ALICE GRIFFITH REDEVELOPMENT PROJECT

Draft Environmental Impact Statement

City and County of San Francisco
Mayor's Office of Housing
in cooperation with the
San Francisco Redevelopment Agency

December 2011

ESA

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ES.1 Introduction

The National Environmental Policy Act (NEPA) requires the preparation of an Environmental Impact Statement (EIS) for major federal actions that may significantly affect the quality of the human environment. This Draft EIS has been prepared by the City and County of San Francisco's Mayor's Office of Housing in cooperation with the San Francisco Redevelopment Agency (SFRA) to describe the potential environmental effects of the Proposed Action, which is the approval of funding and development agreements by the U.S. Department of Housing and Urban Development (HUD) for the redevelopment of the 34-acre "Project Site" in the City of San Francisco, California. The Project Site includes the Alice Griffith public housing site (Alice Griffith) owned by the San Francisco Housing Authority (SFHA) and three adjacent parcels owned by other entities. The Proposed Action would include the redevelopment of Project Site with up to 1,200 new dwelling units, space for potential neighborhood serving retail development, open space and associated infrastructure. The City and County of San Francisco's Mayor's Office of Housing (MOH) has been designated as the Responsible Entity by HUD for assumption of its NEPA authority and NEPA lead agency responsibility.

This Draft EIS has been prepared in accordance with NEPA (42 USC §4321 et seq.), the Council on Environmental Quality (CEQ) Regulations for implementing NEPA (40 CFR Parts 1500-1508) and HUD regulations for Environmental Review Procedures for Entities Assuming HUD Environmental Responsibilities (24 CFR Part 58).

The Project Site is located in the Bayview Hunters Point (BVHP) neighborhood of the City of San Francisco. The Project Site is generally bounded by Gilman Avenue on the south, Hawes Street on the west, Carroll Avenue on the north, and Arelious Walker Drive on the east, with a rectangular extension to the south along Giants Drive that includes a portion of the Candlestick Park stadium parking area. The Project Site includes: (1) the property containing Alice Griffith owned by SFHA (Assessor's Parcel Number [APN] 4884-26); (2) an adjacent property to the east controlled by the State through the California Department of Parks and Recreation (State Parks) and State Lands Commission (APN 4884-25); (3) an adjacent property to the east owned by SFRA (APN 4884-27); and (4) an adjacent property to the south owned by the City through the San Francisco Recreation and Parks Department (APN 5000-01).[1]

[1] The San Francisco Recreation and Parks property is a portion of a larger parcel.

The SFHA property contains the Alice Griffith public housing development which includes 256 dwelling units, playground areas, and the Alice Griffith Opportunity Center. Candlestick Park Stadium parking and overflow parking areas are located on the three non-SFHA properties.

ES.2 Purpose and Need

The City has identified the need for redevelopment of the BVHP neighborhood, and more specifically, the Alice Griffith public housing development, as an area in need of improvements to address physical decay and isolation from the surrounding community. For these needs, the City is seeking HUD funding for the primary purpose of redevelopment of the Project Site.

The Alice Griffith public housing development is distressed and deteriorated, with residences in various stages of physical decay. The existing Alice Griffith development also is physically isolated from the surrounding community. The development includes several internal looped roadways; however, there is only one access point to the off-site street network. There are few neighborhood-serving retail and quality recreational uses near the Project Site. These conditions of distress and disconnectedness frustrate community efforts to create a secure and healthy environment.

ES.3 Alternatives

This document analyzes the potential environmental consequences associated with the Proposed Action, two development alternatives, and the No Action Alternative. The alternatives are described in detail in **Chapter 2.0** and are summarized below.

Alternative A – Proposed Action

The Proposed Action would include development of a residential neighborhood and associated infrastructure on the Project Site. Properties within the Project Site would undergo land transfer prior to development, which would result in land retained by SFHA for reconfigured affordable housing and by the developer for the remainder. The residential development would include one-for-one replacement of the existing 256 public housing units, plus 954 market-rate and below market-rate sale and rental units. The Proposed Action would be constructed in phases to avoid displacement of existing residents. The initial phases would develop currently vacant portions of the site, and existing residents would then occupy those new units before structures were demolished in later phases.

Space would be provided on the ground floor for community-serving retail and service facilities in the housing complex. The Proposed Action also would include an early learning child development center and a new 1.4-acre Alice Griffith Neighborhood Park, consisting of community gardens, sports facilities, picnic areas and other recreational amenities. The existing Opportunity Center, which is a modular unit that serves as a community center, may remain or be relocated onsite depending upon construction phasing needs.

Infrastructure improvements associated with the Proposed Action would include on-site stormwater treatment facilities such as vegetated swales and rainwater cisterns, and a joint trench network including electrical, communications, and gas utilities. The existing street grid network in the BVHP neighborhood would be extended through the Project Site, providing a substantial increase in the number of roadway, bicycle, and pedestrian connections, thus better integrating the Project Site with the rest of the neighborhood.

Alternative B – Housing Replacement Alternative

As with the Proposed Action, this alternative would include the transfer of land to the SFHA and developer in order to facilitate redevelopment of the Project Site. Alternative B would include replacement of the 256 existing public housing units on a one-to-one basis, with no mixed-income housing. Construction would proceed in phases so as not to displace existing residents, with the first phases occurring in vacant portions of the Project Site. The existing Opportunity Center would remain or be relocated onsite. This alternative includes a 1.4-acre park, and similar infrastructure improvements to Alternative A.

Alternative C – Reduced Development Alternative

As with the Proposed Action, this alternative would include the transfer of land to the SFHA and developer in order to facilitate redevelopment of the Project Site. Alternative C proposes up to 875 dwelling units including one-for-one replacement of the 256 public housing units and 619 new market-rate and below-market-rate units. Construction would proceed in phases so as not to displace existing residents, with the first phases occurring in vacant portions of the Project Site. The existing Opportunity Center would remain or be relocated onsite. This alternative includes a 1.4-acre park, and similar infrastructure improvements to Alternative A.

Alternative D – No Action Alternative

Under the No Action Alternative, conditions at the Project Site would remain unchanged. The 256 public housing units would not be replaced, and no other improvements would be implemented.

ES.4 Areas of Environmental Controversy

The following areas of potential controversy and issues of concern have been raised by agencies and the public through the scoping process:

- Land use (compatibility of the planned development with surrounding land uses);
- Hazardous materials (potential affects to existing residents from hazardous soils and other materials, including asbestos, that could be encountered during building demolition and construction);
- Air quality (effects of emissions resulting from equipment, demolition, construction, and future traffic on existing and planned residents);

- Noise (effects from nearby noise generators and construction noise on existing and planned residents);
- Water resources (contaminated runoff during construction and operation and increase in impervious surfaces);
- Public services (effects during construction on family services and school enrollment);
- Traffic and transportation (increased traffic on local roadways, potential effects on transit systems and transportation infrastructure); and
- Environmental justice (disproportionate, adverse effects on low-income or minority populations in the surrounding area).

ES.5 Environmental Consequences and Mitigation Summary

Table ES-1 summarizes the environmental consequences and mitigation for each alternative in the EIS. In addition, the significance for each impact is shown before and after implementation of the associated mitigation measures.

TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
4.2 Air Quality					
Impact 2.1: General Conformity Determination (Criterion 1)	None	LS	LS	LS	LS
Impact 2.2: Local Thresholds for Criteria Air Pollutants and Precursors (Criterion 2)	None	LS	LS	LS	LS
Impact 2.3: Fugitive Dust Emissions for Construction (Criterion 3)	None	LS	LS	LS	LS
Impact 2.4: Carbon Monoxide Concentrations during Operation (Criterion 4)	None	LS	LS	LS	LS
Impact 2.5: Exposure to Health Risks (Criterion 5)	**Mitigation Measure 2.5: Implement Accelerated Emission Control Device Installation on Construction Equipment Used for Alice Griffith Parcels [EIR Mitigation Measure AQ-2.2]** The project sponsor will require that construction equipment used in the Alice Griffith parcels would utilize equipment which meets the USEPA Tier 4 engine standards for particulate matter control (or equivalent) throughout the entire duration of construction activities on those parcels.	S/LS	S/LS	S/LS	LS
Impact 2.6: Local Thresholds for $PM_{2.5}$ concentrations for New Residential Development (Criterion 6)	None	LS	LS	LS	LS
Impact 2.7: Exposure to Odor Emissions (Criterion 7)	None	LS	LS	LS	LS
4.3 Hazards and Hazardous Materials					
Impact 3.1: Exposure to Hazardous Fill Material (Criterion 1)	**Mitigation Measure 3.1a: Article 22A Site Mitigation Plans [Similar to EIR Mitigation Measure HZ-1a]** Prior to obtaining a site, building or other permit from the City for development activities involving subsurface disturbance of artificial fill materials, the Project Applicant shall characterize the fill materials in accordance with the requirements of San Francisco Health Code Article 22A. In addition to the requirements of Article 22A, site sampling shall include analysis of soil vapor samples to identify potential vapor intrusion of volatile organic compounds. If the site investigation indicates the presence of a hazardous materials release, a site mitigation plan must be prepared. The site mitigation plan must specify the actions that will be implemented to mitigate the significant environmental or health and safety risks caused or likely to be caused by the presence of the identified release of hazardous materials including soil vapor intrusion. The site mitigation plan shall identify, as appropriate, such measures as excavation, containment, or treatment of the hazardous materials, monitoring and follow-up testing, and procedures for safe handling and transportation of the excavated materials, or for protecting the integrity of the cover or for addressing emissions from remedial activities, including the use of vapor barriers into building design plans, consistent with the requirements set forth in Article 22A.	S/LS	S/LS	S/LS	NI

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	Mitigation Measure 3.1b: Unknown Contaminant Contingency Plan [EIR Mitigation Measure HZ-2a.1] Before obtaining the permit for the first site or building or other permit for development involving subsurface disturbance, the project sponsor shall prepare and the SFDPH shall approve a contingency plan to address unknown contaminants encountered during development. 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 of unanticipated subsurface hazards or hazardous material releases during construction. Control procedures would include 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 plan shall be amended, as necessary, if new information becomes available that could affect the implementation of the plan. **Mitigation Measure 3.1c: Site-Specific Health and Safety Plans [EIR Mitigation Measure HZ-2a.2]** Before obtaining the permit for the first site or building or other permit for the project from the City for development involving subsurface disturbance, the project sponsor shall prepare and submit to the SFDPH a site-specific HASP in compliance with applicable federal and state OSHA requirements and other applicable laws to minimize impacts on public health and the environment. Implementation of the HASP shall be required as a condition of any applicable permit. The plan shall include identification of chemicals of concern, potential hazards, a requirement for personal protective equipment and devices, and emergency response procedures. The HASP shall be amended, as necessary, in the event new information becomes available that could affect the implementation of the plan.				
Impact 3.2: Proximity to a Potentially Hazardous Site (Criterion 2)	Implement Mitigation Measure 3.1a	S/LS	S/LS	S/LS	NI
Impact 3.3: Release of Hazardous Substances (Criterion 3)	Implement Mitigation Measure 3.1c **Mitigation Measure 3.3: Asbestos Identification and Abatement Mitigation** The BAAQMD shall be notified ten days in advance of any proposed demolition or abatement work. Notification includes the names and addresses of operations and persons responsible; description and location of the structure to be demolished/altered including size, age and prior use, and the approximate amount of friable asbestos; scheduled starting and completion dates of demolition or abatement; nature of planned work and methods to be employed; procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used. All asbestos survey and abatement work shall be conducted by a	S/LS	S/LS	S/LS	SU

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	state certified contractor. The local office of the State Occupational Safety and Health Administration (OSHA) shall be notified of asbestos abatement to be carried out. Asbestos abatement contractors shall follow state regulations contained in 8CCR1529 and 8CCR341.6 through 341.14 where there is asbestos-related work involving 100 square f eet or more of asbestos containing material. Asbestos removal contractors shall be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur shall have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento. The contractor and hauler of the material shall file a Hazardous Waste Manifest which details the hauling of the material from the site and the disposal of it.				
Impact 3.4: Potential Release of Hazardous Materials During Routine Use, Storage, Transport, and Disposal (Criterion 4)	None	LS	LS	LS	NI
4.4 Land Use and Land Use Planning					
Impact 4.1: Consistency with Land Use Plans and Compatibility with Surrounding Development (Criterion 1)	No feasible mitigation.	LS	SU	LS	SU
4.5 Noise					
Impact 5.1: Background Noise Levels (Criterion 1)	None	LS	LS	LS	NI
Impact 5.2: Local Standards for Construction Noise (Criterion 2)	**Mitigation Measure 5.2: Construction Document Mitigation to Reduce Noise Levels During Construction [EIR MMNO-1a.1]** The Project Applicant shall incorporate the following practices into the construction documents to be implemented by the Project contractor: • Provide enclosures and mufflers for stationary equipment, shrouding or shielding for impact tools, and barriers around particularly noisy operations on the site • Use construction equipment with lower noise emission ratings whenever possible, particularly air compressors • Provide sound-control devices on equipment no less effective than those provided by the manufacturer • Locate stationary equipment, material stockpiles, and vehicle staging areas as far as practicable from sensitive receptors • Prohibit unnecessary idling of internal combustion engines • Require applicable construction-related vehicles and equipment to use designated truck routes to access the Project site • Implement noise attenuation measures to the extent feasible, which may include, but are	S/LS	S/LS	S/LS	NI

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	not limited to, noise barriers or noise blankets. The placement of such attenuation measures will be reviewed and approved by the Director of Public Works prior to issuance of development permit for construction activities. Designate a Noise Disturbance Coordinator who shall be responsible for responding to complaints about noise during construction. The telephone number of the Noise Disturbance Coordinator shall be conspicuously posted at the construction site and shall be provided to the City. Copies of the construction schedule shall also be posted at nearby noise-sensitive areas.				
Impact 5.3: Indoor Noise Levels (Criterion 3)	Implement Mitigation Measure 5.2	S/LS	S/LS	S/LS	NI
Impact 5.4: Increase in Noise Levels over Existing Criterion 4)	None	LS	LS	LS	NI
4.6 Socioeconomic Characteristics					
Impact 6.1: Displacement of Existing Residents or Businesses (Criterion 1)	None	LS	LS	LS	NI
Impact 6.2: Reduced Neighborhood Access (Criterion 2)	None	B	B	B	NI
Impact 6.3: Induce a Substantial Amount of Unplanned Growth (Criterion 3)	None	LS	NI	LS	NI
Impact 6.4: Cause a Substantial Decrease in Local or Regional Employment (Criterion 4)	None	B	B	B	NI
4.7 Environmental Justice					
Impact 7.1: Disproportionate Effects to Low-Income and Minority Populations (Criterion 1)	None	B	B	B	SU
4.8 Public Services and Utilities					
Impact 8.1: Water Supply (Criterion 1)	None	LS	LS	LS	NI
Impact 8.2: Wastewater Conveyance and Treatment (Criterion 2)	None	LS	LS	LS	NI
Impact 8.3: Solid Waste Collection and Disposal (Criterion 3)	None	LS	LS	LS	NI
Impact 8.4: Energy (Criterion 4)	None	LS	LS	LS	NI
Impact 8.5: Police Services (Criterion 5)	None	LS	LS	LS	NI
Impact 8.6: Fire Protection and Emergency Medical Services (Criterion 6)	None	LS	LS	LS	NI
Impact 8.7: Schools (Criterion 7)	None	LS	LS	LS	NI

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Impact 8.8: Libraries (Criterion 8)	None	LS	LS	LS	NI
Impact 8.9: Parks and Recreation (Criterion 9)	None	LS	LS	LS	NI
4.9 Visual Character/Aesthetics					
Impact 9.1: Character, Scale and Aesthetic Appeal (Criterion 1)	**Mitigation Measure 9.1: Construction Period Screening and Cleaning [Similar to EIR Mitigation Measure AE-2]** Construction documents shall require all contractors to strictly control the staging and cleanliness of construction equipment stored or driven beyond the limits of the work area. Construction equipment shall be parked and staged on the Project Site, and staging areas shall be screened from view at street level. Before building permits are issued, the project sponsor (through the construction contractor[s]) shall submit a construction staging, access, and parking plan to the San Francisco Department of Building Inspection (DBI) for review and approval. Construction workers shall be prohibited from parking their vehicles on the street. Vehicles shall be kept clean and free of mud and dust before leaving the Project Site. Each day, project contractors shall be required to sweep surrounding streets used for construction access and to maintain them free of dirt and debris	S/LS	S/LS	S/LS	NI
Impact 9.2: Views of Scenic Resources (Criterion 2)	None	LS	LS	LS	NI
4.10 Hydrology, Flooding and Water Quality					
Impact 10.1: Depletion or Degradation of Surface Water Quality (Criterion 1)	**Mitigation Measure 10.1a: Stormwater Pollution Prevention Plan: Combined Storm Sewer System (EIR Mitigation Measure HY-1a.1)** In compliance with the Article 4.1 of the San Francisco Public Works Code and the City's Construction Site Water Pollution Prevention Program, the project sponsor shall submit a site-specific stormwater pollution prevention plan (SWPPP) to the SFPUC for approval, before construction begins in areas draining to the combined sewer system. The SFPUC requires implementation of appropriate best management practices (BMPs) in the California Stormwater Quality Association Stormwater BMP Handbook-Construction or the Caltrans Construction Site BMPs Manual. In accordance with SFPUC's requirements, the SWPPP shall include the following: • An erosion and sediment control plan, with a site map illustrating the BMPs that will be used to minimize on-site erosion and sediment discharge into the combined sewer system and a narrative description of those BMPs. Appropriate BMPs for the erosion and sediment control plan may include: o Scheduling—Develop a schedule that includes sequencing construction activities with the implementation of appropriate BMPs. Perform construction and control practices in accordance with the planned schedule. Schedule work to minimize soil disturbance during the rainy season. Schedule major grading operations for the dry season when practical. Monitor the weather forecast for rainfall and adjust the schedule as appropriate.	S/LS	S/LS	S/LS	NI

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	o Erosion control BMPs—Preserve vegetation where feasible, mulch or hydroseed areas until permanent stabilization is established, and use soil binders, geotextiles and mats, earth dikes and drainage swales, velocity dissipation devices, slope drains, or polyacrylamide to protect soil from erosion; o Wind erosion BMPs—Apply water or other dust palliatives to prevent dust nuisance and overwatering, which can cause erosion. Alternatively, cover small stockpiles or areas that remain inactive for seven or more days; o Sediment control BMPs—Install silt fences, sediment basins, sediment traps, check dams, fiber rolls, sand or gravel bag barriers, straw bale barriers, approved chemical treatment, and storm drain inlet protection to minimize the discharge of sediment; sweep streets to remove sediment; and o Tracking controls—Stabilize the construction site entrance to prevent construction vehicles from tracking sediment onto public roads. Stabilize on-site vehicle transportation routes immediately after grading to prevent erosion and to control dust. Install a wash area to remove sediment from tires and under carriages. • Non-stormwater management BMPs may include water conservation practices, dewatering practices that minimize sediment discharges, and BMPs for paving and grinding; identifying illicit connections and illegal dumping; irrigation and other planned or unplanned discharges of potable water; vehicle and equipment cleaning, fueling, and maintenance; concrete curing and finishing; temporary batch plants; and implementing shoreline improvements and working over water. Discharges from dewatering shall comply with the SFPUC's batch wastewater discharge requirements, which regulate influent concentrations for various constituents. • Waste management BMPs shall be implemented for material delivery, use, and storage; stockpile management; spill prevention and control; solid and liquid waste management; hazardous waste management; contaminated soil management; concrete waste management; and septic/sanitary waste management; • SWPPP training requirements—Construction personnel will receive training on the SWPPP and BMP implementation; and • Site inspections and BMP maintenance—An inspector identified in the SWPPP will inspect the Project Site regularly, before and after a storm and once each 24-hour period during extended storms to identify BMP effectiveness and implement corrective actions if required. The SWPPP shall include checklists that document when the inspections occurred, the results of the inspection, required corrective measures, and when corrective measures were implemented. Required BMP maintenance related to a storm shall be completed within 48 hours of the storm.				

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	Mitigation Measure 10.1b: Stormwater Pollution Prevention Plan: Separate Storm Sewer System (EIR Mitigation Measure HY-1a.2) Consistent with the requirements of the SWRCB General Permit for Stormwater Discharges Associated with Construction and Land Disturbing Activities (Construction General Permit), the project sponsor shall undertake the proposed project in accordance with a project-specific SWPPP prepared by a qualified SWPPP developer. The San Francisco Bay Regional Water Quality Control Board (SFRWQCB), the primary agency responsible for protecting water quality in the project area, is responsible for reviewing and ensuring compliance with the SWPPP. This review is based on the construction general permit issued by the SWRCB. The SWPPP shall include, as applicable, all BMPs required in Attachment C of the construction general permit for risk level 1 dischargers, Attachment D for risk level 2 dischargers, or Attachment E for risk level 3 dischargers. In addition, recommended BMPs, subject to review and approval by the SFRWQCB, include the measures listed below. However, the measures themselves may be altered, supplemented, or deleted during the SFRWQCB's review process, since it has final authority over the terms of the SWPPP. • Scheduling o To reduce the potential for erosion and sediment discharge, schedule construction to minimize ground disturbance during the rainy season; schedule major grading operations during the dry season when practical, and allow enough time before rainfall begins to stabilize the soil with vegetation or to install sediment-trapping devices; o Sequence construction activities to minimize the amount of time that soils remain disturbed; o Stabilize all disturbed soils as soon as possible following ground-disturbing work; and o Install erosion and sediment control BMPs before the start of any ground-disturbing activities; • Erosion and sedimentation o Preserve vegetation in areas where no construction is planned or where construction will occur at a later date; o Stabilize and revegetate disturbed areas as soon as possible after construction with planting, seeding, or mulch (e.g., straw or hay, erosion control blankets, hydromulch, or other similar material), except in cultivated areas; o Install silt fences, coir rolls, and other suitable measures around the perimeter of the areas affected by construction and staging areas and around riparian buffers, storm drains, temporary stockpiles, spoil areas, stream channels, swales, downslope of all exposed soil areas, and in other locations determined necessary to prevent off-site sedimentation; o Install temporary slope breakers during the rainy season on slopes greater than 5				

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	percent where the base of the slope is less than 50 feet from a water body, wetland, or road crossing at spacing intervals required by the SFRWQCB; o Use filter fabric or other appropriate measures to prevent sediment from entering storm drain inlets; o Detain and treat stormwater using sedimentation basins, sediment traps, Baker tanks, or other measures to ensure that discharges to receiving waters meet applicable water quality objectives; o Install check dams, where applicable, to reduce flow velocities and erosion and to allow sediment to settle out of runoff; o Install outlet protection/energy dissipation, where applicable, to prevent scour of the soil caused by concentrated high velocity flows; and o Implement control measures such as spraying water or other dust palliatives to alleviate dust nuisance. • Groundwater/dewatering o Prepare a dewatering plan before excavation, specifying methods of water collection, transport, treatment, and discharge of all water produced by construction site dewatering; o Impound water produced by dewatering in sediment retention basins or other holding facilities to settle the solids and provide other treatment as necessary before discharge to receiving waters; locate sedimentation basins and other retention and treatment facilities away from waterways to prevent sediment-laden water from reaching streams; o Control discharges of water produced by dewatering to prevent erosion; and o If contaminated groundwater is encountered, contact the SFRWQCB for appropriate disposal options; depending on the constituents of concern, such discharges may be disallowed altogether, or require regulation under a separate general or individual permit that would impose appropriate treatment requirements before discharge to the stormwater drainage system. • Tracking controls o Grade and stabilize construction site entrances and exits to prevent runoff from the Project Site and to prevent erosion; o Install a washing facility at the Project Site access to allow for tire washing when vehicles exit the Project Site; and o Remove any soil or sediment tracked off paved roads during construction by street sweeping. • Nonstormwater controls				

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	o Place drip pans under construction vehicles and all parked equipment; o Check construction equipment for leaks regularly; o Wash construction equipment in a designated enclosed area regularly; o Contain vehicle and equipment wash water for percolation or evaporation away from storm drain inlets; o Refuel vehicles and equipment away from receiving waters and storm drain inlets, contain the area to prevent run-on and runoff, and promptly clean up spills; and o Cover all storm drain inlets when paving or applying seals or similar materials to prevent the discharge of these materials. • Waste management and hazardous materials pollution control o Remove trash and construction debris from the project area daily; o Locate sanitary facilities a minimum of 300 feet from receiving waters, and maintain sanitary facilities regularly; o Store all hazardous materials in an area protected from rainfall and stormwater run-on and prevent the off-site discharge of hazardous materials; o Minimize the potential for contamination of receiving waters by maintaining spill containment and cleanup equipment on-site and by properly labeling and disposing of hazardous wastes; o Locate waste collection areas close to construction entrances and away from roadways, storm drains, and receiving waters; o Inspect trash receptacles and other waste and debris containers regularly for leaks and remove and properly dispose of any hazardous materials and liquid wastes placed in these containers; train construction personnel in proper material delivery, handling, storage, cleanup, and disposal; and o Implement construction materials management BMPs for road paving, surfacing, and asphalt removal activities and for handling and disposing of concrete and cement. • BMP inspection, maintenance, and repair o Inspect all BMPs regularly to confirm proper installation and function and inspect BMPs daily during storms; and o Immediately repair or replace BMPs that have failed; provide sufficient devices and materials (e.g., silt fence, coir rolls, erosion blankets) throughout the project construction to enable immediate corrective action for failed BMPs. • Monitoring and reporting o Provide the required documentation for SWPPP inspections, maintenance, and repair requirements; identify in the SWPPP the personnel who will perform				

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	monitoring and inspection; o Maintain written records of inspections, spills, BMP-related maintenance, corrective actions, and observations of off-site discharges of sediment or other pollutants, as required by the SFRWQCB; and o Monitor the water quality of discharges from the Project Site to assess the effectiveness of control measures. • Implement BMPS for shoreline improvements and work over water to minimize the potential transport of sediment, debris, and construction materials to the Lower Bay during construction of shoreline improvements. • Post-construction BMPs o Revegetate all temporarily disturbed areas as required after construction activities are completed; o Remove any remaining construction debris and trash from the Project Site and area on project completion; o Phase the removal of temporary BMPs as necessary to ensure stabilization of the Project Site; o Maintain post-construction site conditions to avoid formation of unintended drainage channels, erosion, or areas of sedimentation; and o Correct post-construction site conditions as necessary to comply with the SWPPP and any other pertinent SFRWQCB requirements. • Train construction site personnel on components of the SWPPP and BMP implementation. Train personnel who will perform inspection and monitoring activities. **Mitigation Measure 10.1c: Regulatory Stormwater Requirements [EIR Mitigation Measure HY-6a.1]** In accordance with the San Francisco Stormwater Design Guidelines, the project sponsor shall submit a stormwater control plan to the SFPUC, as part of the development application submitted for approval. The plan shall demonstrate how the following measures would be incorporated into the project: • Low impact development site design principles (e.g., preserving natural drainage channels and treating stormwater runoff at its source rather than in downstream centralized controls); • Source control BMPs in the form of design standards and structural features for the following areas, as applicable: o Commercial areas; o Restaurants;				

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TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
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	o Retail gasoline outlets; o Automotive repair shops; and o Parking lots; • Source control BMPs for landscaped areas shall be documented in a landscape management plan that relies on integrated pest management and includes pesticide and fertilizer application guidelines; and • Treatment control measures (e.g., bioretention, porous pavement, vegetated swales) targeting the project specific contaminants of concern: sediment, pathogens, metals, nutrients (nitrogen and phosphorus compounds), oxygen demanding substances, organic compounds (e.g., PCBs and pesticides), oil and grease, and trash and debris. The stormwater control plan shall demonstrate that the project has the land area available to support the proposed BMP facilities sized in accordance with the required water quality design storm. Volume-based BMPs shall be sized to treat runoff resulting from 0.75 inch of rainfall (LEED SS6.2), and flow-based BMPs shall be sized to treat runoff resulting from a rainfall intensity of 0.2 inch per hour. Treatment trains1 shall be used where feasible. Additional requirements: • LEED SS6.2—BMPs used to treat runoff shall be designed to remove 80 percent of the average annual post-development total suspended solids loads. BMPs are considered to meet these criteria if they are designed in accordance with SFPUC requirements. • The SCP shall include an operations and maintenance plan that demonstrates how the treatment control BMPs would be maintained in the long term, what entities would be responsible for BMP maintenance in the public and private rights-of-way, funding mechanisms, and what mechanisms would be used to formalize maintenance and access agreements. The project sponsor shall also prepare a stormwater drainage master plan for approval by the SFPUC. It shall include plans for the storm drain infrastructure and for stormwater management controls (e.g., vegetated swales, dry wells). The storm drain infrastructure shall illustrate conveyance of the five-year storm in a separate storm drain piped system and conveyance of the 100-year storm in the street and drainage channel rights-of-way. **Mitigation Measure 10.1d, Groundwater Dewatering Plan [EIR Mitigation Measure MM HY-1a.3]** Prior to commencement of construction activities and to minimize potential impacts to receiving water quality during the construction period, the Project Applicant shall through the proper implementation of this dewatering plan, show compliance with SFRWQCB/NPDES requirements, whichever are applicable.				

[1] The sequencing of structural BMPs to achieve optimal flow management and pollutant removal from urban stormwater.

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		Alternative A	Alternative B	Alternative C	Alternative D
	The Dewatering Plan shall specify how the water would be collected, contained, treated, monitored, and/or discharged to the vicinity drainage system or Lower Bay. Subject to the review and approval of the SFRWQCB, the Dewatering Plan shall include, at a minimum: • Identification of methods for collecting and handling water on site for treatment prior to discharge, including locations and capacity of settling basins, infiltration basins (where not restricted by site conditions), treatment ponds, and/or holding tanks. • Identification of methods for treating water on site prior to discharge, such as filtration, coagulation, sedimentation settlement areas, oil skimmers, pH adjustment, and other BMPs. • Procedures and methods for maintaining and monitoring dewatering operations to ensure that no breach in the process occurs that could result in an exceedance of applicable water quality objectives. • Identification of discharge locations and inclusion of details on how the discharge would be conducted to minimize erosion and scour. • Identification of maximum discharge rates to prevent exceedance of storm drain system capacities. • Additional requirements of the applicable General Permit or NPDES Permit/WDR (including effluent and discharge limitations and reporting and monitoring requirements, as applicable) shall be incorporated into the Dewatering Plan. Any exceedance of established narrative or numeric water quality objectives shall be reported to the SFRWQCB and corrective action taken as required by the SFRWQCB and the Dewatering Plan. Corrective action may include increased residence time in treatment features (e.g., longer holding time in settling basins) and/or incorporation of additional treatment measures (e.g., addition of sand filtration prior to discharge).				
Impact 10.2: Depletion or Degradation of Groundwater (Criterion 2)	Implement Mitigation Measures 10.1a through 10.1d	S/LS	S/LS	S/LS	NI
Impact 10.3: Modification of Site Drainage Pattern (Criterion 3)	None	LS	LS	LS	NI
Impact 10.4: Flooding Risks (Criterion 4)	None	LS	LS	LS	LS
4.11 Traffic and Transportation					
Impact 11.1: Intersection Traffic Impacts (Criterion 1)	None	LS	LS	LS	NI
Impact 11.2: Freeway Ramp Impacts (Criterion 2)	None	LS	LS	LS	NI
Impact 11.3: Transit Impacts (Criterion 3)	None	LS	LS	LS	NI
Impact 11.4: Impacts on Pedestrians and Bicycles (Criterion 4)	None	LS	LS	LS	NI

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

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		Alternative A	Alternative B	Alternative C	Alternative D
Impact 11.5: Parking (Criterion 5)	None	LS	LS	LS	NI
4.12 Geology and Soils					
Impact 12.1: Ground Shaking (Criterion 1)	**Mitigation Measure 12.1a: Site-Specific Geotechnical Investigation with Seismic Analyses [EIR Mitigation Measure GE-4a.1]** Prior to the issuance of any building permits for the Project Site: • The Applicant shall submit to the San Francisco DBI for review and approval a site-specific, design-level geotechnical investigation prepared by a California Certified Engineering Geologist (CEG) or California Registered Geotechnical Engineer (GE), as well as project plans prepared in compliance with the requirements of the SFBC, the Seismic Hazards Mapping Act, and requirements contained in California Geological Survey Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California. In addition, all engineering practices and analyses of peak ground accelerations and structural design shall be consistent with SFBC standards to ensure that structures can withstand expected ground accelerations. The CEG or GE shall determine and DBI shall approve design requirements for foundations and all other improvements associated with the permit application. • DBI shall employ a third-party CEG and California Registered Professional Engineer (Civil) (PE) to form a geotechnical peer review committee (GPRC), consisting of DBI and these third-party reviewers. The committee shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that the plans incorporate all necessary geotechnical mitigation measures. DBI shall issue no permits until the committee has approved the geotechnical investigation and the project plans, including the factual determinations and the proposed engineering designs and construction methods. • All project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations; and • The project CEG or GE shall be responsible for ensuring compliance with these requirements. **Mitigation Measure 12.1b: Seismic Design Compliance Documentation [EIR Mitigation Measure GE-4a.2]** Prior to the issuance of a building permit for the replacement of the Alice Griffith Public Housing site, the Applicant shall submit any and all seismic design compliance documentation to the U.S. Department of Housing and Urban Development (HUD), as required by that agency. The Project Developer shall confirm, by copy of all documents submitted, including transmittal, compliance with this requirement to DBI. The project CEG or GE shall be responsible for verifying project compliance with this requirement.	S/LS	S/LS	S/LS	LS

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Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
Impact 12.2: Soil Suitability (Criterion 2)	**Mitigation Measure 12.2a: Site-Specific Geotechnical Investigation with Analyses of Liquefaction, Lateral Spreading and/or Settlement [EIR Mitigation Measure GE-5a]** Prior to issuance of building permits for the Project Site: • The Applicant shall submit to the DBI for review and approval a site-specific, design-level geotechnical investigation prepared by a CEG or GE, as well as project plans prepared in compliance with the requirements of the SFBC, the Seismic Hazards Mapping Act, and requirements contained in CGS Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California. In addition, all engineering practices, and analyses of structural design shall be consistent with SFBC standards to ensure seismic stability, including reduction of potential liquefaction hazards. • DBI shall employ a third-party CEG and California Registered Professional Engineer (Civil) to form a GPRC, consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. No permits shall be issued by the DBI until the GPRC has approved the geotechnical investigation and the project plans, including the factual determinations and the proposed engineering designs and construction methods. • All project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations. • The site-specific project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce liquefaction hazards. The engineering design techniques to reduce liquefaction hazards shall include proven methods generally accepted by CEGs, subject to DBI and GPRC review and approval, including the following: **Structural Measures** • Construction of deep foundations, which transfer loads to competent strata beneath the zone susceptible to liquefaction, for critical utilities and shallow foundations; and • Structural mat foundations to distribute concentrated load to prevent damage to structures. **Ground Improvement Measures** • Additional over-excavation and replacement of unstable soil with engineering-compacted fill; • Dynamic compaction, such as deep dynamic compaction or rapid impact compaction, to densify loose soils below the groundwater table; • Vibro-compaction, sometimes referred to as vibro-flotation, to densify loose soils below the groundwater table;	S/LS	S/LS	S/LS	LS

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	• Stone columns to provide pore pressure dissipation pathways for soil, to compact loose soil between columns, and to provide additional bearing support beneath foundations; and • Soil-cement columns to densify loose soils and provide additional bearing support beneath foundations. • The project CEG or GE shall be responsible for ensuring compliance with these requirements. **Mitigation Measure 12.2b: Site-Specific Geotechnical Investigation with Expansive Soils Analyses [EIR Mitigation Measure GE-10a]** Prior to issuance of building permits for the Project Site: • The Applicant shall submit for DBI review and approval a site-specific, design-level geotechnical investigation prepared by a CEG or GE, as well as project plans prepared in compliance with the requirements of the SFBC. In addition, all engineering practices and analyses of structural design shall be consistent with SFBC standards to ensure soils stability, including reduction of potential soil expansion hazards. • DBI shall employ a third-party CEG and California Registered PE to form a GPRC, consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. DBI shall issue no permits until the GPRC has approved the geotechnical investigation and the project plans, including the factual determinations and the proposed engineering designs and construction methods. • All project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations. • The site-specific project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce expansive soils hazards. The engineering design techniques to reduce expansive soils hazards shall include proven methods generally accepted by CEGs, subject to DBI and GPRC review and approval. The design-level geologic and geotechnical studies shall identify the presence of expansive soils and potentially unstable soils and shall identify means to avoid the hazard of or support the design of engineering procedures to stabilize the soils, as required by Chapter 18 (Soils and Foundations) of the SFBC. Sections 1803 through 1812 of the SFBC contain the formulas, tables, and graphs by which the project engineer shall develop the project's soil-stability specifications, including the appropriate foundation designs for structures on expansive soils and which the DBI would use to verify the applicability of the specifications. If expansive soils are identified, appropriate support and protection procedures shall be designed and implemented to maintain the stability of soils next to newly graded or re-graded access roads, work areas, and structures during and after construction and to minimize potential for damage to structures and facilities at the				

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Impact Statement	Mitigation Measures	Original Impact / Residual Impact with Mitigation			
		Alternative A	Alternative B	Alternative C	Alternative D
	Project Site. • The project CEG or GE shall be responsible for ensuring compliance with these requirements. **Mitigation Measure 12.2c: Site-Specific Geotechnical Investigation with Corrosive Soils Analyses [EIR Mitigation Measure GE-11a]** Before building permits are issued for the Project Site: • The project sponsor shall submit for DBI review and approval a site-specific, design-level geotechnical investigation prepared by a CEG or GE, as well as project plans prepared in compliance with the requirements of the SFBC. In addition, all engineering practices and analyses of structural design shall be consistent with SFBC standards to ensure soils stability, including reduction of potential hazards from corrosive soils. • DBI shall employ a third-party CEG and California Registered PE to form a GPRC, consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. DBI shall issue no permits shall until the GPRC has approved the geotechnical investigation and the project plans, including the factual determinations and the proposed engineering designs and construction methods. • All project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations. • The site-specific project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce potential hazards from corrosive soils. The engineering design techniques to reduce corrosive soils hazards shall include proven methods generally accepted by CEGs, subject to DBI and GPRC review and approval. The design-level geologic and geotechnical studies shall identify the presence of corrosive soils and shall identify means to avoid the hazard, as required by Chapter 18 (Soils and Foundations) of the SFBC. Sections 1803 through 1812 of the SFBC contain the formulas, tables, and graphs by which the project engineer shall develop the project's structural design specifications, including the appropriate foundation designs for structures on corrosive soils and which DBI would use to verify the applicability of the specifications. If corrosive soils are identified, appropriate protection procedures shall be designed and implemented to minimize potential for damage from corrosive soils to structures and facilities at the Project Site. • The project CEG or GE shall be responsible for ensuring compliance with these requirements.				

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		Alternative A	Alternative B	Alternative C	Alternative D
Impact 12.3: Destabilization of Geologic Conditions (Criterion 3)	**Mitigation Measure 12.3: Minimize Rock Fragmentation Impacts during Construction [EIR Mitigation Measure GE-3]** Prior to the issuance of any permit is issued for a construction activity that would involve controlled rock fragmentation that could cause settlement or lateral movement of structures on nearby properties, the Applicant shall, in compliance with Section 1803.1 of the San Francisco Building Code (SFBC), include in the permit application methods and techniques to ensure that controlled rock fragmentation would not cause unacceptable vibration or settlement or lateral movement of structures at nearby properties. Such methods and technologies shall be based on the specific conditions at the construction site such, but not limited to, the following: • Pre-excavation, surveying of potentially affected structures; • Underpinning foundations of potentially affected structures, as necessary; and • Including in the excavation plan a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of an excavation. Monitoring results shall be submitted to San Francisco DBI. In the event of unacceptable ground movement, as determined by DBI inspections, all excavation shall cease and corrective measures shall be implemented. The DBI shall reevaluate and approve the controlled rock fragmentation program and ground stabilization measures.	S/LS	S/LS	S/LS	NI
Impact 12.4: Slope Failure (Criterion 4)	None	LS	LS	LS	LS
Impact 12.5: Soil Erosion (Criterion 5)	Implement Mitigation Measures 10.1a, 10.1b and 10.1c	S/LS	S/LS	S/LS	LS
4.13 Cultural and Historic Resources					
Impact 13.1: Effects to Historic Architectural Resources (Criterion 1)	None	NI	NI	NI	NI
Impact 13.2: Effects to Archaeological Resources (Criterion 2)	A PA between the City and County of San Francisco and the California SHPO shall be executed regarding an archaeological testing program for the Project Site. The stipulations of the PA shall include but are not limited to the draft PA language provided in **Appendix D.**	S/LS	S/LS	S/LS	LS
Impact 13.3: Consistency with Cultural Resource Management Plans and Agreements (Criterion 3)	Implement Mitigation Measure 13.2	S/LS	S/LS	S/LS	NI
4.14 Biological Resources					
Impact 14.1: Substantial Adverse Effect on Special-Status Species and Other Legally-Protected Species (Criterion 1):					
- Plants	None	NI	NI	NI	NI
- Birds	**Mitigation Measure 14.1: Impact Avoidance and Pre-Construction Surveys for Nesting Special-Status and Legally Protected Avian Species [EIR Mitigation Measure BI-6a.1]** The project sponsor shall implement the following measures to avoid impacts on nesting birds:	S/LS	S/LS	S/LS	NI

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	• Not more than 15 days before construction between February 1 and August 31, surveys for nesting birds shall be conducted by a qualified biologist (one familiar with the breeding biology and nesting habits of birds that may breed in the project vicinity) that is selected by the project sponsor and approved by the City or San Francisco Redevelopment Agency (SFRA). Surveys shall cover the entire area to be affected by construction and the area within a 250-foot buffer of construction or ground-disturbing activities. The results of the surveys, including survey dates, times, methods, species observed, and a map of any discovered nests, shall be submitted to the City or SFRA. If no active avian nests (i.e., those with eggs or young) are identified on or within 250 feet of the limits of the disturbance area, no further mitigation is necessary. Phased construction work shall require additional surveys if vegetation or building removal has not occurred within 15 days of the initial survey or is planned for an area that was not previously surveyed. Alternatively, to avoid impacts, the project sponsor shall begin construction after the previous breeding season for local raptors and other special-status species has ended (after August 31) and before the next breeding season begins (before February 1). • If active nests (with eggs or young) of special-status or protected avian species are found within 250 feet of the proposed disturbance area, a minimum 250-foot no-disturbance buffer zone surrounding active raptor nests and a minimum 100-foot buffer zone surrounding nests of other special-status or protected avian species shall be established until the young have fledged. Project activities shall not occur in the buffer as long as the nest is active. The size of the buffer area may be reduced if a qualified biologist familiar with the species' nesting biology (as approved by the City or SFRA) and the CDFG determine it would not be likely to have adverse effects on the particular species. Alternatively, certain activities may occur in the aforementioned buffers, with CDFG concurrence, if a qualified biologist monitors the activity of nesting birds for signs of agitation while those activities are being performed. If the birds show signs of agitation, suggesting that they could abandon the nest, activities would cease in the buffer area. No action other than avoidance shall be taken without CDFG consultation. • Completion of the nesting cycle (to determine when construction near the nest can commence) shall be determined by a qualified biologist experienced in identification and biology of the specific special-status or protected species.				
- Mammals	None	LS	LS	LS	NI
- Fish	None	NI	NI	NI	NI
Impact 14.2: Substantial Adverse Effect on Sensitive or Critical Habitat (Criterion 2)	None	NI	NI	NI	NI

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Impact 14.3: Substantial Adverse Effect on Locally-Protected Trees (Criterion 3)	**Mitigation Measure 14.3: Preservation and Replacement of Significant Trees and Preservation and Planting of Street Trees (EIR Mitigation Measure BI-14a)** Construction outside of the Department of Public Works (DPW) jurisdiction could result in the disturbance or removal of a large number of trees. To minimize this impact, the project sponsor shall implement following measures in these areas: • To the extent feasible, avoid the removal of trees that meet the size specifications of significant trees in the Public Works Code Article 16. Any such trees that are removed shall be replaced at a minimum of 1 to 1 (one tree impacted to one tree replaced). The species used for replacement shall be consistent with DPW recommendations. • Plant street trees in all new development areas. The species, size, and locations shall be consistent with the requirements specified in Planning Code Section 143, including the following: o The street tree installed shall be a minimum of one 24-inch box tree for each 20 feet of frontage of the property along each street or alley, with any remaining fraction of 10 feet or more of frontage requiring an additional tree. Such trees shall be either within a setback area on the lot or within the public right-of-way along such lot. o The species of trees selected shall be suitable for the site, and, in the case of trees installed in the public right-of-way, the species and locations shall be subject to DPW approval. Procedures and other requirements for the installation, maintenance, and protection of trees in the public right-of-way shall be as set forth in Public Works Code Article 16. • If a significant tree or street tree would not be removed, but construction activities would occur within the dripline of such tree, a tree protection plan shall be prepared by an arborist certified by the International Society of Arboriculture, in accordance with the Urban Forestry Ordinance. This plan shall be submitted to the Planning Department for review and approval before a demolition or building permit is issued. The tree protection plan shall include measures to protect all parts of a tree from disturbance during construction and may include the following: o A site plan with tree species, trunk location, trunk diameter at breast height, and the canopy dripline area within development; o The use of protective fencing to establish an area to be left undisturbed during construction; o Protection specifications, including construction specifications such as boring instead of trenching for utility lines, or tree specifications such as drainage, fertilization, or irrigation measures; and o Pruning specifications, if needed, to preserve the health of the tree and allow construction to proceed.	S/LS	S/LS	S/LS	NI

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CHAPTER 1.0
Purpose and Need

1.1 Introduction

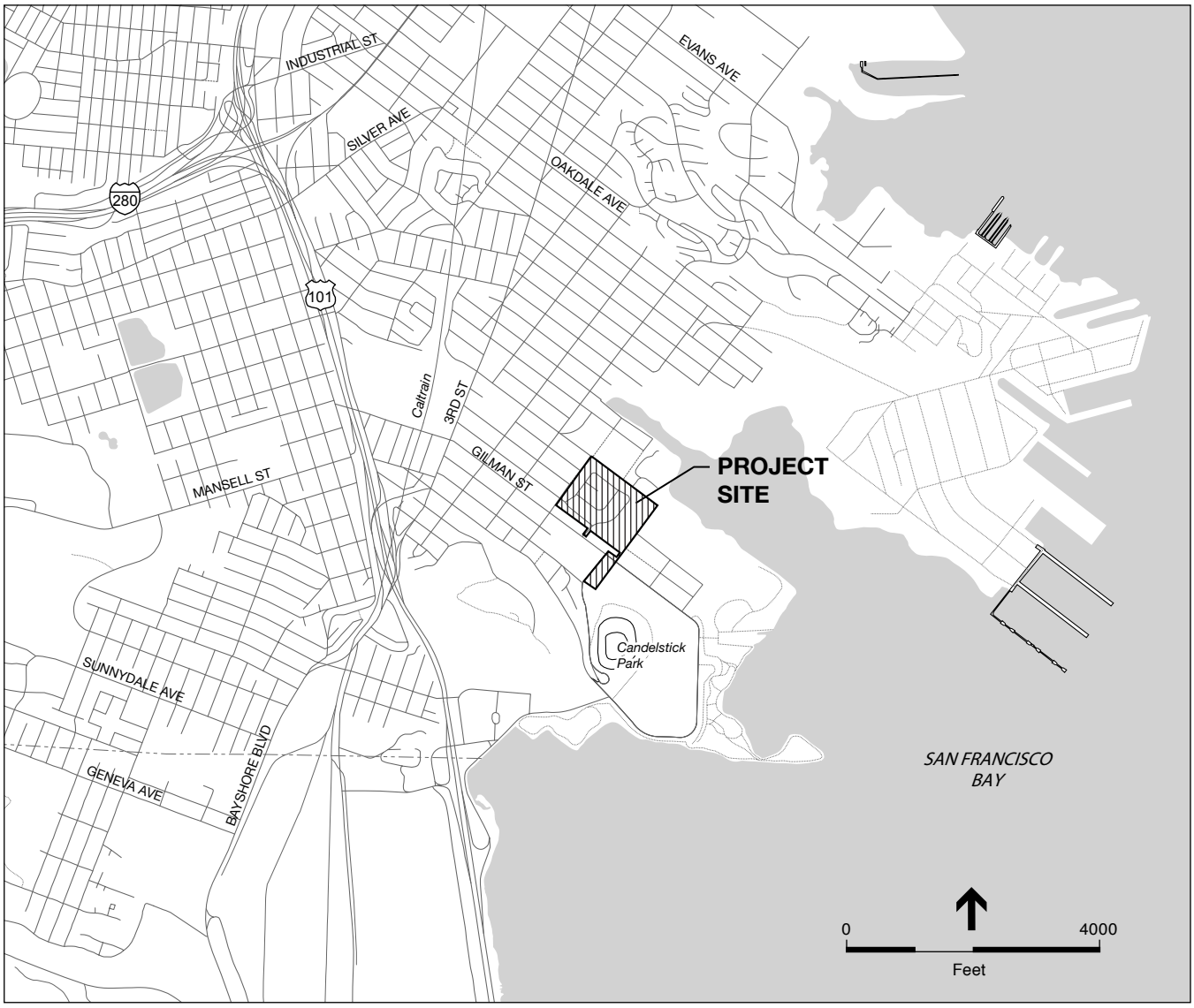
The National Environmental Policy Act (NEPA) requires the preparation of an Environmental Impact Statement (EIS) for major federal actions that may significantly affect the quality of the human environment. This Draft EIS has been prepared by the City and County of San Francisco's Mayor's Office of Housing in cooperation with the San Francisco Redevelopment Agency (SFRA) to describe the potential environmental effects of the Proposed Action, which is the approval of funding and development agreements by the U.S. Department of Housing and Urban Development (HUD) for the redevelopment of the 34-acre "Project Site" in the City of San Francisco, California. The Project Site includes the Alice Griffith public housing site (Alice Griffith) owned by the San Francisco Housing Authority (SFHA) and three adjacent parcels owned by other entities. The Proposed Action would include the redevelopment of Project Site with up to 1,200 new dwelling units, space for potential neighborhood serving retail development, open space, and associated infrastructure. The City and County of San Francisco's Mayor's Office of Housing (MOH) has been designated as the Responsible Entity by HUD for assumption of its NEPA authority and NEPA lead agency responsibility.

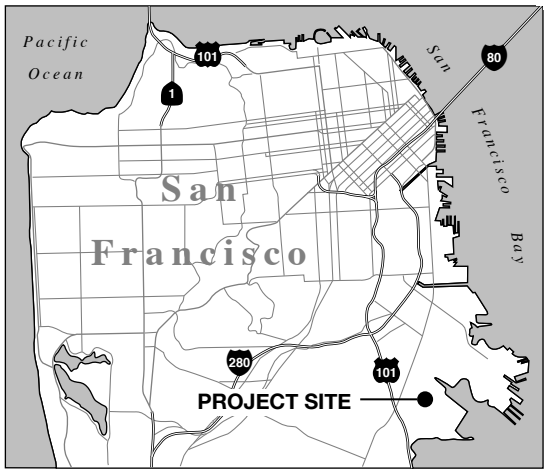
This Draft EIS has been prepared in accordance with NEPA (42 USC §4321 et seq.), the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 CFR Parts 1500-1508) and HUD regulations for Environmental Review Procedures for Entities Assuming HUD Environmental Responsibilities (24 CFR Part 58).

1.2 Project Site and Vicinity

The Project Site is located in the Bayview Hunters Point (BVHP) neighborhood of the City of San Francisco. The Project Site is often included in local planning documents as part of the Candlestick Point area, which is a subarea of the BVHP community. **Figure 1-1** shows the regional location of the Project Site and **Figure 1-2** provides an aerial photograph with the Project Site boundary. The Project Site is generally bounded by Gilman Avenue on the south, Hawes Street on the west, Carroll Avenue on the north, and Arelious Walker Drive on the east, with a rectangular extension to the south along Giants Drive that includes a portion of the Candlestick Park stadium parking area.

The 34-acre Project Site includes: (1) the property containing Alice Griffith owned by SFHA (Assessor's Parcel Number [APN] 4884-26), (2) an adjacent property to the east controlled by the State through the California Department of Parks and Recreation (State Parks) and State Lands





SOURCE: ESA

Figure 1-1
Regional Location

SOURCE: The aerial photograph used for this figure is dated February 2011; Tetra Tech

Figure 1-2
Project Site

Commission (APN 4884-25), (3) an adjacent property to the east owned by SFRA (APN 4884-27), and (4) an adjacent property to the south owned by the City through the San Francisco Recreation and Parks Department (APN 5000-01).[1]

1.3 Background

1.3.1 Historical Uses

The Project Site was historically undeveloped marshland until World War II. Some fringe areas of the Project Site may have been part of the Bay View Park horseracing track and hotel complex, which was first developed in 1863 and reclaimed by the San Francisco Bay by 1880. The Project Site was partially filled and developed with the Double Rock War Dwellings in 1943. This was a temporary, wartime housing development serving Hunters Point Naval Shipyard. In 1962, the Double Rock War Dwellings were demolished and replaced with the existing housing which was later named after a former SFHA board member, Alice Griffith.[2]

1.3.1 Existing Uses

The Project Site contains Alice Griffith public housing and overflow parking areas for Candlestick Park. The parking areas are located on the State Parks and State Lands Commission parcel, the SFRA parcel and the San Francisco Recreation and Parks Department parcel. The SFHA-parcel contains Alice Griffith, which is composed of 33, two-story, rectangular apartment buildings, which were constructed beginning in 1962. There are 256 dwelling units total that range in size from one to five bedrooms. Although the building sizes vary, the architectural character of the buildings is simple and uniform, with stucco facades and metal detailing. Shared open courtyards are interspersed among the buildings. Alice Griffith includes several playground areas and the Alice Griffith Opportunity Center. Of the 256 units, 228 units are occupied and 28 units are vacant. Approximately 670 residents occupy these units. The residents include 321 adults, 61 of whom are employed.[3]

In the Project Site vicinity, single-family residential uses are dominant south of Fitzgerald Avenue. Light industrial, warehouse and storage uses are dominant north of Fitzgerald Avenue. To the east and southeast are overflow parking areas for Candlestick Park, a recreational vehicle park along Gilman Avenue, Candlestick State Park Recreation Area, and the San Francisco Bay. To the south of the Project Site is the Candlestick Park stadium and parking lot. Adjacent to the south side of the Project Site are a restaurant, church, and multi-unit condominium community on the north side of Gilman Avenue. The Bret Harte Elementary School and the Gilman Playground are located across the street on the south side of Gilman Avenue.

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1 The San Francisco Recreation and Parks property is a portion of a larger parcel.

2 Circa: Historic Property Development, *Bayview Waterfront Plan Historic Resources Evaluation, Volume II: Draft Historic Resource Survey and Technical Report*, July 2009.

3 San Francisco Housing Authority, personal communication between Kate Hartley of the San Francisco Redevelopment Agency and Dominica Henderson of the San Francisco Housing Authority, May 2011.

1.3.2 Planning Background

Existing planning documents and prior environmental reviews for the BVHP neighborhood include the BVHP Redevelopment Plan and the Candlestick Point-Hunters Point Shipyard Phase II (CP-HPS) Project. This section briefly summarizes these documents, and describes those elements that are relevant to the Project Site.

Bayview Hunters Point Redevelopment Plan

The Project Site is a part of a larger community in need of redevelopment. When adopted by the San Francisco Board of Supervisors in 2006, the BVHP Redevelopment Plan amended the redevelopment plan formerly known as the Hunters Point Redevelopment Plan (Project Area A) to add 1,361 acres (Project Area B), including the Project Site. The primary objective of the BVHP Redevelopment Plan is to revitalize the BVHP community through economic development, affordable housing and community enhancement programs for the benefit of existing residents and community-based businesses. Extensive surveys and literature reviews have been conducted for the Plan Area to document existing physical and economic conditions. A Project Area Committee consults with the Agency on policy matters affecting the residents of the area.

Within Project Area B, approximately 50 percent of the existing buildings suffer from very extensive or extensive deficiencies, including extensive deterioration, general dilapidation, serious cracks in walls/foundation, sagging roof/walls/floor or general alignment problems.[4] Approximately 88 percent of the primary buildings were constructed prior to the 1970 design provisions of the Uniform Building Code for earthquake forces and thus are potentially unsafe in the event of an earthquake. These building deficiencies present potential safety and health concerns. In terms of economic conditions, Project Area B has a large number of vacant industrial and retail spaces[5] and a lack of neighborhood-serving retail.[6]

In August 2010, the San Francisco Board of Supervisors amended the BVHP Redevelopment Plan as part of the approvals for the CP-HPS Project. Objectives for the Alice Griffith neighborhood are defined in the Redevelopment Plan as follows:

> *This Neighborhood will accommodate a diverse range of housing types with improved connections to the surrounding neighborhoods. Existing affordable homes will be rebuilt to provide at least one-for-one replacement units targeted to the same income levels as those of the existing residents and ensure that eligible Alice Griffith Housing residents have the opportunity to move to the new, upgraded units directly from their existing Alice Griffith Housing units without having to relocate to any other area. A focus of the Neighborhood will be a centrally located park that extends the length of the Neighborhood that may include community gardens, active sports uses, and picnic areas. This Neighborhood will include mixed-income housing developments that may include townhomes, stacked*

[4] SFRA, *Bayview Hunters Point Redevelopment Plan Amendment, Report on the Plan Amendment*. May 2010. Pg III-16
[5] Ibid. Pg III-49
[6] Ibid. Pg III-52

townhomes, live-work units, group housing, and multi-unit, multi-story apartment and condominium buildings.[7]

Candlestick Point-Hunters Point Shipyard Phase II Project

Redevelopment of the Project Site is included within the CP-HPS Project approved by the San Francisco Board of Supervisors on August 3, 2010. The CP-HPS Project covers approximately 702 acres along the southeastern waterfront of San Francisco. The CP-HPS Project is composed of nine districts, including the Alice Griffith District (i.e. the Project Site). The environmental effects of the CP-HPS Project were evaluated in the CP-HPS EIR prepared by the City and the Redevelopment Agency pursuant to the California Environmental Quality Act. The Final EIR was certified by the City and the Redevelopment Agency on June 3, 2010.

The CP-HPS Project envisions the following new uses at buildout in the Candlestick Point and Hunters Point Shipyard areas: 10,500 residential units; 885,000 square feet of regional/neighborhood retail; 2,650,000 square feet of commercial, light industrial, research and development (R&D) and office space; 255,000 square feet of arts education and artist studio space; 100,000 square feet of community uses; and 330 acres of parks and open space. The Hunters Point portion would include a new 49ers stadium or, in the event that a stadium is not built, either an additional 2,500,000 square feet of R&D or a combination of housing and R&D space.

Prior to approval, the CP-HPS Project was reviewed and discussed in over 230 public meetings, including meetings with the two community-based advisory organizations that oversee the Plan area (the Hunters Point Shipyard Citizens Advisory Committee and the Project Area Committee), the Redevelopment Agency Commission, the Board of Supervisors, the Planning Commission and other City commissions, along with other local forums.

Approval of the CP-HPS Project was preceded by voter approval of Proposition G, an initiative petition measure named the "Bayview Jobs, Parks, and Housing Initiative". Approved in June 2008, Proposition G called for the revitalization of the CP-HPS Project area and included the following objectives related to the Project Site and Proposed Action:

Tangible community benefits:

- Create new public recreation and open spaces
- Create a range of job and economic development opportunities for local, economically disadvantaged individuals and business enterprises, particularly for residents and businesses located in the Bayview neighborhood
- Provide neighborhood-serving retail

Integration with the larger BVHP neighborhood (Plan Area):

- Provide automobile, public transportation, and pedestrian connections

[7] SFRA, *Bayview Hunters Point Redevelopment Plan*, August 2010, page 30.

- Create substantial affordable housing, jobs, and commercial opportunities for existing Bayview residents and businesses

Substantial new housing in a mix of rental and for-sale units, both market-rate and below-market-rate, and rebuilding of Alice Griffith Housing:

- Provide new affordable housing that is targeted to the lower income levels of the Bayview population, including new units that are suitable for families, seniors, and young adults
- Rebuild Alice Griffith housing to provide one-for-one replacement units targeted to the same income levels as those of the existing residents and ensure that eligible Alice Griffith Housing residents have the opportunity to move to the new, upgraded units directly from their existing Alice Griffith housing units without having to relocate to any other area

Consistent with Proposition G, the CP-HPS Project includes 10,500 residential housing units, of which 31.86 percent (3,345 units) will be below market. The housing program includes: the complete rebuilding of the Alice Griffith Public Housing Development to provide one-for-one replacement of existing units targeted to the same income levels as those of the existing residents, and phasing to ensure that residents have the opportunity to move directly to the new units.

Additionally, over 300 acres of new and improved public parks and open space, regional and neighborhood-serving retail space, community facilities, and substantial infrastructure and transportation improvements are also included in the CP-HPS Project. Thus, the Proposed Action is consistent with and fulfills certain objectives of Proposition G.

Housing Opportunities for People Everywhere (HOPE SF)

The redevelopment of Alice Griffith is part of the HOPE SF program: a public-private partnering effort to revitalize the City's most distressed public housing sites. In March 2007, the HOPE SF Task Force recommended that the City and the SFHA partner to rebuild distressed public housing sites in San Francisco, including the Alice Griffith neighborhood, as mixed-income communities. HOPE SF principles include replacement of public housing units one-for-one, creation of economically-integrated communities, involvement of residents within the planning process, provision of economic opportunities through the rebuilding process, integration with neighborhood improvements plans, and creation of environmentally sustainable and accessible communities.

1.4 Purpose and Need

The Proposed Action is the approval by HUD of funding and development agreements associated with redevelopment of the Project Site with affordable housing. CEQ Regulations for Implementing NEPA (40 CFR Part 1502.13) state that the EIS purpose and need "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action."[8] The City has identified the need for redevelopment of the BVHP neighborhood,

[8] 40 CFR Part 1502.13

including the Project Site. The Alice Griffith public housing development is in need of improvements to address physical decay and isolation from the surrounding community. The purpose of the Proposed Action is to address these needs through redevelopment of the Project Site.

The Alice Griffith public housing development is distressed and deteriorated, with residences in various stages of physical decay. In 2007, SFHA compiled an Immediate Needs Report to document existing improvement needs at SFHA properties, including Alice Griffith.[9] Identified issues for Alice Griffith include, but are not limited to, the following: dry rot and weather damage to structures, lead paint and asbestos pipe insulation and tiles requiring abatement, broken windows and dilapidated window frames, damaged metal and wood doors, dilapidated wood decks and railings, substandard electrical system with frequent overloads, damaged walls and ceilings, and ineffective hydronic heating systems in need of replacement. Building deficiencies present potential safety and health concerns. Alice Griffith would be more expensive to repair than to rebuild and thus the most feasible financial alternative is the replacement of structures.[10]

The existing Alice Griffith development is also physically isolated from the surrounding community. The development includes several internally looped roadways; however, there is only one access point to the off-site street network. There are few neighborhood-serving retail and quality recreational uses near the Project Site. These conditions of distress and isolation frustrate community efforts to create a secure and healthy living environment.

1.5 Overview of the NEPA Process

1.5.1 Scoping

HUD published a Notice of Intent (NOI) in the Federal Register, Vol. 75, No. 235 on December 8, 2010, to inform agencies and the general public that a Draft EIS would be prepared by the City and County of San Francisco, as the Responsible Entity in accordance with 24 CFR Part 58.2. The NOI also solicited comments concerning the Draft EIS. A public scoping meeting was held on January 5, 2011 at Bret Harte Elementary School at 1035 Gilman Avenue, San Francisco, CA. Attendees were given the opportunity to ask questions and to provide written and oral comments. A scoping report was finalized in March 2011 and is included in **Appendix A**.

1.5.2 Draft EIS

The Notice of Availability of the Draft EIS is being distributed to interested agencies and individuals for a 45-day review and comment period. This distribution ensures that interested parties have an opportunity to express their views regarding the effects of the Proposed Action and alternatives, and to ensure that information pertinent to permits and approvals is provided to decision makers.

[9] SFRA, *Bayview Hunters Point Redevelopment Plan Amendment, Report on the Plan Amendment.* May 2010. Appendix C.

[10] HOPE SF, *Frequently Asked Questions*, Available online at: http://hope-sf.org/faq.php, accessed November 2011.

1.5.3 Final EIS and Record of Decision

Following public review of the Draft EIS, a Final EIS will be prepared which will include responses to substantive comments on the Draft EIS and a discussion of any revisions made to the Draft EIS. The Final EIS will be available for review for 30 days. After public review, MOH will decide on the action, if any, and publish a Record of Decision.

1.5.4 Request for Release of Funds

Pursuant to 24 CFR Part 58 Subpart H, MOH will prepare and disseminate a NOI/RROF (Notice of Intent/Request for Release of Funds) prior to submitting the RROF and certification to HUD. After the dissemination of the NOI/RROF and HUD's receipt of the certification and RROF there is a 15-day objection period before HUD may approve the release of funds.

CHAPTER 2.0
Alternatives

2.1 Introduction

Consistent with Council on Environmental Quality guidelines (40 CFR Part 1502.14), this section includes a detailed discussion of the alternatives analyzed in this Draft EIS. The four alternatives include:

- Alternative A – Proposed Action
- Alternative B – Housing Replacement Alternative
- Alternative C – Reduced Development Alternative
- Alternative D – No Action Alternative

In developing the Proposed Action, the San Francisco Redevelopment Agency (SFRA), the San Francisco Housing Authority (SFHA), the City of San Francisco, and CP Development Co. (Applicant) determined the appropriate mix of public housing, below market-rate, and market-rate housing that would meet the various objectives and goals of the project partners for the proposed Alice Griffith District. These objectives and goals include satisfying the purpose and need, creating a suitable variety of economically integrated unit types, and satisfying the project's financial requirements. A number of different development scenarios were considered. Based on this evaluation, it was determined that 1,210 residential units would best satisfy these criteria. The Proposed Action is further described in **Section 2.2**.

The SFRA, the SFHA, the City, and CP Development Co. developed an alternative that minimizes the short-term construction impacts by limiting redevelopment to replacing the existing 256 public housing units. This alternative, the Housing Replacement Alternative is further described in **Section 2.3**.

Using transportation modeling, the number of below market-rate and market-rate housing units was reduced to a level that avoids significant and unavoidable cumulative traffic impacts. This alternative, the Reduced Development Alternative, is further described in **Section 2.4**.

Because the purpose and need is focused on the need to redevelop the Project Site, no off-site alternatives were considered.

2.2 Alternative A – Proposed Action

The Proposed Action includes the redevelopment of a residential neighborhood and associated infrastructure on the Project Site. The Project Site is defined in **Section 1.2**. Properties within the Project Site would undergo land transfer prior to development.

2.2.1 Land Transfer

Land transfers are proposed between SFHA, SFRA, CP Development Co. (the master developer of the Candlestick Point-Hunters Point Shipyard Phase II [CP-HPS] project), McCormack Baron Salazar, Inc. (MBS, CP Development Co's joint venture partner for the development of Alice Griffith), and the State of California. These transfer agreements are pursuant to the CP-HPS Disposition and Development Agreement by and between SFRA and CP Development Co. and ancillary, related documents governing the development program at the Project Site.

CP Development Co. and MBS anticipate entering into a Disposition and Development Agreement and a Master Development Agreement with the SFHA. Per this Agreement, a portion of the Alice Griffith housing site would be retained by SFHA for replacement housing and the development of other affordable housing units. The remainder would be acquired by CP Development Co for non-SFHA housing. Proposed land transfer/development agreements concerning affordable housing parcels require the U.S. Department of Housing and Urban Development (HUD) and SFHA approval.

A portion of the Project Site is currently controlled by the State of California (acting through the California Department of Parks and Recreation [State Parks] and the State Lands Commission), and is subject to certain land transfer agreements[1] between the State and SFRA. These agreements, authorized by Chapter 203, California Statutes of 2009 (Senate Bill 792) provide for, among other things, the transfer of this portion of the Alice Griffith site to SFRA. It is anticipated that SFRA, will subdivide these parcels and transfer the majority of the property for development of Alice Griffith replacement housing to the developer, with a subsequent transfer of the land to the SFHA, per the Disposition and Development Agreement and Master Development Agreement. Like the other Alice Griffith replacement housing parcels, SFHA will take and retain long-term ownership of the land underlying the replacement housing and the developer will retain ownership of vertical improvements to the site. The balance of what is currently State property will be transferred to CP Development Co for non-SFHA housing.

Two other parcels within the Project Site will be transferred for development, again pursuant to the terms of the CP-HPS Disposition and Development Agreement and its ancillary documents. One, currently owned by SFRA, will be subdivided, with a portion designated as an affordable parcel and the balance as a non-SFHA parcel. The second parcel is currently owned by the City and County of San Francisco, acting through its Recreation and Parks Department. The City will transfer this parcel to SFRA, which, in turn, will transfer it to CP Development Co. for development as non-SFHA housing.

[1] Candlestick Point State Recreation Area Reconfiguration, Improvement and Transfer Agreement and Hunters Point Shipyard/Candlestick Point Title Settlement, Public Trust Exchange, and Boundary Agreement

2.2.2 Proposed Development

Proposed Land Uses

The Proposed Action includes residential, open space and community serving land uses. A land use plan is shown in **Figure 2-1**.

Residential Uses – The Proposed Action calls for up to 1,210 new dwelling units on the Project Site at densities shown in **Table 2-1**. Housing would include one-for-one replacement of the existing 256 public housing units, plus a mix of for-sale and rental units, both market-rate and below market-rate. The new residences would include townhouses, stacked townhouses, and three- to five-story stacked flats. The maximum height for new residential buildings would be 65 feet.

TABLE 2-1
RESIDENTIAL LAND USES FOR ALTERNATIVE A

Land Use	Units
Residential (15-75 units per acre)	360
Residential (50-125 units per acre)	850
Total	**1,210**

SOURCE: Lennar Urban, 2011

Community Serving Uses – Community serving uses may include retail, an early learning child development center, and a community center. Space would be provided on the ground floor of residential buildings for community-serving retail and service facilities.

The existing community center, known as the Opportunity Center, is a modular unit. The Opportunity Center may be relocated or demolished, depending upon construction phasing needs. If the Opportunity Center were demolished, it will be replaced with a new, on-site community center.

Open Space – A new 1.4-acre park, Alice Griffith Neighborhood Park, would extend for several blocks near the center of the neighborhood. The park would include community gardens, sports facilities, picnic areas and other recreational amenities.

Infrastructure

Water Supply

The Project Site would be served by the City's low pressure water system from the University Mound Reservoir. Reclaimed water mains would be developed for irrigation of park and landscape areas. Reclaimed water mains would be connected to the potable water system initially, until a source of reclaimed water is developed by the City. A connection to the City's Auxiliary Water Supply System would also be developed for fire protection purposes only.

SOURCE: Lennar Urban, 2011

Figure 2-1
Alternative A - Proposed Action

Wastewater

The Project Site is currently served by a combined storm sewer system where stormwater, along with residential and commercial sewage, is directed to treatment plants prior to being released to the San Francisco Bay. The Proposed Action would include a separated sanitary sewer system, which would convey wastewater by gravity flow to the Gilman Avenue combined sewer, which flows to the Southeast Water Pollution Control Plant.

Drainage

The storm drainage system would handle stormwater by three methods; the particular method employed for any individual storm would depend on the magnitude of the event. These methods include treated storm flows, a five-year storm[2] piped system, and overland flow. The storm drainage system would be separated from the sanitary sewer system to reduce wet weather flows to the Southeast Water Pollution Control Plant. On-site treatment would handle most of the stormwater generated by typical precipitation (1.17-year storm). Examples of on-site treatment are vegetated swales, flow-through planter boxes, permeable pavement, green rooftops, and rainwater cisterns. Larger rainfall events, up to a five-year storm, would be handled within the rights-of-way of every street in the Project Site. Examples of these stormwater facilities are vegetated buffer strips, flow-through planter boxes, bioretention facilities, pervious surfaces, and subsurface detention vaults. Bioretention basins would also be constructed in parks and open space. Most stormwater runoff from up to a five-year storm would be treated before it enters the drains, allowing the system to discharge directly to San Francisco Bay without further management. Stormwater from larger storms would be routed to the bay by overland flow along a network of street gutters and roadways. The overland flow stormwater system would fully contain a 100-year storm.

Joint Trenches

A joint trench network would be developed at the Project Site and would include electrical, communications, and gas utilities. Major and minor joint trenches would be routed through the street network to provide power, communications, and gas infrastructure to the Project Site.

Transportation Improvements

The existing street grid network in the Bayview neighborhood would be extended through the Project Site. This grid extension would provide a substantial increase in the number of roadway connections and better integrate the Project Site with the neighborhood. The street grid would continue east into the Candlestick Point development. The result is that the Project Site would be linked to the surrounding area via a continuous street grid network. Streets would be completed through the Alice Griffith neighborhood, which is consistent with the San Francisco Better Streets Plan,[3] to enable safe access for all users. Proposed street design would include driveway access management, traffic calming features, such as signs and striping, pedestrian bulbs where feasible

[2] The maximum level of storm activity expected to occur on average every five years; similar definition for 1.17-year and 100-year storms.

[3] City and County of San Francisco. *Better Streets Plan.* Adopted by the City and County of San Francisco on December 6, 2010.

at intersections, and refuge islands. Streetscape amenities, including benches, lighting, plantings and other features, would facilitate a high-quality pedestrian and bicycle network, consistent with the Better Streets Plan. A Transportation Demand Management Plan would be adopted to promote transit use and access to nearby existing and proposed transit lines.

Construction

The Proposed Action would be constructed over a nine-year construction period beginning in 2012 and ending in 2021. Redevelopment of the Project Site would proceed in phases so that it would not displace existing residents. The initial phases would develop currently vacant portions of the site, and existing residents would then occupy those new units before structures were demolished and redeveloped in later phases.

During construction, the following types of activities would be expected: abatement and demolition, site preparation and earthwork/grading, building construction and controlled rock fragmentation. Some activities could occur simultaneously. Demolition and construction activities would be limited to weekdays and daytime hours (7:00 AM to 7:00 PM).

Abatement and Demolition

Demolition would include removing buildings and infrastructure. As necessary, lead-based paint, asbestos, polychlorinated biphenyls (PCBs), and mercury would be abated in buildings before demolition. Infrastructure would be demolished to allow the construction of new infrastructure. Minor utilities would be abandoned in place or would be removed if they interfered with the installation of new infrastructure.

Site Preparation and Earthwork/Grading

The Proposed Action would include major site preparation and earthwork. All soil is assumed to be retained on-site and used for project grading and improvements. Site earthwork and grading would typically be performed using standard construction equipment, such as excavators, loaders, tractors, compactors, crushers, graders, and water trucks.

Building Construction

Building construction would include developing new residential and community service buildings, planting new landscaping, and constructing roadways, sidewalks, and utilities (although these activities would not occur simultaneously). The number of truck trips on any given day would vary, from a low of four trips to a maximum of 152 trips during site preparation.

Controlled Rock Fragmentation

The Project Site is underlain by Franciscan sandstone and shale. Most of the immediate Project Site vicinity consists of thin fill over bedrock and artificial fill underlain by young bay mud over bedrock. Bedrock is at elevations ranging from 45 feet above City datum to 10 feet below. Bedrock would need to be removed in the northern portion of the Project Site to depths ranging from 2 to

23 feet below ground surface and may include localized well-cemented beds. An estimated 140,000 cubic yards of rock would need to be cut. At least 70 percent of this rock would be removed by heavy equipment and the remaining 30 percent (approximately 42,000 cubic yards) would be removed by controlled rock fragmentation. Heavy construction equipment rock removal methods could include ripping using a Caterpillar D9 tractor with ripper attachment, and mechanical rock breaking, using hammer, splitters, or cutters. Harder areas of bedrock may require alternative techniques for removal, such as controlled rock fragmentation. Controlled rock fragmentation technologies include pulse plasma rock fragmentation, controlled foam or hydraulic injection, and controlled blasting. In some scenarios, using a combination of these techniques may be necessary. Controlled blasting can typically be performed at noise levels below typical building demolition levels (80 to 100 decibels).

Current estimates indicate that there are approximately 42,000 cubic yards of hard rock in three areas of the Project Site.[4] For estimation, each area is assumed to contain a third of this volume, or 14,000 cubic yards of rock, that may need to be removed using controlled rock fragmentation. Excavators could remove 14,000 cubic yards of rock in six weeks in three events, each producing approximately 4,500 cubic yards, with a two-week period between events for set up and excavation. The three events would occur sequentially, and would take approximately 17 weeks.

Development Standards

Design for Development

New construction would be regulated by development controls and design guidelines within the Candlestick Point Design for Development (D4D) document, which is included in **Appendix B**. The D4D sets forth specific development standards and guidelines, including but not limited to site coverage, building height and bulk, setbacks, building modulation and frontage, open space, parking and loading.

The D4D also addresses street layout, open space and blocks, and establishes overarching strategies for placement of certain uses and building types relative to street and open space types.

Green Building Concepts

The Proposed Action contains a number of features that would implement policies articulated in the San Francisco Sustainability Plan,[5] including high performance glazing, energy-efficient lighting, daylighting, shading, building envelope optimization, reflective roofs, and natural ventilation in the project design. The project sponsor has also committed to constructing buildings at the Project Site to the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development Gold standard, based on the pilot version of the rating system released in June 2007. Following the 2007 LEED Neighborhood Development Pilot Program rating system, the Proposed Action would incorporate strategies, including the following:

[4] MACTEC, *CP-HPSII Rock Fragmentation*, June 2009 as provided in the CP-HPS Project EIR pg. II-78.
[5] City and County of San Francisco. *Sustainability Plan for San Francisco*. San Francisco Department of the Environment. October 1996.

- Enhanced habitat values;
- Proximity to transit and bicycle routes;
- Urban design that promotes walking and discourages driving;
- Affordable housing that supports a community of mixed ages and income;
- Community participation in community planning and design;
- Compliance with the San Francisco Green Building Ordinance;
- ENERGY STAR compliance to be documented by a Home Energy Rating System;
- Unbundled parking;
- Drought-tolerant plant species and efficient irrigation systems, such as drip irrigation, moisture sensors, and weather data-based controllers;
- Tree-lined streets throughout the development;
- Access to public space and recreational amenities through the creation of parks and playfields;
- Efficient use of water and the potential use of recycled water for non-potable uses such, as irrigation, toilet flushing, and vehicle washing; and
- Progressive management to retain and treat stormwater on-site or in adjacent areas.

Furthermore, the Proposed Action would comply with all applicable provisions of San Francisco's Green Building Ordinance, which is contained in Chapter 13C of the San Francisco Building Code. Recycling, composting, and trash facilities would be provided, as required by the San Francisco Environment Code. The Proposed Action has set an energy efficiency performance target of 15 percent below the energy efficiency standards articulated in Title 24, Part 6 of the 2008 California Code of Regulations.

2.3 Alternative B – Housing Replacement Alternative

Alternative B includes the development of a residential neighborhood and associated infrastructure on the Project Site. The three non-SFHA owned parcels would undergo land transfer prior to development on those portions of the Project Site. In comparison to the Proposed Action, this alternative would develop less residential units.

2.2.1 Land Transfer

As with the Proposed Action, this alternative would include the transfer of land to the SFHA and developer in order to facilitate redevelopment of the Project Site. The transfer process would be the same as described for Alternative A.

2.2.2 Proposed Development

Proposed Land Uses

Alternative B includes residential, open space and community serving land uses. A land use plan is shown in **Figure 2-2**.

Residential Uses – Alternative B would replace the 256 existing public housing units on a one-to-one basis, with no mixed-income housing (**Table 2-2**).

TABLE 2-2
RESIDENTIAL LAND USES FOR ALTERNATIVE B

Land Use	Units
Residential (10-15 units per acre)	256
Total	**256**

SOURCE: Lennar Urban, 2011

Community Serving Uses –The Opportunity Center may be relocated or demolished, depending upon construction phasing needs. If the Opportunity Center were demolished, it will be replaced with a new, on-site community center.

Ground floor community-serving retail and service facilities would not be located on-site given the low density development under this alternative.

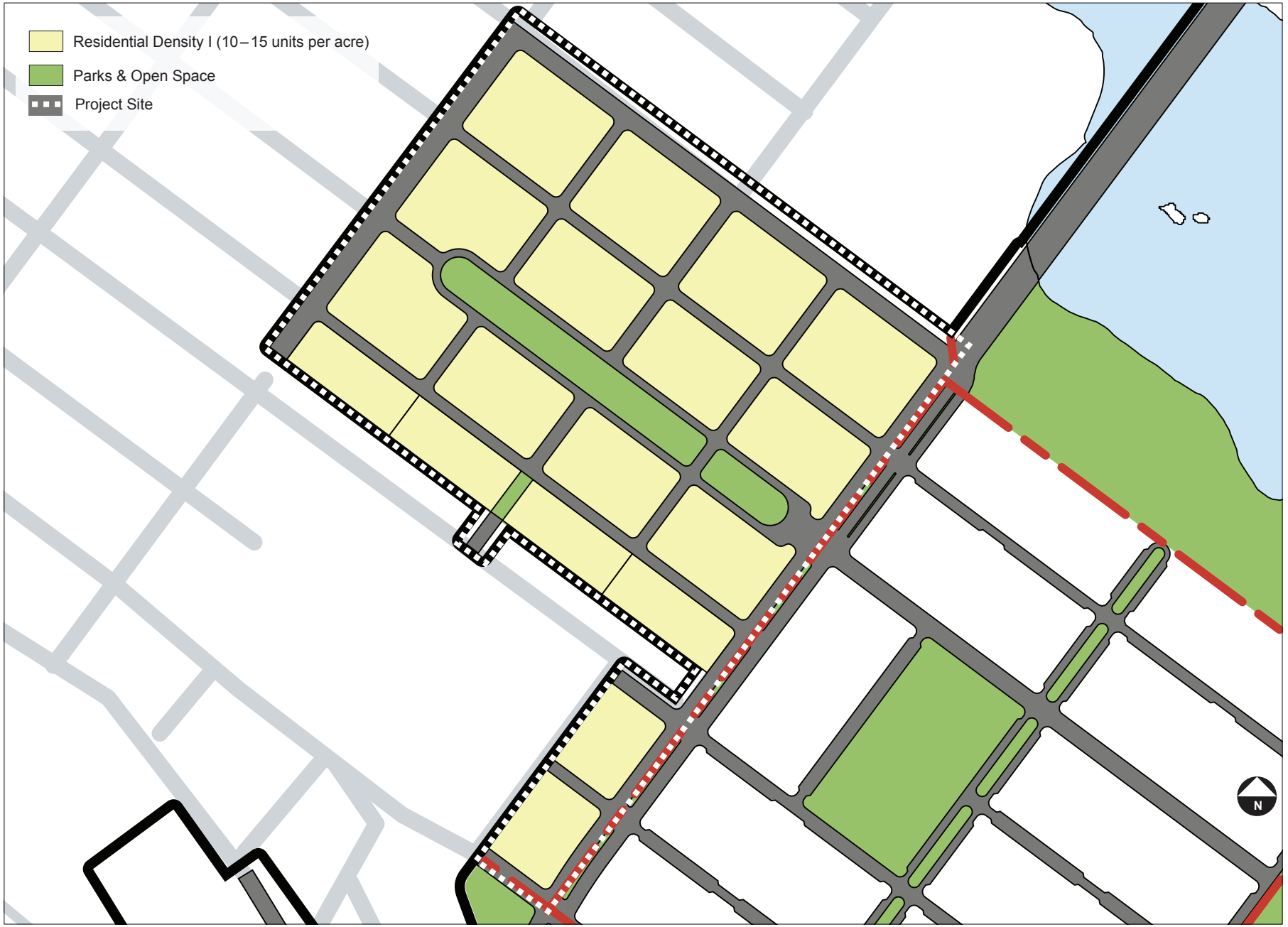
Open Space – A new 1.4-acre park, Alice Griffith Neighborhood Park, would extend for several blocks near the center of the neighborhood, as discussed under the Proposed Action.

Infrastructure

The infrastructure including water supply, wastewater and drainage systems would be similar to those discussed for the Proposed Action. While the demands associated with Alternative B would be less the location of infrastructure would be the same given the same block pattern of development.

Transportation Improvements

As with the Proposed Action, the existing street grid network in the Bayview neighborhood would be extended through the Project Site. Bicycle, pedestrian and transit use would be encouraged through street amenities and a Transportation Demand Management Plan, similar to the Proposed Action.



SOURCE: Lennar Urban, 2011

Alice Griffith Redevelopment Project Draft EIS . 211653

Figure 2-2

Alternative B - Housing Replacement Alternative

Construction

Construction would proceed in phases on the same schedule as construction under the Proposed Action. Redevelopment of the Project Site would proceed in phases so that it would not displace existing residents i.e. vacant portions of the Project Site would be developed first to provide units for existing residents prior to demolishing the existing residences in later phases.

The following types of activities would be expected during construction: abatement and demolition, site preparation and earthwork/grading, building construction and controlled rock fragmentation. Given the similarity in footprint, construction activities would be substantially similar to the Proposed Action.

Development Standards

Alternative B would be constructed to the D4D standards and would incorporate the green building concepts discussed for the Proposed Action.

2.4 Alternative C – Reduced Development Alternative

Alternative C includes the development of a residential neighborhood and associated infrastructure on the Project Site. The three non-SFHA owned parcels would undergo land transfer prior to development on those portions of the Project Site. In comparison to the Proposed Action, this alternative would develop less residential units.

2.2.1 Land Transfer

As with the Proposed Action, this alternative would include the transfer of land to the SFHA and developer in order to facilitate redevelopment of the Project Site. The transfer process would be the same as described for Alternative A.

2.2.2 Proposed Development

Proposed Land Uses

Alternative C includes residential, open space and community serving land uses. A land use plan is shown in **Figure 2-3**.

Residential Uses – Alternative C would include up to 875 new homes at densities shown in **Table 2-3**. Housing would include one-for-one replacement of the 256 public housing units and 619 new market-rate and below-market-rate housing units. The existing units would be demolished.

SOURCE: Lennar Urban, 2011

Figure 2-3

Alternative C - Reduced Intensity Alternative

TABLE 2-3
RESIDENTIAL LAND USES FOR ALTERNATIVE C

Land Use	Units
Residential (15-75 units per acre)	315
Residential (50-125 units per acre)	560
Total	**875**

SOURCE: Lennar Urban, 2011

Community Serving Uses –The Opportunity Center may be relocated or demolished, depending upon construction phasing needs. If the Opportunity Center were demolished, it will be replaced with a new, on-site community center.

Space would be provided on the ground floor of residential buildings for community-serving retail and service facilities.

Open Space – A new 1.4-acre park, Alice Griffith Neighborhood Park, would extend for several blocks near the center of the neighborhood, as discussed under the Proposed Action.

Infrastructure

The infrastructure including water supply, wastewater and drainage systems would be similar to those discussed for the Proposed Action. While the demands associated with Alternative C would be less the location of infrastructure would be the same given the same block pattern of development.

Transportation Improvements

As with the Proposed Action, the existing street grid network in the Bayview neighborhood would be extended through the Project Site. Bicycle, pedestrian and transit use would be encouraged through street amenities and a Transportation Demand Management Plan, similar to the Proposed Action.

Construction

Construction would proceed in phases on the same schedule as construction under the Proposed Action. Redevelopment of the Project Site would proceed in phases so that it would not displace existing residents i.e. vacant portions of the Project Site would be developed first to provide units for existing residents prior to demolishing the existing residences in later phases.

The following types of activities would be expected during construction: abatement and demolition, site preparation and earthwork/grading, building construction and controlled rock fragmentation. Given the similarity in footprint, construction activities would be substantially similar to the Proposed Action.

Development Standards

Alternative C would be constructed to the D4D standards and would incorporate the green building concepts discussed for the Proposed Action.

2.5 Alternative D – No Action Alternative

Under the No Action Alternative, conditions at the Project Site would remain unchanged. The 256 public housing units would not be replaced, and no other improvements would be implemented.

2.6 Permits and Approvals

The following list identifies the major permits and other actions required by federal, state and local agencies for implementation of the Proposed Action, Alternative B and Alternative C.

2.6.1 Federal

U.S. Department of Housing and Urban Development – Proposed development is eligible for federal funding from HUD. HUD approvals are required prior to the release of funds.

2.6.2 State

California State Historic Preservation Officer – Consultation with the California State Historic Preservation Officer (SHPO) is required pursuant to Section 106 of the National Historic Preservation Act for potential impacts to cultural resources (archaeological and historical). The City has an existing Programmatic Agreement (PA) with SHPO and the Advisory Council on Historic Preservation which governs the consultation process for Part 58 projects. Accordingly, a site-specific PA is being negotiated with SHPO for mitigation of potential impacts.

2.6.3 Regional/Local

City of San Francisco – Multiple approvals from the City of San Francisco would be required prior to Project Site development. These include, among others, the following major approvals: approval of subdivision maps, public improvements, and infrastructure by the Department of Public Works; Archaeological and Paleontological Monitoring Program approval by the Planning Department Environmental Review Officer, Site Mitigation Plan (per Article 22), Unknown Contaminant Contingency Plan, Health and Safety Plan, Asbestos Dust Mitigation Plan (ADMP) and Dust Control Plan (DCP) approvals by the Department of Public Health, approval of construction-related permits by the Department of Building Inspection, Construction Waste Diversion Plan approval by the Department of the Environment and approval of replacement housing by SFHA.

San Francisco Redevelopment Agency – Project financing and schematic design approvals, development agreements and related approvals.

San Francisco Public Utilities Commission – The San Francisco Public Utilities Commission would approve infrastructure plans for water, sewer, stormwater, and electricity and the Storm Water Pollution Prevention Plan for construction activities.

Bay Area Air Quality Management District – The Bay Area Air Quality Management District would approve the ADMP and DCP.

Regional Water Quality Control Board – A National Pollutant Discharge Elimination System construction stormwater permit (Notice of Intent to Proceed under General Construction Permit) would be required for land disturbance of more than one acre.

San Francisco Redevelopment Agency – Project financing and schematic design approvals, development agreements and related approvals.

CHAPTER 3.0
Affected Environment

3.1 Introduction

Per Council on Environmental Quality Regulations (40 CFR §1502.15), an Environmental Impact Statement shall include a description of the environment to be affected by the alternatives under consideration. The following issues are discussed in this chapter:

- Air Quality
- Hazards and Hazardous Materials
- Land Use and Land Use Planning
- Noise
- Socioeconomic Characteristics
- Environmental Justice
- Public Services and Utilities
- Visual Character/Aesthetics
- Hydrology, Flooding and Water Quality
- Traffic and Transportation
- Geology and Soils
- Cultural and Historic Resources
- Biological Resources

3.1.1 Parcel Comparison

The Project Site includes four separate, properties: (1) the Alice Griffith public housing site owned by the San Francisco Housing Authority (SFHA), (2) an adjacent property to the east controlled by the State through the California Department of Parks and Recreation and California State Lands Commission (3) an adjacent property to the east owned by the San Francisco Redevelopment Agency, and (4) an adjacent property to the south owned by the City through the San Francisco Recreation and Parks Department.[1] For many environmental issues, the affected environment discussion is the same for all properties and thus the Project Site is referenced as a whole. Differences between properties are noted where applicable and relevant. The most notable difference is that the SFHA

[1] The San Francisco Recreation and Parks property is a portion of a larger parcel.

parcel contains the existing Alice Griffith public housing development while the non-SHFA parcels contain paved parking for Candlestick Park stadium and gravel over-flow parking areas. The following is a summary of the differences between properties discussed in **Chapter 3.0** (note there were no notable differences between properties for the discussion of traffic/transportation, cultural/historic resources, and biological resources).

Air Quality and Noise

The Alice Griffith housing development on the SFHA-owned portion of the Project Site is considered a sensitive receptor for air quality and noise effects. The three non-SFHA properties do not contain sensitive receptors.

Hazards and Hazardous Materials

The lower portions of the Project Site, primarily the non-SFHA properties, were historically part of the San Francisco Bay but have since been filled. The SFHA property was also filled but to a lesser extent. The source of the fill material is unknown.

Potential hazardous materials used in the construction of Alice Griffith public housing include asbestos containing materials, electrical equipment, transformers that may contain polychlorinated biphenyls, fluorescent lights and switches containing mercury and lead-based paint. These existing hazards are associated only with the SFHA property.

Land Use and Land Use Planning / Visual Character and Aesthetics

As discussed above, the primary land use and visual differences between the SFHA and non-SFHA properties is that the Alice Griffith public housing development is located exclusively on the SFHA property while the other properties are used for parking.

Socioeconomic Characteristics and Environmental Justice

As the SFHA property is the only portion of the Project Site that contains residential uses, it is the only portion of the Project Site where population, housing, employment, ethnicity and income issues are currently relevant.

Public Services and Utilities

The SFHA parcel is the only portion of the Project Site which has notable demands for public services and utilities (water, wastewater, solid waste, energy, law enforcement, fire protection and suppression, schools, libraries and recreation).

Hydrology, Flooding and Water Quality

Stormwater runoff from the Project Site drains into the City's combined sewer/stormwater drainage system, with the exception of the southernmost parcel owned by the City through the Recreation and Parks Department. This property is within the 47-acre area surrounding Candlestick Park stadium which discharges to a separate sewer system.

Geology and Soils

The SFHA portion of the Project Site is primarily underlain with Franciscan bedrock while the non-SFHA portions of the Project Site are primarily underlain by sedimentary fill and deposits. This makes the non-SFHA properties more susceptible to hazards associated with liquefaction and seismically-induced ground shaking.

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3.2 Air Quality

This section addresses the existing air quality setting for the Project Site and vicinity. Climate change and greenhouse gas emissions are discussed in **Chapter 5**, Cumulative Impacts.

3.2.1 Criteria Air Pollutants

The Project Site is in the San Francisco Bay Area Air Basin. The Bay Area is the second largest metropolitan area in California, containing 19 percent of the state's population and producing 15 percent of its criteria air pollutant emissions. Criteria air pollutants are air pollutants that are regulated based on scientific criteria (human health-based and/or environmentally-based) for setting permissible levels. The following criteria air pollutants are discussed: Ozone, Carbon Monoxide, Respirable Particulate Matter, Nitrogen Dioxide, Sulfur Dioxide and Lead.

The National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are pollutant concentration thresholds intended to maintain air quality that is protective of public health and welfare. States and other agencies collect air quality data from monitoring stations to determine if regional air quality meets or exceeds these thresholds. Areas are then categorized as nonattainment (pollutant concentrations exceed the thresholds), attainment (pollutant concentrations are lower than the thresholds), or unclassifiable. Unclassified areas are treated as attainment areas for most regulatory purposes.

In relation to the NAAQS, the Project Site is in a nonattainment area for the 8-hour ozone and 24-hour Particulate Matter – Fine ($PM_{2.5}$) standards.[1] In relation to the CAAQS, the Project Site is in a nonattainment area for the following standards: 1-hour and 8-hour ozone, the 24-hour and annual PM_{10}, and annual $PM_{2.5}$.[2]

The Bay Area Air Quality Management District (BAAQMD) maintains a network of air monitoring stations in the Peninsula climatological subregion. Data for San Francisco is collected at the San Francisco station, at 10 Arkansas Street, approximately three miles north-northwest of the Project Site. Recent air monitoring data from the station compared to the CAAQS and NAAQS is presented in **Table 3.2-1**.[3]

As shown in Table 3.2-1, the only exceedance of the CAAQS or NAAQS based on data collected at the San Francisco monitoring station in 2009 was $PM_{2.5}$, which slightly exceeded the threshold of 35 micrograms per cubic meter ($\mu g/m^3$, averaged over a 24-hour period) on one day. All other criteria pollutants measured were below the NAAQS and CAAQS. Sulfur dioxide is not expected to exceed the NAAQS and CAAQS in this area and therefore is not measured at the San Francisco station.

[1] BAAQMD, Air Quality Standards and Attainment Status. Internet website: http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm. Accessed April 20, 2011.
[2] Ibid.
[3] BAAQMD, Bay Area Air Pollution Summary 2009. Internet website: http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx. Accessed June 23, 2011.

TABLE 3.2-1
SAN FRANCISCO STATION AIR QUALITY MONITORING DATA

Pollutant*	San Francisco Station	CAAQS	NAAQS	Exceedance (days)
Ozone, maximum 1-hour average	0.072 ppm	0.09 ppm	NE	0
Ozone, maximum 8-hour average	0.056 ppm	0.07 ppm	0.075 ppm	0
Carbon monoxide, maximum 1-hour average	4.3 ppm	20 ppm	35 ppm	0
Carbon monoxide, maximum 8-hour average	2.9 ppm	9 ppm	9 ppm	0
Nitrogen dioxide, maximum 1-hour average	59 ppb	180 ppb	100 ppb	0
Nitrogen dioxide, annual arithmetic mean	15.1 ppb	30 ppb	53 ppb	0
PM_{10}, maximum 24-hour average	36 $\mu g/m^3$	50 $\mu g/m^3$	150 $\mu g/m^3$	0
PM_{10}, annual arithmetic average	18.7 $\mu g/m^3$	20 $\mu g/m^3$	NE	0
$PM_{2.5}$, maximum 24-hour average	35.6 $\mu g/m^3$	NE	35 $\mu g/m^3$	1
$PM_{2.5}$, annual arithmetic average	9.7 $\mu g/m^3$	12 $\mu g/m^3$	15 $\mu g/m^3$	0

*No data were collected for sulfur dioxide
NE = not established, ppm = parts per million, ppb =parts per billion, $\mu g/m^3$ = micrograms per cubic meter, PM = particulate matter

3.2.2 Local Emission Sources

Several stationary emissions sources permitted by the BAAQMD are within 1,000 feet of the Project Site. $PM_{2.5}$ emissions and cancer and non-cancer health risks associated with most of these facilities are low; however, one site, the Bay View Greenwaste Management Facility, presents potential health risks.

The Bay View Greenwaste Management Facility is located near the northernmost portion of the Project Site, at 1300 Carroll Avenue. The BAAQMD inspected the facility in June 2011 and subsequently issued a Notice of Violation (NOV) for a 350 horsepower Caterpillar diesel engine used on the site. The NOV was issued for the facility's failure to have authority to construct and failure to have a permit to operate the engine. During the inspection, the BAAQMD also noted that another 110 horsepower John Deere diesel-powered engine was in use at the site. Both engines are unable to comply with the California Air Resources Board (CARB) Air Toxic Control Measure for in-use prime engines and must be replaced. The Bay View Greenwaste Management Facility and the BAAQMD entered into a Compliance and Enforcement Agreement on September 6, 2011. The agreement stipulates that the John Deere engine must cease operation by October 15, 2011 and the Caterpillar engine must cease operation by March 31, 2012.

A site where tractor-trailer compartments are stored is located north of the Project Site at 1236 Carroll Avenue. The site was observed for approximately two hours on a weekday morning in May 2011 to determine the nature of its operations. No tractor trailers, other vehicles, or people entered or exited the site during this time. Only a few tractor trailer compartments are stored on site and the office trailer is padlocked. The site appears to be relatively inoperative and not actively contributing to truck traffic on local roads.

3.2.3 Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants other than the criteria air pollutants that can cause adverse human health effects. For TACs, there are no federal or state ambient air quality standards. Relevant TACs for the Project Site and vicinity include asbestos and diesel particulate matter (DPM).

Asbestos

Inhalation of asbestos can cause severe health effects and thus the federal, state, and local governments have established regulations to prevent its release into the air. Asbestos is assumed to be present in the Alice Griffith public housing buildings on the San Francisco Housing Authority (SFHA)-owned portion of the Project Site. These buildings were constructed in the 1960s when asbestos was commonly present in building materials. Asbestos is discussed further in **Section 3.3**, Hazards and Hazardous Materials.

Diesel Particulate Matter

DPM is not one chemical but a mixture of harmful chemicals found in diesel exhaust. The primary source of DPM is emissions from diesel-fueled vehicles both on roadways and from other mobile sources, such as construction and agricultural equipment. There is no monitoring data for DPM because there is no accepted way to measure DPM emissions.

3.2.4 Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. Reasons for greater sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are also sensitive to poor air quality because when people stay home for extended periods of time, they are subject to extended exposure to pollutants. The Alice Griffith housing development on the SFHA-owned portion of the Project Site is considered a sensitive receptor. The three non-SFHA parcels do not contain sensitive receptors. Residences to the west of the Project Site are sensitive receptors, with the closest residence located approximately 25 feet from the Project Site. The True Hope Church of God in Christ, Bret Harte Elementary School, Bret Harte Nursery and School-Age Children's Center, and Gilman Park are sensitive receptors located approximately 200 feet from the Project Site on Gilman Avenue. Bethel Cathedral Church of God is a sensitive receptor located approximately 250 feet from the Project Site, on Egbert Avenue. No other sensitive receptors were identified within 1,000 feet of the Project Site.

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3.3 Hazards and Hazardous Materials

This section addresses the existing setting relevant to hazards and hazardous materials associated with historic and current uses of the Project Site and vicinity. This section incorporates the results of environmental database records searches conducted for the project area. Information in this section is also based on review of Environmental Data Resources (EDR) reports for the Project Site prepared in April 2011.[1]

3.3.1 Historic Land Uses

The Project Site, including much of the San Francisco Housing Authority (SFHA) property, consists of a small knoll overlooking surrounding development. The lower portion of the site to the southeast, primarily consisting of the non-SFHA properties, was historically part of the San Francisco Bay but has since been filled. Prior to the construction of the Alice Griffith public housing, the site was occupied by the Double Rock War Dwellings, constructed in the 1940s to house workers at the Shipyard. The site was filled and graded in the early 1960s to construct the Alice Griffith public housing. The source of the fill is unknown, but may have come from the adjacent hillside.

3.3.2 Current Land Uses

The current Alice Griffith public housing development consists of a community of 256 units ranging in size from one to five bedrooms, paved parking, and landscaped areas that were constructed beginning in 1962.[2]

Schools within One-Quarter Mile of the Project Site

The Bret Harte Elementary School is approximately 500 feet from the Project Site at 1035 Gilman Drive to the south-southwest. The school enrolls approximately 260 students from kindergarten through the fifth grade and also hosts before school and after school programs until approximately 6:00 PM. There are no other schools or educational, training, or vocational centers within a quarter mile of the Project Site.

Airport Safety Zone

The Project Site is not within the boundary of the San Francisco International Airport Land Use Policy Plan, including the airport safety or clear zones. In addition, no portion of the Project Site is within a Federal Aviation Administration (FAA) Part 77 defined Runway Object Free Area or Runway Safety Area. San Francisco International Airport, the closest airport to the site, is approximately six miles to the south.

[1] Environmental Data Resources. The EDR Radius Map with GeoCheck, Alice Griffith Redevelopment Project, Inquiry Number 3046108.1s, April 19, 2011.
[2] Circa: Historic Property Development. *Bayview Waterfront Plan Historic Resources Evaluation, Volume I: Historic Context Statement.* Prepared for PBS&J on behalf of the San Francisco Redevelopment Agency. July 2009.

Potentially Contaminated Sites within 1 Mile of the Project Site

The Project Site is next to a variety of land uses where hazardous materials are or have been used in varying quantities and may be present in subsurface materials. These land uses include light industrial to the north-northwest along Carroll, Donner, and Egbert Avenues, consisting primarily of metal fabrication, distribution facilities, and recycling yards. A truck storage yard is located across Carroll Street to the north, and unimproved Candlestick Point State Recreational Area (CPSRA) lands are to the north-northeast, including a park maintenance building, leading to the Yosemite Slough and the South Basin of San Francisco Bay. West of Hawes Street is a combination of both light industrial and single-family residential uses along Fitzgerald and Gilman Avenues. East of Arelious Walker Drive, there are existing overflow parking lots for the Candlestick Park stadium, vacant parcels, and unimproved CPSRA parklands and bayfront. Across the South Basin to the northeast is Hunters Point Naval Shipyard, formerly a naval shipyard and repair facility and currently undergoing remediation. The Bay View Greenwaste Management Facility is located near the northernmost portion of the Project Site, at 1300 Carroll Avenue. Air emissions associated with this facility are discussed in **Section 3.2**, Air Quality.

The Bayview Plume Study Area, comprised of a contaminated groundwater plume, is located approximately 0.41 mile to the north of the Project Site. The plume study area has been under investigation by the California Department of Toxic Substances Control (DTSC) and the City of San Francisco since the 1990s. The plume study area is bounded on the northeast by Quesada Avenue, on the southwest by Thomas Avenue, on the northwest by Keith Avenue, and on the southeast by Ingalls Avenue. According to a 2010 memorandum prepared for DTSC,[3] elevated concentrations of tetrachloroethene (a dry cleaning solvent), and benzene, ethylbenzene, toluene, and xylene (compounds found in petroleum derivatives) have been detected in groundwater in the plume study area. The source of the release has not been identified but the volatile organic compound, tetrachloroethene, is very soluble in water and commonly found to migrate beyond the area of original release. These contaminants can pose potential health hazards through soil gas vapor intrusion into structures that lie above the plume. Previous data suggests the release is migrating in a southerly direction (towards Yosemite Slough), although local variations can occur.[4] The full lateral and vertical extent of the groundwater contamination has not been identified and site specific groundwater flow and gradient have not been confirmed. Although groundwater in the Candlestick Point area is not used as a drinking water source, and is generally not exposed to human contact, public exposure to soil vapor gas could occur through vapor intrusion from contaminants in underlying groundwater.[5]

Previous Site Investigations

A Phase I Environmental Site Assessment (Phase I ESA), dated June 16, 2009, was prepared for the Candlestick Point area, including the Project Site. The Phase I ESA involved site reconnaissance and a review of environmental regulatory databases, topographic maps, city directories, Sanborn historical maps, and aerial photographs.

[3] URS. *Technical Memorandum: Groundwater Investigation, Bayview Plume Study Area*. Prepared for the Department of Toxic Substances Control. December 19, 2010.
[4] Ibid.
[5] Ibid.

No hazardous materials were observed at the Project Site during the site visit conducted on March 10, 2009. Findings from this Phase I ESA included the presence of lead-based paint (LBP) and asbestos containing materials (ACMs) at the Project Site based on the age of the buildings. According to the report, "…Suspect ACMs may include the vinyl flooring, sheetrock and joint compound, and roofing material…" During interviews conducted for this report, Alice Griffith public housing personnel stated that LBP had been detected at the facility; however, no documentation regarding testing was available to confirm its presence.[6]

Hazardous Building Materials

Potential hazardous materials used in the construction of Alice Griffith public housing include ACMs, electrical equipment, transformers that may contain polychlorinated biphenyls (PCBs), fluorescent lights and switches containing mercury and LBP. Before the 1970s, ACMs were commonly used in building materials, including insulation, siding, floor tiles, and acoustical ceiling materials. PCBs were commonly used for electrical transformers and electrical light ballasts.

Asbestos-Containing Materials

Asbestos is a naturally occurring mineral found in serpentine rocks. There are no mapped serpentine rocks or soils at the Project Site or in the surrounding area. However, the Project Site does have the potential for ACMs within structures due to the age of the building construction materials dating from the early 1960s and the composition of the construction fill, the source of which is unknown.

ACMs are defined in the National Emissions Standard for Hazardous Air Pollutants as materials containing greater than 1.0 percent asbestos.[7] By federal standards the detection of trace amounts of asbestos fibers (greater than 0.1 percent but less than 1.0 percent) would not be considered asbestos.

Lead-Based Paint

Lead is a suspected carcinogen and is considered toxic in high doses. Until 1978, when the U.S. Consumer Product Safety Commission banned its use, lead was commonly used in household interior and exterior paints due to its durability and its ability to dry quickly, so it is likely that LBP is present in both the exteriors and interiors of the residential units at the Project Site.

The U.S. Occupational Safety and Health Administration and California Division of Occupational Safety and Health use a standard based on airborne exposure to workers disturbing the painted surface, providing that airborne lead should not exceed a permissible exposure limit of 50 micrograms per cubic meter. The U.S. Department of Housing and Urban Development uses a cutoff of 0.5 percent lead by weight, or 1.0 milligram/square centimeter. Lead paint waste disposal is regulated by the California Environmental Protection Agency, which uses a definition of 350 parts per million (ppm) total lead by weight. Additionally, the San Francisco Health Code

6 MACTEC Engineering and Consulting. *Phase I Environmental Site Assessment, Candlestick Point Area*. Prepared for Lennar Urban – Bay Area Division. June 16, 2009.

7 40 CFR Part 61, subpart M. Percentage asbestos determined by polarized light microscopy utilizing the method specified in EPAs Asbestos Hazard Emergency Response Act regulation (40 CFR part 763).

(Chapter 34, Section 3407) establishes requirements for developments that could potentially disturb LBP as discussed **in Section 4.3**.

Light Fixtures Containing PCBs and Mercury

DTSC has classified PCBs as a hazardous waste when concentrations exceed 5 ppm in liquids or when a standard extract of a non-liquid exceeds 5 ppm. Electrical transformers and fluorescent light ballasts may contain PCBs, and if so, they are regulated as hazardous waste. Most ballasts manufactured since 1978 do not contain PCBs and are required to have a label that PCBs are not present. Transformers and ballasts that date back to the construction of the Project Site may contain PCBs and should be disposed of accordingly during demolition. Pre-1978 ballasts, switches, and thermostats may also contain elemental mercury, which is considered a hazardous waste when disposed.

3.3.3 Agency Database Review

A review of databases and files from federal, state, and local environmental regulatory agencies was conducted to identify use, generation, storage, treatment or disposal of hazardous materials and chemicals, or release incidents of such materials that may impact the Project Site during construction or operation. The results of the search are presented in **Table 3.3-1**.

Based on the regulatory database review, there are no known hazardous materials release sites on the Project Site or on adjacent property.[8] Nevertheless, due to the history of the Candlestick Point area, including the known use of construction materials and debris from prior on-site buildings as fill for the present residential buildings, and the possibility of encountering soil contamination and potentially hazardous materials during project demolition activities, the potential for hazardous materials exists.[9]

[8] Environmental Data Resources. *The EDR Radius Map with GeoCheck, Alice Griffith Redevelopment Project.* Inquiry Number 3046108.1s. April 19, 2011.

[9] Circa: Historic Property Development. 2009. Bayview Waterfront Plan Historic Resources Evaluation, Volume I: Historic Context Statement. Prepared for PBS&J on behalf of the San Francisco Redevelopment Agency. July 2009.

TABLE 3.3-1
EDR DATABASE SUMMARY

Database	Radius from Center of Project Site	Target Property	Number of Surrounding Facilities
Federal			
National Priorities List (NPL)	1 Mile	No	1
Proposed NPL	1 Mile	No	0
Delisted NPL	1 Mile	No	0
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	½ Mile	No	1
CERCLIS No Further Remedial Action Planned Sites (NFRAP)	½ Mile	No	1
Resource Conservation and Recovery Act (RCRA) Corrective Action Treatment, Storage, and Disposal (TSD) Facilities (CORRACTS)	1 Mile	No	0
RCRA Non-Corrective Action (TSD) Facilities	½ Mile	No	0
RCRA Waste Generators	¼ Mile	No	8
US Brownfields	½ Mile	No	0
US Engineering Controls (US ENG CONTROLS)	½ Mile	No	1
US Institutional Control (US INST CONTROL)	½ Mile	No	1
Emergency Response Notification System (ERNS)	Site	No	-
Formerly Used Defense Sites (FUDS)	1 Mile	No	1
State, Local, and Tribal			
Bond Expenditure Plan (BEP)	1 Mile	No	0
Hist Cal-Sites	1 Mile	No	4
Response	1 Mile	No	3
Envirostor	1 Mile	No	12
California Hazardous Material Incident Report System (CHMIRS)	Site	No	-
Cortese	1 Mile	No	0
Historical Cortese	½ Mile	No	32
Notify 65	1 Mile	No	3
Toxic Pits	1 Mile	No	0
Solid Waste Information System (SWF/LF)	½ Mile	No	0
Waste Management Unit Database System/Solid Waste Assessment Test (WMUDS/SWAT)	½ Mile	No	1
Leaking Underground Storage Tank (LUST) databases	½ Mile	No	43
Underground Storage Tank (UST) databases	Site and adjacent	No	26
Inactive USTs (CA FID UST/SWEEPS UST)	½ Mile	No	14
Aboveground Storage Tank (AST)	1 Mile	No	3
Spills, Leaks, Investigation, and Cleanup (SLIC)	½ Mile	No	2
Voluntary Cleanup Plan (VCP)	½ Mile	No	1
Deed Restriction Listing (DEED)	½ Mile	No	0
California Bond Exp. Plan	1 Mile	No	1
Tribal databases	Various	No	0
Drycleaners	¼ Mile	No	0
EDR Proprietary Databases			
Historical Auto Stations	¼ Mile	No	7
Historical Cleaners	¼ Mile	Yes	4

SOURCE: Environmental Data Resources. *The EDR Radius Map with GeoCheck, Alice Griffith Redevelopment Project*. Inquiry Number 3046108.1s. April 19, 2011 and *The EDR Radius Map with GeoCheck, Alice Griffith Redevelopment Project.* Inquiry Number 3200660.2s dated November 3, 2011.

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3.4 Land Use and Land Use Planning

This section discusses the existing land uses for the Project Site and vicinity.

3.4.1 Project Site and Vicinity

Land Uses on the Project Site

The Project Site includes the San Francisco Housing Authority's (SFHA's) Alice Griffith public housing development and three adjacent parcels. The Project Site is bounded by Carroll Avenue on the north, Hawes Street on the west, Arelious Walker Drive on the east, and Gilman Avenue on the south, with a rectangular extension to the south along Giants Drive that includes a portion of the Candlestick Park parking area. The Project Site is in the extreme southeastern portion of the City, near San Francisco Bay, approximately five miles south of the downtown Financial District.

The Alice Griffith housing development consists of 33 two-story, rectangular structures of uniform design and construction materials, featuring beige stucco façades, with light green trim and metal detailing at window locations. The buildings feature shared courtyards and front entries. The buildings are set back from the roadways by shared open yards planted with grass interspersed among the parking facilities in front of the buildings. Other uses on the site include a community "opportunity" center, a Boys and Girls Club, several playground areas, and a pump house.

The Project Site is centrally located within the Candlestick Point neighborhood, but it is isolated from the surrounding neighborhood due to the insular, closed-off street pattern which allows one primary access point to the surrounding neighborhood streets and transit facilities. Vehicular access to the Project Site is limited to a southeasterly extension of Fitzgerald Avenue, connecting with Griffith Street, which runs northeasterly from Gilman Avenue. The roadways within the Project Site consist of an interior loop system, centering on Cameron Way and Nichols Way, in addition to Griffith Street. There is no direct access to most of the surrounding streets, including Egbert, Donner, and Carroll Avenues.

Land Uses Surrounding the Project Site

The Project Site vicinity includes a variety of land uses. Light industrial uses are located to the north-northwest along Carroll, Donner, and Egbert Avenues, consisting primarily of metal fabrication and distribution facilities and recycling yards. A truck storage yard is located across Carroll Avenue to the north. Industrial storage yards, vacant parcels, and the bayfront are east of Arelious Walker Drive. West of Hawes Street is a combination of both light industrial and single-family residential uses along Fitzgerald and Gilman Avenues. A church is located adjacent to the site on the northerly side of Gilman Avenue, and an adjoining multi-unit condominium community is located on the corner of Gilman Avenue and Arelious Walker Drive. A restaurant is located adjacent to the site along the north side of Gilman Avenue, while the Bret Harte Elementary School and the Gilman Playground are located across the street on the south side of Gilman Avenue.

3.4.2 Regional Context

Bayview Hunters Point Neighborhood

The Project Site is within the Candlestick Point area, part of the greater Bayview Hunters Point (BVHP) neighborhood, and is on a peninsula in the extreme southeastern corner of the City. The greater BVHP community consists primarily of residential, commercial, and light industrial uses. The primary commercial corridor is along Third Street and includes retail clusters of small shops and restaurants as well as social services, the Southeast Health Center, the Bayview/Anna E. Waden Library, and the Southeast Community Facility. Third Street also includes a light rail line that connects the BVHP neighborhood with downtown, approximately five miles to the north. Residential neighborhoods are primarily single-family units, but some multi-family dwellings are also located along Jamestown, Williams, and Innes Avenues. Industrial uses are also found throughout the neighborhood, both in the Candlestick Point neighborhood and to the south. Light industrial uses west of Third Street include regional moving and storage facilities, auto repair shops and automobile storage yards, wholesale distributors, and recycling facilities. Park and open space facilities are also featured throughout the community, including the Bayview Park, Heron's Head Park, India Basin Shoreline Park, several community centers and playgrounds, and Candlestick Point State Recreational Area (CPSRA).

Candlestick Point

Candlestick Point, including the Project Site, is connected to the rest of the BVHP neighborhood primarily by way of Jamestown and Gilman Avenues, which link to Third Street, the primary commercial and circulation thoroughfare for BVHP. Jamestown and Gilman Avenues connect at their eastern terminus to the Hunters Point Expressway, which connects the southerly and easterly portions of Candlestick Point around the Candlestick Park stadium facility to Harney Way and US Highway 101. Candlestick Point is somewhat isolated due to its peninsula location and due to Bayview Hill, a steep natural promontory immediately west of the stadium, and US Highway 101, which runs west of Candlestick Point and largely isolates the BVHP neighborhood from the City's street grid to the west.

CPSRA is a 154-acre state park with about one-third of the land developed for recreation, including fishing piers, picnic facilities, paved lookout points, and a boat launch ramp. The remainder of the park is dedicated to natural uses, including tidal flats and shoreline biotic preservation. Natural areas of CPSRA lands, leading to Yosemite Slough and the South Basin of San Francisco Bay, are located to the north-northeast. Across the South Basin is Hunters Point Shipyard, formerly a naval shipyard facility.

The most prominent land use in the project vicinity is Candlestick Park, located to the south-southeast. This is the football stadium for the San Francisco 49ers National Football League (NFL) franchise. Candlestick Park features a 70,000-seat outdoor stadium, surrounded by large, surface level parking lots. The stadium is used for eight home regular season NFL games per year, two pre-season games, and up to two post-season playoff games. The NFL season runs from August through January,

including pre- and post-season play. In addition, Candlestick Park is used for concerts and other large outdoor events at scheduled times throughout the year. Privately owned parking lots are next to the lots owned by the Candlestick Park facility; these lots, including those on Jamestown Avenue, are used as overflow parking for stadium events. A private, 165-space recreational vehicle facility is located adjacent to stadium parking between Gilman and Fitzgerald Avenues.

Hunters Point Shipyard

The Hunters Point Shipyard Phase II site, located 0.5 miles east of the Project Site consists of 421 dry acres of land uses associated with the prior shipyard use, including storage sheds, ship repair facilities, light manufacturing facilities, scrap metal recycling yards, administrative buildings, and other uses associated with U.S. Navy shipbuilding, storage, and repair. Several former Navy administrative buildings are leased and occupied as artists' studios by approximately 300 tenant-artists. In addition, two buildings are leased for woodworking and picture framing. The area also includes dry docks, piers, and wharves. The Hunters Point Shipyard Phase I site, consisting of approximately 75 acres just over 0.5 miles northeast of the Project Site, is under construction and will include a mix of residential uses, commercial uses, parks and open space.

3.4.3 Agriculture

The Project Site is mapped as urban and built-up land in the California Department of Conservation, Farmland Mapping and Monitoring Program.[1] Urban and built-up land is defined as "…land [that] is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes." The Project Site does not contain agricultural or forestry uses or resources.

[1] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, Important Farmland in California, 2008, available online at ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2008/fmmp2008_08_11.pdf, accessed September 19, 2011.

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3.5 Noise

This section includes an explanation of acoustic terms used throughout the EIS and a discussion of the affected noise environment for the Project Site and vicinity.

3.5.1 Acoustic Fundamentals

Sound and noise can be measured in various ways. The basic unit of measurement is the decibel (dB). The A-weighted decibel (dBA) was developed to approximate human hearing based on human response to different frequencies of sound. Some representative noise sources and their corresponding noise levels in dBA are shown in **Table 3.5-1**.

TABLE 3.5 -1
EXAMPLE SOUND LEVELS

Noise	dBA
Rock Band	110
Jet Fly-over at 100 feet	105
Diesel Truck going 50 mph at 50 feet	80
Noisy Urban Area during daytime	75
Gas Lawnmower at 100 feet	70
Commercial Area	65
Normal Speech at 3 feet	65
Quiet Urban Area during Daytime	50
Quiet Urban Area during Nighttime	40
Quiet Rural Area during Nighttime	25

dBA = A-weighted decibel
SOURCE: California Department of Transportation, Technical Noise Supplement, 2009.

Other noise measurements used in this section include the community noise equivalent level (CNEL), which is a measure of the average sound level over a 24-hour period, with a penalty factor of 5 dB applied to evening noise (7:00 pm to 10:00 pm) and a penalty factor of 10 dB applied to nighttime noise (10:00 pm to 7:00 am). The day-night average sound level (DNL) is similar to the CNEL in that it is a measure of the average sound level over a 24-hour period; however, a penalty factor of 10 dB is applied only to nighttime noise (10:00 pm to 7:00 am). The equivalent average sound pressure level (Leq) can be thought of as the average sound level over the period that the sound was measured, although it is not the same as an arithmetic average.

3.5.2 Noise-Sensitive Land Uses

Noise-sensitive land uses include residences, lodgings, childcare facilities, schools, places of worship, hospitals and similar facilities. People in these facilities generally are engaged in activities that typically require relatively quiet environments including relaxation, sleep, concentration, prayer,

contemplation and convalescence. Alice Griffith Public Housing is residential and is therefore a sensitive receptor.

The area west of the Project Site is predominantly residential, with the closest house approximately 25 feet from the site. The True Hope Church of God in Christ, Bret Harte Elementary School, Bret Harte Nursery and School-Age Children's Center, and Gilman Park are approximately 200 feet from the Project Site on Gilman Street. Bethel Cathedral Church of God is approximately 250 feet from the Project Site on Egbert Avenue. No other sensitive receptors were identified within 1,000 feet of the Project Site.

3.5.3 Existing Noise Levels

In order to determine the suitability of a site under U.S. Department of Housing and Urban Development (HUD) criteria, sound levels can be measured using sound meters, or sound levels can be calculated using HUD's Noise Assessment Guidelines.[1] Measured sound levels for the Project Site are described below. These monitored sound levels were assessed using HUD's Noise Assessment Guidelines. **Figure 3.5-1** provides a map with the locations of noise measurements discussed within this section. Measurement locations were selected based on the proximity to arterial roadways that provide primary access to the Project Site.. The future contribution of noise from increased roadway traffic generated by the project is assessed in **Section 4.5** using the roadway noise model of the Federal Highway Administration, separate from the HUD-specific analysis.

Sound Level Measurements

Background noise measurements were taken at the edge of the Project Site on Carroll Avenue north of Arelious Walker Drive for three days, Saturday, Sunday, and Monday, in January 2009.[2] These measurements are presented in **Table 3.5-2**. Additional information regarding HUD noise standards is included in **Section 4.5**.

TABLE 3.5-2
EXAMPLE SOUND LEVELS AT THREE FEET FROM THE ROAD EDGE

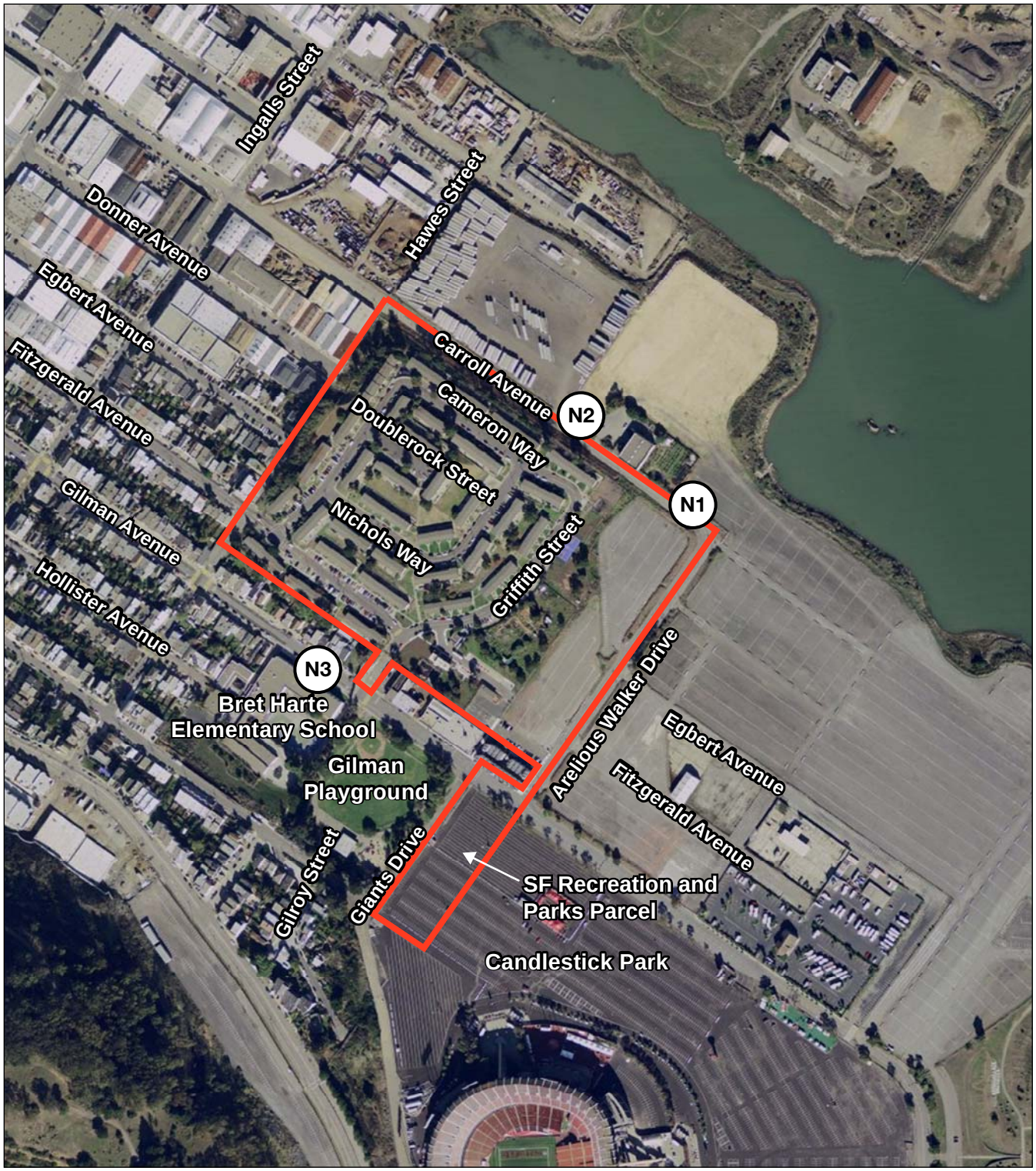
Location	DNL Day 1	DNL Day 2	DNL Day 3
N1 Carroll Avenue	67	63	67

DNL = day-night average sound level

SOURCE: Wilson Ihrig and Associates. Bayview Waterfront Draft EIR San Francisco 49ers Stadium Operational Noise Study. October 2009.

[1] HUD, The Noise Guidebook, Environmental Planning Division, Office of Environment and Energy, September 1991.

[2] Wilson Ihrig and Associates, Bayview Waterfront Draft EIR San Francisco 49ers Stadium Operational Noise Study, October 2009.



SOURCE: The aerial photograph used for this figure is dated February 2011; Tetra Tech

Figure 3.5-1
Noise Measurment Locations

The existing background noise levels on Carroll Avenue were greater than 65 dB DNL on two of the three days. The existing sound level measurements were collected with the sound meter positioned three feet from the edge of the road. The HUD standard for exterior noise levels applies at a location that is 6.5 feet from the residence[3]. The porches of the nearest Alice Griffith houses are approximately 50 feet from the edge of Carroll Avenue. The sound level at a point 6.5 feet from the porch (or 43.5 feet from the edge of Carroll Avenue) would be 55.4 dBA DNL, assuming a sound attenuation rate of 3 dB for every doubling of distance[4]. Therefore, the sound level at the point where the HUD standard applies (6.5 feet from the residence) would be below 65 dB DNL and therefore would be classified as "acceptable" according to HUD standards.

The 2009 noise survey also included separate traffic noise measurements at two locations bordering the Project Site: a vacant lot along Carroll Avenue, across from the Project Site, and a site along Gilman Avenue, across from Bret Harte Elementary School. The measurements were taken during 15 minutes of the weekday PM commute.[5] Data from the survey are presented in **Table 3.5-3**.

TABLE 3.5-3
EXISTING TRAFFIC NOISE LEVELS

Location	DNL	Primary Noise Source
N2 Carroll Avenue	52.6	Traffic along Carroll Avenue
N3 Gilman Avenue	57.7	Traffic along Gilman Avenue

DNL = day-night average sound level
SOURCE: Wilson Ihrig and Associates. Bayview Waterfront Draft EIR San Francisco 49ers Stadium Operational Noise Study. October 2009.

The data presented in Table 3.5-3 are from the Federal Highway Administration Traffic Noise Model (TNM) output in DNLs at the existing residential setback. This model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, truck mix, distance from the roadway to the noise receptor, and site environmental conditions. On Carroll Avenue, using a residential setback of 60 feet from the road centerline, the DNL was modeled at 52.6 dBA. On Gilman Avenue, using a residential setback of 40 feet from the road centerline, the DNL was modeled at 57.7 dBA.[6] These traffic noise measurements are below 65 dB DNL and are considered "acceptable," according to HUD standards.

Calculated Sound Levels

Traffic noise levels were calculated using the peak hour turning movements for the intersection of Gilman Avenue and Arelious Walker from the Traffic Study prepared for this project, and the Federal

[3] 24 CFR Part 51.103(c)

[4] Noise attenuates at different rates depending on factors such as whether the noise is a point source (such as a power tool) or a line source (such as a road with relatively consistent traffic) and what type of surface the noise travels over (such as vegetation versus pavement). A sound attenuation rate of 3 dB for every doubling of distance is a conservative estimate that assumes a clear line-of-sight from the noise source to the receptor and the noise traveling over hard surfaces such as pavement.

[5] Wilson Ihrig and Associates, Bayview Waterfront Draft EIR San Francisco 49ers Stadium Operational Noise Study, October 2009.

[6] PBS&J, Traffic Noise Model Output, October 6, 2009.

Highway Administration TNM Lookup tables. The resulting Leq was then converted to DNL using a formula from the 2009 Caltrans Technical Noise Supplement, assuming peak hour traffic to be ten percent of the average daily traffic. The data is presented in **Table 3.5-4**.

TABLE 3.5-4
CALCULATED PROJECT SITE TRAFFIC NOISE LEVELS

Location	DNL
Existing	
Gilman Ave west of Arelious Walker Blvd[1]	47
Arelious Walker Blvd north of Gilman Ave[2]	52

1. Calculations incorporated a 100 foot residential setback.
2. Calculations incorporated a 50 foot residential setback.
DNL = day-night average sound level

SOURCE: Fehr and Peers, June 2011. ESA 2011.

The loudest calculated traffic noise occurred on Arelious Walker Boulevard, using a residential setback of 50 feet from the road centerline, the DNL was modeled at 64.8 dBA. These traffic noise measurements do not exceed 65 dB DNL and are considered "acceptable," according to HUD standards.

In order to calculate sound levels using HUD's Noise Assessment Guidelines, the following existing noise sources are considered: airports within 15 miles, railroads within 3,000 feet, and arterial roadways within 1,000 feet of the Project Site.[7]

Aircraft Noise

San Francisco International Airport is approximately seven miles south and Oakland International Airport is approximately nine miles east of the Project Site. The Project Site is outside the 55 dB CNEL noise contour of both airports.[8]

Arterial Roadway Noise

According to the City's General Plan Transportation Element Vehicular Street Map (Map 6) and downloadable geographic information system data, no streets within 1,000 feet of the Project Site are classified as major arterials.[9] The closest arterial roadway is Third Street, which is approximately 1,900 feet west of the Project Site. Therefore, no arterial roadways were included in the HUD noise assessment.

[7] HUD, The Noise Guidebook, Environmental Planning Division, Office of Environment and Energy, September 1991.

[8] San Francisco International Airport, Aircraft Noise Abatement Office, Mapping Tools, Internet Web Site: http://www.flyquietsfo.com/mapping_tools.asp, Accessed April 19, 2011, and Oakland International Airport, Fourth Quarter 2008 Noise Contours. Internet website: http://www2.oaklandairport.com/noise/pdfs/2008_Annual_Noise_Contour_Map.pdf, accessed April 27, 2011, March 2009.

[9] San Francisco Planning Department, Map 6 Vehicular Street Map. From the San Francisco General Plan, Transportation Element, Internet website: http://www.sf-planning.org/ftp/General_Plan/images/I4.transportation/tra_map6.pdf, accessed April 18, 2011 and San Francisco Geographic Information Systems Data Catalog, Internet website: http://gispub02.sfgov.org/website/sfshare/index2.asp, Accessed April 19, 2011.

Rail Noise

The Third Street light rail is approximately 2,100 feet west of the Project Site, and Caltrain is approximately 2,500 feet west of the Project Site, between Third Street and Bayshore Boulevard. Because these railways are within 3,000 feet, their potential contribution to noise at the Project Site was assessed using HUD's Noise Assessment Guidelines.[10] Noise from these sources was calculated using the model defaults and train volumes of 230 electrified light rail trains and 90 diesel trains per day.[11] The noise level from diesel trains was estimated at 64 dB DNL and from electric trains at 63 dB DNL, both of which are classified as acceptable. Furthermore Caltrain is below grade from Paul Avenue station and enters a tunnel below Salinas Avenue to go under Hwy 101. This would reduce its contribution to a receptor 2,500 feet away in addition to being separated by five blocks of densely comprised urban residential structures, a conservative 10 dBA reduction was assumed, resulting in noise levels of approximately 54 dB DNL for Caltrain. If both trains were to pass the Project Site simultaneously, the additive noise level would be approximately 64 DNL, an acceptable noise level below the 65 DNL threshold.

Combined Noise Levels

As the noise levels in the area are not made up of one source, the combination of calculated traffic (52 dB DNL), aircraft (50 dB DNL), and rail (63 dB DNL) noise sources were calculated for the Project Site area. Combined area noise for the existing scenario is approximately 64 DNL, which is below the HUD 65 DNL acceptable noise level.

[10] HUD, The Noise Guidebook. Environmental Planning Division, Office of Environment and Energy; September 1991.

[11] Caltrain, Schedules, Internet website: http://www.caltrain.com/schedules.html, and 511.org, MUNI (San Francisco Metropolitan Transportation Agency) Schedules: Route KT Ingleside/Third Street, Internet website: http://transit.511.org/accessible/schedules/ routeinfo.aspx?cid=SF&rted=KT. Accessed April 19, 2011.

3.6 Socioeconomics

This chapter presents the socioeconomics setting for the SFHA-owned Alice Griffith housing development. The remainder of the Project Site is used only for parking or is undeveloped, and thus does not contribute to this discussion. The Alice Griffith housing development is part of the larger Bayview Hunters Point (BVHP) neighborhood, which is primarily residential but also includes some retail and light industrial uses. Data for the Alice Griffith housing development is compared to the greater BVHP neighborhood and the City and County of San Francisco. The study areas are shown in **Figure 3.7-1**.

Table 3.6-1 below shows the projected population, households, and jobs for the City of San Francisco based data from the U.S. Census and the Association of Bay Area Governments (ABAG):

TABLE 3.6-1
POPULATION ESTIMATES AND PROJECTIONS FOR SAN FRANCISCO

	Population	Households	Jobs
2000	776,733[a]	329,700[a]	642,500[a]
2010	810,000[a]	346,680[a]	568,730[a]
2035	969,000[b]	415,000[b]	806,830[b]

SOURCE: [a] U.S. Census Bureau, 2011; [b] ABAG, 2009

3.6.1 Population

In 2000, the greater BVHP neighborhood had a population of approximately 27,105 persons[1], about four percent of the overall San Francisco population of 776,733. The Project Site, located within the greater BVHP neighborhood, presently has approximately 670 residents.

3.6.2 Housing

San Francisco has a total of approximately 376,942 housing units with a vacancy rate of 8.2 percent.[2] The U.S. Census 2000 data showed that the Bayview Hunters Point neighborhood had approximately 9,583 housing units.[3] The Project Site has 256 dwelling units, of which 28 units or 11 percent are vacant or unoccupied.

Housing projections have been developed by ABAG within the Regional Housing Needs Plan (RHNP). The RHNP is mandated by the State of California (California Government Code Section 65584) to address housing issues and needs based on future growth projections for the area. The RHNP is developed by ABAG and allocates to cities and counties their "fair share" of the region's

[1] Based on the latest available data for census tracts which make up the Bayview Hunters Point neighborhood as mapped in U.S. EPA, EJView, available online at: http://epamap14.epa.gov/ejmap/entry.html, accessed September, 30, 2011.

[2] California Department of Finance, *Housing Units, Households, and Vacant Units: 2000 and 2010, Incorporated Cities by County in California*, based on Census 2010, generated 3/8/2011.

[3] See note 1.

projected housing needs based on household income groupings over a 7.5-year planning period for each jurisdiction's Housing Element. San Francisco's allocation of regional housing needs for the 2007–2014 planning period is 31,193.[4]

3.6.3 Employment

Current employment opportunities at and in the vicinity of the Project Site are limited. Opportunities that do exist in the area include the concentration of light industrial uses along Carroll Avenue, northwest of the site, including a truck staging area directly across from the site to the north. The Candlestick Park stadium also offers employment opportunities both for vending at the stadium and vendor parking in the overflow lots next to the stadium.

The Candlestick Park stadium is in use for ten home football games per year (two pre-season games and eight regular season games), plus infrequent concerts and other outdoor events providing full-time, part-time, and seasonal jobs for the BVHP area. While the Candlestick Point-Hunters Point Shipyard Phase II Project that was approved by the City in 2010, proposes to demolish the existing Candlestick Park stadium, it also proposes to build a new stadium at nearby Hunters Point. In addition, that Plan proposes new retail, office, and research and development uses, and a hotel, providing approximately 10,730 new permanent jobs.[5]

[4]Association of Bay Area Governments, *San Francisco Bay Housing Needs Plan 2007-2014*, June 2008, available online at http://www.abag.ca.gov/planning/pdfs/SFHousingNeedsPlan.pdf, accessed September 23, 2011.

[5] Redevelopment Agency of the City and County of San Francisco, Bayview Hunters Point Redevelopment Plan, as amended, 2010; City of San Francisco, Draft Environmental Impact Report, Candlestick Point-Hunters Point Shipyard Phase II, November 2009.

3.7 Environmental Justice

U.S. Department of Housing and Urban Development (HUD) regulations found at 24 CFR Parts 50 and 58, mandate compliance with Executive Order 12898 (EO 12898), *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, for HUD and/or HUD applicants.

HUD defines low-income through a comparison of annual household income for households of various sizes with the area median income. HUD defines income guidelines for extremely low-income households (those with 30 percent or less of the area median income), very low-income households (those with 50 percent or less of the area median income) and low-income households (those with 80 percent or less of the area median income).

Low-income population is defined as any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by the proposed program, policy, or activity.

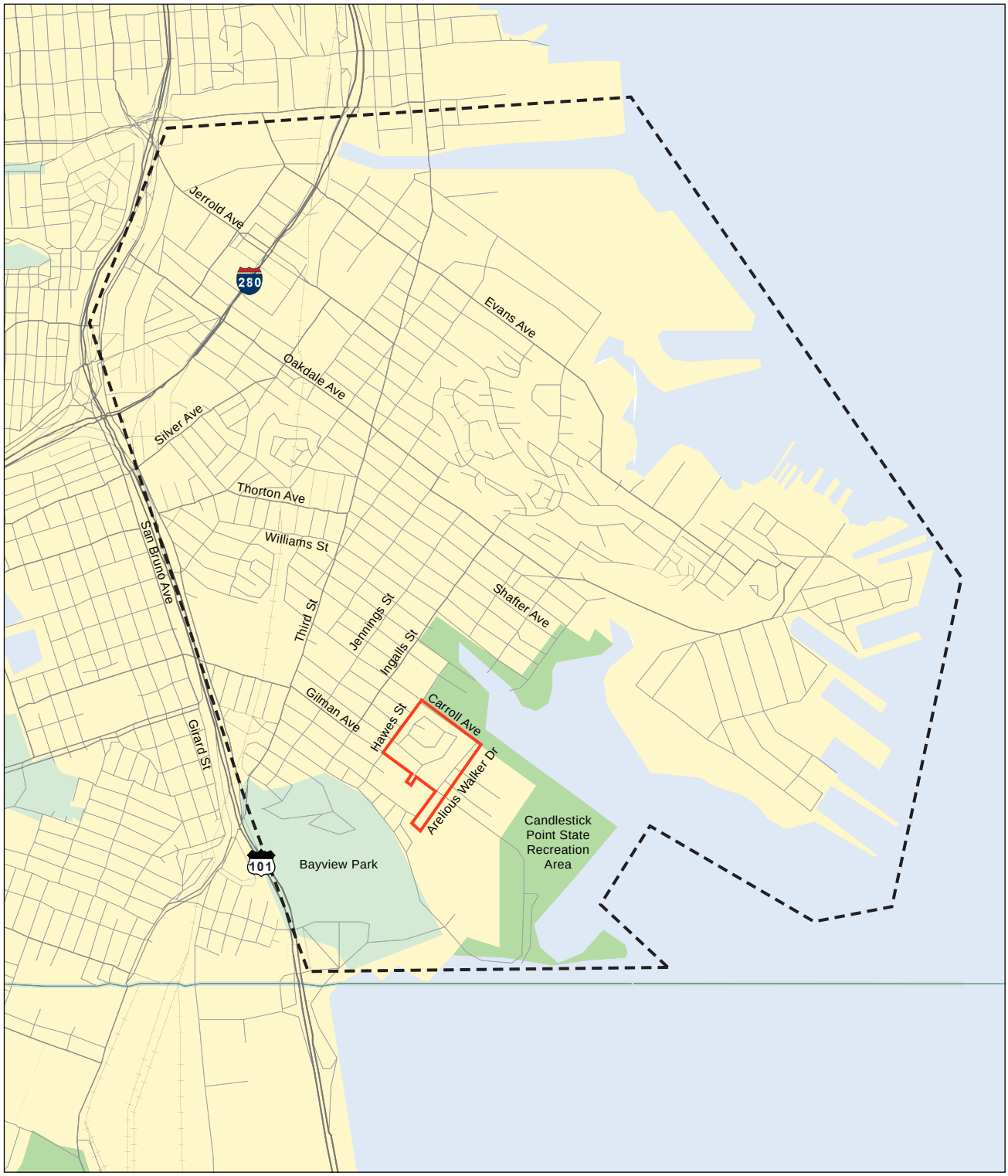
Minority population is defined as any readily identifiable group of minority persons who live in geographic proximity and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed program, policy or activity.

A *minority population* is considered to be present if the minority population percentage of the affected area is greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (census tracts are generally considered appropriate). Guidance from the Council on Environmental Quality (CEQ) states that "Minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis".[1]

3.7.1 Minority Communities

Table 3.7-1 below shows the racial and ethnic profile of the Project Site and the surrounding Bayview Hunters Point (BVHP) neighborhood compared to the profiles of the City of San Francisco and California as a whole. This data is based on population and housing statistics by county for the Census 2000. The data in Table 3.7-1 is based on the areas outlined in **Figure 3.7-1** for the Project Site and the BVHP neighborhood (as delineated in the General Plan).

[1] CEQ; *Environmental Justice, Guidance Under the National Environmental Policy Act*, December 10, 1997.



SOURCE: DeLorme Street Atlas USA, 2000; U.S. EPA, 2011; and ESA, 2011

Figure 3.7-1

Environmental Justice Study Areas

TABLE 3.7-1
STUDY AREA ETHNIC PROFILE

	Bayview Hunters Point	San Francisco	California
Percent White	8.9%	49.6%	59.4%
Percent African American	46.8%	7.6%	6.6%
Percent Asian/Pacific Islander	28.3%	30.9%	10.9%
Percent American Indian	0.5%	0.5%	0.9%
Percent Other Race	10.7%	6.4%	16.9%
Percent Multiracial	4.8%	4.5%	5.0%
Percent Minority	94.9%	56.4%	53.4%

SOURCE: EPA, Demographic Report, available online at http://oaspub.epa.gov/envjust/demog_report_2_ejv.doCountyStateComp, accessed September 30, 2011.

As indicated in the table above, the greater BVHP neighborhood include almost six times as many African American persons as does either the City of San Francisco or the remainder of California. The Project Site contains a similar ethnic profile to the BVHP neighborhood with a minority population of approximately 96 percent; the largest ethnic minority group (or 46 percent) is identified as African American. Overall, the Project Site and the BVHP neighborhood have almost twice the concentration of minorities as the rest of San Francisco and the state of California.

3.7.2 Low-Income Communities

Poverty Levels

The US Census Bureau defines the average poverty level in the U.S. for a family of four as a maximum annual income of $21,203 or less, as of 2007. **Table 3.7-2** shows the percentage of the total number of persons and households that are below the poverty level for the greater BVHP neighborhood, the City of San Francisco, and the state of California.

TABLE 3.7-2
STUDY AREA POVERTY STATISTICS

	Bayview Hunters Point	San Francisco	California
Percent Persons below Poverty Level	21.6%	11.3%	14.2%
Households in Area	9,273	329,700	11,502,870
Households on Public Assistance	1,089	12,942	563,409
Percent Households on Public Assistance	12	4	5

SOURCE: EPA, Demographic Report, available online at http://oaspub.epa.gov/envjust/demog_report_2_ejv.doCountyStateComp, accessed September 30, 2011.

Approximately 84 percent of the Project Site population was living below the poverty level in 2009.[2] The poverty rate for the Project Site is greater than 50 percent and substantially higher than the surrounding neighborhood, City or State. Thus, the Alice Griffith neighborhood meets the definition of environmental justice populations, as defined by the US Census Bureau, CEQ criteria, and Executive Order 12898.

3.7.3 Outreach to Low-Income and Minority Communities

As stated elsewhere, the recommendations of the Housing Opportunities for People Everywhere (HOPE) SF Task Force form a critical part of the policy framework for the Proposed Action. The president of the Alice Griffith Tenants Association (AGTA) served as part of the HOPE SF Task Force, ensuring that the needs of Alice Griffith residents were represented. The first AGTA meeting held to discuss Alice Griffith's revitalization was on March 29, 2007, and resident meetings – including the participation of staff from the Mayor's Office of Housing (MOH), Office of Economic and Workforce Development (OEWD), San Francisco Redevelopment Agency (SFRA), San Francisco Housing Authority (SFHA), and the development team – have continued regularly since then, with repeated discussion on the topics of supportive service activities, job development, relocation and reoccupancy, and site design. Translation services in Samoan, Spanish, and Mandarin are provided on an as-needed basis. Since 2010, AGTA meetings have been facilitated by Urban Strategies, the project sponsor's social services provider. Working on-site, Urban Strategies has focused on individualized needs of Alice Griffith residents, including: 1) assisting residents locate job training and job placement opportunities; 2) analyzing household needs and making services connections for families; and 3) conducting liaison work with San Francisco Unified School District. Urban Strategies' social services have also focused on preparatory work for the construction program and tenancy in the new development, including: 1) building the capacity of AGTA members to lead and engage other residents in the HOPE SF process; 2) increasing access to clear, culturally accessible, and relevant information; and 3) creating forums that support open and meaningful dialogue between residents and the development team, with encouragement of resident self-advocacy.

City staff and the development team have also held numerous meetings with the larger community, neighbors and stakeholders since 2007 to discuss Alice Griffith's revitalization. These meetings were often held pursuant to the authority of the BVHP Project Area Committee, a diverse body of community members elected to lead the Bayview on development, economic, and social issues. The purpose of these meetings is to identify community goals, discuss the ways in which they can be incorporated into the project, and describe the ways the resulting consensus vision can be implemented.

A public scoping meeting to gather input from residents and stakeholders for the preparation of this Draft EIS was held on January 5, 2011, at the Bret Harte Elementary School at 1035 Gilman Avenue, next to the project site. A notice of the scoping meeting was sent on December 5, 2010, to all current residents of Alice Griffith Public Housing, as well as all neighbors within 500 feet

[2] San Francisco Housing Authority, personal communication between Kate Hartley of the San Francisco Redevelopment Agency and Dominica Henderson of the San Francisco Housing Authority, 2009.

of the site. In addition, the notice was sent to news publications and interested parties and organizations. In all, 633 notices were sent. Approximately 15 people attended the meeting and shared comments, ideas, and concerns regarding the Proposed Action, details of which are shown below. Contact information for MOH, OEWD, SFRA, SFHA, and CP Development Co. staff was provided for follow up and to establish lines of communication to ensure that comments, ideas, and concerns were being addressed throughout the planning and development process.

The Draft EIS is being distributed for a 45-day review and comment period. Additional details regarding review periods during the EIS process are included in **Section 1.5**

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3.8 Public Services and Utilities

The following section addresses the public services and utilities which are relevant to the Project Site. The following areas are discussed: water supply, wastewater conveyance and treatment, solid waste collection and disposal, energy, law enforcement, fire protection and emergency medical services, schools, libraries, and parks and recreation.

3.8.1 Water

The San Francisco Public Utilities Commission (SFPUC) manages the water delivery system to the Project Site through a regional water system. Approximately 1/3 of water is delivered to retail customers in San Francisco. Approximately 2/3 of water is delivered to 28 wholesale water agencies in Alameda, Santa Clara, and San Mateo counties.[1] Over the past five years, water delivery averaged 270.43 million gallons per day (MGD) for all customers.[2]

The Hetch Hetchy watershed, located in Yosemite National Park, provides approximately 85 percent of San Francisco's total water needs. Spring snowmelt runs down the Tuolumne River and fills Hetch Hetchy, the largest reservoir in the Hetch Hetchy water system. Surface water in the Hetch Hetchy Reservoir is treated, but does not require filtering. The Alameda and Peninsula watersheds produce about 15 percent of the total water supply from six reservoirs which capture and store rain and local runoff. The Sunol Filter Galleries, a groundwater source near the Town of Sunol, supplies less than one percent of San Francisco's water. Water from the reservoirs and Sunol Filter Galleries are treated and filtered prior to delivery.[3]

The Project Site is currently served by the City's low-pressure water system from the University Mound Reservoir. Current water use in the Candlestick Point area based on water meter readings is 0.3 MGD, which includes Alice Griffith public housing complex, the Candlestick Point State Recreation Area and Candlestick Park stadium.[4] The Project Site does not currently have access to a recycled water system.

The City maintains an Auxiliary Water Supply System (AWSS) for fire protection purposes only. The Project Site is not currently connected to the AWSS although there is a planned extension on Gilman Street from Ingalls Street to Candlestick Point.

3.8.2 Wastewater

The SFPUC manages a combined sewer system throughout the City, which collects both stormwater runoff and wastewater flows in the same network of pipes. The Project Site is

[1] SFPUC, Water System Information, available online at: http://www.sfwater.org/index.aspx?page=355, accessed September 2011.

[2] SFPUC, Daily Use Stats, available online at: http://www.sfwater.org/index.aspx?page=417, accessed September 2011.

[3] See note 1.

[4] PBS&J, Water Supply Assessment for the proposed Candlestick Point/Hunters Point Shipyard Phase II project, October, 2009.

currently served by the combined sewer system, within the Bayside drainage area. All flows from the Bayside drainage area are conveyed to the Southeast Water Pollution Control Plant (SWPCP). The SWPCP is located approximately 1.3 miles north of the Project Site on Phelps Street between Jerrold Avenue and Evans Avenue. The SWPCP provides secondary treatment then wastewater is discharged through the deep water outfall at Pier 80 or through the Quint Street outfall to the Islais Creek Channel.

Wastewater and stormwater flows from the Project Site enter the combined sewer system and are conveyed through the Candlestick tunnel sewer to the Yosemite Transport/Storage System. From here flows are conveyed to the Griffith Pump Station, then the Hunters Point tunnel sewer, and finally to the SWPCP.[5] The exact volume of flows from the Alice Griffith public housing site is unknown, as the SFPUC does not monitor volumes from individual land uses or areas. Based on a standard residential wastewater generation factor, the Alice Griffith housing complex would generate approximately 76,800 gpd of wastewater to the combined sewer system).[6]

The Candlestick tunnel sewer has an average daily dry-weather flow of 2.5 MGD (1,736 gallons per minute or gpm) and a design capacity of 50 MGD (34,722 gpm).[7] The Yosemite Transport System and existing sewers have a storage volume of 11.5 million gallons. Pumping capacities for the Griffith Pump Station are 10 MGD in dry weather and 120 MGD in wet weather. Dry-weather flows from the Griffith Pump Stations are relatively small.[8] The Hunters Point tunnel sewer has an average dry-weather flow of 6 MGD (including the 2.5 MGD from the Candlestick tunnel sewer) (4,167 gpm) and a design capacity of 120 MGD (83,333 gpm).[9] The SWPCP treats approximately 67 MGD during dry weather (approximately 80 percent of the City's total wastewater flow) to a secondary treatment standard with a total capacity of 150 MGD.

During larger storm events, excess flows that cannot be treated at the SWPCP (when flows exceed 150 MGD) are treated at the North Point Wet Weather Facility (NPWWF), at 111 Bay Street, which provides primary treatment and disinfection capacity for an additional 150 MGD of wet-weather flows. Treated flows from this facility are discharged through four deep-water outfalls. Two of the deep-water outfalls terminate at the end of Pier 33, and two terminate at the end of Pier 35 on the northeastern Bay. The NPWWF can treat an additional 100 MGD to a primary treatment standard, which is only discharged from the Southeast Pollution Control Outfall (Pier 80 outfall). At full wet-weather capacity, discharge at the Pier 80 outfall is maximized to 110 MGD (100 MGD primary treatment from NPWWF and 10 MGD secondary treatment from SWPCP). The remaining 140 MGD secondary treatment from the SWPCP would be discharged via the Quint Street shallow water outfall into Islais Creek Channel.

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[5] SFPUC, *Bayside Systems and Facilities and Operations Plan*, 2002.

[6] Calculated as 256 units and 300 gallons per day, using the residential wastewater generation factor from the *Candlestick Point/ Hunters Point Shipyard Infrastructure Concept Report* (2007) prepared by Winzler & Kelly Consulting Engineers.

[7] SFPUC, *Bayside Systems and Facilities and Operations Plan*, 2002.

[8] Ibid.

[9] Ibid.

The combined sewer system also includes the Bayside Wet Weather Facilities (BWWF), which consist of interconnected large underground rectangular tanks and tunnels with a series of baffles and weirs that are designed to remove settleable solids and floatables. During dry weather, the BWWFs transport combined stormwater and wastewater to the SWPCP. During wet weather, the underground transport tunnels provide a total storage capacity of approximately 193 million gallons, while pumps continue to transfer combined wastewater and stormwater to the SWPCP. When the combined capacity of the SWPCP and the NPWWF is exceeded, the BWWFs retain stormwater flows for later treatment. The tanks allow floatable and settleable solid materials to be removed, similar to primary treatment processes. The materials retained in the storage and transport boxes are flushed to the treatment plants after storms.

In the event that the capacities of the SWPCP, the NPWWF, and wet weather facilities and storage structures are exceeded, the combined stormwater and sewage, after receiving the equivalent of wet weather primary treatment in the transport structures/boxes, is discharged into San Francisco Bay through any one of the 29 shoreline combined sewer overflow (CSO) structures.[10] All solids that settle out in the storage/transport structures are flushed to the SWPCP after the rainstorm subsides. There are six CSO structures in the vicinity of the Project Site, in Yosemite Slough (South Basin) and Candlestick Cove. In the Project Site vicinity, the wet-weather facilities have been designed and constructed to achieve a long-term annual average of one CSO discharge to ensure that most wastewater receives secondary treatment (removal of settleable materials and partial removal of dissolved materials).

3.8.3 Solid Waste

Residential and commercial solid waste collection services for the City are provided by Recology Sunset Scavenger. Curbside pick-up is sorted by the customer into recycling, compost and landfill bins. These materials are then transferred to either the Recology Solid Waste Transfer and Recycling Center at 501 Tunnel Avenue or Recycle Central at Pier 96. The solid waste stream is sorted at these facilities to remove recyclables and compostable materials. Remaining municipal solid waste is transported to the Altamont Landfill, pursuant to an existing agreement between the City and Waste Management. The Altamont Landfill is located east of Livermore in Alameda County. The Altamont Landfill has a permitted maximum disposal of 11,500 tons per day and received approximately 1.07 million tons of waste in 2009 (the most recent year reported by the State).[11] In 2009, the waste contributed by San Francisco was approximately 484,848 tons[12] which represents

[10] This level of treatment meets the minimum treatment specified by the USEPA Combined Sewer Overflow Control Policy (CSO Policy) I50 FR 18688, April 11, 1994.

[11] California Department of Resources Recycling and Recovery (CalRecycle), Active Landfills Profile for Altamont Landfill & Resource Recovery (01-AA-0009), http://www.calrecycle.ca.gov/Profiles/Facility/Landfill/LFProfile2.asp?COID=1&FACID=01-AA-0009, accessed September 2011.

[12] CalRecycle, San Francisco Diversion/Disposal Rate Report, Reporting year 2009, available online at: http://www.calrecycle.ca.gov/LGCentral/Tools/MARS/JurDrDtl.asp?Flag=1&Ju=438&YR=2009, accessed September 2011.

approximately 45 percent of the total volume of waste received at this facility in 2009. The estimated closure date for the landfill is 2025.[13]

The existing agreement for disposal at Altamont Landfill will expire in 2015. On July 26, 2011, the Board of Supervisors approved a contract with Recology to dispose of the City's waste at the Recology Ostrom Road Landfill in Yolo County. Solid waste would be shipped by rail. The new 10-year contract takes effect in 2015 and allows the City to dispose of up to 5 million tons.[14] Ostrom Road Landfill has a permitted maximum disposal of 3,000 tons per day and an anticipated closure date of 2066.[15]

Construction and demolition (C&D) debris in the City must be transported by a registered transporter[16] to a registered facility[17] that can process mixed C&D debris pursuant to the City and County of San Francisco C&D Ordinance. The Ordinance requires that at least 65 percent of C&D debris from a site go to a registered C&D recycling facility.

According to Calrecycle, San Francisco per capita waste disposal is approximately 0.42 tons of waste per resident per year. Based on this generation rate, the existing Alice Griffith housing development which contains 736 residents would dispose of approximately 309 tons per year.[18]

3.8.4 Energy

Pacific Gas & Electric (PG&E) provides electricity to the Project Site and vicinity. The electrical distribution and transmission lines are overhead in this area. The Project Site and vicinity are connected via a 12 kilovolt (kV) electrical connection to the PG&E grid. On a per capita basis, Californians consume approximately 6.72 megawatt-hours (MWh) of electricity annually.[19] Based on an electrical use factor of 3.617 MWh/unit[20], the 241 occupied units in the Alice Griffith housing complex consume approximately 872 MWh annually.[21]

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13 See note 11.

14 San Francisco Examiner, San Francisco supes award sweet landfill contract to Recology, July 26, 2011. Available online at: http://www.sfexaminer.com/blogs/under-dome/2011/07/san-francisco-supes-award-sweet-landfill-contract-recology, accessed September 2011.

15 CalRecycle, Active Landfills Profile for Recology Ostrom Road Landfill (58-AA-0011). http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=58&FACID=58-AA-0011, accessed September 2011.

16 SF Environment, Registered Transporters, http://www.sfenvironment.org/downloads/library/sf_cd_registered_transporters.pdf, accessed September 2011.

17 SF Environment, Registered Facilities, http://www.sfenvironment.org/downloads/library/sf_cd_registered_facilities.pdf, accessed September 2011.

18 CalRecycle, 2009, Residential Waste Disposal Rates, available online at: http://www.calrecycle.ca.gov/wastechar/ResDisp.htm, accessed September 2011.

19 California Energy Commission, 2011. U.S. Per Capita Electricity Use by State in 2010, available online at: http://www.energyalmanac.ca.gov/electricity/us_per_capita_electricity-2010.html, accessed September 2011.

20 The energy use factor cited for residential units is from: ENVIRON International Corporation, Climate Change Technical Report: Candlestick Point–Hunters Point Shipyard Phase II Development Plan, October 2009, Table 3-8 (Appendix S to the CPHPS Plan EIR).

21 As the energy used factor is based on compliance Title 24 standards and the Alice Griffith housing complex was constructed prior to these standards, electricity consumption may somewhat higher than this estimate.

PG&E also provides natural gas to the Project Site and vicinity through underground transmission lines. On a per capita basis, Californians consume approximately 60,000 cubic feet per year (approximately 62 million British thermal units [MBtu] annually.[22] Based on a natural gas use factor of .04 MBtu/unit, the 241 occupied units in the Alice Griffith housing complex consume approximately 9.64 MBtu annually.[23]

3.8.5 Law Enforcement

The Project Site is in the Bayview District of the San Francisco Police Department, one of 10 police districts throughout the city.[24] Each of these districts is composed of members of the Patrol Division and Traffic Division, which make up the Field Operations Bureau. The nearest police station to the Project Site is the Bayview Station at 201 Williams Avenue, which is approximately one mile west of the Project Site (**Figure 3.8-1**). As of 2009, from 138 to 148 officers were assigned to the Bayview Station.[25]

Calls for services are categorized as Priority A, B, and C. Priority A calls are of the highest priority, Priority B calls are second in priority, and Priority C calls are the third level of priority. According to the SFPD 2007 Annual Report, the Bayview District received 6,148 Priority A calls, 10,784 Priority B calls, and 8,944 Priority C calls, for a total of 25,876 calls for service. In addition to calls for service, the Bayview District also dealt with a total of 110,781 on-view (i.e., on site) incidents that required an officer-initiated response.[26]

The San Francisco Housing Authority (SFHA), in collaboration with the San Francisco Police Department, implemented a Housing Liaison Program that provides supplemental law enforcement services to several large family developments, including the Alice Griffith public housing development starting in 2009. Services are provided pursuant to a Memorandum of Understanding which is renewed annually.

3.8.6 Fire Protection and Emergency Medical Services

The San Francisco Fire Department (SFFD) provides fire protection and emergency medical services to the Project Site. There are currently 43 fire stations throughout the City. The nearest station to the Project Site is Fire Station 17 at 1295 Shafter Avenue at the corner of Ingalls Street. The stations that would likely provide response to the Project Site are included in **Table 3.8-1** and shown on **Figure 3.8-1**.

[22] California Energy Commission, 2006. Average Per Capita Natural Gas Consumption by State 2006, http://energyalmanac.ca.gov/naturalgas/per_capita_consumption.html, accessed September 2011.

[23] See footnote 21.

[24] San Francisco Police Department, 2007 Annual Report, available online at: http://sf-police.org/Modules/ShowDocument.aspx?documentid=14893, accessed September 2011.

[25] CPHPS EIR, 2010. Obtained via personal communication, John Loftus, Captain, Bayview District Station to Chad Mason, PBS&J, July 28, 2009.

[26] See footnote 24.

SOURCE: DeLorme Street Atlas, 2000; and ESA, 2011

Figure 3.8-1
Police and Fire Stations in the Project Site Vicinity

TABLE 3.8-1
FIRE STATIONS IN THE PROJECT SITE VICINITY

Station	Location	Equipment	# Personnel per Shift
9	2245 Jerrold Ave.	Engine, Ladder Truck, Battalion Chief	10
17	1295 Shafter Ave	Engine, Ladder Truck	9
25	3305 Third St.	Engine	4
42	2430 San Bruno Ave.	Engine	4
44	1298 Girard St.	Engine	4

SOURCE: San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, Candlestick Point–Hunters Point Shipyard Phase II Development Plan Project Draft Environmental Impact Report, November 2009, Table.O-3.

Total daily staff for all SFFD stations is currently 315. The number of personnel per shift depends on the equipment at each station. Fire engines require four staff per shift, ladder trucks require five staff per shift, and the Battalion Chief requires one staff per shift. An engine carries one officer (a captain or a lieutenant) and three firefighters, one of whom is either a designated Emergency Medical Technician (BLS/basic life support) or a Paramedic (ALS/advanced life support).

The stations located east of US-101 (Stations 9, 17 and 25) respond to calls within the Bayview Hunters Point neighborhood. The stations west of the US-101 may also respond (Stations 42 and 44); however, the freeway creates an obstruction that makes access to areas east of the freeway more difficult from this location. For Station 42, the closest cross- freeway route is the Silver Avenue undercrossing. From Station 44, the Paul Avenue undercrossing is reached by going north on San Bruno Avenue to Mansell Street and then to Paul Avenue, or the Bayshore Boulevard/3rd Street overcrossing can be reached by going south on San Bruno Avenue to Bayshore Boulevard.

In some areas water for fire suppression is provided by AWSS and is distributed through a network of pipes drawing water from a collection of reservoirs and pumping stations throughout the City. The Project Site is not currently connected to the AWSS although there is a planned extension on Gilman Street from Ingalls Street to Candlestick Point.

3.8.7 Schools

The San Francisco Unified School District (SFSUD) oversees the public school system in San Francisco (K–12). The nearest schools to the Project Site are shown on **Figure 3.8-2**. The nearest elementary schools are Bret Harte Elementary School, just south of the Project Site, and Kipp Bayview Academy (approximate 0.5 miles west). The nearest middle schools are Dr. Martin Luther King, Jr., Middle School (one mile northwest), and Visitacion Valley Middle School (1.25 miles southwest). The nearest high school is Thurgood Marshall High School (1.25 miles northwest). School facility capacity and enrollment data for these schools is provided in **Table 3.8-2**.

TABLE 3.8-2
SCHOOL ENROLLMENT AND CAPACITY

	Capacity[1]	2010 Enrollment[2]	2010 Remaining Capacity	% Remaining Capacity
Bret Harte Elementary (K-5)	500	240	260	52%
Kipp Bayview Academy (Charter)	N/A	236	N/A	N/A
Martin Luther King Jr. Middle School (6-8)	525	531	-6	-1%
Visitacion Valley Middle School (6-8)	850	434	416	49%
Thurgood Marshal High School (9-12)	1,275	788	487	38%

SOURCE:
1) SFUSD, *Capital Plan FY 2010-2019*, September 2009
2) SFUSD, School Site and List Summary, October 6, 2010.

Over the last decade, overall SFUSD enrollment gradually declined. The decline stopped in the fall of 2008, when kindergarten enrollments began to increase, reflecting a growth in birth rates five years earlier. SFUSD projections indicate that elementary enrollment will continue to grow.[27] The number of elementary school students is predicted to increase from 25,000 in 2008 to 27,600 in 2013, representing an 11 percent increase over five years. After a slight decline in 2009 and 2010, middle school enrollment is anticipated to increase again. However, in 2013 it would still stand below current enrollment (at 11,640 compared with 11,816 in 2008). High school enrollment is anticipated to experience a continuous decline, from 19,696 students in 2008 to 18,396 in 2013.[28]

SFUSD currently uses a diversity index lottery system to assign students to schools based on a number of factors including parental choice, school capacity, and special program needs. When there are more applicants than available seats for a school a diversity index is utilized based on ethnicity, income, language and prior academic performance. Students who are not assigned to one of their choices are then assigned to the nearest school with capacity.[29]

As of the 2008-09 academic school year, there were approximately 43 school-age children living at the Alice Griffith public housing complex.[30]

3.8.8 Libraries

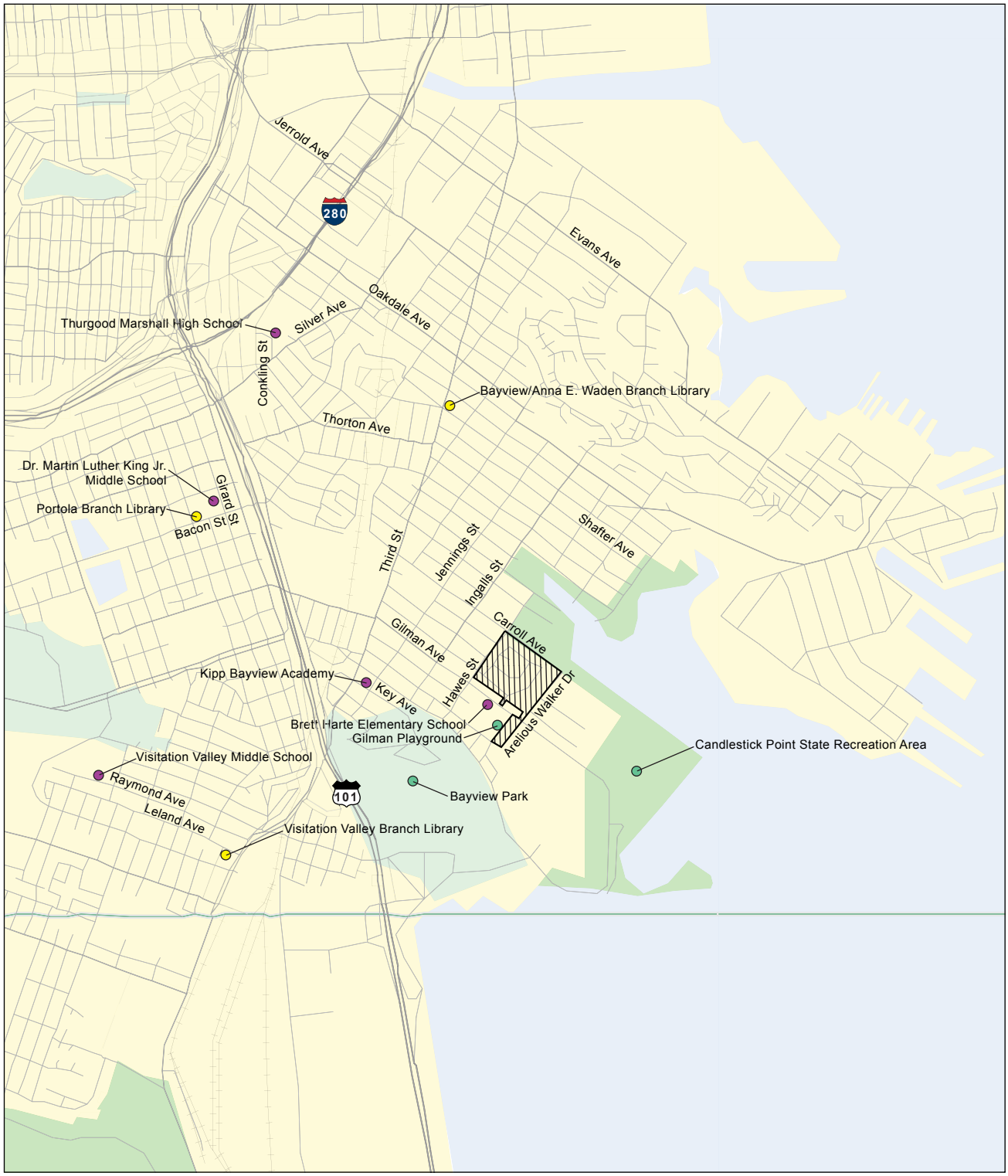
There are three branches of the San Francisco Public Library within two miles of the Project Site as shown on **Figure 3.8-2**: Bayview/Anna E. Waden (Bayview) Branch at 5075 3rd Street (one mile north), Portola Branch at 380 Bacon Street (one mile northwest), and Visitacion Valley Branch at 45 Leland Avenue (one miles southwest).

[27] SFUSD, *Capital Plan FY 2010-2019*, September 2009, available online at: http://www.sfusd.edu/en/assets/sfusd-staff/about-SFUSD/files/capital-plan-final-2010-2019.pdf, accessed September 2011.

[28] Ibid.

[29] SFUSD, History of the Student Assignment Method, available online at: http://portal.sfusd.edu/apps/departments/educational_placement/HistoryStudentAssignment.pdf, 2011.

[30] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, Candlestick Point–Hunters Point Shipyard Phase II Development Plan Project Draft Environmental Impact Report, November 2009



SOURCE: DeLorme Street Atlas, 2000; and ESA, 2011

Figure 3.8-2
Schools, Libraries, and Parks in the Project Site Vicinity

In November 2000, San Francisco voters approved a bond measure for library improvements. The newly constructed Portola Branch opened in February 2009. The newly constructed Visitacion Valley Branch opened in July 2011. The Bayview Branch was closed on April 2, 2011 for construction of a new library building at the same site. The Bayview Branch is anticipated to re-open December 2012. Temporary library services are located at the Bayview Hunters Point YMCA at 1601 Lane Street, which is approximately 0.75 miles north of the Project Site. [31]

3.8.9 Parks and Recreation

Park and recreation areas in the Project Site vicinity are shown on **Figure 3.8-2**.

The Gilman Playground includes 4.4 acres just south of the Project Site, across Gilman Avenue. Gilman Playground includes a playground, baseball diamond, basketball court, restrooms, picnic tables, and a dog park area.[32] The Bayview Park/K.C. Jones Playground includes 3.4 acres and is located approximately 0.5 miles northwest of the Project Site. Bayview Park includes a playground, baseball diamond, and the Martin Luther King Jr. swimming pool.

The Candlestick Point State Recreational Area (CPSRA) includes 154 acres along the San Francisco Bay shoreline. The portion of the Project Site impressed with the State trust is located within the CPSRA. Approximately one-third of the CPSRA is developed for recreation, including trails, picnic sites and fishing piers. Recreational opportunities include hiking, biking, fishing and windsurfing. The remainder of the CPSRA is dedicated to natural uses, including tidal flats and shoreline biotic preservation. The Candlestick Point-Hunters Point Shipyard Phase II Development Plan proposes improved facilities within the CPSRA to enhance public access to the waterfront and enjoyment of the Bay. These improvements will include revegetation and landscaping, shoreline restoration and stabilization, infrastructure improvements (such as trails, pathways, and visitor facilities), a biofiltration pond to cleanse stormwater, the provision of habitat and opportunities for environmental education, Eco-Gardens,‘ and salt-marsh restoration.

The Bayview Hill Natural Area (also called Bayview Park) includes 44 acres located 0.25 miles southwest of the Project Site. The Bayview Hill Natural Area includes picnic areas, natural habitat areas and recreational trails. It supports a diverse assemblage of plants and animals, perhaps the most diverse in the San Francisco natural areas system.[33]

Approximately 2.5 miles southwest of the Project Site is the 2,326-acre San Bruno Mountain State Park, a primarily undeveloped parkland that includes hiking trails and natural areas.

[31] San Francisco Public Libraries, Branch Library Improvement Program, available online at: http://sfpl.org/index.php?pg=2000002301, accessed September 2011.

[32] San Francisco Recreation and Parks, Parks Map, available online at: http://sfrecpark.org/parksMapPage.aspx, accessed September 2011.

[33] San Francisco Recreation and Parks Department, Natural Areas – Bayview Hill Natural Area, available online at: http://sfnap.org/n_area/parks/na_bay.html, accessed September 2011.

3.9 Visual Character / Aesthetics

This section describes the visual character and aesthetics of the affected environment within and surrounding the Project Site. The visual character and aesthetics of an area are created by elements of the natural and built environment and their physical relationship to each, as perceived by people. Natural and built elements of the affected environment are integral to the land use environment. Therefore, the setting discussions below incorporate much of the information presented in **Section 3.4,** Land Use and Land Use Planning.

A series of photographs taken from locations within and around the Project Site is presented at the end of this section (**Figures 3.9-2 through 3.9-8**) and referenced throughout the affected environment discussions below. The key to the location from which each photograph was taken is mapped in **Figure 3.9-1**. The photographs are provided to illustrate the existing character and aesthetics within and around the Project Site, and to show the views and scenic resources that are visible from and across the Project Site.

3.9.1 Regional Setting

The Project Site is in located in the urbanized, mixed-use Candlestick Point Area, approximately five miles south of downtown San Francisco and nearly 0.75 miles east of US Highway 101 (US 101). Situated at an elevation higher than its immediate surroundings, portions of the Project Site offer distant views to natural features that include Bayview Hill (west of Candlestick Park stadium), waters of the South Basin of San Francisco Bay, Yosemite Slough, the shoreline features of the Candlestick Park State Recreation Area (CPSRA), and San Bruno Mountain to the southwest. Prominent man-made features include the re-gunning cranes used to lift heavy equipment for the building and repair of ships, and the downtown San Francisco skyline.

3.9.2 Project Setting

Project Site Conditions

The Project Site consists of the Alice Griffith housing development on a gentling sloping knoll, as well relatively flat undeveloped areas in the southeast area of the Project Site. The Alice Griffith residential buildings and community center are situated in the north and central portion of the Project Site where the highest elevations exist. The housing development portion of the Project Site is bounded generally by Gilman Avenue on the southwest (behind the lots that front Gilman Avenue and that are not part of the Project Site), Hawes Street on the northwest, Carroll Avenue on the northeast, and what would be a northerly extension of Giant's Drive on the southeast. Flat paved and gravel surface lots, which provide primary and overflow parking area for Candlestick Park stadium events, exist on the remainder of the Project Site, southeast to Arelious Walker Drive (and what would be its extension west to Ingerson Avenue). Residences fronting Gilman Avenue southeast of Giant's Drive are excluded from the Project Site.

The Project Site contains 256 residential units in 33, two-story rectangular structures, approximately 25 feet in height. The building sizes and design are uniform and simple, with construction materials featuring beige stucco façades with light green trim and metal window detailing. The buildings feature shared courtyards and front entry access. The buildings are set back from the Project Site roadways by shared open yards planted with grass and surface parking in front of the buildings.

Other physical features visible within the Project Site that contribute to the visual character and aesthetic include lighting, overhead power and telephone lines, and graffiti art. Landscaping within the housing portion of the Project Site consist primarily of mature trees and grass. The undeveloped areas to the south and east have ruderal vegetation and little landscaping.

The physical condition of the Project Site can be best described as dilapidated, with scattered trash, damaged and broken fencing, and illegal dumping on the undeveloped parcels to the southeast. As discussed in **Section 1.0,** Purpose and Need, the Alice Griffith Public Housing development specifically is distressed and deteriorated, with residences in various stages of physical decay. Views A through G (within **Figures 3.9-2 through 3.9-5**) and View J (within **Figure 3.9-6)** are examples of the "character or scale" and "aesthetic appeal" of the existing Project Site, which the Proposed Action and alternatives could affect.

The Alice Griffith housing development is physically isolated from the surrounding area; the roadways are an internal looped configuration, and there is only one direct access point to the off-site street network along Gilman Avenue.

Surrounding Area Conditions

The area surrounding the Project Site includes neighborhoods of single-family residences, apartment buildings, parks, open space, undeveloped parcels and light industrial and commercial development. Single-family residential uses and the Bret Harte Elementary School and Gilman Playground are prominent to the west of the Project Site, and light industrial, warehouse and storage uses dominate the remaining areas surrounding the site to the north and southeast. Candlestick Park, including the stadium and expansive surface parking lots that surround it, is a prominent nearby physical feature visible from the higher elevations of the Project Site. The CSPRA open space and the South Basin of San Francisco Bay exist approximately 250 feet from the eastern edge of the Project Site, beyond warehouse buildings and surface parking areas along Carroll Avenue and south of Arelious Walker Drive. View A (within **Figure 3.9-2)** and Views L through N (within **Figures 3.9-7 and 3.9-8**) are examples of the "character or scale" and "aesthetic appeal" of the existing surroundings, which the Proposed Action and the alternatives could affect.

Lighting

Existing outdoor lighting conditions within and around the Project Site are generally typical of urban mixed use areas. Lighting sources include street lighting, exterior lighting at residences, and security and service lighting typical of industrial and commercial facilities and associated surface parking lots and service yards. Substantial but periodic lighting occurs at Candlestick Park stadium and related parking throughout the year for stadium events.

Views and Scenic Resources

Views from the Project Site

Immediate views from the Project Site include the open space of CPSRA fronting the bay, Candlestick Park stadium and parking lots to the east and southeast, Gilman Playground, and residential areas immediately southwest. As mentioned previously, natural features visible include Bayview Hill, a steep natural hill west of the stadium, and San Bruno Mountain to the southwest. Views from the Project Site also capture Hunters Point Hill and Potrero Hill in the distance to the north and northeast. Views H and I (within **Figures 3.9-5 and 3.9-6**) and Views M and N (**Figure 3.9-8**) are examples of the "public opportunities to view scenic resources" from the Project Site, which the Proposed Action and the alternatives could affect.

Views toward the Project Site

Although the developed portion of the Project Site is on a small knoll, the development is low scale (approximately 25 feet) and is not visible from many offsite viewpoints. Primary views of the Project Site are from the CPSRA lands to the northeast (as illustrated in **Section 4.5**, Figure 4.9-5) and beyond, and from the streets that border the development, from up to approximately two blocks away. Views K and L (**Figure 3.9-7**) are examples of the "character or scale" of the Project Site viewed from public locations, which the Proposed Action and alternatives could affect.

Views across the Project Site

From areas surrounding the Project Site, there are limited views across the Project Site to scenic resources, except that Bayview Hill (west of Candlestick Park stadium) is visible from parts of the CPSRA along the South Basin as illustrated in **Section 4.5**, Figure 4.9-5. Views across the site are limited due to the low-lying nature of the surrounding areas and roadways, the approximate 25-foot height of the buildings within the developed and highest areas of the Project Site, and steep streets through the Project Site that interrupted long-range vistas. Views K and L (**Figure 3.9-7**) are examples of the lack of "public opportunities to view scenic resources" across the Project Site, which the Proposed Action and alternatives could affect.

0 250 500 Feet

Project Site

A Photo Location

SOURCE: The aerial photograph used for this figure is dated February 2011; Tetra Tech

Figure 3.9-1

Project Site and Context Photograph Locations

View (A) toward main entrance of Project Site, looking southeast along Fitzgerald Avenue

View (B) within Project Site, looking southeast from Cameron Way and Nichols Way Intersection

SOURCE: ESA

Alice Griffith Redevelopment Project Draft EIS . 211653

Figure 3.9-2

Project Site and Context Photograph Locations

View (C) within Project Site, along Nichols Way, looking southeast from Cameron Way

View (D) within Project Site, looking southwest along Cameron Way

SOURCE: ESA

Alice Griffith Redevelopment Project Draft EIS . 211653

Figure 3.9-3

Project Site and Context Photograph Locations

View (E) within Project Site, into Double Rock Cul-de-sac, looking southeast from Cameron Way

View (F) within Project Site, looking east along Griffith Street

SOURCE: ESA

Figure 3.9-4

Project Site and Context Photograph Locations

View (G) within Project Site, looking north along the 2400 Block of Griffith Street

View (H) within Project Site, looking east along Griffith Street

SOURCE: ESA

Figure 3.9-5

Project Site and Context Photograph Locations

View (I) across Project Site playground, looking east toward Potrero Hill (in background)

View (J) within Project Site, looking northwest along Cameron Way from Griffith Street

SOURCE: ESA

Figure 3.9-6

Project Site and Context Photograph Locations

View (K) toward Project Site, looking southeast along Donner Avenue

View (L) toward Project Site, looking southwest along Carroll Avenue (light industrial uses)

SOURCE: ESA

Figure 3.9-7

Project Site and Context Photograph Locations

View (M) looking north from Carroll Avenue, east of the Project Site (truck staging area)

View (N) of Gilman Playground from Gilman Avenue, south of Project Site (Candlestick Park in background)

SOURCE: ESA

Figure 3.9-8

Project Site and Context Photograph Locations

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3.10 Hydrology, Flooding and Water Quality

The following section discusses the affected environment for surface hydrology, flooding, surface water quality and groundwater quality.

3.10.1 Surface Hydrology and Drainage

The Bay Area climate is characterized by cool wet winters and mild dry summers. Temperature and precipitation averages vary greatly with elevation and distance from water. San Francisco, due to the fact that it is surrounded by water on three sides, is characterized by cooler summers, including frequent fog and low clouds from the Pacific Ocean. The average annual rainfall in the vicinity of the Project Site is 21.1 inches, primarily occurring from October to April.[1] Analysis of rainfall data indicates frequent periods of alternating wet and dry annual precipitation patterns, normally lasting a few years.

The portion of San Francisco Bay to the east-northeast of the Project Site is referred to as the San Francisco Bay Lower (Lower Bay) in the South Basin Hydrologic Planning Area.[2] Water features along the bayfront in the vicinity of the Project Site include India Basin, South Basin, Yosemite Slough, and Candlestick Cove. There are no creeks that flow into the bay in the vicinity of the Project Site, in part due to the long-developed physical environment of the neighborhood. Runoff into the bay occurs from stormwater outfalls and surface drainage.

The highest elevation of the Project Site is in the northern portion of the site as shown on **Figure 3.10-1**. As a result, the predominant drainage pattern is toward the southwest, south, and southeast. Most of the Project Site is developed with structures or paved areas, and therefore, there is little natural drainage. Stormwater runoff from the Project Site parcels drains into the City's combined sewer/stormwater drainage system, with the exception of the southernmost parcel owned by the City through the Recreation and Parks Department. This parcel is within the 47-acre area surrounding Candlestick Park stadium which discharges to a separate sewer system.

The combined sewer/stormwater drainage system is managed by the San Francisco Public Utilities Commission (SFPUC). This system combines stormwater runoff and wastewater flows and conveys them to facilities where they are treated prior to discharge. The Project Site discharges to east side facilities that discharge to the Lower Bay under a National Pollutant Discharge Elimination System permit. The combined sewer/stormwater drainage system is further discussed in **Section 3.8**, Public Services.

[1] Western Regional Climate Center, San Francisco Mission Dolores Station. Website: http://www.wrcc.dri.edu/, accessed August 2011.

[2] San Francisco Regional Water Quality Control Board, San Francisco Bay Basin Water Quality Control Plan (Basin Plan). As amended, July 14, 2010. Website: http://www.swrcb.ca.gov/rwqcb2/basin_planning.shtml, accessed August 2011.

SOURCE: Tetratech, City of San Francisco Elevation Datum

Figure 3.10-1
Topogrphy

The separate sewer system which serves the southernmost, non-SFHA parcel is maintained by the City Recreation and Park Department, including catch basins, piping, pump stations, and outfalls to the Bay. SFPUC provides assistance on outfall maintenance.

3.10.2 Surface Water Quality

The Lower Bay of San Francisco Bay has been identified as an impaired water body by the State Water Resources Control Board (SWRCB) as part of Sec. 303(d) of the Clean Water Act (CWA) because it does not meet the water quality requirements of (i) the San Francisco Regional Water Quality Control Board, San Francisco Bay Basin Water Quality Control Plan, as amended, July 14, 2010 (Basin Plan), (ii) the California Toxics Rule, or (iii) the National Toxics Rule for listed uses that are described as beneficial (industrial service supply; ocean, commercial and sport fishing; shellfish harvesting; estuarine habitat; fish migration; preservation of rare and endangered species; fish spawning; wildlife habitat; water contact recreation; non-contact water recreation; and navigation).[3] Pollutants identified in the Lower Bay are result of prior industrial uses along the Bay, as well as improperly treated runoff from a variety of current industrial, commercial, and other land uses. Candlestick Cove, off Candlestick Point, has been identified as an impaired water body for indicator bacteria. The potential sources of the bacteria could include nonpoint sources, and industrial and municipal point sources. A Total Maximum Daily Load (TMDL) for the entire San Francisco Bay has been developed for mercury and has been incorporated by amendment into the Basin Plan.

There are no active water quality monitoring stations either at the Project Site or in the Candlestick Point neighborhood. However, the SFPUC and the San Francisco Department of Public Health together conduct a shoreline beach quality monitoring program, consisting of year-round weekly sampling at 14 locations around the perimeter of the City. These sampling locations include three sites in the vicinity of Alice Griffith—one in the South Basin at Jack Rabbit Beach and two in Candlestick Cove at Sunnydale Cove and Windsurfer Circle.[4] These samples have indicated levels of coliforms exceeding targeted objectives (10,000 per 100 milliliters); however, because the samples are conducted in the Bay waters, they do not conclusively indicate any violations of stormwater discharge permits of unauthorized stormwater or wastewater releases.[5]

3.10.3 Flooding

The Federal Emergency Management Agency (FEMA) prepares Flood Insurance Rate Maps (FIRMs) that identify areas subject to flood inundation, most often from a flood having a one percent chance of occurrence in a given year (also known as a "base flood" or "100-year flood"). FEMA refers to the portion of the floodplain or coastal area that is at risk from floods of this magnitude as a Special Flood Hazard Areas (SFHA).

[3] EPA. 2006. CWA Section 303[d], List of Water Quality Limited Segments, June 28, 2007.

[4] San Francisco Regional Water Quality Control Board, San Francisco Bay Basin Water Quality Control Plan (Basin Plan). As amended, July 14, 2010. Website: http://www.swrcb.ca.gov/rwqcb2/basin_planning.shtml, accessed August 2011.

[5] Candlestick Point-Hunters Point Shipyard Phase II Project EIR, certified June 3, 2010.

No FIRMs have been formally published for the City and thus the base flood elevation for a 100-year flood event has not been formally established. FEMA issued a preliminary FIRM for the City on September 21, 2007, which tentatively identified SFHAs. The City has also drafted Interim Floodplain Maps with identified SFHAs.[6] The Project Site is not located within the preliminary SFHAs on either the FEMA preliminary FIRM or City's interim maps. The preliminary maps identified SFHAs in the Project Site vicinity, including shoreline areas of Yosemite Slough and portions of Candlestick Point, just east of the Candlestick Park football stadium.

The current average rate of sea level rise for the San Francisco Bay area is 0.0066 feet/year at the San Francisco tide station.[7] The San Francisco Bay Conservation and Development Commission has prepared maps for areas inundated by 16 inches of sea level rise by 2050 and 55 inches of sea level rise by 2100. As extrapolated from the BCDC projections in the Candlestick Point-Hunters Point Shipyard Phase II Project Environmental Impact Report (CP-HPS Project EIR), the 2075 mid-point, sea level rise would be about 36 inches or 3 feet, though estimates vary on the estimated sea level rise by 2100.[8] The CP-HPS Project EIR projected inundation zones given a 3-foot increase in sea level; the Project Site is located outside of the inundation area. In the Project Site vicinity, areas to the north and south are subject to inundation given a 3-foot sea level rise[9].

3.10.4 Groundwater Quality

Existing groundwater basins in the vicinity of the Project Site include the Islais Valley (Basin ID: 2-33, 9.2 square miles), South San Francisco (Basin ID: 2-37, 3.4 square miles), and Visitacion Valley (Basin ID: 2-32, 9 square miles).[10] The primary sources of water recharge into the groundwater basins include rainfall infiltration, landscape irrigation runoff, and leakage from water, wastewater, and storm drain pipes. These basins have generally maintained stable groundwater levels, in part because they are not used for domestic water supply.[11]

According to the Basin Plan, the groundwater basins in the vicinity of the Project Site are not considered suitable as a potential domestic water supply due to point and nonpoint sources of pollution and contamination. The water beneath the Project Site flows easterly toward the bay. Land uses in the vicinity of the Project Site, including the truck storage area and adjacent light industrial uses along Carroll Avenue, may use solvents and other industrial liquids that can seep into groundwater areas. The truck storage area includes visible pavement surface oils and fuels from trucks that can seep into sewers and gutters and potentially contaminate groundwater areas.

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[6] City and County of San Francisco, Risk Management, San Francisco Interim Floodplain Maps, July 2008. Website: http://sfgsa.org/index.aspx?page=828, accessed November 2011.

[7] National Oceanic and Atmospheric Administration (NOAA), NOAA Tides and Currents. Mean Sea Level Trend 9414290 San Francisco, California 1887-2006, website: http://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=9414290, accessed September 18, 2009.

[8] Candlestick Point-Hunters Point Shipyard Phase II Project EIR, certified June 3, 2010. Pg III.M-15

[9] Ibid. Figure III.M-5

[10] San Francisco Regional Water Quality Control Board, San Francisco Bay Basin Water Quality Control Plan (Basin Plan). As amended, July 14, 2010. Website: http://www.swrcb.ca.gov/rwqcb2/basin_planning.shtml, accessed August 2011.

[11] Ibid.

Furthermore, possible saltwater interaction with groundwater areas is possible due to high tides and natural ebbing of the bay shoreline. The composition of fill material at the Project Site and in the vicinity may have contributed to groundwater contamination through the introduction of asbestos and lead-based paint particles through the soil into the groundwater. Groundwater sampling at several locations in Candlestick Point has indicated low volume levels of organic compounds.

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3.11 Traffic and Transportation

The following section describes the transportation study area including roadways, intersections, public transit, and pedestrian/bicycle facilities that could be measurably affected by the Proposed Action and alternatives. **Figure 3.11-1** presents the transportation study area and the intersection analysis locations. Existing conditions data is derived from the project-specific traffic analyses in **Appendix C**.[1]

3.11.1 Roadways and Traffic

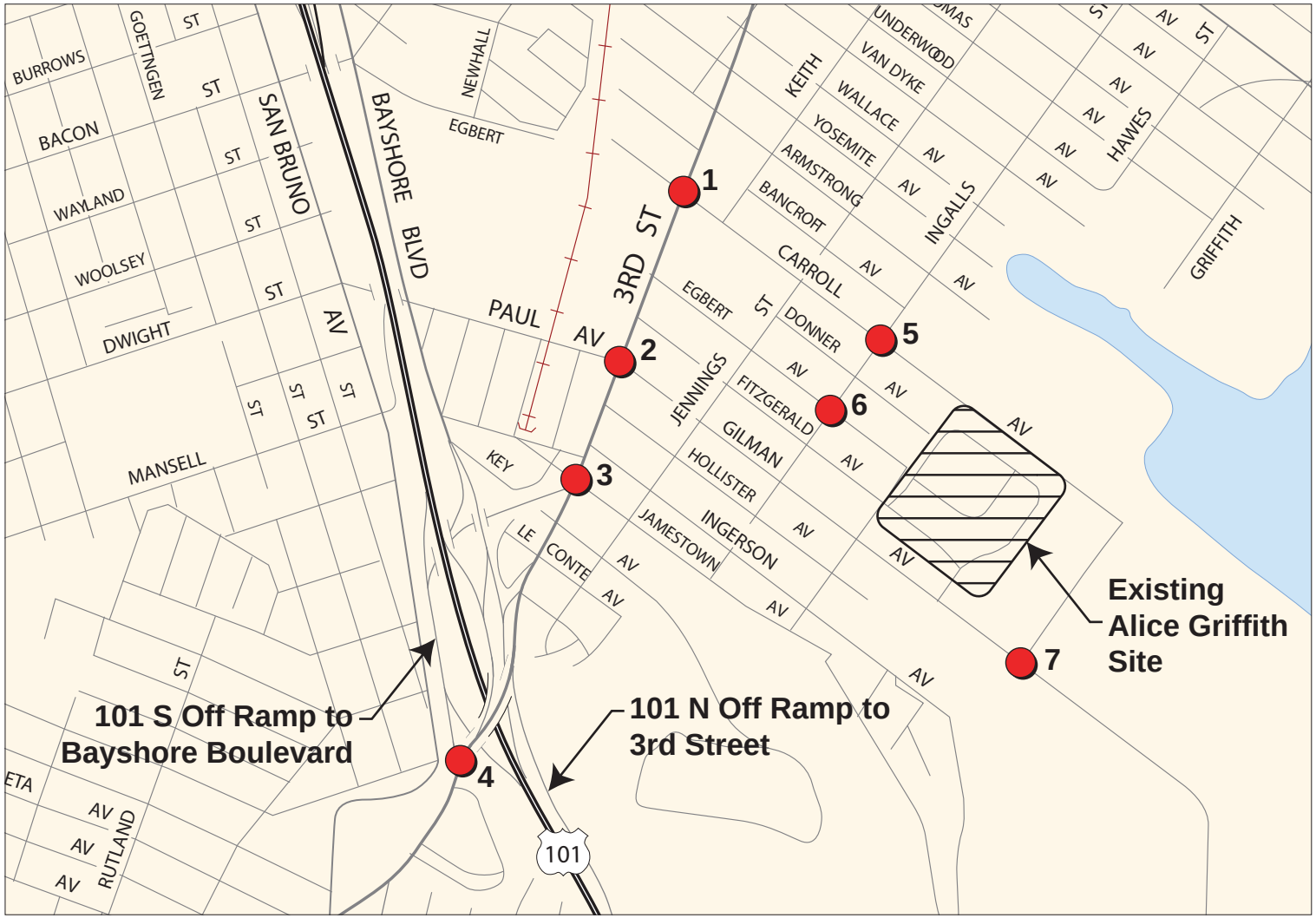
Key Area Roadways

US Highway 101 (US 101) is generally a north/south freeway, connecting San Francisco with the Peninsula and beyond to the south and with Marin County and beyond to the north. Between its junctions with Interstate 80 (I-80) to the north and I-280 to the south, US 101 is an eight- to ten-lane limited-access freeway. US 101 has both northbound and southbound on- and off-ramps at Harney Way and Beatty Avenue. US 101 has a southbound off-ramp at Paul and San Bruno Avenues. US 101 is one of the most heavily used corridors in the Bay Area. US 101 and I-280 merge approximately two miles north of Candlestick Point, a common location of congestion during weekday commute periods and before and after football games at Candlestick Park.

Third Street is the principal north-south roadway in the southeast part of San Francisco, extending from its interchange with US 101 and Bayshore Boulevard, to its intersection with Market Street. It is the main commercial street in Bayview Hunters Point and also serves as a through street and access to the industrial areas north and east of US 101. In the vicinity of the Project Site, Third Street has two travel lanes in each direction. The T-Third light rail route operates in an exclusive median right-of-way, with the exception of the segment between Kirkwood and Thomas Avenues, where the light rail shares one travel lane in each direction with vehicles. In the San Francisco General Plan, Third Street is designated as a Major Arterial, as a Transit Preferential Street (TPS), and as a route with significant truck traffic (between Jerrold Avenue and Fourth Street).

Carroll Avenue is an east-west roadway between Third Street and Arelious Walker Drive. Carroll Avenue has one eastbound lane and two westbound lanes; it has a right-of-way width of 80 feet, discontinuous sidewalks, and, due to the rail tracks, no sidewalk on the south side, between Jennings and Third Streets. Between Ingalls and Hawes Streets there are no sidewalks on the north side of the street, and between Hawes and Griffith Streets there are no sidewalks on either side of the street. Sidewalk accommodations to the east of Ingalls Street are generally discontinuous or are frequently obstructed by parked vehicles. On-street parking is permitted west of Ingalls Street. The San Francisco General Plan identifies Carroll Avenue as a street with significant truck traffic. Carroll Avenue is a part of Bicycle Route #805. Between Arelious Walker Drive and Ingalls Street, Carroll Avenue is part of the unimproved on-street Bay Trail.

[1] Fehr & Peers, *Near-Term and Cumulative Traffic Analysis for the Alice Griffith Project in San Francisco, CA*. May 3, 2010.



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1 Study Intersections

SOURCE: Fehr and Peers, 2010

Figure 3.11-1
Traffic Study Area

As part of the Candlestick Point-Hunters Point Shipyard Phase II (CP-HPS) Project, Carroll Avenue will be reconstructed as an Industrial/Mixed-Use[2] street, with four vehicle travel lanes, 6-foot bicycle lanes, and 12-foot sidewalks on the north and south sides of the street. Although the timeline of this improvement has yet to be determined, roadways will be improved at a level commensurate with adjacent land uses to ensure the efficient performance of the transportation network from the perspective of vehicles, transit, pedestrians, and bicyclists.

Gilman Avenue is an east-west street between Third Street and Giants Drive/Hunters Point Expressway. Gilman Avenue has one eastbound travel lane and two westbound lanes, and on-street parking is generally permitted. As with Jamestown and Ingerson Avenues, commercial vehicles weighing more than 6,000 pounds are prohibited from Gilman Avenue between Third and Fitch Streets, except for local service.

Arelious Walker Drive (previously named Fitch Street) is a north-south discontinuous roadway that is divided by the Yosemite Slough and Hunters Point Hill. Arelious Walker Drive runs between Gilman and Carroll Avenues, between Shafter and Palou Avenues, and between Innes and Galvez Avenues. Like other north-south streets in the vicinity, the Arelious Walker Drive alignment has a 64-foot-wide right-of-way with room for two 10-foot-wide sidewalks (presently unpaved). This street serves as an alternative way to access the northern unpaved privately owned parking lots used for stadium parking. Arelious Walker Drive between Gilman and Carroll Avenues is part of Bicycle Route #805 and is part of the unimproved on-street Bay Trail.

As part of the CP-HPS Project, Arelious Walker Drive, immediately east of the Project Site will be reconstructed as a Commercial Throughway[3] street with four vehicle travel lanes and on-street parallel parking, 6-foot bicycle lanes and 15-foot sidewalks on the east and west sides of the street. Although the timeline of this improvement has yet to be determined, roadways will be improved at a level commensurate with adjacent land uses to ensure the efficient performance of the transportation network from the perspective of vehicles, transit, pedestrians, and bicyclists.

Bayshore Boulevard is a north-south arterial that generally parallels US 101. Bayshore Boulevard has three travel lanes in each direction, separated by a median. The San Francisco General Plan designates Bayshore Boulevard as a Major Arterial, part of the Metropolitan Transportation System (MTS) Network, a Secondary TPS (other – secondary), and a Neighborhood Commercial Street (City and County of San Francisco 2010b). Bayshore Boulevard is part of Bicycle Routes #25 and #5. The T-Third light rail line runs on an exclusive median right-of-way on Bayshore Boulevard, between Hester Avenue and Sunnydale Avenue.

Griffith Street is a north-south discontinuous roadway that is divided by Yosemite Slough. On the southern side of the slough, Griffith Street runs between Gilman Avenue and Cameron Way. North of the Slough, Griffith Street extends from Navy Road south to Thomas Avenue. Between Thomas Avenue and the Slough, Griffith Street is an unimproved dirt road. The San Francisco General Plan identifies Griffith Street between Thomas Avenue and Crisp Avenue as a street with significant truck traffic.

[2] Street type based on typology developed in the City of San Francisco Better Streets Plan, December 2010.
[3] See note 2.

Ingalls Street is a north-south roadway between Jamestown Avenue and Innes/Middle Point. Ingalls Street has one travel lane in each direction, and on-street parking and sidewalks on both sides. Ingalls Street has narrow sidewalks and very wide travel lanes between Yosemite Avenue and Thomas Avenue. Before the Navy's closure of the Hunters Point Shipyard, Ingalls Street was part of the designated truck route between Carroll Avenue and the south (Crisp) gate at Palou Avenue. The San Francisco General Plan identifies Ingalls Street between Carroll and Thomas Avenues as a street with significant truck traffic. Ingalls Street between Carroll and Yosemite Avenues is part of the unimproved on-street Bay Trail.

Ingerson Avenue is an east-west street between Third Street and Giants Drive. Ingerson Avenue has one travel lane in each direction, and on-street parking is permitted. Commercial vehicles weighing more than 6,000 pounds are prohibited on Ingerson Avenue between Third Street and Arelious Walker Drive, except for local service.

Jamestown Avenue is an east-west street between Third Street and Hunters Point Expressway. West of Redondo Street, Jamestown Avenue has one travel lane in each direction. East of Redondo Street to Giants Drive, there is a substantial change in width as Jamestown Avenue increases to one lane in the eastbound direction and two lanes in the westbound direction. Commercial vehicles weighing more than 6,000 pounds are prohibited from using Jamestown as a through route. On-street parking is generally permitted. Jamestown Avenue provides access to Bayview Park and the Candlestick Point Recreation Area and is identified in the San Francisco General Plan as a Recreational Street.

Internal Streets

The Project Site is currently served by two interior loop roads (Griffith Street and Cameron Avenue) serving residences and an access road (Fitzgerald Avenue). As part of the Proposed Action and CP-HPS Project, the street grid that surrounds the existing Project Site (Donner Avenue, Egbert Avenue, and Fitzgerald Avenue) would be extended through the site.

Baseline

Seven existing intersections and two freeway on- and off-ramps in the study area were identified as key locations that could most likely be impacted by the project, and these were selected for detailed study of the project impacts.

Intersection Operations

Traffic conditions at the study intersections were evaluated using level of service (LOS), which is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or congested conditions with excessive delays. **Table 3.11-1** defines each of the levels of service and shows the correlation between average control delay and level of service.

TABLE 3.11-1
LOS DEFINITIONS FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS

Control/ LOS	Description of Operations	Average Control Delay (seconds per vehicle)
Signalized		
A	No adverse delays: No approach phase is fully used, and no driver waits longer than one red light.	≤ 10
B	Minimal delays: An occasional approach phase is fully used. Drivers begin to feel restricted.	> 10.0 and ≤ 20.0
C	Acceptable delays: Major approach phase may become fully used. Most drivers feel somewhat restricted.	> 20.0 and ≤ 35.0
D	Tolerable delays: Drivers may wait through no more than one red light. Queues may develop but dissipate rapidly without excessive delays.	> 35.0 and ≤ 55.0
E	Adverse delays: Volumes approaching capacity. Drivers may wait through several signal cycles, and long queues form upstream.	> 55 and ≤ 80
F	Excessive delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80.0
Unsignalized		
A	No delay for STOP-controlled approach.	≤ 10.0
B	Operations with minor delays.	> 10.0 and ≤ 15.0
C	Operations with moderate delays.	> 15 and ≤ 25.0
D	Operations with some delays.	> 25.0 and ≤ 35.0
E	Operations with high delays and long queues.	> 35.0 and ≤ 50.0
F	Operations with extreme congestion, with very high delays and long queues.	> 50.0

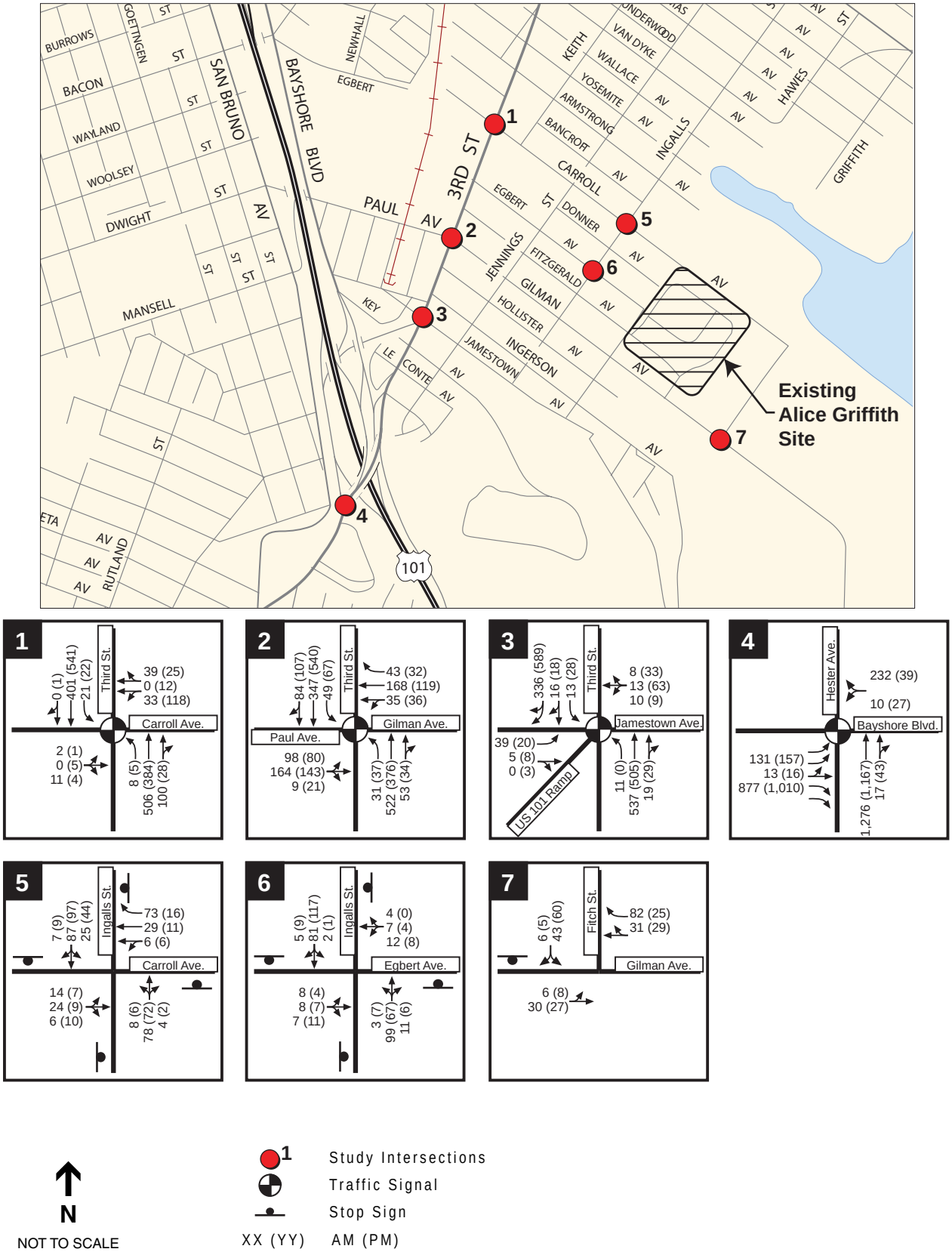
LOS = level of service

SOURCE: US Transportation Research Board,, *Highway Capacity Manual*, last amended July 2010.

Existing conditions at the study intersections were analyzed for weekday AM (8:00 to 9:00 AM) and PM (5:00 to 6:00 PM) peak hour conditions. The weekday AM and PM peak hours are considered the current typical morning and evening commute periods, when roadway traffic is generally highest. This analysis considers typical weekday conditions, which are defined as a non-holiday or special event midweek day when area schools are in session and transportation conditions do not represent a special event (such as concerts or football games at Candlestick Park). Special events are infrequent and any additional traffic generated by these events would not represent the typical conditions experienced by residents on a day-to-day basis.

The following study intersections were analyzed for weekday AM and PM peak hour conditions (**Figure 3.11-2**):

- **Third Street/Carroll Avenue (1).** This intersection was selected for analysis because it is expected that Project-generated traffic will use several directional movements, including the westbound left- and right-turn movements leaving the project, the southbound left-turn movement and northbound right-turn movement accessing the project, and the northbound and southbound through movements for both accessing and leaving the Project Site. Additionally, the T-Third light rail line travels in a separate right-of way in the center of Third Street through this intersection.



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1 Study Intersections
Traffic Signal
Stop Sign
XX (YY) AM (PM)

SOURCE: Fehr and Peers, 2010

Figure 3.11-2
Existing Weekday
Peak Hour Traffic Volumes and Land Configurations

- **Third Street/Gilman Avenue-Paul Avenue (2).** This intersection was selected for analysis because it is expected that Project Site traffic will use several directional movements, including the westbound left-turn, through, and right-turn movements and southbound right-turn movement leaving the Project Site, the southbound left-turn movement, eastbound through and right-turn movement, and northbound right-turn movement accessing the Project Site, and the northbound and southbound through movements for both accessing and leaving the Project Site. Additionally, the T-Third light rail line travels in a separate right-of way in the center of Third Street through this intersection, and the 29-Sunset bus line crosses Third Street.

- **Third Street/Jamestown Avenue (3).** This intersection was selected for analysis because Project-generated traffic is expected to use several directional movements, including the southbound right-turn movement leaving the Project Site and the northbound through movement accessing the Project Site. Additionally, the T-Third light rail line travels in a separate right-of way in the center of Third Street through this intersection.

- **Bayshore Boulevard/Hester Avenue/US 101 southbound off-ramp (4).** This intersection was selected for analysis because Project-generated traffic is expected to use several directional movements, including the eastbound right-turn movement leaving the Project Site and the northbound through movement and eastbound left-turn movement accessing the Project Site. Additionally, the T-Third light rail line travels in a separate right-of-way in the center of Third Street through this intersection.

- **Ingalls Street/Carroll Avenue (5).** This intersection was selected for analysis because it is next to the project, and Project-generated traffic is expected to use several directional movements, including the westbound through movement and northbound through movement leaving the Project Site and the eastbound through movement and southbound through movement accessing the Project Site.

- **Ingalls Street/Egbert Avenue (6).** This intersection was selected for analysis because it is next to the Project Site, and Project-generated traffic is expected to use several directional movements, including the westbound through movement leaving the Project Site and the eastbound through movement accessing the Project Site.

- **Arelious Walker Drive/Gilman Avenue (7).** This intersection was selected for analysis because it is next to the Project Site, and Project-generated traffic is expected to use several directional movements, including the eastbound through and left-turn movement and the southbound left-turn movement leaving the Project Site and the westbound through and left-turn movement and southbound right-turn movement accessing the Project Site. Additionally, the 29-Sunset bus line travels along Gilman Avenue.

Existing operating conditions for local intersections are provided in **Table 3.11-2**. The study intersections currently operate at an acceptable LOS during the AM and PM peak hours, with average vehicle delay under 28 seconds and LOS of C or better.

TABLE 3.11-2
INTERSECTION OPERATIONS – PROPOSED ACTION

Intersection	Control	Peak Hour	Existing	
			Delay*	LOS**
Third Street/Carroll Avenue	Signal	AM	12	B
		PM	14	B
Third Street/Gilman and Paul Avenues	Signal	AM	27	C
		PM	24	C
Third Street/Jamestown Avenue	Signal	AM	13	B
		PM	14	B
Bayshore Blvd./Hester Ave./US 101 SB	Signal	AM	28	C
		PM	13	C
Ingalls Street/Carroll Avenue	All-way stop	AM	8 (SB)	A
		PM	8 (SB)	A
Ingalls Street/Egbert Avenue	All-way stop	AM	8 (SB)	A
		PM	8 (SB)	A
Arelious Walker/Gilman Avenue	Side-street stop	AM	9 (SB)	A
		PM	9 (SB)	A

*Delay measured in seconds per vehicle.
**For stop-controlled intersections, delay and LOS presented for worst approach.
SOURCE: Fehr & Peers, 2010.

Ramp Operations

A ramp junction analysis was conducted to determine the operating conditions for ramp volumes merging with the freeway mainline traffic flow. Freeway ramps were evaluated using the *Highway Capacity Manual 2000* method for ramp merge and diverge conditions (Transportation Research Board 2000). Service levels at the on- and off-ramps are determined based on density, as calculated using the freeway volumes and the ramp volumes at each study location. The operating characteristics of the ramps are described using the concept of LOS (see **Table 3.11-3**).

TABLE 3.11-3
LOS DEFINITIONS FOR FREEWAY RAMP JUNCTION

LOS	Maximum Density (passenger cars per mile per lane)	
	Basic Freeway Sections	Freeway Ramp Junctions
A	< 11	< 10
B	> 11 to 18	> 11 to 20
C	> 18 to 26	> 20 to 28
D	> 26 to 35	> 28 to 35
E	> 35 to 45	> 35
F	> 45	Demand exceeds capacity

SOURCES: US Transportation Research Board, *Highway Capacity Manual*, 2010; Jack E. Leisch & Associates 1983.

The following freeway ramp junctions were analyzed for weekday AM and PM peak hour conditions (shown on **Figure 3.11-1**):

- **US 101 Southbound Off-Ramp to Bayshore Boulevard.** This ramp junction was selected for analysis because Project-generated traffic is expected to exit the southbound US-101 freeway at this location in order to access the Project Site.
- **US 101 Northbound Off-Ramp to Third Street.** This ramp junction was selected for analysis because Project-generated traffic is expected to exit the northbound US-101 freeway at this location in order to access the Project Site.

Existing freeway ramp operations are included in **Table 3.11-4**. During the weekday AM and PM peak hours, all of the ramps operate at LOS D or better.

TABLE 3.11-4
RAMP JUNCTION OPERATIONS – PROPOSED ACTION

		Existing	
Ramp Junction	**Peak Hour**	**LOS**	**Density***
1. SB US 101 off-ramp to Bayshore Boulevard	AM	D	31
	PM	D	30
2. NB US 101 off-ramp to Third Street	AM	D	30
	PM	D	35

*Density of vehicles measured in passenger cars per mile per lane; ramp junctions operating at LOS E or LOS F conditions highlighted in **bold.**

SOURCE: Fehr & Peers, 2010.

3.11.2 Public Transportation

This section describes the transit network in the transportation study area. The study area is served by public transit routes providing cross-town, community, downtown, and regional service. Local service in the study area is provided by the San Francisco Municipal Railway (Muni) bus and light rail lines, which can be used to access regional transit operators. Service to and from the East Bay is provided by Bay Area Rapid Transit (BART), Alameda-Contra Costa Transit District (AC Transit) and ferries; service to and from the North Bay is provided by Golden Gate Transit buses and ferries; and service to and from the Peninsula and South Bay is provided by Caltrain, San Mateo County Transit District (SamTrans), and BART. Each of these regional services can be accessed by local transit serving the study area.

Two transit lines closest to the Project Site were analyzed. The Muni bus line 29 Sunset travels between Gilman Avenue and Third Street near the Project Site, and provides service to the Outer Mission, Ingleside, Outer Sunset, and Outer Richmond districts. It serves the Balboa Park BART Station, City College of San Francisco, San Francisco State University, and Golden Gate Park. The Muni T Third is a light rail line that operates just north of the Project Site along Third Street, and provides service to Downtown San Francisco. The route serves all the Muni and BART stations along Market Street in Downtown in addition to the Fourth Street Caltrain terminal and operates in close proximity to the Bayshore Caltrain Station to the south of the study area.

Existing Muni transit service to and from the study area is summarized in **Table 3.11-5**. As shown in Table 3.11-5, Muni service near the Project Site operates below Muni's established capacity utilization standard of 85 percent.

TABLE 3.11-5
EXISTING MUNI TRANSIT SERVICE TO STUDY AREA

			Ridership*	Capacity Utilization**	Maximum Load Point
Route	Peak Hour	Frequency (in Minutes)	Inbound (Outbound)	Inbound (Outbound)	Inbound (Outbound)
29 Sunset	AM	10	321 (142)	84% (57%)	Balboa Park BART (Ocean/Geneva) Persia/Mission (19th/Holloway)
	PM	10	124 (160)	33% (42%)	
T Third	AM	8.5	336 (512)	35% (54%)	4th/King (Third/Evans) 4th/King (4th/King)
	PM	8.5	333 (369)	35% (39%)	

*Ridership at the maximum load point.
Lines operating above Muni standard capacity utilization are highlighted in **bold.
SOURCE: Fehr and Peers, *Candlestick Point-Hunters Point Phase II Project Transportation Study, Final Report*. November 9, 2009.

BART operates regional rail transit service in the metropolitan Bay Area connecting San Francisco with the East Bay and northern San Mateo County. BART does not provide direct service into the Project Site. Transit connections can be made to the Balboa Park station via Muni line 29-Sunset. Caltrain provides rail passenger service on the Peninsula between Gilroy and San Francisco. The Bayshore station is the closest active Caltrain station to the study area and is located in in Brisbane.

As mentioned earlier, the CP-HPS Project would expand and enhance the public transportation network near the Project Site. This would include a new bus rapid transit route, new downtown express bus routes, and increased service for several Muni bus routes, including the 29 Sunset and T Third, which serves the Project Site. The CP-HPS Project would include the following transit improvements, which were assumed as part of the future transportation system:

- Extending Muni routes to better serve the Project Site
- Increasing frequencies on existing routes to provide more capacity
- Providing new transit facilities and routes to the Project Site

Also included in the CP-HPS Project, new direct transit service is proposed to serve commuter trips to downtown San Francisco. Connections to the regional transit network (BART and Caltrain) would serve employment centers in the South Bay and the East Bay. Many of the proposed transit lines would include transit priority systems that would use sensors to detect approaching transit vehicles to alter signal timings and improve transit efficiency. The proposed transit improvements nearest to the Project Site are as follows:

- The 29-Sunset would be extended from its current terminus near the Alice Griffith Public Housing, near Gilman Avenue and Giants Drive, into the proposed Candlestick Point retail area and would increase its frequency by reducing headways between buses from

10 minutes to 5 minutes during the am and pm peak hours. A new short line of the 29-Sunset would also operate between the Project Site and Balboa Park Station.

- The T-Third service between Bayview and Chinatown via the Central Subway would convert from one-car to two-car trains, but headways would remain unchanged. The ultimate service for the T-Third is under study by the (San Francisco Municipal Transportation Agency) SFMTA as part of implementation of the Central Subway project, and may change. The information included in this study reflects discussions with SFMTA staff and the best available information at the time.

The phasing of the above transit improvements will be based on criteria identified with the CP-HPS Project Disposition and Development Agreement. This document is reflects the commitments agreed to by the CP-HPS developer and Muni to ensure that the development of the CP-HPS site (including the Project Site) would not lead to adverse transit capacity use or delay impacts. These criteria can be referenced in the Candlestick Point-Hunters Point Shipyard Transit Operating Plan, May 2010.[4]

3.11.3 Pedestrian and Bicycle Conditions

Pedestrian Conditions

The on-site residential streets do not connect directly to Carroll Avenue or Gillman Avenue; rather, there are only two connections, via Fitzgerald Avenue and Griffith Street. Within the Project Site, there are sidewalks on both sides of the street. These streets experience lower volumes of traffic compared to the surrounding area.

Bicycle Conditions

There are several bicycle facilities in the study area, including municipal routes, which are part of the San Francisco Bicycle Network, and regional routes, which are part of the San Francisco Bay Trail system. Bikeways are typically Class I, Class II, or Class III facilities. Class I bikeways have exclusive rights-of-way for bicyclists and pedestrians; Class II bikeways are striped areas of roadways and are for the preferential use of bicyclists; Class III bikeways are signed bike routes where bicyclists share travel lanes with motor vehicles**.**

The following bicycle facilities are closest to the Project Site. Route #5 is the eastern-most north-south bicycle route. It runs primarily as a Class III facility along Bayshore Boulevard, Third Street, and Illinois Street and as a Class II facility along The Embarcadero and San Bruno Avenue. Route #7 is a Class III bike route, with a southern terminus at Keith Street and Carroll Avenue at the Bayview Playground and Martin Luther King, Jr., Pool. Connector Route #805 is a Class III facility that provides a connection between Beatty Avenue and Tunnel Avenue (near the Bayshore Caltrain Station) in Brisbane and Third Street and Carroll Avenue in the Bayview Hunters Point area. The San Francisco Bay Trail is designed to create recreational pathway links to the various commercial, industrial, and residential neighborhoods that surround the San Francisco Bay. The CP-HPS Project includes development of the Bay Trail along the shoreline, through Candlestick Point and Hunters Point Shipyard and portions of the regional Bay Trail.

[4] Fehr & Peers, *Candlestick Point-Hunters Point Shipyard Transit Operating Plan*, May 2010.

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3.12 Geology and Soils

Geology and soils are part of the physical environment of the Project Site. The geologic environment includes the rock formations and soils that underlie the Project Site and may be disturbed or otherwise affected by the Proposed Action and alternatives, as well as geologic processes such as seismicity, erosion, and soil settlement that may affect the Proposed Action and alternatives.

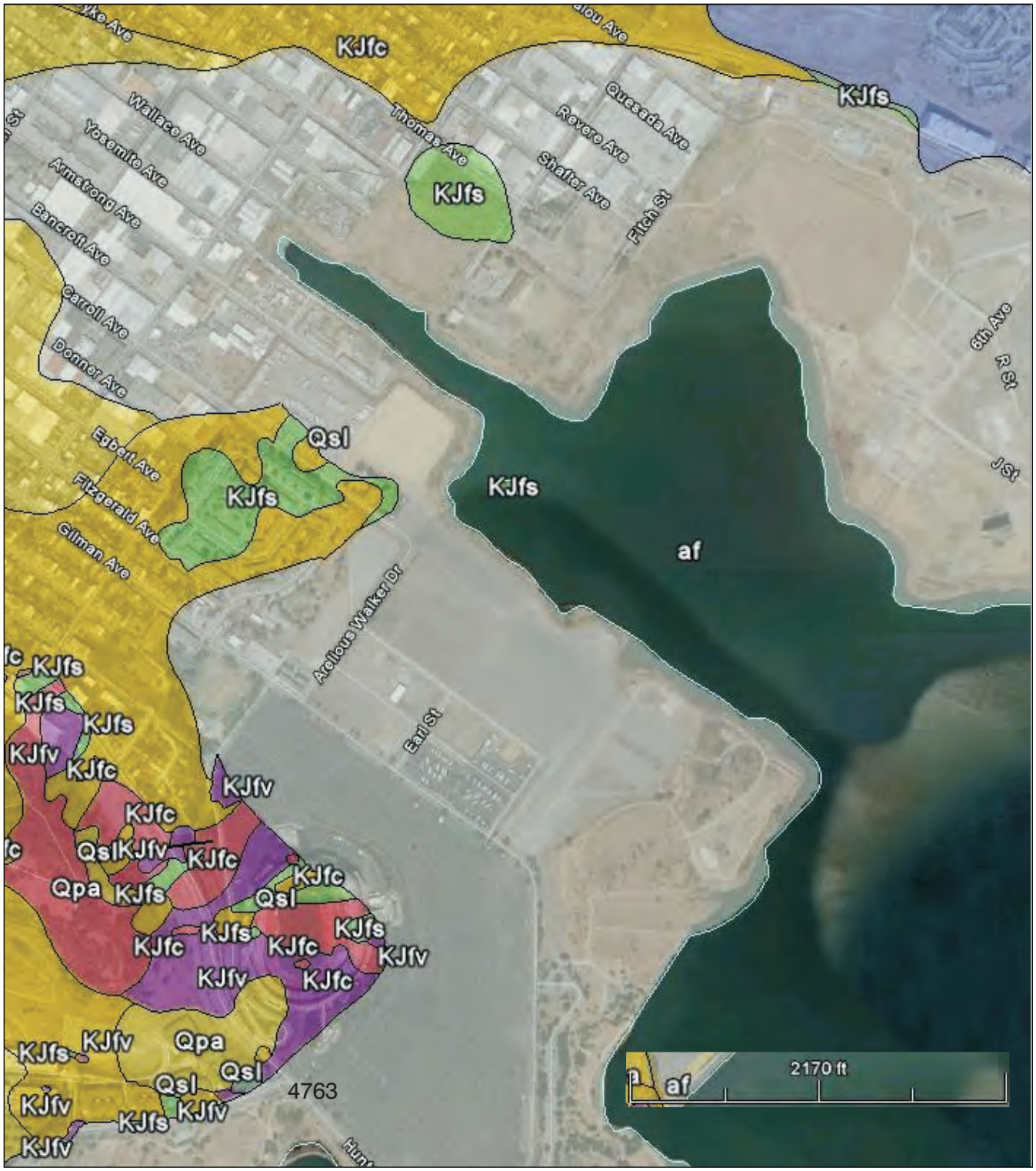
3.12.1 Geology

Physiographic Setting

The Project Site is underlain by bedrock of the Franciscan Complex, which comprises much of the basement rock of the Coast Ranges of California east of the San Andreas Fault.[1] The knoll, roughly bounded by Hawes Street, Fitzgerald Avenue, Cameron Way, and Griffith Street and elongated in the direction of Double Rock in South Basin, is an outcrop of Franciscan bedrock (**Figure 3.12-1**). Franciscan rocks represent material of different origins and ages that was scraped from subducting oceanic crust onto the North American continental plate during the Mesozoic and Cretaceous Eras (the age of dinosaurs). The Franciscan rocks underlying the Project Site consist of greywacke sandstone and shale (labeled "KJs" on Figure 3.12-1) and are thought to be part of the 100- to 200-million-year-old Marin Headlands terrane, a northwest-trending band of mainly sedimentary rocks that were originally deposited in coastal waters. Elsewhere the Franciscan Complex includes chert, greenstone, serpentine, and a mixture of sheared rocks called mélange. For example, north of Yosemite Slough, the Marin Headlands terrane is bounded by the Hunters Point Shear Zone, a northwest-trending but inactive fault zone containing large bodies of serpentinite.[2,3]

Around the perimeter of the existing housing complex, the Franciscan bedrock is overlain by an apron of unconsolidated slope debris and ravine fill derived from upslope areas and deposited during the past 10,000 years. Within the Project Site, these deposits consist mainly of sandy clay and clayey sand that are dense and slightly cemented.[4] The Franciscan bedrock generally slopes down to the north and east and may be up to about 40 feet below mean sea level under parts of Arelious Walker Drive. Sea levels have risen and fallen over the centuries, so the slope debris deposits may rest on, and are probably interbedded with, Bay Mud deposits.[5]

[1] Jennings, C. W., with modifications by Gutierrez, C., Bryant, W., Saucedo, G., and Wills, C. Geologic map of California: California Geological Survey, Geologic Data Map No. 2, scale 1:750,000.
[2] Elder, W.P. Geology of the Golden Gate Headlands. Field Trip 3, in: Geology and Natural History of the San Francisco Bay Area, A Field-Trip Guidebook, 2001 Fall Field Conference National Association of Geoscience Teachers, Far Western Section September 14–16, 2001 Menlo Park, California. U.S. Geological Survey Bulletin 2188, Philip W. Stoffer and Leslie C. Gordon, Editors.
[3] Bonilla, M.G. 1998. Preliminary Geologic Map of the San Francisco South 7.5 Minute Quadrangle and Part of the Hunters Point 7.5 Minute Quadrangle, San Francisco Bay Area, California: a Digital Database. U.S. Geological Survey Open File Report OF-98-354.
[4] ENGEO Incorporated. 2009 Preliminary Geotechnical Report, Hunters Point Shipyard Phase II and Candlestick Point, San Francisco, California. Submitted to Lennar Urban, San Francisco, California. May 21, 2009.
[5] Bonilla. 1998.



Note: Boundaries of geologic units are approximate.

af = artificial fill
Qsl = Hillslope deposits (Quaternary)
Qpa = Alluvium (Pleistocene)
KJfs = Franciscan Complex sedimentary rocks
KJfc = Franciscan Complex chert
KJfv = Frnaciscan Complex volcanic rocks
Jsp = serpentinite

SOURCE: Google Earth Pro 2011;
US Geologic Survey 2006; Tetra Tech

Figure 3.12-1
Geology of Site Vicinity

Until the 1950s, the shoreline of San Francisco Bay extended approximately up to what is now Griffith Street and Carroll Avenue. As a result, young Bay Mud, consisting of organic-rich silts and clays, overlies the slope debris deposits to the north and east of these streets.[6]

During the 1950s, the marshlands and shallow bay waters to the north and east of the Project Site were filled to create new land, so imported fill materials, typically consisting of sand and gravel but also including rock and debris from many different sources, were deposited over the Bay Mud. The thickness of these artificial fill materials generally increases to the east and may be about 20 feet thick under portions of Arelious Walker Drive.[7]

Topography

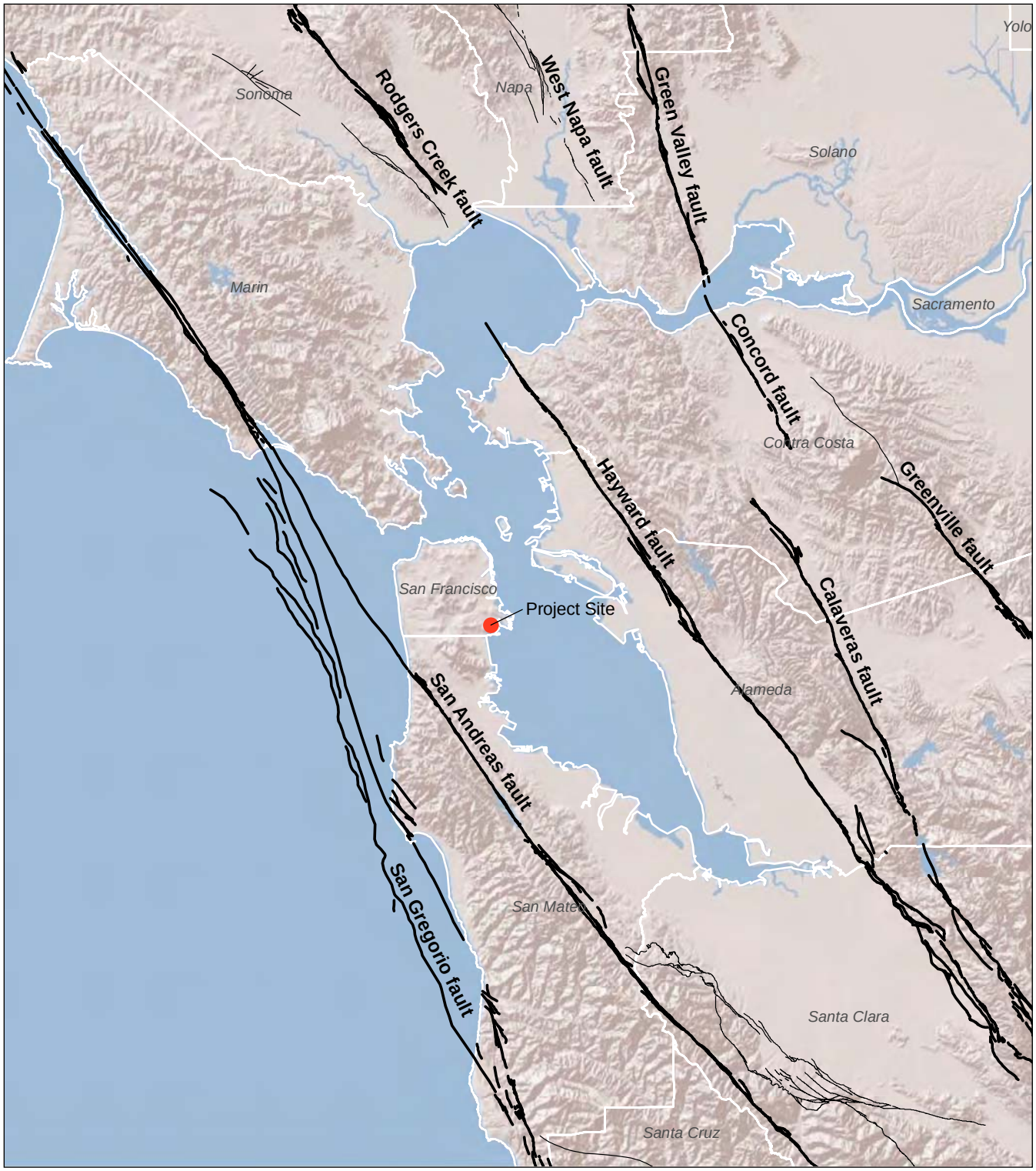
The west half of the Alice Griffith housing complex is on a low knoll that rises to a little more than 75 feet above mean sea level, based on the 1929 National Geodetic Vertical Datum (NGVD) of 1929, as indicated on the US Geological Survey San Francisco South, 7.5-minute topographic quadrangle map.[8] Since the City datum is approximately 8.6 feet lower than the 1929 NGVD, the highest elevation at the Project Site would therefore be about 66 feet with respect to the City datum. The lowest elevation on the Project Site is about 0 feet with respect to the City datum, or slightly less than 10 feet above mean sea level NGVD. Slopes within the Project Site range from nearly level along the east side of the Project Site to about 20 percent in the west, with steeper slopes in some areas on the perimeter of the existing housing area.

Earthquakes and Faults

The Bay Area is a seismically active region, containing multiple northwest-trending strike-slip faults associated with the boundary between the North American continental plate and the Pacific Oceanic Plate, in which the Pacific Plate is moving northward relative to the North American Plate at an average rate of several centimeters per year. Although most of the relative plate movement is slippage parallel to the continental margin, compressional forces also push the plates together in an east-west direction, resulting in some vertical movement (hence the formation of the Coast Ranges) and a broad band of faults that generally parallel the margin of the continent. The movement is typically not uniform over time but occurs episodically, as strain builds up in "locked" sections of faults and is suddenly released when the frictional resistance of the rocks is overcome, sometimes resulting in large earthquakes.

Alquist-Priolo Earthquake Fault Zones have not been mapped within the boundaries of the Project Site.[9] As shown in **Figure 3.12-2**, the two principal faults active within the past 200 years nearest the Project Site are the San Andreas Fault, approximately seven miles west, and the Hayward Fault, approximately 12 miles east. Both are capable of producing large earthquakes. Other Quaternary (active in the past 11,700 years) or historically active strike-slip faults in the region are: the Serra Fault Zone, a splinter of the San Andreas Fault just east of the San Andreas Fault; the Seal Cove

6 MACTEC Engineering and Consulting, Phase I Environmental Site Assessment, Candlestick Point Area. Prepared for Lennar Urban – Bay Area Division. June 16, 2009.
7 ENGEO, 2009.
8 US Geological Survey, San Francisco South Quadrangle California. 7.5 Minute Series.
9 State of California, Special Studies Zones, San Francisco South, revised official map, effective January 1, 1982.



SOURCE: U.S. Geological Survey (California Geological Survey), 2006, Quaternary failt and fold database for the United States, accessed DATE, from http://earthquakes.usgs.gov/regional/qfaults/; Tetra Tech

Figure 3.12-2
Regional Faults

and San Gregorio Faults west of the San Andreas Fault; the Calaveras, Green Valley and Concord Faults east of the Hayward Fault; and the Rogers Creek Fault north of San Pablo Bay.[10]

The intensity of ground shaking during an earthquake depends on several factors, including the magnitude of the earthquake, distance from the source, and the nature of the geologic materials underlying the Project Site. Ground shaking is least in bedrock materials and is amplified by loose unconsolidated materials. Because the Project Site is underlain with Franciscan bedrock, ground shaking within the Project Site is likely to be less in the upland portions but would be amplified on the lower elevations, which are underlain by sedimentary deposits and fill.

The intensity of ground motion can be described in terms of ground acceleration, which is the rate of change in the speed and direction of motion. Earthquake ground acceleration is expressed in relation to the acceleration of gravity, which is the rate at which a falling object speeds up as it falls toward the earth. Probabilistic seismic hazard assessments performed by the California Geological Survey (CGS) indicate that the project site has a 10 percent chance of exceeding ground motion of 0.472 g[11] for hard rock and 0.472 for soft rock, over the next fifty years.[12] These ground motions correspond to Modified Mercalli (MM) intensities of VIII, which would cause moderate damage such as extensive damage to unreinforced masonry buildings, including partial collapse; wood-frame houses moved on foundations if not bolted, and loose partition walls thrown out.[13]

Seismic-Induced Landslides

In addition to ground shaking, earthquakes can have indirect effects on building sites, including inducing landslides in landslide-prone areas and causing liquefaction in areas with loose unconsolidated deposits and a high water table. The hazard zone map for the City, prepared by the California Division of Mines and Geology (CDMG) in accordance with the Seismic Hazards Mapping Act of 1990, does not identify any slopes on the Project Site as requiring mitigation for earthquake-induced landslides.[14]

Liquefaction

Liquefaction susceptibility in the region of the Project Site has been mapped by the USGS and their mapping has been adopted by the City and County of San Francisco.[15,16] They show the areas Bayward of the historic shoreline of San Francisco Bay, including portions of the Project

[10] Jennings, C. W., and W. A. Bryant, Fault activity map of California: California Geological Survey Geologic Data Map No. 6, map scale 1:750,000.
[11] Acceleration due to gravity or "g", is approximately 9.8 meters per second squared.
[12] California Geological Survey, Probabilistic Seismic Hazards Mapping, Ground Motion Page, available online at http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamap.asp, accessed 13 September 2011.
[13] Association of Bay Area Governments (ABAG), Modified Mercalli Intensity Scale, available at http://www.abag.ca.gov/bayarea/eqmaps/doc/mmi.html, accessed 13 September 2011.
[14] California Division of Mines and Geology, Seismic Hazard Zones, City and County of San Francisco. November 17, 2000.
[15] Witter, R. C., K. L. Knudsen, J. M. Sowers, C. M. Wentworth, R. D. Koehler, and C. E. Randolph, Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California. U.S. Geological Survey, Open-File Report 06-1037 (sheet 2 of 2). 2006.
[16] Knudsen, K. L., J. M. Sowers, R. C. Witter, C. M. Wentworth, and E. J. Helley, Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California. U.S. Geological Survey Open-File Report 00-444, Sheet 2 of 2. 2000.

Site, as having a high susceptibility to liquefaction. The hazard zone map for the City (**Figure 3.12-3**), which relied largely on this mapping, shows the same areas as requiring mitigation for potential liquefaction.[17]

3.12.2 Soils

The characterization of soils on the Project Site is based on mapping by the U.S. Department of Agriculture, Natural Resources Conservation Service. The soils in the already developed area of the Project Site are classified as "Orthents, cut and fill, 0 to 15 percent slopes," while the soils on the level lands on the undeveloped eastern side of the Project Site are classified as "Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes."[18] Orthents are soils that have been disturbed, such as by grading and construction, or that are mixed with fill soils imported from other areas, so that the native soils are no longer intact. The soils have variable characteristics and engineering properties and are often prone to settlement. The water erosion hazard is moderate to low, depending on slope. Although these soils are used for homesite, urban, and recreation development, the soils may have certain limitations. Among the main limitations of these soils are their variable properties and susceptibility to subsidence in areas that are not adequately compacted. A high water table is also a limitation in some areas, such as fill on former baylands. The **s**oil survey notes that gravel and debris should be removed from landscaped areas, and areas with a high water table and shallow-rooted salt-tolerant trees and shrubs should be planted.[19]

3.12.3 Mineral Resources

The CGS has classified lands within the San Francisco Bay Region into Mineral Resource Zones (MRZs) based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act of 1974. The Project Site is mapped as MRZ 4, an area where there is inadequate information and thus the site is not a designated area of significant mineral deposits.[20] There are no operational mineral resource recovery sites in the immediate area whose operations or accessibility would be affected by the construction or operation of the proposed action.

[17] City and County of San Francisco, Map 4, Seismic Hazard Zones for San Francisco, in: San Francisco General Plan, Community Safety Element. 2001.
[18] Kashiwagi, J. H. and L. A. Hokholt, Soil Survey of San Mateo County, Eastern Part, and San Francisco County, California. US Soil Conservation Service. Issued May 1991.
[19] Ibid.
[20] Stinson, M.C., M.W. Manson, J.J. Plappert, and others, Mineral Land Classification: Aggregate Materials in the San Francisco-Monterey Bay Area, Part II, Classification of Aggregate Resource Areas South San Francisco Bay Production-Consumption Region, California Division of Mines and Geology Special Report 146, 1982.

SOURCE: CA Department of Conservation, 2006; Tetra Tech

Figure 3.12-3
Liquefaction Hazard

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3.13 Cultural and Historic Resources

This section discusses the cultural resources for the Project Site and vicinity. For this discussion cultural resources is used to refer to both historic architectural resources and archaeological resources.

Historic architectural resources include buildings, structures, objects, sites, and historic districts. Military-related cultural features include earthen batteries, concrete foundations, rock alignments, water-conveyance features, and other artifact concentrations.

Archeological resources consist of prehistoric or historic-period archaeological resources. Prehistoric archeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs). Historic-period materials (not associated with military installations or activities) might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse.

The discussion of cultural resources is guided by an existing Programmatic Agreement (PA) between the City and County of San Francisco, California State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) pursuant to Section 106 of the National Historic Preservation Act (NHPA; 16 USC §470f) and its implementing regulations at 36 CFR Part 800.14. The PA establishes the City's Section 106 responsibilities for the administration of undertakings subject to regulation by 24 CFR Part 58 which may have an effect on historic properties. The City is required to comply with the stipulations set forth in the PA for all undertakings that (1) are assisted in whole or in part by revenues from U.S. Department of Housing and Urban Development (HUD) Programs subject to 24 CFR Part 58 and that (2) can result in changes in the character or use of any historic properties that are located in an undertaking's Area of Potential Effect (APE). The Proposed Action would receive funds subject to Part 58 and thus is subject to the Stipulations of the PA. The PA is included in **Appendix D**.

3.13.1 Area of Potential Effect

As the undertaking involves the demolition and rebuilding of housing owned and operated by the San Francisco Housing Authority (SFHA), Stipulation VI(C) of the PA applies. Stipulation VI(C) requires the City to determine and document the APE in accordance with 36 CFR §800.16(d) for all undertakings except for the rehabilitation of interior or exterior features [VI(A)] and improvements to infrastructure [VI(B)].

The APE is defined in 36 CFR §800.16(d) as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

In accordance with this guidance, the San Francisco Mayor's Office of Housing (MOH) as the responsible agency under the NHPA has determined the APE for the federal undertaking (or Proposed Action) for both archaeological and historic architectural resources. The APE is shown on

Figure 3.13-1 and is inclusive of the entire Project Site. The APE also includes buildings that are 50 years or older adjacent to the Project Site; thus, the APE is larger than the Project Site. The MOH and Circa: Historic Properties determined that the APE includes parcels on the northeast side of the Project Site along Carroll Avenue, parcels on the southeast side along Arelious Walker Drive, parcels along the northeast side of Gilman Avenue, and parcels along the north side of Hawes Avenue.

MOH based its determination of the APE on the research described in **Section 3.13.4** as well as guidelines contained in the Advisory Council on Historic Preservation's Section 106 Archaeology Guidance.[1] The APE is inclusive of (1) surface and subsurface areas that may be disturbed as a result of the Proposed Action and alternatives and (2) historic architectural properties that could be directly or indirectly affected by the Proposed Project and alternatives.

3.13.2 Archaeological Resources Setting

Prehistoric Context

The majority of known prehistoric era sites in the City of San Francisco are no more than 2,000 years old, and are found buried at depths of approximately 10 to 20 feet below ground surface. They were originally deposited within the dune sands that were blown eastward from the Pacific coast, across the peninsula. Other counties surrounding the Bay also contain evidence of occupation from the Early Holocene to the time of historic contact. Prehistoric resources and sites that have survived to be discovered during historic times represent only a portion of the past. Nels C. Nelson conducted a systematic survey around the perimeter of the entire San Francisco Bay between 1906 and 1909, focusing on mounds of shell partially submerged or adjacent to the Bay waters. He recorded 425 shellmounds, and yet his survey occurred well after Yerba Buena Cove had been filled and the area heavily developed and covered by the built environment.[2]

The Middle Holocene period (5700-1800 B.C) in the Bay Area is evidenced by substantial settlements, isolated burials, distinct cemeteries, milling slabs, mortars and pestles, and the earliest known fabrication and use of shell beads and other ornaments. The Late Holocene has left the strongest archeological record of prehistoric populations in the Bay Area. The Late Holocene period (1800 B.C. – A.D. 1780) is marked by the establishment of large shellmounds such as those recorded by Nelson in the early 1900s. Artifact assemblages are characterized by bone awls (indicating the manufacture of coiled basketry), net sinkers, mortars (probably indicating greater consumption of acorns), Olivella shell beads, the appearance of the bow and arrow, and diverse beads and ornaments, such as incised bird bone tubes. There is some indication of a greater exploitation of deer, sea otter, mussels, and clams. There is a growing indication that shellmounds were planned, constructed landscapes on sites of ancestral, or at least mortuary, importance.

1 Current as of 01/01/2009, available online at www.achp.gov/archguide.

2 Nelson, Nels C., Shellmounds of the San Francisco Bay area, *University of California Publications in American Archaeology and Ethnology* 7 (4):310-356, Berkeley, 1909.

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NOT TO SCALE

Area of Potential Effect

SOURCE: Circa Historic Property Development, 2011

Figure 3.13-1

Area of Potential Effect

Ethnographic Context

By circa 2,500 B.P., Ohlone/Costanoan peoples occupied essentially the same territory that they would until Euro-American contact.[3] This territory extended from the Carquinez Strait southward to the Sur River and from the Pacific coast eastward to the Diablo Range.[4] The San Francisco Peninsula was occupied by speakers of Ramaytush or San Francisco Costanoan, one of eight Ohlone/Costanoan Indian languages spoken in California. Costanoan is derived from the Spanish term Costanos for "coast people;" however, it does not represent a cohesive ethnic group, and is no longer widely used to refer to the people of the region, who generally prefer the name Ohlone.

Ohlone territory was significantly affected by Spanish colonialism in California. Between 1769 and 1776, seven Spanish expeditions entered the Ohlone lands and, by the close of the eighteenth century, seven missions had been established. At the time of these early contacts approximately 10,000 Ohlone Indians existed, comprising roughly 50 politically autonomous community groups.[5]

Spanish and Mexican Periods 1769-1848

In the spring of 1776, the site of San Francisco was chosen by Juan Batista Anza for the establishment of a Spanish mission and military post. Later that same year, the Mission San Francisco de Asís (also known as Mission Dolores) and Presidio de San Francisco were officially dedicated and Jose Joaquin Moraga (Anza's lieutenant) took formal possession in the name of King Carlos III of Spain.[6] Several local tribes of the San Francisco bayshore moved to Mission Dolores in their entirety. The Yelamu local tribe, no more than 160 individuals, held the tip of the San Francisco Peninsula north of San Bruno Mountain. Most Yelamu people were baptized between 1777 and 1784 at Mission Dolores.[7]

The Spanish annexation and colonization of Alta California, as manifested in the religious-military mission system, produced profound changes in the cultures of the indigenous population. The missions resettled and concentrated the aboriginal hunter-gatherer population into agricultural communities. The concentration of population, coupled with the indigenous people's lack of immunity to European diseases. It has been estimated that the Ohlone population declined from 10,000 or more in 1770 to less than 2,000 in 1832.[8]

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3 Moratto, Michael J., California Archaeology, Academic Press, Orlando, FL, 1984, 279.

4 Ibid., 225; Kroeber, Alfred L., *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Smithsonian Institution, Washington, D.C., reprinted 1976 by Dover, New York, 1925, 462.

5 Cook, Sherburne F., The Conflict Between the California Indian and White Civilization, I: The Indian Versus the Spanish Mission, *Ibero-Americana* 21, Berkeley, 1943; Cook, Sherburne F., The Conflict Between the California Indian and White Civilization, II: The Physical and Demographic Reaction of the Non-mission Indian in Colonial and Provincial California, *Ibero-Americana* 22, Berkeley, 1943.

6 Hoover, Mildred B., Hero E. Rensch, and Ethal G. Rensch. *Historic Spots in California*. Fourth Edition Revised by Douglas E. Kyle. Stanford University Press. Stanford, California, 1990, 331-334.

7 Milliken, Randall, Richard T. Fitzgerald, Mark G. Hylkema, Randy Groza, Tom Origer, David G. Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottfield, Donna Gillette, Vaviana Bellifemine, Eric Strother, Robert Cartier, and David A. Fredrickson, Punctuated Culture Change in the San Francisco Bay Area, In *Prehistoric California: Colonization, Culture, and Complexity*, edited by T.L. Jones and K.A. Klar, pp. 99–124, AltaMira Press, 2007.

8 Levy, Richard, Costanoan In *California*, edited by Robert F. Heizer, pp. 485–495, Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C., 1978, 486.

American Period, 1848-Present

California became part of the U.S. as a consequence of the U.S. victory over Mexico in the war. The territory was formally ceded in the treaty of Guadalupe Hidalgo in 1848, and was admitted as a state in 1850.[9] Following the discovery of gold, San Francisco transformed rather quickly from an isolated hamlet into a bustling center of commerce.[10] According to historic accounts cited by Hupman and Chavez (1995:56), after the discovery of gold, the population of San Francisco grew from 375 people in 1847 to 2,000 by February 1849, and by the end of 1849, there may have been as many as 20,000 people living in the City.

Before the mid-nineteenth century, the Project Site was covered with grasses, scrub brush, and some oak and willow tree stands. Within the region, the presence of natural resources likely made it a desirable location for prehistoric habitation. During the mid- and late nineteenth century, filling and grading occurred along the shoreline of the San Francisco Bay, including the Candlestick Point area.[11]

It is known that land speculators expanded San Francisco's build-able envelope by extensively altering the area. The area just north and west of the Project Site (between Third Street and the former water line) was first developed in 1863 as a high-class horseracing track known as Bay View Park; however, by the 1880s the track had been reclaimed by the sea. The Bay View Park land remained undeveloped marshland until the eve of World War II.[12]

The area around Islais Creek was "...changed considerably during the 20th Century. What was originally a series of extensive marshes interspersed with rocky outcroppings was transformed into mostly flat land reclaimed by leveling nearby hills and clearing rocky shoreline...[The] Candlestick Point...area is dominated by a large hill (now known as Bayview Hill), of serpentine and sandstone that originally arose from the shallow marshland at its base. Today, it has been extensively quarried and otherwise altered to accommodate Candlestick Park Stadium. The remainder of Candlestick Point is a former landfill that was further reclaimed with fill for parking lots and Candlestick Point State Recreational Area. Near Yosemite Slough and the Alice Griffith public housing, the land was a mix of marshlands and rocky shoals. During World War II, it was partially filled to create the site for the Double Rock War Dwellings. After the war, the area around Yosemite Slough, known as South Basin, was filled in to create its current configuration."[13]

In 1937, the U.S. Housing Authority (USHA) was founded as a part of the Department of the Interior. In addition to providing governance to local housing authorities, the USHA also provided grant money. San Francisco was one of the first cities to apply for the federal program,

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9 Beck, Warren A. and Ynez D. Haase, *Historical Atlas of California*. University of Oklahoma Press, 1974.

10 Hoover, Mildred B., Hero E. Rensch, and Ethal G. Rensch. *Historic Spots in California*. Fourth Edition Revised by Douglas E. Kyle. Stanford University Press. Stanford, California, 1990, 334-336; Kemble 1957:7

11 Archeo-Tec, Archaeological Research Design and Treatment Plan for the Bayview Waterfront Project, San Francisco, California, Volume II. Prepared for Michael Rice, PBS&J. June 2009.

12 Roger and Nancy Olmsted, Historical Consultants, *San Francisco Bayside Historical Cultural Resource Survey*, 1982, pg. 98

13 Circa: Historic Property Development, 2009. *Bayview Waterfront Plan Historic Resources Evaluation,* Volume I: Historic Context Statement. Prepared for PBS&J on behalf of the San Francisco Redevelopment Agency. July 2009. pgs. 46-47.

establishing the SFHA in 1938. By 1939, the federal government began to shift its focus from providing public housing to building defense-related housing in preparation for entering World War II. In mid-1943 the Double Rock War Dwellings were opened (six months after the Middle Point War Housing complex between Evans Avenue and Innes Avenue. The Double Rock War Dwellings were the precursor to the Alice Griffith housing development. In 1960 construction began on the Alice Griffith Garden Homes complex, replacing the Double Rock war dwellings. The new units were largely constructed on foundations remaining from the demolition of the temporary war buildings Double Rock housing. The Alice Griffith housing development was completed in 1962.

3.13.3 Historic Architectural Resources Setting

The PA (Paragraph D of Stipulation VII) requires the City to evaluate all properties that may be affected by an Undertaking using National Register Criteria set forth in 36 CFR Section 60.4. All such evaluations are to be documented by the City on a State of California Historic Resources Inventory Form.

As discussed above, the existing Alice Griffith housing complex was constructed in 1962. The Alice Griffith housing complex was evaluated for its historic significance in 2008 by Circa: Historic Properties (Circa) and was determined to be ineligible for listing on the NRHP.[14] The historical evaluation determined that the housing complex was not historically significant using the above criteria, and therefore the buildings do not qualify as a historic property.

Approximately 30 buildings (plus vacant lands) immediately surround the Alice Griffith housing complex. Out of the 30 buildings within the APE, 22 are over fifty years of age. [15] These properties were assessed for physical integrity by Circa, on behalf of the MOH, to determine which retained their historic integrity. Circa, determined that of the 22 properties over 50 years of age and within the APE, only six properties had minimal changes to premier character defining features. The properties that were determined to have sufficient integrity were: 1048, 1068, 1070, 1090, and 1094 Gilman Avenue and 1201 Egbert Avenue. These six buildings were recorded on California Department of Parks and Recreation (DPR) 523 A forms. Subsequent to these initial evaluations Circa identified and evaluated an adjacent property at 1112 Fitzgerald Avenue which retains a high level of physical integrity.[16] The property at 1112 Fitzgerald Avenue is included within the APE and documented on DPR 523 A and DPR 523 B forms. All seven properties described were evaluated and do not appear to meet any historic context that would make them individually eligible or as contributors

[14] Circa; Historical Property Development. 2008. Alice Griffith Housing Development Department of Parks & Recreation 523 A and B forms. Northwest Information Center. Records Search Results File No. 10-0118, August 4, 2010.

[15] Office of Historic Preservation, "Instructions for Recording Historical Resources," March 1995. Properties that are less than 50 years old generally are excluded from listing in the NRHP, unless they can be shown to be exceptionally important and there is scholarly evidence supporting their significance.

[16] Circa: Historical Property Development, *Resource Evaluation of 1112 Fitzgerald Ave. San Francisco and Expansion of the Historic Area of Potential Effect*, correspondence to Eugene Flannery, Mayor's Office of Housing, July 2011.

to a historic district eligible for the NRHP.[17] The DPR 523 A and B forms and cover letters from Circa are included in **Appendix D**.

3.13.4 Research Methods and Evaluations

The affected environment for this undertaking has been previously documented in the following studies: Historical Context for the Archaeology of the Bayview Waterfront Project[18] and Archaeological Research Design and Treatment Plan for the Bayview Waterfront Project.[19] These studies and the Northwest Information Center (NWIC) records search results were examined to provide the description of the archaeological resources within the APE.

In accordance with the PA (Stipulations VII.A.2 and XI.B), MOH requested a planning records search from the California Historical Resources Information System, NWIC at Sonoma State University. The records search (File No. 10-0118), conducted on August 4, 2010 by the NWIC did not identify any recorded cultural resources within the Project Site.[20] There are no Native American resources in or adjacent to the Project Site referenced in the ethnographic literature reviewed by NWIC.

The NWIC noted that there is a moderate potential of identifying unrecorded Native American resources and a moderate to high potential of identifying unrecorded historic-period archaeological resources in the Project Site.

Although no cultural resources have been identified within the Project Site, some indigenous/prehistoric sites, believed to be shell middens recorded by Nels Nelson around 1910, are located in the vicinity. Due to the location of the Project Site near natural springs and the historic shoreline, it is archaeologically sensitive for unrecorded cultural resources. Historical evidence regarding previous use of the area also suggests that there is a possibility of undocumented historic-era resources.[21]

MOH also contacted the SHPO for comment and review, pursuant to the terms of the PA. The SHPO's office responded that the MOH should enter into a project-specific PA with SHPO that will outline the procedures and methodology that MOH will use to further identify potential historic properties.[22] Pursuant to 36 CFR 800.6(a)(1) the City must notify the Advisory Council on Historic Preservation, to determine if they wish to participate in the consultation. Upon receiving notification and supporting documentation concerning the Proposed Action, ACHP concluded that Council involvement does

17 Ibid.

18 Circa, 2009.

19 Archeo-Tec. Archaeological Research Design and Treatment Plan for the Bayview Waterfront Project, San Francisco, California, Volume II. Prepared for Michael Rice, PBS&J, June 2009.

20 Northwest Information Center. California State University, Sonoma, Records Search Results File No. 10 0118, August 4, 2010.

21 Ibid.

22 Letter from Milford Wayne Donaldson, California SHPO, to Douglas Shoemaker, Director MOH, June 2, 2011, Reference No. HUD110506K.

not apply and thus their participation is not needed in consultation.[23] Coordination with SHPO is ongoing.

Native American Resources

The NWIC concluded that there are no Native American resources referenced in the ethnographic literature in or next to the Project Site. The NWIC also concluded that, given the location of the site, there is a moderate potential of identifying unrecorded Native American resources.

MOH contacted the California Native American Heritage Commission (NAHC) requesting a requesting a Sacred Lands File Search. The NAHC's response was received on December 17, 2010, that no sacred sites were identified in its files. MOH sent consultation letters to the list of Native Americans provided by the NAHC on January 25, 2011, and Native American coordination efforts will be ongoing throughout the planning and construction process.

[23] Letter from LaShavio Johnson, Office of Federal Agency Programs to Douglas Shoemaker, Director MOH, July 5, 2011, Reference No. HUD110506K.

3.14 Biological Resources

This section is a description of the biological resources on the Project Site. The discussion of biological resources includes vegetation, wildlife, sensitive habitats, and special-status species that are found or are potentially found on the Project Site. The biological resources on the Project Site have been identified in previous environmental documents, including the Candlestick Point-Hunters Point Phase II Environmental Impact Report (EIR),[1] Hunters Point Shipyard and Candlestick Point State Recreation Area Preliminary Delineation of Wetlands and Other Waters,[2] Candlestick Point/Hunters Point Shipyard Project Biotechnical Report,[3] and the Candlestick Point/Hunters Point Shipyard Tree Survey.[4]

3.14.1 Vegetative Communities and Wildlife Habitats

Project Site habitat types include urban development, landscaped, and ruderal/annual grassland. Each habitat type is described below. Most of the Project Site is classified as urban habitat, which includes development and paved areas. Urban habitat is not considered a vegetative community.

Vegetation

The vegetation communities represented on the Project Site are defined according to California Department of Fish and Game (CDFG) Wildlife and Habitat Data Analysis Branch List of California Terrestrial Natural Communities.[5] The Project Site contains two vegetation communities: ruderal/nonnative annual grassland and landscaped areas/ornamental plants. Disturbances of the vegetative communities include construction of the current housing development and associated roads and parking areas, increasing competition from invasive nonnative species, and ongoing disturbances, such as vegetation management, trash, and pedestrian traffic. These disturbances have resulted in urbanization of almost the entire Project Site. The remaining vegetated areas have been reduced in quality. No sensitive vegetation communities occur within the Project Site.

Ruderal/Nonnative Annual Grassland

Patches of nonnative annual grassland habitat are found throughout the Project Site. Invasive, nonnative grasses characterize this community. Typical grassland characteristic of this environment consists of a mixture of invasive annuals, such as wild oat (*Avena fatua*), rip-gut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), rat-tail fescue (*Vulpia myuros*), and hare barley (*Hordeum murinum* var. *leporinum*). Broad-leaf species in nonnative annual grasslands consist of wild radish (*Raphanus sativus*), painted charlock (*R. raphanistrum*), black mustard

[1] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department. Candlestick Point–Hunters Point Shipyard Phase II Project Draft Environmental Impact Report. November 2009.
[2] H.T. Harvey & Associates. Hunters Point Shipyard and Candlestick Point State Recreation Area Final Delineation of Wetlands and Other Waters, San Francisco, California, February 2009 and revised July 13, 2009 and October 13, 2009.
[3] PBS&J. Candlestick Point/Hunters Point Shipyard Project Biological Technical Report. Prepared for the San Francisco Redevelopment Agency and San Francisco Planning Department. December 11, 2008; updated November 2, 2009.
[4] H.T. Harvey & Associates. Candlestick Point/Hunters Point Shipyard Tree Survey. October 16, 2009
[5] CDFG, 2010.

(*Brassica nigra*), Mediterranean linseed (*Bellardia trixago*), cut-leaf plantain (*Plantago coronopus*), spring vetch (*Vicia sativa*), red valerian (*Centranthus ruber*), and Italian thistle (*Carduus pycnocephalus*).

Landscaped Areas/Ornamental Plants

Landscaped areas at the Project Site consist primarily of trees and grass. The vast majority of trees identified in the Project Site consist of eucalyptus (*Eucalyptus* spp.), pines (*Pinus* spp.), and olives (*Olea europeaea*), all of which are non native. No trees designated as "landmark" trees are in the project area.[6] Significant trees as defined by the City of San Francisco's Urban Forestry Ordinance occur within the Project Site.[7] The Candlestick Point/Hunters Point Shipyard Tree Survey identifies and characterizes all of the trees in the Project Site.[8]

3.14.2 Sensitive Habitats

No sensitive habitats have been identified on the Project Site.[9] H. T. Harvey and Associates conducted a wetland delineation in July 2009 within a study area that included the Project Site, and the U.S. Army Corps of Engineers verified the delineation. No wetlands or other waters of the United States were identified within the boundaries of the Project Site.

3.14.3 Wildlife

Limited wildlife is expected to occur within the Project Site due the disturbed nature and urban setting of the site. Common species that may be present are California ground squirrel (*Spermophilus beecheyi*), feral domestic cat (*Felis silvestris*), feral domestic dog (*Canis familiaris*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*). The sparse vegetation on most of the Project Site limits its value for breeding and migratory birds. The ruderal/grassland habitats surrounded by urban and industrial development limits the potential for dispersal of mammals in and out of the Project Site. There are no California Natural Diversity Database (CNDDB) reports of any special-status animal species occurrences within the Project Site.[10]

3.14.4 Special-Status Species

For this EIS, special-status species include those listed as threatened or endangered, California species of special concern, or fully protected by the CDFG or those listed as endangered, threatened, or candidate species by the US Fish and Wildlife Service (USFWS). Plant species

[6] H.T. Harvey & Associates, Candlestick Point/Hunters Point Shipyard Tree Survey, October 16, 2009.
[7] Significant trees are defined in the City's Urban Forestry Ordinance as being within 10 feet of a public right-of-way as well as 20 feet or greater in height, 15 feet or greater in canopy width, or 12 inches or greater diameter of trunk measured at 4.5 feet above grade may
[8] Ibid.
[9] PBS&J, Candlestick Point/Hunters Point Shipyard Project Biological Technical Report. Prepared for the San Francisco Prepared Redevelopment Agency and San Francisco Planning Department, December 11, 2008; updated November 2, 2009.
[10] California Natural Diversity Database, Biogeographic Data Branch. May 2011.

include those on the California Native Plant Society (CNPS) lists 1B.1 and 1B.2; these are locally sensitive species that are under threat of local extirpation. The potential for special-status plant and wildlife species in the Project Site was determined by assessing habitat suitability information and reviewing the CNDDB and USFWS databases (**Appendix E**).

Table 3.14-1 identifies the special-status plant and wildlife species that have been recorded or that could occur within five miles of the Project Site, along with a description of their habitat requirements, protection status, and a brief description of each species' likelihood to be present in the Project Site; those species occurrences are also mapped in **Figure 3.14-1**. All of the species known to occur within five miles of the Project Site and listed in Table 3.14-1 were determined not likely to occur or to be absent because the site lacks suitable habitat or is outside of the species' range and no instances of such species were observed during field surveys. Several special-status aquatic species have been identified within a five-mile radius, but they have not been included in this analysis because the Proposed Action and alternatives would not impact nearby aquatic environments.

TABLE 3.14-1
SENSITIVE PLANT OR WILDLIFE SPECIES IN OR POTENTIALLY IN THE SAN FRANCISCO SOUTH AND HUNTER'S POINT USGS 7.5-MINUTE QUADRANGLES

Scientific Name	Common Name	Preferred Habitat	Federal/ State/CNPS Status	Likelihood of Occurrence in the Action Area
Plants				
Arctostaphylos francicana	Franciscan manzanita	Coastal scrub with serpentine soils	--/--/1B.2	U
A. imbricate	San Bruno Mountain manzanita	Chaparral and coastal scrub	--/E/1B.1	U
A. montana ssp. *ravenii*	Presidio manzanita	Chaparral and coastal prairie	E/E/1B.1	U
A. montaraensis	Montara manzanita	Chaparral and coastal scrub	--/--/1B.2	U
A. pacifica	Pacific manzanita	Chaparral and coast scrub	--/E/1B.2	U
Astragalus tener var. *tener*	Alkali milk-vetch	Playas and valley and foothill grassland	--/--/1B.2	U
Carex comosa	Bristly sedge	Coastal prairie, marshes and swamps	--/--/2.1	U
Chorizanthe cuspidate var. *cuspidate*	San Francisco Bay spineflower	Coastal bluff scrub, coastal dunes, and coastal prairie	--/--/1B.2	U
Chorizanthe robusta var. *robusta*	Robust spineflower	Chaparral and coastal dunes	E/--/1B.1	U
Cirsicum andrewsii	Franciscan thistle	Broadleaf upland forest, coastal bluff scrub	--/--/1B.2	U
Cirsicum occidentale var. *compactum*	Compact cobwebby thistle	Chaparral, coastal dunes, coastal prairie	--/--/1B.2	U
Clarkia franciscana	Presidio clarkia	Chaparral, coastal prairie, and coastal scrub with serpentine soils	E/E/1B.1	U
Collinsia multicolor	San Francisco collinsia	Closed-cone coniferous forest and coastal scrub	--/--/1B.2	U
Cordylanthus maritimus spp. *palustris*	Point Reyes bird's-beak	Coastal salt marsh	--/--/1B.2	U
Fritillaria liliacea	Fragrant fritillary	Cismontane woodland, coastal prairie, coastal scrub	--/--/1B.2	U
Gilia capitata ssp. *chamissonis*	Blue coast gilia	Coastal dunes and coastal scrub	--/--/1B.1	U
Grindelia hirsutula var. *maritime*	San Francisco gumplant	Coastal bluff scrub and coastal scrub	--/--/1B.2	U

TABLE 3.14-1
SENSITIVE PLANT OR WILDLIFE SPECIES IN OR POTENTIALLY IN THE SAN FRANCISCO SOUTH AND HUNTER'S POINT USGS 7.5-MINUTE QUADRANGLES

Scientific Name	Common Name	Preferred Habitat	Federal/ State/CNPS Status	Likelihood of Occurrence in the Action Area
Helianthella castanea	Diablo helianthella	Broad-leafed upland forest and chaparral	--/--/1B.2	U
Hemizonia congesta ssp. *congesta*	Seaside tarplant	Coastal scrub and valley grassland	--/--/1B.2	U
Hesperevax sparsiflora var. *brevifolia*	Short-leaved evax	Coastal bluff and coastal dunes	--/--/1B.2	U
Hesperolinon congestum	Marine western flax	Chaparral and valley and foothill grassland habitats with serpentine soils	T/T/1B.1	U
Horkelia cuneata ssp. *sericea*	Kellogg's horkelia	Closed-cone coniferous forest, chaparral and coastal dunes	--/--/1B.1	U
Layia carnosa	Beach layia	Coastal dunes and coastal scrub	E/E/1B.1	U
Leptosiphon rosaceus	Rose leptosiphon	Coastal bluff scrub	--/--/1B.1	U
Lessingia germanorum	San Francisco lessingia	Coastal scrub	E/E/1B.1	U
Malacothamnus arcuatus	Acruate bush-mallow	Chaparral and cismontane woodland	--/--/1B.2	U
Pentachaeta bellidiflora	White-rayed pentachaeta	Cismontane woodland and valley and foothill grassland	E/E/1B.1	U
Sanicula maritime	Adobe sanicle	Chaparral, coastal prairie, meadows and seeps	--/R/1B.2	U
Silene verecunda ssp. *verecunda*	San Francisco campion	Coastal bluff scrub, chaparral and coastal prairie	--/--/1B.2	U
Suaeda californica	California seablite	Marshes and swamps with coastal salt marsh	E/--/1B.1	U
Triphysaria floribunda	San Francisco owl's clover	Coastal prairie and coastal scrub	--/--/1B.2	U
Triquetrella californica	Coastal triquetrella	A moss, coastal bluff scrub and coastal scrub	--/--/1B.2	U
Invertebrates				
Callophrys mossii bayensis	San Bruno elfin butterfly	Broadleaf stonecrop	E/--/--	U
Euphydryas editha bayensis	Bay checkerspot butterfly	Dwarf plantain, purple owl's clover, Indian paintbrush	T/--/--	U
Icaricia icarioides missionensis	Mission blue butterfly	False goldenaster, blue dicks, seaside buckwheat, and lupine	E/--/--	U
Speyeria callippe callippe	Callippe silverspot butterfly	Grassland habitats in the northern Bay Area containing *Viola pedunculata*	E/--/--	U
Speyeria zerene myrtleae	Myrtle's silverspot butterfly	Grassland habitats in the Bay Area containing *Viola adunca*	E/--/--	U
Amphibians				
Rana aurora draytonii	California red-legged frog	Riparian vegetation near slow-moving water	T/SC/--	U
Reptiles				
Emys marmorata	Western pond turtle	Permanent or nearly permanent water in a variety of habitats	--/--/--	U
Thamnophis gigas	Giant garter snake	Freshwater marshes and low gradient streams	T/T/--	U
Thamnophis sirtalis tetrataenia	San Francisco garter snake	Inhabits ponds, streams, rivers and reservoirs	E/T/--	U
Birds				
Athene cunicularaia	Burrowing owl	Found in open dry grassland and ruderal areas. Requires small mammal burrows	--/SC/--	U

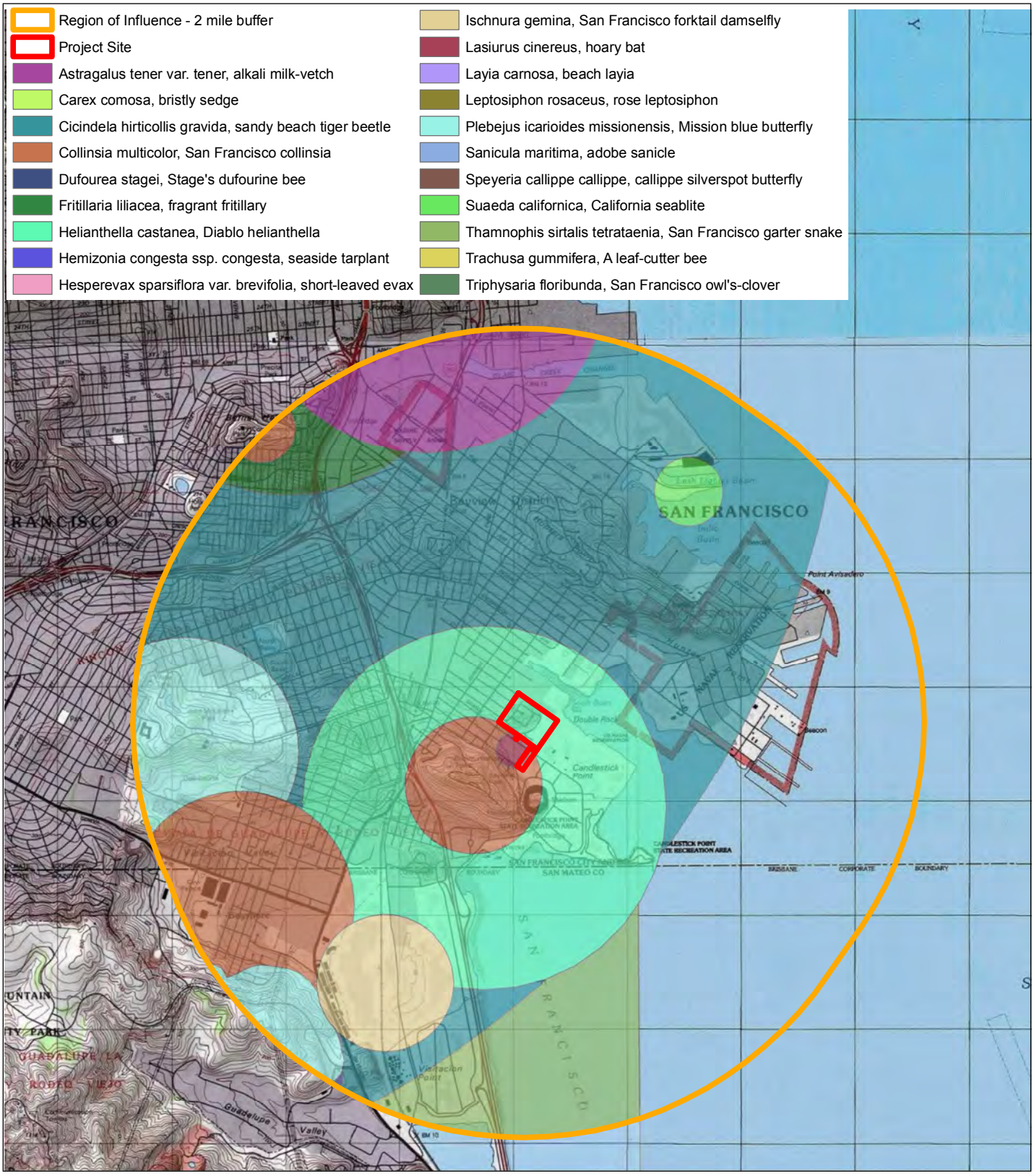
TABLE 3.14-1
SENSITIVE PLANT OR WILDLIFE SPECIES IN OR POTENTIALLY IN THE SAN FRANCISCO SOUTH AND HUNTER'S POINT USGS 7.5-MINUTE QUADRANGLES

Scientific Name	Common Name	Preferred Habitat	Federal/ State/CNPS Status	Likelihood of Occurrence in the Action Area
Brachyramphus marmoratus	Marbled murrelet	Mature coastal coniferous forests for nesting; nearby coastal water for foraging	T/E/--	U
Diomedea albatrus	Short-tailed albatross	Pelagic (open ocean); nests on offshore islands in the North Pacific	E/-/--	U
Charadrius alexandrines nivosus	Western snowy plover	Coastal beaches and open areas with sandy or saline substrates	T/SC/--	U
Elanus leucurus	White-tailed kite	Grasslands, savannahs, marshes and other open land or sparsely wooded areas.	--/FP/--	U
Geothlypis trichas sinuosa	Saltmarsh common yellowthroat	Inhabits emergent vegetation; nests on ground, over water, or dense shrubs	--/SC/--	U
Lanius ludovicianus	Loggerhead shrike	Grasslands with scattered trees and shrubs.	--/SC/--	U
Laterallus jamaicensis coturniculus	California black rail	Inhabits tidal salt marshes bordering larger bays	--/T/--	U
Melospiza melodia pusillula	Alameda song sparrow	Tidal salt marsh habitats along the edge of the bay	--/SC/--	U
Rallus longirostris obsoletus	California clapper rail	Restricted to salt marshes and tidal sloughs.	E/E/--	U
Riparia riparia	Bank swallow	Riparian habitat	--/T/--	U
Sternula antillarum browni	California least tern	Nests on sandy, upper ocean beaches	E/T/--	U
Mammals				
Lasiurus blossevillii	Western red bat	Roosts primarily in trees, less often in shrubs next to streams, fields, or urban areas	--/SC/--	P
Lasiurus cinereus	Hoary bat	Diverse forest habitat with mixture of trees and open space	--/--/--	U
Reithrodontomys raviventris	Salt march harvest mouse	Salt marshes of the San Francisco Bay	E/--/--	U

SOURCES: California Department of Fish and Game. California Natural Diversity Database. (Commercial Version, dated August 3, 2010). Biogeographic Data Branch, Sacramento, California. California Native Plant Society. Inventory of Rare and Endangered Plants (online edition). California Native Plant Society. Sacramento, CA. 2010. United States Fish and Wildlife Service. Sacramento Fish and Wildlife Office. Official Species List. Sacramento, CA. Last Updated November 21, 2011.

Notes:
E = Endangered
T = Threatened
C= Candidate
U= unlikely
P= potential
C= Confirmed
- = No Listing
SC= California species of special concern
FP= California fully protected

CNPS Status:
- = No Listing
1B.1= seriously endangered in CA, rare or endangered elsewhere
1B.2= fairly endangered in CA, rare or endangered elsewhere
2.2= fairly endangered in CA, more common elsewhere
3 = Need more information on this species



SOURCE: Tetratech, California Department of Fish and Game

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Figure 3.14-1
Special Status Species

Special-Status Plants

The USFWS, CNDDB, and CNPS reported 41 special-status plant species as potentially occurring in the US Geological Survey's 7.5-minute San Francisco South and Hunters Point quadrangles. The Project Site is largely developed, and most vegetation in the area was introduced as landscape plants and turf grass. The Project Site is on Bay fill. Ruderal (disturbed) habitats predominate in those portions that are not landscaped. PBS&J staff biologists conducted reconnaissance level surveys for the Candlestick Point area on August 8, 2007, and May 5 and July 8, 2008.[11] The lack of suitable habitat over most of the Project Site, combined with the absence of observed special-status plants, either as observed during previous focused surveys or cited in by the CNDDB, supports the conclusion that no special-status plant species occur within the Project Site or adjacent areas.

Special-Status Wildlife

Invertebrates

Monarch Butterfly (*Danaus plexippus*)

Monarch butterflies are common and widespread in California, including the San Francisco Bay Area. They tend to gather in winter roosting sites along the California coast in relatively few locations. Roost sites that are used traditionally by large numbers of individuals are considered sensitive biological resources, so this common butterfly is discussed here as a sensitive species. Wintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine), with nectar and water sources nearby, generally near the coast. A total of seven monarch butterflies were observed during the Yosemite Slough Watershed Wildlife Survey.[12] The nearest observations of monarch butterfly roosts are at Fort Mason, the Presidio of San Francisco, and Stern Grove. Although individual monarch butterflies have been observed in the area, sensitive winter roosting habitat is not likely to occur within the Project Site.

Birds

The CNDDB reports no occurrences of any special-status bird species within the Project Site. Special-status bird species have been recorded in the vicinity during the Yosemite Slough Watershed Wildlife Survey[13]. Due to the lack of suitable nesting habitat and the disturbed nature of the Project Site, no special-status bird species have the potential to nest on the Project Site. The species considered are summarized in Table 3.14-1. Although some special-status bird species have been identified in the vicinity of the Project Site and fly-overs and foraging may occur, the lack of suitable nesting and breeding habitat within the Project Site, or in immediately adjacent areas, makes it unlikely that these species would be impacted. The tall trees within the Project area may provide nesting

[11] PBS&J, Candlestick Point/Hunters Point Shipyard Project Biological Technical Report, prepared for the San Francisco Redevelopment Agency and San Francisco Planning Department, December 11, 2008, updated November 2, 2009.
[12] Golden Gate Audubon Society, Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004, prepared by LSA. July 27, 2004.
[13] Ibid.

habitat for regionally common raptor species, such as the red-shouldered hawk (*Buteo lineatus*) or Cooper's hawk (*Accipiter cooperii*).

Mammals

The only special-status mammal species with potential to occur within the Project Site is the western red bat (*Lasiurus blossevillii*), a California species of special concern. The western red bat is not known to breed in San Francisco, but the species is migratory, and red bats occur in San Francisco during migration and possibly during winter. Western red bats are not colonial and would occur only in small numbers. They are known to roost in the foliage of a few tree species, including eucalyptus. Potential habitat for this species is in the eucalyptus and other mature trees on the Project Site. However, most bat species are sensitive to human-generated disturbance, so it is unlikely this species would occur on the Project Site.

CHAPTER 4.0
Environmental Consequences

4.1 Introduction

This chapter describes the environmental consequences that would result from the development of the Proposed Action and alternatives. The analysis presented in this chapter has been prepared in accordance with the Council on Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) Regulations (40 CFR 1502.16). The direct environmental effects of each alternative are provided for issue areas discussed in **Chapter 3.0**.

The related federal laws and authorities and other requirements discussed in 24 CFR § 58.5 and 58.6 were considered and are addressed in the various sections of **Chapter 4.0**.

4.1.1 Determination of Significance

The CEQ NEPA Regulations (40 CFR 1508.27) define significance of effects in terms of context and intensity. Context refers to society as whole, the affected region or interests, and the locality. Intensity refers to the severity of effect. The following were considered in evaluating intensity:

- Whether effects are beneficial or adverse
- Degree of public health or safety effects
- Unique resource characteristics of the geographic area
- Degree of controversy
- Uncertainty and unknown risks of effects
- Degree to which action may set a precedence
- Cumulative effects
- Effects on scientific, cultural, or historic resources
- Effects to endangered or threatened species or habitat(s)
- Violation of federal, state, or local environmental regulations

For each environmental issue section the criteria used to evaluate significance are stated prior to the impact analysis. Both direct and indirect impacts are considered within this chapter. Indirect analysis for example includes potential for growth-inducing impacts Section 4.6 (Criterion 3).

4.1.2 Mitigation

Mitigation measures are recommended for significant, adverse impacts. The City has adopted the mitigation from the Candlestick Point-Hunters Point Shipyard Phase II Project Environmental Impact Report which analyzed redevelopment of the Project Site within the context of a larger planning area. When applicable, these mitigation measures are recommended and the mitigation measure number from the EIR is cross referenced.

4.2 Air Quality

This section presents the regulatory context and impact analysis for air quality. Federal, state and local thresholds were used to evaluate the impacts of the Proposed Action and alternatives. As development would be phased to allow existing residents to occupy the Project Site through the duration of construction activities, the analysis considers the effects to these residents as well as off-site sensitive receptors.

4.2.1 Regulatory Context

Federal

Clean Air Act

The 1970 Clean Air Act (CAA; 42 USC 7401 et. seq.) is a federal law that regulates air emissions. Under the authority of the CAA, the Environmental Protection Agency (EPA) has established national ambient air quality standards (NAAQS) for six air pollutants that are often referred to as criteria pollutants: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, suspended particulate matter (PM_{10} and $PM_{2.5}$), and lead. The NAAQS are listed in **Table 4.2-1**. The NAAQS are intended to protect public health and welfare by establishing pollutant concentration to which the public can be exposed without adverse health effects. Each state is required to identify areas where ambient air quality does not comply with the NAAQS and to develop and implement State Implementation Plans (SIPs) that detail how the area will comply with the NAAQS. The SIP must be submitted to and approved by the EPA. The CAA prohibits federal assistance to projects that are not in conformance with the SIP.

The status of areas with respect to the NAAQS is categorized as nonattainment (does not meet the NAAQS), attainment (better than the NAAQS), unclassifiable, or attainment/cannot be classified. For simplicity and clarity, the federal unclassifiable and attainment/cannot be classified designations are called unclassified in this document. The unclassified designation includes attainment areas that comply with federal standards as well as areas for which monitoring data are lacking. Unclassified areas are treated as attainment areas for most regulatory purposes. The Project Site is located in an air basin designated as a federal nonattainment area for the 8-hour ozone and 24-hour $PM_{2.5}$ standards and as a maintenance area for the CO standard.[1]

Section 176(c) of the CAA, also known as the General Conformity Rule, requires federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the CAA and SIPs. The General Conformity Rule is codified at 40 CFR, Part 51, Subpart W, and Title 40 CFR, Part 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans. The General Conformity Rule thresholds applicable to the San Francisco Bay Area Air Basin are presented below in **Table 4.2-2**.

[1] BAAQMD, Air Quality Standards and Attainment Status, Internet website: http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm, accessed April 20, 2011.

TABLE 4.2-1
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	NAAQS	CAAQS
Ozone	8 hours	0.075 ppm	0.070 ppm (137 $\mu g/m^3$)
	1 hour	NE	0.09 ppm (180 $\mu g/m^3$)
Carbon monoxide	8 hours	9 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)
	1 hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen dioxide	1 hour	0.100 ppm	0.18 ppm (339 $\mu g/m^3$)
	Annual arithmetic mean	0.053 ppm (100 $\mu g/m^3$)	0.030 ppm (57 $\mu g/m^3$)
Sulfur dioxide	24 hours		0.04 ppm (105 $\mu g/m^3$)
	1 hour	0.075 ppm (196 $\mu g/m^3$)	0.25 ppm (655 $\mu g/m^3$)
PM_{10}	Annual arithmetic mean		20 $\mu g/m^3$
	24 hours	150 $\mu g/m^3$	50 $\mu g/m^3$
$PM_{2.5}$	Annual arithmetic mean	15 $\mu g/m^3$	12 $\mu g/m^3$
	24 hours	35 $\mu g/m^3$	NE
Sulfates	24 hours	NE	25 $\mu g/m^3$
Lead	Calendar quarter	1.5 $\mu g/m^3$	NE
	30 day average	NE	1.5 $\mu g/m^3$
Hydrogen sulfide	1 hour	NE	NE
Vinyl chloride	24 hours	NE	0.010 ppm (26 $\mu g/m^3$)
Visibility reducing particles	8 hour (10:00 AM to 6:00 PM Pacific time)	NE	NE

NOTES: NE = not established
ppm = parts per million
mg/m^3 = milligrams per cubic meter
$\mu g/m^3$ = micrograms per cubic meter

SOURCE: BAAQMD, Air Quality Standards and Attainment Status. Internet website: http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm. Accessed April 20, 2011.

TABLE 4.2-2
GENERAL CONFORMITY RULE THRESHOLDS

VOC or ROG	100 tons per year
NOx	100 tons per year
PM10	100 tons per year
PM2.5	100 tons per year
Carbon Monoxide	100 tons per year

SOURCE: U.S. EPA Title 40 CFR, Part 93, 1993

According to U.S. Department of Housing and Urban Development (HUD) regulations 24 CFR, Part 58.5, Subpart A, an environmental analysis of a HUD proposed project must certify that the project complies with the federal Clean Air Act as amended, particularly the General Conformity Rule, conformance with relevant State or Federal Implementation Plans.

State

California Clean Air Act

In 1988, California passed the California CAA (California Health and Safety Code Sections 39600 et seq.), which, like its federal counterpart, calls for the designation of areas as attainment or nonattainment but based on state ambient air quality standards (described below) rather than the NAAQS. The California ambient air quality standards (CAAQS) tend to be at least as protective as the NAAQS and are often more stringent. The CAAQS are shown in **Table 4.2-1**. The Project Site is located in the San Francisco Bay Area Air Basin which is designated as a state nonattainment area for the 1-hour and 8-hour ozone, the 24-hour and annual PM_{10}, and annual $PM_{2.5}$ standards.

California SIP

The California SIP is not one document but rather the totality of the state, regional, and local regulations, programs, and planning documents that apply to air quality and emissions control. The California Air Resources Board (CARB) is the lead agency for the SIP. The Air Quality Management Districts and other agencies submit elements of the SIP to the CARB for review. The CARB communicates with the EPA about updates to the SIP.

Local

Bay Area Air Quality Management District

The BAAQMD is the regional agency with jurisdiction over air quality regulations in the San Francisco Bay Area Air Basin, which includes the City and County of San Francisco. BAAQMD is responsible for attaining and maintaining air quality in its jurisdiction within the federal and state air quality standards. To this end, BAAQMD has published its *California Environmental Quality Act Air Quality Guidelines*[2], which contains thresholds of significance for regulated air pollutants and greenhouse gas precursors. The relevant BAAQMD thresholds are shown in **Table 4.2-3**.

San Francisco Dust Control Ordinance

San Francisco Health Code Article 22B, and San Francisco Building Code Section 106.A.3.2.6, (collectively the San Francisco Construction Dust Control Ordinance), require that all site preparation work, demolition, or other construction in San Francisco that could create dust or expose or disturb more than 10 cubic yards or 500 square feet of soil, comply with specified dust control measures. For project sites greater than half an acre, the Ordinance requires that the project sponsor submit a dust control plan for approval by the San Francisco Health Department. The Proposed Action and alternatives would be required to comply with the Ordinance and to submit a dust control plan.

[2] BAAQMD, California Environmental Quality Act Air Quality Guidelines, May 2011.

TABLE 4.2-3
BAY AREA AIR QUALITY MANAGEMENT DISTRICT AIR QUALITY THRESHOLDS

Threshold of Significance	Construction	Operations
Reactive organic gases (ROG)	54 pounds (lbs)/day	54 lbs/day or 10 tons/year
Nitrogen oxides (NOx)	54 lbs/day	54 lbs/day or 10 tons/year
Inhalable particulate matter (PM_{10})	82 lbs/day (exhaust only)	82 lbs/day or 15 tons/year
Fine particulate matter ($PM_{2.5}$)	54 lbs/day (exhaust only)	54 lbs/day or 10 tons/year
PM_{10}/$PM_{2.5}$ (fugitive dust)	Best management practices	None
Carbon monoxide	None	9.0 parts per million (ppm), 8-hour average), 20.0 ppm, 1-hour average)
Risk and hazards – new receptor, project	Same as operational thresholds	• Increased cancer risk of greater than 10 in a million • Increased noncancer risk of greater than 1.0 hazard index (chronic or acute) • Ambient $PM_{2.5}$ increase of greater than 0.3 microgram per cubic meter ($\mu g/m^3$) annual average
Risk and hazards – new receptor, cumulative	Same as operational thresholds	• Increased cancer risk of greater than 100 in a million • Increased noncancer risk of greater than 10.0 hazard index (chronic or acute) • Ambient $PM_{2.5}$ increase of greater than 0.8 $\mu g/m^3$ annual average
Odors	None	• Complaint history exceeding five confirmed complaints per year, averaged over three years

NOTES: PM = Particulate Matter
$\mu g/m^3$ = micrograms per cubic meter

SOURCE: BAAQMD. California Environmental Quality Act Air Quality Guidelines. May 2011.

San Francisco Air Quality Standard for Residential Developments

The San Francisco Health Code Article 38 requires an air quality assessment to evaluate the concentration of $PM_{2.5}$ from local roadway traffic when new residential development is proposed. If the air quality assessment indicates that the concentration of $PM_{2.5}$ at the site would be greater than 0.2 $\mu g/m^3$, a ventilation system capable of removing 80 percent of ambient $PM_{2.5}$ from habitable areas must be installed if the development cannot be relocated to avoid exposure greater than 0.2 $\mu g/m^3$. This health code article is required by law and is not considered by the City of San Francisco Planning Department to be a significance criterion to be implemented in CEQA or NEPA analysis.

4.2.2 Impact Analysis

4.2.2.1 Significance Criteria

The impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For consistency with local air quality management the BAAQMD standards were used to evaluate impacts for several pollutants. For air quality, the analysis considers whether the Proposed Action or alternatives would:

1. Conflict with the CAA General Conformity Rule
2. Emit a criteria pollutant or precursor that exceeds local thresholds for construction or operation
3. Exceed local standards for fugitive dust emissions during construction
4. Exceed carbon monoxide standards during operation
5. Expose sensitive receptors to health risks in excess of local thresholds
6. Exceed local $PM_{2.5}$ standards for new residential development
7. Expose a substantial number of people to odor emissions

4.2.2.2 Alternative A – Proposed Action

Impact 2.1: General Conformity Determination (Criterion 1)

In relation to the NAAQS, the Project Site is located in an air basin designated as nonattainment area for the 8-hour ozone and 24-hour $PM_{2.5}$ standards and as a maintenance area for the CO standard.[3] Section 176(c) of the CAA, also known as the General Conformity requirements, requires federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the CAA and SIPs. **Table 4.2-4** shows the relevant conformity thresholds, estimated 2016 construction emissions (the year when maximum pollutant emissions would occur because the greatest amount of construction would occur), and operational emissions. As shown in **Table 4.2-4**, Alternative A would not exceed the conformity analysis threshold; therefore, the Proposed Action would not violate or contribute to new violations of the NAAQS, would not increase the frequency or severity of existing violations of the NAAQS, and would not delay timely attainment of the NAAQS for ozone or PM2.5.

TABLE 4.2-4
CONFORMITY ANALYSIS (TONS PER YEAR)

Criteria Air Pollutant	Conformity Analysis Threshold	Project Construction Emissions	Project Operational Emissions
Ozone precursors (NOx)	100	14	7
Ozone precursor (VOC)	100	1.5	0.8
$PM_{2.5}$	100	2	0.3
CO	100	7	Modeled

SOURCE: ENVIRON, Air quality assessment data provided by email from Michael Keinath, ENVIRON. 2011.

With respect to conformity with CO maintenance, localized CO concentrations were modeled and presented later in this document in Table 4.2-6, indicating that project operational motor vehicle emissions of CO, including existing traffic volumes, would not cause violations of AAQS and the SFBAAB is expected to remain an Attainment area for CO. The project would be in conformance with the CAA and SIP, as required by 24 CFR, Part 58.5, Subpart A, and thus would not have a

[3] BAAQMD, Air Quality Standards and Attainment Status, available online at: http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm, accessed April 20, 2011.

significant, adverse impact with respect to federal air standards. This impact is considered ***less than significant***.

Impact 2.2: Local Thresholds for Criteria Air Pollutants and Precursors (Criterion 2)

Alternative A's contribution to emissions of criteria pollutants and precursors was assessed by performing a quantitative analysis of emissions and comparing the resulting numbers to the corresponding significance thresholds. Project emissions were calculated using the URBEMIS 2007 (Version 9.2.4) model.

BAAQMD has established thresholds of significance for certain criteria pollutants for both construction and operation. As shown in **Table 4.2-5**, project emissions would be less than the BAAQMD significance thresholds. Therefore this impact would be ***less than significant*** during both construction and operation of the Proposed Action.

TABLE 4.2-5
CRITERIA AIR POLLUTANT EMISSIONS
(AVERAGE DAILY EMISSIONS IN POUNDS PER DAY)

	Construction		Operation	
Criteria Air Pollutant	**BAAQMD Threshold**	**Project Emissions[4]**	**BAAQMD Threshold**	**Project Emissions[5]**
ROG	54	4.3	54	49.2
NOx	54	38	54	38.5
PM_{10} exhaust	82	1.2	82	1.7
$PM_{2.5}$ exhaust	54	1.1	54	1.6

SOURCE: ENVIRON, Air quality assessment data provided by email from Michael Keinath, ENVIRON. May 2011.

Impact 2.3: Fugitive Dust Emissions for Construction (Criterion 3)

Fugitive dust is particulate matter lifted into the air by wind or human activities that disturb soil, such as construction. The project would generate fugitive dust during construction. The BAAQMD significance threshold for fugitive dust emissions for construction is implemented by best management practices (BMPs) contained in the City's Dust Control Ordinance. The Ordinance requires a dust control plan in addition to the following BMPs:

- Submit a map to the director of the SFDPH, showing all sensitive receptors within 1,000 feet of the site;
- Wet down areas of soil at least three times per day;
- Provide an analysis of wind direction and install upwind and downwind particulate dust monitors;
- Record particulate monitoring results;

4 Ibid.
5 Ibid.

- Hire an independent third party to conduct inspections and keep a record of those inspections;
- Establish shutdown conditions based on wind, soil migration, and other factors;
- Establish a hotline for surrounding community members who may be affected by project-related dust;
- Limit the area subject to construction at any one time;
- Install dust curtains and windbreaks on the property lines, as necessary;
- Limit the amount of soil in hauling trucks to the size of the truck bed and secure the load with a tarpaulin;
- Enforce a 15 mile per hour (mph) speed limit for vehicles entering and exiting construction areas;
- Sweep affected streets with water sweepers at the end of the day;
- Install and use wheel washers to clean truck tires;
- Stop construction when winds exceed 25 mph;
- Apply soil stabilizers to inactive areas; and
- Sweep adjacent streets to reduce particulate emissions.

Because the Proposed Action would comply with the Dust Control Ordinance and associated BMPs, air quality impacts related to fugitive dust emissions would be ***less than significant***.

Impact 2.4: Carbon Monoxide Concentrations during Operation (Criterion 4)

The BAAQMD enforces the state standards for carbon monoxide concentrations of 9.0 ppm averaged over an 8-hour period or 20.0 ppm averaged over a 1-hour period. Concentrations of carbon monoxide were calculated at the intersection of Gilman Avenue and Arelious Walker Drive, the intersection nearest to the Project Site where the greatest change in traffic levels is expected, and thus the greatest increase in carbon monoxide concentrations. Project carbon monoxide emissions were calculated using the California Department of Transportation's CALINE4 model. This analysis also included the effects of the Candlestick Point-Hunters Point Shipyard Phase II (CP-HPS) Project, so it is higher than impacts would actually be under the Proposed Action and thus conservative. As shown in **Table 4.2-6**, carbon monoxide concentrations would not exceed the BAAQMD threshold. Therefore, this impact would be ***less than significant***.

Impact 2.5: Exposure to Health Risks (Criterion 5)

Construction Risk and Hazard Impacts

Health risks associated with the Proposed Action were calculated based on emissions during construction. The construction health risk analysis calculates the diesel particulate matter (DPM)

TABLE 4.2-6
CARBON MONOXIDE CONCENTRATIONS, OPERATION (PPM)

Intersection	Federal/State Standard	1-Hour Average		
		Existing (2009)	Future Baseline (2030)	Future Project (2030)
Gilman Avenue and Arelious Walker Drive	35/20	2.5	2.7	3.1
8-Hour Average				
Gilman Avenue and Arelious Walker Drive	9/9.0	1.6	1.7	2.0

SOURCE: PBS&J, Air Quality Model Input/Output. July 2009.

and toxic air contaminants (TAC) emissions associated with construction vehicles operating on-site, construction material delivery and waste disposal trips, worker commute trips, and disturbance of soil containing TACs. There are no TAC-containing soils on the Project Site, but they are found off-site in the Hunters Point Annex (formerly the Hunters Point Naval Shipyard), which is approximately 0.5 mile northeast of the Project Site. Multiple areas of contaminated soil and groundwater have been identified at the Hunters Point Annex as discussed in **Section 3.3**, Hazards and Hazardous Materials. As previously stated, the air quality analysis was performed for the larger CP-HPS Project and therefore included TAC-containing soils. Inclusion of this source in the quantitative analysis results in an overestimate of health risks associated with Alternative A.

Emissions from all phases of project construction were estimated, including demolition, grading, excavation, foundation work, and building construction. Emissions were calculated using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) air dispersion modeling system. The results of the health risk assessment are shown in **Table 4.2-7**.

TABLE 4.2-7
CONSTRUCTION HEALTH RISK ASSESSMENT RESULTS

BAAQMD Threshold	BAAQMD Threshold	Project Construction	Project Construction, With Mitigation 2.5
Cancer risk (per million)	10	20	4.5
Hazard index	1.0	0.09	0.02

SOURCE: ENVIRON. Air quality assessment data provided by email from Michael Keinath, ENVIRON. May 2011.

As shown in **Table 4.2-7**, the chronic non-cancer hazard index would not exceed the BAAQMD threshold; however, the lifetime cancer risk (assuming a 70-year lifetime) for the maximally exposed individual on the Project Site would be 20 in a million, which exceeds the BAAQMD threshold of 10 in a million and therefore impacts would be ***significant and adverse***.

Mitigation: Implementation of **Mitigation Measure 2.5** would minimize health risks associated with construction activities by requiring that construction equipment used at the

Project Site shall meet EPA Tier 2 standards[6] outfitted with CARB Level 3 Verified Diesel Emission Control Strategies[7] for particulate matter control (or equivalent) for the duration of construction. As shown in **Table 4.2-7**, implementation of this mitigation would reduce the lifetime cancer risk below the BAAQMD threshold.

Significance after Mitigation: Less than significant.

Operational Risk and Hazard Impacts

The Proposed Action would result in the location of new sensitive land uses (residences) in an area where there are existing stationary sources of TACs. Based on 2010 traffic data of the San Francisco CHAMP traffic model, all roadways within 1,000 feet of the project perimeter would have daily traffic volumes below 10,000 vehicles per day and would not require an assessment of traffic related risks and hazards from local roadways.[8] Permitted stationary sources within 1,000 feet of the project site have a maximum cancer risk of 0.02 in one million and a maximum hazard index of 0.02, which are both less than the BAAQMD significance threshold of 10 in one million and 1.0, respectively. The Bay View Greenwaste Facility currently operates engines which could pose health risks to the Project Site; however, pursuant to the agreement discussed in **Section 3.2**, these engines must be replaced prior to March 2012, which is prior to operation of the Proposed Action. Consequently, operational impacts related to localized risks and hazards would be ***less than significant***.

Impact 2.6: Local Thresholds for $PM_{2.5}$ concentrations for New Residential Development (Criterion 6)

The $PM_{2.5}$ concentrations were calculated for construction and operation of the Proposed Action. During construction, $PM_{2.5}$ emissions would result from nondiesel-fueled construction vehicles and from worker commute trips using the method described for the health risk assessment. During operations, $PM_{2.5}$ emissions would result from additional vehicle trips associated with residents of the additional units. The air quality impacts of the additional vehicle trips would extend beyond the Project Site to the local road network. Therefore, both on-site and off-site analyses were performed. For the on-site analysis, multiple receptor locations on the Project Site were considered and the receptor with the maximum exposure was determined. For the off-site analysis, the following roadways were considered: Third Street, Gilman Avenue, Harney Way, Arelious Walker Drive, Jamestown Avenue, and Ingerson Avenue. $PM_{2.5}$ emissions from vehicle exhaust, tire wear, and brake wear were calculated using the CARB's Emission Factor (EMFAC) model, modified to account for future regulations requiring emissions reductions. Vehicle trip information was drawn from the traffic study for the CP-HPS Project. Average annual $PM_{2.5}$ concentrations were then calculated using the air dispersion model California Line Source Dispersion Model Version 3 (CALINE3) with Queuing and Hot-spot Calculations Refined

[6] EPA, Nonroad Diesel Equipment Regulations and Standards, available online at: http://www.epa.gov/nonroaddiesel/regulations.htm, accessed May 9, 2011. January 2011.

[7] CARB, Diesel Programs Verification Procedure -- Currently Verified, available online at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm, accessed May 9, 2011. January 2011.

[8] BAAQMD, BAAQMD Risk and Hazard Screening Analysis Flowchart, May 3, 2011 available online at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx accessed November 2011.

(CAL3QHCR). DPM emissions were conservatively assumed to be represented by the $PM_{2.5}$ emissions, resulting in an overestimate of $PM_{2.5}$ concentrations. The results of the $PM_{2.5}$ assessment are shown in **Table 4.2-8**.

TABLE 4.2-8
$PM_{2.5}$ CONCENTRATIONS

	BAAQMD Threshold	Project Construction	Project Operation	Combined (Construction plus Operation)
Annual average $PM_{2.5}$ ($\mu g/m^3$)	0.3	0.083	0.2	0.283

As shown in **Table 4.2-8** $PM_{2.5}$ concentrations would not exceed the BAAQMD threshold. This impact would be ***less than significant.***

Impact 2.7: Exposure to Odor Emissions (Criterion 7)

The BAAQMD has not established a significance threshold for odors during project construction. Residents could notice odors from construction vehicle exhaust or other construction, but these would be temporary and do not typically result in odor complaints. The BAAQMD's significance threshold for odors during project operation is based on the complaint history regarding odors. A project would exceed the threshold if there were more than five confirmed complaints per year, averaged over three years.[9] The project would contain only typical residential components, such as buildings, ventilation systems, parks, and roads that would not generate odors. Therefore, complaints regarding odors are not expected, and impacts would be ***less than significant***.

4.2.2.3 Alternative B – Housing Replacement Alternative and Alternative C – Reduced Development Alternative

Impact 2.1: General Conformity Determination (Criterion 1)

The Proposed Action, which represents the largest development at build out among the alternatives, would not exceed the conformity analysis threshold (**Table 4.2-4**). Thus it is reasonable to assume that development of a reduced intensity under Alternatives B and C would not exceed the conformity thresholds. For this reason, Alternatives B and C would have a ***less than significant*** impact for this criterion.

Impact 2.2: Local Thresholds for Criteria Air Pollutants and Precursors (Criterion 2)

Emissions of criteria air pollutants and precursors from Alternatives B and C would be similar but reduced in comparison to the Proposed Action (**Table 4.2-5**). While less residential units would be constructed, the extent of on-site development would be similar to the Proposed Action. As the Proposed Action would be less than the BAAQMD significance thresholds it is reasonable to assume that the alternatives with reduced intensity would have a ***less than significant impact*** for this criterion.

[9] BAAQMD, California Environmental Quality Act Air Quality Guidelines, June 2010.

Impact 2.3: Fugitive Dust Emissions for Construction (Criterion 3)

Alternatives B and C would generate fugitive dust during construction and would be required to comply with the Construction Dust Control Ordinance and the BAAQMD threshold for construction, which is implementation of BMPs contained in the Dust Control Ordinance. The BAAQMD has not established a significance threshold for fugitive dust associated with operation, and these uses proposed under the alternatives would not be expected to produce substantial fugitive dust. Because these alternatives would comply with the Dust Control Ordinance and associated BMPs, air quality impacts related to fugitive dust emissions would be ***less than significant***.

Impact 2.4: Carbon Monoxide Concentrations during Operation (Criterion 4)

As shown in **Table 4.2-6**, carbon monoxide concentrations for the Proposed Action would not exceed the BAAQMD threshold. As Alternatives B and C would result in lower concentrations from reduced development in comparison to the Proposed Action, it is reasonable to assume that Alternatives B and C would not exceed the BAAQMD threshold for carbon monoxide concentrations and that impacts would be ***less than significant***.

Impact 2.5: Exposure to Health Risks (Criterion 5)

Health risk impacts from Alternatives B and C would be somewhat less than those for the Proposed Action. However, given the similar extent and duration of construction in comparison to the Proposed Action, it is anticipated that construction activities for these alternatives would also exceed the BAAQMD threshold for lifetime excess cancer risk. This is a ***significant and adverse*** impact.

> **Mitigation**: Implementation of **Mitigation Measure 2.5** would reduce health risks during construction.
>
> **Significance after Mitigation**: Less than significant

Impact 2.6: Local Thresholds for $PM_{2.5}$ concentrations for New Residential Development (Criterion 6)

Impacts from PM2.5 concentrations on the proposed residential development under Alternatives B and C would be similar but somewhat less than those for the Proposed Action (**Table 4.2-8**). Alternatives B and C include less residential units and thus fewer trips on local roadways.. This is a ***less than significant*** impact

Impact 2.7: Exposure to Odor Emissions (Criterion 7)

As similar construction activities would take place and similar land uses are proposed for development, the likelihood of Alternatives B and C generating odor complaints is the same as the Proposed Action and thus is not likely. Exposure to odors is considered ***less than significant*** for construction and operation phases.

4.2.2.5 Alternative D – No Action Alternative

Under the No Action Alternative, no construction or change in existing uses at the Project Site are proposed. There are existing uses at the Project Site which generate operational emissions, such as resident vehicle trips; however, there would be no change to the existing level of emissions. Thus, overall effects from the No Action Alternative would be ***less than significant***.

4.2.3 Mitigation Measures

Mitigation Measure 2.5: Implement Accelerated Emission Control Device Installation on Construction Equipment Used for Alice Griffith Parcels [EIR Mitigation Measure AQ-2.2]

The project sponsor will require that construction equipment used in the Alice Griffith parcels would utilize equipment which meets the USEPA Tier 4 engine standards for particulate matter control (or equivalent) throughout the entire duration of construction activities on those parcels.

4.3 Hazards and Hazardous Materials

This section discusses potential impacts related to hazards and hazardous materials under the Proposed Action and alternatives and mitigation for significant and adverse impacts. It discusses applicable regulations related to construction and operational phases and provides an analysis of both known and potential hazards present in existing structures and underlying soil and groundwater. Specifically, it examines whether the Proposed Action or alternatives would result in significant and adverse impacts to construction workers, future residents and people in the surrounding area.

4.3.1 Regulatory Context

Federal

HUD Environmental Requirements

U.S. Department of Housing and Urban Development (HUD) Environmental Review Procedures for Entities Assuming HUD Environmental Responsibilities (24 CFR, Part 58.5(i)) state that all sites "…being proposed for use in HUD programs must be free of hazardous materials, contamination, toxic chemicals and gases, and radioactive substances, where a hazard could affect the health and safety of occupants or conflict with the intended utilization of the property." Under this regulation, the environmental review of multifamily housing units must include the evaluation of previous uses of the site or other evidence of contamination on or near the site, in order to ensure that the occupants of the proposed site are not adversely affected by any of the aforementioned hazards. HUD Environmental Standards also specify that particular attention should be given to any proposed site on or in the general proximity of such areas as dumps, landfills, industrial sites, or other locations that contain, or may have contained, hazardous wastes. The project sponsor is required to use current techniques by qualified professionals to conduct further investigations as necessary. The potential for occupants of the Proposed Action and alternatives to be exposed to contaminants or other hazards is included within the impact analysis.

US Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has ultimate jurisdiction over the handling, use, storage, and disposal of hazardous materials. The Comprehensive Environmental Response, Compensation, and Liability Act (42 USC 9601 et seq.) is responsible for cleaning up hazardous materials at sites listed on the National Priority List. There are no sites on the National Priority List within or adjacent to the Project Site.

The Resource Conservation and Recovery Act (RCRA; 42 USC 6901 et seq.) regulates the disposal of solid wastes and hazardous wastes. Under RCRA, U.S. EPA regulates hazardous waste from the time that the waste is generated until its final disposal. RCRA also gives U.S. EPA or an authorized state the authority to conduct inspections to ensure that facilities are in compliance with regulations and to pursue enforcement actions if a violation is discovered. The U.S. EPA

delegated its RCRA authority to the California Department of Toxic Substances Control (DTSC) for the issuance of hazardous waste disposal permits.

Asbestos is regulated under Section 112 of the Clean Air Act as part of the National Emissions Standards for Hazardous Air Pollutants program (40 CFR Part 61). Asbestos abatement is regulated under the Asbestos Hazard Emergency Response Act (AHERA), enacted in 1986 under the Toxic Substances Control Act. Individuals may be certified under AHERA to conduct abatement work, including initial inspection. Existing buildings on the San Francisco Housing Authority (SFHA) portion of the Project Site could include asbestos and thus are subject to these regulations.

State

California Health and Safety Code

Section 19827.5 of the California Health and Safety Code stipulates that local agencies require project applicants to demonstrate compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos, before building or demolition permits are issued. Bay Area Air Quality Management District (BAAQMD) has the authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement. BAAQMD is required to be notified by the project applicant ten days before any demolition or abatement work; this notification must include the timeline of the project and the proposed site of storage and off-site disposal of hazardous materials. The notification process is applicable to the SFHA-portion of the Project Site.

California Hazardous Waste Control Law

The Hazardous Waste Control Law (HWCL) is the primary hazardous waste statute in California. HWCL implements the RCRA as a comprehensive waste management system. It specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure their proper management. HWCL also establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. HWCL exceeds federal requirements by mandating source reduction planning and a much broader requirement for permitting facilities that treat hazardous waste. It also regulates a number of types of wastes and waste management activities that are not covered by federal law with RCRA. The DTSC enforces the HWCL and administers the Hazardous Waste Tracking System to follow hazardous waste shipments through the state.

California Occupational Safety and Health Administration

California Occupational Safety and Health Administration (Cal/OSHA) is also required to be notified of asbestos abatement. Asbestos abatement contractors must follow state regulations contained in OSHA Sec. 8, CCR 1529 and CCR 341.6 through 341.14, where there is asbestos-related work involving 100 square feet or more of asbestos-containing material (ACM). Asbestos removal contractors must be certified as such by the Contractors State License Board. The site where abatement is scheduled is required to have a hazardous waste generator number assigned by and registered with the Office of the California Department of Health Services. Both the contractor

and hauler of the material are required to file a hazardous waste manifest that details the hauling of the material from the site as well as its off-site disposal.

Local

San Francisco Building Code

Chapter 34 of the San Francisco Building Code (SFBC), Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures, requires specific notification and work standards and identifies prohibited work methods and penalties. These standards and procedures apply where there is any work that may disturb or remove lead-based paint (LBP) on any building built on or before December 31, 1978, or on any steel structures where LBP would be disturbed or removed and where exterior work would disturb more than 100 square feet or 100 linear feet of LBP. This section contains performance standards, including establishment of containment barriers at least as effective at protecting human health and the environment as those in HUD's *Guidelines for Evaluation and Control of Lead-Based Paint Hazards* (24 CFR, Part 35).

The Building Code also includes property notification requirements, including notifying project construction contractors of any paint-inspection reports that verify the presence or absence of LBP in the regulated area of the Project Site. Before demolition or abatement, the applicant must provide written notice to the San Francisco Department of Building Inspection (DBI) Director of the following:

- Location of the project;
- Nature and approximate square footage of the painted surface being disturbed or removed;
- Anticipated job start and completion dates for the work;
- Whether the responsible party has reason to know or presume that LBP is present;
- Whether the building is residential or nonresidential and owner-occupied or rental property and the approximate number of units, if any;
- Dates that the responsible party has fulfilled or would fulfill any tenant or adjacent property notification requirements; and
- Name, address, telephone number, and pager number of the party who would perform the work.

In addition, requirements include posting signs when containment is required, the landlord notifying tenants of the impending work, the availability of a pamphlet about lead in the home, notice by contractor of the early commencement of work, and notice of lead-contaminated dust or soil, if applicable. The ordinance contains provisions regarding inspection and sampling for compliance by the DBI and enforcement and describes penalties for noncompliance.

San Francisco Health Code

The San Francisco Health Code Article 22A (the Maher Ordinance) requires an investigation of the potential presence in soil of hazardous materials in areas containing fill at project sites before

demolition or grading activities. Article 22A addresses possible risks from the potential presence of hazardous materials, requiring a site analysis, and provides mitigations for any risks identified as a condition for demolition and construction. Under the regulations of Article 22A, the site analysis is required under any of the following conditions:

- More than 50 cubic yards will be disturbed;
- The site is bayward of the 1851 high-tide line; or
- The site is in any area identified by the San Francisco Department of Public Health (SFDPH) for remediation.

In addition, the provisions of Article 22A requires compliance with SFDPH's Hazardous Materials Unified Program Agency (HMUPA) regulations and allows the SFDPH to inspect any site or facility where hazardous wastes are stored, handled, processed, or disposed. Hazardous wastes would be disclosed in the Hazardous Materials Certificate of Registration for that facility.

4.3.2 Impact Analysis

4.3.2.1 Significance Criteria

The impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For hazards and hazardous materials the analysis considers whether the Proposed Action or alternatives would:

1. Locate an occupied structure on filled land that contains toxic chemicals or radioactive materials at concentrations that would result in exposures above U.S. EPA acceptable risk levels
2. Locate occupied structures on or near a site which could pose potential environmental hazards, such as dumps, landfills, or industrial locations that might contain hazardous wastes
3. Result in the likely release of hazardous substances that creates a human health or environmental hazard
4. Result in a human health or environmental hazard through the use or disposal of hazardous substances

Additional criteria which were considered include whether the Proposed Action or alternatives would involve operations with explosives or fire hazards, or locate a structure within an area that could create hazards for an airport. The Proposed Action and alternatives do not propose operational uses which would involve explosives or fire hazards, and there are no airports within five miles of the site or at a distance which would affect safe operation of airports. Thus, it was determined that these criteria are not applicable and do not need to be discussed further.

4.3.2.2 Alternative A – Proposed Action

Impact 3.1: Exposure to Hazardous Fill Material (Criterion 1)

Redevelopment of the Project Site would involve site excavation for installing foundations, trenching for wet and dry utility lines, and grading and compacting soils for buildings, roads, and the proposed park. Due to the unknown source of fill underlying the Project Site, these activities could expose unknown contaminated soil and fill materials to the environment. Potential contaminants include petroleum, oil, metals, and chemicals that may have leached into the soil from nearby sites or may have been included in the original fill materials. This poses a potential health risk for construction workers, residents occupying the Project Site and people in the surrounding area. This impact is considered ***significant and adverse***.

> **Mitigation**: Implementation of **Mitigation Measures 3.1a, 3.1b** and **3.1c** would reduce the potential impacts from potentially contaminated fill. To minimize risks associated with exposure to hazardous fill material, the project sponsor would be required to characterize site fill materials in accordance with the requirements of San Francisco Health Code Article 22A, including preparation of a site mitigation plan if the site investigation indicates the presence of a hazardous materials release. Further, the project sponsor would implement measures including preparation and City approval of a contingency plan to address unknown contaminants encountered during development, and a site-specific Health and Safety Plan (HASP) in compliance with applicable federal and state OSHA requirements and other applicable laws to minimize impacts on public health and the environment.
>
> **Significance after Mitigation:** Less than Significant

Impact 3.2: Proximity to a Potentially Hazardous Site (Criterion 2)

There are no documented sites that use, store, handle, or dispose of toxic, radioactive, or chemical substances within an unacceptable distance from the Project Site. A search of AST sites, indicated that three ASTs were located within a mile radius of the Project Site. The nearest AST is located approximately 1/3 of a mile from the site. According to the HUD safety criteria, this 2,860 gallon AST is well outside of the acceptable separation distance for people and structures.[1] The Greenwaste Facility is discussed in **Section 4.2**, Air Quality. The Bayview Plume Study Area located potentially upgradient of the Project Site, although the direction of groundwater flow is unconfirmed and shows local variability, is undergoing a remediation process to address volatile organic contamination in the groundwater. Due in large part to the fact that neither the full lateral extent of the contamination plume nor the groundwater flow direction has been defined, the possibility remains that contamination of the underlying groundwater could be present beneath the Project Site. While groundwater will not be encountered during construction of the Proposed Action, the potential intrusion of soil vapors either from the Bayview Plume Study Area or from past releases in the site soils presents a potential for a ***significant and adverse*** impact.

> **Mitigation**: Implementation of **Mitigation Measure 3.1a** would include soil vapor sampling and, if necessary, removal of contaminated soils or installation of vapor barriers

[1] Acceptable Separation Distance Electronic Assessment Tool, http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/environment/asdcalculator, accessed November 3, 2011.

beneath proposed structures. Mitigation measures **3.1b** and **3.1c** include preparation and City approval of a contingency plan to address unknown contaminants encountered during development, and a site-specific Health and Safety Plan (HASP) in compliance with applicable federal and state OSHA requirements and other applicable laws to minimize impacts on public health and the environment.

Significance after Mitigation: Less than Significant

Impact 3.3: Release of Hazardous Substances (Criterion 3)

Buildings within the SFHA portion of the Project site potentially contain asbestos, LBP and polychlorinated biphenyls (PCBs). These materials could be released during construction posing potential health risks to construction workers, residents on the Project Site and people in the surrounding area.

Asbestos is a hazardous air pollutant, regulated under Section 112 of the Clean Air Act and abatement is regulated under AHERA. Demolition activities associated with the Proposed Action could release friable ACM to the environment, posing both short-term and long-term carcinogenic risk to workers, residents, and others in the vicinity. To minimize such risks, structures scheduled for demolition would be thoroughly inspected for the presence of asbestos, as required under Section 19827.5 of the California Health and Safety Code and also requested by U.S. EPA through their scoping comments letter.[2] Before obtaining permits, all friable ACM will be removed from buildings by AHERA-certified individuals. Disposal of ACM would occur in accordance with applicable regulations. If no representative sampling or abatement is performed, all demolition debris from the Project Site would be treated as though ACM were present in all building materials and removed by a licensed disposal company. Regulations also require notification of BAAQMD prior to demolition or abatement work and Cal/OSHA prior to abatement work.

LBP would be regulated by Chapter 34, Section 34017 of the SFBC which requires notification and work standards for activities which could result in LBP disturbance. These requirements are built into the permit review process and thus no demolition or abatement activities could take place prior to satisfying these requirements.

Exposure to PCBs could pose short-term and long-term health hazards to workers and residents in the vicinity if not removed and disposed of according to applicable regulations, including worker health and safety plans, notification requirements, and use of personal protective equipment.

The potential for human exposure to asbestos, LBP and PCBs is considered ***significant and adverse***.

Mitigation: The project sponsor would implement **Mitigation Measure 3.1c** to minimize potential exposure. This measure addresses compliance with OSHA requirements, and would include the preparation of a site-specific HASP. The HASP would identify chemicals of concern, potential hazards, a requirement for personal protective equipment and devices, and emergency response procedures. Additionally, the project sponsor would implement

[2] EPA: *Scoping Comments for the HOPE SF Development at Alice Griffith Public Housing Development, San Francisco, California*. Addressed to the Mayor's Office of Housing. January 12, 2011.

Mitigation Measure 3.3 in order to minimize public and worker exposure to airborne asbestos at the Project Site and vicinity. Prior to construction, the project sponsor would obtain approval of an asbestos dust mitigation plan (ADMP) from the BAAQMD, and would ensure that specific dust control measures are implemented throughout the construction period. Additional air monitoring would be implemented if required by the BAAQMD to monitor off-site migration of asbestos dust and appropriate protocols would be established and implemented.

Significance after Mitigation: Less than Significant

Impact 3.4: Potential Release of Hazardous Materials During Routine Use, Storage, Transport, and Disposal (Criterion 4)

Construction activities related to the Proposed Action would require the use and transportation of hazardous materials (e.g., fuels, cement products, lubricants, paints, adhesives, and solvents). In addition, construction vehicles would be used on-site that could accidentally release hazardous materials such as oils, grease or fuels. These hazardous materials and vehicles would remain on the Project Site during the period of construction activities. Accidental releases of hazardous materials during demolition and construction activities could impact soil and/or groundwater quality, which could result in adverse health effects to construction workers, the public, and the environment. The contractor's compliance with requirements related to SFDPH's HMUPA certificate of storage for hazardous materials during construction would ensure that these potential effects related to inadvertent release of hazardous materials would be ***less than significant***.

The Proposed Action does not proposed uses associated with major storage, use or disposal of hazardous materials. During operation, households and neighborhood-serving retail are anticipated to use minor quantities of common products containing hazardous materials. Typical products containing hazardous materials include household cleaning products, paints, fuels, refrigerants associated with building heating and air systems, fertilizers and pesticides. With proper use and storage these products do not pose significant hazards to people. In the events of an accidental release to the environment or harmful exposure, anticipated domestic and neighborhood-serving retail use would be at such limited quantities that the impacts would be limited to a very small area. Thus impacts during operation would be ***less than significant***.

4.3.2.3 Alternative B – Housing Replacement Alternative and Alternative C – Reduced Development Alternative

Alternatives B and C involve the same extent of demolition and construction activities on the Project Site and propose to construct the same types of land uses, thus the potential for human exposure to hazards or hazardous releases associated with construction and operation are the same as Alternative A. Alternatives B and C would result in the same potential risks associated with exposure to hazardous fill (Criterion 1), intrusion of soil vapors from groundwater contamination (Criterion 2), release of hazardous materials during demolition and construction from the SFHA portion of the Project Site (Criterion 3), and hazardous releases during routine construction and operation activities (Criterion 4). The significance determinations and mitigation measures for these impacts are the same as those discussed for Alternative A.

4.3.2.5 Alternative D – No Action Alternative

As no new construction or land uses are proposed under Alternative D, there would be ***no impact*** associated with Criteria 1, 2, and 4.

Release of Hazardous Substances (Criterion 3)

Under the No Action Alternative, the Alice Griffith public housing development would remain in its current state. Housing on the Project Site was constructed when use of ACMs, LBP and PCBs was common. If not disturbed, the potential health risks associated with these materials is reduced; however, there is a potential risk to existing residents from exposure to these materials which is considered a ***significant and adverse*** impact.

4.3.3 Mitigation Measures

Mitigation Measure 3.1a: Article 22A Site Mitigation Plans [Similar to EIR Mitigation Measure HZ-1a]

Prior to obtaining a site, building or other permit from the City for development activities involving subsurface disturbance of artificial fill materials, the Project Applicant shall characterize the fill materials in accordance with the requirements of San Francisco Health Code Article 22A. In addition to the requirements of Article 22A, site sampling shall include analysis of soil vapor samples to identify potential vapor intrusion of volatile organic compounds. If the site investigation indicates the presence of a hazardous materials release, a site mitigation plan must be prepared. The site mitigation plan must specify the actions that will be implemented to mitigate the significant environmental or health and safety risks caused or likely to be caused by the presence of the identified release of hazardous materials including soil vapor intrusion. The site mitigation plan shall identify, as appropriate, such measures as excavation, containment, or treatment of the hazardous materials, monitoring and follow-up testing, and procedures for safe handling and transportation of the excavated materials, or for protecting the integrity of the cover or for addressing emissions from remedial activities, including the use of vapor barriers into building design plans, consistent with the requirements set forth in Article 22A.

Mitigation Measure 3.1b: Unknown Contaminant Contingency Plan [EIR Mitigation Measure HZ-2a.1]

Before obtaining the permit for the first site or building or other permit for development involving subsurface disturbance, the project sponsor shall prepare and the SFDPH shall approve a contingency plan to address unknown contaminants encountered during development. 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 of unanticipated subsurface hazards or hazardous material releases during construction. Control procedures would include 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 plan shall be amended, as necessary, if new information becomes available that could affect the implementation of the plan.

Mitigation Measure 3.1c: Site-Specific Health and Safety Plans [EIR Mitigation Measure HZ-2a.2]

Before obtaining the permit for the first site or building or other permit for the project from the City for development involving subsurface disturbance, the project sponsor shall prepare and submit to the SFDPH a site-specific HASP in compliance with applicable federal and state OSHA requirements and other applicable laws to minimize impacts on public health and the environment. Implementation of the HASP shall be required as a condition of any applicable permit. The plan shall include identification of chemicals of concern, potential hazards, a requirement for personal protective equipment and devices, and emergency response procedures. The HASP shall be amended, as necessary, in the event new information becomes available that could affect the implementation of the plan.

Mitigation Measure 3.3: Asbestos Identification and Abatement Mitigation

The BAAQMD shall be notified ten days in advance of any proposed demolition or abatement work. Notification includes the names and addresses of operations and persons responsible; description and location of the structure to be demolished/altered including size, age and prior use, and the approximate amount of friable asbestos; scheduled starting and completion dates of demolition or abatement; nature of planned work and methods to be employed; procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used. All asbestos survey and abatement work shall be conducted by a state certified contractor.

The local office of the State Occupational Safety and Health Administration (OSHA) shall be notified of asbestos abatement to be carried out. Asbestos abatement contractors shall follow state regulations contained in 8CCR1529 and 8CCR341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos containing material. Asbestos removal contractors shall be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur shall have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento. The contractor and hauler of the material shall file a Hazardous Waste Manifest which details the hauling of the material from the site and the disposal of it.

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4.4 Land Use and Land Use Planning

This section discusses the consistency of the Proposed Action and alternatives with applicable federal, state, and local land use regulations, ordinances, and policies. In particular, this section reviews the applicable land use policies of the Bayview Hunters Point (BVHP) Redevelopment Plan, the Candlestick Point Subarea Plan of the San Francisco General Plan, and the development standards and guidelines in the Candlestick Point Design for Development. Additionally, this section discusses the compatibility of the Proposed Action and alternatives with surrounding development.

4.4.1 Regulatory Context

Federal

There are no federal land use laws, regulations, or policies applicable to the Project Site. As the Project Site is not within the federally designated coastal zone, the Coastal Zone Management Act (16 USC, Section 3501 et seq.) does not apply.

State

Candlestick Point Public Trust Lands

In May 2011 the Governor signed an agreement among the Redevelopment Agency, the City, the Port of San Francisco, the State Lands Commission, and the California Department of Parks and Recreation ("State Parks") to improve the configuration of lands within Candlestick Point that are subject to the public trust for commerce, navigation and fisheries ("public trust" or "trust"), and lift the trust from the remainder of the Project Site. As a result of this action, the trust will be lifted from the State-controlled portion of the Project Site.

Prior to this agreement, the configuration of trust and nontrust lands within Candlestick Point (and neighboring Hunters Point Shipyard) was such that the purposes of the public trust could not be fully realized. A substantial portion of the reclaimed trust lands were interior lands that had been cut off from access to navigable waters, or were paper streets laid out in a grid pattern that was not useful to the trust. Most of these lands were no longer needed or required for the promotion of the public trust, while other lands within the Candlestick Point-Hunters Point Shipyard (CP-HPS) Plan area adjacent to the waterfront or otherwise of high value to the public trust were not subject to the public trust.

To remedy this situation, Senate Bill 792 (SB 792), which was approved by the California Legislature and signed by the Governor in 2009, authorized a land exchange to improve the configuration of public trust lands at Candlestick Point and Hunters Point Shipyard by placing the trust along the entire shoreline and on other lands with high value to the trust, and removing the trust from interior lands that are cut off from the water, thereby removing impediments to their redevelopment. The Trust Exchange Agreement implements this exchange through a series of

phased conveyances, by which the State Lands Commission will take title to the lands, hold a portion of the lands subject to the trust, and convey the remainder to the Redevelopment Agency, the City, or State Parks either subject to or free of the trust.

Local

City and County of San Francisco General Plan

The City's General Plan is its guiding document for land use and policy planning. The plan is composed of a series of elements, each of which describes a particular topic that applies city-wide. Among these is the Housing Element, which supports increasing the supply of housing throughout the City and encourages development of permanently affordable housing. A number of policies of this element are applicable to the alternatives, among them Objective 1, Policy 1.2: Focus housing growth and infrastructure necessary to support growth according to community plans…in key opportunity areas such as …Candlestick [Point]; Objective 8, Policy 8.1: Support the production and management of permanently affordable housing; and Objective 9, Policy 9.3: Maintain and improve the condition of the existing supply of public housing, through programs such as HOPE SF.

The General Plan, however, does not include a comprehensive land use element. The land use policies, goals, and objectives are contained in neighborhood and community-wide area plans, which identify local land use development goals and policies. For the BVHP neighborhood, the City has adopted the BVHP Area Plan. A subcomponent of this plan, outlining land use and development goals and objectives for the Candlestick Point neighborhood, is the Candlestick Point Subarea Plan.

Candlestick Point Subarea Plan

The Candlestick Point Subarea Plan is a component of the BVHP Area Plan. Its purpose is to outline broad objectives and policies for the redevelopment of Candlestick Point. As a subarea plan, it contains specific community development policies focused on the 281 acres that compose the Candlestick Point Subarea. Development that is consistent with the Subarea Plan objectives and policies is considered consistent with the City's General Plan.

The policies of the Candlestick Point Subarea Plan that are directly applicable to the Proposed Action and alternatives are as follows:

- **Policy 1.1—**Create a balanced and complete mix of land uses;
- **Policy 1.2—**Take full advantage of the underused site by providing high-density sustainable development;
- **Policy 1.4—**Ensure that new land uses will accommodate diverse residential, worker, and visitor populations;
- **Policy 3.2—**Ensure a block pattern and street network that is tied to the adjacent neighborhood, is coherent, and provides the development with organization and orientation; and

- **Policy 5.3—**Create below market-rate housing at a range of income levels that will serve and support the existing community and create opportunities for home ownership.

The Bayview Hunters Point Redevelopment Plan

The BVHP Plan has established goals and priorities for community development. On August 3, 2010, the Board of Supervisors adopted an amendment to the BVHP Plan to create two subareas: Candlestick Point Subarea (Zone 1) of the BVHP Project Area, and Zone 2 (the rest of BVHP Project Area). Within the Candlestick Point subarea, the amendment created three land use districts: (1) a mixed use residential district of four neighborhoods, including the Alice Griffith Neighborhood; (2) a mixed use commercial district to serve as the retail center allowing regional retail, offices, a hotel, a performance art arena and housing: and (3) an open space district.

Objectives for the Alice Griffith Neighborhood are defined as follows:

> *This Neighborhood will accommodate a diverse range of housing types with improved connections to the surrounding neighborhoods. Existing affordable homes will be rebuilt to provide at least one-for-one replacement units targeted to the same income levels as those of the existing residents and ensure that eligible Alice Griffith Housing residents have the opportunity to move to the new, upgraded units directly from their existing Alice Griffith Housing units without having to relocate to any other area. A focus of the Neighborhood will be a centrally located park that extends the length of the Neighborhood that may include community gardens, active sports uses, and picnic areas. This Neighborhood will include mixed-income housing developments that may include townhomes, stacked townhomes, live-work units, group housing, and multi-unit, multi-story apartment and condominium buildings.*[1]

Candlestick Point Design for Development and Other Approved Plans

The Candlestick Point Design for Development document (D4D; **Appendix B**), adopted June 3, 2010 by the San Francisco Planning Commission and the San Francisco Redevelopment Commission, establishes the development standards and guidelines that will govern future design and development at Candlestick Point. These design standards and guidelines will apply to all development within the Candlestick Point neighborhood, including both public and private development, with the objective of implementing the vision set forth in the BVHP Plan.

The D4D sets forth specific standards and guidelines, including site coverage, building height and bulk, setbacks, building modulation and frontage, open space, parking and loading. The D4D also addresses street layout, open space and blocks, and establish overarching strategies for placement of certain uses and building types relative to street and open space types. The D4D contains specific standards and guidelines for the Project Site. The development standards include a minimum street wall height of 40 feet on blocks that face the Alice Griffith Community Park, as well as mid-block breaks to create pedestrian friendly amenities as part of the streetscape. Development guidelines include varied building heights, with shorter buildings fronting Hawes Street, the southwesterly side of Fitzgerald Avenue and the northern portion of Carroll Avenue to serve as a transition to

[1] SFRA, *Bayview Hunters Point Redevelopment Plan*, August 2010, page 30.

the surrounding neighborhood. Additional guidelines call for ground floor commercial, community space or live/work units near transit stops, and the use of architectural elements at the corner of Arelious Walker Drive and Carroll Avenue, which serves as a gateway into the site.

In addition to the D4D, development of the Proposed Action or an alternative will be governed by several companion planning documents approved in conjunction with the CP-HPS Project, including the Infrastructure Plan, Transportation Plan, Parks, Open Space and Habitat Plan, Sustainability Plan and Design Review and Document Approval Procedure.

The Infrastructure Plan establishes design standards, criteria, and specifications for streets, water systems, the separated storm and sewer systems, low impact design for stormwater treatment features, and other infrastructure systems. Individual projects, such as the Proposed Action, must comply with these standards.

The Transportation Plan focuses on facilitating walking and cycling throughout the CP-HPS area, significantly expanding transit service to this area, including a transit operating plan, and implementing a comprehensive transportation demand management program. For the Project Site, greater connections to the existing street network are included.

The Parks, Open Space and Habitat Plan provides for 330 acres of new and improved open space, parks, and habitat areas, including new neighborhood parks (such as the park included in the Proposed Action), sports fields, a heritage park, connections to regional trails, access to the Bay along the Hunters Point Shipyard and Candlestick Point waterfronts, renovation of the Candlestick Point State Recreation Area, habitat enhancement, and a significant tree planting program.

The Sustainability Plan incorporates key components of the land use and other plans for the CP-HPS Project. It includes requirements for compliance with the City's Green Building Ordinance, energy efficiency that exceeds Title 24 standards, EnergyStar appliances, waste reduction measures, installation of reclaimed water infrastructure, and provision of solar ready infrastructure.

4.4.2 Impact Analysis

4.4.2.1 Significance Criteria

The impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. A significant adverse land use impact would result if the Proposed Action or alternatives would be:

1. Inconsistent with applicable land use plans and policies or incompatible with surrounding development.

The Candlestick Park State Recreation Area (CPSRA) public trust agreements were drafted and executed specifically to allow the Proposed Action and as a result there is no inconsistency with the public trust and this issue will not be further analyzed.

Implementation of the Proposed Action or an alternative must comply with the development standards and guidelines in the adopted D4D and companion plans such as the Infrastructure Plan, the Transportation Plan, the Parks and Open Space Plan, and the Sustainability Plan. The approval process provided for in these plans and in the Design Review and Document Approval Procedure will ensure compliance with the requirements in these documents and thus consistency with the plans and policies contained in these documents will not be further analyzed.

Because the Project Site does not contain land suitable for agriculture or protected for agricultural purposes, this issue is not relevant and was not evaluated.

4.4.2.2 Alternative A – Proposed Action

Impact 4.1: Consistency with Land Use Plans and Compatibility with Surrounding Development

Consistency of the Proposed Action with the General Plan and BVHP Redevelopment Plan is analyzed below. The Proposed Action would be consistent with local land use plans. Therefore, no adverse impacts would ***result***.

General Plan – Candlestick Point Subarea Plan

The Proposed Action would be consistent with the applicable policies in the Candlestick Point Subarea Plan. It would create a balanced and complete mix of land uses by incorporating residential uses, recreation and open space uses, community facilities, and opportunities for ground floor retail space within the redeveloped Project Site. The 1.4-acre Alice Griffith Neighborhood Park would have recreational areas, picnic and sports facilities, and a community garden. The existing opportunity office would remain or would be relocated onsite.

Consistent with Subarea Plan policies, the Proposed Action would provide high-density sustainable development incorporating two residential densities of between 15 and 75 units to 50 and 125 units per net acre. The Proposed Action also would include a mix of below market-rate and market-rate housing units. Both the high density and mixed income nature of the Proposed Action would contribute to a vibrant sustainable development. The replacement of severely deteriorated existing housing also would contribute to the long-term sustainability of the neighborhood. The ground-floor community-serving retail and service facilities at central locations within the new neighborhood and a new neighborhood park would enhance the livability and sustainability of the development. Additionally, the Proposed Action would be implemented consistent with the sustainability requirements in the Infrastructure Plan and Sustainability Plan, which would include, among others, provisions for low impact stormwater treatment measures, compliance with the City's Green Building Ordinance, installation of reclaimed water infrastructure, climate appropriate vegetation, new buildings that exceed Title 24 standards, and recycling facilities

The mixed income (public housing, low-income rental units, and work force housing) and high density neighborhood with a variety of housing types would accommodate a diverse residential population. Below market housing would be available at a range of income levels and include

opportunities for new home ownership. The replacement of the public housing and the opportunity for relocation of the existing residents in the new units would serve and support the exiting community.

Also consistent with the Subarea Plan, the Proposed Action would feature a block pattern and street network that is tied to the adjacent neighborhood, is coherent, and provides the development with organization and orientation. The existing Alice Griffith development is served by cul-de-sacs and is isolated from the surrounding neighborhood. The Proposed Action would include a reconfiguration of the street grid, extending the existing street grid network in the Bayview neighborhood through the site, providing a substantial increase in the number of roadway connections, and better integrating the site with the surrounding neighborhood.

The Bayview Hunters Point Redevelopment Plan

The Proposed Action would be consistent with the general policy objectives as well as the Community Revitalization Activity Nodes for Candlestick Point as outlined in the Redevelopment Plan. The Proposed Action would provide for existing housing units to be rebuilt with at least one-for-one replacement units. These units would be constructed on a schedule that would provide existing residents the opportunity to relocate to the upgraded units without relocation or displacement. As discussed above, new residential development would be a mixed-income community and accommodate a diverse range of housing types.

In addition, the Proposed Action would include neighborhood-serving commercial and retail uses, as well as office and community service uses, consistent with the goals for the promotion of economic development. Development of the Proposed Action would feature a centrally located neighborhood park with diverse recreational uses consistent with the Redevelopment Plan.

The Proposed Action would be consistent with the Zone 1 Land Use Districts in the BVHP Redevelopment Plan as shown in **Figure 3.4-1**. The primary land use designation of the Project Site is Candlestick Mixed-Use Residential which consists of residential uses and some compatible local-serving retail and services. The Project Site also includes a land use designation of Open Space, which is located on the planned site of the 1.4-acre Alice Griffith Neighborhood Park.

Compatibility with Surrounding Development

The Proposed Action would be compatible with the existing mix of surrounding uses, which consist of light industrial uses to the north, single family residential and multi-family residential to the northwest, office uses at Executive Park, the 49ers stadium and associated parking, and the CPSRA. The scale of nearby development ranges including two-story residential structures, taller apartments and office structures, both small and large scale industrial buildings, open parking lots, and the large-scale stadium. The Proposed Action would expand and improve the existing Alice Griffith neighborhood and introduce new open space, recreational areas, and neighborhood-serving retail uses. These new uses would be compatible with the existing residential uses on the Project Site and in the surrounding neighborhood. The replacement of the deteriorated existing units with a cohesive, well-designed mixed income neighborhood would enhance the quality of the Project Site and the surrounding area. The transition in scale with lower buildings located near the existing

single family residences, the extension of the existing street grid into the Project Site, and the new connections through the site to the CPSRA would contribute to the compatibility of the Proposed Action with existing development. Additionally, the Proposed Action would be consistent with the planned extension of residential uses at Executive Park and the mixed use development approved under the CP-HPS Project for the Candlestick Point area.

4.4.2.3 Alternative B – Housing Replacement Alternative

Impact 4.1: Consistency with Land Use Plans and Compatibility with Surrounding Development

Alternative B would be inconsistent with the central objectives of local land use plans. Alternative B would develop substantially fewer residential units and would not create a new mixed income, diverse, high density residential neighborhood with a variety of housing types. Alternative B also would not include opportunities for neighborhood retail uses. Given the fundamental inconsistency with these plans and policies, the development of Alternative B would have a ***significant and adverse*** impact.

Candlestick Point Subarea Plan

Alternative B would be inconsistent with the Subarea Plan, which envisions the creation of a new neighborhood with a "balanced and complete mix of uses." It would provide replacement housing units for Alice Griffith residents and connect the site with surrounding neighborhoods through the extension of the street grid. It would not, however, include a mix of housing types for a range of income levels. It would not take full advantage of an underused site with a high density development. It would not ensure that the uses would accommodate a diverse population. Finally, it would not include neighborhood-serving retail uses.

The Bayview Hunters Point Redevelopment Plan

Alternative B would not be consistent with the goals and policies of the BVHP Redevelopment Plan. Alternative B would not be consistent with the primary land use designation for the Project Site of "Candlestick Mixed Use Residential.". Although this Alternative would provide for replacement of the public housing units, it would not include the diverse mix of uses or housing types called for under this designation. In addition, this Alternative would not feature the neighborhood-serving retail as outlined in the Community Revitalization Activity Node polices for Candlestick Point.

Compatibility with Surrounding Development

The residential and open spaces uses and the new street grid would be compatible with surrounding residential and other development.

4.4.2.4 Alternative C – Reduced Development Alternative

Impact 4.1: Consistency with Land Use Plans and Compatibility with Surrounding Development

Alternative C would be largely consistent with the applicable local land use plans and policies. Under Alternative C, fewer residential units would developed than allowed by local plans; however, Alternative C would incorporate mixed-income and mixed-density residential development, one for one replacement of existing public housing with no interim relocation of existing residents, and community-serving retail and service uses. Additionally, Alternative C would be compatible with surrounding development. For these reasons, land use impacts from Alternative C are ***less than significant***.

Candlestick Point Subarea Plan

Alternative C would be consistent with the applicable policies in the Candlestick Point Subarea Plan. It would create a balanced and complete mix of land uses by incorporating residential, recreation, community, and retail facilities within the redeveloped Project Site. These facilities would include the 1.4-acre Alice Griffith Neighborhood Park, which would have recreational, picnic and sports facilities and a community garden. The existing opportunity office would remain or would be relocated onsite.

Alternative C would incorporate residential densities of between 15 and 75 units to 50 and 125 units per net acre. Alternative C would also include a diverse mix of land uses, including below market-rate and market-rate housing units that would accommodate a diverse residential population. However, this alternative would construct 33 percent fewer units of housing than the Proposed Action; therefore, Alternative C would be less consistent with Policy 1.2 than the Proposed Action since it would result in a lower housing density and would not take full advantage of an underused site. Other land uses would include ground-floor community-serving retail and service facilities, which would be included in all project residential buildings.

Alternative C would extend the existing street grid network in the Bayview neighborhood through the site, providing a substantial increase in the number of roadway connections and better integration of the site with the surrounding neighborhood.

The Bayview Hunters Point Redevelopment Plan

Alternative C would be consistent with the general policy objectives as well as the Community Revitalization Activity Nodes for Candlestick Point as outlined in the Redevelopment Plan. This Alternative would provide for existing housing units to be rebuilt with at least one-for-one replacement units. These units would be constructed on a schedule that would provide existing residents the opportunity to relocate to the upgraded units without relocation or displacement. As discussed above, new residential development would be a mixed-income community and accommodate a diverse range of housing types.

Alternative C would include neighborhood-serving commercial and retail uses, as well as community service uses, consistent with economic development goals. Development of Alternative C would feature a centrally located neighborhood park with diverse recreational uses consistent with the Redevelopment Plan.

The Proposed Action would be consistent with the Zone 1 Land Use Districts in the BVHP Redevelopment Plan as shown in **Figure 3.4-1**. The primary land use designation of the Project Site is Candlestick Mixed-Use Residential, which allows residential uses and some compatible local-serving retail and services. The BVHP Redevelopment Plan also designates the proposed neighborhood park site as Open Space.

Compatibility with Surrounding Development

Alternative C would be consistent with surrounding development in the same manner as would the Proposed Action.

4.2.2.5 Alternative D – No Action Alternative

Impact 4.1: Consistency with Land Use Plans and Compatibility with Surrounding Development

Under the No Action Alternative, existing conditions at the Project Site would remain unchanged. The existing public housing units would not be replaced, and no other improvements would be implemented.

The Candlestick Point Subarea Plan and the BVHP Redevelopment Plan envision a complete redevelopment of the Project Site to provide for a sustainable, dense, mixed income, mixed use neighborhood with diverse housing types and an economically diverse population. In addition, these plans envision the extension of the street grid system and related transportation improvements that would provide greater connectivity with the Project Site with the surrounding neighborhood and a new neighborhood park. The No Action Alternative would be fundamentally inconsistent with these objectives. The No Action Alternative would not implement the approved CP-HPS Project. Thus, this alternative would have a ***significant and adverse*** land use impact.

4.4.3 Mitigation Measures

No mitigation measures have been identified related to impacts on land use and land use planning.

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4.5 Noise

This section presents the regulatory context for the noise analysis including HUD's noise criteria for new housing construction. Calculations for the noise levels discussed in the impact analysis are provided in **Appendix F**.

4.5.1 Regulatory Context

Federal

HUD Noise Abatement and Control

The U.S. Department of Housing and Urban Development (HUD) environmental noise regulations are set forth in 24 CFR, Part 51, Subpart B, Noise Abatement and Control. According to the regulations, "It is HUD's general policy to provide minimum national standards applicable to HUD programs to protect citizens against excessive noise in their communities and places of residence."[1] These regulations include criteria for assessing whether a HUD project is suitable for a particular site, given the background noise levels. HUD has defined the suitability of a site for new housing construction based on existing noise levels as follows:

- Acceptable—65 dB day-night average sound level (DNL) or less;
- Normally unacceptable—Exceeding 65 dB DNL but not exceeding 75 dB DNL; and
- Unacceptable—Exceeding 75 dB DNL.

The HUD regulations also include a goal (not a standard) that interior noise levels not exceed 45 dB DNL.[2] Sound attenuating features such as barriers or sound attenuating building materials shall be used to achieve the interior noise goal where feasible. Standard building construction generally provides 20 dB DNL of sound attenuation; therefore, if the exterior noise environment is classified as "acceptable," according to HUD standards, the interior noise environment should not exceed 45 dB DNL. The HUD regulations also encourage the use of quieter construction equipment and methods.[3]

Federal Aviation Administration

The Federal Aviation Administration (FAA) develops noise exposure maps that use average annual L_{dn} noise contours around the airport as the primary noise descriptor. The FAA states that all land uses are considered compatible when aircraft noise effects are less than 65 decibels (dB) L_{dn}. San Francisco International Airport is approximately seven miles south and Oakland International

[1] HUD, Noise Abatement and Control, 24 CFR, Part 51, Subpart B.
[2] 24 CFR, Section 51.103(c)
[3] 24 CFR, Section 51.101(7)

Airport is approximately nine miles east of the Project Site. The Project Site is outside the 55 dB CNEL noise contour of both airports.[4]

State

California Noise Insulation Standards

The California Noise Insulation Standards (California Code of Regulations, Title 25, Section 1092) establishes uniform minimum noise insulation performance standards for new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings. Specifically, Title 25 states that interior noise levels attributable to exterior sources shall not exceed 45 dBA L_{dn} of CNEL (the same levels that the HUD recommends for residential interiors) in any habitable room for new dwellings.

Local

San Francisco General Plan

The Environmental Protection Element of the San Francisco General Plan contains the following objectives and policies relevant to noise and new development:

Objective 10: Minimize the impact of noise on affected areas.

> **Policy 10.1** Promote site planning, building orientation and design, and interior layout that will lessen noise intrusion.
>
> **Policy 10.2** Promote the incorporation of noise insulation materials in new construction.

Objective 11: Promote land uses that are compatible with various transportation noise levels.

> **Policy 11.1** Discourage new uses in areas in which the noise level exceeds the noise compatibility guidelines for that use. The Land Use Compatibility Chart for Community Noise included in Policy 11.1 specifies the compatibility of different land use types within a range of ambient noise levels.
>
> For residential uses:
>
> - Noise exposure is considered satisfactory, with no special noise insulation requirements where the L_{dn} is 60 dBA or less.
> - New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in the design where the L_{dn} is between 60 dBA and 70 dBA.

[4] San Francisco International Airport, Aircraft Noise Abatement Office, Mapping Tools, Internet Web Site: http://www.flyquietsfo.com/mapping_tools.asp, Accessed April 19, 2011, and Oakland International Airport, Fourth Quarter 2008 Noise Contours. Internet website: http://www2.oaklandairport.com/noise/pdfs/2008_Annual_Noise_Contour_Map.pdf, accessed April 27, 2011, March 2009.

- New construction or development should generally be discouraged where L_{dn} is over 65 dBA.

For other noise-sensitive uses (i.e., schools, libraries, churches, hospitals, nursing homes):

- Noise exposure is considered satisfactory, with no special noise insulation requirements where the L_{dn} is 65 dBA or less.
- New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in the design where the L_{dn} is between 62 dBA and 70 dBA.
- New construction or development should generally not be undertaken where L_{dn} is over 65 dBA.

Policy 11.3 Locate new noise-generating development so that the noise impact is reduced.

San Francisco Noise Ordinance (Article 29, San Francisco Police Code)

The Noise Ordinance specifically recognizes that adverse effects on a community can arise from noise sources such as transportation, construction, mechanical equipment, entertainment, and human and animal behavior. The San Francisco Noise Ordinance (Article 29, San Francisco Police Code, Section 2900) states:

> It shall be the policy of San Francisco to maintain noise levels in areas with existing healthful and acceptable levels of noise and to reduce noise levels, through all practicable means, in those areas of San Francisco where noise levels are above acceptable levels as defined by the World Health Organization‘s Guidelines on Community Noise.

The following Noise Ordinance provisions address and limit disruptive noise intrusions.

Construction (Sections 2907 and 2908)

The Noise Ordinance states that construction equipment shall not emit noise in excess of 80 dBA when measured at a distance of 100 feet, or at an equivalent sound level at some other convenient distance. This noise level limit is not applicable to impact tools and equipment that contain manufacturer-recommended noise-attenuating intake and exhaust mufflers approved by the Department of Public Works or the Department of Building Inspection. This noise level limit is also not applicable to pavement breakers and jackhammers equipped with manufacturer-recommended acoustically attenuating shields or shrouds that are approved by the Department of Public Works or the Department of Building Inspection.

Noise Limits (Section 2909)

The Noise Ordinance limits noise from a fixed source from causing the noise level measured inside any sleeping or living room in any dwelling unit located on residential property to 45 dBA between the hours of 10:00 P.M. to 7:00 A.M. or 55 dBA between the hours of 7:00 A.M. to 10:00 P.M. with windows open except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

4.5.2 Impact Analysis

4.5.2.1 Significance Criteria

The impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For noise impacts the analysis considers whether the Proposed Action or alternatives would:

1. Expose residents of public housing to background noise levels that exceed HUD's acceptable noise level of 65 dB DNL;
2. Generate construction noise that would not comply with local standards (San Francisco Noise Ordinance); or
3. Result in a substantial permanent increase in ambient noise levels for existing off-site sensitive receptors. This analysis uses the findings of the Federal Interagency Committee on Noise (FICON) to establish a substantial increase. FICON significance recommendations are such that an increase in traffic noise of 3 dBA or more would be significant where the ambient noise level is between 60 and 65 dBA DNL, and an increase of 1.5 dBA or more would be significant where the ambient noise level is more than 65 dBA DNL. In areas where noise levels are below 60 dBA DNL, an increase of 5 dBA would be a significant permanent increase in noise levels. These increases are also commensurate with those used by the Federal Transit Administration (FTA)

4.5.2.2 Alternative A – Proposed Action

Impact 5.1: Background Noise Levels (Criterion 1)

HUD standards consider 65 dB DNL as an acceptable background noise level for new residential developments. Traffic noise levels were calculated for the existing setting and the existing setting plus traffic from the Proposed Action (**Tables 4.5-1** and **4.5-2**).

TABLE 4.5-1
CALCULATED PROJECT SITE TRAFFIC NOISE LEVELS

Location	DNL
Existing	
Gilman Ave west of Arelious Walker Blvd[1]	47
Arelious Walker Blvd north of Gilman Ave[2]	52
Existing Plus Project	
Gilman Ave west of Arelious Walker Blvd	50
Arelious Walker Blvd north of Gilman Ave	55

1. Calculations incorporated a 100 foot residential setback.
2. Calculations incorporated a 50 foot residential setback.

DNL = day-night average sound level

TABLE 4.5-2
COMBINED PROJECT SITE AREA NOISE LEVELS

Location	DNL
Existing Traffic, Airport, Rail[a]	64
Existing Plus Project Traffic, Airport, Rail[b]	64

a: Calculations incorporated a 52 DNL for traffic, 50 DNL for Aircraft, 63 DNL for Rail.
b: Calculations incorporated a 55 DNL for traffic, 50 DNL for Aircraft, 63 DNL for Rail.
DNL = day-night average sound level
SOURCE: ESA 2011.

Existing and existing plus project background noise levels at the Project Site are less than 65 dB DNL, which is within the acceptable range. If both the light rail and Caltrain were to pass the project site simultaneously, the additive noise level would meet but not exceed the 65 dB DNL acceptable noise level. It should be noted that this occurrence would be infrequent and of a very short duration. Therefore, there would be a ***less than significant*** impact to new residential development from background noise levels.

Impact 5.2: Local Standards for Construction Noise (Criterion 2)

Noise levels at the Project Site and in the surrounding area would increase from construction and demolition activities. Demolition and construction would be phased over an approximately 10–year period. Demolition and construction activities would be limited to weekdays and daytime hours (7:00 AM to 7:00 PM), which would comply with the San Francisco Noise Ordinance construction hour restriction. Residents would continue to occupy the existing Alice Griffith public housing development during the first phase of construction and would occupy new residential units as they are completed on the Project Site in later phases of construction.

Approximately 140,000 cubic yards of bedrock in the northwestern portion of the Project Site would need to be removed during construction. Approximately 70 percent would be removed by typical construction equipment, such as tractors with ripper attachments, and rock cutting devices, such as jackhammers and splitters. The remainder of the bedrock would be removed by controlled rock fragmentation. Controlled rock fragmentation can be accomplished in several ways: controlled blasting, pulse plasma rock fragmentation, or controlled foam or hydraulic injection. Controlled blasting can remove a greater amount of rock at one time and often can be accomplished at noise levels of approximately 80 to 100 dBA, which is similar to the noise levels associated with typical construction activities. Although pulse plasma rock fragmentation removes a smaller volume of rock, it generally produces lower levels of noise and vibration and generates less dust. Noise levels associated with controlled rock fragmentation are presented in **Table 4.5-3**.

Construction noise would be required to comply with the limitations established by the San Francisco Noise Ordinance (80 dBA at 100 feet for non-impact equipment).. **Table 4.5-4** presents typical noise levels generated by construction equipment. As shown in **Table 4.5-4**, some construction equipment has the potential to exceed the daytime noise standard. Therefore, this impact would be ***significant and adverse***.

TABLE 4.5-3
NOISE LEVELS OF CONTROLLED ROCK FRAGMENTATION

Distance	Pulse Plasma Rock Fragmentation (dBA)	Controlled Blasting (dBA)
20 meters (65.6 feet)	67.6	82.2
30 meters (98.4 feet)	65.8	78.9
40 meters (131.2 feet)	65.3	73.3

dBA = A-weighted decibels

SOURCE: MACTEC Engineering and Consulting. Phase I Environmental Site Assessment, Candlestick Point Area. Prepared for Lennar Urban – Bay Area Division. June 16, 2009.

TABLE 4.5-4
TYPICAL NOISE LEVELS FROM CONSTRUCTION ACTIVITIES AND CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, L_{eq} at 50 Feet)	Noise Level (dBA, L_{eq} at 100 Feet)
Portable air compressor	81	75
Concrete mixer (truck)	85	79
Scraper	88	82
Jackhammer*	88	82
Dozer	87	81
Paver	89	83
Generator	76	70
Backhoe	85	79
Rock drill*	98	92

NOTES: -Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.
-dBA = A-weighted decibels

* Denotes impact equipment

SOURCES: Bolt, Baranek, and Newman, Inc., 1971; Cunniff, 1977.

Mitigation: Implementation of **Mitigation Measure 5.2** would decrease construction noise levels by requiring construction contractors to implement noise reduction measures for construction activities. These measures would reduce the temporary increases in noise levels experienced during construction activities in accordance with the Noise Ordinance.

Significance after Mitigation: Less than significant

Impact 5.3: Increase in Noise Levels over Existing for Off-Site Sensitive Receptors (Criterion 3)

The Proposed Action would introduce new noise sources to the Project Site and the surrounding area. Operation of the project would result in noise from heating and ventilation systems and outdoor recreation activities within the proposed neighborhood park. Although these sources

would contribute to background noise levels, they are intermittent and the compared to the existing noise environment would be too small to be perceptible by the human ear.[5]

The additional personal vehicles driven by new project residents would contribute to noise levels on nearby roads. The impact of new vehicle trips on noise levels was analyzed by comparing existing traffic volumes to projected traffic volumes using data from the traffic study conducted for this EIS.[6] The impact on noise levels was calculated assuming that it takes a doubling of noise sources to generate a 3 dBA increase in noise levels. Noise levels along Arelious Walker Blvd would increase from 52 dBA DNL to 55 dBA DNL (an increase of 3 dBA) and along Gilman Avenue from 47 dBA DNL to 50 dBA DNL (an increase of 3 dBA). The projected increases are below 5 dBA, which is the level at which a significant permanent increase in noise levels would occur using FICON and FTA criteria.

Therefore, impacts from increased noise levels from stationary and transportation sources associated with the Proposed Action, including new traffic, would be ***less than significant***.

4.5.2.3 Alternative B – Housing Replacement Alternative and Alternative C – Reduced Development Alternative

Impact 5.1: Background Noise Levels (Criterion 1)

The existing noise environment is the same for Alternatives B and C as described for Alternative A and meets the HUD 65 dB DNL standard. With development of Alternatives B and C the ambient background noise levels would be slightly less than Alternative A due to the decreased levels of new traffic from residents so they would also be at or below the 65 dB DNL standard (**Table 4.5-2**). Therefore, there would be a ***less than significant*** impact to new residential development from background noise levels.

Impact 5.2: Local Standards for Construction Noise (Criterion 2)

Although fewer housing units would be constructed under Alternatives B and C, daily construction and demolition noise levels would be similar to those under the Alternative A and would include controlled rock fragmentation in the northern portion of the Project Site. As described for the Alternative A, although construction would comply with City of San Francisco noise ordinance restricted construction hours, some construction equipment would exceed the limit Noise Ordinance limit of 80 dBA at a distance of 100 feet. Therefore, this impact would be ***significant and adverse***.

> **Mitigation**: Implementation of **Mitigation Measure 5.2** would decrease construction noise levels by requiring construction contractors to implement noise reduction measures for construction activities.
>
> **Significance after Mitigation**: Less than significant

[5] Noise differences of less than 1 dBA are too small to be perceptible to the human ear.
[6] Fehr and Peers, Near Term and Cumulative Traffic Analysis for the Alice Griffith Project in San Francisco, CA. June, 2011.

Impact 5.3: Increase in Noise Levels over Existing for Off-Site Sensitive Receptors (Criterion 3)

The increase in noise levels from Alternatives B and C would be similar but slightly less than the Proposed Action. Alternatives B and C would also include noise sources such as heating and ventilation systems, outdoor recreation activities, and traffic from the new residential development. As Alternative A would not exceed FICON and FTA criteria for significant noise increases, it is reasonable to assume that projects of reduced intensity would also meet the standard and would be ***less than significant***.

4.5.2.4 Alternative D – No Action Alternative

The background outdoor noise levels at the Project Site are less than 65 dB DNL, which is considered "acceptable," according to HUD standards (Criterion 1). As outdoor noise levels at the Project Site are less than 65 dB DNL, indoor noise levels are projected to be less than the HUD goal of 45 dB DNL (Criterion 3). No construction activities or change in Project Site uses are proposed which would increase noise levels in comparison to existing noise levels (Criterion 2 and 4). Thus, under Alternative D, ***no impact*** with respect to noise criteria would occur.

4.5.3 Mitigation Measures

Mitigation Measure 5.2: Construction Document Mitigation to Reduce Noise Levels During Construction [EIR Mitigation Measure NO-1a.1]

The Project Applicant shall incorporate the following practices into the construction documents to be implemented by the Project contractor:

- Provide enclosures and mufflers for stationary equipment, shrouding or shielding for impact tools, and barriers around particularly noisy operations on the site
- Use construction equipment with lower noise emission ratings whenever possible, particularly air compressors
- Provide sound-control devices on equipment no less effective than those provided by the manufacturer
- Locate stationary equipment, material stockpiles, and vehicle staging areas as far as practicable from sensitive receptors
- Prohibit unnecessary idling of internal combustion engines
- Require applicable construction-related vehicles and equipment to use designated truck routes to access the Project site
- Implement noise attenuation measures to the extent feasible, which may include, but are not limited to, noise barriers or noise blankets. The placement of such attenuation measures will be reviewed and approved by the Director of Public Works prior to issuance of development permit for construction activities.
- Designate a Noise Disturbance Coordinator who shall be responsible for responding to complaints about noise during construction. The telephone number of the Noise Disturbance Coordinator shall be conspicuously posted at the construction site and shall be provided to the City. Copies of the construction schedule shall also be posted at nearby noise-sensitive areas.

4.6 Socioeconomics

This section addresses the regulatory setting and impact analysis for socioeconomics, including demographic, housing and employment issues.

Population statistics are provided by the U.S. Census as part of its decennial count of the population, along with racial, ethnic, and employment criteria. Population numbers for the 2010 Census were released on March 8, 2011, for selected population criteria. Where information is not yet available, data from the California Department of Finance and Census 2000 was used.[1]

4.6.1 Regulatory Context

There are no federal, state or local laws which are applicable to the impact analysis.

4.6.2 Impact Analysis

4.6.2.1 Significance Criteria

The impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For socioeconomics, the analysis considers whether the Proposed Action or alternatives would:

1. Result in displacement of existing residents or businesses
2. Result in physical barriers or reduced access that would isolate a particular neighborhood or population group
3. Induce a substantial amount of unplanned growth
4. Cause a substantial decrease in local or regional employment

4.6.2.2 Alternative A – Proposed Action

Impact 6.1: Displacement of Existing Residents or Businesses (Criterion 1)

The existing residents on the Project Site would have the option to continue to live at the new residential units on the Project Site. Redevelopment of the Project Site would proceed in phases so that it would not displace existing residents. The initial phases would develop currently vacant portions of the site, and existing residents would then occupy those new units before structures were demolished and redeveloped in later phases. There are no existing businesses on the Project Site. The existing Opportunity Center would be relocated on site. For these reasons, this impact is ***less than significant***.

[1] California Department of Finance, *Demographic Research Unit*, 2007, 2008

Impact 6.2: Reduced Neighborhood Access (Criterion 2)

No adverse effect on neighborhood access would occur as a result of the Proposed Action. Development of the Proposed Action would include transportation improvements that would integrate the Project Site with the surrounding BVHP neighborhood by extending the street grid through the site, including sidewalks and bicycle lanes. This integration would foster easier access to surrounding services and transit facilities. Therefore, the Proposed Action would reduce existing neighborhood barriers and improve neighborhood access, resulting in a ***beneficial*** impact.

Impact 6.3: Induce a Substantial Amount of Unplanned Growth (Criterion 3)

The Proposed Action calls for up to 1,210 new dwelling units. Housing would include one-for-one replacement of the 256 public housing units, plus 954 market-rate and below market-rate sale and rental units. Development of the Proposed Action is consistent with adopted plans and policies, including the Candlestick Point-Hunters Point Shipyard Phase II (CP-HPS) Project, the policies of Proposition G, and the Housing Opportunities for People Everywhere (HOPE) SF goals encouraging the rebuilding of the Project Site as a mixed-income community with rental and for-sale residential housing units, at both affordable and market-rates. The Proposed Action would be developed within the housing and residential densities analyzed in these adopted plans, and therefore, would have a ***less than significant*** impact.

Impact 6.4: Cause a Substantial Decrease in Local or Regional Employment (Criterion 4)

Potential economic impacts under the Proposed Action would result from both temporary construction job growth as well as permanent employment opportunities at the Project Site. It is estimated that, in the peak construction phase during 2016 and 2017, an average of 144 workers and a maximum of 169 workers would be onsite in 2016 and an average of 136 and maximum of 172 workers would be onsite in 2017.[2] It is likely that construction employees not already living in the BVHP neighborhoods would commute from elsewhere, given the temporary nature of the jobs, even if construction would last for several years. After construction, neighborhood serving retail developed as part of the Proposed Action would provide on-site employment opportunities. The BVHP Employment and Contracting Policy has a goal for 50 percent of construction and permanent jobs to be filled by qualified BVHP residents. As the Proposed Action provides new employment opportunities during construction and operation phases, and there is an existing policy to hire locally, the impact on local and regional employment is considered ***beneficial***.

4.6.2.3 Alternative B – Housing Replacement Alternative

Impact 6.1: Displacement of Existing Residents or Businesses (Criterion 1)

As discussed for Alternative A, the existing residents on the Project Site would have the option to continue to live at the new residential units on the Project Site and would not be displaced during construction due to phasing. There are no existing businesses on the Project Site and the existing Opportunity Center would be relocated on site. Thus, this impact is considered ***less than significant***.

[2] MACTEC, 2009

Impact 6.2: Reduced Neighborhood Access (Criterion 2)

Alternative B would integrate the Project Site with the surrounding BVHP neighborhood by extending the street grid through the site, including sidewalks and bicycle lanes. This integration would foster easier access to surrounding services and transit facilities resulting in a ***beneficial*** impact to neighborhood access.

Impact 6.3: Induce a Substantial Amount of Unplanned Growth (Criterion 3)

Alternative B would replace the 256 existing residences only and thus would have ***no impact*** on growth.

Impact 6.4: Cause a Substantial Decrease in Local or Regional Employment (Criterion 4)

Alternative B would provide new employment opportunities during the construction phase. As there would be no neighborhood-serving retail under this alternative, there would be no permanent employment opportunities. The BVHP Employment and Contracting Policy has a goal for 50 percent of construction jobs to be filled by qualified BVHP residents. As the Proposed Action provides new employment opportunities during construction, and there is an existing policy to hire locally, the impact on local and regional employment is considered ***beneficial***.

4.6.2.4 Alternative C – Reduced Development Alternative

Impact 6.1: Displacement of Existing Residents or Businesses (Criterion 1)

As discussed for Alternative A, the existing residents on the Project Site would have the option to continue to live at the new residential units on the Project Site and would not be displaced during construction due to phasing. There are no existing businesses on the Project Site and the existing Opportunity Center would be relocated on site. Thus, this impact is considered ***less than significant***.

Impact 6.2: Reduced Neighborhood Access (Criterion 2)

Alternative C would integrate the Project Site with the surrounding BVHP neighborhood by extending the street grid through the site, including sidewalks and bicycle lanes. This integration would foster easier access to surrounding services and transit facilities resulting in a ***beneficial*** impact to neighborhood access.

Impact 6.3: Induce a Substantial Amount of Unplanned Growth (Criterion 3)

Alternative C would develop 875 residences which would be below the residential densities analyzed through adopted plans and policies, including the CP-HPS Project. As Alternative C would be below approved levels of development for the Project Site, growth impacts would be ***less than significant***.

Impact 6.4: Cause a Substantial Decrease in Local or Regional Employment (Criterion 4)

Alternative C would provide new employment opportunities during the construction phase and new permanent employment opportunities through the development of neighborhood-serving retail. The BVHP Employment and Contracting Policy has a goal for 50 percent of construction and permanent jobs to be filled by qualified BVHP residents. As the Proposed Action provides

new employment opportunities, and there is an existing policy to hire locally, the impact on local and regional employment is considered ***beneficial***.

4.6.2.5 Alternative D – No Action Alternative

Under the No Project alternative, no development would occur, and the existing housing units would remain. The No Action Alternative would not displace existing residents or businesses (Criteria 1 and 2). As there would be no new development this alternative would not result in unplanned growth (Criteria 3) or affect area employment (Criteria 4). Thus, Alternative D would have ***no impact*** on socioeconomic conditions in relation to the existing setting.

4.6.3 Mitigations

No mitigation measures have been identified for socioeconomic issues.

4.7 Environmental Justice

This section addresses the regulatory setting and impact analysis related to environmental justice issues. The analysis considers effects to minority and low-income populations from the Proposed Action and alternatives. As discussed in **Section 3.7**, the Project Site and the greater Bayview Hunters Point (BVHP) neighborhood meet the definition of environmental justice populations.

4.7.1 Regulatory Context

Federal

Executive Order 12898

Federal Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations requires all federal agencies to address potential impacts regarding environmental justice when considering actions.[1] The order states that neither minority nor low-income populations may be subject to a disproportionate level of adverse impacts as a result of a project or action. The order also requires that representatives from minority and low-income populations that could be impacted by the project be engaged and participate in the impacts assessment and public involvement process. Section 3-30(c) of the order states that "federal agencies shall provide environmental justice populations the opportunity to comment on the development and design of research strategies pursuant to this order." Section 5-5(c) states that federal agencies should "work to ensure that public documents, notices, and hearings related relating to human health or the environment are concise, understandable, and readily accessible to the public. The involvement of existing residents of the Alice Griffith housing development in the redevelopment process is discussed in **Section 3.7**.

Civil Rights Act

The Civil Rights Act ensures that this potential for discrimination is identified and addressed without regard to race, color, national origin, sex, age, or disability and includes the following adverse effects:

- Destruction or disruptions of community cohesion (community separation);
- Destruction or disruptions to access of available public and private facilities and services;
- Adverse employment effects;
- Displacement of businesses, housing, and people;
- Tax and property value losses;
- Actions injurious to the public's health (e.g., air, noise, and water pollution); and
- Actions harmful to the public's well being (e.g., aesthetic impacts and loss of recreational property).

[1] *Federal Register*, Vol. 59, No. 32, February 11, 1994. Executive Order Section 1-101

4.7.2 Impact Analysis

4.7.2.1 Significance Criteria

For environmental justice issues, the analysis considers whether the Proposed Action or alternatives would:

1. Result in substantial environmental impacts that disproportionately affect low-income and minority populations

According to EO 12898, an environmental justice impact analysis should identify whether a proposed federal action would result in disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. "Disproportionately high and adverse effect on minority and low-income populations" for this impact analysis means that an adverse effect is predominately borne by a minority or low-income population and that the effect will be suffered by the minority or low-income population and is appreciably more severe or greater in magnitude than the adverse effect on the rest of the population.

4.7.2.2 Alternative A – Proposed Action

Impact 7.1: Disproportionate Effects to Low-Income and Minority Populations (Criterion 1)

The existing Alice Griffith public housing development and greater BVHP neighborhood contain low-income and minority populations.

Redevelopment of the Project Site would proceed in phases to avoid displacement of existing residents. The initial phases would develop vacant portions of the site, and existing residents would then occupy those new units before demolition of structures in subsequent phases.

Occupants of existing residences would be subject to construction period impacts such as dust and noise. These topics are discussed in detail in **Section 4.2** Air Quality, **Section 4.3** Hazards and Hazardous Materials, **Section 4.5** Noise, and **Section 4.10** Hydrology, Flooding, and Water Quality. Construction impacts would be short term. Compliance with current building regulations and implementation of the mitigation measures identified in these sections would ensure that effects on low income and minority populations during construction would be reduced to a less-than significant level.

Overall, development of the Proposed Action would have a ***beneficial*** effect on environmental justice populations. Alternative A would result in improvement of housing conditions for low-income and minority populations as the existing units are distressed and in various stages of physical decay. Alternative A would provide improved on-site recreational opportunities through the creation of a new neighborhood park. This alternative would also improve access to the surrounding community as there is currently only one main access point to/from the Project Site. Alternative A provides employment opportunities for BVHP residents through the BVHP Employment and Contracting Policy, which has a goal for 50 percent of construction and permanent jobs to be

filled by qualified BVHP residents. Permanent jobs at the Project Site would include jobs associated with the on-site neighborhood serving retail.

4.7.2.3 Alternative B – Housing Replacement Alternative

The impacts of Alternative B on environmental justice populations would be the same as Alternative A, with the exception that no permanent job opportunities would be created. Overall, due to the potential job opportunities and the improvement of housing conditions, recreational opportunities, and neighborhood access, Alternative B would have a ***beneficial*** effect on environmental justice populations.

4.7.2.4 Alternative C – Reduced Development Alternative

The impacts of Alternative B on environmental justice populations would be the same as Alternative A. Overall, due to the potential job opportunities and the improvement of housing conditions, recreational opportunities, and neighborhood access, Alternative C would have a ***beneficial*** effect on environmental justice populations.

4.7.2.5 Alternative D – No Action Alternative

Under the No Action Alternative, existing conditions at the Project Site would remain unchanged. The 256 public housing units would not be replaced, and no other improvements would be implemented. It is anticipated that the existing housing on the Project Site would continue to deteriorate, presenting potential safety and health issues. As the Project Site contains low-income and minority populations, this is considered a ***significant and adverse*** impact with respect to environmental justice issues.

4.7.3 Mitigation Measures

No mitigation measures are discussed for environmental justice issues.

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4.8 Public Services and Utilities

4.8.1 Introduction

This section addressees the following public services and utilities: water supply, wastewater conveyance and treatment, solid waste collection and disposal, energy, law enforcement, fire protection and emergency medical services, schools, libraries, and parks and recreation. The section discusses the applicable regulatory framework and analyzes the environmental consequences of the Proposed Action and alternatives.

4.8.2 Regulatory Context

Water

Section 10610.4 of the California Urban Water Management Planning Act specifies that Urban Water Suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies. The San Francisco Public Utilities Commission (SFPUC) prepared and adopted the current Urban Water Management Plan in December 2005.

California, through the passage of Senate Bill 610, requires that a jurisdiction prepare a water supply assessment for development projects that meet certain criteria, including a project that creates demand for 500 or more housing units. The Proposed Action and Alternative C would meet the requirements for preparation of a water supply assessment.

The City's Green Building Ordinance is codified as Chapter 13C of the San Francisco Building Code (SFBC). It applies to residential and commercial construction and requires a minimum water use reduction of 20 percent based on the maximum allowable water use per plumbing fixture and fitting as required by the California Building Code.

Wastewater

The Clean Water Act requires states to develop water quality standards and prohibits the discharge of pollutants into navigable waters from a point source unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. These permits are issued by the state's nine Regional Water Quality Control Boards (RWQCBs) under authorization from the federal government. The NPDES permit includes discharge standards, pollutant and effluent restrictions, and standards for the treatment and disposal of wastewater.

Solid Waste

The California Integrated Waste Management Act (CIWMA) includes provisions for solid waste source reduction, recycling and composting, and environmentally sensitive solid waste land disposal, in addition to targeted reduction goals for solid waste volumes. Recycling, composting, and waste reduction are expected to increasingly divert waste from the landfill, in accordance

with California and local requirements. CIWMA required each jurisdiction to divert 50 percent of its waste stream from landfill disposal by 2000. The City met this threshold in 2003 and increased it to 69 percent in 2005 and 70 percent in 2006.

The San Francisco Board of Supervisors adopted Resolution 679-02 in 2002 which adopted a citywide landfill diversion goal of 75 percent by 2010 and a long-term zero waste goal targeted for 2020.

Projects that require demolition of an existing structure must submit a waste-diversion plan to the Director of the San Francisco Department of the Environment as required by the City's Construction and Demolition Debris Recovery Ordinance (Ordinance 27-06, Chapter 14, San Francisco Environment Code). The waste-diversion plan must demonstrate that 65 percent or more of the total construction and demolition debris produced as the result of the Project (such as wood, metal, concrete, asphalt, and sheetrock) is diverted from landfill interment.

The City's Green Building Ordinance includes rating new construction on a point system with credit given for materials used and recycling among various other factors. As a medium-sized residential construction project the Proposed Action and alternatives would use the GreenPoint rating system.

The Mandatory Recycling and Composting Ordinance (100-09), passed in June 2009 by the San Francisco Board of Supervisors, requires separation of trash from recycling and composting materials for all residences and businesses.

Energy

The California Public Utilities Commission regulates electric and gas service providers throughout the state.

The California Code of Regulations, Title 24, establishes energy conservation standards for heating, cooling, ventilation, water, and lighting on a square footage basis in all new residential and non-residential construction, as well as major renovations of existing buildings. The Title 24 regulations were updated in January 2010 and are updated semiannually. They are enforced by local building inspection offices that are also responsible for incorporating updates into their local building codes and ordinances. In San Francisco, Title 24 is enforced by the City Department of Building Inspection (DBI).

As discussed under solid waste, the City has adopted a Green Building Ordinance. The point system includes credit for energy efficiency measures.

Law Enforcement

There are no applicable regulations for the analysis of impacts to law enforcement services.

Fire Protection and Emergency Medical

The San Francisco Fire Code incorporates by reference the California Fire Code, with certain local amendments. The California Fire Code addresses building standards, emergency access and sufficient fire flow, among other specifications. The San Francisco Fire Department in coordination with the San Francisco DBI conduct plan checks to ensure that structures, occupancies and systems are designed in accordance with the SFBC.

Schools

There are no applicable regulations for the analysis of impacts to schools.

Libraries

There are no applicable regulations for the analysis of impacts to libraries.

Parks and Recreation

The Quimby Act was established by the California Legislature in 1965 to preserve open space and parkland. The Quimby Act allows cities and counties to establish requirements for new development to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two. The City of San Francisco has not established a citywide target ratio of parkland to residents nor has it adopted a Quimby Act ordinance requiring land dedication or in-lieu fees. The City's existing General Plan Open Space and Recreation Element (1986) recommends increasing the per capita supply of public open space, which at the time of the General Plan was 5.5 acres per 1,000 residents. The Open Space and Recreation Element notes that due to San Francisco's existing development patterns, high population density, and small land mass, it would not be possible to achieve a standard as high as 10 acres per 1,000 residents.

4.8.3 Impact Analysis

4.8.3.1 Significance Criteria

The impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For public services and utilities the analysis considers whether the Proposed Action or alternatives would:

Exceed the existing or proposed capacity of municipal utility systems or providers including:

1. water supply,
2. wastewater conveyance and treatment, and
3. solid waste collection and disposal
4. energy (electricity and natural gas)

Exceed the existing or proposed capacity of public services, resulting in the need for new or expanded facilities for:

1. police services,
2. fire protection and emergency medical services,
3. schools,
4. libraries, and
5. parks and recreation

4.8.3.2 Alternative A – Proposed Action

Impact 8.1: Water Supply (Criterion 1)

A Water Supply Assessment was completed for the Candlestick Point-Hunters Point Shipyard Phase II (CP-HPS) Project which included the development of the Proposed Action. Based on the usage rates for the Candlestick Point area, the Proposed Action would have a water supply demand of approximately 0.12 million gallons per day (MGD) at buildout (**Table 4.8-1**). Water supply demand assumes compliance with the California Building Code (specifically Plumbing Code) and the City's Green Building Ordinance (20 percent minimum water use reduction based on the maximum allowable water use per plumbing fixture and fitting as required by the California Building Code).

TABLE 4.8-1
WATER DEMANDS FOR ALTERNATIVE A

	Candlestick Point		Project Site	
Land Use	**Units/Area**	**Total Demand (MGD)**	**Units/Area**	**Total Demand (MGD)**
Residential	7,850 units	0.61	1,210 units	0.09
Community Uses	50,000 sf	0.01	25,000 sf	0.01
Parks and Open Space	8.1 acres	0.06	1.4	0.01
Neighborhood Retail	125,000 sf	0.02	50,000 sf	0.01
Other CP Uses (Hotel, Office, R&D, Regional Retail, etc)	Varies	.0.18	--	--
Total		**0.88**		**0.12**

1. sf=square feet
2. Demand for community uses and neighborhood retail was conservatively assumed for the project site given the opportunity center and availability for neighborhood retail.

SOURCE: SFPUC, Candlestick Point - Hunters Point Shipyard Phase II Project Final Water Supply Assessment, October 2009.

Existing and future water supplies for all retail customers are discussed in the Phased Water Supply Improvement Program (WSIP) developed by SFPUC. The WSIP allocates 84.5 MGD of the existing surface water and groundwater supply to retail customers. An additional 10 MGD is planned by 2015 through the development of additional groundwater and recycled water projects

and from implementation of conservation measures. Thus, after 2015, the estimated water supply for all retail customers is estimated to be 94.5 MGD.[1]

Future retail demands are estimated in the Water Supply Availability Study (WSAS) developed by SFPUC which updates the Urban Water Management Plan (last updated in 2005).[2] Demand estimates include 1) more current population and employment estimates and 2) major development proposals in San Francisco, based on information provided by project proponents, including Lennar Urban for the Proposed Action. The total retail demand estimates in the WSAS, including the Proposed Action, were estimated at 91.81 for 2010, 91.69 for 2015, 91.87 for 2025 and 93.42 for 2030.

A comparison of the supply and demand determined that SFPUC has capacity for existing customers, the Proposed Action and other future projects from 2015 to 2030 for normal years, single-dry years and most multiple-dry years. There was an estimated deficiency for 2010 and deficiencies if 2030 were a second or third dry year event (drought conditions). The deficit in 2010 is a result of the Phased WSIP which restricts SFPUC's allocation to 81 MGD for retail water. If retail demand exceeds the available RWS supply of 81 MGD between 2010 and 2015, and total RWS deliveries exceed 265 MGD between 2010 and 2015, the Water Supply Agreement allows the SFPUC to purchase additional water from the RWS for retail customers in the SFPUC service area by paying an environmental surcharge. The first phase of the Proposed Action is not anticipated to be completed until after 2015 and thus the Proposed Action is not anticipated to affect supplies between 2010 and 2015. During drought conditions the Water Shortage Allocation Plan provides a method for allocating water between the SFPUC's retail and wholesale customers. The Retail Water Shortage Allocation Plan (RWSAP) involves the use of voluntary rationing and issuing specific allotments for customers. With implementation of the RWSAP, adequate water supplies are anticipated for customers.

As discussed above, there would be sufficient water supply prior to construction of the Proposed Action. During drought conditions from 2030 and beyond, implementation of the RWSAP would allow for adequate water supply to be provided to existing and planned development. Thus, the impact of the Proposed Action on water supply providers would be ***less than significant***.

Impact 8.2: Wastewater Conveyance and Treatment (Criterion 2)

Wastewater flows from residential and retail commercial uses are primarily a factor of indoor water use. A conservative wastewater flow factor of 95 percent of water demand was used based on San Francisco historical water demand to wastewater flow ratios.[3] Using this ratio, the Project Site would generate approximately 0.11 MGD or 76.4 gpm on average. Using a conservative factor of 3.0, peak flows are estimated to be 229.2 gpm. Parks and open space water use was excluded from this number as it is primarily associated with irrigation which would either percolate into the ground or flow to the separate stormwater system.

[1] SFPUC, Candlestick Point - Hunters Point Shipyard Phase II Project Final Water Supply Assessment, October 2009.
[2] Ibid. Appendix D.
[3] City and County of San Francisco, 2030 Sewer System Master Plan, Task 100 Technical Memorandum No. 102 Wastewater Flow and Load Projections, Final Draft August 2009.

Wastewater and stormwater flows from the Project Site enter the combined sewer system and are conveyed through the Candlestick tunnel sewer to the Yosemite Transport/Storage System. From here flows are conveyed to the Griffith Pump Station, then the Hunters Point tunnel sewer, and finally to the Southeast Water Pollution Control Plant (SWPCP).[4]

The Candlestick tunnel sewer has an average daily dry-weather flow of 1,736 gallons per minute or gpm.[5] A peak flow of 5,208 gpm (conservatively 3 times average flows) is assumed for this sewer. The design capacity of the Candlestick tunnel sewer is 34,722 gpm[6] which leaves remaining capacity of 29,514 during peak flows. This is more than enough to handle peak flows from the Proposed Action, approximately 229.2 gpm, which represents approximately 0.8 percent of remaining capacity.

The Hunters Point tunnel sewer has an average dry-weather flow of 4,167 gpm[7] and an estimated peak flow of 12,501gpm (based on a conservative peaking factor of 3). The design capacity of the Hunters Point tunnel sewer is 83,333 gpm[8] which leaves remaining capacity of 70,832 during peak flows. This is more than enough to handle peak flows from the Proposed Action, approximately 229.2 gpm, which represents approximately 0.3 percent of remaining capacity.

The SWPCP treats approximately 67 MGD during dry weather with a total capacity of 150 MGD; thus during dry weather there is adequate capacity for the 0.09 MGD wastewater flows from the Proposed Action. During wet weather the wastewater flows of the Project Site would be the same as stormwater from the Project Site would flow into a separate system. During large storm events that exceed the capacity of the SWPCP, North Point Wet Weather Facility and Bayside Wet Weather Facilities, the City is permitted to discharge into the San Francisco Bay via combined sewer overflow structures. Due to the low volume of flows from the Proposed Action and the additional capacity from diversion of Project Site stormwater from the combined sewer system, the Proposed Action is not anticipated to contribute to a violation of current wastewater treatment and discharge requirements. Additional analysis at the cumulative level shows that the larger CP-HPS Project would result in an overall decrease in flows to the combined sewer system in comparison to existing flows, due to diversion of stormwater from the combined sewer system. As there is adequate capacity for wastewater flows from the Proposed Action during dry weather and the wastewater flows during wet weather events would not result in non-compliance with the City's treatment and discharge permits, this impact is considered ***less than significant***.

Impact 8.3: Solid Waste Collection and Disposal (Criterion 3)

Proposed demolition and construction activities would generate waste requiring disposal. The Proposed Action would be required to submit a waste-diversion plan to the San Francisco Department of the Environment pursuant to the City's Construction and Demolition Debris Recovery Ordinance. The waste-diversion plan must demonstrate that 65 percent or more of the total construction and demolition debris are diverted from landfill interment. All mixed C&D debris transferred off-site

[4] SFPUC, *Bayside Systems and Facilities and Operations Plan*, 2002.
[5] Ibid.
[6] Ibid.
[7] Ibid.
[8] Ibid.

must be transferred by a licensed hauler to a licensed C&D recycling facility. Utilizing the licensed hauler and recycling facilities typically qualifies as equivalence to the 65 percent requirement. The proposed regulations would ensure that the maximum amount of construction and demolition materials is diverted from landfills.

During operation, the Proposed Action all residents and neighborhood retail employees would comply with City Ordinance 100-09, the Mandatory Recycling and Composting Ordinance which requires separation of municipal solid waste into recyclables, compostables, and trash. Residual wastes which cannot be recycled or composted would be transferred to the Altamont Landfill until 2015 and to the Ostrom Road Landfill after 2015. Based on San Francisco's per capita waste disposal of approximately 0.42 tons of waste per resident per year, the proposed 2,783 residents would dispose of approximately 1,169 tons per year.[9]

The Proposed Action would not be fully built out until 2021 when residual waste would be transferred to Ostrom Road Landfill; however, residences could be occupied prior to 2015 and thus the Altamont Landfill was given conservative consideration. As of 2009 (the last reported year), on average the Altamont Landfill received less solid waste then permitted for disposal, approximately 2,932 tons per day[10] although daily loads would fluctuate. The Altamont Landfill is permitted a maximum disposal of 11,500 tons per day.[11] Thus, the Altamont Landfill has capacity for the Proposed Action, which would represent approximately 0.03 percent of daily permitted intake.

As of 2009 (the last reported year), on average the Ostrom Road Landfill received less solid waste then permitted for disposal, approximately 646 tons per day[12] although daily loads would fluctuate. The Ostrom Road Landfill is permitted a maximum disposal of 3,000 tons per day.[13] Thus, the Ostrom Road Landfill has capacity for the Proposed Action, which would represent approximately 0.11 percent of daily permitted intake.

Disposal rates for businesses are typically based on the number of employees or square feet. As it is uncertain how much neighborhood retail would ultimately be accommodated these uses were not included in the above calculations. However, given the remaining permitted daily capacity for both Altamont Landfill and Ostrom Road Landfill (8,568 tons per day and 2,354 tons per day respectively), there is more than enough existing daily capacity for the level of neighborhood commercial envisioned under the Proposed Action. Considering the required recycling during construction and operation, the extent of project demands and the availability of capacity at the Altamont and Ostrom Road Landfills, the impacts of the Proposed Action on solid waste facilities would be ***less than significant***.

[9] CalRecycle, 2009, Residential Waste Disposal Rates, available online at: http://www.calrecycle.ca.gov/wastechar/ResDisp.htm, accessed September 2011.

[10] Based on 1.07 million tons received in 2009. California Department of Resources Recycling and Recovery (CalRecycle), Active Landfills Profile for Altamont Landfill & Resource Recovery (01-AA-0009), http://www.calrecycle.ca.gov/Profiles/Facility/Landfill/LFProfile2.asp?COID=1&FACID=01-AA-0009, accessed September 2011.

[11] Ibid.

[12] Based on 235,901 tons received in 2009. CalRecycle, Active Landfills Profile for Recology Ostrom Road Landfill (58-AA-0011). http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=58&FACID=58-AA-0011, accessed September 2011.

[13] Ibid.

Impact 8.4: Energy (Criterion 4)

The Proposed Action would increase demands on electricity and natural gas providers. While the Proposed Action is larger than the existing development it incorporates a number of energy efficiency measures. As discussed in the project description (**Chapter 2.0**), the project sponsor has committed to voluntarily implement LEED for Neighborhood Development (ND), based on the pilot version of the rating system released in June 2007. LEED ND standards apply principles of energy efficiency such as compliance with ENERGY STAR. The Proposed Action has also set an energy efficiency performance target of 15 percent below the energy efficiency standards in Title 24, Part 6, of the 2008 California Code of Regulations.

Electricity demands for the Proposed Action are estimated to be approximately 5,264 megawatt-hours (MWh) without the 15 percent energy performance deduction and 4,880 MWh with the reduction (**Table 4.8-2**). For reference 5,264 MWh and 4,880 MWh are approximately 0.09 percent and 0.08 percent of total electricity consumed by San Francisco (5.855 million MWh[14]), respectively. Thus, the Proposed Action would represent a small portion of electricity consumption in San Francisco.

TABLE 4.8-2
ELECTRICITY DEMANDS FOR ALTERNATIVE A

Land Use	MWh/(sf or unit)	Units/Area	MWh Consumed Annually	MWh Consumed Annually with 15% reduction
Plug-In Appliances				
Residential	1.7830	1,210 units	2,157	No reduction taken for plug-in appliances
Community Uses	0.0093	25,000 sf	233	
Neighborhood Retail	0.0096	50,000 sf	480	
Subtotal			*2,870*	*2,870*
Building Envelope				
Residential	1.7350	1,210 units	2,099	1,784
Community Uses	0.0052	25,000 sf	130	111
Neighborhood Retail	0.0027	50,000 sf	135	115
Subtotal			*2,364*	*2,010*
Total			**5,264**	**4,880**

1. sf=square feet
2. Demand for community uses and neighborhood retail was conservatively assumed for the project site given the opportunity center and availability for neighborhood retail.

SOURCE: ESA, 2011; ENVIRON International Corporation, Climate Change Technical Report: Candlestick Point–Hunters Point Shipyard Phase II Project, October 2009,

Natural gas demands for the Proposed Action are estimated to be approximately 784 million British thermal units (MBtu) without the 15 percent energy performance deduction and 666 MWh with the reduction (**Table 4.8-3**). For reference 784 MBtu and 666 MBtu are both approximately

[14] California Energy Commission, Electricity Consumption by County: San Francisco County. http://ecdms.energy.ca.gov/elecbycounty.aspx (accessed October 2011).

0.003 percent of total natural gas consumed by San Francisco (26 million MBtu[15]). Thus, the Proposed Action would represent a small portion of natural gas consumption in San Francisco

TABLE 4.8-3
NATURAL GAS DEMANDS FOR ALTERNATIVE A

Land Use	MBtu/(sf or unit)	Units/Area	MBtu Consumed Annually	MBtu Consumed Annually with 15% reduction
Residential	0.0360	1,210 units	43	37
Community Uses	0.0200	25,000 sf	500	425
Neighborhood Retail	0.0048	50,000 sf	240	204
Subtotal				
Total			**784**	**666**

1. sf=square feet
2. Demand for community uses and neighborhood retail was conservatively assumed for the project site given the opportunity center and availability for neighborhood retail.

SOURCE: ESA, 2011; ENVIRON International Corporation, Climate Change Technical Report: Candlestick Point–Hunters Point Shipyard Phase II Project, October 2009,

As discussed above, the Proposed Action would represent a small portion of energy consumption for San Francisco. The project sponsor would continue to coordinate with electricity and natural gas providers to ensure that adequate supplies and infrastructure are available. Energy is provided on a first-come, first served basis and energy providers have not stopped accepting new applications for service. The project sponsor would be charged for new infrastructure and infrastructure extension, where required, based on the utilities' adopted tariffs. Further required coordination includes the submittal of design-level load information to energy providers and the submittal of infrastructure plans to the City of San Francisco. Considering the relatively minor demand and City and utility approvals required for service, the energy demands of the Proposed Action would be ***less than significant***.

Impact 8.5: Police Services (Criterion 5)

The Proposed Action is within an area currently served by the Police Department and thus would not increase response times from the development of residential units that are inaccessible or distant from existing police facilities or patrols. The Proposed Action would result in a population of 2,783 residents at the Project Site and a net population increase of approximately 2,113 (given 670 existing on-site residents). The San Francisco Police Department evaluates the need for additional officers by sector, based on a ratio of 1 police officer per 665 persons, reflecting both the City's resident and commuter population. This ratio has not been formally adopted, but serves as an evaluative baseline for determining current and future staffing needs.[16] Thus the Proposed Action could result in a need for up to three additional officers for primary services. However, the Police Department would evaluate any increase in staffing, in conjunction with district-wide needs in the neighborhood and citywide needs. It is anticipated that the supplemental police

[15] California Energy Commission, Gas Consumption by County: San Francisco County. http://ecdms.energy.ca.gov/gasbycounty.aspx (accessed October 2011).
[16] This ratio is documented in projects contributing to cumulative demand and is based on the population to police officer ratio in 2005.

housing team would also remain at the Project Site, pursuant to the terms of the existing Memorandum of Understanding (MOU) between the San Francisco Housing Authority and the San Francisco Police Department for Supplement Law Enforcement Services.[17]

A Boundaries Analysis Report was prepared for the Police Department which identifies City-wide facility needs. Some stations are recommended for replacement or expansion; however, the report does not identify the Bayview station for replacement, expansion, or improvement as one of the early action priorities. The report does identify the potential for reconfiguration of the existing station and provision of structured parking to meet long-term operational needs at the Bayview station. As the station is not near capacity, the addition of three officers is not anticipated to result in the need for expanded or new police facilities. Thus, the direct impact of the Proposed Action to police services would be *less than significant*. Cumulative impacts in **Chapter 5** consider the impact of the Proposed Action in conjunction with other development in the Project Site vicinity and discuss additional building space within the CP-HPS Project for police and fire protection services.

Impact 8.6: Fire Protection and Emergency Medical Services (Criterion 6)

New buildings would be constructed in compliance with the San Francisco Fire Code which would help to reduce the risks associated with structure fires. The Proposed Action also includes the extension of the auxiliary water supply system to provide adequate pressure for fire flows. The Proposed Action would result in a net population increase of 2,113 people which would increase demands on fire protection and emergency medical services. The San Francisco Fire Department response time goal for fire and medical emergency services is 4.5 minutes. There are currently three stations (Stations 17, 42 and 44) which would be able to provide a response time of 4.5 minutes or less to the Project Site.[18] Due to the number of existing facilities which could provide adequate response to the Project Site, the Proposed Action is not anticipated to result in the need for new or expanded facilities. Thus, the direct impact of the Proposed Action to fire protection and emergency medical services would be ***less than significant***. Cumulative impacts in **Chapter 5** consider the impact of the Proposed Action in conjunction with other development in the Project Site vicinity and discuss additional building space within the CP-HPS Project for police and fire protection services.

Impact 8.7: Schools (Criterion 7)

The Proposed Action includes new residential development which could generate students who would attend local public schools. It is conservatively assumed that students would be new to the district and would attend public schools, though it is likely that a portion of the students would already be enrolled within the San Francisco Unified School District (SFUSD) or would attend a private school. Recent environmental documents in consultation with SFUSD use a student generation rate of 0.203 students per dwelling (K-12).[19] Using this student generation rate, the

[17] San Francisco Housing Authority (SFHA), Resolution Authorizing the Executive Director to Enter Into a One year Memorandum of Understanding Between the San Francisco Housing Authority and the San Francisco Police Department for Supplement Law Enforcement Services in an Amount not to Exceed $650,000, April 13, 2009.

[18] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, Candlestick Point–Hunters Point Shipyard Phase II Project Draft Environmental Impact Report, November 2009, Table.O-4.

[19] Candlestick Point–Hunters Point Shipyard Phase II Project Draft Environmental Impact Report, November 2009 and Eastern Neighborhoods Community Rezoning and Area Plan Final Environmental Impact Report, August 2008.

Proposed Action would generate approximately 246 students or approximately 19 students per grade. Schools in the vicinity of the Project Site have adequate capacity (**Table 4.8-4**) with the exception of Martin Luther King Jr. Middle School, which is located approximately one mile from the Project Site. Visitacion Valley Middle School does have adequate capacity and is located 1.25 miles from the Project Site.

TABLE 4.8-4
SCHOOL ENROLLMENT AND CAPACITY

	Capacity[1]	2010 Enrollment[2]	2010 Remaining Capacity	Potential Students from Proposed Action
Bret Harte Elementary (K-5)	500	240	260	114
Visitacion Valley Middle School (6-8)	850	434	416	57
Thurgood Marshal High School (9-12)	1,275	788	487	76

SOURCE:
1. SFUSD, *Capital Plan FY 2010-2019*, September 2009
2. SFUSD, School Site and List Summary, October 6, 2010.

SFUSD currently uses a diversity index lottery system to assign students to schools based on a number of factors including parental choice, school capacity, and special program needs.[20] Under the diversity index lottery system the students generated by the Proposed Action may attend a SFUSD school other than the nearest schools; however, that school would have to have capacity. Thus, the assumption that all students generated by the Proposed Action would attend the nearest school is a conservative assumption of the impact on the students' default school assignment.

New development, such as the Proposed Action, is required to pay school impact development fees which would go directly to the SFUSD to fund staffing and facilities and reduce the impacts of new development. Given the payment of school fees and the capacity within nearby schools, impacts to schools would be ***less than significant***.

Impact 8.8: Libraries (Criterion 8)

There are three branches of the San Francisco Public Library within two miles of the Project Site. These library branches are either new or are being remodeled and their capacities expanded as a result of the Branch Library Improvement Program. Library services and facilities are funded primarily through voter-approved bond measures and the General Fund, which receives revenue from a range of sources including property taxes and development fees. As several new libraries are undergoing expansion and the Proposed Action would contribute to library funding through property taxes and development fees, impacts to libraries would be ***less than significant***.

Impact 8.9: Parks and Recreation (Criterion 9)

The City of San Francisco has not established a citywide target ratio of parkland to residents nor has it adopted a Quimby Act ordinance requiring park land dedication or in-lieu fees. The Proposed Action would include the 1.4-acre Alice Griffith Neighborhood Park, which would have playgrounds,

[20] SFUSD, History of the Student Assignment Method, available online at: http://portal.sfusd.edu/apps/departments/educational_placement/HistoryStudentAssignment.pdf, 2011.

sports facilities, picnic areas, and recreational amenities. In addition, there are several nearby parks, including the Gilman Playground across the street, Bayview Park to the south across Jamestown Avenue, and the Bayview K.C. Jones Playground. The Candlestick Point State Recreation Area provides a large area for recreation less than half a mile from the Project Site. With existing and planned parks and recreation facilities, the Proposed Action would have a ***less than significant*** impact on parks and recreation.

4.8.3.3 Alternative B – Housing Replacement Alternative

Impact 8.1: Water Supply (Criterion 1)

Water demands would differ from existing levels due to the incorporation of water use reduction measures in compliance with the City's Green Building Ordinance. The water demands for Alternative B are estimated to be 0.06 MGD (**Table 4.8-5**) which is less than Alternative A. As sufficient water supplies are available for Alternative A, it is reasonable to assume that there would be available water supplies for Alternative B, which has a lower demand. Thus, impacts to water suppliers would be ***less than significant***.

TABLE 4.8-5
WATER DEMANDS FOR ALTERNATIVES B AND C

	Candlestick Point		Alternative B		Alternative C	
Land and Facility Uses	**Units/Area**	**Total Demand (MGD)**	**Units/Area**	**Total Demand (MGD)**	**Units/Area**	**Total Demand (MGD)**
Residential	7,850	0.61	256 units	0.02	875 units	.07
Community Uses	50,000 sf	0.01	25,000 sf	0.01	25,000 sf	0.01
Parks and Open Space	8.1 acres	0.06	1.4 acres	0.01	1.4 acres	0.01
Neighborhood Retail	125,000 sf	0.02	--	0.02	50,000 sf	0.01
Other CP Uses (Hotel, Office, R&D, Regional Retail, etc)	Varies	.0.18	--	--	--	--
Total		**0.88**		**0.06**		**0.10**

1. sf=square feet
2. Demand for community uses and neighborhood retail was conservatively assumed for the project site given the opportunity center and availability for neighborhood retail.

SOURCE: SFPUC, Candlestick Point - Hunters Point Shipyard Phase II Project Final Water Supply Assessment, October 2009.

Impact 8.2: Wastewater Conveyance and Treatment (Criterion 2)

As discussed for Alternative A, a conservative wastewater flow factor of 95 percent of water demand was used based on San Francisco historical water demand to wastewater flow ratios. Using this ratio, Alternative B would generate approximately 0.06 MGD or 39.6 gpm on average. Using a conservative factor of 3.0, peak flows are estimated to be 118.8 gpm. Parks and open space water use was excluded from this number as it is primarily associated with irrigation which would either percolate into the ground or flow to the separate stormwater system.

As there is sufficient wastewater conveyance and treatment capacity for Alternative A, it is reasonable to assume that there would be available capacity for Alternative B, which has lower average and peak wastewater flows. Thus, impacts to wastewater service providers would be ***less than significant***.

Impact 8.3: Solid Waste Collection and Disposal (Criterion 3)

As Alternative B includes the same number of residential units as the existing Alice Griffith housing development, no change in solid waste disposal rates is anticipated. Residents are currently required to sort refuse into recycling, compostables and trash by the Mandatory Recycling and Composting Ordinance and would continue to do so under Alternative B. As no increase in solid waste would be anticipated, this impact would be ***less than significant.***

Impact 8.4: Energy (Criterion 4)

Alternative B would increase demands on electricity and natural gas providers. Impacts would be similar to those described for Alternative A; however, Alternative B would have lower demands due to the reduced intensity of development. Considering the relatively minor demand and City and utility approvals required for service, the energy demands of Alternative B would be ***less than significant***.

Impact 8.5: Police Services (Criterion 5)

Alternative B would not result in a net increase in population, and thus is not anticipated to increase demands on police services. This impact is considered ***less than significant***.

Impact 8.6: Fire Protection and Emergency Medical Services (Criterion 6)

Alternative B would not result in a net increase in population, and thus is not anticipated to increase demands on fire protection and emergency medical services. The Project Site is within the 4.5 minute response time goal for three fire stations. For these reasons, this impact is considered ***less than significant***.

Impact 8.7: Schools (Criterion 7)

Alternative B would not result in a net increase in population, and thus would not increase the number of students attending local schools. This impact is considered ***less than significant***.

Impact 8.8: Libraries (Criterion 8)

Alternative B would not result in a net increase in population and thus would not increase demands on library services. This impact would be ***less than significant***.

Impact 8.9: Parks and Recreation (Criterion 9)

Alternative B would not result in an increase in the number of residents at the Project Site and thus it is anticipated that recreational demands would be similar to existing demands from residents at the Project Site. While the implementation of Alternative B would result in the loss of existing recreational facilities on the Project Site southeast of Griffith Street, they would be replaced with

more centralized recreational amenities within a new 1.4-acre park on the Project Site. The net effect of on parks and recreation would be ***less than significant***.

4.8.3.4 Alternative C – Reduced Development Alternative

Impact 8.1: Water Supply (Criterion 1)

The water demands for Alternative C are estimated to be 0.10 MGD (**Table 4.8-5**) which is less than Alternative A. As sufficient water supplies are available for Alternative A, it is reasonable to assume that there would be available water supplies for Alternative C, which has a lower demand. Thus, impacts to water suppliers would be ***less than significant***.

Impact 8.2: Wastewater Conveyance and Treatment (Criterion 2)

As discussed for Alternative A, a conservative wastewater flow factor of 95 percent of water demand was used based on San Francisco historical water demand to wastewater flow ratios. Using this ratio, Alternative C would generate approximately 0.10 MGD or 66.0 gpm on average. Using a conservative factor of 3.0, peak flows are estimated to be 198 gpm. Parks and open space water use was excluded from this number as it is primarily associated with irrigation which would either percolate into the ground or flow to the separate stormwater system.

As there is sufficient wastewater conveyance and treatment capacity for Alternative A, it is reasonable to assume that there would be available capacity for Alternative C, which has lower average and peak wastewater flows. Thus, impacts to wastewater service providers would be ***less than significant***.

Impact 8.3: Solid Waste Collection and Disposal (Criterion 3)

Alternative C would generate solid waste during demolition and construction activities and during operation.

Alternative C would be required to submit a waste-diversion plan pursuant to the City‘s Construction and Demolition Debris Recovery Ordinance demonstrating that 65 percent or more of the total construction and demolition debris are diverted from landfill interment. Alternative C would utilize licensed hauler and recycling facilities, which typically qualifies as equivalence to the 65 percent requirement.

During operation, all residents and neighborhood retail employees would comply with the City’s Mandatory Recycling and Composting Ordinance which requires separation of municipal solid waste into recyclables, compostables, and trash. As there is adequate capacity within Altamont and Ostrom Road Landfills for Alternative A, it is reasonable to assume that capacity is available for Alternative C, which would produce less solid waste due to the reduced intensity of development. The impact on solid waste facilities would be ***less than significant***.

Impact 8.4: Energy (Criterion 4)

Alternative C would increase demands on electricity and natural gas providers. This alternative includes the same commitments to voluntarily implement LEED and set an energy efficiency

performance target of 15 percent below Title 24 energy efficiency standards. Energy demands would be similar but less than Alternative A, due to the reduced intensity of development, and thus would represent a small portion of energy consumption for San Francisco. Considering the relatively minor demand and City and utility approvals required for service, the energy demands of Alternative C would be ***less than significant***.

Impact 8.5: Police Services (Criterion 5)

Impacts to police services would be similar to Alternative A. Alternative C would result in a population of 2,013 residents at the Project Site and a net population increase of approximately 1,343 (given 670 existing on-site residents). Using the ratio of 1 police officer per 665 persons, Alternative C would result in a need for up to two additional officers. These officers would be stationed at the Bayview Station which is not identified for expansion or replacement to meet long-term operational needs. Thus, the direct impact of Alternative C to police services would be *less than significant*.

Impact 8.6: Fire Protection and Emergency Medical Services (Criterion 6)

New buildings would be constructed in compliance with the San Francisco Fire Code and the auxiliary water supply system would be extended to the Project Site for adequate pressure for fire flows. Alternative C would result in a net population increase of 1,343 people which would increase demands on fire protection and emergency medical services. The San Francisco Fire Department response time goal for fire and medical emergency services is 4.5 minutes. There are currently three stations which would be able to provide a response time of 4.5 minutes or less to the Project Site.[21] Due to the number of existing facilities which could provide adequate response to the Project Site, Alternative C is not anticipated to result in the need for new or expanded facilities. Thus, the direct impact of Alternative C to fire protection and emergency medical services would be ***less than significant***.

Impact 8.7: Schools (Criterion 7)

Alternative C would include residential development which could generate new students and increase demands on nearby schools. Using the student generation rate of .203 students per dwelling (K-12), Alternative C (875 dwelling units) would generate 178 students or approximately 14 students per grade.

As there is sufficient capacity under Alternative A, which would generate more students, there is adequate capacity for students generated by Alternative C. Alternative C would be required to pay school impact development fees which would go directly to the SFUSD to fund staffing and facilities. Given the payment of school fees and the capacity within nearby schools, impacts would be ***less than significant***.

[21] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, Candlestick Point–Hunters Point Shipyard Phase II Project Draft Environmental Impact Report, November 2009, Table.O-4.

Impact 8.8: Libraries (Criterion 8)

There are three branches of the San Francisco Public Library within two miles of the Project Site. These library branches are either new or are being remodeled and their capacities expanded. As several new libraries are undergoing expansion and Alternative C would contribute to library funding through property taxes and development fees, impacts to libraries would be ***less than significant***.

Impact 8.9: Parks and Recreation (Criterion 9)

The City of San Francisco has not established a citywide target ratio of parkland to residents nor has it adopted a Quimby Act ordinance requiring park land dedication or in-lieu fees. Alternative C would include the 1.4-acre Alice Griffith Neighborhood Park, which would have various recreational amenities. In addition, nearby parks and recreation areas include the Gilman Playground across the street, Bayview Park to the south across Jamestown Avenue, and the Bayview K.C. Jones Playground. The Candlestick Point State Recreation Area provides a large area for recreation less than half a mile from the Project Site. With existing and planned parks and recreation facilities, Alternative C would have a ***less than significant*** impact.

4.8.3.5 Alternative D – No Action Alternative

With the No Action Alternative, no development would occur. No increased demands would be anticipated for public services and utilities and thus ***no impact*** would be anticipated (Criteria 1 through 9).

4.8.4 Mitigation Measures

No mitigation is recommended.

4.9 Visual Character / Aesthetics

This section describes the regulatory framework and the environmental consequences for visual character and aesthetics.

4.9.1 Regulatory Context

Federal and State

There are no federal or state regulations, plans, or policies that apply to the visual character and aesthetics analysis of the Proposed Action and alternatives.

Local

The *San Francisco General Plan Urban Design Element* addresses the physical character and environment of the City with respect to development and preservation. Relevant to visual character and aesthetics issues, the element addresses issues related to City pattern, guidelines for new development, and neighborhood environment. The element includes objectives and policies that promote the preservation of landmarks, structures, and natural features with notable historic, architectural, or aesthetic value. Policies that apply to the visual character and aesthetics of the Proposed Action and alternatives are listed below:

> **Policy 1.1** Recognize and protect major views of the City, with particular attention to those of open space and water.
>
> **Policy 1.3** Recognize that buildings, when seen together, produce a total effect that characterizes the City and its districts.
>
> **Policy 2.6** Respect the character of older development nearby in the design of new buildings.
>
> **Policy 3.3** Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations.
>
> **Policy 3.5** Relate the height of buildings to important attributes of the City pattern and to the height and character of existing development.
>
> **Policy 4.13** Improve pedestrian areas by providing human scale and interest.
>
> **Policy 4.14** Remove and obscure distracting and cluttering elements.

Candlestick Point Design for Development

The Candlestick Point Design for Development document (D4D; **Appendix B**), adopted June 3, 2010 by the San Francisco Planning Commission and the San Francisco Redevelopment Commission, establishes the development standards and guidelines that will govern future design and development at the Project Site and larger Candlestick Point area. Additionaly discussion regarding D4D is included in **Section 4.4.1**.

4.9.2 Impact Analysis

4.9.2.1 Significance Criteria

The following impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For visual character and aesthetics the analysis considers whether the Proposed Action or alternatives would:

1. Introduce elements that are out of character or scale with the existing physical environment or that detract from the aesthetic appeal of the surrounding area
2. Block or disrupt views of scenic resources or reduce public opportunities to view scenic resources.

Approach

The visual character and aesthetics of an area are created by elements of the natural and built environment and their physical relationship to each, as perceived by people. Therefore, individual interpretation of visual character and aesthetics and changes are subjective.

This analysis focuses on the nature and magnitude of changes that would occur considering building scale, height, architectural characteristics, groupings and patterns of buildings along street frontages, lighting, and glare, and public views toward scenic vistas, which include distant built landmarks, public open spaces, or natural features, such as hills or the Bay. This analysis also considers the overall visual effect of the Proposed Action and the alternatives within the broader visual context, as viewed from distant public vantage points.

4.9.2.2 Alternative A – Proposed Action

The Proposed Action would involve the complete demolition, reconfiguration, and redevelopment of the Project Site. All of the Alice Griffith residential buildings and the existing surface parking lots would be demolished and replaced with residential buildings. A neighborhood park would be created and additional community space would be developed to provide a range of community uses, such as social services space, neighborhood services, and commercial uses. The existing roadways, streetscape and other infrastructure throughout the Project Site would be demolished and replaced in phased development.

The illustrations and simulations included in this section are not intended to represent all possible views of the Project Site or final architectural design, but are considered sufficient and adequate to support the assessment of changes to visual character and aesthetics, including changes to views of prominent natural features. The figures include close-in views within the Project Site, as well as medium and long-range views from offsite locations. In addition, the close-in illustrations of the Proposed Action represent building types, heights and design character consistent with the Alice Griffith neighborhood urban design standards and guidelines set forth in the *Candlestick Point Design for Development* (**Appendix B**).

Impact 9.1: Character, Scale and Aesthetic Appeal (Criterion 1)

Construction

During the construction phases of the Proposed Action, construction vehicle and equipment staging areas, exposed building pads, storage trailers, open trenches, debris piles, and roadway bedding and equipment would be visible on or near the Project Site. Construction equipment would be visible from certain perimeter roadways around the Project Site, particularly Arelious Walker Drive. Equipment may also be visible from roadways such as Hawes Street and Carroll Avenue that currently have limited visual access to the Project Site given topography and landscaping, but from which new direct access may exist after re-contouring of the site. Construction equipment would not be located or extend to a height which would obstruct any views of nearby natural resources or scenic vistas.

Construction materials on the Project Site during construction phases of the Proposed Action would introduce elements that are out of character with the existing environment, which includes residential uses nearby. Therefore, the impact regarding aesthetic appeal during construction is considered ***significant and adverse***, even though the effect would be temporary.

Operation

The Proposed Action would create new visual elements within and surrounding the Project Site. Pursuant to the *Design for Development* guidelines, the Project Site would be transformed to improve connections to the surrounding neighborhood, as shown in **Figure 4.9-1**. The existing street grid of surrounding streets would be extended through the Project Site, which is currently an internal loop configuration. Egbert Avenue, which currently ends at Hawes Street adjacent to the Project Site, would be continued as a parkway around a new, centrally-located neighborhood park. The existing highly terraced topography of the Project Site would be re-contoured to more consistent grades to facilitate development as well as mobility.

The existing dilapidated residences, which are in various stages of physical decay (as discussed in **Chapter 1.0,** Purpose and Need), would be replaced with new, aesthetically-improved structures. The new buildings would include townhouses, stacked townhouses, and four- to five-story stacked flats of varying sizes and heights of up to 65 feet, compared to the two-story, approximately 25-foot-tall buildings currently within Alice Griffith. Some of the new buildings would be of similar height to existing buildings.

Adherence to the *Design for Development* standards and guidelines would ensure the building heights would be varied throughout the Project Site, with the tallest buildings up to the maximum six stories (and a 40-foot minimum height) being built along the neighborhood park, as depicted in **Figure 4.9-1**. The shorter buildings would be located along alleyways and situated along Hawes Street, and the northwesterly segments of Fitzgerald Avenue and Carroll Avenue to provide transitions to the lower-rise buildings in the surrounding area.

Figure 4.9-1 also shows other characteristics of the Proposed Action guided by established *Design for Development* standards and guidelines and that would influence the new visual character within the Project Site, such as internal pedestrian connections to off-site areas and the incorporation of

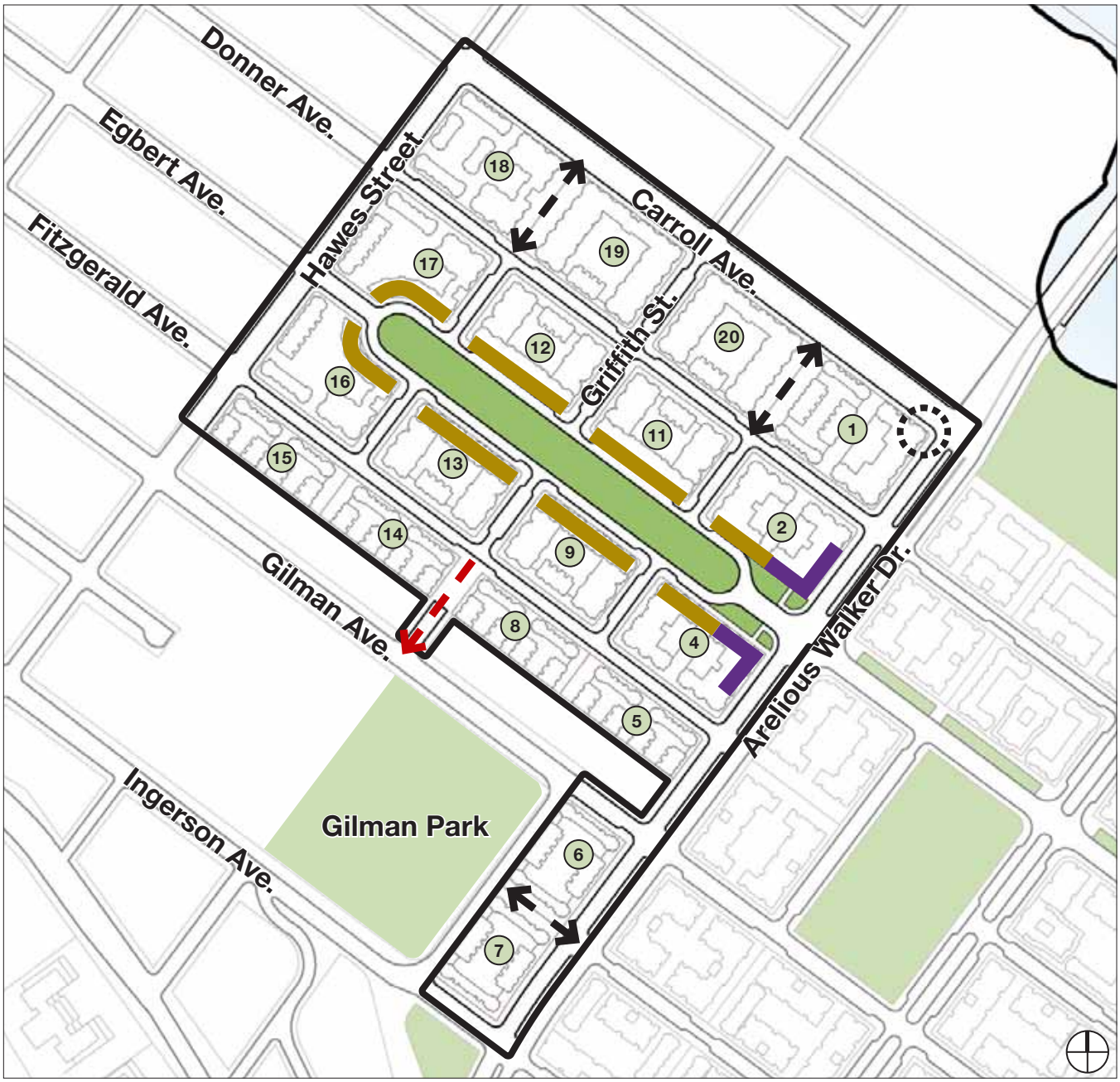
ground-floor commercial uses. Also, development of new residential buildings that would border the backyards of existing residences along Gilman Avenue would provide adequate stepbacks to avoid abrupt changes in building height and scale compared to these homes.

Figure 4.9-2 shows the viewpoint locations from which illustrations of the Project Site were prepared. View A **(Figure 4.9-3**) depicts the taller new residential buildings that would border the new central neighborhood park, as viewed from the southeast end of the park, near Arelious Walker Drive. The new community center is central in this view, which conveys the evened topography, the network of pedestrian ways, and new roadway standards. View B **(Figure 4.9-4**) is a close-in view of the new residential buildings typical along the new parkway; while this view could be from the northwest end of the new central neighborhood park (as indicated in **Figure 4.9-2**), it represents the building and public space design character that would carry through the Project Site.

Figure 4.9-5 includes an existing view of the southern portion of the Project Site and offsite areas to the southwest (that include Bayview Hill), as viewed from Candlestick Park State Recreation Area (CPSRA) west of the Project Site. The same view is also shown with the development under the Proposed Action, and this illustration further demonstrates the increased density and height of development that would occur on the Project Site compared to existing conditions, as well as the change in overall visual character and aesthetics of the Project Site and how the new development would relate physically with the existing surroundings that would remain. Although the Proposed Action would change the visual character and aesthetics of the site, it would be designed to be compatible with the existing surroundings. The illustrations in the aforementioned views are compared with the existing conditions photographs (**Section 3.9**) that are comparatively scaled views of existing Alice Griffith development and the undeveloped parcels at the southeast portion of the Project Site. These include Views B through G (within **Figures 3.9-2 through 3.9-5**) and View J (**Figure 3.9-6**).

Figure 4.9-6 depicts from a birds-eye perspective the overall development pattern of buildings and roadways across the Project Site relative to that of the existing mixed residential, light industrial and commercial area immediately northwest (below Hawes Street), and the existing residential neighborhood to the southwest (along Gilman Avenue and beyond). As mentioned above, the new street pattern through the Project Site would align with the existing grid street system that continues from offsite. While densities would be greater than currently exist, the architectural articulation of the buildings across the Project Site at this scale avoids the use of large, monolithic buildings that would be substantially out of character with the surroundings.

Considering the above elements of the Proposed Action, the residential character of the Alice Griffith portion of the Project Site would not change, but the scale and residential density would increase substantially. Similarly, the character and scale of the surface parking area of the Project Site would change substantially with development of new residences. Taking these factors together, the Proposed Action would not substantially degrade the visual character or quality of the site and its surroundings. The design, massing, and configuration of new buildings, and the layout and circulation of the Project Site, in conformance with the Alice Griffith urban design



Legend

- S1 – Residential Street Wall 40 ft Minimum
- S2/G1 – Mid-block Break (pedestrian mews or vehicular laneways)
- S3 – Griffith Street – Public Right-of-Way (Pedestrian or Vehicular Way)
- Parks
- G3 – Encouraged Ground Floor Commercial or Community Facilities Space
- G4 – Important Intersections
- # Block Numbers

SOURCE: Lennar Urban, 2011; ESA

Figure 4.9-1
Urban Design Elements

SOURCE: Lennar Urban, 2011; ESA 2001

NOTE: Basemap reflects Proposed Action

Figure 4.9-2
Illustrative Viewpoint Locations

SOURCE: Lennar Urban, 2011; ESA 2001

Figure 4.9-3
Illustriative View (A) from East End of
Alice Griffith Community Park

Alice Griffith Redevelopment Project Draft EIS . 211653

SOURCE: Lennar Urban, 2011; ESA 2001

Figure 4.9-4

Illustrative View (B) of Typical Stacked Flat

Existing

Proposed

SOURCE: Lennar Urban, 2009

Alice Griffith Redevelopment Project Draft EIS . 211653

Figure 4.9-5

Illustrative View (C) from CPSRA

SOURCE: Lennar Urban, 2010; ESA, 2011

Alice Griffith Redevelopment Project Draft EIS . 211653

Figure 4.9-6

Illustrative Aerial View (D)
Looking South Toward Project Site

standards and guidelines discussed above, would ensure building heights, building/open space relationships, ground-floor uses, and circulation patterns that are of higher quality and function than existing conditions. New development across the Project Site would not be out of character or scale with the existing physical environment on or around the site and would not substantially detract from the appeal of the natural or man-made surroundings of the site. While the Proposed Action would change existing conditions, it would improve the visual character and aesthetics of the area with well-designed new development, as described above and depicted in Views A through C **(Figures 4.9-3 through 4.9-5)**. The Proposed Action would be considered ***beneficial*** to the visual character of the Project Site and vicinity, given the improvements to visual character and aesthetics that would occur.

Lighting

The Proposed Action would increase the level of outdoor lighting in the area since there would be more housing units and greater density of development on the Project Site. However, the outdoor lighting levels would be still be typical of residential, neighborhood commercial, open space uses and street lighting in urban, mixed use areas and would not be a substantial increase the amount of ambient light. These changes would not be sufficient to detract from the aesthetic appeal of the Project Site and surroundings and thus would be ***less than significant***.

Summary

The impact regarding aesthetic appeal during construction would be temporarily ***significant and adverse*** and mitigation is recommended below. After construction, the Proposed Action would be considered ***beneficial*** to the visual character of the Project Site and vicinity, while the introduction of lighting would be ***less than significant***.

> **Mitigation**: Implementation of **Mitigation Measure 9.1** would ensure that all construction staging areas would not be visible from street level; ensure cleanliness of the construction site, surrounding streets, construction equipment that are stored or driven beyond the construction area; and that the City would review and approve a plan for construction staging, access and parking prior to issuance of a building permit.
>
> **Significance after Mitigation**: Less than significant

Impact 9.2: Views of Scenic Resources (Criterion 2)

The Proposed Action would construct buildings that are taller than the existing development on the Project Site and in the immediately surrounding area, but would also lower the elevation of the existing built areas of the Project Site to improve connectivity with the existing neighborhood and grid street pattern as well as improved pedestrian and vehicular movement to and throughout the Project Site.

The combined effect of taller new buildings and "lowered" elevation in parts of the Project Site could increase the visibility of the development from surrounding streets and viewing distances of a few blocks; however, the Proposed Action would not block or disrupt views or reduce public opportunities to view scenic resources. As discussed in **Section 3.9**, there are no substantial views

across the Project Site to scenic resources. Such views are limited by the low-lying nature of the surrounding areas and roadways, the approximate 25-foot height of the buildings within the developed and highest areas of the Project Site, and steep streets through the Project Site that interrupted long-range vistas.

However, existing views of Bayview Hill (west of Candlestick Park stadium) in proximity to the Project Site exist from the CPSRA at the South Basin, as illustrated in **Figure 4.9-5**. The view crosses the existing, undeveloped parcels at the southern and eastern portions of the Project Site, which would be developed with new residential buildings. Other residential uses and Bayview Hill would be visible beyond. The existing Alice Griffith development is seen to the west (right side of photo). The foreground parking area is within the CPSRA. As shown in the illustration, new intervening development resulting from the Proposed Action could limit views of some of the aforementioned resources, but the magnitude of change would not be substantial to create a negative visible effect or prohibit public opportunities to view the most prominent natural scenic resources in the area – San Francisco Bay, the CPSRA shoreline, and Bayview Hill. Bayview Hill from CPSRA or several other public locations. Bayview Hill will remain substantially visible from CPSRA with the Proposed Action. As such, the impact of the Proposed Action on public views of scenic resources would be ***less than significant***.

4.9.2.3 Alternative B – Housing Replacement Alternative

Impact 4.9-1: Character, Scale and Aesthetic Appeal (Criterion 1)

Construction materials on the Project Site during construction phases of Alternative B would introduce elements that are out of character with the existing environment, which includes residential uses nearby. The impact regarding aesthetic appeal during construction would be temporarily ***significant and adverse*** and mitigation is recommended below.

After construction, the extent of visual changes on the Project Site would be similar to the Proposed Action with the exception that overall building heights would be lower due to the decreased number of residential units (256 instead of 1,210). The density, layout and general design would be similar to the Proposed Action and would result in a general aesthetic improvement to the Project Site. After construction, Alternative B would be considered ***beneficial*** to the visual character of the Project Site and vicinity, while the introduction of lighting would be ***less than significant***.

> **Mitigation**: Implementation of **Mitigation Measure 9.1** would reduce impacts during construction.
>
> **Significance after Mitigation**: Less than significant

Impact 9.2: Views of Scenic Resources (Criterion 2)

The impact on views of scenic resources would the similar to the Proposed Action. There are no substantial views across the Project Site to scenic resources and Bayview Hill will remain

substantially visible from CPSRA with the Proposed Action. As such, the impact of the Alternative B on public views of scenic resources would be ***less than significant***.

4.9.2.4 Alternative C – Reduced Development Alternative

Impact 9.1: Character, Scale and Aesthetic Appeal (Criterion 1)

Construction materials on the Project Site during construction phases of Alternative C would introduce elements that are out of character with the existing environment, which includes residential uses nearby. The impact regarding aesthetic appeal during construction would be temporarily ***significant and adverse*** and mitigation is recommended below.

After construction, the extent of visual changes on the Project Site would be similar to the Proposed Action. While there would be fewer residential units (875 instead of 1,210), the height, density, layout and design of the development would be similar to the Proposed Action and would result in a general aesthetic improvement to the Project Site. After construction, Alternative C would be considered ***beneficial*** to the visual character of the Project Site and vicinity, while the introduction of lighting would be ***less than significant***.

> **Mitigation**: Implementation of **Mitigation Measure 9.1** would reduce impacts during construction.
>
> **Significance after Mitigation**: Less than significant

Impact 9.2: Views of Scenic Resources (Criterion 2)

The impact on views of scenic resources would the similar to the Proposed Action. There are no substantial views across the Project Site to scenic resources and Bayview Hill will remain substantially visible from CPSRA with the Proposed Action. As such, the impact of the Alternative B on public views of scenic resources would be ***less than significant***.

4.9.2.5 Alternative D – No Action Alternative

There would be ***no impact*** on visual character and aesthetic resources since no new development, or construction activities associated with development, would occur.

4.9.3 Mitigation Measures

Mitigation Measure 9.1: Construction Period Screening and Cleaning [Similar to EIR Mitigation Measure AE-2]

Prior to the issuance of any site activity or building permits for the Project Site:

> Construction documents shall require all contractors to strictly control the staging and cleanliness of construction equipment stored or driven beyond the limits of the work area. Construction equipment shall be parked and staged on the Project Site, and staging areas shall be screened from view at street level. Before building permits are issued, the project sponsor (through the construction contractor[s]) shall submit a construction staging, access,

and parking plan to the San Francisco Department of Building Inspection (DBI) for review and approval. Construction workers shall be prohibited from parking their vehicles on the street. Vehicles shall be kept clean and free of mud and dust before leaving the Project Site. Each day, project contractors shall be required to sweep surrounding streets used for construction access and to maintain them free of dirt and debris.

4.10 Hydrology, Flooding and Water Quality

This section analyzes the potential effects of the Proposed Action and alternatives on hydrology, including water quality degradation from construction and operation, changes in drainage and flooding patterns.

4.10.1 Regulatory Context

Federal

Safe Drinking Water Act

The U.S. Environmental Protection Agency's (EPA's) Sole Source Aquifer Program was established under Section 1424(e) of the Safe Drinking Water Act. The Sole Source Aquifer program allows for EPA environmental review of any project which is financially assisted by federal grants or federal loan guarantees and is to be implemented in designated sole source aquifer areas. The Project Site is not located in a designated sole source aquifer area.[1]

Clean Water Act

The Clean Water Act (CWA, 33 USC 1251-1376) is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Important applicable sections of the act are:

- Sections 303 and 304, which provide for water quality standards, criteria, and guidelines.
- Section 401, which requires an applicant for any federal permit that proposes an activity that may result in a discharge to "waters of the United States" to obtain certification from the state that the discharge will comply with other provisions of the Act. In California, certification is provided by the State Water Resources Control Board (SWRCB), but would fall under EPA jurisdiction (Region IX) for the Proposed Action and alternatives.
- Section 402, which establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. In California, this permit program is administered by the Regional Water Quality Control Boards.

As the Proposed Action and alternatives do not proposed discharge of dredged or fill material into waters of the United States, Section 401 and Section 404 of CWA do not apply.

Executive Order 11988

Federal Executive Order 11988 requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts from occupying and modifying floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The Project Site is not located in a designated floodplain.

[1] EPA, Region 9, Sole-Source Aquifer Information. Available online at: http://www.epa.gov/region9/water/groundwater/ssa.html, accessed September 2011.

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) implements the National Flood Insurance Program and publishes Flood Insurance Rate Maps (FIRMs) identifying areas subject to inundation from flooding, most often from a flood having a one percent chance of occurrence in a given year (also known as a "base flood" or "100-year flood"). FEMA refers to the portion of the floodplain or coastal area that is at risk from floods of this magnitude as a Special Flood Hazard Areas.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act legislates water quality standards in California. It established the SWRCB and the regional boards as the official state agencies regulating water quality standards in compliance with CWA and EPA statutes and provisions. These regulations are enforced through issuance of NDPES permits and Waste Discharge Requirements. The San Francisco Regional Water Quality Control Board (SFRWQCB) is the applicable regional board for the Project Site.

The SWRCB has adopted Resolution No. 68-16, the Statement of Policy with Respect to Maintaining High Quality Waters in California, restricting degradation of surface water and groundwater. Under the policy, any proposed action that could adversely affect water quality (both surface water and groundwater) must not impact present and anticipated uses of the water and must not result in water quality less than that prescribed in water quality plans and policies.

San Francisco Regional Water Quality Control Board

The SFRWQCB oversees water discharge and stormwater quality issues at the Project Site. SWRCB has adopted a NDPES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, commonly referred to as the Construction General Permit. This permit is required for any project that disturbs one or more acres of land and includes preparation of a Stormwater Pollution Prevention Plan (SWPPP) with best management practices (BMPs) for stormwater retention and treatment. As the Proposed Action and alternatives would disturb over an acre of land, this permit would be required.

Local

San Francisco Construction Site Runoff Pollution Prevention Program

According to the San Francisco Construction Site Runoff Pollution Prevention Program, if the area a project disturbs is in a municipal separate storm sewer system and disturbs one or more acres of soil or is part of a larger development that disturbs one or more acres, an NPDES General Construction Permit is required. Coverage under the permit is not required for projects in areas of San Francisco that drain to the combined sewer system. The San Francisco Public Utilities Commission (SFPUC) requires contractors to prepare a SWPPP, which includes an erosion and sediment control plan for projects that are in the combined sewer system. All construction site

managers must implement BMPs to prevent illicit discharge into the combined sewer.[2] The San Francisco Housing Authority (SFHA) property, San Francisco Redevelopment Agency (SFRA) property and State-controlled property are currently served by the combined sewer system, while the City-owned property (through the City Recreation and Parks Department) is within a municipal separate storm sewer system.

San Francisco Stormwater Management Plan

The following discussion relates to the City Recreation and Parks Department property which is served by a municipal separate storm sewer system. The San Francisco Stormwater Management Plan (SWMP) regulates development projects discharging stormwater into a municipal separate storm sewer system. SWMP measures applicable to the site include the following: public outreach, including public education and public participation; detention of illicit discharges; construction site stormwater runoff control; and post-construction stormwater management.

San Francisco Stormwater Guidelines

The SFPUC has adopted stormwater design guidelines which prescribe the engineering framework for the design of post-construction stormwater controls for the separate storm areas of the City. These guidelines apply to all developments greater than 5,000 square feet and are subject to the policies in the city's Green Building Ordinance. The guidelines require project applicants to prepare a stormwater control plan that demonstrates how the project will capture and treat rainfall depth and intensity, using both volume and flow-based BMPs.

4.10.2 Impact Analysis

4.10.2.1 Significance Criteria

The following impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For hydrology, flooding and water quality impacts, the analysis considers whether the Proposed Action or alternatives would:

1. Result in depletion or degradation of surface water quality (such as through violation of existing or proposed water quality standards)
2. Result in depletion or degradation of groundwater quality
3. Modify drainage patterns, resulting in on-site or off-site impacts
4. Locate occupied structures where there are potential risks associated with flooding

Additional criteria which were considered include whether the Proposed Action or alternatives would meet standards for installation of new water wells, adversely affect a sole source aquifer, or locate occupied structures within a floodplain. No water wells are proposed under the Proposed Action or alternatives. Additionally, the Project Site is not located in a sole source aquifer area or floodplain. Thus, these criteria are not applicable and are not discussed further.

2 SFPUC, Construction Site Runoff Pollution Prevention Procedures, last updated Dec. 29, 2010.

4.10.2.2 Alternative A – Proposed Action

Impact 10.1: Depletion or Degradation of Surface Water Quality (Criterion 1)

Construction of the Proposed Action would include demolishing buildings and infrastructure, movement of fill materials, grading, and site compaction of development areas. These activities would expose soils to precipitation and wind. In addition, construction and development could result in the accidental release of potentially hazardous materials that could contaminate water resources (discussed further under Impact 3.5 in **Section 4.3**). These activities could lead to degradation of water quality from stormwater coming in contact with contaminated areas, such as parking lots or construction sites. Stormwater could transport contaminants off-site, thereby contaminating other water sources. If dewatering activities are proposed they would also need to be managed to prevent contaminants prior to discharge of contained water. This impact is considered ***significant and adverse*** for construction.

The Proposed Action would apply sustainability practices in the design and development of the project, including progressive stormwater management to retain and treat stormwater. Development of stormwater treatment systems in compliance with the City's stormwater regulations and guidelines would minimize impacts after construction of the development. The impact is considered ***less than significant*** for operation.

Overall, impacts related to surface water quality would be ***significant and adverse***, due to construction impacts.

> **Mitigation**: Implementation of **Mitigation Measure 10.1a**, **10.1b and 10.1c** include development of SWPPPs and a stormwater control plan for the Project Site. The SFHA, SFRA and State-controlled properties are part of the combined stormwater/sewer system where a SWPPP is required by local regulations. The City Recreation and Parks Department property is part of a municipal separate sewer system where a SWPPP is required by both State and local regulations. Long-range infrastructure buildout of the area would extend the separate system to all properties, though the exact timing and locations have not been finalized at this time. Thus, the area subject to these mitigation measures could change over the development of the Project Site. **Mitigation Measure 10.1d**, Groundwater Dewatering Plan, specifies how water would be collected, contained, treated, monitored and eventually discharged. Incorporation of these measures would minimize the potential for stormwater to become contaminated with pollutants from construction and the transportation of contaminants to off-site surface waters.
>
> **Significance after Mitigation**: Less than significant

Impact 10.2: Depletion or Degradation of Groundwater (Criterion 2)

Use of groundwater for construction or operation of the Proposed Action is not expected; and, therefore, the Proposed Action would not result in depletion of existing groundwater resources. Some dewatering activities could occur but the impact on groundwater levels would be minimal and temporary. The amount of impervious surfaces under the Proposed Action would be similar to the existing condition, under which most of the Project Site is paved. Therefore, the Proposed Action is not anticipated to affect groundwater recharge rates. As discussed for Criterion 1,

construction and development could result in the accidental release of potentially hazardous materials that could contaminate surface water resources. This contamination could spread to groundwater through percolation. While groundwater is not utilized as a source of drinking water in the Project Site vicinity, contamination could affect future options for water supply. This impact is considered ***significant and adverse***.

> **Mitigation**: Implementation of **Mitigation Measure 10.1a through 10.1d** would include BMPs for stormwater and discharge from dewatering activities, which would minimize contaminants from entering groundwater through percolation.
>
> **Significance after Mitigation**: Less than significant

Impact 10.3: Modification of Site Drainage Pattern (Criterion 3)

Drainage volumes would be similar to current volumes as the Project Site is primarily covered with impervious surfaces. The predominant drainage pattern from the Project Site would be preserved, and no rivers, streams, or other significant natural watercourses exist in the Project Site vicinity that would be altered by the Proposed Action. Stormwater would be routed to either the combined sewer stormwater system or a municipal separate system, depending on the location and phase of construction, as all stormwater would eventually be diverted to a separate system. Therefore, impacts to drainage patterns would be ***less than significant***.

Impact 10.4: Flooding Risks (Criterion 4)

As discussed in **Section 3.10**, the Project Site is not located within a Special Flood Hazard Area (area subject to flooding during a 100-year flood event) on either the FEMA preliminary FIRM or the City's Interim Floodplain Maps. Additionally, given a projection of three feet in sea level rise through 2075, the Project Site is not located in an area which would be inundated. For these reasons, risks associated with flooding would be ***less than significant***.

4.10.2.3 Alternative B – Housing Replacement Alternative and Alternative C – Reduced Development Alternative

Impact 10.1: Depletion or Degradation of Surface Water Quality (Criterion 1) and Impact 10.2: Depletion or Degradation of Groundwater (Criterion 2)

Construction activities under Alternative B and Alternative C would be similar to Alternative A and thus the potential impacts to surface water and ground water are the same as those discussed above for the Proposed Action. Impacts related to surface water quality would be ***significant and adverse***.

> **Mitigation**: As with the Proposed Action, implementation of **Mitigation Measures 10.1a through 10.1d**, would reduce development impacts.
>
> **Significance after Mitigation**: Less than significant

Impact 10.3: Modification of Site Drainage Pattern (Criterion 3)

Drainage volumes would be similar to current volumes as the Project Site is primarily covered with impervious surfaces. Stormwater would be routed to either the combined sewer stormwater system or a municipal separate system during construction and a municipal separate system after construction and thus would not affect natural drainage patterns. Therefore, impacts to drainage patterns would be ***less than significant***.

Impact 10.4: Flooding Risks (Criterion 4)

As discussed for Alternative A, the Project Site is not located within a Special Flood Hazard Area and would not be inundated given a three foot rise in sea level by 2075. Therefore, risks associated with flooding would be ***less than significant***.

4.10.2.4 Alternative D – No Action Alternative

Under the No Action Alternative, conditions at the Project Site would remain unchanged. The existing 256 public housing units would not be replaced and no other improvements would be implemented. As a result there would be ***no impact*** on surface water quality, groundwater quality, or drainage patterns (Criteria 1-3). The Project Site is not located within a Special Flood Hazard Area and the risk of flooding would be less than significant (Criterion 4).

4.10.3 Mitigation Measures

Mitigation Measure 10.1a: Stormwater Pollution Prevention Plan: Combined Storm Sewer System (EIR Mitigation Measure HY-1a.1)

In compliance with the Article 4.1 of the San Francisco Public Works Code and the City's Construction Site Water Pollution Prevention Program, the project sponsor shall submit a site-specific SWPPP to the SFPUC for approval, before construction begins in areas draining to the combined sewer system. The SFPUC requires implementation of appropriate BMPs in the *California Stormwater Quality Association Stormwater BMP Handbook-Construction* or the *Caltrans Construction Site BMPs Manual*. In accordance with SFPUC's requirements, the SWPPP shall include the following:

- An erosion and sediment control plan, with a site map illustrating the BMPs that will be used to minimize on-site erosion and sediment discharge into the combined sewer system and a narrative description of those BMPs. Appropriate BMPs for the erosion and sediment control plan may include:
  - Scheduling—Develop a schedule that includes sequencing construction activities with the implementation of appropriate BMPs. Perform construction and control practices in accordance with the planned schedule. Schedule work to minimize soil disturbance during the rainy season. Schedule major grading operations for the dry season when practical. Monitor the weather forecast for rainfall and adjust the schedule as appropriate.
  - Erosion control BMPs—Preserve vegetation where feasible, mulch or hydroseed areas until permanent stabilization is established, and use soil binders, geotextiles and mats, earth dikes and drainage swales, velocity dissipation devices, slope drains, or polyacrylamide to protect soil from erosion;

  - Wind erosion BMPs—Apply water or other dust palliatives to prevent dust nuisance and overwatering, which can cause erosion. Alternatively, cover small stockpiles or areas that remain inactive for seven or more days;
  - Sediment control BMPs—Install silt fences, sediment basins, sediment traps, check dams, fiber rolls, sand or gravel bag barriers, straw bale barriers, approved chemical treatment, and storm drain inlet protection to minimize the discharge of sediment; sweep streets to remove sediment; and
  - Tracking controls—Stabilize the construction site entrance to prevent construction vehicles from tracking sediment onto public roads. Stabilize on-site vehicle transportation routes immediately after grading to prevent erosion and to control dust. Install a wash area to remove sediment from tires and under carriages.

- Non-stormwater management BMPs may include water conservation practices, dewatering practices that minimize sediment discharges, and BMPs for paving and grinding; identifying illicit connections and illegal dumping; irrigation and other planned or unplanned discharges of potable water; vehicle and equipment cleaning, fueling, and maintenance; concrete curing and finishing; temporary batch plants; and implementing shoreline improvements and working over water. Discharges from dewatering shall comply with the SFPUC's batch wastewater discharge requirements, which regulate influent concentrations for various constituents.
- Waste management BMPs shall be implemented for material delivery, use, and storage; stockpile management; spill prevention and control; solid and liquid waste management; hazardous waste management; contaminated soil management; concrete waste management; and septic/sanitary waste management;
- SWPPP training requirements—Construction personnel will receive training on the SWPPP and BMP implementation; and
- Site inspections and BMP maintenance—An inspector identified in the SWPPP will inspect the Project Site regularly, before and after a storm and once each 24-hour period during extended storms to identify BMP effectiveness and implement corrective actions if required. The SWPPP shall include checklists that document when the inspections occurred, the results of the inspection, required corrective measures, and when corrective measures were implemented. Required BMP maintenance related to a storm shall be completed within 48 hours of the storm.

Mitigation Measure 10.1b: Stormwater Pollution Prevention Plan: Separate Storm Sewer System (EIR Mitigation Measure HY-1a.2)

Consistent with the requirements of the SWRCB General Permit for Stormwater Discharges Associated with Construction and Land Disturbing Activities (Construction General Permit), the project sponsor shall undertake the proposed project in accordance with a project-specific SWPPP prepared by a qualified SWPPP developer. SFRWQCB, the primary agency responsible for protecting water quality in the project area, is responsible for reviewing and ensuring compliance with the SWPPP. This review is based on the construction general permit issued by the SWRCB.

The SWPPP shall include, as applicable, all BMPs required in Attachment C of the construction general permit for risk level 1 dischargers, Attachment D for risk level 2 dischargers, or Attachment E for risk level 3 dischargers. In addition, recommended BMPs, subject to review and approval by the SFRWQCB, include the measures listed below. However, the measures themselves may be

altered, supplemented, or deleted during the SFRWQCB's review process, since it has final authority over the terms of the SWPPP.

- Scheduling
  - To reduce the potential for erosion and sediment discharge, schedule construction to minimize ground disturbance during the rainy season; schedule major grading operations during the dry season when practical, and allow enough time before rainfall begins to stabilize the soil with vegetation or to install sediment-trapping devices;
  - Sequence construction activities to minimize the amount of time that soils remain disturbed;
  - Stabilize all disturbed soils as soon as possible following ground-disturbing work; and
  - Install erosion and sediment control BMPs before the start of any ground-disturbing activities;
- Erosion and sedimentation
  - Preserve vegetation in areas where no construction is planned or where construction will occur at a later date;
  - Stabilize and revegetate disturbed areas as soon as possible after construction with planting, seeding, or mulch (e.g., straw or hay, erosion control blankets, hydromulch, or other similar material), except in cultivated areas;
  - Install silt fences, coir rolls, and other suitable measures around the perimeter of the areas affected by construction and staging areas and around riparian buffers, storm drains, temporary stockpiles, spoil areas, stream channels, swales, downslope of all exposed soil areas, and in other locations determined necessary to prevent off-site sedimentation;
  - Install temporary slope breakers during the rainy season on slopes greater than 5 percent where the base of the slope is less than 50 feet from a water body, wetland, or road crossing at spacing intervals required by the SFRWQCB;
  - Use filter fabric or other appropriate measures to prevent sediment from entering storm drain inlets;
  - Detain and treat stormwater using sedimentation basins, sediment traps, Baker tanks, or other measures to ensure that discharges to receiving waters meet applicable water quality objectives;
  - Install check dams, where applicable, to reduce flow velocities and erosion and to allow sediment to settle out of runoff;
  - Install outlet protection/energy dissipation, where applicable, to prevent scour of the soil caused by concentrated high velocity flows; and
  - Implement control measures such as spraying water or other dust palliatives to alleviate dust nuisance.
- Groundwater/dewatering
  - Prepare a dewatering plan before excavation, specifying methods of water collection, transport, treatment, and discharge of all water produced by construction site dewatering;

  - Impound water produced by dewatering in sediment retention basins or other holding facilities to settle the solids and provide other treatment as necessary before discharge to receiving waters; locate sedimentation basins and other retention and treatment facilities away from waterways to prevent sediment-laden water from reaching streams;
  - Control discharges of water produced by dewatering to prevent erosion; and
  - If contaminated groundwater is encountered, contact the SFRWQCB for appropriate disposal options; depending on the constituents of concern, such discharges may be disallowed altogether, or require regulation under a separate general or individual permit that would impose appropriate treatment requirements before discharge to the stormwater drainage system.

- Tracking controls
  - Grade and stabilize construction site entrances and exits to prevent runoff from the Project Site and to prevent erosion;
  - Install a washing facility at the Project Site access to allow for tire washing when vehicles exit the Project Site; and
  - Remove any soil or sediment tracked off paved roads during construction by street sweeping.
- Nonstormwater controls
  - Place drip pans under construction vehicles and all parked equipment;
  - Check construction equipment for leaks regularly;
  - Wash construction equipment in a designated enclosed area regularly;
  - Contain vehicle and equipment wash water for percolation or evaporation away from storm drain inlets;
  - Refuel vehicles and equipment away from receiving waters and storm drain inlets, contain the area to prevent run-on and runoff, and promptly clean up spills; and
  - Cover all storm drain inlets when paving or applying seals or similar materials to prevent the discharge of these materials.
- Waste management and hazardous materials pollution control
  - Remove trash and construction debris from the project area daily;
  - Locate sanitary facilities a minimum of 300 feet from receiving waters, and maintain sanitary facilities regularly;
  - Store all hazardous materials in an area protected from rainfall and stormwater run-on and prevent the off-site discharge of hazardous materials;
  - Minimize the potential for contamination of receiving waters by maintaining spill containment and cleanup equipment on-site and by properly labeling and disposing of hazardous wastes;
  - Locate waste collection areas close to construction entrances and away from roadways, storm drains, and receiving waters;
  - Inspect trash receptacles and other waste and debris containers regularly for leaks and remove and properly dispose of any hazardous materials and liquid wastes placed in these containers; train construction personnel in proper material delivery, handling, storage, cleanup, and disposal; and

  - Implement construction materials management BMPs for road paving, surfacing, and asphalt removal activities and for handling and disposing of concrete and cement.
- BMP inspection, maintenance, and repair
  - Inspect all BMPs regularly to confirm proper installation and function and inspect BMPs daily during storms; and
  - Immediately repair or replace BMPs that have failed; provide sufficient devices and materials (e.g., silt fence, coir rolls, erosion blankets) throughout the project construction to enable immediate corrective action for failed BMPs.
- Monitoring and reporting
  - Provide the required documentation for SWPPP inspections, maintenance, and repair requirements; identify in the SWPPP the personnel who will perform monitoring and inspection;
  - Maintain written records of inspections, spills, BMP-related maintenance, corrective actions, and observations of off-site discharges of sediment or other pollutants, as required by the SFRWQCB; and
  - Monitor the water quality of discharges from the Project Site to assess the effectiveness of control measures.
- Implement BMPS for shoreline improvements and work over water to minimize the potential transport of sediment, debris, and construction materials to the Lower Bay during construction of shoreline improvements.
- Post-construction BMPs
  - Revegetate all temporarily disturbed areas as required after construction activities are completed;
  - Remove any remaining construction debris and trash from the Project Site and area on project completion;
  - Phase the removal of temporary BMPs as necessary to ensure stabilization of the Project Site;
  - Maintain post-construction site conditions to avoid formation of unintended drainage channels, erosion, or areas of sedimentation; and
  - Correct post-construction site conditions as necessary to comply with the SWPPP and any other pertinent SFRWQCB requirements.
- Train construction site personnel on components of the SWPPP and BMP implementation. Train personnel who will perform inspection and monitoring activities.

Mitigation Measure 10.1c: Regulatory Stormwater Requirements [EIR Mitigation Measure HY-6a.1]

In accordance with the San Francisco Stormwater Design Guidelines, the project sponsor shall submit a stormwater control plan to the SFPUC, as part of the development application submitted for approval. The plan shall demonstrate how the following measures would be incorporated into the project:

- Low impact development site design principles (e.g., preserving natural drainage channels and treating stormwater runoff at its source rather than in downstream centralized controls);

- Source control BMPs in the form of design standards and structural features for the following areas, as applicable:
  - Commercial areas;
  - Restaurants;
  - Retail gasoline outlets;
  - Automotive repair shops; and
  - Parking lots;
- Source control BMPs for landscaped areas shall be documented in a landscape management plan that relies on integrated pest management and includes pesticide and fertilizer application guidelines; and
- Treatment control measures (e.g., bioretention, porous pavement, vegetated swales) targeting the project specific contaminants of concern: sediment, pathogens, metals, nutrients (nitrogen and phosphorus compounds), oxygen demanding substances, organic compounds (e.g., PCBs and pesticides), oil and grease, and trash and debris. The stormwater control plan shall demonstrate that the project has the land area available to support the proposed BMP facilities sized in accordance with the required water quality design storm. Volume-based BMPs shall be sized to treat runoff resulting from 0.75 inch of rainfall (LEED SS6.2), and flow-based BMPs shall be sized to treat runoff resulting from a rainfall intensity of 0.2 inch per hour. Treatment trains[3] shall be used where feasible.

Additional requirements:

- LEED SS6.2—BMPs used to treat runoff shall be designed to remove 80 percent of the average annual post-development total suspended solids loads. BMPs are considered to meet these criteria if they are designed in accordance with SFPUC requirements.
- The SCP shall include an operations and maintenance plan that demonstrates how the treatment control BMPs would be maintained in the long term, what entities would be responsible for BMP maintenance in the public and private rights-of-way, funding mechanisms, and what mechanisms would be used to formalize maintenance and access agreements.

The project sponsor shall also prepare a stormwater drainage master plan for approval by the SFPUC. It shall include plans for the storm drain infrastructure and for stormwater management controls (e.g., vegetated swales, dry wells). The storm drain infrastructure shall illustrate conveyance of the five-year storm in a separate storm drain piped system and conveyance of the 100-year storm in the street and drainage channel rights-of-way.

Mitigation Measure 10.1d, Groundwater Dewatering Plan [EIR Mitigation Measure MM HY-1a.3]

Prior to commencement of construction activities and to minimize potential impacts to receiving water quality during the construction period, the Project Applicant shall through the proper implementation of this dewatering plan, show compliance with SFRWQCB/NPDES requirements, whichever are applicable.

[3] The sequencing of structural BMPs to achieve optimal flow management and pollutant removal from urban stormwater.

The Dewatering Plan shall specify how the water would be collected, contained, treated, monitored, and/or discharged to the vicinity drainage system or Lower Bay. Subject to the review and approval of the SFRWQCB, the Dewatering Plan shall include, at a minimum:

- Identification of methods for collecting and handling water on site for treatment prior to discharge, including locations and capacity of settling basins, infiltration basins (where not restricted by site conditions), treatment ponds, and/or holding tanks.
- Identification of methods for treating water on site prior to discharge, such as filtration, coagulation, sedimentation settlement areas, oil skimmers, pH adjustment, and other BMPs.
- Procedures and methods for maintaining and monitoring dewatering operations to ensure that no breach in the process occurs that could result in an exceedance of applicable water quality objectives.
- Identification of discharge locations and inclusion of details on how the discharge would be conducted to minimize erosion and scour.
- Identification of maximum discharge rates to prevent exceedance of storm drain system capacities.
- Additional requirements of the applicable General Permit or NPDES Permit/WDR (including effluent and discharge limitations and reporting and monitoring requirements, as applicable) shall be incorporated into the Dewatering Plan.

Any exceedance of established narrative or numeric water quality objectives shall be reported to the SFRWQCB and corrective action taken as required by the SFRWQCB and the Dewatering Plan. Corrective action may include increased residence time in treatment features (e.g., longer holding time in settling basins) and/or incorporation of additional treatment measures (e.g., addition of sand filtration prior to discharge).

4.11 Traffic and Transportation

This section discusses the regulatory framework for traffic and transportation and analyzes the potential project-level environmental consequences on traffic and transportation from implementation of the Proposed Action or alternatives. Transportation-related issues of concern that are addressed include traffic on local and regional roadways, transit, pedestrian and bicycle traffic, and parking. Study roadways and intersections are described in **Section 3.11**.

This section is based on information in the Near-Term and Cumulative Traffic Analysis for the Alice Griffith Project[1] and the Supplemental Traffic Analysis for the Alice Griffith Project.[2] Both reports are included in **Appendix C**.

4.11.1 Regulatory Context

Federal

The United States Department of Transportation (USDOT) is the primary federal agency responsible for transportation infrastructure and improvements in the United States. The USDOT administers a federal funding mechanism for state and local transportation projects, and established standards for highway, aviation, and transit operations, as well as safety standards.

State

The California Department of Transportation (Caltrans) is the responsible agency for management of transportation infrastructure and transportation improvements in California. Caltrans manages the state highway system, and works with federal and local transportation agencies to coordinate funding highway and transit improvements.

Local

San Francisco Municipal Transportation Agency (SFMTA) is the transportation agency of the City and County of San Francisco. The SFMTA is responsible for management and operation of transit systems, including the Municipal Railway (Muni) rail system and all bus and related transit lines. The SFMTA also establishes service standards for these systems and is responsible for the operations and maintenance budgets for all transit and related roadway operations. In addition, the SFMTA assists other City and County agencies, as well as Caltrans, with transit forecasting and planning needs.

[1] Fehr & Peers, Inc., *Alice Griffith Traffic Impact Study*, as amended March 29, 2011.
[2] Fehr & Peers, Inc., *Alice Griffith Supplemental Traffic Impact Study*, June 6, 2011

4.11.2 Impact Analysis

4.11.2.1 Significance Criteria

The following impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. Local significance criteria commonly applied throughout San Francisco, including the Transportation Impact Analysis Guidelines for Environmental Review[3], was used for intersection and freeway Level of Service (LOS). LOS definitions for intersection and freeway operations are included in **Section Table 3.11-1** and **Table 3.11-3**, respectively.

For traffic and transportation, the analysis considers whether the Proposed Action or alternatives would:

1. Result in the deterioration in LOS at signalized and unsignalized intersections to a significant extent:
   - For signalized intersections, result in the deterioration in the Level of Service (LOS) from LOS D or better to LOS E or F, or from LOS E to F
   - For unsignalized intersections, cause the worst approach to deteriorate from LOS D or better to LOS E or F and meet Caltrans signal warrants, or meet Caltrans signal warrants when the worst approach is already at LOS E or F. For an unsignalized intersection that operates at LOS E or F under existing conditions, substantially worsen delays.
2. For freeway mainline segments and freeway on-ramp merge and off-ramp diverge operations, result in the deterioration in the LOS from LOS D or better to LOS E or F or from LOS E to F. For a freeway facility operating at LOS F under existing conditions, contribute substantially (greater than five percent) to a freeway facility.
3. Substantially increase transit demand that could not be accommodated by transit capacity
4. Create potentially hazardous conditions for pedestrians or bicyclists, or otherwise substantially interfere with pedestrian or bicyclist access
5. Result in a deficiency of parking spaces for project demands.

In addition to the above criteria, it was considered whether the Proposed Action or alternatives would result in major traffic hazards. All transportation improvements would be designed to SFMTA standards and specifications, including the installation of new roads, transit facilities, and bicycle/pedestrian improvements. Improvement plans for these facilities would be reviewed and approved by the SFMTA, San Francisco Department of Public Works, and San Francisco Department of Building Inspection, prior to construction. The approval process for project-related transportation facilities would ensure that improvements are designed to adopted standards and no traffic hazards are anticipated. Therefore, this issue is not discussed further.

[3] City and County of San Francisco, Transportation Impact Analysis Guidelines for Environmental Review, October 2002.

4.11.2.2 Alternative A – Proposed Action

Under the Proposed Action, the existing street grid network would be extended through the Project Site, including Donner Avenue, Egbert Avenue, and Fitzgerald Avenue. The Proposed Action would encourage walking as a primary mode of transportation. The streets within the Project Site, including the new extensions of Donner Avenue, Egbert Avenue, and Fitzgerald Avenue, would include features for traffic calming and accommodation of multi-modal travel, such as: curb extensions, intersection bulb-outs, raised crosswalks, comprehensive wayfinding signs which support a network of walkways and shared-use paths, narrow roadway lanes and short blocks.

Travel Demand Forecasts

The travel demand generated by the Proposed Action was determined by calculating the daily person-trips generated by the different types of Proposed Action land uses and the portion of those trips that would occur during specified peak hours. After determining the number of person trips generated by the Proposed Action, the trips were distributed to geographical origins/destination areas, including five San Francisco areas (downtown central business district, the rest of Superdistrict 1, Superdistrict 2, Superdistrict 3, Superdistrict 4) and the South Bay, East Bay and North Bay. The mode split analysis then determined the portion of these trips made via automobile, public transit, or other mode of transportation, based on the origin/destination of the trips, the purpose of the trips, and the availability of various modes. Finally, automobile occupancy rates were determined, in order to yield the average number of individuals in a vehicle and thus to determine the number of vehicles that would be traveling to and from the Project Site.

The travel demand forecasts for the Proposed Action were developed using data collected at the existing Alice Griffith public housing development, and data from the San Francisco Guidelines[4] and the Candlestick Point-Hunters Point Shipyard (CP-HPS) Plan Environmental Impact Report[5].

As part of the Proposed Action, the existing affordable housing units would be replaced. For near-term conditions, trip generation forecasts for the replacement of these units were based on empirical data collected at the Alice Griffith public housing entrance on Fitzgerald Avenue at Hawes Street. As shown in **Table 4.11-1**, the site generates 143 vehicle trips during the AM peak hour and 159 vehicle trips during the PM peak hour. The resulting trip generation rates are 0.59 trip per occupied unit during the AM peak hour and 0.66 trip per occupied unit during the PM peak hour.

[4] Ibid.
[5] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, Candlestick Point–Hunters Point Shipyard Phase II Project Draft Environmental Impact Report, November 2009.

TABLE 4.11-1
VEHICLE TRIP GENERATION+ RATES

Occupied Housing Units	AM Peak Hour Vehicle Trips	PM Peak Hour Vehicle Trips	Near-Term Vehicle Trip Rates	
			AM Peak Hour	PM Peak Hour
Affordable Housing*				
241	143	159	0.59	0.66
Market-Rate/Below Market-Rate Housing**				
Studio/one-bedroom			0.71	0.79
Two+ bedrooms			0.95	1.05

* Based on vehicle counts collected at Alice Griffith Public Housing in April 2010.
** SF Guidelines 2002. AM trip rates were calculated using the ratio of AM/PM trips (0.9) observed for the existing housing development.

SOURCE: Fehr & Peers, 2010 (Appendix C)

The Proposed Action includes the construction of 954 new market-rate/below market-rate housing units. Near-term trip generation rates for these units were based on the San Francisco Guidelines; the guidelines do not contain AM peak hour trip generation rates, so near-term AM peak hour trip generation rates were estimated by factoring the PM peak hour rates by 0.9, which is based on the AM and PM peak hour trip difference observed in the surveyed trip rates.

Table 4.11-2 summarizes the number of vehicle trips expected to be generated by the Proposed Action under near-term conditions. As shown, the Proposed Action would generate 943 AM peak hour vehicle trips and 1,047 PM peak hour vehicle trips under near-term conditions.

TABLE 4.11-2
PROPOSED ACTION VEHICLE TRIP GENERATION

			Near-Term		
		Number of Units	Rate (AM/PM)	AM Vehicle Trips	PM Vehicle Trips
Affordable Housing (Existing)		256	0.59/0.66	151	169
Market-Rate/Below Market-Rate Housing	Studio/one-bedroom	477	0.71/0.79	339	377
	Two+ bedrooms	477	0.95/1.05	453	501
	Total	**1,210**	**0.78/0.87**	**943**	**1,047**

SOURCE: Fehr & Peers, 2010 (Appendix C)

To evaluate the Proposed Action's contribution to near-term public transit demand in the area, trip travel demand forecasts were developed using the SF Guidelines (2002). These provide an estimation method that is more appropriate for near-term transit demand generated by the Proposed Action because it uses trip generation rates and mode split information that reflects the area's existing transit usage, as reported in the US Census.

Table 4.11-3 presents the existing near-term transit trips and those that would be generated by the Proposed Action. As shown, the additional units on the Project Site would generate 340 AM peak hour transit trips and 388 PM peak hour transit trips.

TABLE 4.11-3
PROPOSED ACTION TRANSIT TRIP GENERATION

			Near-Term		
Unit Type		**Number of Units**	**Rate (AM/PM)***	**AM Transit Trips**	**PM Transit Trips**
Affordable Housing (Existing)		256	0.28/0.32	72	82
Market-Rate/Below Market-Rate Housing	Studio/one-Bedroom	477	0.24/0.27	115	131
	Two+ bedrooms	477	0.32/0.37	153	175
Total		**1,210**	**0.28/0.32**	**340**	**388**

* Based on the person trip generation method presented in Appendix C of the San Francisco Transportation Impact Analysis Guidelines for Environmental Review (2002).

SOURCE: Fehr & Peers, 2010 (Appendix C)

Significance Criteria Discussion

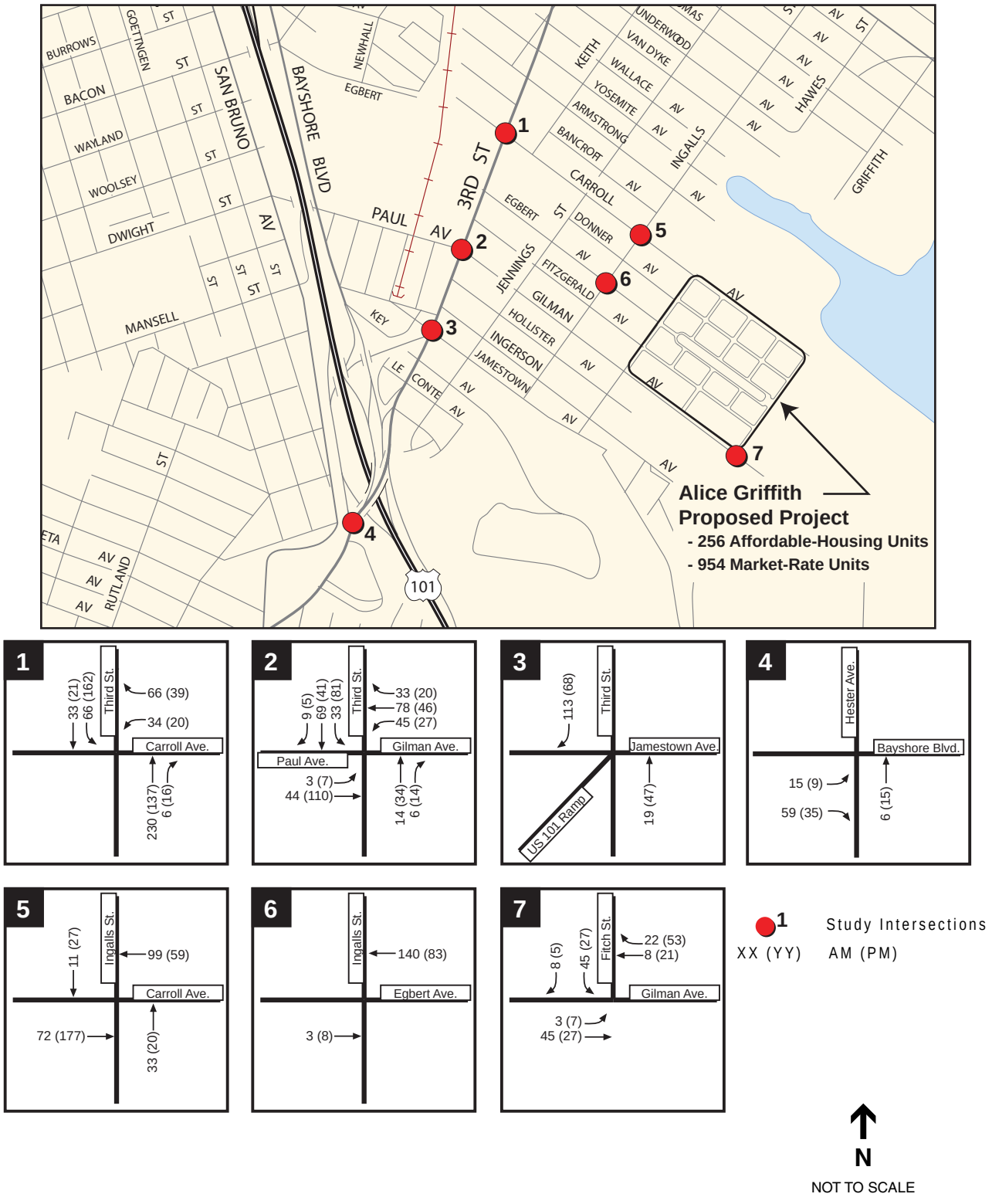
Impact 11.1: Intersection Traffic Impacts (Criterion 1)

Table 4.11-4 compares the intersection LOS under existing conditions and LOS with the Proposed Action for the weekday AM and PM peak hours. The near-term trip generation associated with the Proposed Action (**Figure 4.11-1**) was added to existing roadway turning movements (**Figure 3.11-2**) to determine the Proposed Action intersection volumes (**Figure 4.11-2**).

In general, with the addition of traffic generated by the Proposed Action to the study area roadway network, congestion levels would increase. However, all study intersections would continue to operate at acceptable LOS (LOS D or better) in AM and PM peak hours with the addition of traffic generated by the Proposed Action. Therefore, the impact of the Proposed Action on study intersections would be ***less than significant***.

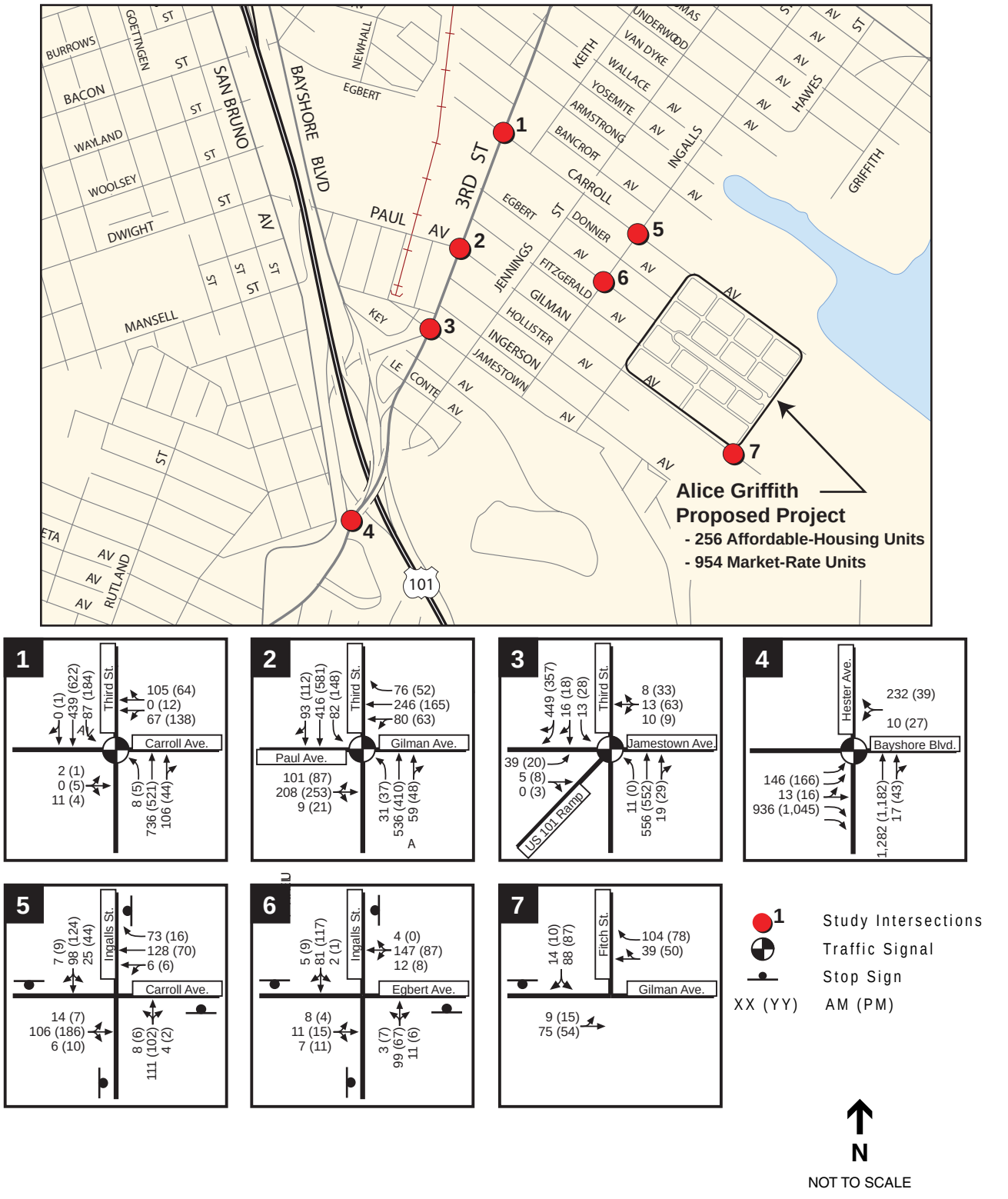
Impact 11.2: Freeway Ramp Impacts (Criterion 2)

Table 4.11-5 presents a comparison of the freeway ramp junction LOS under existing conditions and LOS with the Proposed Action for the weekday AM and PM peak hours. As shown, both ramp junctions would operate at acceptable LOS D or better in both peak hours, with the addition of traffic from the Proposed Action. Therefore, the impact of the Proposed Action on freeway ramp junctions would be ***less than significant***.



SOURCE: Fehr and Peers, 2010

Figure 4.11-1
Near-Term Project Trip Assignment



SOURCE: Fehr and Peers, 2010

Figure 4.11-2

Existing Plus Project Weekday
Peak Hour Traffic Volumes and Lane Configurations

TABLE 4.11-4
INTERSECTION OPERATIONS – PROPOSED ACTION

Intersection	Control	Peak Hour	Existing		Proposed Action	
			Delay*	LOS**	Delay*	LOS**
Third Street/Carroll Avenue	Signal	AM	12	B	17	B
		PM	14	B	43	D
Third Street/Gilman and Paul Avenues	Signal	AM	27	C	45	D
		PM	24	C	41	D
Third Street/Jamestown Avenue	Signal	AM	13	B	13	B
		PM	14	B	15	B
Bayshore Blvd./Hester Ave./US 101 SB	Signal	AM	28	C	31	C
		PM	13	C	14	B
Ingalls Street/Carroll Avenue	All-way stop	AM	8 (SB)	A	10 (NB)	A
		PM	8 (SB)	A	10 (EB)	A
Ingalls Street/Egbert Avenue	All-way stop	AM	8 (SB)	A	8 (SB)	A
		PM	8 (SB)	A	8 (SB)	A
Arelious Walker/Gilman Avenue	Side-street stop	AM	9 (SB)	A	10 (SB)	A
		PM	9 (SB)	A	10 (SB)	A

* Delay measured in seconds per vehicle.
** For stop-controlled intersections, delay and LOS presented for worst approach.
SOURCE: Fehr & Peers, 2010 (Appendix C)

TABLE 4.11-5
RAMP JUNCTION OPERATIONS – PROPOSED ACTION

Ramp Junction	Peak Hour	Existing		Proposed Action	
		LOS	Density*	LOS	Density*
SB US 101 off-ramp to Bayshore Boulevard	AM	D	31	D	31
	PM	D	30	D	31
NB US 101 off-ramp to Third Street	AM	D	30	D	30
	PM	D	35	D	35

* Density of vehicles measured in passenger cars per mile per lane; ramp junctions operating at LOS E or LOS F conditions highlighted in **bold.**
SOURCE: Fehr & Peers, 2010 (Appendix C)

Impact 11.3: Transit Impacts (Criterion 3)

The Proposed Action would generate 340 AM peak hour transit trips and 388 PM peak hour transit (**Table 4.11-3**). Considering that most of the local and regional transit services are beyond walking distance from the Project Site, most public transit trips generated by the Proposed Action would result in biking or driving to public transit. There is generally substantial capacity available on all transit services in the vicinity of the Project Site; the 29-Sunset bus route is a 1/4 of a mile away and the T-Third light rail line is 3/8 of a mile away, and peak period headways on both lines are less than 15 minutes. As shown in **Table 3.11-5**, both have extra capacity to accommodate additional transit riders. Thus, the addition of transit trips generated by the Proposed Action is not anticipated to substantially change the capacity of these services. Therefore, the Proposed Action would result in a ***less than significant*** impact.

Impact 11.4: Impacts on Pedestrians and Bicycles (Criterion 4)

The Proposed Action would provide pedestrian and bicycle improvements on the Project Site including enhanced sidewalks and bicycle facilities. Enhanced sidewalks would be designed to conform to San Francisco's Better Streets Plan standards, which, when possible, strive to have minimum sidewalk widths of 10 feet. Within the Project Site, the sidewalk widths are proposed to be 12 feet wide. Additionally, enhanced sidewalks may contain such amenities as street furniture, plantings, and lighting and will conform to Americans with Disabilities Act guidelines, including curb cuts at intersections. Streets in the Project Site would be classified as neighborhood residential, with sidewalks and shared (Class III) bicycle routes, in which the bicyclist is allowed full use of the travel lane. With these features, the Proposed Action would result in a ***less than significant*** impact on pedestrian and bicycles.

Impact 11.5: Parking (Criterion 5)

The Proposed Action would provide 450 general on-street parking spaces and 1,210 residential structured parking spaces, for a total of 1,670 parking spaces to serve the Project Site. This is greater than the average of one parking space per household projected for the CP-HPS Project area. Therefore, the Proposed Action would have a ***less than significant*** impact on parking.

4.11.2.3 Alternative B – Housing Replacement Alternative

Under Alternative B the existing street grid network would be extended through the Project Site, and walking would be encouraged through pedestrian-friendly features and traffic calming measures as discussed for the Proposed Action.

Travel Demand Forecasts

Because this alternative includes one-to-one replacement of the affordable housing units, the travel behavior to and from the Project Site would likely be similar to existing conditions in the near-term, before future transit improvements associated with the CP-HPS Project are implemented.

Table 4.11-6 presents the trips that would be generated by Alternative B. As shown, the additional units on the Project Site would generate 151 AM peak hour transit trips and 169 PM peak hour trips.

TABLE 4.11-6
ALTERNATIVE B VEHICLE TRIP GENERATION

		Near-Term		
	Number of Units	Rate (AM/PM)	AM Vehicle Trips	PM Vehicle Trips
Alternative B	256	0.59/0.66	151	169

SOURCE: Fehr & Peers, 2010 (Appendix C)

Significance Criteria Discussion

Impact 11.1: Intersection Traffic Impacts (Criterion 1)

Table 4.11-7 compares the intersection LOS under existing conditions and LOS with Alternative B for the weekday AM and PM peak hours. The near-term trip generation associated with Alternative B was added to existing roadway turning movements to determine the intersection volumes for Alternative B.

TABLE 4.11-7
INTERSECTION OPERATIONS – ALTERNATIVE B

			Existing		Alternative B	
Intersection	**Control**	**Peak Hour**	**Delay***	**LOS****	**Delay***	**LOS****
Third Street/Carroll Avenue	Signal	AM	12	B	13	B
		PM	14	B	15	D
Third Street/Gilman and Paul Avenues	Signal	AM	27	C	29	C
		PM	24	C	26	C
Third Street/Jamestown Avenue	Signal	AM	13	B	13	B
		PM	14	B	14	B
Bayshore Blvd./Hester Ave./US 101 SB	Signal	AM	28	C	29	C
		PM	13	C	13	B
Ingalls Street/Carroll Avenue	All-way stop	AM	8 (SB)	A	8 (SB)	A
		PM	8 (SB)	A	8 (SB)	A
Ingalls Street/Egbert Avenue	All-way stop	AM	8 (SB)	A	8 (NB)	A
		PM	8 (SB)	A	8 (SB)	A
Arelious Walker/Gilman Avenue	Side-street stop	AM	9 (SB)	A	9 (SB)	A
		PM	9 (SB)	A	9 (SB)	A

* Delay measured in seconds per vehicle.
** For stop-controlled intersections, delay and LOS presented for worst approach.
SOURCE: Fehr & Peers, 2010 (Appendix C)

In general, with the addition of traffic generated by Alternative B to the study area roadway network, congestion levels would remain the same as under existing conditions. All study intersections would continue to operate at acceptable LOS D or better in both peak hours with the addition of traffic generated by Alternative B. Therefore, the impact of Alternative B on study intersections would be ***less than significant***.

Impact 11.2: Freeway Ramp Impacts (Criterion 2)

Table 4.11-8 presents a comparison of the freeway ramp junction LOS under existing conditions and LOS with Alternative B for the weekday AM and PM peak hours. As shown, both ramp junctions would operate at acceptable LOS D or better in both peak hours, with the addition of traffic from Alternative B. Therefore, the impact of Alternative B on freeway ramp junctions would be ***less than significant***.

TABLE 4.11-8
RAMP JUNCTION OPERATIONS – ALTERNATIVE B

Ramp Junction	Peak Hour	Existing		Plus Alternative B	
		LOS	Density*	LOS	Density*
SB US 101 off-ramp to Bayshore Boulevard	AM	D	31	D	31
	PM	D	30	D	30
NB US 101 off-ramp to Third Street	AM	D	30	D	30
	PM	D	35	D	35

* Density of vehicles measured in passenger cars per mile per lane. Ramp junctions operating at LOS E or LOS F highlighted in **bold**.
SOURCE: Fehr & Peers, 2010 (Appendix C)

Impact 11.3: Transit Impacts (Criterion 3)

Alternative B would result in less additional travel demand than the Proposed Action and about the same travel demand as the existing site. As shown in **Table 3.11-5**, transit has extra capacity to accommodate additional transit riders. Because Alternative B would generate a similar number of transit trips as now, transit lines would continue to operate at acceptable levels of service. Therefore, Alternative B would result in a ***less than significant*** impact.

Impact 11.4: Impacts on Pedestrians and Bicycles (Criterion 4)

Alternative B would provide pedestrian and bicycle improvements on the Project Site including enhanced sidewalks and bicycle facilities. Streets in the Project Site would be classified as neighborhood residential, with sidewalks and shared (Class III) bicycle routes, in which the bicyclist is allowed full use of the travel lane. With these features, Alternative B would result in a ***less than significant*** impact on pedestrian and bicycles.

Impact 11.5: Parking (Criterion 5)

As the layout of blocks is the same under Alternative B, it is estimated that up to 450 general on-street parking spaces could be provided which is greater than the average of one parking space per household projected for the CP-HPS Project area. Alternative B would have a ***less than significant*** impact on parking.

4.11.2.4 Alternative C – Reduced Development Alternative

Under Alternative C the existing street grid network would be extended through the Project Site, and walking would be encouraged through pedestrian-friendly features and traffic calming measures as discussed for the Proposed Action.

Travel Demand Forecasts

Under Alternative C, the existing 256 public housing units would be replaced one-for-one and 619 below market-rate and market-rate housing units would be developed. The traffic impact analysis for Alternative C utilizes the same total trip generation rate as the Proposed Action.

Table 4.11-9 presents the trips that would be generated by Alternative C. As shown, the additional units on the Project Site would generate 683 AM peak hour transit trips and 761 PM peak hour trips.

TABLE 4.11-9
ALTERNATIVE C VEHICLE TRIP GENERATION

		Near-Term		
	Number of Units	Rate (AM/PM)	AM Vehicle Trips	PM Vehicle Trips
Alternative C	875	0.78/0.87	683	761

SOURCE: Fehr & Peers, 2010 (Appendix C)

Significance Criteria Discussion

Impact 11.1: Intersection Traffic Impacts (Criterion 1)

Table 4.11-10 compares the intersection LOS under existing conditions and LOS with Alternative C for the weekday AM and PM peak hours. The near-term trip generation associated with Alternative C was added to existing roadway turning movements to determine the intersection volumes for Alternative C.

TABLE 4.11-10
INTERSECTION OPERATIONS – ALTERNATIVE C

			Existing		Alternative C	
Intersection	**Control**	**Peak Hour**	**Delay***	**LOS****	**Delay***	**LOS****
Third Street/Carroll Avenue	Signal	AM	12	B	16	B
		PM	14	B	33	C
Third Street/Gilman Avenue and Paul Avenue	Signal	AM	27	C	40	D
		PM	24	C	37	C
Third Street/Jamestown Avenue	Signal	AM	13	B	13	B
		PM	14	B	15	B
Bayshore Blvd./Hester Ave./US 101 SB	Signal	AM	28	C	30	C
		PM	13	C	14	C
Ingalls Street/Carroll Avenue	All-way stop	AM	8 (SB)	A	9 (SB)	A
		PM	8 (SB)	A	9 (SB)	A
Ingalls Street/Egbert Avenue	All-way stop	AM	8 (SB)	A	8 (NB)	A
		PM	8 (SB)	A	8 (SB)	A
Arelious Walker/Gilman Avenue	Side-street stop	AM	9 (SB)	A	9 (SB)	A
		PM	9 (SB)	A	9 (SB)	A

* Delay measured in seconds per vehicle.
** For stop-controlled intersections, delay and LOS presented for worst approach.

SOURCE: Fehr & Peers, 2010 (Appendix C)

In general, with the addition of traffic generated by Alternative C to the study area roadway network, congestion levels would increase at several intersections. All study intersections would continue to operate at acceptable LOS D or better in both peak hours with the addition of traffic generated by Alternative C. Therefore, the impact of Alternative C on study intersections would be ***less than significant***.

Impact 11.2: Freeway Ramp Impacts (Criterion 2)

Table 4.11-11 presents a comparison of the freeway ramp junction LOS under existing conditions and LOS with Alternative C for the weekday AM and PM peak hours. As shown, both ramp junctions would operate at acceptable LOS D or better in both peak hours, with the addition of traffic from Alternative C. Therefore, the impact of Alternative C on freeway ramp junctions would be ***less than significant***.

TABLE 4.11-11
RAMP JUNCTION OPERATIONS – ALTERNATIVE C

		Existing		Plus Alternative C	
Ramp Junction	**Peak Hour**	**LOS**	**Density***	**LOS**	**Density***
SB US 101 off-ramp to Bayshore Boulevard	AM	D	31	D	31
	PM	D	30	D	30
NB US 101 off-ramp to Third Street	AM	D	30	D	30
	PM	D	35	D	35

* Density of vehicles measured in passenger cars per mile per lane. Ramp junctions operating at LOS E or LOS F conditions highlighted in **bold**.

SOURCE: Fehr & Peers, 2010 (Appendix C)

Impact 11.3: Transit Impacts (Criterion 3)

Alternative C would generate 246 AM peak hour transit trips and 281 PM peak hour transit (**Table 4.11-12**). Considering that most of the local and regional transit services are beyond walking distance from the Project Site, most public transit trips generated by Alternative C would result in biking or driving to public transit.

TABLE 4.11-12
ALTERNATIVE C TRANSIT TRIP GENERATION

			Near-Term		
Unit Type		**Number of Units**	**Rate (AM/PM)***	**AM Transit Trips**	**PM Transit Trips**
Affordable Housing (Existing)		256	0.28/0.32	72	82
Market-Rate/Below Market-Rate Housing	Studio/one-bedroom	309	0.24/0.27	74	85
	Two+ bedrooms	310	0.32/0.37	100	114
Total		**875**	**0.28/0.32**	**246**	**281**

* Based on the person trip generation methodology presented in Appendix C of the San Francisco Transportation Impact Analysis Guidelines for Environmental Review (2002).

SOURCE: Fehr & Peers, 2010 (Appendix C)

There is generally substantial capacity available on all transit services in the vicinity of the Project Site; the 29-Sunset bus route is a 1/4 of a mile away and the T-Third light rail line is 3/8 of a mile away, and peak period headways on both lines are less than 15 minutes. As shown in **Table 3.11-5**, both have extra capacity to accommodate additional transit riders. Thus, the addition of transit trips generated by Alternative C is not anticipated to substantially change the capacity of these services. Therefore, Alternative C would result in a ***less than significant*** impact.

Impact 11.4: Impacts on Pedestrians and Bicycles (Criterion 4)

Alternative C would provide pedestrian and bicycle improvements on the Project Site including enhanced sidewalks and bicycle facilities. Streets in the Project Site would be classified as neighborhood residential, with sidewalks and shared (Class III) bicycle routes, in which the bicyclist is allowed full use of the travel lane. With these features, Alternative C would result in a ***less than significant*** impact on pedestrian and bicycles.

Impact 11.5: Parking (Criterion 5)

Alternative C would provide 450 general on-street parking spaces and at least 875 residential structured parking spaces, for a minimum total of 1,325 parking spaces. This is greater than the average of one parking space per household projected for the CP-HPS Project area. Therefore, Alternative C would result in a ***less than significant impact*** on parking.

4.11.2.5 Alternative D – No Action Alternative

Under Alternative D, there would be no change to existing travel demands associated with the Project Site. Thus, Alternative D would have ***no impact*** on existing LOS for roadways and freeways, transit operations, pedestrian/bicycle facilities or parking supply.

4.11.3 Mitigation Measures

No mitigation is recommended for near-term traffic impacts.

4.12 Geology and Soils

This section addresses the regulatory setting, environmental consequences, and mitigation measures related to geology and soils. A preliminary geotechnical investigation has been conducted to evaluate site-specific issues for potential residential development at the Project Site.[1] Mitigation recommends further geotechnical investigation at the design-level phase.

4.12.1 Regulatory Context

Federal

Executive Order 12699

Executive Order 12699, Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction, was enacted in 1990 and applies to construction of new buildings owned, leased, constructed, assisted, or regulated by the federal government. The guidelines in this order establish minimum acceptable seismic safety standards, provide evaluation procedures for determining the adequacy of local building codes, and recommend implementation procedures. The compliance provision for this Executive Order is the International Building Code (IBC). The IBC forms the basis for the California and San Francisco Building Codes. The California and San Francisco Building Codes are more stringent concerning soils and seismic safety measures due to the issues and concerns prevalent in the state and San Francisco Bay Area.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act requires the California State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults. The Project Site is not within an Alquist-Priolo Earthquake Fault Zone.

Seismic Hazards Mapping Act

The Seismic Hazard Mapping Act (Public Resources Code Section 2693[c]), adopted in 1990, requires the California State Geologist to create maps delineating zones where data suggest amplified ground shaking, liquefaction, or earthquake-induced landsliding may occur (seismic hazard zones). The act requires responsible agencies to approve only projects within seismic hazard zones following a site-specific investigation to determine if the hazard is present and, if so, inclusion of appropriate mitigations. The southern and eastern portions of the Project Site are within a designated liquefaction hazard zone, so the development of the Proposed Action or any of the alternatives would be subject to this Act.[2]

[1] ENGEO, Inc., Preliminary Geotechnical Conceptual Design Report Hunters Point Shipyard Phase II and Candlestick Point, San Francisco, California, May, 2009.
[2] California Division of Mines and Geology (CDMG), Seismic Hazard Zones, City and County of San Francisco. November 17, 2000.

California Building Code

The California Building Code (CBC) is codified in the California Code of Regulations Title 24, Part 2. Most recently revised and adopted in 2010, the CBC establishes regulations for building conditions and structural requirements in the state including seismic and soil design parameters for new construction. Each jurisdiction in the state is allowed to adopt its own building code based on the latest adopted CBC, provided they meet all state standards and enforce all CBC regulations.

Local

San Francisco Building Code

The San Francisco Building Code (Municipal Code, Title 17, Chapter 17.04) derives from the adopted 2009 IBC and the 2010 CBC. This code is administered and enforced by the San Francisco Department of Building Inspection (DBI), and compliance with all provisions is mandatory for all new development and redevelopment in the City.

4.12.2 Impact Analysis

4.12.2.1 Significance Criteria

The following impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For geology and soils the analysis considers whether the Proposed Action or alternatives would:

1. Result in substantial risk of injury or death due to collapse of structures or damage to infrastructure because of ground failure or ground shaking
2. Result in substantial damage to foundations or other infrastructure due to liquefaction, differential settlement, lateral spreading, expansive soils, corrosive soils, or other adverse engineering properties of soils
3. Destabilize existing geologic conditions or accelerate adverse geologic processes
4. Expose people or structures to substantial threat of injury or damage from slope failure
5. Cause substantial soil erosion

Additional criteria which were considered include whether the Proposed Action or alternatives would substantially alter or impede access to a unique or valuable geologic feature, or substantially reduce access to important mineral resources. As no unique or valuable geologic features or important mineral resources have been identified in the Project Site or immediate vicinity, [3] these criteria are not applicable and are not discussed further.

[3] Stinson, M.C., M.W. Manson, J.J. Plappert, and others, Mineral Land Classification: Aggregate Materials in the San Francisco-Monterey Bay Area, Part II, Classification of Aggregate Resource Areas South San Francisco Bay Production-Consumption Region, California Division of Mines and Geology Special Report 146, 1982.

4.12.2.2 Alternative A – Proposed Action

Impact 12.1: Ground Shaking (Criterion 1)

Ground shaking is likely to occur in the Project Site vicinity as a result of earthquakes on one or more regional faults. The severity at the Project Site would depend on the location and fault involved but there is the potential for ground shaking at a level which could damage buildings and infrastructure, and present risks to people. Ground shaking is likely to be most severe on areas underlain by unconsolidated materials, which include the east and southeast margins of the Project Site, generally the non-SFHA parcels between Alice Griffith Street and Arelious Walker Drive. Ground shaking would be less but could still be severe on the areas of the Project Site underlain at shallow depth by Franciscan bedrock, which includes most of the SFHA-parcel. Due to the potential for severe groundshaking for all of the Project Site, this impact is considered ***significant and adverse***.

> **Mitigation**: Implementation of **Mitigation Measure 12.1a** and **12.1b** would ensure that further site-specific geotechnical investigations are conducted prior to construction. Requirements for structures and other improvements would be identified and incorporated into the project plans to ensure that facilities can withstand peak ground accelerations.
>
> **Significance after Mitigation**: Less than significant

Impact 12.2: Soil Suitability (Criterion 2)

Soils on the Project Site are expected to have varying characteristics and engineering properties. According to the Seismic Hazard Zone Map published by the California Geological Survey[4], filled lands bayward of the historic shoreline, including portions of the Project Site, are highly susceptible to liquefaction. Some of the materials used for filling lands outside the historic bay shoreline may be susceptible to settlement. Other potential soil concerns include localized areas with expansive clay soils, which could cause damage to roads or foundations, and corrosive soils, which could enhance corrosion of metal pipes or other materials in contact with the soil. New construction would occur on the non-SFHA parcels which have not been developed with structures and could experience effects to foundations, utilities, or streets. These impacts are considered ***significant and adverse***.

> **Mitigation**: Implementation of **Mitigation Measures 12.2a, 12.2b and 12.2c** would ensure that soils are adequately characterized to identify soils with undesirable characteristics and to identify appropriate corrective measures to reduce liquefaction and other soil hazards. These include proven methods generally accepted by California Certified Engineering Geologists, subject to DBI and the Geotechnical Peer Review Committee review and approval. Additionally, site-specific analyses to identify necessary structural and building engineering design techniques would be required.
>
> **Significance after Mitigation:** Less than significant

[4] CDMG, 2000.

Impact 12.3: Destabilization of Geologic Conditions (Criterion 3)

Grading and site preparation could involve fracturing the Franciscan bedrock that underlies the Project Site. Heavy construction equipment, including hoe-rams, splitters, and cutters, could be used to fragment rock. In addition, harder bedrock may require removal using a technique known as controlled rock fragmentation, requiring such techniques as pulse plasma rock fragmentation, controlled foam injection, and controlled blasting.[5,6] These techniques have the potential to result in settlement or lateral movement of existing structures on adjacent or nearby properties, which would be a ***significant and adverse*** impact.

> **Mitigation**: Implementation of **Mitigation Measure 12.3** would include site specific methods and technologies to reduce vibration, or settlement or lateral movement of nearby structures. Additionally, a monitoring plan would be required to detect ground settlement or lateral movement of structures in the vicinity of an excavation and would include corrective measures for unacceptable ground movement.
>
> **Significance after Mitigation**: Less than significant

Impact 12.4: Slope Failure (Criterion 4)

Slopes on the Project Site are not identified as susceptible to seismically-induced landslides and therefore the potential for slope failure is expected to be low. [7] As a result, impacts related to slope failure are considered ***less than significant***.

Impact 12.5: Soil Erosion (Criterion 5)

Soils on the Project Site have a moderate water erosion hazard. During construction, there is increased potential for erosion of exposed soils by wind and water, which could contribute to water quality degradation. This impact is discussed in **Section 4.10**, Hydrology, Flooding and Water Quality and is considered ***significant and adverse***.

> **Mitigation**: Implementation of **Mitigation Measure 10.1a**, **10.1b and 10.1c** include development of Stormwater Pollution Prevention Plans and a stormwater control plan, which would include measures to minimize impacts from soil erosion.
>
> **Significance after Mitigation**: Less than significant

4.12.2.3 Alternative B – Housing Replacement Alternative and Alternative C – Reduced Development Alternative

Alternatives B and C are located on the same Project Site as Alternative A and thus have the same seismic and soil safety concerns. While Alternatives B and C include fewer residential units, the extent of development or footprint is the same as Alternative A. Both would include multi-family

[5] MACTEC Engineering and Consulting, Phase I Environmental Site Assessment, Candlestick Point Area. Prepared for Lennar Urban – Bay Area Division. June 16, 2009.

[6] Controlled blasting fractures bedrock by using explosives to produce a vibration or shockwave that breaks up the rock. Controlled foam injection forces an aqueous polymer into existing rock fractures and enlarges them until the rock fails. Plasma rock fragmentation uses an electrical impulse to create a flash of extremely high heat that shatters the rock by causing it to expand beyond its capacity to maintain structural integrity.

[7] CDMG, 2000.

residential units, though Alternatives B and C may be built at lower densities. As such, the difference between the impacts of Alternatives A, B and C would be negligible for geology and soils issues. The significance conclusions and required mitigation are the same as those listed for Alternative A.

4.12.2.4 Alternative D – No Action Alternative

Impact 12.1: Ground Shaking (Criterion 1)

Severe ground shaking could occur at the Project Site because of future earthquakes on one or more regional faults. Because existing housing is built on an area underlain at shallow depth by Franciscan bedrock, ground shaking is expected to be less than on areas underlain by fill; however, ground shaking could still be severe. The structures on the Project Site are not among the types of construction that are most vulnerable to failure in an earthquake, such as soft-story buildings, unreinforced masonry, or non-ductile concrete frame structures. Although ground shaking at the Project Site may result in severe damage to structures, it is not expected to present substantial risks of injury or death as the Alice Griffith public housing development was constructed in 1962, after Recommended Lateral Force Requirements prepared by the Structural Engineers Association of California were included in the Uniform Building Code. Therefore, the effects of ground shaking would be ***less than significant***.

Impact 12.2: Soil Suitability (Criterion 2)

Currently, there are no structures on the areas of the Project Site mapped as highly susceptible to liquefaction. Non-SFHA parcels which are susceptible to moderate liquefaction contain paved and gravel parking areas and utility improvements. Soils in the developed portion of the site may have varying characteristics and engineering properties due to past disturbance; however, no additional settlement or compaction is expected in the housing area, and no impacts are expected from expansive clays or corrosive soils in the undeveloped portions of the site. Thus, impacts from liquefaction and other soil concerns under Alternative D would be ***less than significant***.

Impact 12.3: Destabilization of Geologic Conditions (Criterion 3)

As no new construction is proposed under the No Action Alternative, there would be ***no impact*** related to destabilization of geologic conditions.

Impact 12.4: Slope Failure (Criterion 4)

Slopes on the Project Site are not identified as susceptible to seismically-induced landslides and therefore the potential for slope failure is expected to be low. [8] As a result, impacts related to slope failure are considered ***less than significant***.

[8] Ibid.

Impact 12.5: Soil Erosion (Criterion 5)

Soils on slopes in the housing area have a moderate water erosion hazard. Maintaining existing landscaping is expected to adequately stabilize soils and minimize erosion. Therefore, impacts would be ***less than significant***.

4.12.3 Mitigation Measures

Mitigation Measure 12.1a: Site-Specific Geotechnical Investigation with Seismic Analyses [EIR Mitigation Measure GE-4a.1]

Prior to the issuance of any building permits for the Project Site:

- The Applicant shall submit to the San Francisco DBI for review and approval a site-specific, design-level geotechnical investigation prepared by a California Certified Engineering Geologist (CEG) or California Registered Geotechnical Engineer (GE), as well as project plans prepared in compliance with the requirements of the SFBC, the Seismic Hazards Mapping Act, and requirements contained in California Geological Survey Special Publication 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. In addition, all engineering practices and analyses of peak ground accelerations and structural design shall be consistent with SFBC standards to ensure that structures can withstand expected ground accelerations. The CEG or GE shall determine and DBI shall approve design requirements for foundations and all other improvements associated with the permit application.
- DBI shall employ a third-party CEG and California Registered Professional Engineer (Civil) (PE) to form a geotechnical peer review committee (GPRC), consisting of DBI and these third-party reviewers. The committee shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that the plans incorporate all necessary geotechnical mitigation measures. DBI shall issue no permits until the committee has approved the geotechnical investigation and the project plans, including the factual determinations and the proposed engineering designs and construction methods.
- All project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations; and
- The project CEG or GE shall be responsible for ensuring compliance with these requirements.

Mitigation Measure 12.1b: Seismic Design Compliance Documentation [EIR Mitigation Measure GE-4a.2]

Prior to the issuance of a building permit for the replacement of the Alice Griffith Public Housing site, the Applicant shall submit any and all seismic design compliance documentation to the U.S. Department of Housing and Urban Development (HUD), as required by that agency. The Project Developer shall confirm, by copy of all documents submitted, including transmittal, compliance with this requirement to DBI. The project CEG or GE shall be responsible for verifying project compliance with this requirement.

Mitigation Measure 12.2a: Site-Specific Geotechnical Investigation with Analyses of Liquefaction, Lateral Spreading and/or Settlement [EIR Mitigation Measure GE-5a]

Prior to issuance of building permits for the Project Site:

- The Applicant shall submit to the DBI for review and approval a site-specific, design-level geotechnical investigation prepared by a CEG or GE, as well as project plans prepared in compliance with the requirements of the SFBC, the Seismic Hazards Mapping Act, and requirements contained in CGS Special Publication 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. In addition, all engineering practices, and analyses of structural design shall be consistent with SFBC standards to ensure seismic stability, including reduction of potential liquefaction hazards.
- DBI shall employ a third-party CEG and California Registered Professional Engineer (Civil) to form a GPRC, consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. No permits shall be issued by the DBI until the GPRC has approved the geotechnical investigation and the project plans, including the factual determinations and the proposed engineering designs and construction methods.
- All project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations.
- The site-specific project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce liquefaction hazards. The engineering design techniques to reduce liquefaction hazards shall include proven methods generally accepted by CEGs, subject to DBI and GPRC review and approval, including the following:

Structural Measures

- Construction of deep foundations, which transfer loads to competent strata beneath the zone susceptible to liquefaction, for critical utilities and shallow foundations; and
- Structural mat foundations to distribute concentrated load to prevent damage to structures.

Ground Improvement Measures

- Additional over-excavation and replacement of unstable soil with engineering-compacted fill;
- Dynamic compaction, such as deep dynamic compaction or rapid impact compaction, to densify loose soils below the groundwater table;
- Vibro-compaction, sometimes referred to as vibro-flotation, to densify loose soils below the groundwater table;
- Stone columns to provide pore pressure dissipation pathways for soil, to compact loose soil between columns, and to provide additional bearing support beneath foundations; and
- Soil-cement columns to densify loose soils and provide additional bearing support beneath foundations.

- The project CEG or GE shall be responsible for ensuring compliance with these requirements.

Mitigation Measure 12.2b: Site-Specific Geotechnical Investigation with Expansive Soils Analyses [EIR Mitigation Measure GE-10a]

Prior to issuance of building permits for the Project Site:

- The Applicant shall submit for DBI review and approval a site-specific, design-level geotechnical investigation prepared by a CEG or GE, as well as project plans prepared in compliance with the requirements of the SFBC. In addition, all engineering practices and analyses of structural design shall be consistent with SFBC standards to ensure soils stability, including reduction of potential soil expansion hazards.

- DBI shall employ a third-party CEG and California Registered PE to form a GPRC, consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. DBI shall issue no permits until the GPRC has approved the geotechnical investigation and the project plans, including the factual determinations and the proposed engineering designs and construction methods.

- All project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations.

- The site-specific project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce expansive soils hazards. The engineering design techniques to reduce expansive soils hazards shall include proven methods generally accepted by CEGs, subject to DBI and GPRC review and approval. The design-level geologic and geotechnical studies shall identify the presence of expansive soils and potentially unstable soils and shall identify means to avoid the hazard of or support the design of engineering procedures to stabilize the soils, as required by Chapter 18 (Soils and Foundations) of the SFBC. Sections 1803 through 1812 of the SFBC contain the formulas, tables, and graphs by which the project engineer shall develop the project's soil-stability specifications, including the appropriate foundation designs for structures on expansive soils and which the DBI would use to verify the applicability of the specifications. If expansive soils are identified, appropriate support and protection procedures shall be designed and implemented to maintain the stability of soils next to newly graded or re-graded access roads, work areas, and structures during and after construction and to minimize potential for damage to structures and facilities at the Project Site.

- The project CEG or GE shall be responsible for ensuring compliance with these requirements.

Mitigation Measure 12.2c: Site-Specific Geotechnical Investigation with Corrosive Soils Analyses [EIR Mitigation Measure GE-11a]

Before building permits are issued for the Project Site:

- The project sponsor shall submit for DBI review and approval a site-specific, design-level geotechnical investigation prepared by a CEG or GE, as well as project plans prepared in compliance with the requirements of the SFBC. In addition, all engineering practices and analyses of structural design shall be consistent with SFBC standards to ensure soils stability, including reduction of potential hazards from corrosive soils.

- DBI shall employ a third-party CEG and California Registered PE to form a GPRC, consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. DBI shall issue no permits shall until the GPRC has approved the geotechnical investigation and the project plans, including the factual determinations and the proposed engineering designs and construction methods.

- All project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations.

- The site-specific project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce potential hazards from corrosive soils. The engineering design techniques to reduce corrosive soils hazards shall include proven methods generally accepted by CEGs, subject to DBI and GPRC review and approval. The design-level geologic and geotechnical studies shall identify the presence of corrosive soils and shall identify means to avoid the hazard, as required by Chapter 18 (Soils and Foundations) of the SFBC. Sections 1803 through 1812 of the SFBC contain the formulas, tables, and graphs by which the project engineer shall develop the project's structural design specifications, including the appropriate foundation designs for structures on corrosive soils and which DBI would use to verify the applicability of the specifications. If corrosive soils are identified, appropriate protection procedures shall be designed and implemented to minimize potential for damage from corrosive soils to structures and facilities at the Project Site.

- The project CEG or GE shall be responsible for ensuring compliance with these requirements.

Mitigation Measure 12.3: Minimize Rock Fragmentation Impacts during Construction [EIR Mitigation Measure GE-3]

Prior to the issuance of any permit is issued for a construction activity that would involve controlled rock fragmentation that could cause settlement or lateral movement of structures on nearby properties, the Applicant shall, in compliance with Section 1803.1 of the SFBC, include in the permit application methods and techniques to ensure that controlled rock fragmentation would not cause unacceptable vibration or settlement or lateral movement of structures at nearby properties. Such methods and technologies shall be based on the specific conditions at the construction site such, but not limited to, the following:

- Pre-excavation, surveying of potentially affected structures;
- Underpinning foundations of potentially affected structures, as necessary; and
- Including in the excavation plan a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of an excavation. Monitoring results shall be submitted to San Francisco DBI. In the event of unacceptable ground movement, as determined by DBI inspections, all excavation shall cease and corrective measures shall be implemented. The DBI shall reevaluate and approve the controlled rock fragmentation program and ground stabilization measures.

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4.13 Cultural and Historic Resources

This section includes the regulatory setting, environmental consequences, and mitigation measures related to cultural resources (both archaeological and historic architectural resources). As discussed in **Section 3.13**, there is an existing 2007 Programmatic Agreement (PA) which establishes the City of San Francisco's responsibilities under Section 106 of the National Historic Preservation Act (NHPA) for projects subject to 24 CFR Part 58, which are assisted with revenue from U.S. Department of Housing and Urban Development (HUD) Programs. Section 3.13.1 describes the boundaries of the Area of Potential Effect (APE) and the methodology for establishing the APE in compliance with the 2007 PA.

4.13.1 Regulatory Context

Federal

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA; 16 USC, Section 470 [f]), as amended (PL 89-515), and its implementing regulations (36 CFR, Part 800.9) require federal agencies to consider the effects of their actions on properties listed on, or eligible for listing on, the National Register of Historic Places (NRHP). To be eligible for the NRHP, a cultural resource must meet specific criteria identified in 36 CFR Part 60, and explained in guidelines published by the Keeper of the National Register. These criteria are as follows:

A. Association with events that have made a significant contribution to the broad patterns of our history;

B. Association with the lives of persons significant to our past;

C. Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Resources that have yielded or may be likely to yield information important in prehistory or history.

In addition to historic significance, a property must have integrity to be eligible for the NRHP. This is the property's ability to convey its demonstrated historic significance through location, design, setting, materials, workmanship, feeling, and association. The significance of effects on cultural resources depends upon the alteration of elements that make the resource NRHP-eligible.

Programmatic Agreement

The 2007 PA by and among the City and County of San Francisco, the California State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation Regarding Historic Properties Affected by Use of Revenue from the Department of Housing and Urban Development Part 58 Programs is included in **Appendix D**. The 2007 PA guides all Section 106 activities for

applicable City projects funded partially or in whole by HUD. It stipulates activities that are exempt from Section 106 consultation with SHPO when conducted in accordance with the Secretary of the Interior Standards for Treatment of Historic Properties and when approved by the San Francisco Planning Department. The PA also includes procedures for unanticipated discovery of archaeological resources during project implementation.

The City's responsibilities under the PA include review of existing information on any property within an Undertaking's APE as required by 36 CFR 800.4, to determine if such properties may be historic properties. At a minimum, the PA stipulates that the City shall:

- Review the current listing of the NRHP
- Review lists of Historic Properties maintained by the City and SHPO, and the Northwest Information Center of the California Historical Resources Information System, Sonoma State University, California, or its successors and any other information available in the City's Planning Department records pertaining to any property within an Undertaking's APE.
- Visit the site and evaluate in accordance with the Section 106 process.
- If the property is one to which Indian Tribes attach religious and cultural significance, those Indian tribes will be consulted by the City regarding the Undertaking.
- The City shall consult with the San Francisco Landmarks Preservation Advisory Board when necessary to determine the significance of a resource.

Executive Order 11593

Executive Order 11593, Protection and Enhancement of the Cultural Environment, required Federal agencies to initiate measures so that actions would preserve sites, structures and objects of historical, architectural and archaeological significance. Portions of the Executive Order were codified as part of the 1980 amendments to the NHPA. The City's responsibilities to evaluate cultural resources and to consult with applicable resource agencies under the 2007 PA are consistent with Executive Order 11593.

4.13.2 Impact Analysis

4.13.2.1 Significance Criteria

The impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For cultural resources the analysis considers whether the Proposed Action or alternatives would:

1. Alter the character of a historic architectural resource or cause physical destruction, damage or alteration to a historic architectural resources
2. Alter the character of an archaeological resource or cause physical destruction, damage or alteration to an archaeological resource
3. Be inconsistent with established management plans and agreements for cultural resources, including the 2007 PA

4.13.2.2 Alternative A – Proposed Action

The San Francisco Mayor's Office of Housing (MOH) determined an APE (**Figure 3.13-1**) for the Proposed Action which includes 1) the Project Site, 2) adjacent properties with buildings 50 years or older and 3) surface and subsurface areas that could be disturbed as a result of the Proposed Action.

Impact 13.1: Effects to Historic Architectural Resources (Criterion 1)

As discussed in **Section 3.13**, all buildings within the APE, including Alice Griffith housing complex were assessed for eligibility for the NRHP.[1] While some properties had sufficient integrity, no properties met the criteria that would make them individually eligible or eligible as contributors to a historic district for the NRHP. Because no historic architectural resources have been identified in the APE, the Proposed Action would have ***no impact*** for this criterion.

Impact 13.2: Effects to Archaeological Resources (Criterion 2)

As discussed in **Section 3.13**, there is a moderate potential of identifying unrecorded Native American resources and a moderate to high potential of identifying unrecorded historic-period archaeological resources in the Project Site.[2] The ground-disturbing activities associated with excavation, demolition, and construction could damage or destroy unidentified resources. This impact is considered ***significant and adverse***.

> **Mitigation**: Implementation of **Mitigation Measure 13.2**, a project-specific PA which establishes an archaeological monitoring program, archaeological data recovery program and procedures for human remains and funerary objects, would reduce the risk of impacts to unknown resources.
>
> **Significance after Mitigation:** Less than significant

Impact 13.3: Consistency with Cultural Resource Management Plans and Agreements (Criterion 3)

To date, the City has complied with the terms of the 2007 PA. **Section 3.13** describes the determination of the APE in compliance with Stipulation VI of the PA. Regarding the identification and evaluation of historic properties (Stipulation VII), the City has reviewed the current listing of the NRHP, conducted site visits and evaluation of properties using the National Register Criteria, and documented evaluation on California Historic Resources Inventory Forms. MOH also contacted SHPO, ACHR, NWIC (VII.A.2 and XI.B) and the Native American Heritage Commission (VII.A.4) regarding the Proposed Action and potential archaeological resources. SHPO's office responded that the MOH should enter into a site-specific PA with the SHPO that will outline the procedures

[1] Circa; Historical Property Development. 2008. Alice Griffith Housing Development Department of Parks & Recreation 523 A and B forms. Northwest Information Center. Records Search Results File No. 10-0118, August 4, 2010.
Circa: Historical Property Development, *Resource Evaluation of 1112 Fitzgerald Ave. San Francisco and Expansion of the Historic Area of Potential Effect (APE)*, correspondence to Eugene Flannery, Mayor's Office of Housing, July 2011.

[2] Northwest Information Center. California State University, Sonoma, Records Search Results File No. 10 0118, August 4, 2010.

and methodology that MOH will use to further identify potential historic properties.[3] Without implementation of a site-specific PA or other agreement addressing undiscovered resources impacts could be ***significant and adverse***.

Mitigation: Implementation of **Mitigation Measure 13.2**, a project-specific PA would ensure conformance with the 2007 PA.

Significance after Mitigation: Less than significant

4.13.2.3 Alternative B – Housing Replacement Alternative and Alternative C – Reduced Development Alternative

The APE for Alternatives B and C is the same as Alternative A, as both include the construction of a residential development with the same footprint on the Project Site. There are no known resources eligible for the NRHP within the APE; however, there is the potential for construction activities to affect unknown, subsurface resources. For these reasons, the significance of impacts and recommended mitigation is the same as Alternative A.

4.13.2.4 Alternative D – No Action Alternative

Impact 13.1: Effects to Historic Architectural Resources (Criterion 1)

As the APE does not contain properties eligible for the NRHP and no construction or change in use of the Project Site is proposed, there would be ***no impact*** to historic architectural resources.

Impact 13.2: Effects to Archaeological Resources (Criterion 2)

The APE is currently developed and no construction or change in use of the Project Site is proposed. It is anticipated that any unknown archaeological resources buried below the developed area would remain undisturbed and thus impacts to archaeological resources would be ***less than significant***.

Impact 13.3: Consistency with Cultural Resource Management Plans and Agreements (Criterion 3)

The 2007 PA would not apply to this alternative as no HUD funding or approvals are proposed. This alternative would not conflict with existing management plans or agreements for cultural resources and thus there would be ***no impact***.

4.13.3 Mitigation Measures

Mitigation Measure 13.2: Project Specific Programmatic Agreement

A PA between the City and County of San Francisco and the California SHPO shall be executed regarding an archaeological testing program for the Project Site. The stipulations of the PA shall include but are not limited to the draft PA language provided in **Appendix G.**

[3]Letter from Milford Wayne Donaldson, California SHPO, to Douglas Shoemaker, Director MOH, June 2, 2011, Reference No. HUD110506K.

4.14 Biological Resources

This section presents the regulatory framework for biological resources and analyzes the potential effects of the Proposed Action and alternatives on biological resources, including special-status and other legally-protected species.

4.14.1 Regulatory Context

Federal

The Proposed Action and alternatives would not affect a water body subject to the Wild and Scenic Rivers Act and thus this regulation is not discussed within the Environmental Impact Report (EIS).[1] The Project Site does not include wetlands and thus Executive Order 11990 (Protection of Wetlands) is not discussed. [2] The Proposed Action and alternatives do not propose discharge of dredged or fill material into waters of the United States and thus the Clean Water Act Section 401 and Section 404 permitting programs are not discussed.

Federal Endangered Species Act

The federal Endangered Species Act (FESA)[3] grants protection over species that are formally listed as threatened, endangered, or proposed for listing. The primary protective requirement in the case of projects requiring federal permits, authorizations, or funding, is Section 7 of FESA, which requires federal lead agencies to consult (or "confer" in the case of proposed species or proposed critical habitat) with the U.S. Fish and Wildlife Services (USFWS) and National Oceanic Atmospheric Administration (NOAA) Fisheries[4] to ensure that their actions do not jeopardize the continued existence of federally listed species. In addition to Section 7 requirements, Section 9 of the FESA protects listed wildlife species from "take". Take is broadly defined as those activities that "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect [a protected species], or attempt to engage in any such conduct." An activity can be in violation of take prohibitions even if the activity is unintentional or accidental. Significant modification or degradation of occupied habitat for listed species, or activities that prevent or significantly impair essential behavioral patterns, including breeding, feeding, or sheltering, are also considered "take" under the FESA. Federal agencies may receive authorization for the incidental take of listed species under Section 7 through the issuance of a Biological Opinion from the USFWS and/or NOAA Fisheries. State, local, and private entities may receive incidental take authorization under an approved Habitat Conservation Plan.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to take or attempt to take any migratory bird, any part, nest, or egg of any such bird except under the terms of a permit issued by the U.S. Department of the Interior. Over 1,000 bird species are protected by the MBTA. A

[1] HUD Environmental Requirements at 24 CFR Part 58.5(f)
[2] HUD Environmental Requirements at 24 CFR, Part 58.5(b)
[3] HUD Environmental Requirements at 24 CFR, Part 58.5(e)
[4] NOAA Fisheries are involved when marine species may be affected.

migratory bird is any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle.

Executive Order 11312: Invasive Species

Executive Order 11312 directs all federal agencies to prevent and control introductions of invasive nonnative species in a cost-effective and environmentally sound manner to minimize their economic, ecological, and human health impacts. Executive Order 11312 established a national Invasive Species Council made up of federal agencies and departments and a supporting Invasive Species Advisory Committee composed of state, local and private entities. The Invasive Species Council and Advisory Committee oversee and facilitate implementation of the Executive Order, including preparation of a National Invasive Species Management Plan.

State

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the California Fish and Game Code, a permit from the California Department of Fish and Game (CDFG) is required for a project that could result in the take of a state-listed threatened or endangered species (i.e., species listed under CESA). Under CESA, the definition of "take" includes an activity that would directly or indirectly kill an individual of a species, but the state definition does not include "harm" or "harass," as the federal definition does. As a result, the threshold for take under the CESA is typically higher than that under the FESA. Under CESA, CDFG maintains a list of threatened species and endangered species (California Fish and Game Code 2070). CDFG also maintains two additional lists: (1) a list of candidate species that are species CDFG has formally noticed as being under review for addition to either the list of endangered species or the list of threatened species; and (2) a list of "species of special concern;" these lists serve as "watch lists."

Native Plant Protection Act

The California Native Plant Protection Act of 1977 (Fish and Game Code Sections 1900–1913) is intended to preserve, protect, and enhance endangered or rare native plants in California and gives the CDFG authority to designate state endangered, threatened, and rare plants and provides specific protection measures for identified populations.

Vascular plants listed as rare or endangered by the California Native Plant Society, but which have no designated status or protection under federal or state endangered species legislation, are defined as follows:

- **List 1A:** Plants Believed Extinct.
- **List 1B:** Plants Rare, Threatened, or Endangered in California and elsewhere.
- **List 2:** Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere.
- **List 3:** Plants About Which More Information is Needed - A Review List.
- **List 4:** Plants of Limited Distribution - A Watch List.

In general, plants appearing on CNPS List 1 or 2 are considered to be rare by local standards.

California Fish and Game Code

The California Fish and Game Code protects a variety of species from take. Certain species are considered *fully protected*, meaning that the code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. It also is possible for a species to be protected under the California Fish and Game Code, but not fully protected.

Local

San Francisco Urban Forestry Ordinance

The City protects trees with its Urban Forestry Ordinance (Ord. 165-95, App. 5/19/95) and Article 16, Sections 806 (Planting and Removal of Street Trees) through 810 (Significant Trees) of the Public Works Code. Significant trees are defined as those within 10 feet of a public right-of-way that also meet one of the following size requirements: 20 feet or greater in height, 15 feet or greater in canopy width, or 12 inches or greater diameter of trunk measured at 4.5 feet above grade. Among the factors considered in the removal of significant trees are the following: their size, age, and species; visual and aesthetic characteristics; cultural or historic characteristics; ecological and location characteristics. Street trees are also protected by the City's Urban Forestry Ordinance and both require a permit for removal. The ordinance also provides a process for designating trees as landmark trees and protects significant, landmark, and street trees during construction. As discussed under Criterion 3 below there are no landmark trees within the Project Site; however there are trees which meet the definition of significant trees and street trees.

San Francisco Planning Code

Section 143 of the San Francisco Planning Code requires the installation of one street tree for each 20 feet of property frontage along each street or alley. Any remaining fraction of 10 feet or more of frontage requires an additional tree for the owner or developer of a new or relocated building or a building with 20 percent or more floor area expansion in specified districts. This ordinance applies to residential districts.

4.14.2 Impact Analysis

4.14.2.1 Significance Criteria

The impact analysis utilizes criteria to evaluate whether implementation of the Proposed Action or alternatives would result in significant, adverse effects. For biological resources the analysis considers whether the Proposed Action or alternatives would:

1. Have a substantial adverse effect on special-status species (identified at the federal, state or local level) or other legally-protected species
2. Have a substantial adverse effect on sensitive or critical habitat (identified at the federal, state or local level)
3. Have a substantial adverse effect on locally-protected trees

Additional criteria which were considered include whether the Proposed Action or alternatives would have an adverse effect on wetlands or other waters of the U.S. subject to jurisdiction under Section 404 of the Clean Water Act, interfere with an existing wildlife corridor or conflict with an adopted habitat conservation plan. There are no wetlands or waters of the U.S. within the Project Site and no major or regional wildlife corridors were identified for the Project Site.[5] There are no adopted habitat conservation plans which include the Project Site. Thus, it was determined that these criteria are not applicable and do not need to be discussed further.

4.14.2.2 Alternative A – Proposed Action

Impact 14.1: Substantial Adverse Effect on Special-Status Species and Other Legally-Protected Species (Criterion 1)

Plants

The Project Site is developed and disturbed and no special-status plants have been observed in surveys. Additionally, the Project Site generally does not support the preferred or required soils (such as serpentine) needed to support special-status plant species and has low habitat value. For these reasons special-status plant species are considered absent from the Project Site and the Proposed Action would result in ***no impact*** to special-status plant species.

Mammals

The only special-status terrestrial mammal with the potential to occur in the Project Site is the western red bat. Potential roosting habitat for this species is present in the Project Site in the mature trees where bats would roost in the foliage during migration and from August to April. Construction activities that would remove these potential roosting sites could result in a small number of individuals being displaced. However, the western red bat is highly sensitive to disturbance, and the disturbance caused by construction and tree removal machinery would likely cause bats to disperse to other areas before injury or mortality could occur. There is some potential that such displacement could result in increased predation of red bats that are displaced during daylight hours, though the number of individuals that could be thus affected would be very low. Therefore, while the removal of large trees could disturb and kill a very limited number of this species, the loss or disturbance would not represent a substantial adverse effect. This is because it would not substantially reduce the habitat of this species, cause a drop in population below self-sustaining levels, or reduce its range. Impacts to the western red bat as a result of project activities would be ***less than significant***.

Fish

No resident or migratory fish occur within or in the vicinity of the Project Site. Project activities would have no direct or indirect impacts on fish habitat or spawning grounds. Therefore, the Proposed Action would have ***no impact*** on special-status fish species.

[5] PBS&J, Candlestick Point/Hunters Point Shipyard Project Biological Technical Report, Updated November 2, 2009.

Birds

The California Natural Diversity Database (CNDDB) reports no occurrences of any special-status bird species at the Project Site. Special-status bird species have been recorded in the vicinity during the Yosemite Slough Watershed Wildlife Survey[6], but due to the lack of suitable nesting habitat and the disturbed nature of the site, no special-status bird species have the potential to nest on the Alice Griffith Redevelopment site itself, or to use the site frequently or in large numbers. Because many bird species are protected by the MBTA and California Fish and Game Code, impacts on these species are also considered. Tall trees on the site provide potential nesting habitat for regionally common raptor species. Marginal habitat for ground-nesting bird species is present in the shrubs and grasslands on the site. Project implementation and construction activities, including grading, materials laydown, facilities construction, vegetation removal, and construction vehicle traffic, may result in loss of a legally protected ground-nesting bird species' active nest or mortality of the nest's occupants.

The removal of trees from the San Francisco Housing Authority (SFHA) portion of the Project Site could adversely impact nesting habitat of raptor species or other native bird species if these species are on the site during construction. As a result, the effects of construction could be ***significant and adverse***.

> **Mitigation**: Implementation of **Mitigation Measure 14.1** includes measures for surveying for, identifying, and avoiding occupied nests and delaying construction to prevent nest abandonment and providing a buffer zone around occupied nests. This would ensure that disturbance from construction would not result in the loss of individuals or destruction of nests or eggs, which would reduce the effects of project construction and implementation on legally protected avian species.
>
> **Significance after Mitigation**: Less than significant

Impact 14.2: Substantial Adverse Effect on Sensitive or Critical Habitat (Criterion 2)

The Project Site contains developed areas, landscaped areas and ruderal/nonnative annual grassland. These areas have not been designated as critical habitat nor are they considered sensitive habitats. While landscaped areas provide some habitat for local species, they are not unique and would be replaced with landscaped areas within the new development. Because no sensitive habitat exists within the Project Site, there would be ***no impact*** for this criterion.

Impact 14.3: Substantial Adverse Effect on Locally-Protected Trees (Criterion 3)

Demolition would also involve the removal of trees and vegetation from the Project Site. The Urban Forestry Ordinance protects street trees within the jurisdiction of the Department of Public Works and significant and landmark trees within the jurisdiction of the Department of Public

[6] Golden Gate Audubon Society, *Final Report Yosemite Slough Watershed Wildlife Survey 2003–2004,* prepared by LSA, July 27, 2004.

Works and on private property. There are no landmark trees within the Project Site.[7] There are street trees and trees which would meet the definition of significant under the Ordinance.

Street trees under the jurisdiction of the Department Public Works (such as within public right-of-way) are subject to the requirements of the Public Works Code which specifies a process for gaining approval to remove trees and requires protection of trees during construction activities. Additionally, trees approved for removal must be replaced in accordance with requirements of the Department of Public Works. The Proposed Action would be required to comply with these regulations and thus the impact to trees within the jurisdiction of the Department of Public Works would be ***less than significant***.

The removal of trees outside of the Department of Public Works jurisdiction are not subject to the Public Works Code. Thus removal of a large number of trees that meet the size definition of significant trees, without replacement of trees, could result in conflicts with policies articulated in the City's Urban Forestry Ordinance. The Ordinance identifies trees as important to the urban environment because they improve air quality and wildlife habitat, contribute to psychological well-being and the aesthetic environment, and decrease noise. The City's Planning Code Section 143 embodies similar policies by requiring the planting of certain quantities of street trees when constructing new development in certain areas of the City; however, the Planning Code does not automatically apply in redevelopment areas. As a result, activities within the Project Site could result in ***significant and adverse*** impacts to locally-designated significant trees.

> **Mitigation**: Implementation of **Mitigation Measure 14.3** would encourage the preservation of trees that are large enough to meet the size specification of significant trees in the Public Works Code and would require the replacement of large trees that are removed. Further, it would require the planting of street trees consistent with the intent of the Planning Code Section 143.
>
> **Significance after Mitigation:** Less than significant

4.14.2.3 Alternative B – Housing Replacement Alternative and Alternative C – Reduced Development Alternative

Implementation of Alternatives B and C would result in the same extent of land disturbance as Alternative A and thus impacts to wildlife and habitats would the same as discussed for Alternative A. Thus, impacts to special-status and other legally-protected species and locally-protected trees would be ***significant and adverse*** before mitigation and less than significant after implementation of **Mitigation Measures 14.1** and **14.3** (Criteria 1 and 3). There is no sensitive or critical habitat within the Project Site and thus there would ***no impact*** to these types of habitat (Criterion 2).

[7] SF Environment, Maps of Landmark Trees in SF, available online at: http://www.sfenvironment.org/our_programs/interests.html?ssi=4&ti=8&ii=131, accessed October 2011.

4.14.2.4 Alternative D – No Action Alternative

Under the No Action Alternative, there would be no new development or other change to the existing use of the Project Site. Thus there would be ***no impact*** on special-status or other legally-protected species, sensitive or critical habitat, locally-protected trees (Criteria 1-3).

4.14.3 Mitigation Measures

Mitigation Measure 14.1: Impact Avoidance and Pre-Construction Surveys for Nesting Special-Status and Legally Protected Avian Species [EIR Mitigation Measure BI-6a.1]

The project sponsor shall implement the following measures to avoid impacts on nesting birds:

- Not more than 15 days before construction between February 1 and August 31, surveys for nesting birds shall be conducted by a qualified biologist (one familiar with the breeding biology and nesting habits of birds that may breed in the project vicinity) that is selected by the project sponsor and approved by the City or San Francisco Redevelopment Agency (SFRA). Surveys shall cover the entire area to be affected by construction and the area within a 250-foot buffer of construction or ground-disturbing activities. The results of the surveys, including survey dates, times, methods, species observed, and a map of any discovered nests, shall be submitted to the City or SFRA. If no active avian nests (i.e., those with eggs or young) are identified on or within 250 feet of the limits of the disturbance area, no further mitigation is necessary. Phased construction work shall require additional surveys if vegetation or building removal has not occurred within 15 days of the initial survey or is planned for an area that was not previously surveyed. Alternatively, to avoid impacts, the project sponsor shall begin construction after the previous breeding season for local raptors and other special-status species has ended (after August 31) and before the next breeding season begins (before February 1).
- If active nests (with eggs or young) of special-status or protected avian species are found within 250 feet of the proposed disturbance area, a minimum 250-foot no-disturbance buffer zone surrounding active raptor nests and a minimum 100-foot buffer zone surrounding nests of other special-status or protected avian species shall be established until the young have fledged. Project activities shall not occur in the buffer as long as the nest is active. The size of the buffer area may be reduced if a qualified biologist familiar with the species' nesting biology (as approved by the City or SFRA) and the CDFG determine it would not be likely to have adverse effects on the particular species. Alternatively, certain activities may occur in the aforementioned buffers, with CDFG concurrence, if a qualified biologist monitors the activity of nesting birds for signs of agitation while those activities are being performed. If the birds show signs of agitation, suggesting that they could abandon the nest, activities would cease in the buffer area. No action other than avoidance shall be taken without CDFG consultation.
- Completion of the nesting cycle (to determine when construction near the nest can commence) shall be determined by a qualified biologist experienced in identification and biology of the specific special-status or protected species.

Mitigation Measure 14.3: Preservation and Replacement of Significant Trees and Preservation and Planting of Street Trees (EIR Mitigation Measure BI-14a)

Construction outside of the Department of Public Works (DPW) jurisdiction could result in the disturbance or removal of a large number of trees. To minimize this impact, the project sponsor shall implement following measures in these areas:

- To the extent feasible, avoid the removal of trees that meet the size specifications of significant trees in the Public Works Code Article 16. Any such trees that are removed shall be replaced at a minimum of 1 to 1 (one tree impacted to one tree replaced). The species used for replacement shall be consistent with DPW recommendations.
- Plant street trees in all new development areas. The species, size, and locations shall be consistent with the requirements specified in Planning Code Section 143, including the following:
    - The street tree installed shall be a minimum of one 24-inch box tree for each 20 feet of frontage of the property along each street or alley, with any remaining fraction of 10 feet or more of frontage requiring an additional tree. Such trees shall be either within a setback area on the lot or within the public right-of-way along such lot.
    - The species of trees selected shall be suitable for the site, and, in the case of trees installed in the public right-of-way, the species and locations shall be subject to DPW approval. Procedures and other requirements for the installation, maintenance, and protection of trees in the public right-of-way shall be as set forth in Public Works Code Article 16.
- If a significant tree or street tree would not be removed, but construction activities would occur within the dripline of such tree, a tree protection plan shall be prepared by an arborist certified by the International Society of Arboriculture, in accordance with the Urban Forestry Ordinance. This plan shall be submitted to the Planning Department for review and approval before a demolition or building permit is issued. The tree protection plan shall include measures to protect all parts of a tree from disturbance during construction and may include the following:
    - A site plan with tree species, trunk location, trunk diameter at breast height, and the canopy dripline area within development;
    - The use of protective fencing to establish an area to be left undisturbed during construction;
    - Protection specifications, including construction specifications such as boring instead of trenching for utility lines, or tree specifications such as drainage, fertilization, or irrigation measures; and
    - Pruning specifications, if needed, to preserve the health of the tree and allow construction to proceed.

CHAPTER 5.0
Cumulative Impacts

5.1 Introduction

The cumulative effects analysis broadens the scope of analysis to include effects beyond those directly attributable to the implementation of the Proposed Action and alternatives. Cumulative effects are defined as the effects "…on the environment which result from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR § 1508.7). The purpose of cumulative effects analysis, as stated by the Council on Environmental Quality (CEQ) "is to ensure that federal decisions consider the full range of consequences" (1997).

The cumulative analysis begins with defining the geographic boundary and time frame of the analysis. Secondly, the cumulative environment is described in terms of past, present and future actions that may affect the status of the resources, ecosystems, and human communities within the defined time frame and geographic boundary.

The analyses below conclude that the Proposed Action would contribute a cumulatively considerable amount of traffic to the intersection of Third Street and Carroll Avenue. The degradation in operations at the intersection of Third Street and Carroll Avenue would primarily be due to Proposed Action-related traffic increases on Carroll Avenue and Third Street. No feasible mitigation is available. With implementation of proposed mitigation, all other cumulative impacts would be less than significant.

5.1.1 Time Frame

Cumulative impacts are determined by the timing of other nearby projects. For a group of projects to generate cumulative construction impacts, they must be temporally as well as geographically proximate. Where future off-site development projects could potentially contribute to a cumulative construction impact, the timing of the specific off-site developments in relation to the Proposed Action and alternatives is discussed. The timing of the projects described below may fluctuate due to schedule changes of other unknown factors.

The time frame of the cumulative effects analysis extends to 2030. This year was selected as the future analysis year because the San Francisco County Transportation Authority travel demand model used in the analysis develops traffic and transit forecasts for cumulative development and

growth through 2030. Beyond this planning horizon, information on growth patterns and future activities becomes scarce and uncertainties increase, limiting the usefulness of a more extended analysis.

5.1.2 Geographic Boundary

The geographic area for the cumulative analysis varies depending upon the environmental issue and the geographic extent of the potential impact. For example, the geographic area associated with construction noise impacts would be limited to areas close to the construction activity and directly affected by construction noise, whereas the geographic area that could be affected by traffic would be larger to include roadways within the transportation study area. Accordingly, the geographic boundary is summarized prior to the discussion of the cumulative analysis for each issue area in **Section 5.2**.

In most cases, the geographic extent of the proposed alternatives' contribution to cumulative impacts would be limited to a small area around the Project Site, or the Candlestick Point area, and in some cases the Candlestick Point-Hunters Point Shipyard Phase II (CP-HPS) Project area. The planning background for the CP-HPS Project is included in **Section 1.3.2**.

5.2 Cumulative Analysis

The following cumulative analysis determines whether the proposed alternatives when considered with past, present and future projects could result in cumulatively significant and adverse impacts. Significance is determined based on context and intensity as well as specified quantitative criteria where applicable.

If cumulative impacts would not be significant and adverse then no further discussion is warranted. If cumulative impacts are significant and adverse then the analysis considers both the contribution of the proposed alternatives and the feasible mitigation measures that would be implemented to reduce or avoid the contribution of the proposed alternatives to the cumulative impact.

In some cases the proposed alternatives do not contribute to cumulative impacts and no further discussion is warranted. For example, Alternative D proposes no construction activities and thus would not contribute to any construction-related impacts from other past, present or future projects in the surrounding area.

5.2.1 Climate Change

Alternatives A, B and C

Climate change occurs without distinct geographic boundaries and is considered a cumulative and global issue. However, it is not reasonable to conduct a global analysis. Thus, because the development of the Project Site is part of the larger CP-HPS Project, cumulative impacts in this

analysis are based on the potential GHG emission impacts of the CP-HPS Project in the context of state and local policies and regulations.

Currently 24 CFR Part 58 does not address Climate Change from Greenhouse Gas (GHG) Emissions nor does the federal government regulate GHGs. GHG emissions from the overall CP-HPS Project, including the Proposed Action, were analyzed in the CP-HPS EIR with respect to State and local goals for GHG emission reduction.

The CP-HPS Project is a dense, mixed use, urban infill development that will promote transit use, biking, and walking, must comply with the City's Green Building ordinance, and includes an approved Sustainability Plan. Moreover, the Proposed Action and Alternatives B and C would replace outdated housing with new construction that would be required to include energy efficient features and would provide greater access to transit.

It was determined in the CP-HPS EIR that, with implementation of mitigation described below, the CP-HPS Project would not conflict with 1) the State goal of reducing GHG emissions in California to 1990 levels by 2020 or 2) San Francisco's Climate Action Plan, by impeding implementation of local GHG reduction goals established by the Greenhouse Gas Reduction Ordinance. Implementation of mitigation for the CP-HPS Project (Mitigation Measures GC-1 through GC-4) would include planting up to 10,000 net new trees, exceeding Title 24 standards by at least 15 percent, installation of ENERGY STAR appliances and use of light emitted diode based street lighting. Mitigation will effectively address climate change effects of the CP-HPS Project, of which the Project Site is part.

Alternative D

Alternative D would not contribute to construction-related GHG emissions nor result in an increase in operation-related GHG emissions and thus would not contribute to cumulative GHG impacts.

5.2.2 Air Quality

The geographic boundary for construction period air quality impacts includes the Project Site and the immediate vicinity to the extent that fugitive dust or odors could travel off-site during construction and combine with that of nearby construction projects.

The geographic boundary for operational air quality impacts extends to a larger area as operational impacts (criteria pollutants and health risks) include emissions from project-generated traffic, which encompasses the geographic boundary that includes the study intersections and roadways shown on **Figure 5-1**, where traffic may be measurably affected by the Proposed Action and alternatives.

Alternatives A, B and C

The cumulative analyses performed for the CP-HPS Project EIR[1] included the Proposed Action and thus forms the cumulative baseline for this analysis.

General Conformity Determination (Criterion 1)

Each federal action is considered independently with respect to general conformity and thus this impact is not cumulative in nature. As discussed in **Section 4.2**, Alternative A would not exceed the conformity analysis threshold.

Local Thresholds for Criteria Air Pollutants and Precursors (Criterion 2)

Locally, a project is considered to have a cumulatively significant adverse air quality impact if the project exceeds the identified significance thresholds.[2] Construction and operational emissions would not exceed local thresholds for criteria air pollutants as discussed in **Section 4.2**. Therefore emissions from development of Alternatives A, B and C would not result in a considerable contribution to any criteria air pollutant threshold impacts during construction or operation phases.

Fugitive Dust Emissions for Construction (Criterion 3)

Fugitive dust emissions during construction could result in cumulative impacts if multiple developments are under construction at the same time in a concentrated area. The nearby projects with the potential to be under construction at the same time as the alternatives and close enough for the potential to result in combined fugitive dust emissions during construction would be the Executive Park development (3,400 residential units and 90,000 square feet of retail/restaurant uses approximately 0.5 miles south of the Project Site) and a portion of the Candlestick Point portion of the CP-HPS Project. Demolition and construction activities associated with Alternatives A, B and C would begin prior to the development of the remainder of the Candlestick Point portion of the CP-HPS Project, with the exception of two blocks adjacent to the northeastern boundary of the Project Site.[3] Alternatives A, B and C, the Candlestick Point portion of the CP-HPS Project, and the Executive Park development would be required to comply with the City's Dust Control Ordinance and associated best management practices (BMPs). Compliance with established dust control measures would ensure that cumulative impacts from construction dust emissions would not be significant and adverse.

Carbon Monoxide Concentrations During Operation (Criterion 4)

Concentrations of carbon monoxide were calculated at the intersection of Gilman Avenue and Arelious Walker Drive, the intersection nearest to the Project Site where the greatest change in traffic levels is expected, and thus the greatest increase in carbon monoxide concentrations results. As shown in **Table 4.2-6**, carbon monoxide concentrations would increase under cumulative (2030) conditions (based on the cumulative traffic analysis), but would still be well

[1] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, Candlestick Point–Hunters Point Shipyard Phase II Development Plan Project Draft Environmental Impact Report November 2009.
[2] BAAQMD CEQA Air Quality Guidelines, 2010.
[3] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, Candlestick Point–Hunters Point Shipyard Phase II Development Plan Project Final Environmental Impact Report May 2010. Figures II-16 and II-17.

below the federal and state standards. Therefore, cumulative impacts from carbon monoxide concentrations would not be significant and adverse.

Exposure to Health Risks and Local Thresholds for $PM_{2.5}$ concentrations (Criteria 5 and 6)

Cumulative impacts related to increased health risks to sensitive receptors were calculated by performing a health risk analysis. This analysis included the effects of full build out of the Proposed Action as well as the full build out of the other elements of the CP-HPS Project and other assumptions in the cumulative traffic analysis.[4] The cumulative health risk assessment method was similar to that described for the Proposed Action. The analysis also accounted for emissions from three diesel engines near the Project Site that are stationary emission sources and require permits issued by the BAAQMD.

Table 5-1 presents the results of the cumulative health risk assessment.[5] As shown, the resulting cancer risk over a 70-year lifetime exposure would not exceed the BAAQMD threshold for increased cancer risk of 100 in a million. The non-cancer hazard index and the annual average $PM_{2.5}$ concentration would also not exceed the BAAQMD thresholds. Thus, cumulative impacts related to potential health risks would not be significant and adverse. Given the reduced intensity of development under Alternatives B and C, the health risk cumulative impacts would be slightly less than the cumulative impacts with the Proposed Action and thus would not be significant and adverse.

TABLE 5-1
CUMULATIVE HEALTH RISK ASSESSMENT RESULTS

Criteria	BAAQMD Threshold	On-Site Receptor
Cancer risk (per million)	100	43
Hazard index	10	0.23
Annual average $PM_{2.5}$ ($\mu g/m^3$)	0.8	0.4

SOURCE: ENVIRON. Air quality assessment data provided by email from Michael Keinath, ENVIRON. May 2011.

Exposure to Odor Emissions (Criterion 7)

Short-term localized odors, such as exhaust from construction vehicles, could be generated during construction of Alternatives A, B and C in conjunction with other proposed development that would occur on the Candlestick Point area of the CP-HPS Project. However, construction odors would be temporary and generally do not result in odor complaints. No odors would be generated during operation of Alternatives A, B and C. Therefore, the cumulative impact associated with odors would not be significant and adverse.

[4] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, 2009.
[5] ENVIRON. Air quality assessment data provided by email from Michael Keinath, ENVIRON. May 2011.

Alternative D

Under Alternative D there would be no federal action and thus general conformity would not apply (Criterion 1). Alternative D would not result in an increase in criteria air pollutants, fugitive dust, carbon monoxide, risk in exposure to health risks, $PM_{2.5}$, or odors (Criterion 2, 3, 4, 5, 6 and 7) as no construction or change in site use would occur.

5.2.3 Hazards and Hazardous Materials

The geographic boundary for airborne hazards (asbestos) during construction is similar to air quality in that it includes the immediate vicinity of the Project Site, to the extent that construction dust could travel. The geographic boundary for other hazards/hazardous materials impacts does not extend past the Project Site as discussed below.

Alternatives A, B and C

Exposure to Hazardous Fill Material (Criterion 1)

The effects related to exposure to hazardous fill material are generally limited to the area where grading and other earth-moving activities would occur. Demolition and construction activities for the Project Site would begin prior to nearby Candlestick Point portions of the larger CP-HPS Project. The nearby Candlestick Point portions of the CP-HPS Project would be required to comply with mitigation measures to avoid or reduce the impact from exposure to hazardous fill material, including Article 22A Site Mitigation Plans, Unknown Contaminant Contingency Plans and Site-Specific Health and Safety Plans (Mitigation Measures HZ-1a, HZ-2a.1, HZ2a.2). Alternatives A, B and C would be required to implement similar mitigation (Mitigation Measures 3.1a, 3.1b and 3.1c). Compliance with local regulations and adopted mitigation measures would avoid or reduce the risk of exposure to hazardous fill material. Alternatives A, B and C when considered with past, present and future projects would not result in cumulatively significant and adverse impacts under this criterion.

Proximity to a Potentially Hazardous Site (Criterion 2)

Section 4.3 addresses the past and present hazardous sites which could potentially affect residential development of the Project Site. Future remediation activities in the Project Site vicinity include removal of potentially contaminated fill material, which is discussed above, and abatement of asbestos, which is discussed below. There are no other known hazardous sites or hazardous issues in the Project area that would be cumulative in nature.

Release of Hazardous Substances (Criterion 3)

Asbestos-containing materials and lead-based paint have the potential to become disturbed during demolition activities for existing structures in the Candlestick Point portions of the CP-HPS Project. These substances can become airborne and result in a health risk to construction workers, residents, others in the immediate vicinity. Demolition of most of the Project Site would occur prior to demolition activities proposed in other areas of Candlestick Point. Demolition of existing structures in the northeastern portion of the Project Site could occur concurrently with demolition of existing structures for CP-HPS Project, located approximately 1,500 feet southwest of the Project Site.

At this distance (the equivalent of approximately 4-5 blocks) combined or cumulative effects are not anticipated. In addition, development of the Project Site and the remainder of Candlestick Point are subject to survey and notification requirements discussed n **Section 4.3**. The nearby Candlestick Point portions of the CP-HPS Project would be required to comply with adopted mitigation Site-Specific Health and Safety Plans (HZ-2a.2) to reduce potential impacts related to hazards. Alternatives A, B and C would implement the same mitigation (Mitigation Measure 3.1c) in addition to asbestos identification and abatement mitigation (Mitigation Measure 3.3). Compliance with local regulations and adopted mitigation measures would reduce the risk of cumulative effects associated with hazardous substances. Thus, cumulative impacts under this criterion would not be significant and adverse.

Potential Release of Hazardous Materials During Routine Use, Storage, Transport, and Disposal (Criterion 4)

Redevelopment of the Project Site and the CP-HPS Project area would involve the routine use, transport, and disposal of hazardous materials during construction. Accidental releases during construction are typically isolated to the immediate vicinity of the release and are not cumulative in nature. Alternatives A, B and C do not propose uses which would require hazardous materials for operation and thus would not contribute to cumulative impacts under this criterion.

Alternative D

Under Alternative D, no demolition, renovation or construction is proposed and thus Alternative D would not contribute to any cumulative effects associated with exposure to hazardous fill or release of hazardous substances (Criteria 1-4).

5.2.4 Land Use

When considering the consistency of the alternatives with applicable land use plans, the geographic boundary is limited to the Project Site; consequently, consistency with applicable land use plans is not a cumulative issue and will not be discussed. The geographic boundary for cumulative land use compatibility impacts includes the Project Site and its immediate surroundings.

Alternatives A, B and C

Land Use Compatibility with Surrounding Development (Criterion 1)

As discussed in **Section 4.4**, Alternatives A, B and C would be compatible with existing and proposed off-site development. Thus, no significant and adverse cumulative land use impacts would occur.

Alternative D

Land Use Compatibility with Surrounding Development (Criterion 1)

Under the No Action Alternative, there would be no change to the existing land use and thus no effect on compatibility with existing off-site uses. Proposed residential uses in adjacent areas of

Candlestick Point would also be compatible with the existing development. Thus, Alternative D would not result in cumulative land use impacts.

5.2.5 Noise

U.S. Department of Housing and Urban Development (HUD) regulations require an assessment of the future noise environment "at least 10 years beyond the date of the project"[6]. The analysis of cumulative impacts fulfills this requirement because it analyzes conditions in 2030. The geographic boundary for the HUD analysis (Criterion 1) includes the Project Site and noise sources which could affect the ambient noise level at the Project Site. The geographic context for construction noise impacts (Criterion 2) includes the Project Site and the residential uses (or other sensitive receptors) south and west of the Project Site. The geographic context for increased noise levels (Criterion 3) extends to areas which could be measurably affected by project-generated traffic (see extent of traffic impacts in **Figures 5-1** through **5-3**).

Alternatives A, B and C

Background Noise Levels (Criterion 1)

This criterion evaluates whether Alternatives A, B or C would introduce new residential development within a cumulative noise environment which meets HUD's standard of 65 dB DNL as an acceptable background noise level. This analysis used the cumulative traffic model to determine background noise levels at the Project Site. The cumulative traffic model includes full buildout of the CP-HPS Project area in addition to other planned projects and growth assumptions. Traffic in the vicinity of Arelious Walker Blvd and Gilman Avenue intersection under cumulative conditions was used for noise modeling (**Appendix F**). Both the cumulative and cumulative plus project background noise levels would be within the acceptable range for residential development (**Table 5-2**).

The noise environment in the Project vicinity also includes passage of light rail, Caltrain and aircraft. If all three of these noise sources were to occur simultaneously the resultant noise at the Project Site could be up to 66.7 DNL without the project and 66.9 DNL with the project.[7] This noise projection, however, would be unlikely to occur given that: (1) the noise impact calculation did not consider factors that would substantially reduce the projected DNL; (2) it would be rare that these three noise sources would simultaneously pass near the Project site; and (3) any such occurrence would be of a short duration. The noise level would be lower than calculated because the calculations did not reflect that Caltrain is located below-grade (and underground as it travels south of the Project Site area) and that the Project Site is separated from Caltrain and the light rail by three blocks of dense, urban development which would buffer noise. With consideration of these factors, cumulative noise levels are not anticipated to be significant and adverse.

[6] 24 CFR Part 51, Subpart B
[7] Calculations incorporated a 65 DNL for traffic, 50 DNL for Aircraft, 63 DNL for Rail.

TABLE 5-2
CALCULATED PROJECT SITE TRAFFIC NOISE LEVELS

Location	DNL
Cumulative	
Gilman Ave west of Arelious Walker Blvd[1]	61
Arelious Walker Blvd north of Gilman Ave[2]	65
Cumulative Plus Project	
Gilman Ave west of Arelious Walker Blvd	61
Arelious Walker Blvd north of Gilman Ave	65

1. Calculations incorporated a 100 foot residential setback.
2. Calculations incorporated a 50 foot residential setback.
DNL = day-night average sound level

SOURCE: Fehr and Peers, June 2011. ESA, 2011.

Local Standards for Construction Noise (Criterion 2)

Construction and demolition noise from Alternatives A, B and C would add to construction and demolition noise occurring in other portions of Candlestick Point from the CP-HPS Project. The CP-HPS Project is required to implement adopted mitigation to reduce noise levels during construction (Mitigation Measure NO-1a.1). Alternatives A, B and C would be required to implement the same mitigation (Mitigation Measure 5.2). Construction and demolition activities at Candlestick Point must also comply with the San Francisco Noise Ordinance which would limit hours of construction noise. Compliance with the Noise Ordinance and implementation of mitigation would reduce cumulative construction noise impacts such that no significant and adverse impacts would occur.

Increase in Noise Levels (Criterion 3)

Operation of the project in conjunction with past, present and proposed development would result in increased noise from heating and ventilation systems and outdoor recreation activities within parks. These noises are common in the Project Site vicinity, are generally less than 1 dBA (imperceptible to the human ear), and are intermittent; for these reasons, cumulative noise impacts from these sources would not be significant and adverse.

Alternatives A, B and C would generate traffic which would add to traffic noise on local roadways (within the areas mapped on Figures 5-1 through 5-3). The CP-HPS EIR determined that buildout of the CP-HPS Project (including redevelopment of the Project Site) would contribute to significant and adverse increases in noise at Carroll Avenue east of 3rd Street and Gilman Avenue east of 3rd Street using Federal Transit Authority standards for impacts to noise-sensitive uses.[8] Carroll Avenue east of 3rd street contains industrial uses and does not contain noise sensitive uses; thus increases in noise along this roadway are not considered a significant and adverse effect.

Gilman Avenue east of 3rd Street contains residential uses and the addition of traffic from the CP-HPS Project would result in a noticeable increase (4 dB) in the 2030 ambient noise levels along this roadway. The resulting 2030 noise level with the Proposed Action (Alternative A) would be

[8] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, 2009. Section III.1

64.6 dBA DNL. As indicated in Table 5-2, the contribution of the Proposed Action would have no quantitative impact on roadside noise levels on Gilman Avenue in the cumulative scenario (61 dBA with or without the project). Therefore, the Proposed Action would not contribute to this future cumulative impact resulting from the CP-HPS project. Alternatives B and C would have reduced project trip generation compared to Alternative A and would also have a negligible contribution to future cumulative roadside noise impacts along Gilman Avenue.

Alternative D – No Action Alternative

Alternative D would not contribute to construction or operational noise level changes and thus would not contribute to cumulative noise impacts (Criteria 1-4).

5.2.6 Socioeconomics

The geographic boundary for socioeconomics is the CP-HPS Project area, as neighborhood access, growth and employment impacts from redevelopment would be distributed throughout this area.

Alternatives A, B and C

Displacement of Existing Residents or Businesses (Criterion 1)

Under Alternatives A, B and C, the existing residents on the Project Site would have the option to continue to live at the new residential units on the Project Site. As these alternatives would not displace existing residents, they would not contribute to cumulative impacts under this criterion.

Reduced Neighborhood Access (Criterion 2)

Redevelopment of the Project Site in conjunction with the CP-HPS Project is anticipated to improve access in the Project Site vicinity. The CP-HPS Project, in conjunction with Alternatives A, B and C, would connect the Project Site to the surrounding street grid, provide transportation and infrastructure improvements for vehicles, pedestrians and cyclists, and provide additional transit service and facilities for the surrounding neighborhood. Thus beneficial cumulative impacts would result with respect to neighborhood access.

Induce a Substantial Amount of Unplanned Growth (Criterion 3)

Development of the CP-HPS Project area in conjunction with development under Alternatives A and C would be consistent with adopted plans and policies, including the CP-HPS Project, encouraging the rebuilding of the Project Site as a mixed-income community. Alternatives A and C would be developed within the housing and residential densities analyzed in these adopted plans. Alternative B would result in no growth as it includes only the replacement of existing units. Thus, cumulative impacts from development of Alternatives A, B and C in conjunction with the remainder of the CP-HPS Project area would not result in a substantial amount of unplanned growth and would not be significant and adverse.

Cause a Substantial Decrease in Local or Regional Employment (Criterion 4)

The redevelopment of the CP-HPS Project area, including the Project Site would provide construction job opportunities and permanent job opportunities. The Bayview Hunters Point (BVHP) Employment and Contracting Policy has a goal for 50 percent of construction and permanent jobs to be filled by qualified BVHP residents, directly benefiting local employment. Thus, cumulative employment impacts would be beneficial.

Alternative D – No Action Alternative

Alternative D would not result in displacement of existing residents, changes to neighborhood access, new growth or changes to local or regional employment. Thus Alternative D would not contribute to cumulative impacts under Criteria 1-4.

5.2.7 Environmental Justice

The geographic boundary for cumulative environmental justice includes the Project Site and areas where significant and unavoidable impacts could occur as discussed below.

Alternatives A, B and C

Disproportionate Effects to Low-Income and Minority Populations (Criterion 1)

In general, potentially cumulative effects discussed in this chapter would be mitigated and would not disproportionately impact low-income and minority populations. One off-site traffic impact at one intersection would be cumulatively significant and unavoidable; however, this impact affects a broader population. Additionally, the CP-HPS Project would increase access to the local transportation network and improve public transit access and facilities benefiting residents of the Project Site and the BVHP neighborhood. Proposed development, including Alternatives A, B and C, would result in improved housing conditions, improved and new infrastructure, job opportunities, and increased availability of neighborhood-serving retail among other benefits. Overall, proposed cumulative development would have a beneficial effect on environmental justice populations.

Alternative D – No Action Alternative

As discussed in **Section 4.7**, the No Action Alternative would result in significant and adverse impacts with respect to environmental justice issues. These impacts are not anticipated to extend beyond the Project Site or become incrementally greater with surrounding development and thus would not contribute to cumulative impacts. Other proposed development in the BVHP neighborhood, such as the CP-HPS Project, would result in improved and new infrastructure, job opportunities, and increased availability of neighborhood-serving retail among other benefits. Low-income and minority populations within the Project Site would benefit from proposed off-site redevelopment.

5.2.8 Public Services and Utilities

The geographic boundaries for cumulative public services and utilities impacts are summarized under each criterion below. Generally, impacts for public services and utilities extend to the service boundary for the public or private entity providing service to the Project Site.

Alternatives A, B and C

Water Supply (Criterion 1)

The geographic boundary for water supply extends to the San Francisco Public Utilities Commission (SFPUC) water service area. Long-term water supply and demand for SFPUC customers is discussed in **Section 4.8**. Future water supplies for all retail customers are discussed in the Phased Water Supply Improvement Program (WSIP) and future retail demands are estimated in the Water Supply Availability Study (WSAS), both developed by SFPUC. Projected demands include anticipated growth, the Proposed Action and other major development projects through 2030. A comparison of the supply and demand determined that SFPUC has capacity for existing customers, the Proposed Action (and Alternatives B and C which have a lower demand),and other future projects from 2015 to 2030 for normal years, single-dry years and most multiple-dry years.[9] During drought conditions from 2030 and beyond, implementation of the Retail Water Shortage Allocation Plan (measures for voluntary rationing and issuance of specific allotments for customers) would allow for adequate water supply to be provided to existing and planned development. Thus, cumulative impacts would not be significant and adverse.

Wastewater Conveyance and Treatment (Criterion 2)

For wastewater conveyance, the geographic context for cumulative impacts is the watershed that utilizes the Candlestick Point and Hunters Point tunnel sewers and contributes wastewater to the Southeast Water Pollution Control Plant. Cumulative peak flows from the development of Candlestick Point are estimated at 1,479 gpm to the Candlestick tunnel sewer, which has an existing unused capacity of 28, 035 gpm. This flow would combine with a maximum peak flow of 979 gpm from the Hunters Point Shipyard Phase II development for a combined peak flow of 2,458 gpm to the Hunters Point Tunnel Sewer, which has an existing unused capacity of 69,853 gpm. Thus the combined flows of the CP-HPS Project represent 3.5 percent of remaining capacity.[10] Much of the area that contributes to the sewers is developed and given the relative size of other proposed projects (much smaller in comparison to the CP-HPS Project) there would be additional capacity within the conveyance system. Currently the CP-HPS Project area contributes stormwater from some areas to the wastewater system which results in an increase in flows during wet-weather. The CP-HPS Project includes development of a separate stormwater system which would result in a reduction in wet weather flows from the existing conditions. The CP-HPS Project would generate approximately 1.18 million gallons per day (MGD) of wastewater which is 1.4 percent of the remaining dry-weather treatment capacity (1.18 MGD/83 MGD) and 0.8 percent of the

[9] SFPUC, Candlestick Point - Hunters Point Shipyard Phase II Project Final Water Supply Assessment, October 2009.
[10] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, 2009.

overall treatment capacity of the SWPCP (1.18 MGD/150 MGD). There is a substantial amount of capacity for existing development and other development projects anticipated through 2030.

As sufficient wastewater treatment and conveyance capacity are available for the Proposed Action and Alternatives B and C as well as existing development and other proposed and approved projects, cumulative impacts would not be significant and adverse.

Solid Waste Collection and Disposal (Criterion 3)

The geographic context for solid waste collection and disposal is the City of San Francisco as municipal solid waste from the jurisdiction, which cannot be recycled or composted, is now and will be in the future primarily transferred to one landfill (the Altamont landfill until 2015 and the Ostrom Road Landfill after 2015).

All proposed demolition and construction projects within the City are required to submit a waste-diversion plan pursuant to the City‘s Construction and Demolition Debris Recovery Ordinance. The waste-diversion plan must demonstrate that 65 percent or more of the total construction and demolition debris are diverted from landfill interment. The proposed regulations would ensure that the maximum amount of construction and demolition materials is diverted from landfills for all projects within the City. Some projects would also be subject to the City’s Green Building Ordinance requirement of at least 75 percent diversion of total construction and demolition debris.

Cumulative development in the City would generate varying amounts of solid waste that would decrease the remaining capacity of servicing landfills. The City has implemented a number of aggressive strategies to divert additional solid waste and achieve citywide diversion goals. The City plans to achieve a full (100 percent) waste diversion by 2020 which would help to maintain and potentially extend the life of the landfills utilized by the City. All City residents and neighborhood retail employees must comply with the City’s Mandatory Recycling and Composting Ordinance which requires separation of municipal solid waste into recyclables, compostables, and trash.

The City plans for solid waste services based on existing disposal rates and planning documents for future development. Development of the Project Site is consistent with the existing Redevelopment Plan for the BVHP which is included in growth projections. Taking into consideration existing development and future growth, the City has entered into a 10-year contract to dispose of up to 5 million tons of municipal solid waste at the Ostrom Road Landfill.[11] Assuming an average disposal of 500,000 tons per year, Alternatives A, B and C would represent approximately 0.2% or less of the disposed waste.[12] Given the City's waste diversion requirements and the City's plan for solid waste disposal, cumulative impacts under this criterion would not be significant and adverse.

[11] San Francisco Examiner, San Francisco supes award sweet landfill contract to Recology, July 26, 2011. Available online at: http://www.sfexaminer.com/blogs/under-dome/2011/07/san-francisco-supes-award-sweet-landfill-contract-recology, accessed September 2011.

[12] Alternative A would dispose of 1,169 tons per year as discussed in Section 4.8.

Energy (Criterion 4)

The geographic context for an analysis of cumulative impacts associated with dry utilities would be the service areas of the respective providers within the City of San Francisco. For electricity, it would be either the service area of PG&E or the SFPUC within the City. For natural gas, the context would be the service area of PG&E within the City. These service providers would extend their infrastructure to accommodate growth within their service areas. Development of cumulative projects, in combination with the Project, would increase demand for electricity and natural gas.

All cumulative projects within the City of San Francisco would be required to comply with applicable City codes, which require that infrastructure plans be submitted for approval to demonstrate that adequate infrastructure exists or would be constructed to accommodate the project. In addition, all projects in California are subject to Title 24 requirements for energy conservation. The proposed alternatives would implement energy efficiency measures including implementation of LEED for Neighborhood Development (ND) and meeting a performance target of 15 percent below the energy efficiency standards in Title 24, Part 6, of the 2008 California Code of Regulations. The energy demands from Alternatives A, B and C would be less than 0.1% both electricity and natural gas demands for San Francisco.

The proposed alternatives and other future development would be required to coordinate with the City and electricity and natural gas providers to ensure that adequate supplies and infrastructure are available. Energy is provided on a first-come, first served basis and energy providers are continuing to increase supplies in coordination with the growth projections of local jurisdictions throughout California. PG&E and SFPUC continue to accept new applications for service and thus, with coordination on an individual-project basis, significant and adverse cumulative impacts would not occur.

Police Services (Criterion 5)

The geographic context for impacts to police services is the service area for the Bayview station of the San Francisco Police Department. The proposed alternatives in conjunction with existing and other future development in the CP-HPS Project area would result in demand for increased police services from the Bayview station. The San Francisco Police Department evaluates the need for additional officers by sector, based on a ratio of 1 police officer per 665 persons, reflecting both the City's resident and commuter population. The CP-HPS Project for example could result in a demand for up to 53 additional officers based on the aforementioned ratio and Alternatives A and C approximately four additional officers. Alternative B would not result in an increased demand as it includes only replacement of existing units. The San Francisco Police Department would evaluate the specific increased staffing needs as proposed projects are built as part of its regular evaluation of city-wide needs.

A Boundaries Analysis Report was prepared for the Police Department which identifies City-wide facility needs.[13] The report does not identify the Bayview station for replacement, expansion, or

[13] The Public Safety Strategies Group (PSSG), San Francisco Police Department District Station Boundaries Analysis, May 13, 2008.

improvement as one of the early action priorities. The report does identify the potential for reconfiguration of the existing station and provision of structured parking to meet long-term operational needs at the Bayview station. The CP-HPS Project includes community space which could house additional police facilities for the Project Site and surrounding neighborhood. Additional police facilities could be accommodated within the 100,000 square feet of community space incorporated into the CP-HPS Project, the construction of which is evaluated and mitigated for within the CP-HPS Project EIR. Given that the Police Department plans for future needs and that the CP-HPS Project has space to accommodate additional police facilities, cumulative impacts would not be significant and adverse.

Fire Protection and Emergency Medical Services (Criterion 6)

The geographic context for impacts to fire protection and emergency medical services is the service area for the San Francisco Fire Department (SFFD), in the CP-HPS Project vicinity. As with existing development, future development would be constructed in compliance with the San Francisco Fire Code which would help to reduce the risks associated with structure fires. Existing SFFD facilities in the Bayview neighborhood would provide adequate response times to most points within the CP-HPS Project area, including the Project Site. SFFD staff, reviewing considerations of development types and distances, concluded that a fire station would be needed at a site that would offer more rapid response to the portions of the CP-HPS Project area. Recommendations for such a station included providing one engine (four staff), one truck (five staff), and one ambulance (staff requirements not indicated), in an approximately 6,000-gsf building. The SFFD facilities could be accommodated on the CP-HPS Project site within the 100,000 square feet of community space. Since adequate response times would be ensured for the CP-HPS Project through provision of a new fire facility, the construction of which is evaluated and mitigated for within the EIR, cumulative impacts would not be significant and adverse.

Schools (Criterion 7)

The geographic context for impacts to schools is the San Francisco Unified School District (SFUSD). Cumulative development includes existing and new residential development which could generate students who would attend public schools. SFUSD currently uses a diversity index lottery system to assign students to schools based on a number of factors as discussed in **Section 4.8**. This analysis conservatively assumes that the schools within the BVHP and immediately surrounding neighborhoods would be primarily affected by development of the Project Site as these facilities would serve as the students' default school assignments. Citywide it is anticipated that a 12 percent overcapacity of school facilities would occur by 2030, though schools in the vicinity of the CP-HPS Project have approximately 49 percent capacity remaining. SFUSD has prioritized improvements for projected growth within the adopted Capital Plan Fiscal Year 2010-2019. To fund these improvements, proposed projects are required to pay school impact development fees which would go directly to the SFUSD. Given that future growth has been considered by the SFUSD and projects have been and would be required to pay school impacts fees, cumulative impacts would not be significant and adverse.

Libraries (Criterion 8)

The geographic context for library impacts is the BVHP neighborhood and vicinity. Residential development from the CP-Project and Executive Park would increase demand for local library services. There are three branches of the San Francisco Public Library within the BVHP neighborhood and immediate vicinity. These library branches are either new or are being remodeled and their capacities expanded as a result of the Branch Library Improvement Program. The CP-HPS Project includes space for a reading room and automated book-lending machines to accommodate increased demand for the CP-HPS Project area. With recent and proposed library expansions and the addition of the reading room under the CP-HPS Project, cumulative impacts to libraries would not be significant and adverse.

Parks and Recreation (Criterion 9)

The geographic context for parks and recreation impacts is the BVHP neighborhood as new residential development in the Project Site vicinity, including the CP-HPS Project and Executive Park, would primarily impact facilities in this area. Cumulative impacts could occur if parks and recreation facilities are not planned and developed concurrently with new residential development. New residences primarily increase demands for park and recreation facilities within walking distance of the proposed residences and also contribute to demand for regional facilities. The CP-HPS Project includes the development of regional and local park and recreation facilities including 240 acres of new parks, sports fields, waterfront recreation areas, as well as 97 acres of new and improved State parkland concurrently with new residential development. Alternatives A, B and C include the development of the 1.4-acre Alice Griffith Neighborhood Park which would meet the primary demands from the proposed alternatives. In addition, there are several existing parks in the vicinity of the Project Site, including the Gilman Playground across the street, Bayview Park to the south across Jamestown Avenue, and the Bayview K.C. Jones Playground. With existing and planned parks and recreation facilities, cumulative park and recreation impacts would not be significant and adverse.

Alternative D – No Action Alternative

Alternative D would not result in increased demands for public services and utilities and thus would not contribute to cumulative impacts (Criteria 1 through 9).

5.2.9 Visual Character/Aesthetics

As discussed below, the geographic boundary for construction and operation impacts is the Candlestick Point area.

Alternatives A, B and C

Character, Scale and Aesthetic Appeal (Criterion 1)

Construction

The geographic context for construction impacts includes the Project Site and other areas of Candlestick Point which would have visible construction areas from the CP-HPS Project. The CP-HPS Project includes mitigation for construction area cleaning and screening (EIR Mitigation Measure AE-2). Alternatives A, B and C would be required to implement adopted similar mitigation (Mitigation Measure 9.1) to ensure that construction staging areas are adequately screened. With the proposed mitigation, the CP-HPS Project and Alternatives A, B and C would not result in cumulatively significant and adverse visual/aesthetic impacts.

Operations

To demonstrate the changes in the visual and aesthetic character of the proposed Project Site and the surrounding Candlestick Point area, visual simulations were conducted in the CP-HPS Project EIR, which show cumulative development to the extent it is visible in the viewpoints selected for simulation. **Figure 4.9-5** of this EIS was presented in the CP-HPS Project EIR and shows the Proposed Action in context with existing development and off-site projects that would be developed in phases over the next 20 years. Alternatives B and C would be similar visually although reduced in intensity.

The new development of Alternatives A, B and C, when considered with existing development, and the CP-HPS Project, would alter the existing scale, density, and in some cases land use of the area. This cumulative development would not substantially degrade the visual character or aesthetic quality of the area. The design, massing, and configuration of new buildings, and the layout and circulation of the cumulative development would occur in conformance with urban design standards and guidelines established for all parts of the CP-HPS Project areas. New development would be of higher quality and function than existing conditions. Therefore, at buildout, development of Alternatives A, B and C combined with existing and proposed development, would not result in a significant and adverse visual/aesthetic cumulative impact under this criterion.

Views of Scenic Resources (Criterion 2)

The geographic context for this analysis is the Candlestick Point portion of the CP-HPS Project. Views of natural and scenic resources which could potentially be affected by Alternatives A, B and C, in conjunction with other proposed development, include views of Bayview Hill, Hunters Point Hill, Potrero Hill, the San Francisco skyline, waters of the South Basin of San Francisco Bay, Yosemite Slough, the shoreline features of the Candlestick Park State Recreation Area (CPSRA), San Bruno Mountain, and distant views of the East Bay hills. Proposed development of the CP-HPS Project area would include buildings of varying heights, including heights taller than existing development. New development could partially limit existing scenic views of some of the aforementioned resources, but most prominent natural scenic resources in the area – the San Francisco Bay, the CPSRA shoreline (including Yosemite Slough), and Bayview Hill would still

be visible. Proposed development in the Candlestick Point vicinity would not be tall enough, or clustered enough, to interfere with views of the re-gunning cranes, the Bay, the East Bay Hills, or the downtown San Francisco skyline. Bayview Hill would remain substantially visible from CPSRA. Therefore, the impact of Alternatives A, B and C combined with existing and other proposed development would not result in a significant and adverse visual impact under this criterion.

Alternative D – No Action Alternative

Under Alternative D, no visible changes would occur and thus Alternatives D would not contribute to cumulative impacts with respect to visual character or aesthetics (Criteria 1-4).

5.2.10 Hydrology, Flooding and Water Quality

The geographic context for cumulative hydrology and water quality impacts includes the Project Site and areas which could be impacted by downstream runoff from the Project Site, which is the Candlestick Point area. The Project Site does not contribute to cumulative flooding impacts as discussed below.

Alternatives A, B and C

Depletion or Degradation of Surface Water Quality (Criterion 1)

Construction

Construction activities have the potential to degrade water quality from stormwater coming in contact with contaminated areas, such as parking lots or construction sites. Dewatering activities have the potential to degrade water quality if not properly collected, treated and discharged. All development projects, however, must comply with comprehensive regulatory requirements that would avoid or reduce the potential for such impacts. The Candlestick Point portion of the CP-HPS Project includes mitigation calling for development of SWPPPs, development of a stormwater control plan and development of a dewatering plan (EIR Mitigation Measures HY-1a.1, HY-1a.2, HY-1a.3and HY-6a.1,). Alternatives A, B and C would be required to implement the same mitigation (Mitigation Measures 10.1a, 10.1b, 10.1c and 10.1d) to reduce impacts to downstream surface water. With the proposed mitigation for the Alternatives A, B and C and the remainder of the Candlestick Point portion of the CP-HPS Project, cumulative impacts would not be significant and adverse.

Operation

After construction, Alternatives A, B and C would convey stormwater to a municipal separate system. Developments within the Candlestick Point area which discharge to a municipal separate system are required to develop stormwater treatment systems in compliance with the City's stormwater regulations and guidelines. Volume and flow-based BMPs must be incorporated into the stormwater treatment system. Stormwater treatment design is part of the approval process

with which Alternatives A, B and C and other Candlestick Point projects must comply and thus cumulatively significant and adverse impacts would not occur.

Depletion or Degradation of Groundwater (Criterion 2)

Alternatives A, B and C would not utilize groundwater for construction or operation. As the Project Site is primarily covered with impervious surfaces, development of Alternatives A, B and C would not contribute to any cumulative impacts to groundwater recharge rates. During construction activities, proposed projects could potentially release substances which could percolate and contaminate groundwater. As discussed under Criterion 1, the development of the Candlestick Point portion of the CP-HPS Project and Alternatives A, B and C must implement mitigation for stormwater collection and treatment. With the proposed mitigation for Alternatives A, B and C and the remainder of the CP-HPS Project area, cumulative impacts to groundwater would not be significant and adverse.

Modification of Site Drainage Pattern (Criterion 3)

Developed areas of the Candlestick Point area, including the Project Site convey stormwater through either the combined sewer stormwater system or a municipal separate system. The developed area lacks natural watercourses such as rivers and streams, and thus Alternatives A, B and C would not contribute to cumulative impacts to drainage patterns.

Flooding (Criterion 4)

As discussed in **Section 4.10**, the CP-HPS Project EIR considered the potential for flooding of the Project Site. The Project Site is not within a potential area for flooding under either existing or cumulative conditions (build-out of the CP-HPS Project area) and thus would not contribute to cumulative flooding impacts.

Alternative D – No Action Alternative

Under Alternative D there would be no new development or changes to site drainage and thus Alternative D would not contribute to any cumulative impacts related to surface water quality, groundwater quality, or drainage patterns (Criteria 1-3). The Project Site is not within a potential area for flooding under either existing or cumulative conditions (build-out of the CP-HPS Project area) and thus would not contribute to cumulative flooding impacts (Criterion 4).

5.2.11 Traffic and Transportation

This cumulative analysis is based on information in the Near-Term and Cumulative Traffic Analysis for the Alice Griffith Project[14] and the Supplemental Traffic Analysis for the Alice Griffith Project[15] (**Appendix C)**. The reports utilize data from the CP-HPS Project EIR which analyzed development of the Proposed Action. The cumulative analysis for the EIR used the San Francisco County Transportation Authority (SFCTA) travel demand model (SF-CHAMP) which develops traffic and transit forecasts for cumulative development and growth through 2030. The geographic boundaries

[14] Fehr & Peers, Inc., *Alice Griffith Traffic Impact Study*, as amended March 29, 2011.
[15] Fehr & Peers, Inc., *Alice Griffith Supplemental Traffic Impact Study*, June 6, 2011

for the following analysis include the study intersections and roadways shown on **Figure 5-1**, where traffic may be measurably affected by the Proposed Action and alternatives. At further distances, traffic generated by the alternatives becomes highly dispersed on local roadways and is difficult to measure or attribute to the alternatives.

The CP-HPS Project design and the design for Alternatives A, B, and C encourage walking and biking for shorter neighborhood trips and encourage public transit use to and from citywide and regional destinations. These improvements would reduce the number of vehicle trips generated by new housing units as development and transit service in the area increase. The average cumulative vehicle trip generation rate per dwelling from the CP-HPS Project EIR is 0.25 during the AM peak hour and 0.28 during the PM peak hour (Fehr & Peers, **Appendix C**). This trip generation is lower than generation rates discussed in **Section 4.11** due to the increased transit network that would be developed in the future under cumulative conditions. These are general rates that can be applied to all housing types, regardless of style or income diversity. The CP-HPS Project includes improvements in public transportation, such as bus rapid transit and express bus lines and extension of five transit lines, and streetscape improvements to encourage walking and biking for shorter neighborhood trips. The 29-Sunset bus route and T-Third light rail line would also be improved with reduced headways and capacity increases.

Alternative A – Proposed Action

The travel demand forecasts for the Proposed Action were developed using data collected at the existing Alice Griffith public housing development, and data from the San Francisco Guidelines and the CP-HPS Project EIR. The cumulative trip generation rates account for the change the fundamental transportation characteristics of the neighborhood over the next 20 years from buildout of the CP-HPS Project and other BVHP area development. **Table 5-3** summarizes the cumulative trip generation rates and travel demand. Under cumulative conditions, when walking and transit use is forecast to be greater, the Proposed Action is expected to generate 302 new AM peak hour vehicle trips and 340 new PM peak hour vehicle trips.

TABLE 5-3
CUMULATIVE VEHICLE TRIP GENERATION - PROPOSED ACTION

			Near-Term		
		Number of Units	Rate (AM/PM)	AM Vehicle Trips	PM Vehicle Trips
Affordable Housing (Existing)		256	0.25/0.28	64	72
Market-Rate/Below Market-Rate Housing	Studio/one-bedroom	477	0.25/0.28	119	134
	Two+ bedrooms	477	0.25/0.28	119	134
	Total	**1,210**	**0.25/0.28**	**302**	**340**

SOURCE: Fehr & Peers, 2010 (Appendix C)

Intersection Traffic Impacts (Criterion 1)

Since the Proposed Action was included in the cumulative forecasts used in the CP-HPS Project, EIR to evaluate the cumulative impacts of the Proposed Action, a cumulative baseline (no project) scenario (**Figure 5-2**) was developed by subtracting the net difference of new vehicle trips generated by the Proposed Action (**Figure 5-1**) and the existing land use from the cumulative plus project conditions (**Figure 5-3**) identified in the CP-HPS Project EIR. **Table 5-4** presents a comparison of the intersection LOS analysis for the cumulative baseline and the cumulative plus Proposed Action conditions for the weekday AM and PM peak hours.

TABLE 5-4
CUMULATIVE INTERSECTION OPERATIONS – PROPOSED ACTION

			Cumulative Baseline		Cumulative Plus Proposed Action	
Intersection	**Control**	**Peak Hour**	**Delay***	**LOS****	**Delay***	**LOS****
Third Street/Carroll Avenue	Signal	AM	21	C	23	C
		PM	**62**	**E**	**75**	**E**
Third Street/Gilman and Paul Avenues***	Signal	AM	**>80**	**F**	**>80**	**F**
		PM	**>80**	**F**	**>80**	**F**
Third Street/Jamestown Avenue	Signal	AM	**>80**	**F**	**>80**	**F**
		PM	**>80**	**F**	**>80**	**F**
Bayshore Blvd./Hester Ave./US 101 SB	Signal	AM	**>80**	**F**	**>80**	**F**
		PM	**>80**	**F**	**>80**	**F**
Ingalls Street/Carroll Avenue	Signal	AM	28	C	28	C
		PM	38	D	38	D
Ingalls Street/Egbert Avenue	All-way stop	AM	9 (SB)	A	9 (NB)	A
		PM	9 (SB)	A	9 (SB)	A
Arelious Walker/Gilman Avenue	Signal	AM	31	C	30	C
		PM	36	D	36	D

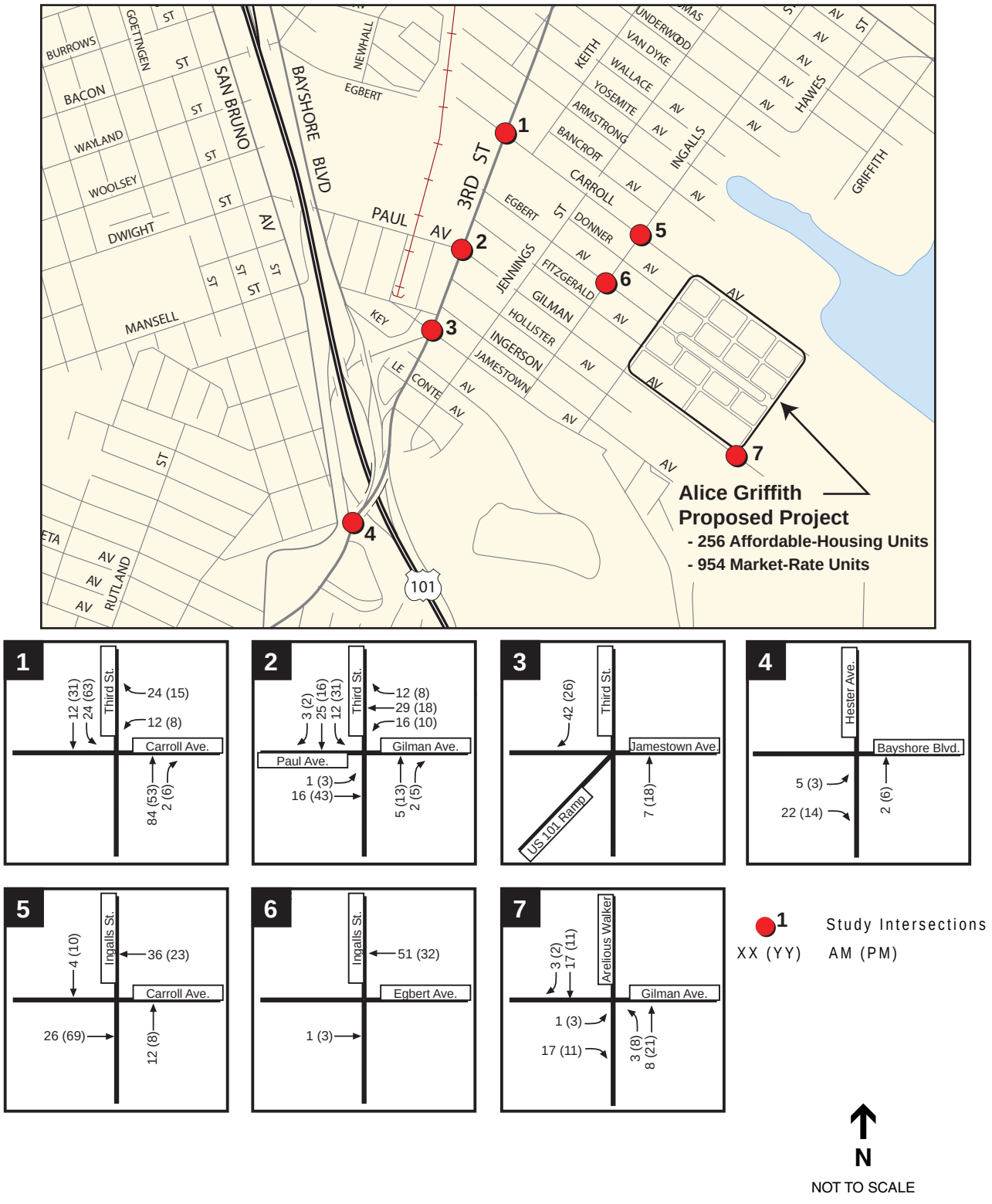
* Delay measured in seconds per vehicle. For stop-controlled intersections, delay and LOS presented for worst approach.
** Intersections operating at LOS E or LOS F are highlighted in bold.
*** Project contributes a substantial amount of traffic to the critical southbound left movement during the am peak hour; however, the movement is expected to operate at LOS D under Proposed Action cumulative conditions.

SOURCE: Fehr & Peers, 2010 (Appendix C)

In general, with the addition of traffic generated by the Proposed Action to the study area roadway network and other cumulative traffic growth, congestion levels would increase. The following four intersections would operate at LOS E or F during one or both peak hours under cumulative baseline and Proposed Action cumulative conditions:

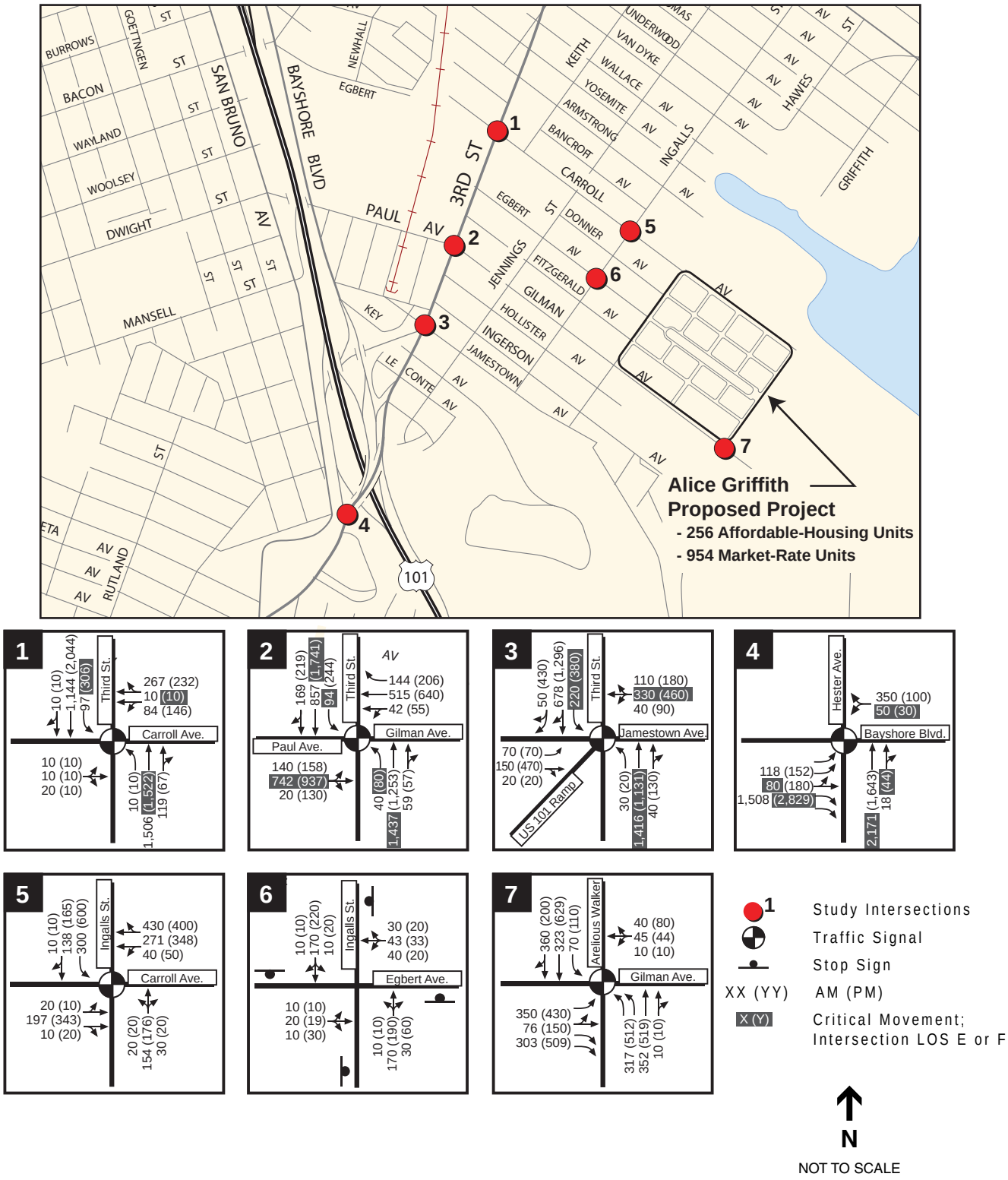
- Third Street/Carroll Avenue (PM peak hour)
- Third Street/Gilman Avenue-Paul Avenue (AM/PM peak hour)
- Third Street/Jamestown Avenue (AM/PM peak hour)
- Bayshore Boulevard/Hester Avenue/US 101(AM/PM peak hour)

At intersections that would operate at LOS E or F under cumulative baseline conditions, and would continue to operate at LOS E or F under Proposed Action cumulative conditions, the project-generated vehicle trips were reviewed to determine whether the increase would contribute



SOURCE: Fehr and Peers, 2010

Figure 5-1
Cumulative Project Trip Assignment

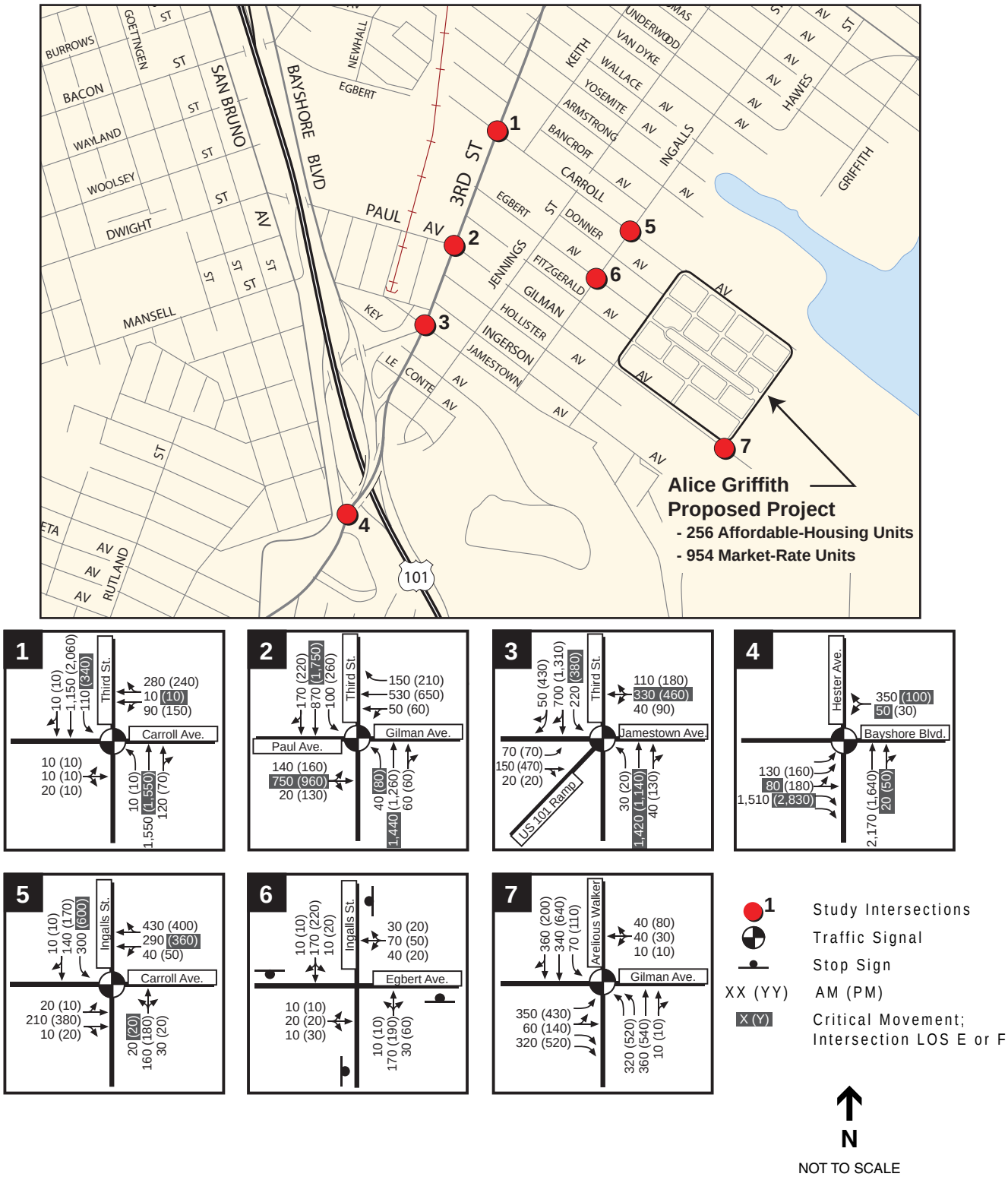


SOURCE: Fehr and Peers, 2010

Alice Griffith Redevelopment Project Draft EIS . 211653

Figure 5-2

Cumulative No Project Conditions Weekday Peak Hour Traffic Volumes and Lane Configurations



SOURCE: Fehr and Peers, 2010

Figure 5-3
Cumulative Conditions Weekday
Peak Hour Traffic Volumes and Lane Configurations

considerably to critical movements operating at LOS E or F. The Proposed Action would not contribute substantially to the amount of traffic at the Third Street/Gilman Avenue-Paul Avenue, Third Street/Jamestown Avenue, and Bayshore Boulevard/Hester Avenue/US 101 intersections. Unacceptable operations at these intersections are primarily due to other planned development in the CP-HPS Project area and regional traffic growth.

The Proposed Action would contribute a cumulatively considerable amount of traffic to critical movements, which are expected to operate unacceptably under the Proposed Action cumulative conditions at the intersection of Third Street and Carroll Avenue. As shown in **Table 5-4**, implementation of the Proposed Action would exacerbate LOS E operating conditions under cumulative conditions. The degradation in operations at the intersection of Third Street and Carroll Avenue would primarily be due to Proposed Action-related traffic increases on Carroll Avenue and Third Street. Traffic signals on intersections along Third Street are timed to prioritize transit movements along Third Street. Since this traffic would add more than five percent of net new trips to an intersection that is already projected to operate at an unacceptable level during cumulative conditions, the impact is considered to be significant, using the impact criteria from the SF Guidelines.

The SFMTA has indicated that there may be slight adjustments to the traffic signal timing for intersections along Third Street that could be implemented and that would reduce auto delay at signalized intersections without degrading transit travel times. However, those improvements would not be enough to improve intersection operating conditions to acceptable levels. To accommodate additional rights-of-way needed for additional lanes, Third Street would need to be widened to the east and west. This would require demolishing structures, acquiring additional right-of-way, reducing corner sidewalk widths and/or prohibiting on-street parking along Third Street. Widening Third Street or reducing the corner sidewalk space at this location would be inconsistent with the pedestrian environment created by the Third Street Light Rail Project. Widening Third Street would make the pedestrian crossing longer and would require more dedicated pedestrian crossing time as part of the signal phasing plan. For these reasons, roadway widening is considered infeasible. Thus, the Proposed Action would contribute considerably to a cumulatively significant and adverse intersection impact.

Freeway Ramp Impacts (Criterion 2)

Table 5-5 presents a comparison of the freeway ramp junction LOS for cumulative baseline and LOS for cumulative plus Proposed Action conditions for the weekday PM peak hour. As shown, the study ramp junctions would operate at LOS E or F under cumulative baseline and cumulative plus Proposed Action conditions. The Proposed Action would contribute less than 2.7 percent of future traffic to these facilities. Per local significance criteria, as discussed in **Section 4.11**, projects that contribute greater than 5 percent to a freeway facility would be considered to have a significant and adverse contribution to the freeway ramp impact. As the Proposed Action contributes less than 5 percent, the Proposed Action would not contribute considerably to cumulative ramp junction impacts.

TABLE 5-5
CUMULATIVE RAMP JUNCTION OPERATIONS – PROPOSED ACTION

Ramp Junction	Cumulative Baseline		Proposed Action Cumulative		Project Volume	2030 Volume	Project Contribution
	LOS	Density*	LOS	Density			
SB US 101 off-ramp to	**37**	**E**	**37**	**E**	7	860	0.8%
Bayshore Boulevard	**37**	**E**	**38**	**E**	18	1,063	1.7%
NB US 101 off-ramp to	**35**	**E**	**36**	**E**	5	226	2.2%
Third Street	**>40**	**F**	**>40**	**F**	12	446	2.7%

* Density of vehicles per segment measured in passenger cars per mile per lane. Ramp junctions operating at LOS E or F conditions are highlighted in **bold**.

SOURCE: Fehr & Peers, 2010 (Appendix C)

Transit Impacts (Criterion 3)

The BVHP neighborhood is currently well connected to public transit system through Municipal Railway (Muni) bus and light rail lines which connect to regional transit operators (e.g. Bay Area Rapid Transit, Caltrain). Peak period service on most lines in the BVHP area is at 8 to 10 minute headways between buses. The Project would primarily impact transit along the 29-Sunset route (service adjacent to Project Site) and the T-Third light rail route (approximately three blocks from the Project Site).

Transit demand in the BVHP area is anticipated to increase under cumulative conditions. The Project Site is part of the CP-HPS Project which proposes improvements to transit service in addition to improvements currently proposed as part of San Francisco Municipal Transit Authority's Transit Effectiveness Program. Because a final Transit Plan has not been adopted, the CP-HPS Project EIR includes Mitigation Measure TR-17 for implementation of a Transit Operation Plan. The Plan includes coordination with SFMTA for transit improvements; the most relevant improvements for the Proposed Action include: (1) a short line between Candlestick Point and Balboa Park BART station reducing headways from 10 to 5 minutes during AM and PM peak periods between these two points, and (2) a new CPX-Candlestick Express to downtown San Francisco from Candlestick Point. The proposed improvements are anticipated to approximately double the 2030 transit capacity in the BVHP area and allow transit operation at less than Muni's 85 percent capacity utilization standards.[16] With implementation of the mitigation adopted for the CP-HPS Project, no significant adverse cumulative transit impacts would occur.

Impacts on Pedestrians and Bicycles (Criterion 4)

The CP-HPS Project includes an integrated network of Class I (separated bicycle path) and Class II (bicycle lane) bicycle facilities as well as new sidewalks throughout the CP-HPS Project area. Gilman Avenue would feature a Class II bicycle lane connecting the Candlestick Point area to Third Street, which is a primary route for travel to areas outside of the CP-HPS Project area. The Yosemite Slough Bridge would include a 12-foot wide Class I bicycle and pedestrian facility to connect the Candlestick Point and Hunters Point Shipyard areas. The Project Site and larger CP-

[16] San Francisco Redevelopment Agency and City and County of San Francisco Planning Department, 2009.

HPS Project area would include traffic calming measures which improve pedestrian safety. Alternative A proposes enhanced sidewalks and bicycle facilities which connect to off-site sidewalks and bicycle routes. Considering the planned pedestrian and bicycle facilities, cumulative impacts would not be significant and adverse.

Parking (Criterion 5)

As discussed in **Section 4.11**, Alternative A proposes a sufficient number of parking spaces for proposed uses and thus would not contribute to cumulative parking impacts.

Alternative B –Housing Replacement Alternative

Table 5-6 presents the cumulative trip generation for Alternative B. As shown, the additional units under Alternative B would generate 64 AM peak hour transit trips and 72 PM peak hour trips.

TABLE 5-6
CUMULATIVE VEHICLE TRIP GENERATION - ALTERNATIVE B

		Near-Term		
	Number of Units	Rate (AM/PM)	AM Vehicle Trips	PM Vehicle Trips
Alternative B	256	0.25/0.28	64	72

SOURCE: Fehr & Peers, 2010 (Appendix C)

Intersection Traffic Impacts (Criterion 1)

The Alternative B cumulative intersection volumes were developed by adding the cumulative Alternative B trip generation to cumulative baseline roadway turning movements. The cumulative baseline turning movements were assumed to be higher under Alternative B than under the Proposed Action or Alternative C because it is assumed that below market-rate and market-rate housing would be constructed in other portions of the approved CP-HPS Project area if they are not constructed on the Project Site. **Table 5-7** presents a comparison of the intersection LOS analysis for the cumulative baseline and cumulative plus Alternative B conditions for the weekday AM and PM peak hours.

In general, with the addition of traffic generated by Alternative B to the study area roadway network and other cumulative traffic growth, congestion levels would increase. The following four intersections would operate at LOS E or F during one or both peak hours under cumulative baseline and cumulative plus Alternative B conditions:

- Third Street/Carroll Avenue (PM peak hour)
- Third Street/Gilman Avenue-Paul Avenue (AM/PM peak hour)
- Third Street/Jamestown Avenue (AM/PM peak hour)
- Bayshore Boulevard/Hester Avenue/US 101(AM/PM peak hour)

At intersections that would operate at LOS E or F under cumulative baseline conditions, and would continue to operate at LOS E or F under cumulative plus Alternative B conditions, the vehicle trips generated by Alternative B were reviewed to determine whether the increase would contribute considerably to critical movements operating at LOS E or F. Alternative B would not contribute substantially to the amount of traffic at any of the four intersections. Unacceptable operations at these intersections are primarily due to other planned development in the CP-HPS Project area and regional traffic growth. Alternative B would not result in a considerable contribution to cumulative intersection impacts.

TABLE 5-7
CUMULATIVE INTERSECTION OPERATIONS – ALTERNATIVE B

			Cumulative Baseline		Cumulative Plus Alternative B	
Intersection	**Control**	**Peak Hour**	**Delay***	**LOS****	**Delay***	**LOS****
Third Street/Carroll Avenue	Signal	AM	22	C	23	C
		PM	70	E	75	E
Third Street/Gilman and Paul Avenues***	Signal	AM	22	C	23	C
		PM	70	E	75	E
Third Street/Jamestown Avenue	Signal	AM	>80	F	>80	F
		PM	>80	F	>80	F
Bayshore Blvd./Hester Ave./US 101 SB	Signal	AM	>80	F	>80	F
		PM	>80	F	>80	F
Ingalls Street/Carroll Avenue	Signal	AM	20	C	28	C
		PM	37	D	38	D
Ingalls Street/Egbert Avenue	All-way stop	AM	9 (SB)	A	9 (NB)	A
		PM	9 (SB)	A	9 (SB)	A
Arelious Walker/Gilman Avenue	Signal	AM	30	C	30	C
		PM	35	D	36	D

* Delay measured in seconds per vehicle. For stop-controlled intersections, delay and LOS presented for worst approach.
** Intersections operating at LOS E or LOS F are highlighted in bold.
*** Project contributes a substantial amount of traffic to the critical southbound left movement during the am peak hour; however, the movement is expected to operate at LOS D under cumulative conditions.
SOURCE: Fehr & Peers, 2010 (Appendix C)

Freeway Ramp Impacts (Criterion 2)

Table 5-8 presents a comparison of the freeway ramp junction LOS for cumulative baseline and LOS for cumulative plus Alternative B conditions for the weekday PM peak hour. As shown, the study ramp junctions would operate at LOS E or F under cumulative baseline and cumulative plus Alternative B conditions. Alternative B would contribute less than 0.7 percent of future traffic to these facilities. As Alternative B contributes less than 5 percent (the local standard), it would not contribute considerably to cumulative ramp junction impacts.

TABLE 5-8
CUMULATIVE RAMPJUNCTION OPERATIONS – ALTERNATIVE B

Ramp Junction	Cumulative Baseline		Cumulative Plus Alternative B		Project Volume	2030 Volume	Project Contribution
	LOS	Density*	LOS	Density			
SB US 101 off-ramp to Bayshore Boulevard	**37**	**E**	**37**	**E**	1	860	0.1%
	37	**E**	**38**	**E**	4	1,063	0.3%
NB US 101 off-ramp to Third Street	**35**	**E**	**36**	**E**	1	226	0.4%
	>40	**F**	**>40**	**F**	3	446	0.7%

*Density of vehicles per segment measured in passenger cars per mile per lane. Ramp junctions operating at LOS E or F conditions are highlighted in **bold**.

SOURCE: Fehr & Peers, 2010 (Appendix C)

Transit Impacts (Criterion 3)

Cumulative transit impacts would be similar to the Proposed Action, though transit demand is lower under Alternative B. With implementation of the mitigation adopted for the CP-HPS Project, cumulative impacts would not be significant and adverse.

Impacts on Pedestrians and Bicycles (Criterion 4)

Cumulative impacts on pedestrians and bicycles would be similar to the Proposed Action. The CP-HPS Project and Alternative B propose improved pedestrian and bicycle facilities which connect to off-site sidewalks and bicycle routes. Considering the planned pedestrian and bicycle facilities, cumulative impacts would not be significant and adverse.

Parking (Criterion 5)

As discussed in **Section 4.11**, Alternative B proposes a sufficient number of parking spaces for proposed uses and thus would not contribute to cumulative parking impacts.

Alternative C – Reduced Development Alternative

Table 5-9 presents the cumulative trip generation for Alternative C. As shown, the additional units on the Project Site would generate 219 AM peak hour transit trips and 245 PM peak hour trips.

TABLE 5-9
CUMULATIVE VEHICLE TRIP GENERATION - ALTERNATIVE C

		Near-Term		
	Number of Units	Rate (AM/PM)	AM Vehicle Trips	PM Vehicle Trips
Alternative C	875	0.25/0.28	219	245

SOURCE: Fehr & Peers, 2010 (Appendix C)

Intersection Traffic Impacts (Criterion 1)

The Alternative C cumulative intersection volumes were developed by adding the cumulative Alternative C trip generation to cumulative baseline roadway turning movements. The cumulative baseline turning movements were assumed to be higher under Alternative C than under the Proposed Action because it is assumed that below market-rate and market-rate housing would be constructed in other portions of the approved CP-HPS Project area if they are not constructed on the Project Site. **Table 5-10** presents a comparison of the intersection LOS analysis for the cumulative baseline and cumulative plus Alternative C conditions for the weekday AM and PM peak hours.

TABLE 5-10
CUMULATIVE INTERSECTION OPERATIONS – ALTERNATIVE C

			Cumulative Baseline		Cumulative Plus Alternative C	
Intersection	**Control**	**Peak Hour**	**Delay***	**LOS****	**Delay***	**LOS****
Third Street/Carroll Avenue	Signal	AM	21	C	23	C
		PM	**62**	**E**	**75**	**E**
Third Street/Gilman and Paul Avenues***	Signal	AM	**>80**	**F**	**>80**	**F**
		PM	**>80**	**F**	**>80**	**F**
Third Street/Jamestown Avenue	Signal	AM	**>80**	**F**	**>80**	**F**
		PM	**>80**	**F**	**>80**	**F**
Bayshore Blvd./Hester Ave./US 101 SB	Signal	AM	**>80**	**F**	**>80**	**F**
		PM	**>80**	**F**	**>80**	**F**
Ingalls Street/Carroll Avenue	Signal	AM	28	C	28	C
		PM	38	D	39	D
Ingalls Street/Egbert Avenue	All-way stop	AM	9 (SB)	A	9 (NB)	A
		PM	9 (SB)	A	9 (SB)	A
Arelious Walker/Gilman Avenue	Signal	AM	31	C	30	C
		PM	36	D	36	D

* Delay measured in seconds per vehicle. For stop-controlled intersections, delay and LOS presented for worst approach.
** Intersections operating at LOS E or LOS F are highlighted in bold.
*** Project contributes a substantial amount of traffic to the critical southbound left movement during the am peak hour; however, the movement is expected to operate at LOS D under cumulative conditions.
SOURCE: Fehr & Peers, 2010 (Appendix C)

In general, with the addition of traffic generated by Alternative C to the study area roadway network and other cumulative traffic growth, congestion levels would increase. The following four intersections would operate at LOS E or F during one or both peak hours under cumulative baseline and cumulative plus Alternative C conditions:

- Third Street/Carroll Avenue (PM peak hour)
- Third Street/Gilman Avenue-Paul Avenue (AM/PM peak hour)
- Third Street/Jamestown Avenue (AM/PM peak hour)
- Bayshore Boulevard/Hester Avenue/US 101(AM/PM peak hour)

At intersections that would operate at LOS E or F under cumulative baseline conditions, and would continue to operate at LOS E or F under cumulative plus Alternative C conditions, the project-generated vehicle trips were reviewed to determine whether the increase would contribute

considerably to critical movements operating at LOS E or F. Since Alternative C would not add to a five percent net trip increase to a particular movement at any of these intersections, the impact would be less than significant under SF Guidelines criteria. Unacceptable operations at these intersections are primarily due to planned development in the approved CP-HPS Project area and regional traffic growth. Alternative C would not result in a considerable contribution to cumulative intersection impacts.

Freeway Ramp Impacts (Criterion 2)

Table 5-11 presents a comparison of the freeway ramp junction LOS for cumulative baseline and LOS for cumulative plus Alternative C conditions for the weekday PM peak hour. As shown, the study ramp junctions would operate at LOS E or F under cumulative baseline and cumulative plus Alternative C conditions. Alternative C would contribute less than 2.0 percent of future traffic to these facilities. As Alternative C contributes less than 5 percent (the local standard), it would not result in a considerable contribution to cumulative ramp junction impacts.

Transit Impacts (Criterion 3)

Cumulative transit impacts would be similar to the Proposed Action, though transit demand is lower under Alternative C. With implementation of the mitigation adopted for the CP-HPS Project, cumulatively significant and adverse impacts would not occur.

TABLE 5-11
CUMULATIVE RAMP JUNCTION OPERATIONS – ALTERNATIVE C

Ramp Junction	Cumulative Baseline		Cumulative Plus Alternative C		Project Volume	2030 Volume	Project Contribution
	LOS	Density*	LOS	Density			
SB US 101 off-ramp to Bayshore Boulevard	**37** **37**	**E** **E**	**37** **38**	**E** **E**	5 13	860 1,063	0.6% 1.2%
NB US 101 off-ramp to Third Street	**35** **>40**	**E** **F**	**36** **>40**	**E** **F**	3 9	226 446	1.3% 2.0%

*Density of vehicles per segment measured in passenger cars per mile per lane. Ramp junctions operating at LOS E or F conditions are highlighted in **bold**.

SOURCE: Fehr & Peers 2010

Impacts on Pedestrians and Bicycles (Criterion 4)

Cumulative impacts on pedestrians and bicycles would be similar to the Proposed Action. The CP-HPS Project and Alternative C propose improved pedestrian and bicycle facilities which connect to off-site sidewalks and bicycle routes. Considering the planned pedestrian and bicycle facilities, cumulative impacts would not be significant and adverse.

Parking (Criterion 5)

As discussed in **Section 4.11**, Alternative C proposes a sufficient number of parking spaces for proposed uses and thus would not contribute to cumulative parking impacts.

Alternative D – No Action Alternative

The No Action Alternative would not construct new residential development or generate new trips under cumulative conditions and thus would not contribute to cumulative impacts associated with LOS for intersections or freeway ramps, pedestrian/bicycle facilities or parking supply (Criteria 1, 2, 4 and 5). It is anticipated that more trips from the existing development on the Project Site would become transit trips rather than vehicle trips due to the expanding transit network. Given the anticipated capacity for the development alternatives, it is reasonable to assume that the significantly reduced transit demands under Alternative D could be accommodated in the cumulative scenario (Criterion 3) and thus cumulative transit impacts would not be significant and adverse.

5.2.12 Geology and Soils

As discussed below, the geographic boundary for cumulative impacts is generally limited to the Project Site.

Alternatives A, B, and C

Ground Shaking (Criterion 1), Soil Suitability (Criterion 2), and Slope Failure (Criterion 4)

Although the entire Bay Area is situated within a seismically active region with a wide range of geologic and soil conditions, these conditions can vary widely within a short distance, making the cumulative context for potential impacts resulting from exposing people and structures to related risks one that is more localized or even site-specific. Potential cumulative geology and seismic effects, such as ground shaking and soil suitability, do not extend far beyond a project's boundaries, since such geological impacts are typically confined to discrete spatial locations and do not combine to create an extensive cumulative impact. The exception to this generalization would occur where a large geologic feature (e.g., fault zone, massive landslide) might affect an extensive area. The Project Site and vicinity are not located on a fault zone or in an area susceptible to seismically-induced landslides. Additionally, individual projects must comply with seismic design guidelines within the San Francisco Building Code and are required to conduct site-specific geotechnical investigations, as recommended for Alternatives A, B and C. Thus, no cumulatively significant and adverse impacts are anticipated under these criteria.

Destabilization of Geologic Conditions (Criterion 3)

Controlled rock fragmentation could occur at the Project Site and at the nearby Jamestown portion of the CP-HPS Project. Site preparation for the Project Site would occur between 2011 and 2019 while site preparation for the Jamestown area would occur between 2024 and 2028. As rock fragmentation for these areas would not occur concurrently the risk for cumulative impacts, impacts including settlement or lateral movement of existing structures outside of the construction area, would be reduced.

The CP-HPS Project includes mitigation for a monitoring plan to detect ground settlement or lateral movement of structures in the vicinity of excavation and corrective measures should settlement or lateral movement occur (EIR Mitigation Measure GE-3). Alternatives A, B and C would be required

to implement the same mitigation (Mitigation Measure 12.3) to reduce impacts from excavation activities. With the proposed mitigation for Jamestown and Alternatives A, B and C, no significant adverse cumulative impact would occur under this criterion.

Soil Erosion (Criterion 5)

Cumulative impacts with respect to soil erosion are discussed in **Section 5.2.10**. Mitigation for the CP-HPS Project and Alternatives A, B and C include development of SWPPPs and a stormwater control plan so that cumulative soil erosion impacts would not be significant and adverse.

Alternative D – No Action Alternative

As discussed above, ground shaking, soil suitability and slope failure impacts are not cumulative in nature (Criteria 1, 3 and 4). Alternative D proposes no excavation or other construction activities and thus would not contribute to cumulative impacts related to destabilization of geologic conditions or soil erosion (Criterion 2).

5.2.13 Cultural and Historic Resources

The geographic boundary for cultural and historic resources is based on research regarding related cultural and historic resources in the Project Site vicinity. As there is a potential for disturbance to similar archaeological resources in the larger CP-HPS Project, this area was used as the geographic context for the cumulative analysis.

Alternatives A, B, and C

Effects to Historic Architectural Resources (Criterion 1)

No historic architectural resources would be impacted by Alternatives A, B and C, and thus these alternatives would not contribute to cumulative impacts under this criterion.

Effects to Archaeological Resources (Criterion 2)

Excavation, demolition and construction activities have the potential to damage or destroy unidentified resources. The CP-HPS Project includes mitigation for an Archaeological Research Design and Treatment Plan (EIR Mitigation Measure CP-2a). Alternatives A, B and C have adopted the similar mitigation (Mitigation Measure 13.2) to reduce impacts from ground disturbing activities on potentially unidentified archaeological resources. Implementation of Mitigation Measure 13.2 includes a Project Specific Programmatic Agreement, which establishes an archaeological monitoring program, archaeological data recovery program and procedures for human remains and funerary objects. With proposed mitigation, cumulative impacts to archaeological resources would not be significant and adverse.

Consistency with Cultural Resource Management Plans and Agreements (Criterion 3)

The 2007 Programmatic Agreement (PA) between the City and County of San Francisco, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation

regarding HUD Part 58 Programs applies to past, present and future projects receiving funding from HUD within San Francisco. The City and County of San Francisco would continue to comply with the stipulations of the 2007 PA and thus no significant and adverse cumulative impacts are anticipated. With Mitigation Measure 13.2, Alternatives A, B and C would be consistent with the 2007 PA and thus would not contribute to any cumulative impacts.

Alternative D – No Action Alternative

While future development would occur in the BVHP area there would be no change to the existing residential use of the Project Site. Thus Alternative D would not contribute to any cumulative impacts associated with historic architectural resources, archaeological resources, or consistency with existing cultural management plans and agreements (Criteria 1-3).

5.2.14 Biological Resources

The geographic boundary for cumulative impacts to special-status species, other legally protected species and locally-protected trees is the CP-HPS Project area, particularly areas which are currently urban/developed as similar impacts could be anticipated in these areas proposed for redevelopment.

Alternatives A, B, and C

Substantial Adverse Effect on Special-Status Species and Other Legally Protected Species (Criterion 1)

Demolition and construction activities as well as increased human presence could result in disturbances to wildlife. Areas proposed for urban development, including the Project Site, have been developed previously and generally do not provide valuable habitat for wildlife. Urban areas may provide some habitat for special-status and other legally protected mammal and bird species such as western red bat and common raptor species.

Alternatives A, B and C have the potential to contribute to cumulative impacts to the western red bat. Western red bat can roost in mature trees in urban areas and thus there is ample habitat in the vicinity for the species. The western red bat is also highly sensitive to disturbance, and the disturbance caused by construction and tree removal machinery would likely cause bats to disperse to other areas before injury or mortality could occur. The disturbance would not substantially reduce the habitat of this species, cause a drop in population below self-sustaining levels, or reduce its range. Thus, cumulatively significant and adverse impacts would not occur for this species.

Alternatives A, B and C would not contribute to potential cumulative impacts to legally-protected bird species. No occurrences of special status bird species have been reported for the Project Site nor does the Project Site provide suitable habitat for special-status bird species. Thus, Alternatives A, B and C would not contribute to cumulative impacts to these species. There are many bird species are protected by the Migratory Bird Treaty Act and California Fish and Game Code, which can nest in tall trees, shrubs and grasslands that occur in proposed redevelopment areas. Construction

activities have the potential to result in the loss of active nests or mortality of the nest's occupants. The CP-HPS Project includes mitigation for pre-construction surveys and avoidance of active nests (EIR Mitigation Measure BI-6a.1). Alternatives A, B and C have adopted the same mitigation (Mitigation Measure 14.1) to reduce impacts from construction on legally-protected bird species. With proposed mitigation, cumulative impacts would not be significant and adverse.

Alternatives A, B and C would not result in impacts to special-status plant or fish species and thus would not contribute to cumulative impacts to these species.

Adverse Effect on Sensitive or Critical Habitat (Criterion 2)

The Project Site does not contain sensitive or critical habitat, and thus Alternatives A, B and C would not contribute to cumulative impacts to sensitive or critical habitat.

Adverse Effect on Locally-Protected Trees (Criterion 3)

Cumulatively significant and adverse effects could occur to locally-designated significant trees and street trees outside of the jurisdiction of Public Works as protective policies do not necessarily apply in redevelopment areas of the BVHP neighborhood. The CP-HPS Project includes mitigation for preservation and replacement of significant trees and preservation and planting of street trees (EIR Mitigation Measure BI-14a). Alternatives A, B and C would be required to implement the same mitigation (Mitigation Measure 14.3) to reduce impacts from development on significant and street trees. Implementation of Mitigation Measure 14.3 would encourage the preservation of trees that are large enough to meet the size specification of significant trees in the Public Works Code and would require the replacement of large trees that are removed. Further, it would require the planting of street trees consistent with the intent of the Planning Code Section 143. With this mitigation cumulative impacts for this criterion would not be significant and adverse.

Alternative D

Under Alternative D, no demolition or construction is proposed and thus Alternative D would not contribute to any cumulative effects associated with special-status or other legally protected species, sensitive or critical habitats or locally-protected trees (Criteria 1-3).

CHAPTER 6.0
Coordination and List of Preparers

6.1 Agencies

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San Francisco Redevelopment Agency

Stan Muraoka, Environmental Review Officer
Kate Hartley, Development Specialist

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CHAPTER 7.0
Acronyms and Abbreviations

µg/m3	micrograms per cubic meter
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC Transit	Alameda-Contra Costa Transit District
ACHP	Advisory Council on Historic Preservation
ACM	asbestos containing material
ADMP	asbestos dust mitigation plan
ADRP	Archaeological Data Recovery Plan
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AGTA	Alice Griffith Tenants Association
AHERA	Asbestos Hazard Emergency Response Act
ALS	advanced life support
AMP	Archaeological Monitoring Program
APE	Area of Potential Effect
APN	Assessor's Parcel Number
AST	Aboveground Storage Tank
AWSS	Auxiliary Water Supply System
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BCDC	Bay Conservation and Development Commission
BEP	Bond Expenditure Plan
BLS	basic life support
BMP	best management practice
BVHP	Bayview Hunters Point
BVHP PAC	Bayview Hunters Point Project Area Committee
BWWF	Bayside Wet Weather Facilities

C&D	Construction and demolition
CA FID UST/ SWEEPS UST	Inactive USTs
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Occupational Health and Safety Administration
CAL3QHCR	CALINE3 with Queuing and Hot-spot Calculations Refined
California HCD	California Department of Housing and Community Development
CALINE3	California Line Source Dispersion Model Version 3
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CBC	California Building Code
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CEG	California Certified Engineering Geologist
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act , also called the Superfund Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CGS	California Geological Survey
CHMIRS	California Hazardous Material Incident Report System
CHSC	California Health and Safety Code
CIWMA	California Integrated Waste Management Act
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CNSTNOIZ	detailed spreadsheet noise model
CO	carbon monoxide

CO_2	carbon dioxide
CO_{2e}	CO2 equivalents
CORRACTS	Corrective Action Treatment, Storage, and Disposal Facilities
CP-HPS	Candlestick Point-Hunters Point Shipyard
CP-HPS Project EIR	Candlestick Point-Hunters Point Shipyard Phase II Project Environmental Impact Report
CPSRA	Candlestick Point State Recreational Area
CSO	combined sewer overflow
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
D4D	Candlestick Point Design for Developmen
dB	decibel
dBA	A-weighted decibel
DBI	San Francisco Department of Building Inspection
DEED	Deed Restriction Listing
DNL	Also termed Ldn, the DNL is the 24-hour day and night A-weighted noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night. Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.
DOF	California Department of Finance
DPH	San Francisco Department of Public Health
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DPW	Department of Public Works
DTSC	Department of Toxic Substances Control
DTSC	California Department of Toxic Substances Control
DU	dwelling unit
DWR	Department of Water Resources
ECP	Employment and Contracting Policy
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMFAC	Emission Factor
EO	Executive Order

EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ERO	Environmental Review Officer
ES ENG CONTROLS	US Engineering Controls
ES INST CONTROL	US Institutional Control
ESA	Environmental Science Associates
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FARR	Final Archaeological Resources Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
FUDS	Formerly Used Defense Sites
GBRC	Green Building Research Center
GE	California Registered Geotechnical Engineer
GHG	greenhouse gas
GP Guidelines	General Plan Guidelines 2003
gpd	gallons per day
gpm	gallons per minute
GPRC	geotechnical peer review committee
HASP	Health And Safety Plan
HCM	Highway Capacity Manual
HERS	Home Energy Rating System
HMUPA	
HOPE SF	Housing Opportunities for People Everywhere
HUD	U.S. Department of Housing and Urban Development
HWCL	Hazardous Waste Control Law
I-##	Interstate ##
IBC	International Building Code

kV	kilovolt
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
Leq	equivalent average sound pressure level
LOS	level of service
Lower Bay	San Francisco Bay Lower
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MBtu	million British thermal units
MGD	million gallons per day
MLD	Most Likely Descendant
MM	Modified Mercalli
MMRP	Mitigation Monitoring and Reporting Program
MOH	Mayor's Office of Housing
mph	miles per hour
MRZ	Mineral Resource Zones
MTS	Metropolitan Transportation System
Muni	San Francisco Municipal Railway
MWh	megawatt-hours
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
ND	Neighborhood Development
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFL	National Football League
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOV	Notice of Violation

NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPWWF	North Point Wet Weather Facility
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OEWD	Office of Economic and Workforce Development
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
PCB	polychlorinated biphenyls
PG&E	Pacific Gas and Electric Company
PM_{10}	Respirable Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
ppb	parts per billion
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RHNP	Regional Housing Needs Plan
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Boards
RWS	Regional Water System
SamTrans	San Mateo County Transit District
SEAOC	Structural Engineers Association of California
sf	square feet
SFBC	San Francisco Building Code
SFCCO	San Francisco Clean Construction Ordinance
SFDCO	San Francisco Dust Control Ordinance
SFDPH	San Francisco Department of Public Health
SFFD	San Francisco Fire Department
SFGSP	San Francisco Groundwater Supply Project
SFHA	San Francisco Housing Authority
SFHA	Special Flood Hazard Areas (Section 3.10 and 4.10)
SFHC	San Francisco Health Code
SFMTA	San Francisco Municipal Transportation Agency

SFNCO	San Francisco Noise Control Ordinance
SFPUC	San Francisco Public Utilities Commission
SFRA	San Francisco Redevelopment Agency
SFUSD	San Francisco Unified School District
SHPO	California State Historic Preservation Officer
SIP	State Implementation Plan
SLIC	Spills, Leaks, Investigation, and Cleanup
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SWAT	Solid Waste Assessment Test
SWF/LF	Solid Waste Information System
SWMP	solid waste management plan
SWPCP	Southeast Water Pollution Control Plant
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TDM	Transportation Demand Management
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
TPS	Transit Preferential Street
TSD	Treatment, Storage, and Disposal
US 101	US Highway 101
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USHA	Untied States Housing Authority
UST	Underground Storage Tank
VCP	Voluntary Cleanup Plan
VOC	volatile organic compounds
WMUDS	Waste Management Unit Database System
WSIP	Water Supply Improvement Program
WWTP	wastewater treatment plant

Appendices

Provided on CD