BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact Report

State Clearinghouse No. 2004092009

Contra Costa County,
Redevelopment Agency
March 2007

ESA

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Prepared for:
Contra Costa County,
Redevelopment Agency

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Draft Environmental Impact Report

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CHAPTER 1
Introduction

1.1 Environmental Review

The Bay Point Waterfront Strategic Plan (Strategic Plan) is intended to guide redevelopment that would include a new full-scale marina, including parking areas for trailers, dry storage for boats, a new boat launch location, and other support uses consisting of a fuel dock, centrally-located harbor master building, restroom, laundry, and showers, chandlery store with bait and tackle, administrative offices, café/snack bar, and yacht club. The Strategic Plan would also allow for the development of up to 450 new medium-density residential units. Public improvements such as open spaces and infrastructure would also be developed.

The Strategic Plan envisions new land use designations that would be more intensive than those currently contemplated under the Contra Costa County General Plan. A General Plan Amendment would be required to accommodate the uses, densities, and intensities proposed to achieve the development pattern and character envisioned in the Strategic Plan. An adjustment to the existing Urban Limit Line is also proposed to preserve non-urban agriculture, open space, and other pristine areas by establishing a boundary within which urban growth can occur.

The project is referred to throughout this document as the "Bay Point Waterfront Strategic Plan", "The Strategic Plan", or "the Project."

Consistent with the California Environmental Quality Act (CEQA), this EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental consequences of a proposed project, to recommend mitigation measures to lessen or eliminate adverse impacts, and to examine feasible alternatives to the project. The information contained in the EIR will be reviewed and considered by the County prior to the ultimate decision to approve, disapprove, or modify the proposed project.

Among the EIR's key purposes is to identify mitigation measures or alternatives that would substantially lessen or avoid significant adverse environmental effects of the plan.

The EIR includes an Initial Study Checklist that identified environmental issues to be addressed in the EIR and environmental issues that could be excluded from further analysis. This Draft EIR addresses topics where the project could result in a potentially significant impact and therefore required further study. The Initial Study also documents those issues that would clearly result in less than significant impacts. On September 2, 2004 the County sent a Notice of Preparation (NOP) to governmental agencies and organizations and persons interested in the project. The NOP is included in this EIR as

Appendix A. The NOP requested that agencies with regulatory authority over any aspect of the project describe that authority and identify the relevant environmental issues that should be addressed in the EIR. Interested members of the public were also invited to comment. This Draft EIR addresses those responses to the NOP that involved environmental issues associated with the project site and proposed project. Comment letters on the NOP are provided in Appendix B.

The Draft EIR is available for public review for the period identified on the notice that is inside the front cover of the document, during which time written comments on the Draft EIR may be submitted to Contra Costa County Redevelopment Agency, at the address indicated on the notice. Responses to all comments received on the environmental analysis in the Draft EIR and submitted within the specified review period will be prepared and included in the Final EIR.

1.2 Organization of the Draft EIR

The *Summary* (Chapter 2) of this EIR contains a summary of the document and allows the reader to easily reference the analysis of potentially significant effects, proposed mitigation measures, residual environmental impacts after mitigation, if any, and alternatives to the project that reduce or avoid significant effects on the environment. Table 2-1, Summary of Environmental Impacts and Mitigation Measures, is provided at the end of Chapter 2. Detailed analysis of these issues is contained in the main body of the document.

The *Project Description* (Chapter 3) describes the project location, a description of the project, the objectives of the project, the anticipated phasing of the project, a list of the County's required project approvals, and other agencies that must consider aspects of the project.

Environmental Setting, Impacts, and Mitigation Measures (Chapter 4) contains a discussion of the setting (existing conditions and regulatory framework), the environmental impacts (including cumulative impacts) that could result from the project, and the mitigation measures that would reduce or eliminate the identified adverse impacts. The criteria used to assess the significance of adverse environmental effects are identified, and the significance of the impact both prior to and following mitigation is reported.

Alternatives (Chapter 5) evaluates a range of alternatives to the proposed project. These following alternatives are included: Alternative 1: No Project (required by CEQA); Alternative 2: Marina Only; and Alternative 3: Mixed Use: Marina and Reduced Residential.

Other Statutory Sections (Chapter 6 describes the significant, unavoidable impacts and cumulative impacts identified in Chapter 4 and presents the project's potential for inducing growth.

Report Preparation (Chapter 7) identifies the authors of the EIR. Persons and documents consulted during preparation of the EIR are listed at the end of each analysis section (Sections 4.1, through 4.13).

The NOP, as well as supporting background documents and technical information for the impact analyses, are presented in the Appendices. All reference documents listed at the end of each analysis section (throughout Chapter 4) are available for review by the public at the Contra Costa County Redevelopment Agency, under reference Case Number 2004092009.

CHAPTER 2
Summary

2.1 Project Description

The Bay Point Waterfront Strategic Plan Area (Strategic Plan Area), which is partially within the adopted Bay Point Redevelopment Area (Redevelopment Area), is located north of the Union Pacific Railroad tracks, at the terminus of McAvoy Road in the Bay Point area of eastern Contra Costa County.

The Bay Point Waterfront Strategic Plan (Strategic Plan) is intended to guide redevelopment that would create a new full-scale marina with 1568 berths, parking areas for trailers, dry storage for boats, a new boat launch location, and other support uses consisting of a fuel dock, centrally-located harbor master building, restroom, laundry, and showers, chandlery store with bait and tackle, administrative offices, café/snack bar, and yacht club. The Strategic Plan would also allow for development of up to 450 new medium-density residential units. Public improvements such as open spaces and infrastructure would also be developed.

The Strategic Plan envisions new land use designations that would be more intensive than those currently contemplated under the Contra Costa County General Plan. A General Plan Amendment would be required to accommodate the uses, densities, and intensities proposed to achieve the development pattern and character envisioned in the Strategic Plan. An adjustment to the existing Urban Limit Line is also proposed to preserve non-urban agriculture, open space, and other pristine areas by establishing a boundary within which urban growth can occur.

It is anticipated that implementation would occur incrementally due to the complex and expensive nature of the Strategic Plan. The Strategic Plan specifies the harbor as the component that could be developed initially as a catalyst for subsequent investment. Completion of the harbor is anticipated by 2010, and full buildout of the Strategic Plan is expected to occur by 2020. However, including the first phase of the project, full realization of the development outlined in the Strategic Plan would ultimately depend on future market conditions, private initiative, and both public and private and investment.

2.2 Environmental Impacts and Mitigation Measures

Potentially significant environmental impacts of the plan are summarized in **Table 2-1** at the end of this chapter. This table lists impacts and mitigation measures in three major categories: significant impacts that would remain significant even with mitigation (significant and unavoidable); significant impacts that could be mitigated to a less than significant level

(significant but mitigable); and impacts that would not be significant (less than significant) Beneficial effects that would result from the project are also listed. For each significant impact, the table includes a summary of mitigation measure(s) and an indication of level of significance after implementation of mitigation measures. A complete discussion of each impact and associated mitigation measure is provided in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*.

2.3 Alternatives

With consideration given to the selection criteria identified in section 5.1 of the Alternatives Chapter, the County selected the following reasonable range of project alternatives to be addressed in this EIR (discussed in section 5.4):

Alternative 1: No Project

Alternative 2: Marina Alternative (568 berths)

Alternative 3: Mixed-Use: Marina (568 berths) / Residential (70 units)

Both Alternative 2 and Alternative 3 would still retain the existing and proposed recreational trail access in and near the project site. Only the proposed baseball and soccer fields would be eliminated as part of the recreational improvements.

Alternative 1: No Project

In this scenario, the existing site conditions would remain essentially as discussed in the setting sections of Chapter 3. Land uses would remain the same in terms of existing Zoning and General Plan Land Use designations.

Alternative 2: Marina Alternative (568 berths)

In this scenario, only the Marina component of the proposed Strategic Plan would be implemented, expanding the existing McAvoy Harbor from 300 berths to 568 berths. In addition, a total of five buildings would also be constructed to support the expanded marina development. The new buildings would provide space for restroom and laundry facilities, bait and tackle, administrative offices, café-snack bar, yacht club, harbor masters office, a restaurant and an environmental education center. The proposed residential uses and recreational baseball and soccer fields would be eliminated.

Alternative 3: Mixed-Use: Marina (568 berths) / Residential (70 units)

In this scenario, the project site would be developed with the same number of marina berths (568) as proposed under the project. In addition, a total of five buildings are proposed as part of Alternative 3 to support the expanded marina development. The new buildings would provide space for restroom and laundry facilities, bait and tackle, administrative offices, café-snack bar, yacht club, harbor masters office, a restaurant and an environmental education center. However,

the number of residential units would be reduced from 450 units to 70 units and the recreational baseball and soccer fields would be eliminated.

Environmentally Superior Alternative

The No Project alternative (Alternative 1) would avoid all significant unavoidable and significant impacts associated with the project and each of the other alternatives, and therefore would be the environmentally superior alternative. However, as required by CEQA, a second alternative shall be identified when the "no project" alternative emerges as the Environmentally Superior Alternative (CEQA *Guidelines*, Section 15126.6(e)). In this case, the Marina Alternative (Alternative 2) would therefore be considered environmentally superior since it would avoid (or reduce to the greatest extent) several significant and unavoidable impacts that would occur with the project, because residential land uses and the traffic and air quality impacts associated with those uses would not occur.

2.4 Areas of Controversy

Areas of controversy regarding the project that are known to Contra Costa County are listed below. These areas of controversy were identified based on comments received from public agencies and members of the public in response to the Notice of Preparation (NOP) of this EIR, as well as input received during a series of public meetings (conducted separate from the formal environmental review process) on the proposed project. All issues raised that pertain to potential environmental impacts of the project and that are appropriate for inclusion in the EIR pursuant to CEQA, are contained the letters in Appendix B.

Areas of controversy include, but are not limited to, the following:

- Consistency with BCDC Policies in the San Francisco Bay Plan
- Existing BCDC requirements at the Trost Marina site
- Increased run-off from development
- Vehicle congestion, access and circulation
- Effects on the Bay and Baylands
- Impacts to California Endangered Species
- PG & E site clean-up

TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Land Use and Planning		
4.1.1: Adoption of the Strategic Plan or implementation of the Strategic Plan projects would not disrupt or divide an established community. Construction generated by infrastructure and roadway improvements and the eventual construction of a full-scale marina and approximately 450 residential units could result in temporary disruptions to adjacent land uses.	None Required	
4.1.2: Implementation of the Strategic Plan, including the proposed amendments to the General Plan and P-1 Zoning District, and construction and operation of the new marina, marina support uses, and the approximately 450 residential units would result in changes in land uses within the Bay Point Waterfront Area and could conflict with adopted applicable land use plans and policies.	**4.1.2a:** The County and/or future developers of the Strategic Plan Area shall comply with all applicable BCDC policies and provisions set forth in the BCDC permit. To ensure compliance with BCDC policies, the following measures shall be incorporated into the Strategic Plan (see Figure 4.1-6): • Consistent with Bay Plan Policy 2 related to Other Uses of the Bay and Shoreline, the harbor masters building could be constructed on piles over the water, if such an extension would enable actual use of the water (e.g., for mooring boats, or to use the Bay as an asset in the design of the structure). • The proposed fuel dock location shall be relocated to avoid conflict with BCDC plans and policies. Potential locations where the fuel dock could be relocated include: [1] to the north or south of the proposed harbor masters building or [2] located off of land near the environmental education center. • The proposed east-west running road along the northern edge of the McAvoy Harbor to the fuel dock shall be eliminated from the Strategic Plan. In addition, the northern portion of the western road shall also be eliminated as it would not be necessary to access the fuel docks. Access to the northwestern docks shall be provided via the western road as shown on Figure 4.1-6. • If parking along the western road doesn't meet BCDC policy (necessary for water-related uses), the parking shall be eliminated and replaced with an extension of the existing 25-foot wide landscaped public access area (approximately 20 feet in addition to the existing 25-foot landscaped public access). An equivalent number of parking spaces shall be relocated outside of BCDC jurisdiction, along the southern side of the new road that would run east-west through the Strategic Plan Area (see Figure 4.1-6).	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.1.3: Adoption and implementation of the Strategic Plan, including the proposed amendments to the General Plan and P-1 Zoning District, and construction and operation of the new marina, marina support uses, and the approximately 450 residential units together with other cumulative development in the Bay Point Area would result in land use changes.	None Required.	
Aesthetics		
4.2.1: Development proposed as part of the Strategic Plan would not result in a substantial adverse effect on a scenic resource, or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	None required.	
4.2.2: Development as part of the proposed Strategic Plan would not substantially degrade the existing visual character or quality of the site and its surroundings.	None required.	
4.2.3: The proposed Strategic Plan would result in an increase in development that would generate light and glare at the project site.	None required.	
4.2.4: The proposed Strategic Plan, in conjunction with cumulative development, would alter the visual character in the project vicinity.	Less than significant impact, no mitigation required.	
Public Services and Recreation		
4.3.1: The increased population and density resulting from the implementation of the Strategic Plan would not involve or require new or physically altered governmental facilities in order to maintain acceptable service ratios, response time, or other performance objectives for fire protection and emergency medical services and facilities.	Implement Mitigation Measure 4.6.5.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.3.2: The increased population and density resulting from the implementation of the Strategic Plan may require new or physically altered governmental facilities in order to maintain acceptable service ratios, response time, or other performance objectives for police protection services.	**4.3.2:** As a condition of approval, before the proposed project is implemented, the project sponsor shall coordinate with the Contra Costa County's Sheriff's Office in determining what additional staffing and facilities would be required to mitigate adverse impacts of the proposed development. In addition, implementing preventive design measures into the future development at the site, such as landscaping, lighting, and security alarms and door locks would increase safety at the site. As part of standard development practices, project plans would be reviewed by the Sheriff's Office, and the project applicant would be required to incorporate the Office's recommendations into the final project design.	Less than Significant
4.3.3: The students generated by the project would not require new or physically altered school facilities in order to maintain acceptable service ratios or other performance objectives at local public schools.	**4.3.3:** To offset any potential future impacts to school within the project vicinity, and as part of the project approval process, the developer would be required by state law to pay school impact fees. The payment of these fees, which are the state-mandated mitigation measure for potential impacts under CEQA, would result in less than significant environmental impacts to public schools in the project area.	Less than Significant
4.3.4: The additional residential units generated by the proposed Strategic Plan could potentially increase the demand for parks and other recreational facilities.	None Required.	
4.3.5: The additional residential units generated by the proposed project may affect existing park resources.	None Required.	
4.3.6: Development of the project, when combined with other foreseeable development in the vicinity, could result in cumulative impacts to the provision of public services.	None Required.	
Utilities		
4.4.1: The Strategic Plan would result in additional demand for domestic water service from Golden State Water Company (GSWC) and additional water supply from Contra Costa Water District (CCWD).	**4.4.1a:** Water conservation measures shall be incorporated as a standard feature in the design and construction of the proposed project. Water conservation measures shall include the use of equipment, devices, and methodologies for plumbing fixtures and irrigation that furthers water conservation and will provide for long-term efficient water use. In addition, the use of drought-resistant plants and inert materials, and minimal use of turf in landscaped areas shall be required.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	4.4.1b: To allow the project to better achieve water conservation, the project applicant shall also submit landscaping documents that show how water use efficiency will be achieved through design for review and comment at the time of request for new service connections. **4.4.1c:** The project applicant shall coordinate with CCWD's and GSWC's water recycling programs before construction begins in order to maximize the use of recycled water for the project. The project applicant shall plan for the future use of recycled water by installing dual plumbing systems wherever appropriate as determined by CCWD and GSWC. Uses of recycled water at the project site could include landscape irrigation. **4.4.1d:** The project applicant shall fund the installation of any necessary water main extension, additional pumps and meters, or offsite pipelines improvements.	
4.4.2: Implementation of the Bay Point Strategic Plan would increase sewage generation to Delta Diablo Sanitation District's wastewater treatment plant and could require construction of onsite wastewater collection lines, the construction of which could result in adverse environmental effects.	**4.4.2:** When a project or annexation is "proposed" and approved, the project applicant shall fund the installation of any necessary sanitary sewer conveyance pipes, additional pumps and meters, or offsite pipelines improvements.	Less than Significant
4.4.3: The implementation of the proposed Strategic Plan would result in generation of solid waste.	**4.4.3a:** Suitable storage locations and containers for recyclable materials shall be provided for the residential and commercial recreation development. Future owner(s) of the building(s) that would be located on the project site shall maintain these locations during project operations. The future developer(s) of the residential and commercial recreation development, in consultation with the Contra Costa County Community Development Department, shall provide information regarding acceptable materials to be recycled to future owners and/or occupants of the buildings. **4.4.3b:** For each trash can that is provided along the view pier and in the parking lots, the future owner(s) of the marina shall also provide (an) equivalent-sized recycling receptacle(s). Each recycling receptacle shall clearly inform users within which containers to place each material (i.e., aluminum cans, glass, plastic bottles, etc.).	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	4.4.3c: Future developer(s) shall prepare, submit, and implement construction and demolition debris management plans. The debris management plan shall address major materials generated by a construction project of this size and type and opportunities to recycle and/or reuse such materials. The different materials shall be source-separated onsite and then transported to appropriate recyclers (or picked up onsite); direct hauled to a transfer station for separation by the operator; and/or hauled away by salvagers. The future developer(s) shall divert at least 50 percent by weight of all demolition waste from landfill disposal, and shall provide a summary report of the diversion to the Contra Costa County Community Development Department.	
4.4.4: The implementation of the proposed Strategic Plan could result in an increase in inefficient energy use.	**4.4.4a:** In addition to energy conservation measures required by California Code of Regulations Title 24, future developer(s) of the Strategic Plan Area shall implement the following measures: • Equip all showers, faucets, and toilets installed in the Strategic Plan Area with low-flow fixtures to reduce water consumption and energy consumption associated with water heating. • Include in the design of the project the use of ENERGY STAR qualified compact fluorescent light bulbs (CFLs) for use in the marina support buildings (ENERGY STAR qualified CFLs use 66 percent less energy than a standard incandescent bulb and last up to 10 times longer). • Insulate all hot and cold water pipes within the residential and marina support buildings to reduce energy consumption. • Install shades, awnings, or sunscreens on all windows of the residential and marina support use buildings that face south and/or west to screen summer light. In winter, shades can be opened on sunny days to help warm rooms. • Install programmable thermostats in each residential unit to automatically change thermostat settings at certain times of the day (5 – 20 percent savings on space heating costs). • Install energy-efficient ceiling installation and insulate walls, floors, and heating ducts (up to 25 percent savings on space heating costs).	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• Use exterior shading devices or deciduous plants to shade residential buildings from the sun (up to 8 percent savings on cooling costs). • Install thermal windows in residential units. Thermal windows give the benefit of dual pane glass, keeping air trapped between the two panes while they act as a thermal insulator. **4.4.4b:** Implement Mitigation Measures 4.4.3a, 4.4.3b, and 4.4.3c.	
4.4.5: Development of the project, when combined with other foreseeable development in the vicinity, could result in cumulative impacts to the provision of utilities services.	None Required.	
Population and Housing		
4.5.1: Development proposed as part of the Strategic Plan would result in an increase in the residential population within Bay Point.	None Required.	
4.5.2: Development proposed as part of the Strategic Plan could result in an increase in employment within Bay Point.	None Required.	
4.5.3: Development as part of the proposed Strategic Plan would not result in the displacement of existing housing or the displacement of substantial numbers of people.	None Required.	
4.5.4: The proposed Strategic Plan would increase the on-site population, but would not result in a cumulatively considerable contribution to population growth in Bay Point or the vicinity.	None Required.	
Transportation		
4.6.1: The project would increase traffic volumes at the study intersections.	None Required.	
4.6.2: The project would increase the demand for parking in the project area.	**4.6.2:** The development on the site shall provide the following parking supply: 0.60 spaces per berth for the marina; residential parking that would meet the County's parking code and accommodate the estimated parking demand; 254 spaces for its recreational facilities, unless baseball games and soccer games would not be permitted to occur simultaneously (in which case, 164 spaces would be provided); 42 spaces for the beach area; and 25 spaces for the boat launch.	Less than Significant
4.6.3: The project would increase ridership on public transit serving the project area.	None Required.	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.6.4: The project would increase the potential for pedestrian and bicycle safety conflicts.	**4.6.4:** Development on the site shall remain consistent with the Contra Costa County Code and to include the following to provide adequate pedestrian and bicycle safety and connectivity to existing facilities: • Adequate on-site pedestrian facilities including sidewalks (minimum five-foot width) to connect all on-site uses and along both sides of access roads • Sidewalks on at least one side of McAvoy Road and the proposed Alves Lane extension • Bicycle lanes (minimum four-foot width) on either McAvoy Road or the proposed Alves Lane extension • Bicycle parking for residents, marina users, and recreational facility users	Less than Significant
4.6.5: The project would increase vehicular traffic, including potential emergency services traffic, from the project site.	**4.6.5:** Prior to residential occupancy, safety railroad crossing arms shall be provided at all four railroad tracks on McAvoy Road. The Alves Lane extension shall be designed for two-way travel and provide a minimum of one lane in each direction. The Alves Lane extension railroad crossing shall be grade-separated to allow for unobstructed emergency vehicle access. The grade separated crossing is not a capacity enhancing mitigation measure but rather an emergency services mitigation measure. Therefore, the grade separated crossing shall be constructed prior to the occupancy of the site. The sidewalk along the grade-separated crossing shall be American with Disabilities Act (ADA) compliant, which may require a longer bridge span or more gentle slopped approaches to meet ADA requirements. Adequate signing and striping shall be provided at the Alves Lane / Willow Pass Road intersection to provide smooth vehicle travel through the intersection and minimize the effects of offset intersections. To minimize vehicle conflicts, split traffic signal phasing shall be provided for the north and south approaches to the Alves Lane / Willow Pass Road intersection. Pedestrian crosswalks and signal heads shall be provided on all approaches to the intersection.	Less than Significant
4.6.6: The project would increase on-site vehicle traffic.	**4.6.6:** The final site plan shall be developed to remain consistent with the Contra Costa County Code, and the project shall include the following to provide adequate on site vehicular circulation: • Roadway widths and cul-de-sac lengths that meet fire department standards.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• Internal intersections that are not offset or intersect below 60 degrees. • Adequate vehicle turning radii to accommodate emergency vehicles and the largest personal vehicle anticipated to access the site. The largest personal vehicle is expected to be a motor home with a boat trailer (American Association of State Highway and Transportation Officials [AASHTO] vehicle type MH/B). • Adequate internal traffic control based on the Manual on Uniform Traffic Control Devices (FHWA, 2000). • Major internal roadways with two-way travel (one lane in each direction) and left-turn lanes at major intersections • Roundabouts with adequate design and radius to accommodate the largest vehicle anticipated to access the site. A motor home with boat trailer would require a roundabout with a radius of approximately 55 feet.	
4.6.7: Traffic generated by the project would contribute to cumulatively significant impacts at local intersections in the project vicinity in 2025.	**4.6.7:** In order to achieve acceptable levels of service at the Bailey Road / SR 4 Eastbound Ramps / BART intersection, a second eastbound right-turn lane would be necessary. This intersection would operate at LOS F with and without the Project during the p.m. peak hour. The project would increase the V/C ration by 0.02 (i.e., more than the threshold of significance established in the Standards of Significance). This would be a cumulative significant impact. Projected p.m. peak period traffic congestion levels on the segment of eastbound SR 4 from Bailey Road to Railroad Avenue are expected to violate the East County Action Plan Traffic Service Objectives (TSOs) Delay Index under cumulative conditions both with and without the project. The addition of project traffic would increase the Delay Index by 0.1 (i.e., more than the threshold of significance established in the Standards of Significance). This would be a cumulative significant impact.	Significant and Unavoidable

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.6.8: Traffic generated by the project would contribute to cumulatively significant impacts on Routes of Regional Significance in the project vicinity in 2025.	**4.6.8:** The project applicant shall contribute their fair share to all applicable development impact fee programs, including the East County Regional Impact Fee, which is designed to fund improvements to regional facilities including SR 4. However, the segment of SR 4 between Bailey Road and Railroad Avenue is currently under construction, and no further improvements to this segment are included in the *Strategic Plan* of East Contra Costa County Regional Fee and Finance Authority.	Significant and Unavoidable
4.6.9: Project construction would result in temporary increases in truck traffic and construction worker traffic.	**4.6.9:** The project sponsor and construction contractor(s) shall develop a construction management plan for review and approval by the County's Engineering Department. The plan shall include at least the following items and requirements to reduce, to the maximum extent feasible and traffic congestion during construction: A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. Identification of haul routes for movement of construction vehicles that would minimize impacts on motor vehicular, bicycle and pedestrian traffic, circulation and safety, and specifically to minimize impacts to the greatest extent possible on streets in the project area. Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures would occur.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.6.10: Proposed Project-generated increases in heavy truck traffic on area roadways could result in substantial damage or wear of public roadways.	**4.6.10:** Prior to commencement of Proposed Project construction activities, which include any construction-related deliveries to the site, the Project Sponsor shall document to the satisfaction of the Contra Costa County Public Works Department, the road conditions of the construction route that would be used by Proposed Project construction-related vehicles. The Project Sponsor shall also document the construction route road conditions after Proposed Project construction has been completed. The Project Sponsor shall repair roads damaged by construction to County standards and to a structural condition equal to that which existed prior to construction activity. As a security to ensure that damaged roads are adequately repaired, the Project Sponsor shall make an initial monetary deposit, in an amount to be determined by Public Works, to an account to be used for roadway rehabilitation or reconstruction. If the County must ultimately undertake the road repairs, and repair costs exceed the initial payment, then the Project Sponsor shall pay the additional amount necessary to fully repair the roads to pre-construction conditions.	Less than Significant
Air Quality		
4.7.1: Activities associated with site preparation and construction would generate short-term emissions of criteria pollutants, including particulate matter and equipment exhaust emissions.	**4.7.1:** Implement Construction Dust Control Measures. The project sponsor shall require the following practices be implemented by including them in the contractor construction documents: • Water all active construction areas at least twice daily. • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard. • Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at the construction sites. • Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at the construction sites. • Sweep streets daily (with water sweepers) if visible soil material is carried onto the streets. • Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.). • Limit traffic speeds on unpaved roads to 15 miles per hour. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways. • Replant vegetation in disturbed areas as quickly as possible. • Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the construction site. • Install wind breaks or plant trees/vegetative wind breaks at the windward sides of the construction areas. • Suspend excavation and grading activities when wind (as instantaneous gusts) exceeds 25 miles per hour. • Limit the area subject to excavation, grading and other construction activity at any one time.	
4.7.2: Operational activities associated with the project would result in regional air pollutant emissions.	**4.7.2:** The final site plan shall be developed to include the following to provide adequate pedestrian and bicycle connectivity to existing facilities: • Adequate on-site pedestrian facilities including sidewalks (minimum four-foot width) to connect all on-site uses and along both sides of access roads. • Sidewalks on at least one side of McAvoy Road and the proposed Alves Lane extension. • Bicycle lanes (minimum four-foot width) on either McAvoy Road or the proposed Alves Lane extension. • Bicycle parking for residents, marina users, and recreational facility users. Additionally, the following measures should be implemented, as feasible to further reduce project-generated emissions of ROG: • Implement a carpool/vanpool program (i.e., ride matching) for residents of the proposed housing development to reduce trips (i.e., to BART or San Francisco). • Provide preferential parking for alternatively fueled and hybrid vehicles.	Significant and Unavoidable

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.7.3: Project operations would result in emissions of carbon monoxide that could result in localized "hot spots" of CO concentrations in excess of state standards.	None Required.	
4.7.4: The proposed residential development could expose sensitive receptors to objectionable odors.	None Required.	
4.7.5: The proposed Strategic Plan would not conflict with or obstruct implementation of the Bay Area 2005 Ozone Strategy and would not result in an adverse impact to air quality.	None Required.	
4.7.6: The proposed Strategic Plan would result in a significant cumulative impact to air quality as a result of emissions of ROG from the built-out development.	None feasible.	Significant and Unavoidable
Noise		
4.8.1: Construction activities associated with the project could generate intermittent and temporary elevated noise levels in the project vicinity.	None Required.	
4.8.2: Future traffic noise associated with the proposed project would increase the ambient noise levels in the project vicinity.	None Required.	
4.8.3: Future residents of the project could be exposed to elevated noise levels as a result of train traffic.	**4.8.3a:** Residential developments should be set back a minimum of 60 feet from the train tracks. **4.8.3b:** The project housing developer shall retain a qualified acoustical consultant to ensure that interior noise levels at multi-family residences do not exceed a DNL of 45 dBA. If treatments are necessary, they may include installing acoustically-rated windows and blocking sound transmission paths through vents or other openings in the building shell. The acoustical consultant will prepare and submit to the County a report detailing compliance with the interior noise performance standard or, if necessary, the acoustical treatments to be applied to the buildings, or the exterior measures such as sound walls to be constructed, to achieve compliance with the interior noise performance standard. The report must be reviewed and approved by the County before the building permit is issued.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.8.4: Future residents of the project could be exposed to ground-borne vibration as a result of train traffic.	**4.8.4:** The project sponsor shall retain a qualified vibration/acoustical consultant to ensure that the design and setback of proposed residential buildings are sufficient to ensure groundborne vibrations at the residences would not exceed 80 VdB. If treatments are necessary, they may include installing elastomer pads for building foundation or other vibration isolation techniques. The consultant will prepare and submit to the County a report detailing vibration assessment and, if necessary, the additional treatments to be applied to the building to ensure rail generated vibration will not be significant. The report must be reviewed and approved by the County before the building permit is issued.	Less than Significant
Hazards and Hazardous Materials		
4.9.1: Disturbance and release of contaminated soil, groundwater, or building materials during demolition and construction phases of the project could expose construction workers, the public, or the environment to adverse conditions related to hazardous substance handling.	**4.9.1a:** A pre-demolition asbestos-containing materials (ACM) survey shall be performed prior to demolition of the structures. The survey shall include sampling and analysis of all structures on the project area. **4.9.1b:** In the event ACMs are identified in the survey (Measure 4.9.1a), an asbestos abatement plan shall be prepared by a state-certified asbestos consultant. All ACMs shall be removed and appropriately disposed of in accordance with the asbestos abatement plan prior to demolition of the existing buildings in accordance with federal and State construction worker health and safety regulations, the regulations and notification requirements of the Bay Area Air Quality Management District (BAAQMD). **4.9.1c:** The project sponsor shall implement a lead-based paint abatement plan, which shall include the following components: • Development of an abatement specification approved by a Certified Project Designer. • A site Health and Safety Plan, as needed. • Containment of all work areas to prohibit off-site migration of paint chip debris. • Removal of all peeling and stratified lead-based paint on building surfaces and on non-building surfaces to the degree necessary to safely and properly complete demolition activities per the recommendations of the survey. The demolition contractor shall be identified as responsible for properly containing and disposing of intact lead-based paint on all equipment to be cut and/or removed during the demolition.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• Appropriately remove paint chips by vacuum or other approved method. • Collection, segregation, and profiling waste for disposal determination. • Appropriate disposal of all hazardous and non-hazardous waste. **4.9.1d:** Prior to the issuance of any demolition, grading, or building permit, the applicant shall demonstrate to the satisfaction of the Fire Department, Office of Emergency Services, that the site has been investigated for the presence of lead and does not contain hazardous levels of lead. **4.9.1e:** In the event that electrical equipment or other PCB-containing materials are identified prior to demolition activities they shall be removed and disposed of by a licensed transportation and disposal facility in a Class I hazardous waste landfill. **4.9.1f:** Any underground storage tanks (UST) present shall be removed prior to construction activities in the immediate area. The Contra Costa County Local Oversight Program (LOP) shall be contacted to oversee removal and determine appropriate remediation measures. Removal of the UST shall require, as deemed necessary by the LOP, over-excavation and disposal of any impacted soil that may be associated with such tanks to a degree sufficient to the oversight agency. In the event that additional USTs are encountered the same procedures described above shall apply. **4.9.1g:** Soils and dredged sediments generated by construction activities shall be stockpiled onsite in a secure and safe manner, and sampled prior to reuse or disposal at an appropriate facility. Specific sample procedures (i.e. frequency, etc.) for reuse and disposal shall be determined within a Soil Management Plan. The Soil Management Plan will identify sampling protocols, criteria for the various Class I, II, and III disposal facilities, and applicable laws and regulations for handling, storage, and transport of these materials. The Soil Management Plan shall be submitted to and approved of by the Contra Costa Health Services Department prior to implementation. **4.9.1h:** The project applicant shall develop and implement a project-specific worker Health and Safety Plan (HSP). The HSP shall identify the following, but not be limited to: • Description of potential contamination, • Decontamination procedures,	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• Nearest hospital with directions, and • Emergency notification procedures. **4.9.1i:** Per the regulatory standards of the Contra Costa Health Services and the Regional Water Quality Control Board, the project sponsor shall coordinate to determine whether any further remediation is required. If warranted, the project sponsor must develop and submit for review by the Contra Costa Health Services Department, a Soil and Groundwater Management Plan for construction and development activities at the site. The plan shall include, as required, any special health and safety precautions to mitigate worker exposure to contaminated soils or sediments, dust control measures to prevent the generation of dust that could migrate off-site, stormwater runoff controls to minimize migration of soils to storm drains, measures to ensure the proper treatment and disposal of groundwater during dewatering activities, steps for ensuring compliance with applicable state and federal regulations governing the transportation and disposal of hazardous wastes, and general protocol for addressing any unexpected hazardous materials conditions in the subsurface and sediments encountered during construction.	
4.9.2: Hazardous materials used on-site during construction activities (i.e., solvents) could be released to the environment through improper handling or storage.	**4.9.2:** The use of construction best management practices shall be implemented as part of construction to minimize the potential negative effects of accidental release of hazardous materials to groundwater and soils. These shall include the following: • Follow manufacturer's recommendations on use, storage and disposal of chemical products used in construction; • Avoid overtopping construction equipment fuel gas tanks; • During routine maintenance of construction equipment, properly contain and remove grease and oils; and • Properly dispose of discarded containers of fuels and other chemicals.	Less than Significant
4.9.3: Project operations would include use and transport of hazardous materials as well as generate general commercial, household, and maintenance hazardous waste.	**4.9.3:** The storage and handling of petroleum fuels at the fuel dock shall be in accordance with all applicable laws and regulations including the Contra Costa County Code for the storage of hazardous materials.	Less than Significant
4.9.4: The proposed Strategic Plan, in conjunction with cumulative development, would result in an increased exposure to hazards and hazardous materials.	None Required.	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Hydrology and Water Quality		
4.10.1: Project construction would involve activities (excavation, soil stockpiling, boring and pile driving, grading, and dredging, etc.) that would generate loose, erodable soils that, if not properly managed, could affect stormwater runoff and violate any applicable water quality standards or waste discharge requirements; or otherwise substantially degrade water quality.	**4.10.1:** The project sponsor shall comply with all NPDES requirements, RWQCB General Construction Permit requirements, and all Contra Costa County regulations and BCDC requirements. The project sponsor shall put into contract specifications that the contractor(s) implement best management practices for erosion and sediment control during construction.	Less than Significant
4.10.2: Project construction activities would include dredging and excavation of shoreline deposits and fills, which could involve disturbance of contaminated sediment that may result in adverse impacts to water quality.	**4.10.2:** The project sponsor shall obtain and comply with all water quality certifications and requirements required for dredging activities, which shall include a Section 404 permit process, if appropriate, pursuant to the Army Corps of Engineers (Corps) and pursuant to the oversight, permitting, and approval of the Dredged Material Management Office (DMMO).	Less than Significant
4.10.3: Development of the project would result in a substantial increase in impervious area which could potentially increase nonpoint source pollutants in stormwater runoff.	**4.10.3:** The project sponsor shall develop a storm drainage management plan for the proposed project. The plan shall demonstrate, to the satisfaction of the Contra Costa County Watershed Program and the BCDC that the proposed drainage system would be sufficient to accommodate increased flows from the project and would be able to comply with all applicable local water quality policies and ordinances.	Less than Significant
4.10.4: Project operation would involve increased use of the marinas at the project site. As required by the RWQCB, the project design would incorporate post construction BMPs to treat stormwater and control discharge of wastes from the vessels used at the marinas. Therefore, the project would not violate water quality standards or waste discharge requirements.	**4.10.4:** The project sponsor shall ensure that marina operations include implementation (as a part of the project) the following BMPs, which shall include, but not be limited to, the following: • Grade the site to prevent stormwater entering the sediment pits and oil/water separators; • Prohibit engine cleaning in vehicle wash bay areas because solvents remove oil and dirt from the engines that could enter the sewer; • Prohibit pouring of wastes into drains, into surface water, or onto the ground; • Prohibit hosing down of spills with water; • Erect signs that state that the wash area is for washing vehicle exteriors only and that other maintenance or cleaning activities such as oil changes and engine cleaning is prohibited. The project sponsor shall ensure that marina operations enforce rules and regulations for boat users that shall include, but not be limited to, the following:	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• Use only biodegradable, low-phosphate content, water-based cleaners, whenever possible; • Avoid the use of halogenated compounds, aromatic hydrocarbons, chlorinated hydrocarbons, petroleum-based cleaners or phenolics. (The presence of these substances can be checked in the material safety data sheet sheets for each cleaning agent.)	
4.10.5: Site development under the project would involve new landscaping and open recreational fields. If not properly handled, chemicals used to establish and maintain landscaping and open lawn areas, such as pesticides and fertilizers, could flow into the waterways and result in water quality impacts to Suisun Bay.	**4.10.5:** The program sponsor shall prepare a landscape management plan (LMP) for all public open spaces that includes, but is not necessarily limited to, a description of application, storage, and safety measures involving the use of pesticides and fertilizers. The LMP shall include, but not be limited to, the following: • Transportation and storage: Pesticides and fertilizers shall be transported and stored as per state and federal guidelines. They shall be stored in designated bermed areas onsite. • Pesticide Application: Pesticides and fertilizers shall be handled and applied according to the procedures set by the manufacturer. The LMP shall address methods to optimize and reduce the use of pesticides and fertilizers and present strategies to incorporate environmentally-safe (organic) pest and growth enhancement materials. These strategies shall address eventually eliminating the use of chemicals such as diazinon that harm water quality. • Pesticide and fertilizer application schedules. • Container Disposal: The contractor shall dispose of empty containers carefully. The containers shall never be disposed at locations that would contaminate natural waterways. The LMP and its recommendations for use, control, and eventual reduction of nonorganic pesticide and fertilizer use shall be approved by the County prior to installing the landscape and shall be implemented throughout the life of the project.	Less than Significant
4.10.6: The increased construction activity and new development resulting from the project, in conjunction with population and density of other foreseeable development in the County, would not result in cumulative impacts with respect to hydrology and water quality.	None Required.	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Geology, Soils, and Seismicity		
4.11.1: In the event of a major earthquake in the region, seismic ground shaking could potentially injure people and cause collapse or structural damage to proposed structures.	**4.11.1:** A site-specific, design level geotechnical investigation for each building site area shall be required as part of this project. Each investigation shall include an analysis of expected ground motions at the site from known active faults. The analyses shall be in accordance with applicable County ordinances and policies and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from known active faults. In addition, the investigations shall determine final design parameters for the walls, foundations, foundation slabs, and surrounding related improvements (utilities, roadways, parking lots and sidewalks). The investigations shall be reviewed and approved by a registered geotechnical engineer. All recommendations by the project engineer and geotechnical engineer shall be included in the final design. The final seismic considerations for the site shall be submitted to and approved of by the Contra Costa County Inspection Department prior to the commencement of the project.	Less than Significant
4.11.2: In the event of a major earthquake in the region, seismic ground shaking could potentially expose people and property to liquefaction and earthquake-induced settlement.	**4.11.2:** Consistent with Mitigation Measure 4.11.1, prepare a site specific, design level geotechnical investigation for each building site to consider the particular project designs and provide site specific engineering recommendations for mitigation of liquefiable soils. These recommendations shall be in accordance with County ordinances and the most recent California Building Code requirements.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.11.3: Development at the project site could be subjected to settlement.	**4.11.3:** As with standard geotechnical practices, site specific geotechnical investigations and reports would be required in order to obtain permits from Contra Costa County. Such geotechnical investigations and reports prepared for the project site shall include generally accepted and appropriate engineering techniques for determining the susceptibility of the project site to settlement and reducing its effects. Where settlement and/or differential settlement is predicted, mitigation measures such as lightweight fill, geofoam, surcharging, wick drains, deep foundations, structural slabs, hinged slabs, flexible utility connections, and utility hangers could be used. Engineering recommendations shall be included in the project engineering and design plans. All construction activities and design criteria shall comply with applicable codes and requirements of the most recent California Building Code, and applicable County construction and grading ordinances.	Less than Significant
4.11.4: Construction activities at the project area could loosen and expose surface soils. Exposed soils could erode by wind or rain causing potential loss of topsoil and shoreline areas exposed to wave action could be subject to erosion and loss of topsoil leading to reduction in structural integrity of building foundations and other improvements.	**4.11.4:** Consistent with Mitigation Measure 4.10.1 (which addresses construction-related water quality impacts), the project sponsor shall comply with all applicable NPDES requirements, RWQCB General Construction Permit requirements, and all County regulations. In addition, the project design specifications shall include shoreline protection improvements to minimize loss of shoreline soils consistent with applicable County policies and ordinances and BCDC policies. During the construction phase, the applicant would comply with erosion and sediment control measures in accordance with Contra Costa County stormwater management requirements and construction best management practices for the reduction of pollutants in runoff and the State Water Quality Control Board National Pollution Discharge Elimination System (NPDES) requirements, including the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) incorporating Best Management Practices (BMPs). The SWPPP would identify BMPs for implementation during construction activities, such as detention basins, straw bales, silt fences, check dams, geofabrics, drainage swales, and sandbag dikes.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.11.5: The project could potentially expose people or structures to substantial risk or hazards as a result of expansive soils.	**4.11.5:** Consistent with Mitigation Measure 4.11.1, a site-specific, design level geotechnical investigation for each building site area shall be required as part of this project. Such geotechnical investigations and reports prepared for the project site shall include generally accepted and appropriate engineering techniques for determining the susceptibility of the project site to expansive soils and reducing its effects. Engineering recommendations shall be included in the project engineering and design plans. All construction activities and design criteria shall comply with applicable codes and requirements of the most recent California Building Code, and applicable County ordinances.	Less than Significant
4.11.6: The development proposed as part of the project would not result in significant cumulative impacts with respect to geology, soils or seismicity.	None Required.	
Biological and Marine Resources		
4.12.1: The construction of residential buildings and recreational fields would result in the loss of upland ruderal and barren habitat.	None Required.	
4.12.2: Construction of proposed trails, the education center, and reconfiguration of the marina could result in temporary and permanent loss of sensitive brackish marsh habitat.	**4.12.2a:** Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFG) impacted by the project will be restored and/or enhanced. Temporary impacts will be compensated for at a 1:1 ratio (mitigation to impact acreage). Permanent impacts will be compensated for by creating or restoring in kind habitat at a 3:1 ratio. In addition, temporary and/or permanent losses of brackish marsh habitat will be addressed in full in the wetland permitting for the project, as outlined under Mitigation Measures 4.12.2b. **4.12.2b:** Recreational trails will incorporate raised boardwalks in areas that support brackish marsh vegetation and are subject to tidal flooding to limit degradation of this sensitive habitat due to trail traffic. To further reduce trampling of sensitive vegetation, measures to deter human off-trail use (i.e. rails or roping) as well as restrictions on allowing dogs (i.e. on leash only) or horses on trails will be incorporated into trail design.	Less than Significant
4.12.3: The project would result in the loss of raptor foraging habitat.	None Required.	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.12.4: Dredging, pile driving, removal of existing pilings and moorings, and other "in-water" construction activities will result in temporary disturbances to aquatic biological resources and Essential Fish Habitat (EFH).	**4.12.4a:** The proposed project will implement the guidelines of the Corps' Long-term Management Strategy (LTMS). For Chinook salmon, steelhead, and longfin smelt, construction work windows have been established by the LTMS and project construction will occur during those periods. For delta smelt and Sacramento splittail, in-water construction is restricted throughout the year and formal Section 7 consultation will be required. As identified in the LTMS, restricting dredging and other in-water construction activities to specific work windows would avoid direct and indirect impacts to these species. The work window for Chinook salmon and steelhead extends from June 1 through November 30 while the window for longfin smelt extends from September 1 through November 30. As the longfin smelt work window is more restrictive in-channel activities such as dredging and pile-driving associated with the proposed project will occur during the period of September 1 through November 30. However, the LTMS does not provide acceptable work windows for delta smelt and Sacramento splittail, indicating that Section 7 consultation (delta smelt) and conferencing (Sacramento splittail) is required. Typical consultation and permit requirements are presented in above in section 4.12.3 Regulatory Setting. The LTMS was developed prior to the proposed listing of green sturgeon as a threatened species and therefore the species is not addressed in the plan, but compliance with LTMS work windows and other permit requirements is assumed to adequately protect this species. Furthermore, the LTMS does not provide work windows for Pacific herring in the Suisun Bay/Carquinez Straight region, although the species is protected under the program in other parts of San Francisco Bay (e.g., south-central San Francisco Bay) (USACE, 2001). **4.12.4b:** Pile-driving activities will also occur during the work windows specified in the LTMS. This measure will reduce the potential impact of sound pressure levels on salmonids to less than significant. Any pile-driving work occurring outside of these work windows would be conducted in accordance with NMFS directives (e.g., noise levels below 150 decibels at 10 meters) and Corps permits to reduce potential impacts on fish species to less than significant.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.12.5: The construction and operation of the proposed marina facilities may increase the likelihood of introduction or transport of exotic species that are known to disrupt natural communities.	**4.12.5a:** To prevent the spread of invasive water plant species during dredging activities, existing beds will be removed and disposed of at a composting facility prior to construction. The plant beds observed by Applied Marine Sciences, Inc. (AMS) were very small in the fall of 2005. Manual removal of existing plants or the use of synthetic plant cover materials to block light to the plants will be necessary to completely remove the plant prior to dredging. Removal work needs to be done by personnel experienced in the eradication of water borne invasive plants to prevent the release of small plant parts that can regenerate. Use of herbicides might be an option if the treatment area can be minimized. **4.12.5b:** An active boater awareness and education program will be implemented as part of marina operations to prevent the spread of invasive water plant species. One of the primary means of transporting invasive species from one water body to another is by recreational vessels. Portions of the plant become attached to boats and trailers and are brought aboard recreational fishing boats by fisherman. The plants are then transported to other water bodies when the boat and trailer are taken to new lakes or the delta. Implementation of a boater awareness and education program, consistent with existing programs promoted by California Fish and Game, the US Bureau of Land Management and other federal, state and local agencies, will help prevent the introduction and spread of these plants to the San Francisco Delta and other California water bodies.	Less than Significant
4.12.6: The construction and operation of the proposed project could adversely affect fisheries and other aquatic biota by degrading the water quality of surface waters within the marinas.	**4.12.6:** Mitigation Measures identified in Sections 4.9, Hazardous Materials, and 4.10, Hydrology, will be implemented to reduce potential impact to the water quality of the project area and vicinity.	Less than Significant
4.12.7: Pile-driving associated with the construction/renovation of marina facilities and structures could result in disturbance to marine mammals, including special status species.	**4.12.7:** To avoid impacts to marine mammals, contractors shall “dry fire” pile-driving hammers before construction begins.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	Based on the assessments provided by the USACE and NMFS on the above projects, only short-term, negligible impacts are anticipated from the proposed project. As a project improvement measure to further reduce impacts to harbor seals and California sea lions, the technique of "dry firing" would be integrated into pile-driving activities, as necessary, at the start of each day if marine mammals are identified within 150 feet of the work area. Site construction workers would perform this dry firing if the workers were to observe marine mammals in or near the marina prior to construction. No agency notification would be necessary. "Dry firing" has been used to "herd" California sea lions away from work sites during the installation of pilings at the U.S. Coast Guard Pier, Monterey, California (NMFS, 2003). A "dry fire" occurs when the hammer is raised and dropped with no compression of the pistons, which produces approximately 50 percent of the maximum in-air noise level. This technique allows pinnipeds in the area to voluntarily move from the area prior to operating the hammer at full capacity, and should expose fewer animals to loud sounds, both underwater and above water (NMFS, 2003).	
4.12.8: Construction activities proposed for the project could result in a substantial adverse effect on potentially jurisdictional waters of the U.S. under the jurisdiction of the Corps, waters of the state under the jurisdiction of the Regional Water Quality Control Board (RWQCB), and waters and land under BCDC jurisdiction.	**4.12.8a:** Projects implemented as part of the Bay Point Waterfront Strategic Plan shall avoid or minimize adverse effects on jurisdictional waters to the extent practicable. To the extent feasible, final project design will avoid and minimize effects to wetlands and other waters. Areas that are avoided will be subject to BMPs, as described in Section 4.10, Hydrology. Such measures include the installation of silt fencing, straw wattles or other appropriate erosion and sediment control methods or devices. Equipment used for the removal of debris and removal and installation of concrete rip-rap along the harbor shorelines will be from land using backhoes and cranes. Construction operations within the harbor waters may also be barge-mounted or involve other water-based equipment such as scows, derrick barges and tugs. **4.12.8b:** The project applicant shall provide compensation for temporary impacts to, and permanent loss of, waters of the U.S., including wetlands, as required by regulatory permits issued by the Corps, RWQCB, and BCDC. Measures may include, but will not necessarily be limited to the following:	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	Development of a Wetland Mitigation and Monitoring Program. Prior to the start of construction or in coordination with regulatory permit conditions, the project applicant shall prepare and submit to the regulatory agencies for approval, a mitigation and monitoring plan program that outlines the mitigation obligations for temporary and permanent impacts to waters of the U.S., including wetlands, resulting from implementation of projects under the Strategic Plan. The Plan Program will include baseline information from existing conditions, anticipated habitat to be enhanced, performance and success criteria, monitoring and reporting requirements, and site specific plans to compensate for wetland losses resulting from the project. The Project Wetland Mitigation and Monitoring Plan shall include, but not be limited to, the following: *Provide onsite mitigation through wetland creation or enhancement of jurisdictional features.* This could include: restoration of tidal marsh habitat, enhancement of roosting areas for shore birds and water birds, enhancement of habitat diversity. Shoreline enhancements could include removal of debris, including concrete rip-rap. Wetland enhancement could include the removal of non-native vegetation and re-introduction of native vegetation or the reintroduction of tidal channels in portions of the Plan Area that appear to have been drained in the past. *Additional wetland creation or enhancement or offsite mitigation.* If permanent and temporary impacts to jurisdictional waters cannot be compensated for onsite through the restoration of wetland features incorporated within proposed open space areas, the project sponsor shall negotiate additional compensatory mitigation for these losses with the applicable regulatory agencies. Potential options include the creation of additional wetland acreage onsite or the purchase of offsite mitigation.	
4.12.9: Project activities have the potential for direct take of several special status plant species including: Suisun thistle, soft bird's beak, Mason's lilaeopsis, Suisun marsh aster, Delta tule pea, Delta mudwort, and Congdon's tarplant.	**4.12.9:** Focused floristic surveys for Suisun thistle, soft bird's beak, Mason's lilaeopsis, Suisun marsh aster, Delta tule pea, Delta mudwort, and Congdon's tarplant shall be conducted by a qualified biologist throughout the Plan Area prior to initiation of Plan element construction.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	If no plants are found within expected impact areas then no further mitigation will be required. If plants are found in the construction vicinity that can be avoided during construction then the population(s) shall be protected with construction fencing and worker training on avoidance shall be conducted. If plants are found and cannot be avoided then appropriate mitigation measures shall be developed in consultation with USFWS and CDFG. Specific measures may include, but will not necessarily be limited to: • Collection of seed from plants that cannot be avoided by the project. The seed could be donated to a seed bank in order to preserve the genetic line represented by the lost plants. The seed could also be propagated and the resulting plants could be used in local revegetation or mitigation projects. A likely spot for reintroduction would be areas slated for or already undergoing restoration within the EBRPD lands within the Plan Area. • Salvage and transplantation of plants that would be destroyed by construction or dredging activities. Plants could be transplanted to areas within the Plan Area that will remain undisturbed by any development anticipated under the Strategic Plan. • Seed collection, plant salvage, and any propagation shall be carried out by a qualified botanist, plant ecologist, or native plant horticulturist.	
4.12.10: Project activities could result in substantial adverse impacts to special status wildlife.	**4.12.10:** • Pre-construction special status species surveys shall be conducted by a qualified biologist to verify presence or absence of species at risk. Species surveys should occur during the portion of the species' life cycle where the species is most likely to be identified within the appropriate habitat. In all cases, avoidance of the special status species during construction is preferred. • A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regards to sensitive biological resources.	Less than Significant (in combination with species-specific mitigation measures, if applicable, discussed below)

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• A biological monitor shall be appointed to serve as a contact for issues that may arise concerning potential impacts on biological resources (including special status species), implementation of mitigation measures, and to document and report on compliance with all mitigation measures designed to protect biological resources. The biological monitor shall be present on-site whenever project activities have the potential to impact special status species or jurisdictional waters and shall have the authority to stop work at any point that special status wildlife or jurisdictional waters are endangered by project activities.	
4.12.11: Project activities in marsh habitat and along tidal channels could disturb federal and state endangered clapper rails and state threatened black rails.	**4.12.11:** If construction activities (i.e., ground clearing and grading, including removal of trees or shrubs, and activities producing excessive noise) are scheduled to occur during the breeding season (February 1 through August 31), the following measures are required to avoid potential adverse effects on nesting California clapper rail and California black rail: • To the extent feasible perform all construction activities between September 1 and January 31 to avoid rail breeding seasons. • If activities cannot be restricted to the non breeding season protocol level call count surveys will be conducted by a qualified biologist. Rail locations will be determined and rail territories will be avoided, or the marsh will be determined to be unsuitable rail breeding habitat by a qualified biologist familiar with clapper rails and black rails. • If breeding rails are detected in the marsh, project activities will not be conducted in contiguous marsh areas within 700 feet from an identified rail calling center to avoid nest destruction, nest abandonment, and harassment of rails. If the intervening distance between the rail calling center and construction areas is across a major slough channel or other substantial physical barrier and is greater than 200 feet, then project activities may proceed within the breeding season.	Less than Significant
4.12.12: Project related construction activities could disturb, or cause the direct mortality due to crushing burrows of burrowing owls.	**4.12.12a:** No more than two weeks before construction a survey for burrows and burrowing owls shall be conducted by a qualified biologist in areas supporting suitable burrowing owl habitat on site as well as within 500 feet of the construction site.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	Areas potentially supporting burrowing owl include the livestock grazed ruderal habitat in the southern portion of the site and the ruderal and barren areas near the railroads tracks adjacent to the project site. Surveys will conform to the protocol described by the California Burrowing Owl Consortium (1993), which includes a habitat assessment and up to four surveys on different dates if there are suitable burrows present. **4.12.12b:** If occupied owl burrows are found within the survey area, a determination shall be made by a qualified biologist in consultation with CDFG whether or not project work will impact the occupied burrows or disrupt reproductive behavior. • If it is determined that construction will not impact occupied burrows or disrupt breeding behavior, construction will proceed without any restriction or mitigation measures. • If it is determined that construction will impact occupied burrows during August through February, the subject owls will be passively relocated from the occupied burrow(s) using one-way doors. There shall be at least two unoccupied burrows suitable for burrowing owls within 300 feet of the occupied burrow before one-way doors are installed. Artificial burrows shall be in place at least one-week before one-way doors are installed on occupied burrows. One-way doors will be in place for a minimum of 48 hours before burrows are excavated. • If it is determined that construction will physically impact occupied burrows or disrupt reproductive behavior during the nesting season (March through July) then avoidance is the only mitigation available. Construction shall be delayed within 300 feet of occupied burrows until it is determined that the subject owls are not nesting or until a qualified biologist determines that juvenile owls are self-sufficient or are no longer using the natal burrow as their primary source of shelter.	
4.12.13: Marina reconfiguration and dredging activities could impact northwestern pond turtles.	**4.12.13:** Two weeks prior to the commencement of harbor reconfiguration or drainage-related activities, a qualified biologist who has permits from CDFG to move turtles and their nests shall perform western pond turtle surveys within suitable habitat on the project site.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	Surveys shall be conducted for nests as well as individuals. Harbor reconfiguration or drainage-related activities within suitable habitat will not proceed until the work area is determined to be free of turtles or their nests. If pond turtles are identified within work areas, a qualified biologist will be responsible for relocating pond turtles. If a nest is located within a work area, a qualified biologist may move the eggs to a suitable facility for incubation, and release hatchlings into the creek system on site in late fall. A qualified biologist shall be present when project-related activities within or adjacent to suitable aquatic habitat for northwestern pond turtle is occurring and will be responsible for relocating adult turtles that move into work areas.	
4.12.14: Project activities, such as the creation of trails through brackish marsh habitat, could result in the incidental death or destruction of habitat of salt marsh harvest mouse.	**4.12.14:** • When project activities are in or adjacent to suitable habitat, vehicles will be confined to existing roads where possible and disturbed areas revegetated with brackish marsh species. • Crews will use matting, pontoon boards or other comparable methods whenever feasible to minimize impacts to the existing vegetation. The placement of mats will be verified by a qualified biologist before their placement to minimize habitat impacts. Crews will work exclusively from mat boards and boardwalks to minimize trampling of vegetation. • Silt fencing shall be installed to act as an exclusion fence between work areas and adjacent brackish marsh habitat. • Prior to the commencement of construction activities, a qualified biologist will flag the location of an exclusion fence in the field. The fence will be located outside of salt marsh habitat and above the high tide line. Fence installation shall be overseen by a qualified biologist and installation should be timed such that no exceptional high tides have occurred in the week prior to installation. • Standard silt fencing (4 feet in height) should be used and should be seated below grade to the uppermost line printed on the fencing material. The fencing should be oriented such that the stakes are on the outside of the fence (relative to the area of construction) and one to two inches of the fencing material should be laterally flipped inward, or upslope.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• Wooden silt fence stakes should be reinforced with rebar or t-stakes that are at least four feet in length. The metal stakes should be driven to a depth of at least two feet, so they sit deeper than the wooden stakes, and attached to the wooden stakes with baling wire. • Soil on both sides of the silt fence should be compacted after installation. • The exclusion fence shall be maintained during the entirety of the construction activities. • The fencing shall be monitored by a qualified biologist a minimum of once per week to ensure the integrity of the fence.	
4.12.15: Destruction of abandoned buildings or removal of eucalyptus trees within the Plan Area could adversely impact special status bat species.	**4.12.15:** No mitigation is required if construction activities (i.e., ground clearing and grading, demolition to abandoned buildings) are scheduled to occur during the nonbreeding season (September 1 through February 28). If construction activities are scheduled to occur during the breeding season (March l through August 31), the following measures would be implemented to avoid potential adverse effects on breeding special-status bats: • A qualified bat biologist, acceptable to the CDFG, shall conduct preconstruction surveys of all potential breeding habitat within 500 feet of construction activities in areas with low existing disturbance levels. In areas where sources of existing noise and/or disturbance due to human activity are located within 500 feet of the project footprint, surveys shall take place within a radius equivalent to the distance of that existing noise or disturbance. In late winter or early spring, potentially suitable habitat shall be located visually. Bat emergence counts shall be made at dusk as the bats depart from any suitable habitat. In addition, an acoustic detector shall be used to determine any areas of bat activity. At least four nighttime emergence counts shall be undertaken on nights that are warm enough for bats to be active, as determined by a qualified bat biologist. • If active roosts are identified during preconstruction surveys, a no-disturbance buffer shall be created, in consultation with CDFG, around active bat roosts during the breeding season. Bat roosts initiated during construction are presumed to be unaffected, and no buffer is necessary.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• If preconstruction surveys indicate that roosts are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Trees and shrubs that have been determined to be unoccupied by special status bats or that are located outside the no-disturbance buffer for active roosts may be removed.	
4.12.16: Construction activities could adversely affect non-listed special-status nesting raptors and other nesting birds.	**4.12.16:** If construction activities occur only during the non-breeding season between August 31 and February 1, no surveys will be required. Otherwise, a qualified biologist will survey the site for nesting raptors and other birds within 14 days prior to any ground-disturbing activity or vegetation removal. Results of the surveys will be forwarded to the USFWS and CDFG (as appropriate) and, on a case-by-case basis, avoidance procedures adopted. These can include construction buffer areas (several hundred feet in the case of raptors) or seasonal avoidance.	Less than Significant
4.12.17: The project would result in disturbance to, or direct mortality of, common wildlife species and could present a barrier to wildlife movement from adjacent habitats.	None Required.	
4.12.18: The construction of a residential development adjacent to marsh habitat could result in long-term adverse impacts to California clapper rail, salt marsh harvest mouse, and other species inhabiting the adjacent marsh habitat through the introduction of human noise and activity, lighting, and domestic animals.	**4.12.18:** The project applicant will develop and implement a Marsh Wildlife and Habitat Protection Plan for the project site. Components of the plan will include, but not be limited to, the following: • To the extent feasible the project development footprint will maintain a set back of at least 100 feet from marsh habitat on the project site. • To minimize the potentially-adverse effect of night lighting on the adjacent salt marsh habitat the following will be utilized: street lighting only at intersections, low-intensity street lamps and low elevation lighting poles, and internal silvering of the globe or external opaque reflectors to direct light away from marsh habitat. In addition, private sources of illumination around homes shall also be directed and/or shaded to minimize glare into the marsh.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• A pet policy will be developed and residents will be required to adhere to measures of this policy to prevent impacts to wildlife from domestic animals. The pet policy will limit the number of animals per residence and require adult cats, dogs, and rabbits to be spayed or neutered. Cats and dogs should be kept inside the residence and will be allowed outside residences only if on a leash and under the tenant's control and supervision. To provide effective predator control, feral animal trapping may be necessary. The project proponent shall develop a feral cat monitoring program with provisions for the implementation of feral cat trapping should these animals become a problem for marsh wildlife. • Residents will be prohibited from creating feeding stations outside for feral cats to prevent feral cat colonies from establishing and to prevent the attraction of other predator wildlife such as red fox, raccoon, or opossums. • An education program for residents will be developed including posted interpretive signs and informational materials regarding the sensitivity of the marsh habitat, the dangers of unleashed domestic animals in this area, and fines for violation of the pet policy.	
4.12.19: The proposed Strategic Plan, in conjunction with cumulative development, would affect biological resources in the Bay Point Area.	None Required.	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Cultural/Historic Resources		
4.13.1: Potential adverse effects to unknown historical resources, including unique archaeological resources.	**4.13.1:** In the event of a discovery of cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, etc.), work will be suspended and Contra Costa County staff will be contacted. A qualified cultural resource specialist will be retained and will perform any necessary investigations to determine the significance of the find. Contra Costa County will then implement any mitigation deemed necessary for the recordation and/or protection of the cultural resources. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the project proponent will determine whether avoidance is feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is carried out. In addition, pursuant to Sections 5097.97 and 5097.98 of the California Public Resources Code and Section 7050.5 of the California Health and Safety Code, in the event of the discovery of human remains, all work will be halted and the County Coroner will be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission will be adhered to in the treatment and disposition of the remains.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE BAY POINT WATERFRONT STRATEGIC PLAN

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13.2: Potential adverse effects on paleontological resources.	**4.13.2:** An appointed representative of Contra Costa County staff will notify a qualified paleontologist of unanticipated discoveries, document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in Section 15064.5 of the CEQA Guidelines. In the event a fossil is discovered during construction, excavations within 50 feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards (SVP, 1995). The paleontologist will notify Contra Costa County Staff to determine procedures to be followed before construction is allowed to resume at the location of the find. If Contra Costa County staff determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and the plan will be implemented. The plan will be submitted to Contra Costa County staff for review and approval.	
4.13.3: The proposed project would demolish existing buildings that are not considered historic architectural resources under CEQA	None Required.	
4.13.4: The proposed Strategic Plan, in conjunction with cumulative development, would alter the visual character in the project vicinity.	None Required.	

CHAPTER 3
Project Description

3.1 Project Overview

The Bay Point Waterfront Strategic Plan Area (Strategic Plan Area), which is partially within the Bay Point Redevelopment Area (Redevelopment Area), is located north of the Union Pacific Railroad tracks, at the terminus of McAvoy Road in the Bay Point area of eastern Contra Costa County.

The Bay Point Waterfront Strategic Plan (Strategic Plan) is intended to guide redevelopment that would create an environment that would be the object of civic pride for Bay Point. The Strategic Plan would include a new full-scale marina, including parking areas for trailers, dry storage for boats, a new boat launch location, and other support uses consisting of a fuel dock, centrally-located harbor master building, restroom, laundry, and showers, chandlery store with bait and tackle, administrative offices, café/snack bar, and yacht club. The Strategic Plan would also allow for up to 450 new medium-density (i.e., 20 units per acre), multiple-family residential units. Public improvements such as open spaces, recreational areas, and infrastructure would also be developed.

The Strategic Plan envisions new land use designations that would be more intensive than those currently contemplated under the Contra Costa County General Plan. A General Plan Amendment would be required to accommodate the uses, densities, and intensities proposed to achieve the development pattern and character envisioned in the Strategic Plan. The Strategic Plan would require an adjustment to the existing Urban Limit Line which establishes the County's boundary within which urban growth can occur.

It is anticipated that implementation would occur incrementally due to the complex and expensive nature of the Strategic Plan. The Strategic Plan specifies the harbor as the initial component that could be developed initially as a catalyst for subsequent investment. Completion of the harbor is anticipated by 2012, and full buildout of the Strategic Plan is expected to occur by 2020. However, beyond the first phase of the project, full realization of the development outlined in the Strategic Plan would ultimately depend on future market conditions, private initiative, and both public and private and investment.

3.2 Background

A County-initiated zoning and development plan for the Bay Point Redevelopment Area and an additional waterfront area (the Strategic Plan Area) was approved by the County Board of

Supervisors on February 11, 2003, which created a Planned-Unit Zoning District. The object of the Planned-Unit District is to combine into one readily understandable document, all of the requirements for development or use of property in the Redevelopment Area. The Planned-Unit zoning area includes approximately 2,100 acres of land designated for various uses in the County General Plan and Pittsburg/Bay Point BART Station Area Specific Plan.

In late 2001, the Contra Costa County Redevelopment Agency (Redevelopment Agency) retained a consultant team to work with the Bay Point community to develop a Strategic Plan for the waterfront area (which is partially included in the Bay Point Redevelopment Plan), to prepare and evaluate the economic and market feasibility analysis of the area, and to evaluate the condition of the marinas and the infrastructure needs of the Bay Point waterfront. The result of that work is the Bay Point Waterfront Strategic Plan, which encompasses four property holdings totaling approximately 290 acres of land (the Strategic Plan Area); the Strategic Plan proposes a new land use concept plan for two of the four property holdings comprising approximately 190 acres. The Strategic Plan does not propose to alter existing uses on the EBRPD and State Lands Commission properties and therefore, changes that would occur at the remaining property holdings (PG&E and Trost Family) are the focus of this EIR.

In pursuing the development of the Strategic Plan, the Redevelopment Agency empanelled a Task Force comprised of community residents, members of the Bay Point Municipal Advisory Council, the Bay Point Project Area Committee, and other local citizens with an interest in improving the community's waterfront. The Redevelopment Agency worked closely with the Task Force over the period from December 2001 through September 2002 to gather information, address issues, and create a strategic plan that would result in a compelling, economically achievable, and high-quality environment that would be the object of civic pride for Bay Point. Three public workshops were held in Bay Point throughout 2002. The results of those workshops, in addition to extensive analysis of site conditions, market feasibility, infrastructure needs, and alternative development scenarios, guided the preparation of the Refined Concept Plan that is the foundation of the Strategic Plan. A final revision of the Strategic Plan was completed in August 2003, which included a plan for a full-scale marina and open spaces, as well as medium-density housing. Due to the site's proximity to the Pittsburg/Bay Point BART Station, the potential for home ownership in a high value location near the waterfront, and added safety and economic viability due to increased public presence, a residential component was included in the Strategic Plan to allow for an efficient pattern of development.

3.3 Project Objectives

CEQA Guidelines Section 15124(b) requires that the Project Description of an EIR contain a statement of objectives for the proposed project. The project objectives, consistent with the principles used in the development of the Concept Plan in the Strategic Plan and the objectives of the Redevelopment Agency, include:

- Create a compelling, economically achievable, and high-quality environment that will be the object of civic pride for Bay Point;

- Improve access to the marina area;
- Connect the Plan Area with the upland community;
- Enhance public access to waterfront areas;
- Ensure the financial viability of the project;
- Spur revitalization of the waterfront;
- Allow water-oriented residential uses to enhance the economic viability of the project;
- Maximize environmental education opportunities; and
- Protect environmentally sensitive areas.

3.4 Plan Area Location

3.4.1 Regional Setting

Contra Costa County covers about 733 square miles in the northeastern portion of the San Francisco Bay Area. It extends from the northeastern shore of San Francisco Bay easterly about 50 miles to San Joaquin County and is bordered on the east by the San Joaquin River, the south and west by Alameda County, and on the north by Suisun and San Pablo Bays. The western and northern shorelines are highly industrialized, while the interior sections are suburban/residential, commercial and light industrial. The community of Bay Point is located in eastern Contra Costa County and is surrounded by the cities of Pittsburg and Concord.

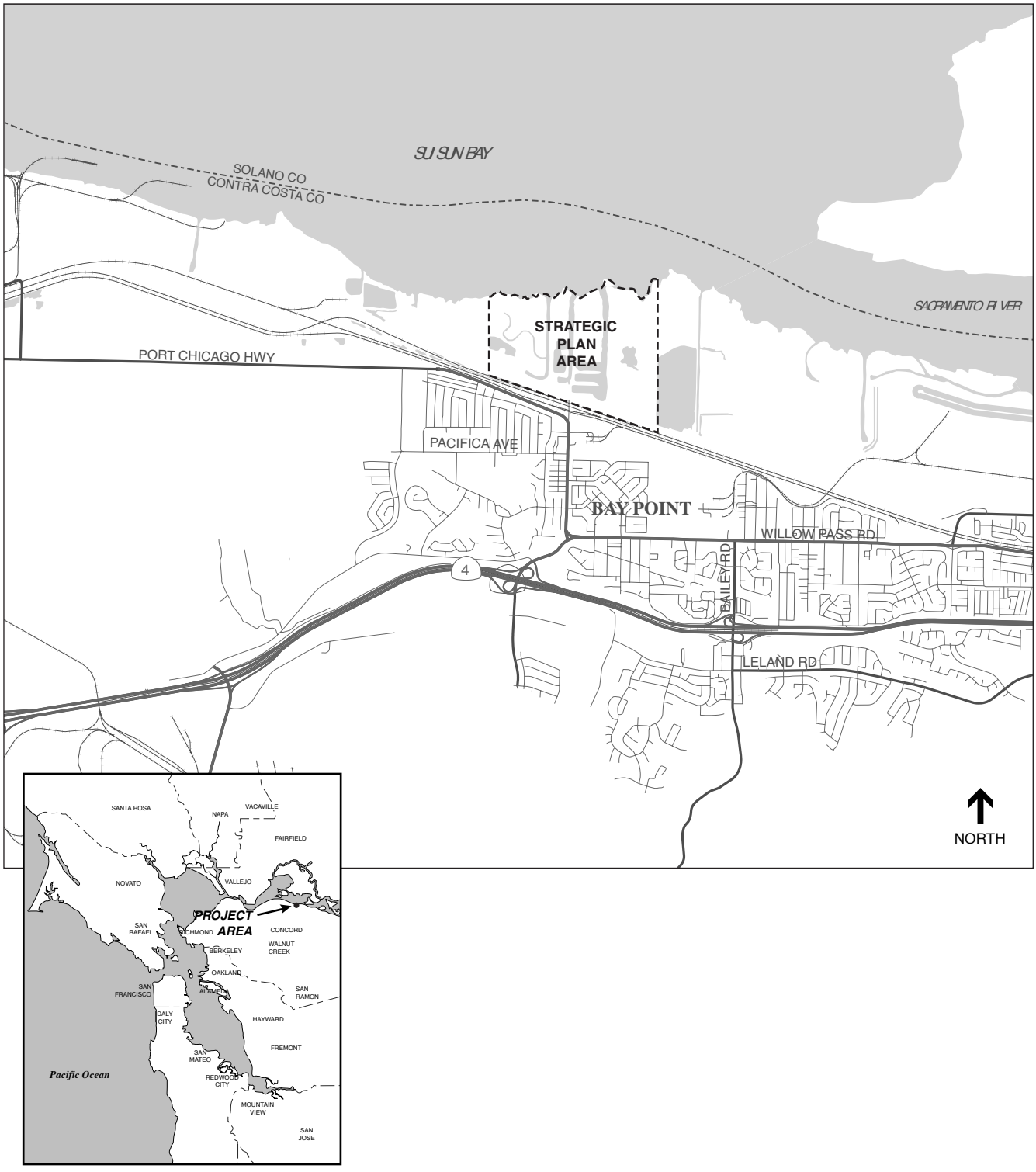
3.4.2 Local Setting

Bay Point

The community of Bay Point is located in eastern Contra Costa County, west of Pittsburg (Figure 3-1). Bay Point is a waterfront community, located to the south of Suisun Bay (part of the Sacramento River Delta). Most of Bay Point is located to the north of State Route 4 (SR 4). It is approximately 35 miles northeast of San Francisco and 28 miles northeast of Oakland. Regional access is available along SR 4, a major east-west freeway that links Bay Point to the rest of the San Francisco Bay Area. It provides connections to SR 24, Interstate 680 (I-680), and Interstate 80 (I-80). SR 4 also links Bay Point to the cities of Pittsburg, Antioch, and Brentwood to the east, and to the city of Martinez to the west. I-680, which is approximately 6 miles west of the plan area, provides a connection to cities along the I-680 corridor including Concord, Walnut Creek, Danville, San Ramon, Dublin, and Pleasanton to the south, and Benicia to the north.

Plan Area

The Plan Area is located along the waterfront in the community of Bay Point (to the south of Suisun Bay), north of the Union Pacific Railroad tracks, at the terminus of McAvoy Road. The only point of entry to the Plan Area is McAvoy Road via the Port Chicago Highway. Four active railroad lines separate the Plan Area from the rest of town with an at-grade crossing.



SOURCE: ESA (2005)

Bay Point Strategic Plan . 204379

Figure 3-1
Project Location

3.5 Project Setting

3.5.1 Existing Land Uses / Ownership

The Plan Area properties are currently owned by four parties (see Figure 3-2): the East Bay Regional Parks District (EBRPD), the California State Lands Commission, the Trost family (owners of McAvoy Harbor), and Pacific Gas and Electric Company (PG&E). Much of the western portion of the Plan Area (the EBRPD and State Lands Commission properties) is considered marshland. The State Lands Commission property is currently open space with trails and the EBRPD property is being planned for a passive use park.

The harbor area has few buildings; one building being a vacant former restaurant building on the McAvoy Harbor property. The former Harris Yacht Club building, a metal-sided building currently exists on the PG&E property. The McAvoy Harbor marina, while in generally poor condition, exists as an operable facility. The marina contains 300 boat slips (240 are covered and 60 are open) ranging from 20 feet to 45 feet. In addition, the marina also provides storage space for about 250 boats on trailers, a launching ramp, a guest dock, two boat clubs, a small café, and a fuel dock. A marina with boat docks and ramps that are not currently used are located on the PG&E property. The PG&E property, to the east of the Harris Yacht Harbor, includes grazing land with some outdoor storage.

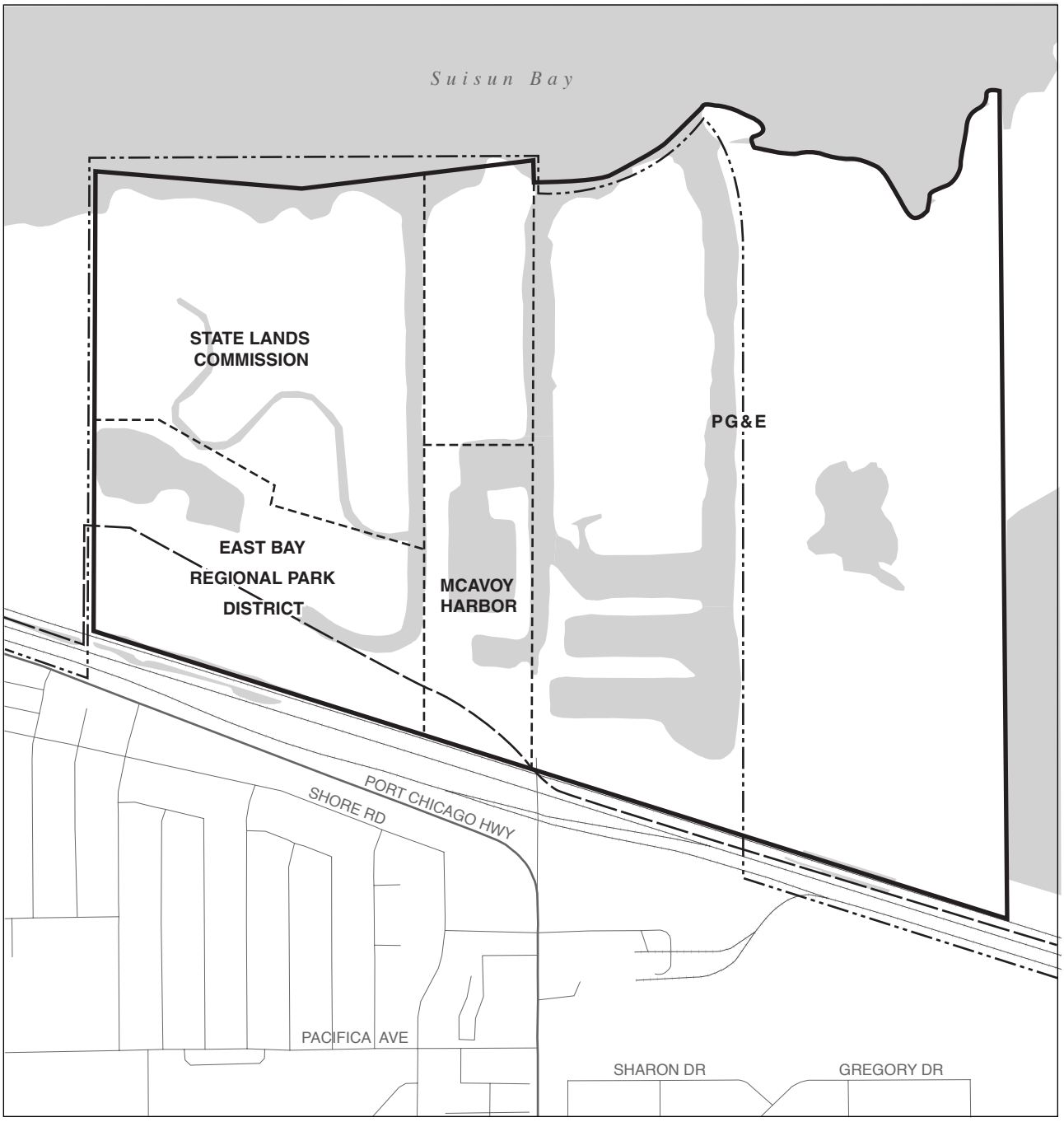
Land uses in the vicinity of the Plan Area include Suisun Bay to the north, open space to the east and west, and a mix of industrial, residential, and commercial uses to the south.

3.5.2 Planning Considerations

Urban Limit Line

One of the planning considerations for the Strategic Plan involves a proposed adjustment to the Contra Costa County Urban Limit Line (ULL). An ULL is an officially adopted and mapped line dividing land to be developed from open space lands to be protected for natural or rural uses. Urban growth boundaries are regulatory tools, designated for long periods of time 20 or more years. An ULL provides certainty to the issue of which lands can be developed and conserved, and can lead to programs that encourage appropriate development inside the boundary and enhance long term ecological, agricultural, and other uses of natural lands outside the boundary.

While the non-residential portions of the Strategic Plan could be achieved without changing the ULL, in order to implement the residential development of the Strategic Plan, some land now within the ULL would need to be reallocated to the proposed residential development, resulting in no net gain or loss of land outside the urban growth boundary. The current ULL includes the southern portion of the EPRPD property, which is currently designated as *Parks and Recreation*, and a small area in the southern portion of the McAvoy Harbor (Trost Family property), which is currently designated as *Commercial Recreation*. Under the Strategic Plan, the ULL would be shifted



SOURCES: RRM Design Group (2003) and ESA (2005)

Bay Point Strategic Plan . 204379

Figure 3-2
Strategic Plan Area
Property Holdings

south and would no longer include this area. The ULL does not currently include any portion of the PG&E property. Under the Strategic Plan, the ULL would be shifted north to include the currently designated *Open Space* and *Commercial Recreation* area, which is proposed for residential development. This adjustment to the ULL would result in simultaneous addition and subtraction of approximately 25 acres to the ULL, thereby resulting in no net gain of area to the ULL (see Figure 3-3). However, the adjustments are entirely within the Strategic Plan boundary.

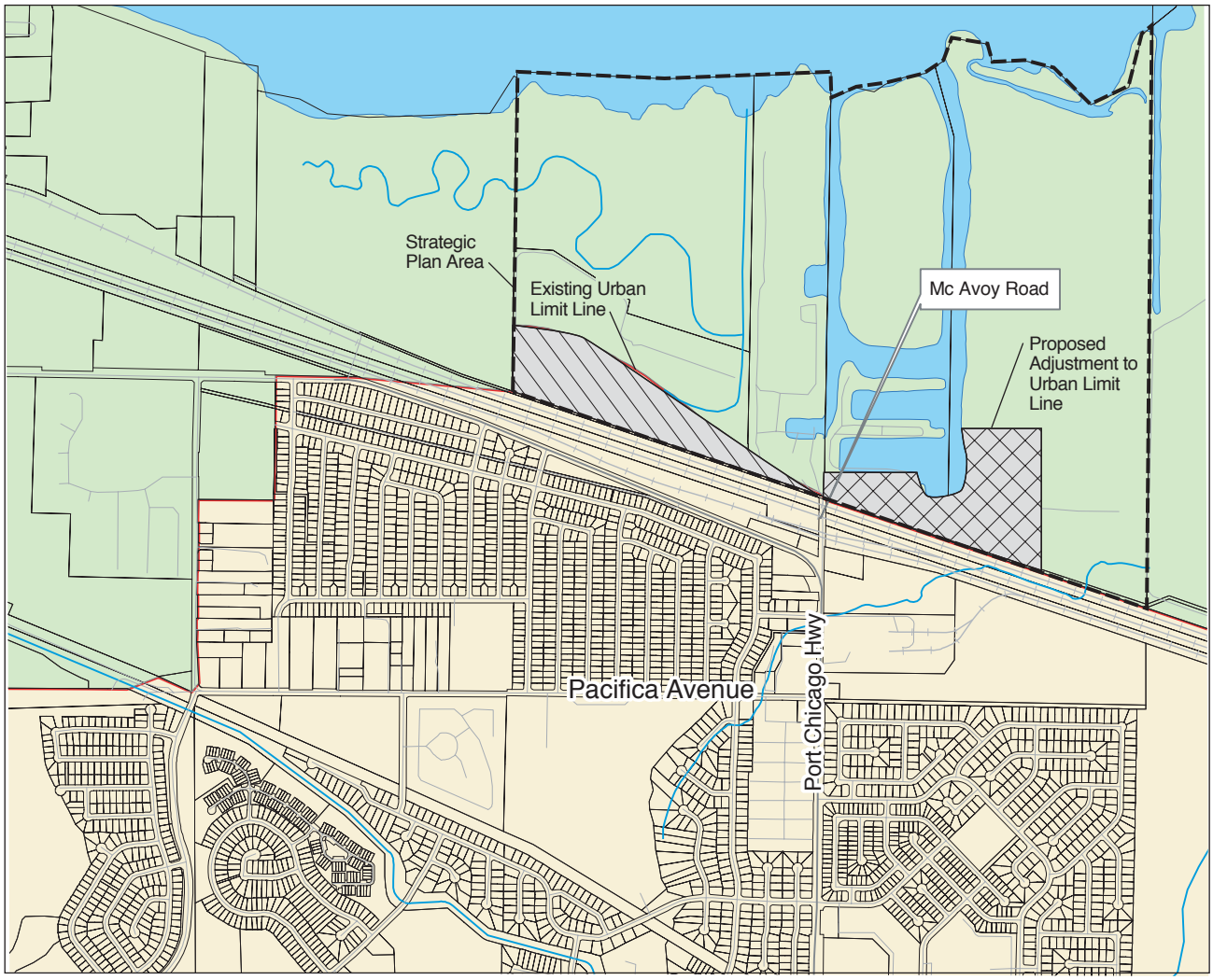
In order to make an adjustment to the ULL, a public hearing and a 4/5 Board of Supervisors vote would be required. As described in further in Chapter 4.1, *Land Use and Planning*, the Board of Supervisors would need to make at least one of seven findings in order to approve this proposed ULL adjustment.

Plan Amendments

The Plan Area is currently designated *Parks and Recreation*, *Open Space*, and *Commercial Recreation*. The land use designation for the marina is currently *Commercial Recreation* (CR), which allows for a range of privately-operated water-oriented recreational uses. The Strategic Plan, with its emphasis on marine support uses, would be consistent with this land use designation. However, the proposed residential area would be inconsistent with the CR designation, which does not allow for residential units other than a caretaker unit. A portion of the proposed residential area would also be on land currently designated as *Open Space* (OS) (the PG&E property), which allows for open space lands such as wetlands and tidelands and other areas of significant ecological resources or geologic hazards. Because neither the General Plan nor the Planned-Unit Zoning District Program would allow for the residential use of these parts of the Plan Area, a general plan amendment and an amendment to the Planned-Unit Zoning District Program would be necessary to permit the residential development anticipated in the Strategic Plan. In addition, in order to provide for development under the Strategic Plan, a general plan amendment and amendment to the Planned-Unit Zoning District Program would be necessary to change a portion of the PG&E property from *Open Space* to *Commercial Recreation*, *Multiple Family Residential-Medium Density*, and *Parks and Recreation*. Further information pertaining to the proposed general plan amendment and amendment to the Bay Point Redevelopment Plan is provided in Chapter 4.1, *Land Use and Planning*.

3.6 Project Components / Characteristics

Under the Strategic Plan, the proposed land use would remain mostly marina. Development would include a new marina, up to approximately 450 new medium-density residential units, parks and recreational amenities, open space, improved vehicular circulation, improved pedestrian circulation and public access opportunities, and provision of utilities. This proposed development would require amendments to the Contra Costa County General Plan, the Zoning Map, and the Bay Point Redevelopment Area Planned-Unit Zoning District Program. Additionally, the Strategic Plan also proposes the easterly extension of Pacifica Avenue from Port Chicago Highway and then north via the northern extension of Alves Lane creating a new second crossing of the railroad tracks to the waterfront area. The General Plan Amendment would add these road extensions to the Transportation and Circulation Element of the General Plan.



LEGEND

TYPE

- Freeway
- Ramp - Interchange
- Highway
- Primary
- Ramp: Non - Fwy/Hwy
- Secondary
- Minor, Residential
- Alley
- Railroad
- Rapid Transit
- Trail: Equestrian, Fire, Hiking, Jeep, etc.
- Creeks/Canals
- Parcels
- WA
- Within Urban Limit Line
- Outside Urban Limit Line
- New Area Outside Urban Limit Line
- New Area Within Urban Limit Line

0 1/4
Mile

SOURCES: Contra Costa County (2001) and ESA (2005)

Figure 3-3
Existing and Proposed Urban Limit Line

3.6.1 Marina

Marina Re-Configuration

As part of the Strategic Plan, the marina would be entirely reconfigured. The existing marina layout, consisting of approximately 500,000 square feet, would be reconfigured without changing its size. The new marina layouts would be in conformance with Department of Boating and Waterways Guidelines. The assumed depths of the basins based on dredging and reconfiguration would be -10 ft. MLLW datum.[1] Dredging impacts that could result from construction of the reconfigured marina are discussed in Section 4.12, *Biological and Marine Resources*.

The excavated and dredged material from the marina and site reconfiguration would need to be reused or disposed. Some of these materials may be suitable as fill onsite, but most of it would need to be transported off site, with suitable replacement materials returned to the site. The material from the site could either be trucked or barged to or from the site. Trucking, which would result in a larger effect than barging, would result in short-term increases in truck traffic – estimated to be approximately 4,000 truck trips removing materials from the site and 4,000 truck trips bringing replacement fill[2] over the term of project construction. This would represent roughly 32 one-way truck trips a day or four truck trips an hour for a construction period of one year. This concerted dredge and excavation material transport would be related to construction only and would not be a part of the operation of the Marina, although normal operation of the Marina would require periodic maintenance dredging[3] to provide an adequate water depth. It is anticipated that maintenance dredging would be done and materials disposed by barge.

Marina Uses

The Strategic Plan proposes to rebuild the marina with approximately 568 berths, 80 percent of which would be covered. No more than 55 of these berths would be available for live-aboard boats. The two columns of berths at the main entry to the marina would remain uncovered to allow an unobstructed view of the marina from the main entry plaza. The majority of the berths would be located on the south end of the marina with the largest berths to the east nearest the main channel. The slip sizes would range from 30 to 50 feet and the average slip length would be 35 feet. There would be a large parking area for trailers as well as dry storage area on the east end of the marina site where there would also be a new boat launch location. In addition, the Strategic Plan proposes various other support uses at the marina (see Figure 3-4). Close to the marina entry gateway, berths, and parking, two buildings on the southwest end of the marina site would house

1 For the purposes of nautical charting in U.S. tidal waters, depth is relative to mean lower low water (MLLW) or the average of the lower of the two low tides each lunar day.

2 If the reconfiguration the marina requires 1/3 of the area now land to be dredged to –10 ft. MLLW and an equal amount of replacement fill imported, the totals to be exported and imported would be roughly 62,000 cubic yards each. This would require approximately 4,000 truck trips for imports and 4,000 truck trips for exports.

3 This analysis does not consider the environmental effects of maintenance dredging which would discussed in a separate environmental review prior to obtaining dredging and disposal permits.

NORTH

SOURCES: RRM Design Group (2003) and ESA (2005)

Figure 3-4
Strategic Plan Components
Concept Plan

the majority of the proposed support uses, including restrooms, laundry, and showers, a chandlery store with bait and tackle, administrative offices, a café/snack bar, and a yacht club. The harbor master building would be located on the far west of the marina, centrally located between the north and south clusters of berths. A restaurant is proposed opposite other proposed support uses nearest the marina main entry and plaza. In total, these marina support buildings would be a maximum of 28,000 square feet (or 0.64 acres). In addition, there would be a small gazebo that would serve as a gathering/meeting area for the public near the beach area sharing the site of a potential future ferry terminal.[4] In addition, an environmental education center, where classes regarding the surrounding ecosystem would be held, and an adjacent plaza area would be located in the northeastern portion of the marina site near the boat launch and parking area.

All shoreline areas within the development would be protected from erosion by rip-rap, geotextile fabrics, or planting, or a combination of these measures.

3.6.2 Residential Units

Because the proposed full-scale marina on the waterfront would provide a unique location for development of complementary housing, the Strategic Plan proposes residential uses to the south and east of the marina site. Under this proposal up to 450 new medium-density, multiple-family residential units would be constructed on approximately 24 acres of land; the development of which would need to be accommodated through an adjustment to the County's Urban Limit Line (see above under *Planning Considerations*). In accordance with the development standards for the Multiple Family Residential-Medium Density (MM) land use designation, building heights would not exceed 45 feet. New residential development would also comply with the Bay Point Redevelopment Area Design Guidelines, which contains specific design guidelines for residential development as well as development around the marina; both of which would apply to the proposed project.

3.6.3 Parks and Recreation

The Strategic Plan proposes to maintain the *Parks and Recreation* designation for the two parcels of land (EBRPD and State Lands Commission) in the western portion of the Plan Area. In addition, a portion of the existing *Open Space* designation in the eastern portion of the Plan Area immediately adjacent to the west of the residential area would be changed to a *Parks and Recreation* area, allowing for various recreational uses as described in Table 3-1.

[4] The Strategic Plan designates an area for a potential future ferry terminal. As no specific information regarding this ferry terminal is currently available, this EIR does not evaluate the site for use as a ferry terminal; it only evaluates this area as part of the proposed view pier, described below under Parks and Recreation. If plans for a ferry terminal at this location are formally proposed, a separate environmental review would be conducted at that time.

TABLE 3-1
PROPOSED PROJECT RECREATIONAL AMENITIES

Recreational Amenity	Location	Description
Sports Fields	Eastern portion of the Plan Area adjacent to the west of the residential area	• Two to three baseball fields • Two soccer fields • Parking area • Round-a-bout
Beach Area	End of the main channel to the north and west of the residential area	• Small beach area to provide for waterfront activities
Hiking/Nature Trails	Three trails are tentatively proposed pending biological studies: One would extend northward originating from the northwest corner of the marina and another would extend from the proposed baseball fields northwesterly through the PG&E property Another trail, the Great California Delta Trail, is proposed to be aligned through the site connecting areas to the east with the marina area and beyond	• Three trails proposed • The opportunity to tie the proposed trails to the EBRPD trails to the west would be explored
View Pier	Adjacent to water	• Concrete-constructed pier supported on concrete piling designed to last 50 years with minimal maintenance • Appropriate handrails around the waterside edges of the pier
Launch Ramp	To the north of the residential area on the eastern side of the marina	• The launch ramp would be constructed to serve the needs of area fishermen and trailerable boat owners • Constructed in conformance with Department of Boating and Waterways Guidelines • Four-lane ramp with boarding floats to service ingress and egress of trailered boats • Adjacent parking would accommodate 15 truck/trailer rigs per launch lane, or a minimum of 60 spaces
Car-top Launch Area	Adjacent to launch ramp	• This sandy area would allow for launching of car-top boats such as sunfish, kayaks, and canoes • An area would be set aside as a shore-side ready area to set-up and breakdown boats as required

3.6.4 Open Space and Habitat Restoration

A majority of the Plan Area would remain open space (144 acres). The existing large pond on the eastern portion of the Plan Area and its surrounding area would provide for environmental awareness education and habitat restoration. The EBPRD and State Lands Commission property

holdings would also continue to remain undeveloped and to be used as *Parks and Recreation*-designated lands. Public trails are currently available on these properties.

3.6.5 Pedestrian Circulation / Public Access

The Strategic Plan emphasizes public access with a large continuous boardwalk along the entire marina waterfront. Beginning with a plaza and overlook area in front of the environmental education center, the proposed pedestrian promenade would continue south and would run adjacent to the residential area on the east of the marina. There, the promenade would narrow following the oval beach area. Overlooks from the promenade would provide views of the beach and main channel of the marina. A large overlook located on the northwest edge of the beach could serve as a future ferry terminal. From the ferry terminal heading west, the promenade would narrow again slightly before opening into a central landscaped plaza area at the main gateway to the marina. The promenade would continue west to the edge of the marina and then continue north past the harbor master up to the fuel dock and north berths (see Figure 3-4).

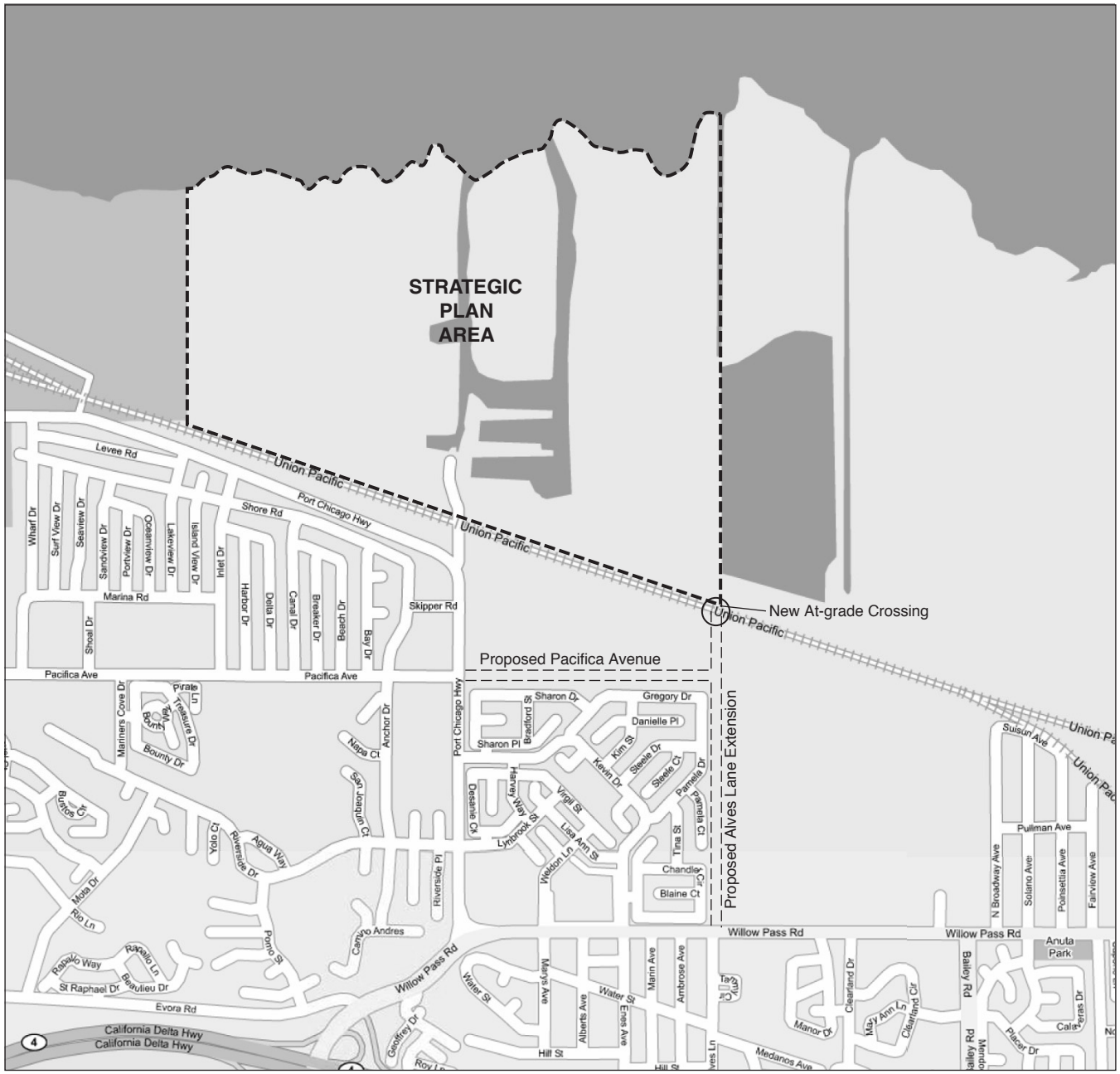
3.6.6 Circulation and Parking

The main entry to the Plan Area would continue to be from Port Chicago Highway via McAvoy Road at the existing bend in the road. A proposed round-a-bout north of the rail lines would allow free flow of traffic and create a visual gateway to the marina. From the round-a-bout visitors would be able to head west to the EBRPD site, northwest to the upper edge of the marina and fuel dock, or west to the residential area and terminating at another round-a-bout with parking area for the recreational park. Access to the boat launch, dry storage, and environmental education area would be from this eastern round-about on the proposed Alves Lane extension. The proposed project would include the easterly extension of Pacifica Avenue from Port Chicago Highway and then north via the northern extension of Alves Land creating a new second entry to the Plan Area (see **Figure 3-5**). This new entry, which would require a new at-grade or separated grade crossing over the four existing rail lines, would relieve congestion during peak travel times.

Parking would be located throughout the site with the largest area being for boat trailer parking near the boat launch. Significant parking areas would also be located at all support facilities and public areas. Parking for the marina areas would be 1 space for every 1.67 berths and parking for the residential area would be 2 spaces per dwelling unit.

3.6.7 Infrastructure

Under the Strategic Plan, basic infrastructure would be extended from the south edge of the Plan Area (on the south side of the railroad tracks at Port Chicago Highway) to provide adequate urban services and to meet fire flow requirements. While some existing utility lines exist, they would



NORTH

SOURCES: Google (2005) and ESA (2005)

Bay Point Strategic Plan . 204379

Figure 3-5

Proposed Off-Site Circulation Improvements

require repair and/or upgrade to serve the Plan Area and its proposed development. See Section 4.4, *Utilities* and Section 4.10, *Hydrology* for additional information regarding planned upgrades and additions to the existing infrastructure onsite.

3.6.8 Plan Amendments

The Redevelopment Agency proposes to amend the Contra Costa County General Plan to incorporate new proposed land use designations for the Plan Area. The Bay Point Redevelopment Area Planned-Unit Zoning District Program would also be amended to be consistent with the proposed General Plan amendments.

General Plan Amendment

The proposed amendments to the General Plan would amend the Land Use Map to reflect the proposed land use designation changes from *Commercial Recreation* to *Multiple Family Residential-Medium Density* and from *Open Space* to *Commercial Recreation*, *Multiple Family Residential-Medium Density*, and *Parks and Recreation*. Figures 4.1-3 and 4.1-4 provide maps showing the existing and proposed General Plan land use designations.

The largest land use designation change would be the proposed *Multiple Family Residential-Medium Density* area, which would encompass the area to the south and east of the marina and is currently designated *Commercial Recreation* and *Open Space*. *Multiple Family Residential-Medium Density* designation permits between 12 and 21.9 multiple family units per net acre. Sites can range up to 3,349 square feet. With an average of 2.5 persons per unit, population densities would normally range between about 30 to about 55 persons per acre. Building heights would be a maximum of 45 feet.

A portion of land on the current PG&E site on the eastern side of the marina would be changed from an *Open Space* designation to *Commercial Recreation* to accommodate the marina and marina-related support uses such as the boat launch and environmental education center. The *Commercial Recreation* designation allows “a range of privately operated recreational uses of a commercial character, including marinas and similar facilities, campgrounds, gold courses, outdoor sports and athletic complexes.” Building heights in this area must be limited to 35 feet.

Also on the current PG&E site, land designated as *Open Space* would be changed to a *Parks and Recreation* designation to accommodate the proposed sports fields and associated parking. The *Parks and Recreation* designation includes “publicly-owned city, district, County and regional parks facilities, as well as golf courses, whether publicly or privately owned.” Appropriate uses in this designation include “passive and active recreation-oriented activities, and ancillary commercial uses such as snack bars, and restaurants.”

See Section 4.1, *Land Use and Planning* for an additional description of the existing and proposed general plan designations.

The general plan amendment also proposes to amend the Circulation Element to add the extension of Pacifica Avenue and Alves Lane from Port Chicago Highway and Willow Pass Road, respectively, to the waterfront area.

Bay Point Redevelopment Area Planned-Unit Zoning District Program

A majority of the Plan Area is within the Bay Point Redevelopment Area Planned-Unit Zoning District. The current designations within the Planned-Unit Zoning District are the same as described above for the General Plan designations. The eastern portion of the Plan Area is not within this Planned-Unit Zoning District and therefore would not require an amendment to that Program; however, *Bay Point General Plan/Strategic Plan Land Use Map* included as part of the Program should be changed to reflect the proposed land use designation changes that would occur if the general plan amendment is approved.

See Section 4.1, *Land Use and Planning*, for an additional description of the existing and proposed zoning designations within the Planned-Unit Zoning District.

3.7 Project Construction and Phasing

Project construction is expected to begin in Spring 2008. Since the marina is the central focus of the Strategic Plan, construction would begin with the marina including berths, docks, and support facilities for boating uses[5]. During the first phase of construction, utility infrastructure upgrades and improvements would be completed. Since it is anticipated that the residential portion of the Strategic Plan would be developed by a private entity and would help to spur much of the commercial development at the waterfront, this portion of development would be either built simultaneously with the marina facilities or subsequent to their installation. Finally, open space and habitat restoration, as well as the proposed environmental center and recreation area would be implemented following completion of the marina and residential uses. It would be expected that construction of infrastructure would last approximately 12-24 months with initial use of the marina and/or occupancy of the residential units expected within an additional 2-10 years (2010 to 2018).

3.8 Approvals and Permits

County approvals that would be required include:

- Contra Costa County Board of Supervisors 4/5 vote to make the proposed adjustment to the Urban Limit Line;
- Contra Costa County East County Regional Planning Commission recommendation of approval and County Board of Supervisors approval of the tentative subdivision map;

[5] The County may decide to break up the construction of marina support facilities into separate and later phases.

- Contra Costa County East County Regional Planning Commission recommendation for and County Board of Supervisors certification of this EIR;

- Contra Costa County Board of Supervisors approval of design guidelines proposed for the area not currently included as part of the Planned-Unit Zoning District Program; and

Additional approvals and/or permits could also be required from:

- Regional Water Quality Control Board for an National Pollutant Discharge Elimination System (NPDES) permit for construction dewatering and Clean Water Act Section 401 ;

- San Francisco Bay Conservation and Development Commission (BCDC) permit;

- Department of Boating and Waterways approval of the new marina layout;

- Department of Toxic Substances Control;

- Contra Costa County Flood Control and Water Conservation District approval of Drainage Master Plan; and

- California Department of Fish and Game Lake and Streambed Alternation Agreement;

- U.S. Army Corps of Engineers Clean Water Act Section 404 and/or Section 10 of the Rivers and Harbors Act Permit.

CHAPTER 4
Environmental Setting, Impacts, and Mitigation Measures

4.1 Land Use and Planning

4.1.1 Introduction

This chapter discusses the local and regional plans and policies applicable to the proposed Strategic Plan and describes the permits and approvals that would be required. Existing land uses in the Strategic Plan Area and the surrounding area are also described, and the impacts of the proposed project are discussed.

The Bay Point Waterfront Strategic Plan Area (Strategic Plan Area) is under the local jurisdiction of Contra Costa County. The Strategic Plan provides a framework for the orderly development and redevelopment of the Bay Point Waterfront Area. The Strategic Plan would facilitate the development of a new marina with related uses, new residential and public uses, and related infrastructure to replace the existing marina, vacant or underutilized land and buildings, and open spaces, by providing land use designations generally consistent with the Contra Costa County General Plan and Bay Point Redevelopment Area Planned-Unit Zoning District Program. The proposed amendments to the General Plan and Zoning District Program would change the existing land use designations governing uses in the Plan Area, and would result in different land uses and land use intensities than currently exist. In addition, the General Plan Amendment would adjust the County's Urban Limit Line.

4.1.2 Setting

Existing Land Uses

Regional

Ranging from urban to rural, land is used in Contra Costa County for many different purposes. The western and northern shorelines are highly industrialized, while the interior sections are suburban/residential, commercial, and light industrial. Approximately 25 percent of the County is devoted to urban uses, while the balance is used for non-urban uses such as agriculture, wetlands, parks, recreation, or general open space and other non-urban uses.

The eastern portion of Contra Costa County is predominantly rural and devoted to agricultural, recreational, and open space uses, with suburban areas along the State Route 4 corridor. Development in the East County is concentrated in collections of small urban communities. Most of the East County residential areas are in the north, in the cities of Pittsburg, Antioch, Oakley, and Brentwood, as well as the unincorporated community of Bay Point. Heavy chemical and steel industries, power plants and some light industry are centered near the Pittsburg-Antioch area. Other smaller facilities are scattered throughout the remainder of the East County. Agricultural uses, farmland, and particularly grazing land, consume most of the acreage in East County. Crops are grown on broad coastal terraces and in narrow alluvial stream valleys, while cattle grazing and dry farming occur on the surrounding foothills. Recreation uses in the east county include the Delta waterways and the Antioch shoreline; a recreational facility at Big Break; Black Diamond Mines and the Contra Loma Regional Park; and others run by the East Bay Regional Park District.

Bay Point

Bay Point is generally bounded by State Route 4 (SR 4) to the south, Loftus Road to the east, Suisun Bay to the north, and Concord Naval Weapons Station to the west. Land uses in the community of Bay Point are predominantly residential. However, Bay Point also includes heavy and light industrial uses. Development of commercial, retail, and residential developments is moving forward to support Bay Point's growing population. Typical of many small communities, the non-manufacturing base consist of grocery markets, contractors, fast food and family restaurants, gas stations, auto repair shops, and convenience stores. The northern shoreline area of Bay Point has been almost entirely retained as open space or recreational areas.

Bay Point Waterfront Strategic Plan Area (Strategic Plan Area)

The Strategic Plan Area is located along the northern shoreline of Bay Point, an area that is currently centered on the existing McAvoy Harbor and the former Harris Yacht Harbor. The Strategic Plan Area consists of about 290 acres of land. Much of the western portion of the Plan Area (the EBRPD and State Lands Commission properties) is considered marshland. The State Lands Commission property is currently open space with trails and the EBRPD property is being planned for a passive use park (see Figure 4.1-1).

The harbor area has few buildings; one building being a vacant former restaurant building relocated to the McAvoy Harbor property. The former Harris Yacht Club building, a metal-sided building, currently exists on the PG&E property. The McAvoy Harbor marina, while in generally poor condition, exists as an operable facility. The marina contains 300 boat slips (240 are covered and 60 are open) ranging from 20 feet to 45 feet. In addition, the marina also provides dry storage space for about 250 boats on trailers, a launching ramp, a guest dock, two boat clubs, a small café, and a fuel dock (see Figure 4.1-2). Land uses in the vicinity of the Plan Area include Suisun Bay to the north, open space to the east and west, and a mix of industrial, residential, and commercial uses to the south.

SOURCES: Google (2005) and ESA (2005)

Figure 4.1-1
Strategic Plan Area Existing Land Uses

NORTH

SOURCES: Google (2005) and ESA (2005)

Figure 4.1-2
Existing Marina Land Uses

Applicable Plans and Policies

Contra Costa County General Plan

The General Plan 2005-2020 is the County's long-range planning document, and contains goals, policies, and specific implementation measures to guide decisions on future growth, development, and the conservation of resources through 2020.

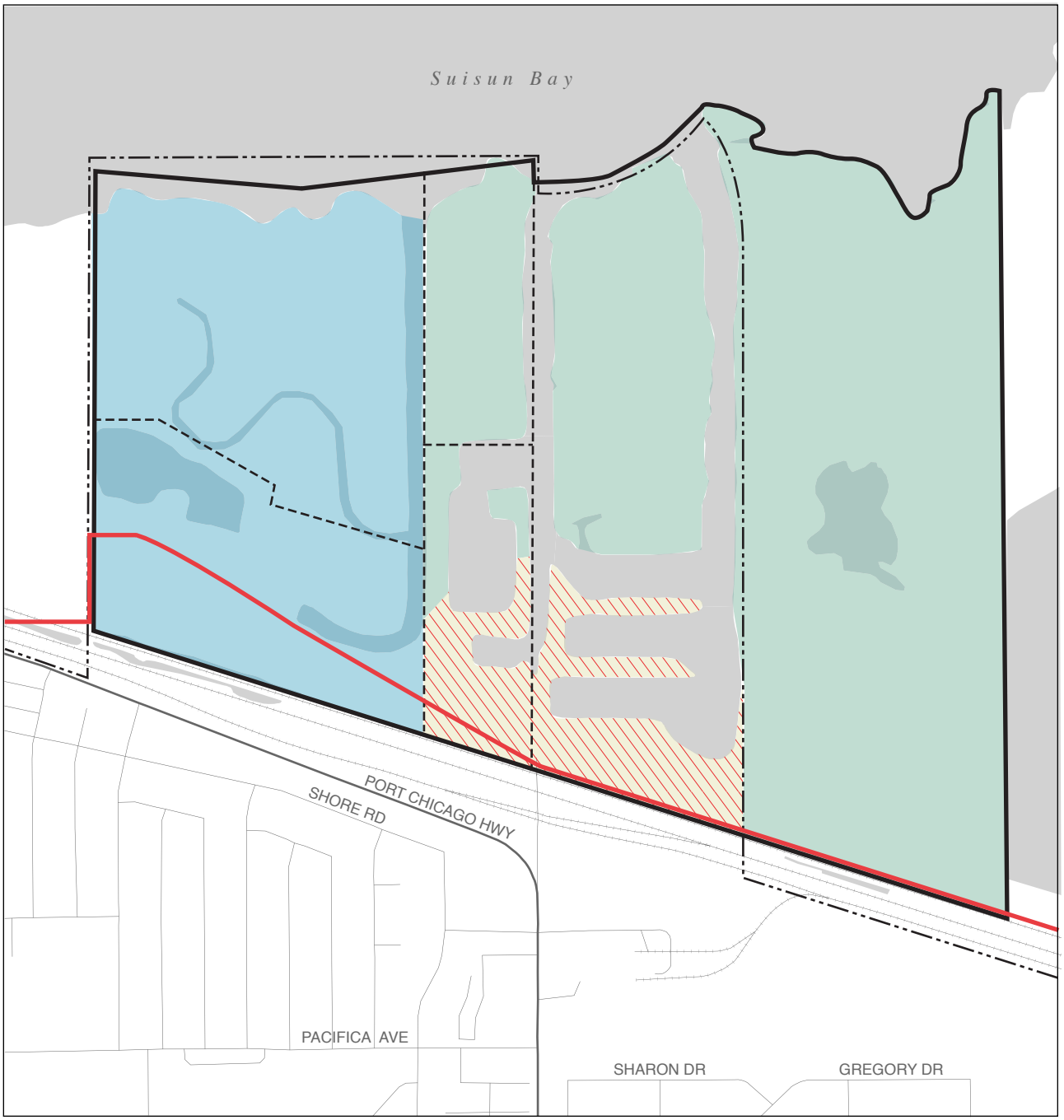
Land Use Element

Land Use Designations. The Strategic Plan Area is currently designated by the General Plan for *Open Space*, *Parks and Recreation*, and *Commercial Recreation*. In general, the *Open Space* land use designation includes publicly-owned open space lands and privately-owned properties for which future development rights may have been deeded to a public or private agency. Appropriate uses in *Open Space* areas involve resource management, such as maintaining marsh and other endangered habitats. Other appropriate uses include low intensity, private recreation for nearby residents. The *Parks and Recreation* designation includes publicly-owned city, district, County, and regional parks facilities and golf courses, whether privately- or publicly-owned. Appropriate uses in this designation are passive and active recreation-oriented activities, and ancillary commercial uses such as snack bars, and restaurants. The *Commercial Recreation* designation allows a range of privately-operated recreational uses of a commercial character, including marinas, campgrounds, gold courses, outdoor sports, and athletic complexes. The *Commercial Recreation* designation allows building heights up to 35 feet and a maximum floor to area ratio (FAR)[1] of 1.0. Figure 4.1-3 shows existing General Plan land use designations of the Strategic Plan Area.

65/35 Land Preservation Standard. The 65/35 Land Preservation Standard, incorporated into the County General Plan when Contra Costa County voters approved Measure C in 1990 (Measure C-1990). Measure C-1990 requires that not less than 65 percent of the land in the County is preserved for parks, open space, agriculture, wetlands, and other non-urban uses. This standard ensures that both within and outside of the Urban Limit Line (ULL), a maximum of not more than 35 percent urban development could occur in the County, irrespective of potential General Plan Amendments in the future. The 65/35 standard operates on a Countywide basis and therefore includes urban and non-urban uses within cities as well as unincorporated areas.

Urban Limit Line. The purpose of the ULL is [1] to ensure preservation of identified non-urban agricultural, open space, and other areas by establishing a line beyond which no urban land uses can be designated during the term of the General Plan and [2] to facilitate the enforcement of the

[1] The floor to area ratio (FAR) is the ratio of floor area to the total site area.



SOURCES: Contra Costa County (1996) and
Contra Costa County (2003)

Figure 4.1-3
Existing General Plan and
P-1 Zoning Program Designations

65/35 Land Preservation Standard. The County General Plan-designated Urban Limit Line (ULL) establishes a boundary beyond which no urban development may be considered within the duration of the General Plan. During the term of the General Plan (2005-2020), properties that are located outside of the ULL may not obtain general plan amendments that would redesignate them for an urban land use. Under certain conditions, the ULL can be changed provided it does not violate the 65/35 Land Preservation Standard. To make an adjustment to the ULL, a public hearing and a 4/5 Board of Supervisors vote would be required. The Board of Supervisors must make at least one of the following seven findings (based on substantial evidence in the record) to approve an adjustment to the ULL:

- a natural or man-made disaster or public emergency has occurred which warrants the provision of housing and/or other community needs within land located outside the ULL;

- an objective study has determined that the ULL is preventing the County from providing its fair share of affordable housing or regional housing as required by State law, and the Board of Supervisors finds that a change to the ULL is necessary and the only feasible means to enable the County to meet these requirements of State law;

- a majority of the cities that are party to a preservation agreement and the County have approved a change to the ULL affecting all or any portion of the land covered by the preservation agreement;

- a minor change to the ULL will more accurately reflect topographical characteristics or legal boundaries;

- an objective study has determined that change to the ULL is necessary or desirable to further the economic viability of the east Contra Costa County Airport, and either (i) mitigate adverse aviation related to environmental or community impacts attributable to Buchanan Field, or (ii) further the County's aviation related needs;

- a change is required to conform to applicable California or federal law; or

- a five (5) year periodic review of the ULL has determined, based on the criteria and factors for establishing the ULL set forth above, that new information is available (from city or County growth management studies or otherwise) or circumstances have changed, warranting a change to the ULL.

The EPRPD property, which is currently designated as *Parks and Recreation*, and a small area in the southern portion of the McAvoy Harbor (Trost Family property), which is currently designated as *Commercial Recreation*, are located within the current ULL. This totals approximately 150 acres (52 percent) of the Strategic Plan Area. The PG&E property is located entirely outside of the current ULL (see **Figure 3-3**).

General Plan Land Use Element Policies. The Land Use Element of the General Plan includes the following policies that are applicable to the proposed Strategic Plan:

Policy 3-5: New development within unincorporated areas of the County may be approved, providing growth management standards and criteria are met or can be assured of being met prior to the issuance of building permits in accordance with the growth management.

Policy 3-6: Development of all urban uses shall be coordinated with provision of essential Community services or facilities including, but not limited to, roads, law enforcement and fire protection services, schools, parks, sanitary facilities, water, and flood control.

Policy 3-7: The location, timing and extent of growth shall be guided through capital improvements programming and financing (i.e., a capital improvement program, assessment districts, impact fees, and developer contributions) to prevent infrastructure, facility and service deficiencies.

Policy 3-8: Infilling of already developed areas shall be encouraged. Proposals that would prematurely extend development into areas lacking requisite services, facilities, and infrastructure shall be opposed. In accommodating new development, preference shall generally be given to vacant or under-used sites within urbanized areas, which have necessary utilities installed with available remaining capacity, before undeveloped suburban lands are utilized.

Policy 3-9: Areas not suitable for urban development because of the lack of availability of public facilities shall remain in their present use until the needed infrastructure is or can be assured of being provided.

Policy 3-11: Urban uses shall be expanded only within a ULL where conflicts with the agricultural economy will be minimal.

Policy 3-16: Community appearance shall be upgraded by encouraging redevelopment, where appropriate, to replace inappropriate uses.

Policy 3-21: The predominantly single family character of substantially developed portions of the County shall be retained. Multiple-family housing shall be dispersed throughout the County and not concentrated in single locations. Multiple-family housing shall generally be located in proximity to facilities such as arterial rods, transit corridors, and shopping areas.

Policy 3-28: New residential development shall be accommodated only in areas where it will avoid creating severe unmitigated adverse impacts upon the environmental and upon the existing community.

Policy 3-29: New housing projects shall be located on stable and secure lands or shall be designed to mitigate adverse or potentially adverse conditions. Residential densities of conventional construction shall generally decrease as the natural slope increases.

Policy 3-30: A variety of appropriately-sized, well-located employment areas shall be planned in order that industrial and commercial activities can contribute to the continued economic welfare of the people of the County and to the stable economic and tax bases of the County and the various cities.

General Plan Housing Element Policies. The newly updated Housing Element of the General Plan includes the following policies that are applicable to the proposed Strategic Plan:

Policy 3.2: Encourage and provide incentives for the production of housing in close proximity to public transportation and services

Policy 5.1: Increase access to homeownership for lower and moderate income households

General Plan Conservation Element Policies. The Conservation Element of the General Plan includes the following policies that are applicable to the proposed Strategic Plan:

> *Policy 8-17*: The ecological value of wetland areas, especially the salt marshes and tidelands of the bay and delta, shall be recognized. Existing wetlands in the County shall be identified and regulated. Restoration of degraded wetland areas shall be encouraged and supported whenever possible.
>
> *Policy 8-85*: Natural watercourses shall be integrated into new development in such a way that they are accessible and provide a positive visual element.
>
> *Policy 8-91*: Grading, filling and construction activity near watercourses shall be conducted in such a matter as to minimize impacts from increased runoff, erosion, sedimentation, biochemical degradation, or thermal pollution.
>
> *Policy 8-94*: Applications to expand marine uses shall be carefully evaluated to ensure that a gain, not a loss, of any associated riparian vegetation will result. Runoff of pollutants into marsh and wetland areas from nearby urban development should be prevented by prohibiting any storm sewer outflow pipe in such areas and by requiring berm or gutter structures at the outer boundary of the buffer zones which would divert runoff to sewer systems for transport out of the area.
>
> *Policy 8-96*: Land use activities in the immediate vicinity of harbors and adjacent facilities shall be compatible with the continued optimum commercial and recreational operations of the harbor.

General Plan Open Space Element Policies. The Open Space Element of the General Plan includes the following policies that are applicable to the proposed Strategic Plan:

> *Policy 9-1*: Permanent open space shall be provided within the County for a variety of open space uses.
>
> *Policy 9-3*: Areas designated for open space shall not be considered as a reserve for urban land uses. In accordance with Measure C (1990), at least 65 percent of all land in the County shall be preserved for agriculture, open space, wetlands, parks, and non-urban uses.
>
> *Policy 9-4*: Where feasible and desirable, major open space components shall be combined and linked to form a visual and physical system in the County.
>
> *Policy 9-7*: Open space shall be utilized for public safety, resource conservation and appropriate recreation activities for all segments of the community.
>
> *Policy 9-8*: Development project environmental review will consider the effect of the project on the County's open space resources, whenever the project proposes to convert substantial amounts of land from an open space designation to an urban development designation.
>
> *Policy 9-9*: The County shall preserve open space lands located outside the Urban Limit Line by declining to authorize requests for general plan amendment studies which would result in redesignation of such lands to urban land use designations. The County shall not designate any open space land located outside the ULL for an urban use. A substantial portion of land developed within the ULL shall be retained for open space, parks and recreational uses (Contra Costa County, 1996).

General Plan Safety Element Policies. The Safety Element of the General Plan includes the following policies that are applicable to the proposed Strategic Plan:

Policy 10-41: Buildings in Urban development near the shoreline and in flood-prone areas shall be protected from flood dangers, including consideration of rising sea levels caused by the greenhouse effect.

Policy 10-42: Habitable areas of structures near the shoreline and in flood-prone areas shall be sited above the highest water level expected during the life of the project, or shall be protected for the expected life of the project by levees of an adequate design.

Contra Costa County Zoning Ordinance

Contra Costa County's Zoning Ordinance, most recently updated in November 2004, regulates land use and development of land within the County. The Zoning Ordinance includes identification of allowed land uses, development standards (e.g., lot size, building height, setbacks, etc.), parking requirements, and the placement of signs.

The entire Strategic Plan Area is currently zoned P-1, *Planned Unit District*. The P-1 District is intended to allow diversification in the relationship of various uses, buildings, structures, lot sizes and open spaces while insuring substantial compliance with the general plan and the intent of the county code in requiring adequate standards necessary to satisfy the requirements of the public health, safety, and general welfare. Specific development requirements for the Planned Unit District is discussed in the following paragraph.

Bay Point Redevelopment Area Planned-Unit Zoning District Program

The County-initiated Bay Point Redevelopment Area Planned-Unit Zoning District Program (P-1 Zoning Program), adopted by the County Board of Supervisors on February 11, 2003, applies to the Strategic Plan Area. The P-1 Zoning Program, which consists of a Land Use Map, Development Standards, a Land Use Matrix, Conditions of Approval, and Design Guidelines, provides development requirements for properties within the P-1 Zoning Program Area, which is zoned P-1 on the County Zoning Map. Wherever there appears to be a conflict between this P-1 Zoning Program and the County Ordinance Code, the P-1 Zoning Program prevails. Consistent with the General Plan Land Use designations, the EBRPD and State Lands Commission properties are designated by the P-1 Zoning Program as *Parks and Recreation*; the McAvoy harbor property is designated *Open Space* (to the north) and *Commercial Recreation* (to the south); and the PG&E property holding on the eastern portion of the Strategic Plan Area is designated *Commercial Recreation* and *Open Space* (see Figure 4.1-3). In the *Parks and Recreation* and *Open Space* designations building heights are restricted to 35 feet, which the P-1 Zoning Program allows building heights up to 50 feet and a maximum FAR of 0.40 in the *Commercial Recreation* designation. Figure 4.1-3 shows existing P-1 Zoning Program designations of the Strategic Plan Area.

The P-1 Zoning Program contains the following relevant development conditions of approval that would be applicable to the proposed Strategic Plan:

Condition of Approval 38: Building bulk, height, land coverage, visual appearance from adjacent land, and design compatibility with existing adjoining development and land use designation, shall be considered and controlled;

Condition of Approval 42: Development applications shall ensure that adequate buffer zones are provided between unlike land uses. (Contra Costa County, 2003)

Redevelopment Plan for the Bay Point Redevelopment Area (formerly West Pittsburg)

The current Redevelopment Plan for the Bay Point Redevelopment Area (Redevelopment Plan) covers the western portion of the Strategic Plan Area. The Redevelopment Plan adopts the land uses set forth in the General Plan as the permitted uses within the Redevelopment Area. It is intended that the land uses set forth in the General Plan now, or as it may be amended, shall be the land uses that govern the Redevelopment Plan. The Redevelopment Plan states that "[n]o use or structure, which, by reason of appearance, traffic, smoke, glare, noise, odor, or other similar factors, would be incompatible with the surrounding areas or structures shall be permitted in any part of the [Redevelopment] Area."

The Redevelopment Plan was completed to: [1] stimulate the construction of new affordable housing in the Redevelopment Project Area; [2] to upgrade the existing residential neighborhoods through rehabilitation of a substantial number of existing housing units, the facilitation of infill housing construction, and development of neighborhood mini-park, tot lot, and landscaping improvements; [3] to provide major infrastructure improvements in the Redevelopment Project Area in order to better serve the existing area residents and businesses, as well as to accommodate new residential, commercial, and industrial development; [4] to revitalize and expand commercial development in the area; and [5] to stimulate new industrial development in the Redevelopment Project Area in order that it may become a productive and attractive economic center, providing jobs for community residents and enhancing the local tax base. Corresponding with the goals outlined, the specific objectives of the Redevelopment Plan include:

Objective 1: Assist in new affordable housing development;

Objective 2: Strengthen existing residential neighborhoods;

Objective 3: Provide infrastructure improvements;

Objective 4: Facilitate commercial development; and

Objective 5: Facilitate Industrial Development. (Contra Costa County, 1987)

East Bay Regional Park District Master Plan

The 1997 East Bay Regional Park District Master Plan (EBRPD Master Plan) defines the vision and the mission of East Bay Regional Park District (EBRPD) and sets priorities through 2007. It explains the District's responsibilities and provides policies and guidelines for achieving standards of service in resource conservation, management, interpretation, public access, and recreation. The Master Plan is designed to maintain a balance between the need to protect and conserve resources and the recreational use of parklands. It was prepared with the participation of the District's citizen-based Park Advisory Committee and with review and comment from the community. The District's first Master Plan was approved in 1973. Since then, the EBRPD Master Plan has been revised every six to seven years to reflect new circumstances to which the District must respond.

The EBRPD property holding in the Strategic Plan Area is identified in the Master Plan as an existing EBRPD parkland, the Bay Point Shoreline. The Bay Point Shoreline is classified as a Regional Shoreline, which is an area or a group of smaller shoreline areas that are connected by trail or water access. Regional shorelines contain a variety of natural environments and manageable units of tidal, near-shore wetland, and upland areas that can be used for scientific, interpretive, or environmental purposes and/or contain sufficient land and water to provide a variety of recreational activities. The Recreation/Staging Unit providing for public access and services may comprise no more than 30 percent of a Regional Shoreline (EBRPD, 1997). In February 2001, the EBRPD Board adopted the Bay Point Regional Shoreline Land Use Plan for the approximately 51 acre Bay Point Shoreline. The goals of the Land use Plan are to provide resource management (including wetland restoration), interpretative facilities, public recreation, shoreline access and regional trails connections.

San Francisco Bay Conservation and Development Commission and the San Francisco Bay Plan

The Bay Conservation and Development Commission (BCDC) is the California state commission charged with the protection and enhancement of San Francisco Bay. The San Francisco Bay Plan (Bay Plan) was originally adopted by BCDC in 1968 and transmitted to the California Legislature and the Governor in 1969, thereby completing its original charge given to it in the provisions of the McAteer-Petris Act of 1965, which mandated the study of the Bay. Among other conclusions, the Bay Plan concluded that "[t]he most important uses of the Bay are those providing substantial public benefits and treating the Bay as a body of water, not as real estate." Major plan proposals in the Bay Plan include the development and preservation of land for water-related industry; development of waterfront parks and recreation facilities; maintenance of wildlife refuges in diked historic baylands; and encouragement of private shoreline development (i.e., water-oriented housing) (BCDC, 2003).

Bay Conservation and Development Commission Jurisdiction

A large portion of the Strategic Plan Area is located within BCDC Bay and shoreline band jurisdiction (see Figure 4.1-4). The Bay jurisdiction includes all tidally influenced portions of the site up to Mean High Tide or, in tidal marshes, up to 5 feet above mean sea level. The shoreline band jurisdiction is a 100-foot-wide portion of the upland measured inland from the edge of the Bay jurisdiction. In addition, due to the history of the Trost Family property holding, BCDC has Bay jurisdiction over a larger portion of that site. Previously, material dredged out of the State Lands Channel that borders the Trost Family's west property line was sidecast onto the Trost site and a road and parking area were created on top of this fill for the marina. Much of that fill occurred within tidal marshes. The edge of the Bay was established by BCDC based on a review of aerial photographs and the history of fill at the site (Sampson, 2004). A 1993 settlement agreement gives BCDC jurisdiction over areas of the Strategic Plan that meet its standard criteria for jurisdiction under current conditions and in addition. BCDC also has jurisdiction over filled areas that were not authorized when the fill was placed (Sampson, 2004).

Strategic Plan Area Boundary

Approximate 100-foot Shoreline Band Jurisdiction

Approximate Edge of Bay + 5 feet above Mean Sea Level Jurisdiction

NOT TO SCALE

NOTE: Jurisdiction boundaries shown are approximate and are subject to change by BCDC.

SOURCES: Google (2005), ESA (2005) and BCDC (2005)

Figure 4.1-4
Approximate BCDC Jurisdiction

Bay Plan Policies

Applicable policies that specifically relate to other resource areas are discussed in the other resource sections in Chapter 4 of this EIR.

Dredging and Filling. A permit from BCDC is required for any Bay filling or dredging within BCDC jurisdiction. A permit must be obtained prior to placing fill or dredging. For purposes of the Bay Plan, fill is defined to include earth or any other substance or material placed in the Bay, including piers, pilings, and floating structures moored in the Bay for extended periods. Public hearings must be held on all permit applications except those of a minor nature. The BCDC policies for Dredging, Fills in According the the Bay Plan, and Fill for Bay OrientedCommerical Recreation, and Fill for Bay-Oriented Public Assemby on Privately-owned Property are presented in Appendix C.

Shoreline Development. A permit from BCDC is required before proceeding with shoreline development. Permits may be granted or denied only after public hearings and after the process for review and comment by the city or county has been completed. The Commission should approve a permit for shoreline development if the agency specifically determines that the proposed project is in accordance with defined standards for use of the shoreline, provision of public access, and advisory review of appearance. The Strategic Plan Area is not located in a BCDC designated priority land use area and therefore, the shoreline area should be used in any manner that would not adversely affect enjoyment of the Bay and shoreline by residents, employees, and visitors within the area itself or within adjacent areas of the Bay and shoreline. The McAteer-Petris Act specifies that for areas outside the priority use boundaries, the Commission may deny a permit application for a proposed project only on the grounds that the project fails to provide maximum feasible public access to the Bay and shoreline consistent with the project. Shoreline development should increase public access to the Bay to the maximum extent feasilbe. The following policies related to *Other Uses of the Bay and Shoreline*, *Public Access to the Bay*, and *Appearance, Design, and Scenic Views* would be applicable to shoreline development in the Strategic Plan Area. Additional applicable policies related to Public Access are discussed in Section 4.3, *Public Services and Recreation* and policies related to Appearance, Design, and Scenic Views are discussed in Section 4.2, *Aesthetics*.

Other Uses of the Bay and Shoreline

Policy 1: Shore areas not proposed to be reserved for a priority use should be used for any purpose (acceptable to the local government having jurisdiction) that uses the Bay as an asset and in no way affects the Bay adversely. This means any use that does not adversely affect enjoyment of the Bay and its shoreline by residents, employees, and visitors within the site area itself or within adjacent areas of the Bay or shoreline.

Policy 2: Accessory structures such as boat docks and portions of a principal structure may extend on piles over the water when such extension is necessary to enable actual use of the water, e.g., for mooring boats, or to use the Bay as an asset in the design of the structure.

Policy 3: Wherever waterfront areas are used for housing, whenever feasible, high densities should be encouraged to provide the advantages of waterfront housing to larger numbers of people. (BCDC, 2003)

4.1.3 Impacts and Mitigation Measures

Standards of Significance

The land use analysis presented below evaluates the consistency of the Strategic Plan with the type and intensities of the existing and planned land uses surrounding the project site. Potential land use conflicts or incompatibility with adjacent areas are usually the result of other environmental effects, such as the generation of noise or objectionable odors. Potential land use conflicts to adjacent areas resulting from the effects the Strategic Plan are discussed below. Other effects of the Strategic Plan to nearby areas are discussed in detail in other relevant sections of the EIR.

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would be considered to result in a significant land use impact if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Impacts

Impact 4.1.1: Adoption of the Strategic Plan or implementation of the Strategic Plan projects would not disrupt or divide an established community. Construction generated by infrastructure and roadway improvements and the eventual construction of a full-scale marina and approximately 450 residential units could result in temporary disruptions to adjacent land uses. (Less than Significant)

As discussed in Chapter 3, *Project Description*, construction activities for the marina and necessary infrastructure for the Strategic Plan Area could begin as early as 2007; construction of the residential units could also begin as early as 2007. Proposed onsite construction would include demolishing existing buildings and grading the site; excavations, dredging, and filling to reconstruct the marina; installing new utilities; placing foundations; construction and finishing new buildings; improving the street network; and paving and landscaping the site. Construction off-site infrastructure also would result in off-site effects.

Project construction-related activities which could adversely affect adjacent land uses are discussed in Sections 4.6, *Transportation and Traffic*, 4.7, *Air Quality*, and 4.8, *Noise*. Mitigation measures identified in these sections would mitigate all potential construction-associated land use impacts to a less than significant level.

Mitigation: No additional required.

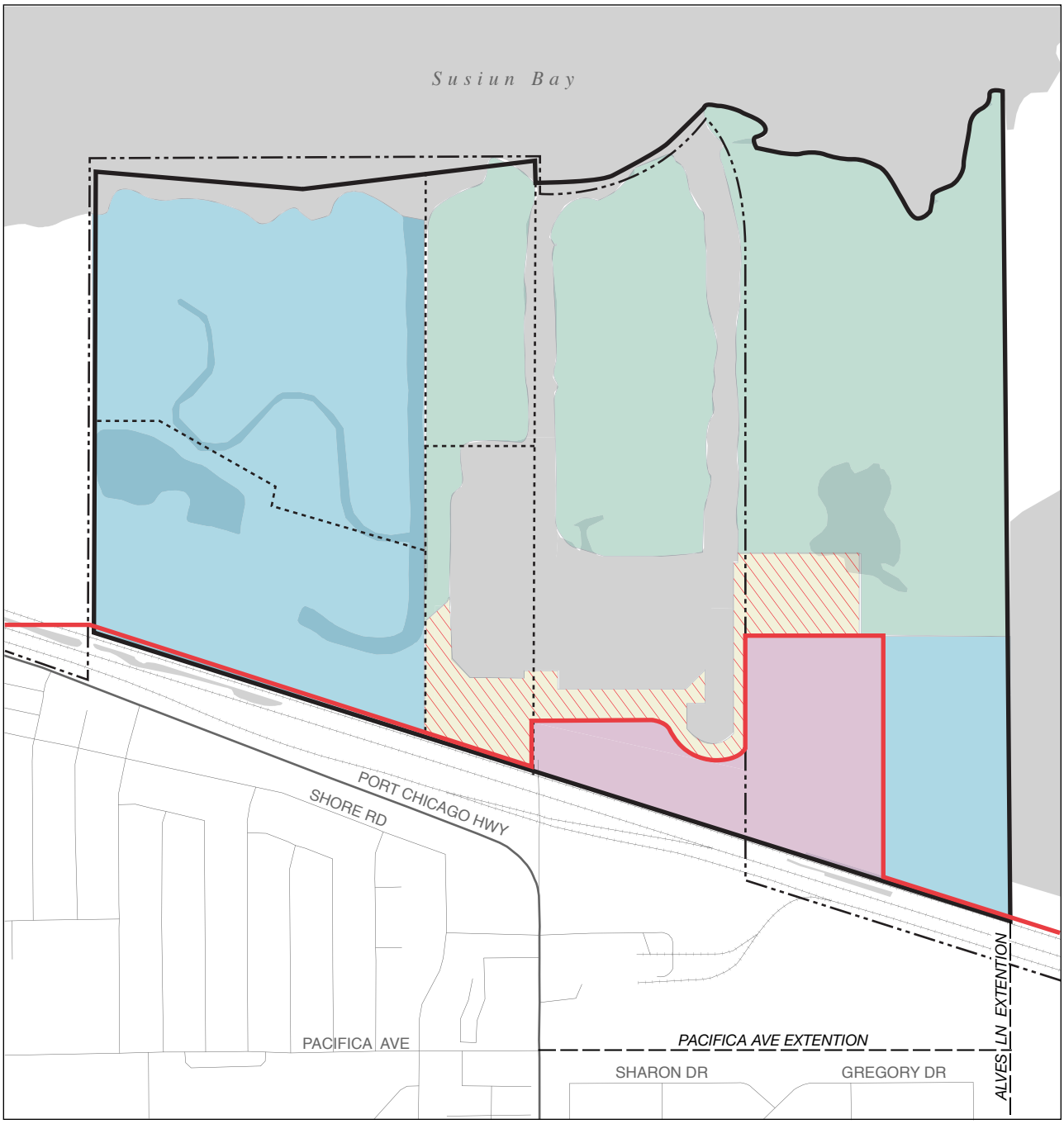
Impact 4.1.2: Implementation of the Strategic Plan, including the proposed amendments to the General Plan and P-1 Zoning District, and construction and operation of the new marina, marina support uses, and the approximately 450 residential units would result in changes in land uses within the Bay Point Waterfront Area and could conflict with adopted applicable land use plans and policies. (Potentially Significant)

Consistency with the Contra Costa County General Plan

The General Plan currently designates the project site for parks, commercial recreation and open space uses. The proposed amendments would change the General Plan land use designations for portions of the Strategic Plan Area from *Commercial Recreation* to *Multiple Family Residential – Medium Density* and from *Open Space* to *Multiple Family Residential – Medium Density* (MM), *Commercial Recreation*, and *Parks and Recreation* (see Figures 4.1-3 and 4.1-5). As stated above in the Setting section, *Commercial Recreation* allows a range of privately-operated recreational uses of a commercial character, including marinas. The *Commercial Recreation* designation allows building heights up to 35 feet and a maximum FAR of 1.0. As also stated in the Setting section, the *Parks and Recreation* designation includes publicly-owned city, district, County, and regional parks facilities; appropriate uses include passive and active recreation-oriented activities, and ancillary commercial uses such as snack bars and restaurants. The MM land use designation allows between 12 and 21.9 multiple family units per acre. Population densities within the MM land use designation normally range from 30 to 55 persons per acre.

Under the Strategic Plan, approximately 450 residential units, a new marina with about 568 berths, a restaurant, buildings that would house the proposed marina supports uses, and the harbor master building would be built by approximately 2010. Under the Strategic Plan, basic infrastructure (i.e., roads and utilities) would be extended from the south edge of the Plan Area (on the south side of the railroad tracks at Port Chicago Highway) to provide adequate urban services and to meet water service fire flow requirements, which would support the proposed changes in land use. In addition, as part of the General Plan Amendment, Pacifica Avenue would be extended eastward to meet with the northern extension of Alves Lane which would provide a second access to the Strategic Plan Area (see Figure 3-5). The infrastructure and roadway improvements would complement the change in land use and would provide increased accessibility to the new land uses.

The General Plan Amendment would change the existing land use designations governing land use at the project site, and would result in new residential densities and non-residential intensities than currently exist. Physical impacts are discussed in their respective sections of this EIR. The number of buildings, building massing, and location of buildings and parking on the project site would also change from existing conditions. The Strategic Plan would allow for the demolition of the existing onsite buildings and the development of a new marina and residential, commercial recreation, and recreational uses. The proposed new land uses would change a marina-oriented and open space area into an area consisting of a marina that would be interrelated with the surrounding



SOURCE: Contra Costa County (2004)

Figure 4.1-5
Proposed General Plan and
P-1 Zoning Program Designations

residential and public recreational uses. In addition, some development proposed under the Strategic Plan would occur within the jurisdiction of BCDC and would thus be subject to the policies of the San Francisco Bay Plan and conditions of the BCDC permit.

The proposed amendment to the General Plan would be consistent with the *Land Use, Conservation,* and *Open Space Elements'* policies identified above in the Setting section. In particular, the Strategic Plan would be consistent with *Land Use Element* Policy 3-21 which seeks to disperse "multiple-family housing…throughout the County and not concentrated in single locations…in proximity to facilities such as arterial roads, transit corridors, and shopping areas" and Policy 3-16, which states that "[c]ommunity appearance shall be upgraded by encouraging redevelopment, where appropriate, to replace inappropriate uses." The Strategic Plan would also be consistent with *Conservation* Policy 8-96, which seeks to ensure that "[l]and use activities in the immediate vicinity of harbors and adjacent facilities…[are] compatible with the continued optimum commercial and recreational operations of a harbor" and *Open Space* Policies 9-1 (provide permanent open space within the County for a variety of open space uses) and 9-7 (utilize open space for public safety, resource conservation, and appropriate recreation activities for all segments of the community).

To implement the Strategic Plan, the existing ULL would need to be adjusted (see below for additional information) to accommodate the proposed residential development. Implementation of the Strategic Plan, which includes adjustment of the ULL to accommodate the proposed residential development would ensure that development would not conflict with *Land Use* Policy 3-11 which states that "[u]rban uses shall be expanded only within a ULL, where conflicts with the agricultural economy will be minimal" and *Open Space* Policy 9-9, which seeks to "preserve open space lands located outside the Urban Limit Line by declining to authorize requests for general plan amendment studies which would result in redesignation of such lands to urban land use designations" and to "not designate any open space land located outside the ULL for an urban use" and to retain "[a] substantial portion of land developed within the ULL…for open space, parks and recreational uses."

Circulation Element. As part of the implementation of the Strategic Plan, Pacifica Avenue would be extended east from Port Chicago Highway and then north via the northern extension of Alves Lane creating a new second crossing of the railroad tracks to the Strategic Plan Area. The proposed General Plan Amendment would add these road extensions to the *Transportation and Circulation Element* of the General Plan. The easterly extension of Pacifica Avenue and northerly extension of Alves Lane would complement the change in land use and would provide increased accessibility to the new land uses.

Consistency with the Contra Costa County Zoning Ordinance

Under the Strategic Plan, the Strategic Plan Area would continue to be zoned P-1, *Planned Unit District*. Specific development requirements in the P-1 district for the Strategic Plan Area are contained in the P-1 Zoning Program (see below).

Consistency with the Bay Point Redevelopment Area Planned-Unit Zoning District Program

Development of the residential units and the sports fields would not be allowed under the current P-1 Zoning Program. Proposed residential uses are not currently allowed in the existing *Commercial Recreation* and *Open Space* zoning designations. Additionally, proposed marina support uses and recreational facilities are not allowed in the *Open Space* designation. The proposed amendments to the P-1 Zoning Program would replace a portion of the existing *Commercial Recreation* designation with a *Multiple Family Residential – Medium Density* (MM) designation (see Figures 4.1-3 and 4.1-5), which would be consistent with the proposed General Plan Amendments and would accommodate the residential uses proposed by Strategic Plan. The MM designation allows between 12 and 20.9 multiple family units per acre, building heights up to 45 feet, and maximum lot coverage of 50 percent.

The proposed P-1 Zoning Program amendment would support the implementation of the proposed General Plan Amendment. The new P-1 Zoning Program designations, like the proposed General Plan Amendment, would result in land uses that are internally consistent (within the project site) and that would also be compatible with surrounding open space land uses. As described above (under *Contra Costa County General Plan* – Land Use Designations), under the Strategic Plan, the proposed primary use would continue to be the marina; however, under the Strategic Plan, about 450 new residential units would be developed in an area that is not currently designated for residential use. Nonetheless, a full-scale marina in the Strategic Plan Area would provide a unique location for development of complementary waterfront housing and would create a separate marina-oriented neighborhood within the larger Redevelopment Area. As required by the P-1 Zoning Program, the residential uses would be setback by a minimum of 10 feet from the lot line, and all setback areas would be required to be landscaped, providing an additional buffer between the proposed residential uses and the railroad tracks. The noise and traffic impacts associated with the proposed residential uses and the existing railroad tracks are discussed in Sections 4.6, *Transportation* and 4.8, *Noise*.

Consistency with the Redevelopment Plan for the Bay Point (formerly West Pittsburg) Redevelopment Area

The proposed General Plan Amendment to change a portion of the PG&E property from *Commercial Recreation* to *Multiple Family Residential – Medium Density and Open Space* to *Park and Recreation* would continue to be consistent with the Redevelopment Plan, because the land uses set forth in the General Plan, are also the land uses that govern the Redevelopment Plan.[2] The Strategic Plan would also serve as a tool to implement the Redevelopment Plan since it would provide infrastructure improvements, including extension and upgrade of utilities and addition of roadway access to the Strategic Plan Area, to accommodate new residential and commercial development (Redevelopment Plan Goal and Objective 3) and revitalize and expand commercial development in the area (Redevelopment Plan Goal and Objective 4).

[2] The only portion of the Strategic Plan Area within the Redevelopment Area that a change in land use designation is proposed, although due to the reconfiguration of the basin, the McAvoy side may also change.

Consistency with the East Bay Regional Park District Master Plan

The EBRPD Master Plan identifies the EBRPD property holding in the Strategic Plan Area as an existing parkland (the Bay Point Shoreline). In February 2001, the Board adopted the Bay Point Regional Shoreline Land Use Plan for the approximately 51 acre park. The goals of the Land Use Plan are to provide resource management (including wetland restoration), interpretative facilities, public recreation, shoreline access and regional trails connections. Under the Strategic Plan, the EBRPD property would continue to be maintained as a parkland and there would exist the opportunity to tie the EBRPD property together with the remaining portion of the Strategic Plan Area with shared trails and/or facilities.

Consistency with the San Francisco Bay Plan

Because a large portion of the Strategic Plan Area lies within BCDC jurisdiction (see Figure 4.1-4), and development of those portions would be subject to the San Francisco Bay Plan. The County and/or future developers of the Strategic Plan Area will need to obtain permits for dredging and filling and development on the shoreline from BCDC prior any construction activities begin. Physical impacts related to dredging and filling are discussed in Sections 4.9, *Hazards and Hazardous Materials*, 4.10, *Hydrology and Water Quality*, and 4.12, *Biological and Marine Resources*. The project's ability to provide adequate public access and recreational opportunities is addressed in Section 4.3, *Public Services and Recreation*.

In the following discussions, aspects of the Strategic Plan that involve filling of the Bay or that could conflict with specific objections stated by BCDC are discussed, and measures are presented that would reduce the quantity of fill or respond to these specific objections. Mitigation measures are listed at the end of the section.[3] It should be noted that BCDC would look at a development plan for the site as a whole and apply policies that address the development specifically.

Marina Reconfiguration. A permit from BCDC would be required for all dredging and filling (including placement of piers and pilings) associated with the new marina layout. The new marina would have to be consistent with Bay Plan *Dredging* Policy 2. The dredging would result in a new marina that would be a water-oriented use according to the Bay Plan. Implementation of Mitigation Measures 4.10.1 through 4.10.5 and 4.12.1 through 4.12.18 would ensure that other criteria set forth in this policy would be met. The marina would be reconfigured using only the amount of fill that currently exists at the marina (material dredged and material filled would be at a 1:1 ratio). In accordance with Policy 1 *Fills in Accord with the Bay Plan*, new fill would be placed to improve shoreline appearance and public access. Additionally, in accordance with Policy 1*Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly on Privately-owned Property*, the new fill would be for Bay-oriented commercial recreation and public assembly purposes and it would provide for improved shoreline appearance and public access to the Bay. Also, consistent with Policy 2 *Other Uses of the Bay and Shoreline*, most of the fill that would comprise the reconfigured marina would be the docks on piles over water that would provide boat slips.

[3] See BCDC Response to NOP in Appendix B.

Marina Support Uses. Marina support uses include a fuel dock, a harbor masters building, a restaurant building, two marina commercial buildings, and an environmental education center. The environmental education center could be located within the 100-foot shoreline band under BCDC jurisdiction. Because the Strategic Plan Area is not located in a BCDC designated priority land use area, the shoreline area may be used in any manner that would not adversely affect enjoyment of the Bay and shoreline and BCDC may only deny a permit application if the proposed project would fail to provide maximum feasible public access to the Bay and shoreline consistent with the project.[4] The proposed environmental education center would be consistent with the San Francisco Bay Plan because in addition to it not impeding enjoyment of the Bay and shoreline, it would have the potential to increase enjoyment of the Bay and shoreline by providing classes that educate the public about the Bay and its ecosystem.

The restaurant building and the western commercial recreation building would be located on existing fill and would not be subject to BCDC jurisdiction. However, the eastern commercial recreation building would be located on new fill and thus, would be subject to BCDC jurisdiction. While this building would be for a water-related use, it is not identified as "likely to be needed" on Bay Plan maps. This area would be filled to improve shoreline appearance and provide improved public access; however, a BCDC permit for the new fill would be needed to obtain prior to any development of this building.

The harbor masters building would also be located on new fill. While the harbor masters building would be a water-oriented use, to minimize the impacts to the Bay, Mitigation Measure 4.1-2a shall be implemented.

In order to operate the marina, a fuel dock is necessary. The proposed location for the fuel dock is part of a marsh. In the past, the Trosts (current owners of the McAvoy Harbor property) had started to develop a roadway in the location where a road is proposed to access the fuel dock (northern perimeter of the McAvoy Harbor). BCDC required that that roadway be restored to marsh and therefore, BCDC has stated that a road proposed for this location is not an appropriate use (Sampson, 2005). Consequently, the proposed location of the fuel dock could potentially conflict with BCDC plans and policies. Mitigation Measure 4.1.2b is provided to address this issue.

Parking, Dry Boat Storage, and Roadways. The western roadway and the proposed parking along it, the northernmost portion of the Alves Lane extension that would terminate at the environmental education center and parking areas at the environmental education center, the sports fields, and to the south of the marina would be located within BCDC jurisdiction and subject to the Bay Plan. None of the parking areas would require new fill except the parking area located to the south of the marina (west of the gazebo) and the County and/or future developers of the Strategic Plan Area would comply with BCDC permits obtained for developing these parking areas. The western road, although it currently exists, was constructed illegally without necessary BCDC permits. BCDC allowed the road to remain but has retained jurisdiction over the existing filled land. BCDC has stated that uses along the road should be water-related and that parking is

[4] Policy 1 *Other Uses of the Bay and Shoreline*

not an appropriate use for this road. In accordance with BCDC stipulations for the McAvoy property, under the Strategic Plan the road would not be greater than 60 feet wide, a 25-foot wide landscaped public access area on the western portion of the 100-foot filled area would remain, and the west-side channel would be expanded by 15 feet.

In addition, as discussed above (under Marina Support Uses), in the proposed location of the east-west running road along the northern edge of the McAvoy Harbor to the fuel dock, BCDC required a roadway to be restored to marsh. BCDC has stated that a road proposed for this location is not an appropriate use (Sampson, 2005). Mitigation Measure 4.1.2b would require that the fuel dock be relocated, thus eliminating the need for a road in this location. Mitigation Measure 4.1.2c further addresses this issue.

Recreational Uses. The sports fields, beach area, view pier (on the shoreline), and launch ramps would be located within BCDC jurisdiction. The beach area, view pier, and launch ramps would enhance public access to and enjoyment of the Bay and shoreline. The sports fields would also attract additional people to the Strategic Plan Area and the other recreational amenities would provide access to and enjoyment of the shoreline and Bay. Additionally, Policy 5 *Recreation* states that playing fields "should generally be placed inland, but may be permitted in shoreline areas if they are part of a park complex that is primarily devoted to water-oriented uses." Because the sports fields would be part of the Strategic Plan, which would be primarily devoted to water-oriented uses, the sports playing fields would also appear to be consistent with BCDC policies. See Section 4.3, *Public Services and Recreation*, for additional information related to public access at the Strategic Plan Area.

Residential. The approximately 450 medium-density residential units would be developed to the south and east of the reconfigured marina. The northeastern portion of the residential development may be located within BCDC jurisdiction; however, development would not require the use of additional fill of the Bay. Consistent with Policy 3 *Other Uses of the Bay and Shoreline*, the proposed housing that would be developed near the waterfront would consist of higher density housing (up to approximately 21.9 multiple family units per acre) and thus, the residential component appears to be consistent with BCDC policies.

> **Mitigation Measure 4.1.2a:** The County and/or future developers of the Strategic Plan Area shall comply with all applicable BCDC policies and provisions set forth in the BCDC permit. To ensure compliance with BCDC policies, the following measures shall be incorporated into the Strategic Plan (see Figure 4.1-6):
>
> - Consistent with Bay Plan Policy 2 related to Other Uses of the Bay and Shoreline, the harbor masters building could be constructed on piles over the water, if such an extension would enable actual use of the water (e.g., for mooring boats, or to use the Bay as an asset in the design of the structure).
>
> - The proposed fuel dock location shall be relocated to avoid conflict with BCDC plans and policies. Potential locations where the fuel dock could be relocated include: [1] to the north or south of the proposed harbor masters building or [2] located off of land near the environmental education center.

NORTH

SOURCES: RRM Design Group (2003) and ESA (2005)

Bay Point Strategic Plan . 204379

Figure 4.1-6
Mitigation Measure
4.1.2a through 4.1.2d

- The proposed east-west running road along the northern edge of the McAvoy Harbor to the fuel dock shall be eliminated from the Strategic Plan. In addition, the northern portion of the western road shall also be eliminated as it would not be necessary to access the fuel docks. Access to the northwestern docks shall be provided via the western road as shown on Figure 4.1-6.

- If parking along the western road doesn't meet BCDC policy (necessary for water-related uses), the parking shall be eliminated and replaced with an extension of the existing 25-foot wide landscaped public access area (approximately 20 feet in addition to the existing 25-foot landscaped public access). An equivalent number of parking spaces shall be relocated outside of BCDC jurisdiction, along the southern side of the new road that would run east-west through the Strategic Plan Area (see Figure 4.1-6).

Implementation of Mitigation Measure 4.1.2 would assure compliance with BCDC policies.

Significance after Mitigation: Less than significant.

Consistency with the 65/35 Land preservation Standard and Urban Limit Line

To implement the Strategic Plan, the existing Urban Limit Line would need to be adjusted. While the non-residential portions of the Strategic Plan could be achieved without changing the ULL, implementing the Strategic Plan's residential component would require that approximately 24 acres of land within the ULL, from the EBRPD property to the proposed residential development at the western edge of the PG&E property, be reallocated to accommodate the proposed residential development. The proposed ULL would then include the residential portion of the Strategic Plan but the EBRPD and Trost property holdings would then be located outside of the ULL (see Figures 3-3 and 4.1-5). This reallocation of land would result in no net gain or loss of land area within or outside of the ULL. The General Plan specifies that under certain circumstances, the ULL can be changed provided it does not violate the 65/35 Land Preservation Standard. Because the proposed ULL adjustment would result in no net loss of land outside of the ULL, it would not violate the 65/35 Land Preservation Standard. Additionally, the General Plan states that to make an adjustment to the ULL, a public hearing and a 4/5 Board of Supervisors vote would be required. Voting to approve a change to the ULL requires the Board of Supervisors to make at least one of seven findings as described in the Setting above. The Board of Supervisors would hold a public hearing and will meet to vote on this planning issue prior to approval of the project.

Cumulative Impacts

Impact 4.1.3: Adoption and implementation of the Strategic Plan, including the proposed amendments to the General Plan and P-1 Zoning District, and construction and operation of the new marina, marina support uses, and the approximately 450 residential units together

with other cumulative development in the Bay Point Area would result in land use changes. (Less than Significant)

Land use effects from the project are local and limited to the site. Future development within the project vicinity is guided by the County's General Plan and associated documents. Planned or approved, but not yet constructed, projects within the vicinity of the proposed Strategic Plan are located south of the project site, as the areas to the east and west are outside of the urban limit line and future development within these areas would not be expected. The area immediately south of the project site is also generally built out pursuant to the General Plan with a mix of residential, industrial and commercial land uses. The project would make a less then considerable contribution to cumulative land use impacts.

Mitigation: None required.

References – Land Use and Planning

Bay Conservation and Development Commission (BCDC), 2003, *San Francisco Bay Plan*, originally adopted 1968, as amended through June 2003.

Contra Costa County, *Contra Costa County General Plan 2005-2020*, January 2005.

Contra Costa County, 2003, *Bay Point Redevelopment Area Planned-Unit Zoning District Program*, adopted February 11, 2003.

Contra Costa County, 1987, *Redevelopment Plan for the West Pittsburg Redevelopment Area (Bay Point Redevelopment Plan)*, adopted December 29, 1987.

East Bay Regional Park District (EBRPD), 1996, *Master Plan 1997 East Bay Regional Park District*, adopted December 17, 1996.

East Bay Regional Park District, Bay Point Regional Shoreline Land Use Plan, adopted February 20, 2001.

Sampson, Ellen M., 2004, Staff Counsel, San Francisco Bay Conservation and Development Commission, written communication, September 30, 2004.

4.2 Aesthetics

4.2.1 Introduction

This section addresses existing visual conditions within the project area and the potential for the implementation of the Strategic Plan to affect those conditions, focusing on the visual character of the site and views from surrounding public areas. Because proposed building designs are schematic at this time, this analysis considers project effects on visual quality based on proposed building siting, massing, and heights. Further refinements in design style, materials, and other details would not change the conclusions of this analysis.

4.2.2 Setting

Regional

Natural features as well as development patterns define Contra Costa County's aesthetic character. Development within the county ranges from urban to suburban to rural, and prominent natural features include ridgelines, open spaces and the bay shoreline. Eastern Contra Costa County, which includes the community of Bay Point, is predominantly rural in character, and development is concentrated in a collection of small communities. Development patterns within the cities of Pittsburg, Antioch, Oakley, and Brentwood are predominantly suburban, and comprised of a number of residential developments. Contrasting with the suburban development in these cities are light and heavy industrial uses, as well as power plants within the Pittsburg-Antioch area. Structures associated with these land uses are adjacent to undeveloped rolling hills that support and agricultural uses, particularly grazing, or open spaces in East County. Development along the estuary shoreline in East County is minimal with the exception of recreation uses and some harbor uses.

Bay Point

The community of Bay Point is generally bounded by State Route 4 to the south, Loftus Road to the east, Suisun Bay to the north, and the Concord Naval Weapons Station to the west. The built environment is comprised of residential development, heavy and light industrial uses, and some commercial and retail uses. Bay Point development is suburban in nature, with structures generally not extending beyond two stories, and similar land uses generally clustered together (i.e. residential uses separated from commercial or retail establishments). Bay Point's northern shoreline has been almost entirely retained as open space or recreational areas and with the exception of portions of the Strategic Plan area, is generally undeveloped.

Strategic Plan Area

The 290-acre Strategic Plan area is within the community of Bay Point, adjacent to the shoreline, and bordered to the south by four active railroad lines, to the north by the San Francisco/Delta

estuary, and to the east and west by open space. Views from the generally flat Strategic Plan area to the south are comprised predominantly of a cluster of one- to two-story single-family homes on the south side of Port Chicago Highway, and intermittent industrial and commercial buildings. The rolling foothills are visible further to the south. Views to the east and west of the project site consist of undeveloped open spaces, with intermittent industrial buildings.

Development within the Strategic Plan area is concentrated at the existing McAvoy Harbor and the former Harris Yacht Harbor. The McAvoy Harbor marina is an operating facility and contains 300 boat slips (240 are covered and 60 are open), and dry storage space for about 250 boats on trailers. Occupied on-site structures are generally associated with McAvoy Harbor marina, including the two-story McAvoy Yacht Club building, covered boat sheds, and a small café. There is also a fuel dock, a launching ramp, a guest dock, and storage space for about 250 boats on trailers. To the east of the McAvoy Harbor marina is the former Harris Yacht Harbor, comprised of a large metal-sided building at one time used as a boat house, and a vacant marina with boat docks and a boat ramp. Further to the east, the area is used for outdoor equipment storage and grazing land. Much of the western portion of the Strategic Plan area (the EBRPD and State Lands Commission properties) is considered marshland, and the State Lands Commission property is currently open space with trails and the EBRPD property is being planned for a passive use park.

Scenic Resources

Scenic resources within Contra Costa County identified in the General Plan include scenic transportation routes, scenic ridges, hillsides and rock outcroppings, and the San Francisco Bay/Delta estuary system. A scenic route is “a road, street or freeway which traverses a scenic corridor of relatively high visual or cultural value.” It consists of both the scenic corridor and the public right-of-way (Contra Costa County, 2005). The General Plan identifies the County’s scenic route system and, within the project vicinity, designates Port Chicago Highway as a scenic route, and State Route 4 as a scenic highway. There are two officially designated California Scenic Highway roadway segments in Contra Costa County including an 8.9-mile roadway segment of State Route 24, from East Portal of Caldecott Tunnel to I-680 near Walnut Creek and a 14.4-mile roadway segment of I-680 from Alameda County line to State Route 24 (California Department of Transportation, 2006). The project site is more than 10 miles from these designated scenic highways. The project site is bordered to the north by the San Francisco/Delta estuary system, and to the south of the site are views of rolling hills. These hillsides are generally undeveloped, with the exception of some, limited, residential development atop the hills. There are no scenic ridges in the immediate vicinity of the project site as identified in the County’s General Plan.

4.2.3 Regulatory Setting

Contra Costa County General Plan

The Contra Costa County General Plan visual resource policies most relevant to the Strategic Plan area include:

Policy 3-15: The design of new buildings and the rehabilitation of existing buildings shall reflect and improve the existing character of the commercial districts in the County.

Policy 3-18: Flexibility in the design of projects shall be encouraged in order to enhance scenic qualities and provide for a varied development pattern.

Implementation Measure 3-x: Promote, devise and maintain appropriate development/redevelopment themes, including design review criteria to provide community identities for the commercial districts of unincorporated communities in the County.

Implementation Measure 3-z: Initiate and enforce, if necessary, specific development standards for both proposed and existing businesses to achieve appropriate landscaping, design and sign structures.

Bay Point Redevelopment Area Planned Unit (P-1) Zoning Plan

The Bay Point Redevelopment Area Planned-Unit (P-1) Zoning District Program was adopted by the County Board of Supervisors on February 11, 2003. The project site is within the P-1 Zoning District, and therefore is subject to its policies and development requirements. The P-1 Zoning Program consists of a Land Use Map, Development Standards, a Land Use Matrix, Conditions of Approval, and Design Guidelines, that provide development requirements for properties within the P-1 Zoning Program area. Design Guidelines, included as part of the P-1 Zoning District Program, are intended to further define visual criteria such as landscaping, signage, refuse screening, lighting and parking ratios. Conditions of Approval relevant to a proposed project include the following:

Development Conditions of Approval

Condition 38: Building bulk, height, land coverage, visual appearance from adjacent land, and design compatibility with existing adjoining development and land use designation, shall be considered and controlled.

Condition 39: A development's design shall be consistent with the Design Guidelines and successfully integrate individual buildings and building groups with surrounding development, other physical features in the area, and existing development which will remain.

Condition 40: The design of structures shall provide for harmonious composition of mass, scale, color, and textures, with special emphasis on the transition from one building type to another, termination of groups of structures, relationships to streets, exploitation of views, and integration of spaces and building forms with the topography of the site and the unique character of the area.

Condition 44: All new residential development shall be consistent with the design guidelines and should include attractive and varied designs which avoid monotonous streetscapes and improve the quality of life for residents. Exterior materials and colors, staggered setbacks, frontage improvements, adequate and safe parking and yard areas and landscaping should be considered.

Condition 50: All outdoor lighting should be directed down and screened away from adjacent properties and streets.

Condition 54: No structure (including but not limited to fences and gateways) or vegetation which obstructs the visibility of and from vehicles approaching the intersection of a street shall be constructed, grown, maintained or permitted higher than

2 feet above the curb grade or 3 feet above the edge of pavement within a triangular area bounded by the right-of-way lines and a diagonal line joining points on the right-of-way lines 25 feet back from the point of intersection.

Residential Conditions of Approval

Condition 57: Design of residential projects should incorporate features of neo-traditional design, consistent with the Design Guidelines.

Condition 58: Exterior materials shall be those customarily used in conventional single-family homes.

Condition 59: Pitched roof and window trim shall be used for new residential construction and remodeling.

Condition 61: Fencing shall be consistent with the design guidelines.

Non-Residential Conditions of Approval

Condition 71: Landscaping on all frontages, and as a buffer to adjacent properties, shall be provided.

Condition 72: Any outdoor storage and maintenance area shall be screened from view from public streets.

Condition 73: All ground, wall and roof mounted equipment shall be screened from public rights-of-way and adjacent properties. Visual screens shall be painted or treated to match the color of the wall or roof.

Condition 81: Street level views of all automobile and truck parking areas from public streets shall be screened.

Condition 83: Limit activities which may result in noise, glare or vibrations extending beyond the property boundary.

Landscaping Conditions of Approval

Condition 92: Parking lots shall be landscaped at a minimum ratio of one tree per four parking spaces for double-loaded stalls and one tree per six spaces for single-loaded stalls.

Condition 93: California native, drought-tolerant plants shall be used as much as possible.

Condition 95: Landscaping shall be maintained by the developer/homeowners.

Signs Conditions of Approval

Condition 96: All signs shall be consistent with the Design Guidelines and subject to an Administrative Permit and the review and approval of the Zoning Administrator.

4.2.4 Impacts and Mitigation Measures

Standards of Significance

The existing visual character of the Plan Area and the surrounding environment was evaluated in terms of visual aesthetics, views within the community, and consistency with Contra Costa County local plans and policies. The urban quality and visual character of an area is determined

by attributes of the site and by patterns in the built environment that are a result of development of the natural and/or cultural character of an area.

Evaluation of potential impacts on existing visual character of locations within the Plan area involved an analysis of project elements that would be introduced by the Strategic Plan, and possible physical changes to the Plan area, and design context introduced by off-site elements.

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would be considered to result in a significant impact to aesthetics if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Impacts

Impact 4.2.1: Development proposed as part of the Strategic Plan would not result in a substantial adverse effect on a scenic resource, or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. (Less than Significant)

Implementation of the Strategic Plan would alter views of the existing marina and associated structures located along the San Francisco/Delta estuary shoreline, which is identified in the Contra Costa County General Plan as a scenic resource. Buildings, boat storage and docks that constitute the existing marina, limit views of the estuary from the south of the project site. The project would redevelop the marina and associated buildings in the project area by removing obsolete or vacant buildings, and constructing a new full-scale marina. Pedestrian access would also be improved along the shoreline as part of the project. These changes would improve the visual environment along this developed portion of the shoreline and would establish a more cohesive and usable marina. The project would be designed in accordance with the General Plan and the Conditions of Approval and Design Guidelines included as part of the P-1 Zoning Program to reduce potential impacts to scenic resources.

Residential development and new playfields proposed under the Strategic Plan would also constitute a visual change on the site. However, because they are setback from the shoreline and located on the site's southeast border, it is not expected that these project components would impact visual resources. These components of the project would also be subject to the General Plan and the Conditions of Approval and Design Guidelines included as part of the P-1 Zoning Program.

As noted in the setting, the project site is located more than 10 miles from a scenic highway designated by the State Scenic Highways Program; therefore, the project would not impact a state scenic highway. Similarly, the project would not impact trees, rock outcroppings or historic buildings.

Based on the above evaluation of the project's impact on scenic resources, the project's effect on scenic resources would be considered less than significant.

Mitigation: None required.

Impact 4.2.2: Development as part of the proposed Strategic Plan would not substantially degrade the existing visual character or quality of the site and its surroundings. (Less than Significant)

The Strategic Plan would alter the visual character of the project site. As noted in the setting section, with the exception of the marina and associated structures, the project site is largely undeveloped, including open space with trails, some grazing land and outdoor equipment storage. The developed portions of the site are generally in poor condition, with a number of the structures vacant. With the implementation of the Strategic Plan, the site would be redeveloped to accommodate a newly constructed and expanded marina and associated facilities, recreation facilities and up to 450 residential units. Development proposed under the Strategic Plan would result in new building construction as well as infrastructure and roadway improvements that would create a more vibrant area. New development on the project site would occur within the P-1 Zoning District and as such, would comply with the development requirements contained within the Conditions of Approval and Design Guidelines, part of the P-1 Zoning Program.

The greatest aesthetic changes that would occur under the Strategic Plan would include the residential development and playfields located in the southeastern portion of the site. This area is presently undeveloped, used primarily for grazing and some outdoor equipment storage. Proposed building style, material and other details are not known at this time; however, in accordance with the development standards for the Multiple Family Residential-Medium Density land use designation, new residential development would be limited to between 12 and 20.9 units per acre, building height would be limited to 45 feet, and maximum lot coverage limited to 50 percent. New residential development and the playfields would also include landscaping to buffer proposed uses from nearby roadways or existing developments. Development would also comply with the Conditions of Approval and Design Guidelines, adopted as part of the P-1 Zoning Program.

The redevelopment of the marina and associated facilities would also constitute an aesthetic change at the site. Redevelopment would improve the visual quality of the site by removing vacant buildings or buildings in poor condition, some which were originally brought to the site from a different location and remodeled to serve their present use. New structures would comply

with applicable design standards, including the height limitation of new buildings to 50 feet, and when complete, new development would reflect a more cohesive design. Implementation of the Strategic Plan would also include improved on-site circulation and access to the area, and would include a continuous boardwalk along the marina waterfront, and roadway improvements. Landscaping would also be introduced to the site. The County would ultimately review landscaping plans for new development under the Strategic Plan as part of project approval.

New development on the site would generally be larger in scale than existing buildings and would be evident to those traveling on existing roadways within the project vicinity. Although new residential buildings could be taller than adjacent residential development to the south of the project site, they would not be so tall as to visually conflict with the context or existing uses in the area.

The Strategic Plan would result in aesthetic changes at the site; however, these changes would not necessarily by considered adverse. Further, because development under the Strategic Plan would be guided by design controls within the General Plan and the Conditions of Approval and Design Guidelines adopted as part of the P-1 Zoning Program, implementation of the Strategic Plan would likely result in beneficial aesthetic effects compared to existing conditions.

Mitigation: None required.

Impact 4.2.3: The proposed Strategic Plan would result in an increase in development that would generate light and glare at the project site. (Less than Significant)

Although the existing harbor and associated uses generates light and glare, with new development proposed under the Strategic Plan, the amount of light and glare produced on-site visible from on- and off-site vantage points would increase. Additional light and glare could contrast with the surrounding open space, and could result in a deterioration of nighttime views from neighboring residential uses. “Spill light” (light that falls on offsite receptors, causing additional unwanted illumination) could be produced from exterior lights on the proposed buildings and marina; from the headlights of vehicles traveling to and from the site; from street, parking lot, and informational signage lighting; and from the reflection of these sources of light on the proposed buildings and paved areas.

The P-1 Zoning Program, applicable to the project area, contains conditions that require outdoor light to be directed down and screened away from adjacent land uses. Compliance with lighting design controls within the General Plan and the Conditions of Approval and Design Guidelines within the P-1 Zoning Program would reduce potential impacts associated with light and glare to less than significant.

Mitigation: None required.

Cumulative Impacts

Impact 4.2.4: The proposed Strategic Plan, in conjunction with cumulative development, would alter the visual character in the project vicinity. (Less than Significant)

Future development within the project vicinity is guided by the County's General Plan and associated documents. Planned or approved, but not yet constructed, projects within the vicinity of the proposed Strategic Plan are located south of the project site, as the areas to the east and west are outside of the urban limit line and future development within these areas would not be expected. The area immediately south of the project site is also generally built out pursuant to the General Plan with a mix of residential, industrial and commercial land uses.

The building height, massing and density associated with the proposed project would be consistent with the planned cumulative density and visual character in the project vicinity established by the P-1 Zoning Program. Therefore, with continued implementation of the design review process, the proposed project, in addition to future development in the vicinity, would not result in cumulative impacts on the visual resources of the surrounding area and the impact would be less than significant.

Mitigation: None required.

References – Aesthetics

California Department of Transportation. State Scenic Highway Program, available online at http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm, accessed February 2006.

Contra Costa County, *Contra Costa County General Plan 2005-2020*, January 2005.

Contra Costa County, *Bay Point Redevelopment Area Planned-Unit Zoning District Program*, adopted February 11, 2003.

4.3 Public Services and Recreation

4.3.1 Introduction

This section describes the types and extent of public services relevant to the proposed Strategic Plan, including fire protection and emergency medical services, police protection, schools, and recreation and parks. Potential impacts to the provisions of these public services are described, as are the relevant regulatory background topics and their applicability to the project. Applicable project impacts and mitigation measures are presented and discussed.

4.3.2 Setting

Fire Protection and Emergency Medical Services

The Contra Costa County Fire Protection District (CCCFPD) provides fire protection and suppression services to Bay Point. In addition, CCCFPD also provides primary fire protection service to the majority of the County, including Pittsburg, Antioch, Oakley, Concord, Clyde, Pacheco, Martinez, Walnut Creek, Lafayette, areas of West County, and some unincorporated areas. It also provides fire prevention services to Orinda, Moraga, Brentwood, and Bethel Island. CCCFPD operates out of 35 stations located throughout its jurisdictional area. CCCFPD maintains mutual aid agreements with the East Diablo Fire Protection District, East Bay Regional Park District, California Department of Forestry, and private industrial companies located within its jurisdiction. These agreements provide the District with emergency response assistance on an as-needed basis.

Battalion 8 of the District provides fire protection services for Pittsburg, Antioch, Oakley, and surrounding unincorporated areas including Bay Point. There are a total of nine stations in the battalion, including two reserve stations located in Oakley. The station located nearest to the Strategic Plan Area is Fire Station 86 located at 3000 Willow Pass Road near Manor Drive in Bay Point (about 1 mile to the southeast of the Project Area). Fire stations also provide rescue and emergency medical because they have the quickest response time of any emergency service.

The response time goal for CCCFPD is to provide service within five minutes of notification. Generally, service can be provided in this time frame to areas located within 1.5 miles of a fire station. The National Insurance Service Office (ISO) has developed a rating system to identify the level of service and risk of substantial fire loss for fire protection districts. The ratings are insurance classifications that range from one to ten, one being best and ten being worst. ISO ratings are based on a number of factors, including personnel, facilities, response times, fire flow capacities, communications, and the general character of development in the area. The District currently has a Class Three ISO rating.

Emergency access to the project site is currently provided via the existing McAvoy Road, which crosses four railroad tracks. Three railroad tracks are used by Union Pacific, while the fourth is

used by Burlington Northern Santa Fe and the Amtrak Capitol Corridor train. The four railroad tracks serve about 32 trains each day. Flashing signals and railroad crossing pavement markings are currently provided on McAvoy Road to help prevent vehicle/train collisions. Safety railroad crossing arms are currently provided for only two of the four tracks. As stated in Section *4.6. Transportation*, traffic on McAvoy Road can be stopped for up to two minutes during the passing of each train. Thus fire protection services to the project site could be delayed by the passing of trains.

Police Protection

The Contra Costa County Sheriff's Department Patrol Division provides uniformed law enforcement services to Bay Point. A network of Station Houses, each of which is commanded by a Lieutenant, enables efficient provision of law enforcement services to the 162,000 residents of the unincorporated areas of the County. Bay Point is within the Martinez Muir Station jurisdiction, which includes Bay Point, Pacheco, and unincorporated Central County. The Station is located at 1980 Muir Road in Martinez. In addition to the provision of traditional police protection services, the Sheriff's Department sponsors a number of programs designed to deter crime in residential neighborhoods. These include Neighborhood Watch programs, which involve fostering acquaintance among neighbors and an attitude of care for neighboring properties, and placement of permanent identification markings on household items and signs on property indicating that valuable items have been marked. These programs can result in reduced rates of theft and other types of crime in neighborhoods.

The Contra Costa County Sheriff's Office serves the unincorporated Contra Costa County, which had a population of 161,754 in 2005. The Office has a total of 552 sworn officers that serve this population, which corresponds to a ratio of 3 sworn officers per 1,000 residents. Likewise, it has a current total of 876 total personnel (sworn and non-sworn), or a ratio of 5 personnel per 1,000 residents (Bromberg, 2006).

There were 522 reported crimes in the Muir Station area as a whole from August 2005 through January 2006, and 355 of those crimes were reported in Bay Point. Crime statistics during the same period indicate that crime in Bay Point is generally higher compared to other areas within the Muir Station jurisdiction (68 percent of all reported crimes in the Muir Station area were in Bay Point). Auto burglary (25 percent), residential burglary (29 percent), theft from vehicle (13 percent), and recovered vehicles (12 percent) generally comprise the largest component of crime in Bay Point. The project area has high demand for service and a steady crime rate (Newman, 2006).

Defensible space design guidelines are also a valuable means of deterring crime in new developments. Defensible space is the concept of designing buildings and neighborhoods to promote the proprietary interest of the residents in neighborhood activities, to permit the identification of suspicious circumstances and persons, and to indicate the potential criminal that he or she would have a high risk of apprehension. According to the Contra Costa County General Plan, principles of defensible space include: a visually well-defined separation between public

and private areas; well-lighted and –windowed apartment stair wells; apartment corridors accessible from only one exterior entrance; windows placed for easy resident surveillance of entryways of public and semi-public areas; absence of interior hiding places; and landscaping that permits surveillance of open areas and entryways (Contra Costa County, 1995). In addition, the Bay Point P-1 zoning program includes conditions of approval for development projects which would include strategies used in "crime prevention through environmental design" processes.

As described above, emergency access to the project site is currently provided via the existing McAvoy Road, which crosses four railroad tracks which serve about 32 trains each day. Traffic on McAvoy Road can be stopped for up to two minutes during the passing of each train. Due to the limited development at the project site, emergency access to the site is considered adequate despite the railroad crossing.

Public Schools

The Mt. Diablo Unified School District (MDUSD) is a K-12 public school district located in Concord that provides public school education services to approximately 37,000 K-12 students. MDUSD covers over 150 square miles, including the cities of Concord, Pleasant Hill, Clayton; portions of Walnut Creek, Martinez, and unincorporated areas including Lafayette, Pacheco, Pittsburg, and Bay Point.

Statistics for MDUSD schools in the project area are shown in Table 4.3-1. Currently, these schools are above or near their student capacities for permanent space, although enrollment is anticipated to decline slightly in the future.

TABLE 4.3-1
ENROLLMENT AND CAPACITIES FOR MDUSD PROJECT AREA SCHOOLS

Schools	Address	Capacity	Enrollment (2005)	Projected Enrollment (2006)
Rio Vista Elementary School	611 Pacifica Avenue, Bay Point	486	397	392
Riverview Middle School	205 Pacifica Avenue, Bay Point	875	913	890
Mt. Diablo High School	2450 Grant Street, Concord	1,914	1,692	1,679

SOURCE: Education Data Partnership (Ed-Data) http://www.ed-data.k12.ca.us, accessed July 12, 2005

School age children living on the project site would be within enrollment areas of Rio Vista Elementary school, located at 611 Pacifica Avenue, Bay Point, approximately half mile from the project site; Riverview Middle School, located at 205 Pacifica Avenue, Bay Point, approximately 1/4 mile from the project site; and Mt. Diablo High School, located at 2450 Grant Street, Concord, approximately eight miles from the project site.

There are currently no provisions within the District for transferring students to other school districts should the school be at or over enrollment capacity. The District is required by law to serve all students living within its boundaries and, instead, has procedures in place to temporarily transfer elementary school students when enrollment capacity becomes an issue. These provisions are not implemented for exceedances of enrollment capacities at middle or high school levels. The District has not made any definite plans to construct new school facilities through the year 2020.

Recreation and Parks

State Parks

The California State Parks system manages two state parks near the proposed Strategic Plan site. Mt. Diablo State Park and the undeveloped John Marsh Home State Park are the closes state park facilities to the plan area. Mt. Diablo State Park is an approximately 20,000 acres park which surrounds a 3,849-foot summit, and includes hiking trails, picnic areas, a visitor center, and campgrounds. It is located approximately ten miles southeast of the City of Walnut Creek. The John Marsh Home State Park, located near the City of Brentwood, contains the historic Stonehouse, home of local pioneer John Marsh and surrounding grounds and is not currently open to the public (Contra Costa County, 2001).

Regional Parks

East Bay Regional Park District

Within Alameda and Contra Costa Counties, the East Bay Regional Park District (EBRPD) manages 94,500 acres; 59 regional parks, recreation areas, wilderness, shorelines, preserves and land bank areas; 29 regional inter-park trails; 1,150 miles of trails within parklands; freshwater swimming areas, boating and/or stocked fishing lakes and lagoons and a disabled accessible swimming pool; 40 fishing docks; three bay fishing piers; 235 family campsites; 42 youth camping areas; two golf courses; 2,082 family picnic tables; 1,707 group picnic tables; interpretive and education centers; and 18 children's' play areas. Ninety percent of EBRPD's lands are protected and operated as natural parklands (EBRPD, 2004).

Regional parks closest to the project site include:

- Bay Point Shoreline, an approximately 150-acre regional shoreline located along the northern coast of the project site, part of which is within the project boundary. The shoreline is comprised primarily or wetlands and marshes. The EBRPD owns approximately 70 acres of the Bay Point Shoreline and leases from the State Lands Commission approximately 80 acres.

- Browns Island, a 595-acre island located at the junction of the Sacramento and San Joaquin rivers, north of Pittsburg, and is comprised primarily of grasslands and tidelands as well as rare and endangered plant species, and a variety of aquatic birds. There are no facilities on the island. Schools

Concord Naval Weapons Station

In addition to the regional parks owned by the EBRPD, the Concord 2030 General Plan, which is now nearing completion, envisions park, open space and recreational uses for a portion of the 5,170-acre Inland Area of the Concord Naval Weapons Station, located several miles southwest of the project area.

Local Parks

Ambrose Recreation and Park District

The Ambrose Recreation and Park District (ARPD) manages approximately 60 acres of recreation and park facilities in and around the Bay Point area, which include after school programs and a community center. Bay Point's parks are designated by the ARPD's 2005 Master Plan as regional parks, community parks, neighborhood parks and vest pocket parks, depending on the size of the park, the population size served and park facilities. While the ARPD currently manages four parks, one of which has a community center, the District anticipates acquiring 28.80 acres of land for the development of four new parks and a Neighborhood Center by 2015.

ARPD uses a per capita ratio of park area to assess the amount of parkland available to the Bay Point residents. Currently there are approximately 60 acres of parkland serving a population of 22,000 residents, with a per capita ratio of 2.72 acres per 1,000 persons, indicating that the project vicinity is slightly underserved by parks and open spaces. To alleviate this, the Master plan recommends acquiring 28.80 acres of parkland from the County, which would allow it to meet the total parkland acreage of approximately 89 acres, thereby allowing the District to meet its objective of providing three acres of parkland for every 1,000 residents. The Master Plan also proposes various improvements to the existing parks and recreation facilities, including resurfacing various courts, improving lighting fixtures, replacing building components and sports equipment.

The proposed project is located within a one-mile radius of the following ARPD-managed parks and recreational facilities:

- Alves Park, a 0.94-acre park located on Alves Lane, approximately half mile from the plan site. Alves Park is comprised of grassy lawn areas for passive recreation.

- Ambrose Community Center and Park, a 7.5-acre park located on Willow Pass Road, approximately one mile from the plan site. The Ambrose Park contains basketball courts, a playground, baseball fields and passive recreation areas. The Community Center provides rental facilities such as a large auditorium, conference room, weight room, and a computer lab.

- Ambrose Park, an 11.53-acre park located on Memorial Way, approximately one mile from the project site. This park contains a swimming pool, picnic areas, and sports facilities.

- Anuta Park, located on Willow Pass Road, approximately half mile from the project area. Anuta Park contains picnic areas and the Anuta Park pavilion, which is available on a first come basis.

The proposed project is also located within a one-mile radius of the following Contra Costa County-managed parks and recreational facilities:

- Lynbrook Park, a 4.13-acre facility located on Kevin Drive near Port Chicago Highway, approximately 1/4 mile from the project site. This park contains playground equipment, a basketball court, open play areas and passive open space.

- Boeger Park, a half acre park located on Caskey Street, approximately two miles from the project site. Boeger Park contains a playground structure and picnic and BBQ areas.

- Hickory Meadows Park, 1/3 acre park on Summerfields and Winterbrook Drives, approximately half mile from the project site. This park contains a playground structure and passive open space.

- Viewpoint Park, a 1/3 acre park located on Pomo Street, approximately one mile from the project site. This park contains a playground structure and passive open space.

Recreation facilities near the plan site are also provided by the Mt. Diablo School District, which maintains 31.71 acres of playgrounds within its schools. During non-school hours and during times of day when these facilities are not being used for school sponsored activities, they are available for public use (ARPD, 2005). Nearby schools include Rio Vista Elementary School, Riverview Middle School, and Mt. Diablo high School (see above).

4.3.3 Regulatory Setting

State

Senate Bill 50

The Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), restricts the ability of local agencies such as Contra Costa County to deny land use approvals on the basis that public school facilities are inadequate. SB 50 establishes the base amount of allowable developer fees at $2.24 per square foot of residential construction and $0.36 per square foot of commercial construction.[1] These fees are intended to address local school facility needs resulting from new development. Public school districts can, however, impose higher fees provided they meet the conditions outlined in the act. Private schools are not eligible for fees collected pursuant to SB 50.

[1] These are current base fees adopted by State Allocation Board (SAB), which is the policy-level body for the programs administered by the Office of Public School Construction within the State Department of General Services. The SAB is authorized by Government Code Section 65995(b)(3) to increase the base fee every two years. In order to levy the fees, school districts must prepare a "nexus" analysis demonstrating why the fees are required and how they will be used.

Regional

San Francisco Bay Plan

BCDC is the federally-designated state coastal management agency for the San Francisco Bay segment of the California coastal zone. This designation empowers the Commission to use the authority of the federal Coastal Zone Management Act to ensure that federal projects and activities are consistent with the policies of the Bay Plan and state law. The San Francisco Bay Plan contains the following findings and policies concerning recreation on and around the bay.

BCDC policies were consulting in determining locations for each type of recreational facility. BCDC Policies related to Marinas, Water-oriented Commercial-Recreation, Waterfront Parks, and All Recreational Facilities are presented in Appendix C.

Local

Contra Costa County General Plan, 2005-2020

The Contra Costa County General Plan, 2005-2020 contains relevant policies and implementation measures pertaining to police, fire, recreation and parks, and schools within its Public Facilities/Services Element, Growth Management Element, and Safety Element. In addition, the Growth Management Element contains relevant performance standards that would be applicable to the Strategic Plan. Performance standards implement the goals and policies of the Growth Management Element. A list of relevant policies, implementation measures are outlined below under each respective category.

Fire Protection and Emergency Medical Services

Policy 7-62: The County shall strive to reach a maximum running time of 3 minutes and/or 1.5 miles from the first-due station, and a minimum of 3 firefighters to be maintained in all central business district (CBD), urban and suburban districts.

Policy 7-63: The County shall strive to achieve a total response time (dispatch plus running and set-up time) of five minutes in CBD, urban and suburban areas for 90 percent of all emergency responses.

Policy 7-64: New development shall pay its fair share of costs for new fire protection facilities and services.

Policy 7-65: Needed upgrades to fire facilities and equipment shall be identified as part of project environmental review and area planning activities, in order to reduce the risk of fire and improve emergency response in the County.

Policy 7-66: Sprinkler systems may be required in new residential structures, where necessary to protect health, safety, and welfare.

Policy 7-71: A set of special fire protection and prevention requirements shall be developed for inclusion in development standards applied to hillside, open space, and rural area development.

Policy 7-72: Special fire protection measures shall be required in high risk uses (e.g. mid-rise and high-rise buildings, and those developments in which hazardous materials are used and/or stored) as conditions of approval or else be available by the district prior to approval.

Policy 7-73: Fire fighting equipment access shall be provided to open space areas in accordance with the Fire Protection Code and to all future development in accordance with Fire Access Standards.

Implementation Measure 7-at: The Community Development Department shall include fire agency code requirements requested by the districts as advisory notes to the applicant within proposed conditions of project approval when the Planning Agency is considering subdivisions, development plans, use permits and other entitlement requests.

Implementation Measure 7-au: Fire protection agencies shall be afforded the opportunity to review projects and submit conditions of approval for consideration to determine whether:

- There is an adequate water supply for fire fighting;
- Road width, road grades and turnaround radii are adequate for emergency equipment; and
- Structures are built to the standards of the Uniform Building Code, the Uniform Fire Code, other State regulations, and local ordinances regarding the use of fire-retardant materials and detection, warning and extinguishment devices.

Implementation Measure 7-av: The County Building Inspection Department and Community Development Department shall submit building and development plan for all new construction, including remodeling, to the local fire protection agency to assure that fire safety and control features are included that meet the adopted codes and ordinances of that agency.

Implementation Measure 7-ba: Continue to levy fire facility fees for new development in unincorporated areas, in accordance with five-year plans.

Implementation Measure 7-bc: Establish a master agreement allowing fire protection agencies to continue to receive tax revenue increases in redevelopment areas, in order to allow agencies to plan for future service needs and financing in these areas.

Police Protection

Policy 7-57: A sheriff facility standard of 155 square feet of station area per 1,000 in population shall be maintained within the unincorporated area of the County.

Policy 7-59: A maximum response time goal for priority 1 and 2 calls of five minutes for 90 percent of all emergency responses in central business district, urban and suburban areas, shall be strived fro by the sheriff when making staffing and beat configuration decisions.

Implementation Measure 7-am: Maintain a sheriff's sub-station in each geographical area of the County (East, West, Central, South Central) to serve the individual needs of that area, if warranted. Facility size should be guided by Policy 7-58 and should be commensurate with staffing needs, with provision for future expansion to match projected increases.

Implementation Measure 7-an: Encourage the Sheriff's Department, in cooperation with the Community Development Department, to develop guidelines for defensible space design of buildings and major subdivision projects. Include such guidelines in the review of development projects to assure that crime-inviting features area reduced or eliminated.

Implementation Measure 7-ao: Encourage the use of citizen action programs sponsored by the Sheriff such as Neighborhood Watch and Operation ID.

Implementation Measure 7-aq: in developing areas the Sheriff protection service standard shall be achieved by creation of a County Service Area and special tax and/or creation of a Mello Roos Community Facilities District that generates special tax revenue to support additional increments of Sheriff patrol necessary to meet the adopted service standard.

Developers, prior to receiving development approvals, should agree (via a Development Agreement or landowner election) to participate in such special funding districts.

Schools

Policy 7-136: The environmental review process shall be utilized to monitor the ability of area schools to serve development.

Policy 7-137: To the extent possible, new residential development, General Plan Amendments, or Rezonings shall, in the absence of the Planning Agency's satisfaction that there are overriding considerations, be required to adequately mitigate impacts on primary and secondary school facilities.

Policy 7-138: The development of quality schools shall be supported by coordinating development review with local school districts including such activities as designating school sites, obtaining dedications of school sites, and supporting local fees, special taxes, and bond issues intended for school construction.

Policy 7-139: The hearing body in reviewing residential projects shall consider the availability of educational facility capacity.

Policy 7-140: school site donation by developers shall be encouraged through the use of density transfer or other appropriate land use alternatives.

Policy 7-141: To the extent possible, the development of school facilities shall be provided in conjunction with and adjacent to local parks and trailways.

Policy 7-142: Adequate provision of schools and other public facilities and services shall be assisted by coordinating review of new development with school districts the cities and other service providers through the Growth Management Program, the environmental review process, and other means.

Policy 7-145: The County expects that all growth impacted school districts, where appropriate, shall actively pursue State and/or Federal funds for school facilities.

Implementation Measure 7-cl: Revise the County CEQA Guidelines to require that the impacts of proposed new developments on the school district be identified.

Recreation and Parks

Policy 9-40: Major park lands shall be reserved to ensure that the present and future needs of the County's residents will be met and to preserve areas of natural beauty or historical interest for future generations. Apply the parks and recreation performance standards in the Growth Management Element.

Policy 9-41: A well- balanced distribution of local parks, based on character and intensity of present and planned residential development and future recreation needs, shall be preserved.

Policy 9-47: Recreational development shall be allowed only in a manner which complements the natural features of the area, including the topography, waterways, vegetation and soil characteristics.

Implementation Measure 9-r: Require that new development meet the park standards and criteria included in the growth management program and set forth in Table 7-3. Ensure that credit for the park dedication ordinance requirements be given for private recreation facilities only after a finding has been adopted that the facilities will be open to and serve the public.

Implementation Measure 9-s: Permit additional marinas to serve the Delta and the Bay in select areas if they meet the following criteria:

1) where projects can be clustered and located adjacent to similar uses;

2) along waterways having an adequate channel width as defined by the State Harbors and Navigation Code;

3) in areas having adequate public vehicular access;

4) where off-site improvements, such as required access roads, can be assigned to development;

5) where adequate on-site sewage disposal can be provided;

6) where located in an area served by a public fire protection district; and

7) when such uses will not conflict with adjacent agricultural uses.

Implementation Measure 9-t: Coordinate with the various school districts in the County to provide for the joint use of recreation facilities.

Implementation Measure 9-x: Work with local unincorporated communities to determine the means of providing local park services where the need presently exists, as well as when development occurs.

Implementation Measure 9-y: Increase the park dedication fee to a level which approaches the local park dedication standards called for this Plan.

Performance Standards. The Growth Management Element of the Contra Costa County General Plan sets forth the following performance standards related to fire protection, public protection and parks and recreation facilities which is applicable to the proposed Strategic Plan:

Fire Protection

Fire stations shall be located within one and one-half miles of developments in urban, suburban and central business district areas. Automatic fire sprinkler systems may be used to satisfy this standard.

Public Protection

A Sheriff facility standard of 155 square feet of station area and support facilities per 1,000 population shall be maintained within the unincorporated are of the County.

Parks and Recreation

Neighborhood parks: 3 acres required per 1,000 population.

Bay Point Redevelopment Area Planned-Unit Zoning District Program

The Bay Point Redevelopment Area Planned-Unit Zoning District Program contains the following relevant conditions for development within the Bay Point Redevelopment Area related to fire protection:

Policy 104: Prior to issuance of a building permit, the Fire District shall review all plans for development.

Policy 105: Sprinkler systems shall be required for all new non-residential development.

Policy 106: Sprinkler systems shall be required in new residential construction if the project is in excess of 1.5 miles from the nearest fire station.

Policy 107: All new buildings and major remodels shall have fire resistant roofs (Class C).

4.3.4 Impacts and Mitigation Measures

Standards of Significance

Based on Appendix G of the CEQA Guidelines, the project would have a significant public service impact if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives for any of the following public services:

  – Fire protection;
  – Police protection;
  – Schools; and
  – Other public facilities.

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Impacts

Fire Protection and Emergency Medical Services Impacts

Impact 4.3.1: The increased population and density resulting from the implementation of the Strategic Plan would involve or require new or physically altered governmental facilities in order to maintain acceptable service ratios, response time, or other performance objectives for fire protection and emergency medical services and facilities. (Significant)

Fire protection, emergency medical services and rescue services would be provided to the Strategic Plan Area by the Contra Costa County Fire Protection District from Fire Station 86, located at 3000 Willow Pass Road, approximately 1.7 miles from the Strategic Plan Area (Carpenter, 2006). This station is staffed with three personnel, one being a paramedic, 23 hours per day, everyday.

From January 1, 2005 through December 31, 2005, the Fire Station responded to 1,958 calls requesting emergency services. The Department estimates that at build-out, the proposed Strategic Plan would increase calls for service by approximately 100 to 150 calls per year (Carpenter, 2006).

The approximately 1,611 new residents resulting from the implementation of the Strategic Plan could increase the number of calls for fire and emergency service. However, the Fire Department indicates that it would be able to provide adequate fire suppression and emergency medical response services to the project site, with existing staff, and that the project would not require

development of new or physically altered facilities (Carpenter, 2006). In accordance with the California Fire Code (CFC), the Fire Department would require that fire prevention measures, such as automatic sprinklers, smoke detectors, fire alarm systems, and fire resistant construction, be incorporated into final project plans for each building. The water system shall also be extended into the project site and be able to deliver fire flow as required by the CFC. All appropriate building and fire code requirements would be incorporated into project construction. The Fire Department would review the project, including provisions for onsite access, exits, and any necessary special equipment to assist firefighters on-site. The project applicant would be required to incorporate the Fire Department's recommendations into the final project.

Construction of new or physically altered facilities would not be required; however the project site is located adjacent to four railroad tracks. When arriving and existing the project site, emergency vehicles would cross these tracks at two railroad crossings, the existing McAvoy Road crossing and the proposed Alves Lane extension crossing, which would be approximately 3,000 feet apart. Given the observed length of trains and the time it takes for a train to pass each railroad crossing, it is likely that both railroad crossings could be closed to vehicular traffic at the same time. Because access to the project site would be limited to these two potentially-blocked locations, at-grade crossings at both McAvoy Road and the proposed Alves Lane extension would result in inadequate emergency vehicle access during train crossings. **Mitigation Measure 4.6.5,** included in Section 4.6, *Transportation*, would minimize this potential risk through adequate signing, striping, and traffic control.

Significance after Mitigation: Less than Significant.

Police Services

Impact 4.3.2: The increased population and density resulting from the implementation of the Strategic Plan may require new or physically altered governmental facilities in order to maintain acceptable service ratios, response time, or other performance objectives for police protection services. (Significant)

Police protection to the Strategic Plan area would be provided by the Muir Station of the Contra Costa County's Sheriff's Office. While there were 522 reported crimes in the Muir Station area as a whole from August 2005 through January 2006, 355 of those crimes were reported in Bay Point.

The project would increase development intensity on the project site as well as increase the onsite population (employees and visitors). This increase could result in an increase in reported crimes. Currently, the project site is staffed with a minimum of two Deputy Sheriffs 24 hours a day, seven days a week. An additional Deputy is assigned during an identified peak service demand, which has been identified as occurring in the afternoon and evening time period. The project area is currently one of high demand for service and a steady crime rate. The Deputy Sheriff's Office

indicated the proposed project would dilute the Office's emergency response capability and therefore, have an adverse impact on public safety. Therefore, the Office stated that an expanded or a newly constructed facility would be necessary to maintain adequate staffing levels and response times if the proposed project is implemented (Newman, 2006). While the Office stated that there are plans underway for increases in police personnel and equipment to accommodate countywide population growth, the proposed project was not considered in these plans (Newman, 2006). The following mitigation measure would address the additional staffing and facilities which the Sheriff's Office has indicated may be required to alleviate the impacts of the proposed project.

> **Mitigation Measure 4.3.2:** As a condition of approval, before the proposed project is implemented, the project sponsor shall coordinate with the Contra Costa County's Sheriff's Office in determining what additional staffing and facilities would be required to mitigate adverse impacts of the proposed development.
>
> In addition, implementing preventive design measures into the future development at the site, such as landscaping, lighting, and security alarms and door locks would increase safety at the site. As part of standard development practices, project plans would be reviewed by the Sheriff's Office, and the project applicant would be required to incorporate the Office's recommendations into the final project design.

Significance after Mitigation: Less than Significant.

Public Schools Impacts

Impact 4.3.3: The students generated by the project would not require new or physically altered school facilities in order to maintain acceptable service ratios or other performance objectives at local public schools. (Significant)

The proposed Strategic Plan has the potential to increase the number of students at the project site by introducing approximately 450 multi-family housing units to project area. The Mt. Diablo Unified School District uses the student generation rate of 0.166 students per multi-family residential unit to estimate the number of students that could potentially be generated by a residential project. Based on this rate, once implemented, the 450 multi-family housing units proposed by the Strategic Plan would generate approximately 75 students that would attend schools within the MDUSD. The student generation rate is not further divided into separate rates for elementary, middle and high school students. Based on ages of the students, they would attend Rio Vista Elementary School, Riverview Middle School and Mt. Diablo High School.

The District has indicated that it is unlikely that the project itself would generate enough students to trigger the need for a new school. However, in aggregate with other proposed developments, it is likely that construction of an additional school will be required in the future (Rayborn, 2005).

Mitigation Measure 4.3.3: To offset any potential future impacts to school within the project vicinity, and as part of the project approval process, the developer would be required by state law to pay school impact fees. The payment of these fees, which are the state-mandated mitigation measure for potential impacts under CEQA, would result in less than significant environmental impacts to public schools in the project area.

Significance after Mitigation: Less than Significant.

Parks and Recreation Impacts

Impact 4.3.4: The additional residential units generated by the proposed Strategic Plan could potentially increase the demand for parks and other recreational facilities. (Less than Significant)

The Strategic Plan, when implemented would include up to 450 multiple family residential units; a new reconfigured marina with 568 berths, of which a maximum of 55 would provide for live-aboard boats; and 28,000 square feet of commercial recreation-related buildings. This eventual development may result in approximately 1,611 new residents at the project site (Section 4.5, *Population and Housing*), thus increasing the demand for parks and recreation facilities. Using the park standard outlined in the General Plan, (three acres per 1,000 residents), the total added population would generate the need for 4.83 acres of neighborhood parks.

As discussed in Chapter 3, Project Description, the Strategic Plan proposes to maintain the *Parks and Recreation* designation for the EBRPD and Station Lands Commission parcels in the western portion of the Plan Area while amending a portion of the existing *Open Space* designation in the eastern segment of the Plan Area to *Parks and Recreation*. Table 3-1, Proposed Project Recreational Amenities, outlines various recreational components of the plan which, at buildout, would include sports facilities, a beach area, two hiking trails, a viewing pier, a launch ramp and a car-top launch area. Overall, these uses would constitute approximately 170 acres or 60 percent of the project site. These facilities would be designed and constructed in the final phase of buildout, following the construction of marina residential uses.

In addition to new parks and open spaces, the Strategic Plan proposes to rebuild the marina with approximately 568 berths, 80 percent of which would be covered. These facilities would allow for greater water-oriented recreational activities through the improvement of waterfront access to allow for recreational boating such as sailing, rowing, canoeing, and kayaking. The proposed park space and amenities associated with the project would benefit both on-site residents and the larger countywide population.

Improvements within the project open space and provisions for the maintenance of the project open space in a manner that meets or exceeds minimum standards provided by the County will occur during development of the site.

As part of the project approval process, Contra Costa County would review the adequacy of the provision and public access to public parks, open spaces, and recreation facilities on the project site. Furthermore, because the project site falls under the jurisdiction of the Bay Conservation and Development Commission (BCDC), the project would be subject to additional review by the BCDC to ensure that adequate public access to and along the shoreline has been incorporated into project. These review processes are not conducted as part of the environmental review of the project. Adequate overall site access to and within the project is discussed in Section 4.2, *Traffic, Transportation, Circulation and Parking*.

Mitigation: None required.

Impact 4.3.5: The additional residential units generated by the proposed project may affect existing park resources. (Less than Significant)

The ARPD provides public park sites and facilities throughout the Bay Point area. As described earlier under the Local Park setting, the public parks located closest to the project site provide a mix of community facilities, passive open space, athletic fields, children's play equipment and picnic areas. As mentioned previously, the proposed project would result in a residential population increase of about 1,611 persons at the project site, which would likely increase the use of existing park resources. However, since the closest open space to the project area would be on the project site, this increased demand would most likely be met by recreational facilities in the immediate project vicinity, as described under Impact 4.3.4, above. Therefore, it is unlikely that the project would result in the increased use or deterioration of existing parks.

Mitigation: None required.

Cumulative Impacts

Impact 4.3.6: Development of the project, when combined with other foreseeable development in the vicinity, could result in cumulative impacts to the provision of public services. (Less than Significant)

The proposed project, in conjunction with reasonably foreseeable future projects, could result in a cumulative increase in the demand for fire protection and emergency medical services, police protection, schools, parks and recreational facilities. The project site is located in an area already served by local public services providers that meet their response time goals and standards to the project site area. The development of the project, the impacts of which are mitigated to less than significant with implementation of Mitigation Measure 4.3.2 (police services) and Mitigation Measure 4.3.3 (school impact fees), and other reasonably foreseeable future projects in the vicinity would be incremental and not by itself trigger the need for the expansion of public

services facilities or adversely impact response times for police, fire and emergency medical services as a direct result of project development. Furthermore, the project and other reasonably foreseeable future projects would be required to comply with all fire code standards, contribute their fair-share in student impact fees, and provide publicly accessible open spaces. Therefore, the effect of the proposed project on public services provisions, in combination with other foreseeable projects, would be less than significant.

Mitigation: None required.

References – Public Services and Recreation

Ambrose Recreation and Park District (ARPD), Master Plan 2005.

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Stombaugh, Travis, General Manager, Ambrose Recreation and Park District, written communication, February 14, 2006.

San Francisco Bay Conservation and Development Commission website, http://www.bcdc.ca.gov/index.php?cat=19, accessed February 2006.

4.4 Utilities

4.4.1 Introduction

This section addresses the impact of the Strategic Plan on the provision of public utilities. Topics analyzed in this chapter include water and water conservation, wastewater, solid waste and recycling, and energy, including electricity and natural gas service, and energy conservation. This chapter focuses on the ability of the Contra Costa County and other service providers to effectively deliver these services to new development under the proposed project. An expanded discussion of the existing and proposed onsite stormwater drainage systems is included in Section 4.7, *Hydrology and Water Quality*.

4.4.2 Setting

Water and Water Conservation

Water Supply

The Contra Costa Water District (CCWD) supplies water to a population of about 500,000 people in north, central, and east Contra Costa County. About 245,000 people receive treated water directly from CCWD, and the other 255,000 receive water that CCWD delivers to six local agencies, including the Golden State Water Company (GSWC) (formerly Southern California Water Company), which serves Bay Point. CCWD delivers some treated water (under a contract) to the GSWC from the Bollman Water Treatment Plant, which has a capacity of 75 million gallons per day (mgd) and also delivers wholesale raw water to GSWC (via the Contra Costa Canal), which is then treated at GSWC's Hill Street Plant and distributed to Bay Point customers for municipal, agricultural, industrial, and landscape irrigation purposes. The Hill Street Plant is located at 38 Hill Street in Pittsburg and has a capacity of approximately 4.15 mgd.

CCWD is almost entirely dependent on the Sacramento-San Joaquin Delta for its water supply. CCWD's primary source is the United States Bureau of Reclamation's Central Valley Project (CVP). CVP water consists of unregulated flows and regulated flows from storage releases from Shasta, Folsom, and Clair Engle reservoirs into the Sacramento River. Other sources include the San Joaquin River and Mallard Slough. Under normal conditions[1], CCWD's total planned water supply for 2005 is 236,350 acre-feet per year (af/yr) and for the year 2020, planned water supply is 260,700 af/yr.

Water Demand

CCWD water consumption has increased in recent years, partly due to the population growth that occurred between 2000 and 2005. Between 2000 and 2005, consumption has ranged from approximately 133,662 af/yr in 2000 to approximately 165,300 af/yr in 2005. Based on CCWD's 2005 Urban Water Management Plan (UWMP), it is estimated that water demand in 2010 will be

[1] Normal is defined as full CVP contract allocation (195,000 af/yr).

approximately 194,700 af/yr and in 2020 (the expected buildout of the proposed project) will be approximately 212,000 af/yr. In determining its ability to service the future water demand, CCWD assumes that its conservation efforts on total demand will grow from one percent in 2000 to 5 percent in 2040 (CCWD, 2000). One year savings from fiscal year 2004 program and past programs, including was 2,250 acre-feet (CCWD, 2005).

Pursuant to Water Code sections 10910 through 10915, GSWC conducted a Water Supply Assessment and Verification (WSAV) to determine whether water supplies in the Bay Point Customer Service Area (CSA) are sufficient to meet projected water demands for the Strategic Plan in the community of Bay Point (see Appendix E). The WSAV concluded and verified there will be adequate water supplies for the Strategic Plan during all hydrologic conditions for at least the next 20 years.

Sanitary Sewer

Sanitary sewer service in the Strategic Plan Area is provided by the Delta Diablo Sanitation District (DDSD). DDSD owns and operates the system that collects, conveys, and treats wastewater for an estimated 184,000 residents and businesses in Bay Point, Antioch, and Pittsburg. DDSD's only treatment plant and its recycled water facility are located on Arcy Lane off of the Pittsburg-Antioch Highway between Loveridge and Somersville Roadsin Antioch. In 2005, the treatment plant has a permitted treatment capacity of 16.5 mgd of sewage and an average dry weather flow of 14.2 mgd. Treated effluent is discharged into New York Slough, a section of the San Joaquin River. In 2001, DDSD started its recycled water program. Recycled water is used at two nearby power generating plants and for landscape irrigation.

Table 4.4-1, below, provides information regarding current and projected Wastewater Treatment Plan's sanitary sewer flows.

TABLE 4.4-1
CURRENT AND PROJECTED TREATMENT PLANT FLOWS (MGD)

	2005	2010	2015
Average Dry Weather Flow	15.6	18.30	20.30
Peak Dry Weather Flow	28.10	32.90	36.60
Peak Wet Weather Flow	30.90	36.70	39.50

SOURCE: Delta Diablo Sanitation District Wastewater Treatment Plan Master Plan Update, February 2004.

DDSD oversees capital improvement projects that anticipate capacity needs for the collection, conveyance and treatment of wastewater flows. Improvement projects are identified in the Capital Improvements Program from the Master Plans that DDSD prepares and the projected wastewater flows are derived from planning projections taken from city and county General Plans.

DDSD is responsible for the interceptor (main) pipelines and collection system in Bay Point.

Stormwater

Increases in impervious surfaces increase the volume and runoff rates of storm water, which can lead to increases in the amount of pollutants (i.e., metals, petroleum) in storm water. See Section 4.7, *Hydrology and Water Quality*, for additional information regarding water quality and quantity impacts related to storm water.

Solid Waste and Recycling

Solid waste collection and disposal in the project area is provided by two franchise haulers that serve Bay Point, Allied Waste/Pleasant Hill Bayshore Disposal and Garaventa Enterprises/Pittsburg Disposal. Residential and commercial solid waste collected by Allied Waste/Pleasant Hill Bayshore Disposal is taken to the Contra Costa Transfer and Recovery Station in unincorporated Martinez and then disposed of at the Keller Canyon Landfill (KCL), which is located in unincorporated Pittsburg in Contra Costa County.

Non-recyclable industrial waste collected by Garaventa Enterprises/Pittsburg Disposal is taken to the Recycling Center and Transfer Station in Pittsburg and then disposed of that the Potrero Hills Landfill (PHLF), located at 3675 Potrero Hills Lane in Solano County.

The Keller Canyon Landfill opened on May 7, 1992, as a Class II facility with a minimum 39-year lifespan as of January 1, 2004. The facility accepts municipal solid waste, non-liquid industrial waste, contaminated soil, ash, grit, and sludges that are at least 50 percent solids. Active landfill operations occur on 244 acres of the 1,400 acre Keller Canyon property. Its service area includes eastern and central Contra Costa County. The landfill is permitted to receive up to 3,500 tons per day and is open six days per week from 7:00 a.m. to 7:00 p.m.

The Potrero Hills Landfill, a regional waste Class II landfill disposal facility, began operating in 1986. It has an estimated permitted capacity of approximately 21.5 million cubic yards; of which approximately 7.7 cubic yards has already been used. The current landfill is scheduled to reach its permitted capacity and to be closed in 2058 (CIWMB, 2005). An expansion to the existing Potrero Hills Landfill onto a 260-acre area owned by Potrero Hills Landfill, Inc. has been proposed. The proposed expansion would add approximately 61.6 million cubic yards of fill capacity. With this additional capacity, the total site capacity would be approximately 83 million cubic yards and the disposal life of the landfill would increase by approximately 35 years.

Energy

Electrical power and natural gas are provided to Bay Point by Pacific Gas and Electric Company (PG&E). PG&E is regulated by the California Public Utilities Commission (CPUC) and is the primary provider of gas and electrical power to Contra Costa County. PG&E purchases both gas and electrical power from a variety of sources, including other utility companies. PG&E's service area extends from Eureka to Bakersfield (north to south), and from the Sierra Nevada to the Pacific Ocean (east to west). PG&E obtains its energy supplies from power plants and natural gas

fields in northern California and from energy purchased outside its service area and delivered through high voltage transmission lines.

With a relatively mild Mediterranean climate and strict energy efficiency and conservation requirements, California has lower energy consumption rates than other parts of the country. According to the Department of Energy (DOE), per capita energy use in California is approximately 70 percent of the national average, the third lowest state in the nation. California has the lowest annual electrical consumption rates per person of any state and uses 20 percent less natural gas per person. Per capita transportation energy use in the state is near the national average (DOE, 1999). Nevertheless, with a population of 34 million people, the state is the tenth largest consumer of energy in the world. According to the California Energy Commission (CEC), petroleum supplies about 54 percent of the State's energy, natural gas about 33 percent, and imported electricity contributes 13 percent of total energy use (CEC, 2000a).

Bay Point is located in a coastal climate zone (Climate Zone 3 in the Title 24 Climate Zone designation mapping) and, with the moderating influence of the bay, requires less energy for heating and cooling than other parts of the state. PG&E delivered 6,815 million kilowatt (kW) hours to customers in Contra Costa County in 2000. Approximately 60 percent of this power was sold to commercial and industrial accounts. The average residential account in Contra Costa County used 8,080 kWhr a year, about 14 percent more than the state average for residential energy consumption fuels, which is approximately 7,078 kWhr a year (CEC, 2001).

PG&E supplied its customers in northern California with approximately 900 billion standard cubic feet (scf) of natural gas in 2002 (CEC, 2002b). Industrial and commercial customers accounted for approximately two thirds of this gas.

4.4.3 Regulatory Setting

Federal

National Energy Policy

The National Energy Policy, developed in May 2001, proposes recommendations on energy use and on the repair and expansion of the nation’s energy infrastructure. The policy is based on the finding that growth in U.S. energy consumption is outpacing the current rate of production. Over the next 20 years, the growth in the consumption of oil is predicted to increase by 33 percent, natural gas by over 50 percent and electricity by 45 percent. While the federal policy promotes further improvements in energy use through conservation, it focuses on increased development of domestic oil, gas, and coal and the use of hydroelectric and nuclear power resources. To address the over-reliance on natural gas for new electric power plants, the federal policy proposes research in clean coal technology and expanded generation from landfill gas, wind, and biomass sources.

State

Senate Bill 610 and Senate Bill 221

The purpose and legislative intent of Senate Bills 610 (SB 610) and Senate Bill 221 (SB 221) was to preclude projects from being approved without specific evaluations being performed and documented by the local water provider proving that water is available to serve the project. SB 610 primarily affects the Water Code and SB 221 principally applies to the Subdivision Map Act. The laws took effect on January 1, 2002.

SB 610 requires the preparation of a Water Supply Assessment and Verification (WSAV) for large-scale development projects.[2] The WSAV report evaluates the water supply available for new development based on anticipated demand. For the broad range of projects which are subject to this law, the statutory WSAV must be requested by the lead agency from the local water provider at the time the lead agency determines that an EIR is required for the project under CEQA. The water agency must then provide the assessment within 90 days (but may request a time extension under certain circumstances). The WSAV must include specific information including an identification of existing water supply entitlements and contracts. The governing board of the water agency must approve the assessment at a public hearing.

SB 221 requires the local water provider to provide "written verification" of "sufficient water supplies" to serve the project. Sufficiency under SB 221 differs from SB 610 in that sufficiency is determined by considering the availability of water over the past 20 years; the applicability of any urban water shortage contingency analysis prepared per Water Code Section 10632; the reduction in water supply allocated to a specific use by an adopted ordinance; and the amount of water that can be reasonably relied upon from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer. In most cases, the WSAV prepared under SB 610 will meet the requirement for proof of water supply under SB 221.

The SB 610 requirement for a WSAV and SB 221 requirement for verification of sufficient water supplies applies to the proposed Strategic Plan. The WSAV (SB 610), which includes verification for proof of water supply (SB 221) has been prepared by the Golden State Water Company and is included as Appendix E in this EIR.

Assembly Bill 939

The Regional Integrated Waste Management Plan state law (Assembly Bill 939) enacted in 1989 established an integrated waste management planning process, including requirements for

[2] All projects that meet any of the following criteria require a WSA: [1] a proposed residential development of more than 500 dwelling units; [2] a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 ft2 of floor space; [3] a proposed commercial office building employing more than 1,000 persons or having more than 250,000 ft^2 of floor space; [4] a proposed hotel or motel, or both, having more than 500 rooms; [5] a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area; [6] a mixed-use project that includes one or more of the projects specified in this subdivision; or [7] a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project

counties and cities to meet adopted waste diversion goals for source reduction, recycling, and composting programs. It required municipal and state agencies to divert the amount of waste going to landfills by 25 percent by the year 1995 and by 50 percent by the year 2000. In 2002, unincorporated portions of Contra Costa County diverted 49 percent, an amount that the California Integrated Waste Management Board approved as a good faith effort toward attaining a 50 percent diversion rate (CIWMB, 2005).

California Code of Regulations Title 24

The State of California regulates energy consumption under Title 24 of the California Code of Regulations. The Title 24 Building Energy Efficiency Standards were developed by the California Energy Commission (CEC) and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and non-residential buildings. The CEC updates these standards periodically and adopted the latest standards in October 1, 2005, which provides new standards for outdoor lighting and residential lighting. These standards establish lighting zones that differentiate the amount of outdoor lighting by geographical location, and establish new performance standards for residential lighting (CEC, 2005).

Local

Contra Costa County General Plan

The Contra Costa County General Plan contains relevant policies and implementation measures pertaining to water supply, solid waste, and sanitary sewer facilities within its Public Facilities/Services Element, Growth Management Element, and Conservation Element. The Public Facilities/Services Element establishes goals and policies and implementation measures that address the vital infrastructure and public services that must be provided. The Growth Management Element establishes performance standards related to the provision of essential public utilities/services. The Conservation Element presents goals and policies for resource protection including energy and water.

Water and Water Conservation

Policy 7-16: Water service systems shall be required to meet regulatory standards for water delivery, water storage, and emergency water supplies.

Policy 7-19: Urban development shall be encouraged within the existing water Spheres of Influence adopted by the Local Agency Formation Commission; expansion into new areas within the Urban Limit Line beyond the Spheres should be restricted to those areas where urban development can meet all growth management standards in the General Plan.

Policy 7-21: At the project approval stage, the County shall require new development to demonstrate that adequate water quantity and quality can be provided. The County shall determine whether (1) capacity exists within the water system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

Policy 7-22: Water service agencies shall be encouraged to meet all regulatory standards for water quality prior to approval of any new connections to the agency.

Implementation Measure 7-r: Where feasible, include water conservation measures recommended by water service agencies in the conditions of approval for subdivisions and other new development.

Performance Standards. The Growth Management Element includes performance standards which require demonstration that adequate water quality and quantity can be provided prior to project approval. Additionally, project approvals conditioned on the fact that capacity either exists or will be provided (most likely through funding) will lapse if not satisfied by a "will serve letter", actual hook-ups, or comparable evidence of adequate water quantity and quality availability.

Sanitary Sewer

Policy 7-29: Sewer treatment facilities shall be required to operate in compliance with waste discharge requirements established by the California Regional Water Quality Control Board. Development that would result in violation of waste discharge requirements shall not be approved.

Policy 7-31: Urban development shall be encouraged within the sewer Spheres of Influence adopted by the Local Agency Formation Commission. Expansion into new areas within the Urban Limit Line but beyond the Spheres of Influence should be restricted to those areas where urban development can meet growth management standards included in the General Plan.

Policy 7-33: At the project approval stage, the County shall require new development to demonstrate that wastewater treatment capacity can be provided. The County shall determine whether (1) capacity exists within the wastewater treatment system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate [waste] water agency, the applicant, or other sources.

Policy 7-37: The need for sewer system improvements shall be reduced by requiring new development to incorporate water conservation measures which reduce flows into the sanitary sewer system.

Implementation Measure 7-x: Include wastewater reduction and other measures recommended by the sewer service agencies in the conditions of approval for subdivisions and other new development.

Performance Standards. The Growth Management Element includes performance standards which require demonstration that adequate sanitary sewer quality and quantity can be provided prior to project approval. Additionally, project approvals conditioned on the fact that capacity either exists or will be provided (most likely through funding) will lapse if not satisfied by a "will serve letter", actual hook-ups, or comparable evidence of adequate sewage collection and wastewater treatment capacity availability.

Solid Waste

Policy 7-88: Solid waste disposal capacity shall be considered in County and city land use planning and permitting activities, along with other utility requirements, such as water and sewer service.

Policy 7-91: Solid waste resource recovery (including recycling, composting, and waste to energy) shall be encouraged so as to extend the life of sanitary landfills, reduce the environmental impact of solid waste disposal, and to make sue of a valuable resource, provided that specific resource recovery programs are economically and environmentally desirable.

Policy 7-92: Waste diversion from landfills due to resource recovery activities shall be subject to goals included in the County Solid Waste Management Plan [now, superseded by the Countywide Integrated Waste Management Plan]. Public agencies and the private sector should strive to meet these aggressive goals.

Energy

Policy 8-53: The County shall cooperate with PG&E to retrofit existing homes with energy savings devices.

Implementation Measure 8-bt: Include provisions for solar access within design review of projects.

Bay Point Redevelopment Area Planned-Unit Zoning District Program (P-1 Zoning Program)

Condition 99: Litter and debris shall be contained in appropriate receptacles on site and shall be removed as necessary (for construction activities) (Contra Costa County, 2003).

Condition 60: Front landscaping and irrigation [for residential uses] in accordance with the Water Conservation Landscaping Requirements of Chapter 82-26 of the County Code shall be provided for residential projects.

Condition 82: A dual water system shall be provided wherever possible (per Chapter 82-30 of the County Code) for all projects within a 'dual water system area' greater than 15 acres or 120,000 square feet in floor area.

Condition 93: California native, drought-tolerant plants shall be used as much as possible.

Contra Costa County Code

Water Conservation Landscaping Requirements (82-26)

The intent of this ordinance is to require water conservation methods for landscaping of new developments by regulating turf areas, planting materials, and irrigation practices. Water conserving landscapes use only about one-third of the water of a traditional non-water conserving landscape. Conditions of approval for new development subject to the provisions of this chapter shall require landscape plans to be submitted to the community development department for final review and approval prior to the issuance of a building permit.

Construction and Demolition Debris Recovery (418-14)

The intent of this ordinance is to reduce the quantity of construction and demolition debris disposed in landfills as required by state law. The Ordinance requires owners of all construction or demolition projects that are 5,000 square feet in size or greater to demonstrate that at least 50 percent of the construction and demolition debris generated on the jobsite are reused, recycled, or otherwise diverted.

Contra Costa Countywide Integrated Waste Management Plan

As required by the California Integrated Waste Management Act, Contra Costa County adopted a *Countywide Integrated Waste Management Plan* and *Source Reduction and Recycling Element* (SRRE). The CoIWMP establishes waste management goals, objectives, and policies related to solid waste disposal; facilities siting; household hazardous waste collection and disposal; and implementing programs to achieve plan goals.

The SRRE establishes policies and goals related to source reduction, recycling, composting, special waste, and public information and education, and programs designed to achieve SRRE goals.

4.4.4 Impacts and Mitigation Measures

Standards of Significance

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would result in a significant impact to utilities if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the project from existing entitlements and resources;
- Result in a determination by the wastewater treatment provider which serves or may serve the project site that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Result in the wasteful, inefficient, or unnecessary consumption of energy.

Impacts

Water and Water Conservation

Impact 4.4.1: The Strategic Plan would result in additional demand for domestic water service from Golden State Water Company (GSWC) and additional water supply from Contra Costa Water District (CCWD). (Significant)

Implementation of the Bay Point Strategic Plan would increase demand for potable water due to the intensification of uses at the project site. The project would be served by Golden State Water Company's Region I, which obtains its water from the Contra Costa Water District. The current water demand for all land uses in the Strategic Plan Area is about 2,605,357 gallons per day (gpd). For purposes of sizing water distribution infrastructure and estimating potential effects to the GSWC's water supplies, the estimated water demand rate for all land uses in the Strategic Plan Area would be approximately 136,705 gallons per day (gpd), as shown in Table 4.4-2. This represents an approximately 5 percent increase over current water consumption.

TABLE 4.4-2
TOTAL WATER DEMAND FOR THE PROJECT

Proposed Use	Water Use Factor[a]	Quantity	Water Demand (GPD)
Multi-Family Housing	200 GPD/unit	450 units	90,000
Restaurant	156 GPD/employee	10 employees	1,560
Laundromat	184 GPD/washer	10 washers	1,840
Commercial Office Space	0.75 GPD/sq. ft.	14,000 sq. ft.	10,500
Landscaping/Ball fields	2,664 GPD/acre	10 acres	26,640
Shoreline Regional Park	N/A	N/A	665[b]
Live-aboard boats	100 GPD/boat	55 boats	5,500
Total Project Demand	**N/A**	**N/A**	**136,705**

[a] Water use factors were taken from Larry Mays, "Water Resources Handbook," and JMM Consulting Engineering, "Water Treatment Principles and Design," and in several cases increased to allow for more conservative, i.e. higher, water demand estimates.
[b] Actual use.

SOURCE: Golden State Water Company, Waterfront Project at Bay Point, Water Supply Assessment and Verification

GSWC's Water Supply Assessment and Verification (WSAV) for the Strategic Plan Area concluded that GSWC possesses water supplies that will be 100 percent reliable during normal, single dry, and multiple dry years to serve both its existing service area and the Strategic Plan area. According to the GSWC, the estimated project water demand of the plan would not exceed the available water supply nor significantly impact existing distribution facilities other than the possible extension of water lines to future projects.

The project sponsor would be required to fund main extensions to provide adequate domestic water supply, fire flows, and system redundancy to the proposed project. Depending on GSWC metering requirements and fire flow requirements set by the local fire department, the project applicant may also be required to fund pipeline and fire hydrant relocations or replacements due to modifications to existing streets and offsite pipeline improvements.

In addition, GSWC is a signatory to the California Urban Water Conservation Council's Memorandum of Understanding Regarding Urban Water Conservation in California ("MOU").

GSWC, as a signatory of the MOU, has agreed to undertake certain Best Management Practices (BMPs) which will result in reductions to urban water demands.

As stated in the WSAV, the program conducted by GSWC for the Bay Point Customer Service Area (CSA) includes the following BMPs: residential plumbing retrofits; water survey programs for residential customers; large landscape conservation programs and incentives; conservation programs for commercial and industrial accounts; system water audits, leak detection and repair; installation of meters and commodity rates for all new customers and retrofit of existing connections; high-efficiency washing machine rebate programs; public information programs; conservation pricing; water conservation coordinator; and water waste prohibition.

When these demand management measures are fully implemented, the Bay Point CSA is expected to realize the water demand reductions listed in Table 4.4-3 below.

TABLE 4.4-3
PROJECTED DEMAND REDUCTIONS FROM BEST MANAGEMENT PRACTICES

Year	2010	2015	2020	2025	2030
Savings (AFY)	172	130	130	106	106

SOURCE: GSWC Waterfront Project at Bay Point, Water Supply Assessment and Verification

Furthermore, to reduce water demand generated by the proposed project, it is anticipated that water recycling and conservation programs shall be required by Contra Costa Water District. These conservation measures, which are already required by the Contra Costa County, are stated in Mitigation Measures 4.4.1a through 4.4.1c. Compliance with these measures, coupled with GSWC's BMPs, would mitigate the potentially adverse impact to the water supplies.

Mitigation Measure 4.4.1a: Water conservation measures shall be incorporated as a standard feature in the design and construction of the proposed project. Water conservation measures shall include the use of equipment, devices, and methodologies for plumbing fixtures and irrigation that furthers water conservation and will provide for long-term efficient water use. In addition, the use of drought-resistant plants and inert materials, and minimal use of turf in landscaped areas shall be required.

Mitigation Measure 4.4.1b: To allow the project to better achieve water conservation, the project applicant shall also submit landscaping documents that show how water use efficiency will be achieved through design for review and comment at the time of request for new service connections.

Mitigation Measure 4.4.1c: The project applicant shall coordinate with CCWD's and GSWC's water recycling programs before construction begins in order to maximize the use of recycled water for the project. The project applicant shall plan for the future use of recycled water by installing dual plumbing systems wherever appropriate as determined by CCWD and GSWC. Uses of recycled water at the project site could include landscape irrigation.

The mitigation measures identified above would reduce the project's demand for water.

The project applicant may be required to install a water main extension, additional water pumps and meters, or offsite pipeline improvements (at the applicant's expense) prior to obtaining water service.

Mitigation Measure 4.4.1d: The project applicant shall fund the installation of any necessary water main extension, additional pumps and meters, or offsite pipelines improvements.

Significance after Mitigation: Less than Significant

Sanitary Sewer

Impact 4.4.2: Implementation of the Bay Point Strategic Plan would increase sewage generation to Delta Diablo Sanitation District's wastewater treatment plant and could require construction of onsite wastewater collection lines, the construction of which could result in adverse environmental effects. (Significant)

The Strategic Plan would increase wastewater transmission and treatment demand, and could require the extension of new wastewater transmission infrastructure for future projects in the Plan Area. For purposes of sizing wastewater collection infrastructure and estimating potential effects to the Delta Diablo Sanitation District (DDSD) or its Antioch wastewater treatment plant, DDSD uses wastewater generation rates provided by the Central Contra Costa Sanitary District (CCCSD). The CCCSD estimates the wastewater generation Average Dry Weather Flows (ADWF) for residential uses to be approximately 225 gallons per day (gpd) per housing unit. The proposed 450 residential units would therefore result in a daily ADWF rate of approximately 101,250 gpd over existing conditions. The CCCSD estimates commercial uses would generate approximately 1,000 (gpd) per acre. The Strategic Plan Area consists of approximately 0.65 acres of commercial use, which would consist primarily of the proposed restaurant and marina support buildings. This could generate approximately 650 (gpd) of wastewater. In total, the combination of residential and commercial use would result in an additional 101,900 gpd, or 0.10 mgd, of sanitary sewer.

Given the existing DDSD capacity of 16.5 mgd of average dry weather flow, the proposed project would use approximately 0.62 percent of the existing remaining capacity of the wastewater treatment plant. This estimated wastewater generation from the project would not significantly affect the existing wastewater treatment capabilities of DDSD. However, a number of other planned, but not yet approved, development projects are proposed within the DDSD service area that, if and when built, would increase the cumulative demand for wastewater treatment, and could increase the demand beyond the existing treatment capacity (Baatrup, 2006).

The DDSD has also indicated that expansion of the conveyance system may be required due to the capacity limitations of sewer pipes in the Bay Point area. Further analysis would be required to determine the exact nature of such required expansions. This analysis could be done as a special project at the time of project design review or could be included in the DDSD's Master Plan Update process, scheduled to start in 2008.

Mitigation Measure 4.4.2: When a project or annexation is "proposed" and approved, the project applicant shall fund the installation of any necessary sanitary sewer conveyance pipes, additional pumps and meters, or offsite pipelines improvements.

Significance after Mitigation: Less than Significant

Solid Waste and Recycling

Impact 4.4.3: The implementation of the proposed Strategic Plan would result in generation of solid waste. (Significant)

The Strategic Plan would result in the development of up to 450 residential units, 568 berths, which could house up to 55 live aboard boats, and about 28,000 square feet of marina support use building space that would consequently generate solid waste. As described in the *Population and Housing* section, it is therefore estimated that up to 1,611 people would reside in the Strategic Plan Area. The County's current rate of disposal for its unincorporated area is approximately 2.48 pounds per resident per day and 9.0 pounds per employee per day (CIWMB, 2006). Based on this estimate, the residential component of the Strategic Plan could generate approximately 4,000 pounds per day (1,460,000 pounds per year) of solid waste that would need to be disposed of in a landfill. This estimate assumes that the County's diversion rate of 49 percent would remain the same for the Strategic Plan Area. Without recycling, implementation of the Strategic Plan could adversely impact the County's diversion rate, which would conflict with the County's Integrated Waste Management Plan. Implementation of the following mitigation measures would reduce this impact to a less than significant level.

Mitigation Measure 4.4.3a: Suitable storage locations and containers for recyclable materials shall be provided for the residential and commercial recreation development. Future owner(s) of the building(s) that would be located on the project site shall maintain these locations during project operations. The future developer(s) of the residential and commercial recreation development, in consultation with the Contra Costa County Community Development Department, shall provide information regarding acceptable materials to be recycled to future owners and/or occupants of the buildings.

Mitigation Measure 4.4.3b: For each trash can that is provided along the view pier and in the parking lots, the future owner(s) of the marina shall also provide (an) equivalent-sized recycling receptacle(s). Each recycling receptacle shall clearly inform users within which containers to place each material (i.e., aluminum cans, glass, plastic bottles, etc.).

Implementation of the Strategic Plan would also result in the construction and demolition activities that would increase the amount of solid waste generated. Under the Strategic Plan, onsite buildings, including the McAvoy Café, the former Harris Yacht Club, the McAvoy Yacht Club, the bait shop, and the restaurant that are currently onsite, would be demolished. In addition, the existing boat docks would be removed. Disposal of this quantity of demolition waste in addition to waste that would be generated from construction of new buildings and facilities would

be significant. This potential impact could be mitigated with implementation of the following mitigation measure. Additionally, as development proceeds, due to the cessation of demolition activities, the daily tonnage of demolition waste would decrease.

> **Mitigation Measure 4.4.3c:** Future developer(s) shall prepare, submit, and implement construction and demolition debris management plans. The debris management plan shall address major materials generated by a construction project of this size and type and opportunities to recycle and/or reuse such materials. The different materials shall be source-separated onsite and then transported to appropriate recyclers (or picked up onsite); direct hauled to a transfer station for separation by the operator; and/or hauled away by salvagers. The future developer(s) shall divert at least 50 percent by weight of all demolition waste from landfill disposal, and shall provide a summary report of the diversion to the Contra Costa County Community Development Department.

Garaventa Enterprises/Pittsburg Disposal Service would provide solid waste collection services to the Strategic Plan Area. Residential and commercial solid waste would then be taken to Pittsburg Disposal Recycling Center and Transfer Station where recyclable items would be separated out of the garbage, and transported out to be recycled into new products. The remaining garbage would be taken to the Potrero Hills Landfill in Solano County. The Potrero Hills Landfill has an estimated permitted capacity of approximately 21.5 million cubic yards; of which approximately 7.7 cubic yards has already been used. The current landfill is scheduled to reach its permitted capacity and to be closed in 2058 (CIWMB, 2005). An expansion to the existing Potrero Hills Landfill onto a 260-acre area owned by Potrero Hills Landfill, Inc. has been proposed. The proposed expansion would add approximately 61.6 million cubic yards of fill capacity. With this additional capacity, the total site capacity would be approximately 83 million cubic yards and the disposal life of the landfill would increase by approximately 35 years (EDAW, 2003). Because the Landfill would not reach its capacity until at least 2058 (and possibly not until 2093) and because the project would not result in the Landfill closing earlier than scheduled, it has sufficient capacity to receive the solid waste that would be generated by construction and operations related to the Strategic Plan.

Significance after Mitigation: Less than significant.

Energy and Energy Conservation

Impact 4.4.4: The implementation of the proposed Strategic Plan could result in an increase in inefficient energy use. (Significant)

The proposed development under the Strategic Plan would increase energy consumption. A detailed estimate of the project's energy consumption was not feasible; however, it is clear that the project would consume substantial amounts of energy. The most direct energy consumption would be in the form of natural gas and/or electricity to heat the buildings and electricity to power lights and other appliances. Less direct, but still considerable, would be the gasoline expended by

project occupants and visitors in traveling to and from the site as well as energy uses anticipated at the proposed marina. Energy use would also be required for demolition/construction activities on a shorter-term basis.

Implementation of energy conservation measures would also be important in order to ensure that this increase would not result in the wasteful, inefficient, or unnecessary consumption of energy. Energy conservation was a critical component in the successful effort to avoid blackouts during the energy crisis leading up to the summer of 2001. Californians averaged a 10 percent reduction in their electricity during peak summer hours in 2001 and reached a record of a 14 percent reduction in June of that year (CEC, 2003). The CEC forecasts that the conservation savings as a result of the 2001 Emergency Energy Efficiency Legislation, which included public awareness programs and rebate programs, amounted to over 3,000 MW in 2002. Energy conservation is necessary to ensure the responsible use of non-renewable resources. The following mitigation measure would help to ensure that potential development under the Strategic Plan would not result in the wasteful, inefficient, or unnecessary consumption of energy.

Mitigation Measure 4.4.4a: In addition to energy conservation measures required by California Code of Regulations Title 24, future developer(s) of the Strategic Plan Area shall implement the following measures:

- Equip all showers, faucets, and toilets installed in the Strategic Plan Area with low-flow fixtures to reduce water consumption and energy consumption associated with water heating.
- Include in the design of the project the use of ENERGY STAR qualified compact fluorescent light bulbs (CFLs) for use in the marina support buildings (ENERGY STAR qualified CFLs use 66 percent less energy than a standard incandescent bulb and last up to 10 times longer).
- Insulate all hot and cold water pipes within the residential and marina support buildings to reduce energy consumption.
- Install shades, awnings, or sunscreens on all windows of the residential and marina support use buildings that face south and/or west to block summer light. In winter, shades can be opened on sunny days to help warm rooms.
- Install programmable thermostats in each residential unit to automatically change thermostat settings at certain times of the day (5 – 20 percent savings on space heating costs).
- Install energy-efficient ceiling installation and insulate walls, floors, and heating ducts (up to 25 percent savings on space heating costs).
- Use exterior shading devices or deciduous plants to shade residential buildings from the sun (up to 8 percent savings on cooling costs).
- Install thermal windows in residential units. Thermal windows give the benefit of dual pane glass, keeping air trapped between the two panes while they act as a thermal insulator.

Mitigation Measure 4.4.4b: Implement Mitigation Measures 4.4.3a, 4.4.3b, and 4.4.3c.

Mitigation Measure 4.4.3 (solid waste disposal measures) would also help to reduce impacts to energy resources because energy and other resource savings are derived from the reuse of recycling of materials, thereby saving the energy required to produce or harvest new materials. Energy savings can also accrue from reduced transportation of waste, because solid waste landfills are typically located further from urban centers than many options for recycling of recovered materials.

Implementation of Mitigation Measure 4.4.4a and 4.4.4b would reduce energy use impacts under the Strategic Plan to a less than significant level.

Significance after Mitigation: Less than significant.

Impact 4.4.5: Development of the project, when combined with other foreseeable development in the vicinity, could result in cumulative impacts to the provision of utilities services. (Less than Significant)

The proposed project, in conjunction with reasonably foreseeable future projects, could result in a cumulative increase in the demand for fire protection and emergency medical services, police protection, schools, parks and recreational facilities. The project site is located in an area already served by local utility providers that meet their standards in the project site area. The development of the project, the impacts of which are mitigated to less than significant with implementation of the above mitigation measures, and other reasonably foreseeable future projects in the vicinity would be incremental and not by itself trigger the need for the expansion of utility facilities as a direct result of project development. Furthermore, the project and other reasonably foreseeable future projects would be required to comply with all standards and contribute their fair-share in impact fees. Therefore, the effect of the proposed project on utilities, in combination with other foreseeable projects, would be less than significant.

Mitigation: None required.

References – Utilities

Contra Costa Water District (CCWD), 2005. *Water Conservation, FY 2004 Year End Report*, 2005. [http://www.ccwater.com/files/ConservationReport04.pdf]

Contra Costa Water District (CCWD), 2000. *Urban Water Management Plan*, December 2000.

California Integrated Waste Management Board (CIWMB), 2005. *Jurisdiction Diversion Rate Summary (Results) [for] Contra Costa-Unincorporated*,

http://www.ciwmb.ca.gov/lgtools/mars/drmcmain.asp?ju=102&VW=In, accessed July 7, 2005.

Contra Costa Environmental Health, http://www.cchealth.org/groups/eh/programs/solid_waste.php, accessed July 7, 2005.

Contra Costa County, *Pittsburg/Bay Point BART Station Area Specific Plan DEIR*, November 1997.

Golden State Water Company, *Waterfront Project at Bay Point Water Supply Assessment and Verification*, October 2006.

4.5 Population and Housing

4.5.1 Introduction

This section describes the anticipated number of residents who would live within the Strategic Plan Area in the context of population trends in Bay Point, adjacent cities, and Contra Costa County. This section relies primarily on information from the 2000 U.S. Census (Census) and the Association of Bay Area Governments (ABAG).[1] ABAG is a regional planning agency, operated by the cities and counties of the Bay Area. The Strategic Plan Area is predominantly undeveloped, and the proposed Strategic Plan would introduce new residential uses, recreation uses, and expand and improve the existing marina and associated facilities within the Plan Area.

4.5.2 Population Setting

Contra Costa County

In 1990, Contra Costa County was the third most populated county in the nine-county Bay Area,[2] following Santa Clara County and Alameda County, and has remained the third most populated county in the Bay Area through 2005. In 2005, Contra Costa County's population was approximately 1,016,300. By 2020, the ABAG anticipates that Contra Costa County will have a population of approximately 1,150,900. The Contra Costa General Plan build out projections are slightly lower than current ABAG projections, estimating a 2020 population of about 1,128,800. The analysis in this EIR will consider both the ABAG projections and General Plan projections for 2020, as appropriate.

Table 4.5-1 summarizes population trends in the Bay Area counties. Contra Costa County's population growth was considerable between 1990 and 2005 (an increase of approximately 212,568 people, or 26 percent), and surpassed all other Bay Area counties in terms of the percent increase. Contra Costa County was third, following Santa Clara and Alameda counties, in terms of the actual increase in the number of people between 1990 and 2005. Between 2005 and 2020, Contra Costa County's population is expected to increase at a slower rate, approximately 13 percent, but will continue to rank third in terms of the estimated increase in the number of people.

1 The Census considers Bay Point a Census Designated Place (CDP). CDPs are communities that lack separate municipal government, but which otherwise resemble incorporated places, such as cities or villages. CDPs are delineated to provide data for settled concentrations of population that are identifiable by name but are not legally incorporated under the laws of the state in which they are located. The Census provides information only for the year 2000 for Bay Point. ABAG includes Bay Point as part of the City of Pittsburg Sphere of Influence. Thus, this analysis relies on Census data and ABAG data as applicable.

2 The nine counties consist of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties.

TABLE 4.5-1
BAY AREA POPULATION BY COUNTY, 1990-2020

	Population						
County	**1990**	**2000**	**2005**	**% Change 1990-2005**	**2010**	**2020**	**% Change 2005-2020**
Alameda	1,276,702	1,443,741	1,517,000	19%	1,584,500	1,714,500	13%
Contra Costa	**803,732**	**948,816**	**1,016,300**	**26%**	**1,055,600**	**1,150,900**	**13%**
Marin	230,096	247,289	251,400	9%	258,500	275,000	9%
Napa	110,765	124,279	134,100	21%	139,700	148,100	10%
San Francisco	723,959	776,733	798,000	10%	810,700	859,200	8%
San Mateo	649,623	707,161	723,200	11%	741,000	806,500	12%
Santa Clara	1,497,577	1,682,585	1,750,100	17%	1,855,500	2,073,300	18%
Solano	339,471	394,542	423,800	25%	466,100	532,400	26%
Sonoma	388,222	458,614	477,700	23%	508,000	534,100	12%
Bay Area	6,020,147	6,783,760	7,091,600	18%	7,419,600	8,094,000	14%

SOURCES: ABAG (2004)

Bay Point and the Strategic Plan Area

Bay Point is a community within unincorporated eastern Contra Costa County. Bay Point is part of the City of Pittsburg's Sphere of Influence (SOI),[3] which extends over 18.2 square miles. Pittsburg and its SOI currently rank as the fourth most populated city/SOI in Contra Costa County, following Concord, Richmond, and Antioch. ABAG projects that the population of the city of Pittsburg and its SOI, which includes Bay Point, will grow from 82,900 in 2005 to 97,900 in 2020, an increase of about 18 percent. Pittsburg status as the fourth most populated city/SOI is expected to be maintained through 2020. ABAG projects a slightly lower growth rate of about 13 percent for Contra Costa County during the same 15-year span (2005-2020), from 1,016,300 in 2005 to 1,150,900 (ABAG, 2004). Table 4.5-2 describes current and anticipated population changes in Pittsburg and its SOI (including Bay Point) and nearby cities between 2000 and 2020. The Strategic Plan Area does not now include any residential land uses, and therefore does not have associated population estimates. Based on consultation with the County and the City of Pittsburg, approved, but not yet completed residential and non-residential projects within the vicinity of the Strategic Plan area were identified. Those approved projects closest to the project site, include the Bay Harbor Commerce Center (industrial park), the Bay Point/Pittsburg BART Station Area Strategic Plan (multi-family and office uses), and the North Broadway Neighborhood (single family, multi-family, and commercial uses). (See Section 4.6, *Transportation*, Figure 4.6-4 and Table 4.6-5 for the complete list of approved projects within the vicinity of the Strategic Plan area.)

[3] A Sphere of Influence is a planning area usually larger than, although sometimes contiguous with, a city's municipal boundary. Spheres of Influence are assigned by the Local Agency Formation Commission and typically indicate the probable physical boundary and service area of the city (including areas which may eventually be annexed).

TABLE 4.5-2
PITTSBURG AND SOI (INCLUDING BAY POINT) AND VICINITY POPULATION CHANGE, 2000–2020

City	Population					
	2000	2005	% Change 2000-2005	2010	2020	% Change 2005-2020
Antioch and SOI	91,293	103,100	13%	108,200	117,000	13%
Concord and SOI	124,467	127,200	2%	130,400	143,300	13%
Pittsburg and SOI	**77,479**	**82,900**	**7%**	**87,300**	**97,900**	**18%**
Contra Costa County	948,816	1,016,300	7%	1,055,600	1,150,900	13%

SOURCE: ABAG (2004)

Population Characteristics

According to Census 2000 data, the median age[4] in Bay Point is 29.1 years of age, which is considerably lower than the median age for Contra Costa County (36.4 years of age), and lower than the state of California's median age (33.3 years of age). The majority of Bay Point residents (approximately 67 percent of the population) are over the age of 18 and under the age of 65. According to the Census 2000, approximately 1,317 seniors (65 years of age and older), or about six percent of the population live in Bay Point. The percentage of seniors in Bay Point is much less than the percentage of seniors within Contra Costa County (about 11 percent of the county population), and within the state (about 11 percent of the state population). The number of youth under the age of 18 in 2000 was approximately 5,838, or 27 percent of the population in Bay Point, much less than the percentage of youth under the age of 18 in Contra Costa County (about 15 percent of the county population) and the state (about 17 percent of the state population).

Employment

The total number of jobs in Contra Costa County, held by both county residents and non-residents was about 317,310 in 2000. By 2020, the County is projected to include approximately 472,830 jobs, representing an increase of about 13 percent between 2005 and 2020. There were approximately 17,470 jobs in Pittsburg and its SOI in 2000, and it was ranked seventh in Contra Costa County for total jobs.[5] According to ABAG *Projections 2004*, the number of jobs in Pittsburg and its SOI are forecast to increase by approximately 18 percent between 2005 and 2020 to a total of 27,960 jobs (ABAG, 2004). Table 4.5-3 summarizes employment trends within the Pittsburg and SOI (including Bay Point) and vicinity.

[4] One-half of the population is older than the median age, and one-half of the population is younger than the median age.
[5] In 2000, the cities of Walnut Creek (62,040 jobs), Richmond (45,520 jobs), San Ramon (40,140 jobs), Martinez (21,250 jobs), Antioch (20,440 jobs), and Pleasant Hill (17,660 jobs) provided more jobs than Pittsburg and its SOI.

TABLE 4.5-3
PITTSBURG AND SOI (INCLUDING BAY POINT) AND VICINITY EMPLOYMENT CHANGE, 2000–2020

City	Population					
	2000	2005	% Change 2000-2005	2010	2020	% Change 2005-2020
Antioch and SOI	20,440	20,590	0.7%	23,790	30,260	13%
Concord and SOI	66,180	66,570	0.6%	70,180	81,330	13%
Pittsburg and SOI	**17,470**	**17,560**	**0.5%**	**20,120**	**27,960**	**18%**
Contra Costa County	371,310	373,000	0.5%	406,010	472,830	13%

SOURCE: ABAG (2004)

4.5.3 Housing

This section summarizes existing housing conditions, housing costs, and the City's fair share of the regional housing needs as determined by ABAG.

Contra Costa County

Between 1990 and 2005, the number of housing units increased throughout the Bay Area by approximately 13 percent. During this period, Contra Costa County experienced an approximate 20 percent growth in the housing stock, adding about 62,173 units. In terms of the percentage increase, Contra Costa was exceeded only by Solano County, which experienced an increase of about 22 percent in the housing stock (an increase of about 26,718 housing units). Table 4.5-4 compares the number of housing units from 1990 to 2005 in each of the nine Bay Area Counties.

TABLE 4.5-4
NUMBER OF HOUSING UNITS BY COUNTY FOR THE BAY AREA 1990-2005

County	1990 Housing Units	2000 Housing Units	2005 Housing Units	% Change in Housing Units 1990–2005
Alameda	504,109	540,183	558,840	11%
Contra Costa	**316,170**	**354,577**	378,343	20%
Marin	99,757	104,990	107,482	8%
Napa	44,199	48,554	52,209	18%
San Francisco	328,471	346,527	355,903	8%
San Mateo	251,782	260,576	266,842	6%
Santa Clara	540,240	579,329	607,035	12%
Solano	119,533	134,513	146,251	22%
Sonoma	161,062	183,153	191,949	19%
Nine Counties	2,365,323	2,552,402	2,664,854	13%

SOURCES: U.S. Census Bureau (2000); State of California (2005)

Bay Point and the Strategic Plan Area

ABAG estimates that the City of Pittsburg and its SOI has about 25,800 households as of 2005, and is projected to increase by about 14 percent (an increase of about 4,930 households) by 2020. **Table 4.5-5** compares the existing and projected number of households in Pittsburg and its SOI between 2000 and 2020. According to the Census, the community of Bay Point had about 6,693 housing units as of 2000 (US Census, 2006). The Strategic Plan Area does not include any existing residential land uses.

TABLE 4.5-5
PITTSBURG AND SOI (INCLUDING BAY POINT) AND VICINITY HOUSEHOLDS

	Households					
City	2000	2005	% Change 2000-2005	2010	2020	% Change 2005-2020
Antioch and SOI	29,656	33,660	14%	35,580	38,480	14%
Concord and SOI	44,972	46,160	3%	47,680	52,550	14%
Pittsburg and SOI	24,001	**25,800**	7%	**27,370**	**30,730**	19%
Contra Costa County	344,129	368,770	7%	385,250	419,970	14%

SOURCE: ABAG (2004)

Household Size

According to the 2000 Census, the average household size in Bay Point in 2000 was 3.27 persons per household, which was higher than the Contra Costa County's average of 2.72. Bay Point is included within Pittsburg's SOI, where the average household size was 3.2 in 2000 and 3.19 in 2005, based on AGAG projections. ABAG projects that within the City/SOI of Pittsburg, the average household size will decline to about 3.16 by 2020. The average household size within the county is also expected to decline slightly, to 2.71 persons per household by 2020 (ABAG, 2004).

In 2005, there were 25,800 households in the city/SOI of Pittsburg and 368,770 households in all of Contra Costa County. ABAG projects continued increases in the total number of households in the city/SOI of Pittsburg to 30,730 by 2020, and about 419,970 households in the county by 2020.

Household Income

ABAG estimates for Pittsburg and its SOI indicate that the mean or average, household income in 2005 is approximately $59,400.[6] In comparison, the mean household income in Contra Costa County is $88,700 (ABAG, 2004).

6 In constant 2000 dollars.

4.5.4 Jobs/Housing Balance

The concept of a jobs/housing balance is used to examine whether a region has a balance between its housing supply and its employment base. The primary function of such an analysis is to provide a generalized measure of employment or housing need in areas where the relationship between these two characteristics is out of balance and to indicate the potential severity of such a condition on traffic and related effects to air quality, and housing affordability. A region with too many jobs relative to housing is likely to experience escalation in housing prices (with a concurrent decline in affordability for the lower-income segments of the community) and intensified pressure for additional residential development. Conversely, a region that has relatively few jobs in comparison to employed residents, may have many workers commuting to jobs elsewhere which can lead to increased traffic congestion and adverse effects on both local and regional air quality.

Although Contra Costa County has a growing employment base, ABAG projects that the county will continue to provide bedroom communities for the workforce of other Bay Area counties (General Plan, 2005, p. 6-3). According to ABAG, Pittsburg and its SOI have close to double the number of employed residents to jobs, indicating that most residents commute outside of the area to work. The jobs/employed residents ratio within Pittsburg and its SOI in 2005 was 0.52 (17,470 jobs for 33,904 employed residents). ABAG projects that the jobs/employed residents ratio will increase slightly to 0.54, based on 17,560 jobs and 33,760 employed residents, by 2010 and to 0.63, based on 27,960 jobs and 44,660 employed residents, by 2020, thereby continuing the trend of residents commuting outside of the area for employment. The jobs/employed residents ratio in Contra Costa County is also weighted towards housing, although not as heavily as Pittsburg and its SOI. In 2005, according to ABAG, the jobs/employed residents ratio is about 0.80 (371,310 jobs and 461,992 employed residents), and this ratio is expected to increase only slightly, to 0.81 (472,830 jobs and 583,400 employed residents) by 2020.

The *East County Workforce Survey* was conducted in 2006 to document the changing demographics of the East County workforce (Contra Costa County, 2006). Of the Bay Point responding households, 41.4 percent have one person employed in the household (the highest number of one-person working households reported), while 41.6 percent have two employed individuals in the household. Overall, 33.4 percent of the region's workforce works within one of the East County communities. The majority of the Bay Point workforce commutes to another community in the Bay Area, while 2.0 percent of workers from other communities in the region commute to Bay Point for work. Approximately two-thirds of Bay Point respondents have commute times of 15 minutes or more each way.

4.5.5 Regulatory Setting

State

Assembly Bill 2853

Assembly Bill 2853 (AB 2853), enacted in 1980, requires all cities to discuss their regional "fair share allocation" of regional housing need by income group in their Housing Elements. Therefore, Contra Costa County must discuss their "regional fair share" allocation as projected by ABAG. ABAG's determination of the local share of regional housing must take into consideration factors including market demand for housing, employment opportunities, availability of suitable sites and public facilities based on local plans, commuting patterns as they relate to the differences between job creation and labor supply, type and tenure of housing, and housing needs of farmworkers.

Local

Contra Costa County General Plan – Housing Element

The Contra Costa County General Plan Housing Element establishes comprehensive, long-term objectives and implementing policies for the housing within the county. Those guiding and implementing policies contained in the Housing Element pertinent to the proposed Strategic Plan are discussed below. Please see Section 4.1, *Land Use and Planning*, for other policies in the General Plan applicable to the proposed project.

> *Goal 3*: Increase the supply of housing with a priority on the development of affordable housing.
>
> *Policy 3.2*: Encourage and provide incentives for the production of housing in close proximity to public transportation and services
>
> *Policy 3-22*: Housing opportunities for all income levels shall be created. Fair affordable housing opportunities should exist for all economic segments of the County.
>
> *Goal 6*: Provide adequate sites through appropriate land use and zoning designations to accommodate the County's share of regional housing needs.
>
> *Goal 7*: Mitigate potential governmental constraints to housing development and affordability.

Bay Point Redevelopment Area Planned Unit (P-1) Zoning Plan

The Bay Point Redevelopment Area Planned-Unit (P-1) Zoning District Program consists of a Land Use Map, Development Standards, a Land Use Matrix, Conditions of Approval, and Design Guidelines, that provide development requirements for properties within the P-1 Zoning Program area. The project site is within the P-1 Zoning District, and Conditions of Approval relevant to the proposed project include the following:

Development Conditions of Approval

Condition 43: New businesses and construction projects shall make best efforts to hire employees, workers and subcontractor components at the job from the Bay Point community.

Residential Conditions of Approval

Condition 55: All residential projects with six (6) or more units are required to include a minimum of 15% affordable housing units.

Condition 56: Projects with five (5) or more residential units may be eligible for a density bonus according to the County Density Bonus Ordinance administered by the Redevelopment Agency.

ABAG's "Fair Share Allocation"

Housing allocation income groups for Contra Costa County, which includes the City of Pittsburg and its SOI, are defined by ABAG as follows:

- Very Low income is defined as less than 50 percent of the median income;
- Low Income is defined as 50–80 percent of the median income;
- Moderate Income is defined as 80–120 percent of the median income;
- Above Moderate is defined as greater than 120 percent of the median income.

State law establishes that regional councils of government shall identify for each city and county a "fair share allocation" for the provision of housing at all income levels within its jurisdiction. The regional housing needs determination for the City of Pittsburg includes Bay Point, which is within the City's SOI. The Housing Element of the Pittsburg General Plan utilizes the Regional Housing Needs Determination completed by ABAG in November 2000, to identify the housing needs within the city and SOI. Housing needs are assess for the period between January 1, 1999 and June 30, 2007.[7]

The total regional housing needs allocation for Pittsburg is 2,360 housing units and for the SOI, the housing needs allocation is 153 housing units. ABAG combines Pittsburg and its SOI for purposes of categorizing the 2,513 units by economic level and projects that 534 units would be in the very-low income category, 296 in the low category, 696 in the moderate category and 987 in the above moderate category. Since 1999, 1,511 housing units have been constructed within Pittsburg and its SOI. Table 4.5-6 identifies the projected levels of housing needs for Pittsburg and its SOI according to ABAG's Regional Housing Needs Assessment, and also identifies housing units, by income category, constructed between 1999 and 2003.

[7] The California Legislature passed SB 491, revising the regional needs/Housing Element planning period from June 30, 2006 to June 30, 2007.

TABLE 4.5-6
PITTSBURG AND SOI (INCLUDING BAY POINT) PROJECTED HOUSING NEEDS

	Affordability Level				
	Very Low	Low	Moderate	Above Moderate	Total
Projected Number of Needed Units 1999-2006	534	296	696	987	2,513
Approved Housing Units 1999-2003	129	339	271	772	1,511
Net Housing Needs	**405**	**0**	**426**	**215**	**1,002**

SOURCE: City of Pittsburg (2004)

4.5.6 Impacts and Mitigation Measures

Standards of Significance

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would result in a significant impact to population and housing if it would:

- Induce substantial growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Impacts

Impact 4.5.1: Development proposed as part of the Strategic Plan would result in an increase in the residential population within Bay Point. (Less than Significant)

Implementation of the Strategic Plan could result in the development of up to 450 multi-family residential units, and up to 55 berths that would be available for live-aboard boats. The project site does not include any existing residential uses. Based on ABAG data, which indicates that the average household size in Pittsburg and its SOI was 3.19 persons per household in 2005, it is estimated that the project could result in a population of approximately 1,611 persons at the site.

As of 2000, the most recent data available for the community of Bay Point, there were approximately 6,693 housing units within the community. The project would result in about an eight percent increase in the communities housing stock, and a similar increase (about eight percent) in the community's 2000 population. The project would also comply with

Conditions of Approval for the P-1 Zoning Program, with regard to affordable housing, and at least 15 percent, or about 68 of the proposed residential units would be affordable housing.

This projected population increase could result in substantial population growth at the project site. Because the proposed project would provide housing accommodations for the entire project-induced population growth, no physical impacts would result from the construction of additional development that would be required to house the new residents. Physical impacts associated with new residential development at the project site proposed as part of this project, and proposed mitigation measures, where feasible, are discussed throughout this EIR.

The project would extend Pacifica Avenue from Port Chicago Highway as well as construct a new at-grade or separated grade crossing over the existing rail lines to serve the site. Basic infrastructure would also be extended from the south edge of the site to provide adequate urban services and to meet fire flow requirements. As part of the project, existing utility lines serving the project site would be repaired and/or upgraded to provide adequate services. New or improved infrastructure would be intended to serve development proposed under the Strategic Plan, and would provide utility connections or new roadways to undeveloped areas outside of the Plan area.

The project site is bordered by Suisun Bay to the north, open space to the east and west, and by four active railroad lines, and a mix of industrial, residential, and commercial uses (south of the railroad lines) to the south. Although the project would include infrastructure improvements, given the characteristics of the bordering properties, either open space or developed areas, the project would not be anticipated to indirectly induce substantial population growth by the provision of this infrastructure.

Mitigation: None required.

Impact 4.5.2: Development proposed as part of the Strategic Plan could result in an increase in employment within Bay Point. (Less than Significant)

In addition to residential development, implementation of the proposed Strategic Plan would result in the replacement of the existing marina with a new marina and associated facilities, and the construction of new recreation facilities (i.e. public trails, soccer and baseball fields). Although the new marina would be approximately the same size as the existing marina (approximately 500,000 square feet), the existing marina is not used to its fullest potential because of a combination of its condition and building vacancies. The McAvoy Harbor marina, while generally in poor condition, exists as an operable facility. The new marina would be entirely reconfigured and would include an additional 268 berths. The marina would also include support buildings that would be up to a maximum of 28,000 square feet.

As noted in the Bay Point Final Report (2003), a survey conducted by Williams-Kuebelbeck & Associates found that at least 85 percent of potential boat slip renters at the new marina would

very likely be residents of eastern and central Contra Costa County, and that approximately 1,100 new boat berths in Bay Point could be developed to meet projected demand resulting from anticipated population growth between 2000 and 2020 (Contra Costa County Redevelopment Agency, 2003). Although the current proposal would increase the number of boat berths to 568, compared to the existing 300 berths, this would be substantially less than the expected demand for the marina services by county residents.

Development of the marina and associated facilities, as well as recreation facilities would increase the daytime population on the site; however, such development would generate only a slight increase in new employment opportunities within Bay Point. New employment opportunities would be minimal given that there is an operating marina on-site. Additionally, most of the proposed uses would be passive (i.e. boat storage, trails, etc.) and would therefore not require a substantial number of employees to manage such uses. Employment opportunities would likely include service jobs associated with management and support of the marina facilities and other recreation facilities.

The project would likely attract employees from the existing employee pool in Bay Point and surrounding areas. Although the housing component of the project would not necessarily provide housing for the employees of the project, the provision of housing would help ensure that employment opportunities provided by the project would not result in an unanticipated demand for housing. Further, new employment opportunities would help to improve the jobs/housing balance within Bay Point. This impact is considered less than significant.

Mitigation: None required.

Impact 4.5.3: Development as part of the proposed Strategic Plan would not result in the displacement of existing housing or the displacement of substantial numbers of people. (No impact)

The approximately 290-acre Strategic Plan Area is located along the northern shoreline of Bay Point, an area that is currently centered around the existing McAvoy Harbor. The harbor area has few buildings; none of which include any existing housing.

Implementation of the proposed Strategic Plan would not displace any on-site dwelling units or existing residents since there are none in the project area. Additionally, the project would not result in impacts related to the displacement of housing, nor would the project necessitate the construction of replacement housing. Therefore the proposed Strategic Plan would have no impacts under this criterion.

Mitigation: None required.

Cumulative Impacts

Impact 4.5.4: The proposed Strategic Plan would increase the on-site population, but would not result in a cumulatively considerable contribution to population growth in Bay Point or the vicinity. (Less than Significant)

As discussed further under Impacts 4.5.1 and 4.5.2, implementation of the Strategic Plan could increase the on-site resident population by approximately 1,611, result in a negligible increase in on-site employment, and provide recreation facilities. Future development within the project vicinity could occur to the south of the site, but would not be expected to occur in areas to the east and west of the site since they are located outside of the urban limit line, and the estuary is to the north. There are a number of approved, but not yet constructed, residential and non-residential projects in the vicinity (see list in *Section 4.6, Transportation,* Figure 4.6-4 and Table 4.6-5) that would result in population growth, and future new development within Bay Point and the surrounding areas would be subject to development guidance contained within the General Plan.

As noted in ABAG *Projections 2005*, which relies on General Plan projections for respective jurisdictions, the resident population and employment within Pittsburg and its SOI is estimated to increase by approximately 18 percent between 2005 and 2020. Additionally, although Contra Costa County has a growing employment base, it is expected that the county would continue to provide bedroom communities, such as Bay Point, for the workforce of other Bay Area counties (General Plan, 2005). Thus, continued residential development within Bay Point could be considered consistent with anticipated development trends.

When considered cumulatively with other potential future development in Bay Point and the vicinity, the proposed project would not, by itself, induce a substantial resident or employment population increase, and the project therefore would not result in a cumulatively considerable impact to cumulative population growth.

Mitigation: None required.

References – Population and Housing

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4.6 Transportation

4.6.1 Introduction

This chapter describes: (1) the existing and planned transportation system in the vicinity of the proposed Bay Point Waterfront Strategic Plan Area (Project), including roadway, bicycle, pedestrian, and transit facilities; (2) the anticipated impacts of the project on these facilities; and (3) associated mitigation measures. The proposed Project includes an expanded marina, residential, and recreational facilities. The Project also proposes to extend Alves Lane from Willow Pass Road to the project site to provide a second access point.

4.6.2 Setting

Figure 4.6-1 shows the location of the project site in relation to the nearby roadway system and the associated study roadways and intersections.

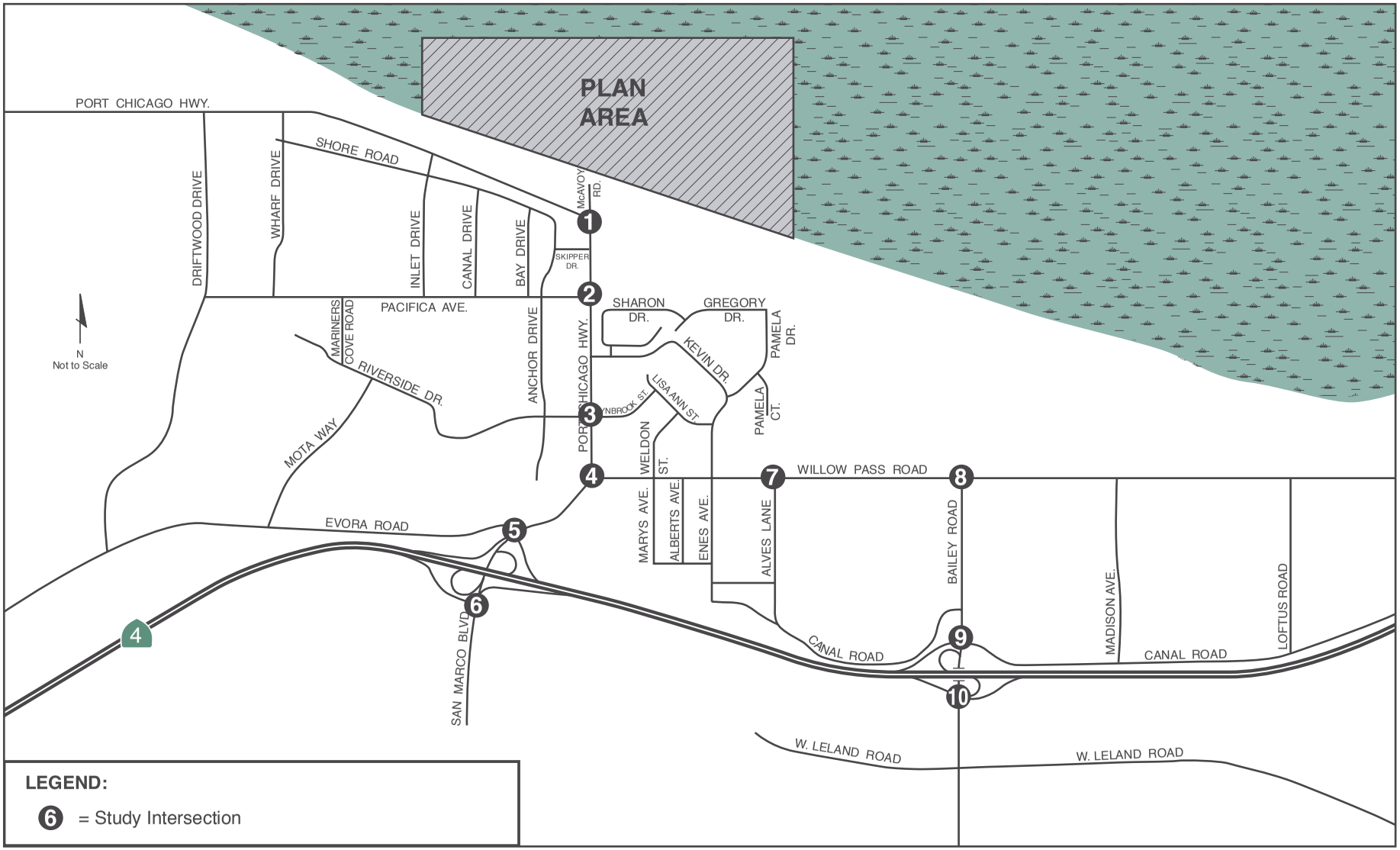
Key Roadways

State Route 4 (Highway 4, or SR 4) is the primary interregional roadway serving the community of Bay Point and City of Pittsburg. SR 4 is an east-west facility extending from Interstate 80 and the City of Hercules in the west to the Nevada state border to the east. SR 4 serves as a major recreational and commuter route between the Bay Area, Central Valley, and Sierra foothills. Roadway widening from four lanes to eight lanes (four lanes in each direction) with one lane in each direction designated as a high-occupancy vehicle (HOV) lane has recently been completed on this facility in the project vicinity. Only carpools, vanpools, and buses are permitted on HOV lanes, in the peak direction of commute travel (i.e., westbound during the a.m. peak period, and eastbound during the p.m. peak period). Further widening (four lanes to eight lanes) is anticipated to occur on this facility east of Railroad Avenue by Year 2010 (Reinders, 2006). The Contra Costa Transportation Authority (CCTA), the state-designated Congestion Management Agency (CMA) for the county, has identified SR 4 as a Route of Regional Significance.

Willow Pass Road is a generally a four-lane east-west arterial in the project vicinity. East of Bailey Road, Willow Pass Road becomes a two-lane roadway. West of Evora Road, Willow Pass Road becomes known as San Marco Boulevard. Willow Pass Road between SR 4 and Railroad Avenue is also designated by the CMA as a Route of Regional Significance.

Bailey Road is a four-lane arterial extending south from Willow Pass Road. The section of Bailey Road between Willow Pass Road and West Leland Road is also designated by the CMA as a Route of Regional Significance.

Port Chicago Highway is generally a two-lane roadway in the project vicinity (four lanes south of Kevin Drive). The roadway once connected the Bay Point community with the city of Concord to the west, however the connection is currently closed to through traffic west of McAvoy Road at the Concord Naval Weapons property.



SOURCES: Fehr & Peers

Bay Point Strategic Plan . 204379

Figure 4.6-1

Project Study Area and Study Intersections

McAvoy Road is a two-lane roadway that provides the only existing point of entry to the Plan Area. Four at-grade active railroad lines cross McAvoy Road at the entrance to the Plan Area.

Study Intersections

Intersections, rather than midblock roadway segments, are almost always the critical capacity-controlling locations for roadway networks. Ten "study" intersections were selected in consultation with staff of Contra Costa County and City of Pittsburg, and were chosen because they are the ones most likely to be affected by the proposed project and thus warrant analysis in this study. Nine of the study intersections are signalized, while one is side-street stop controlled. Figure 4.6-1 presents the location of the study intersections, while Figure 4.6-2 presents the intersection lane configurations and traffic control (signal or stop signs). The ten study intersections are:

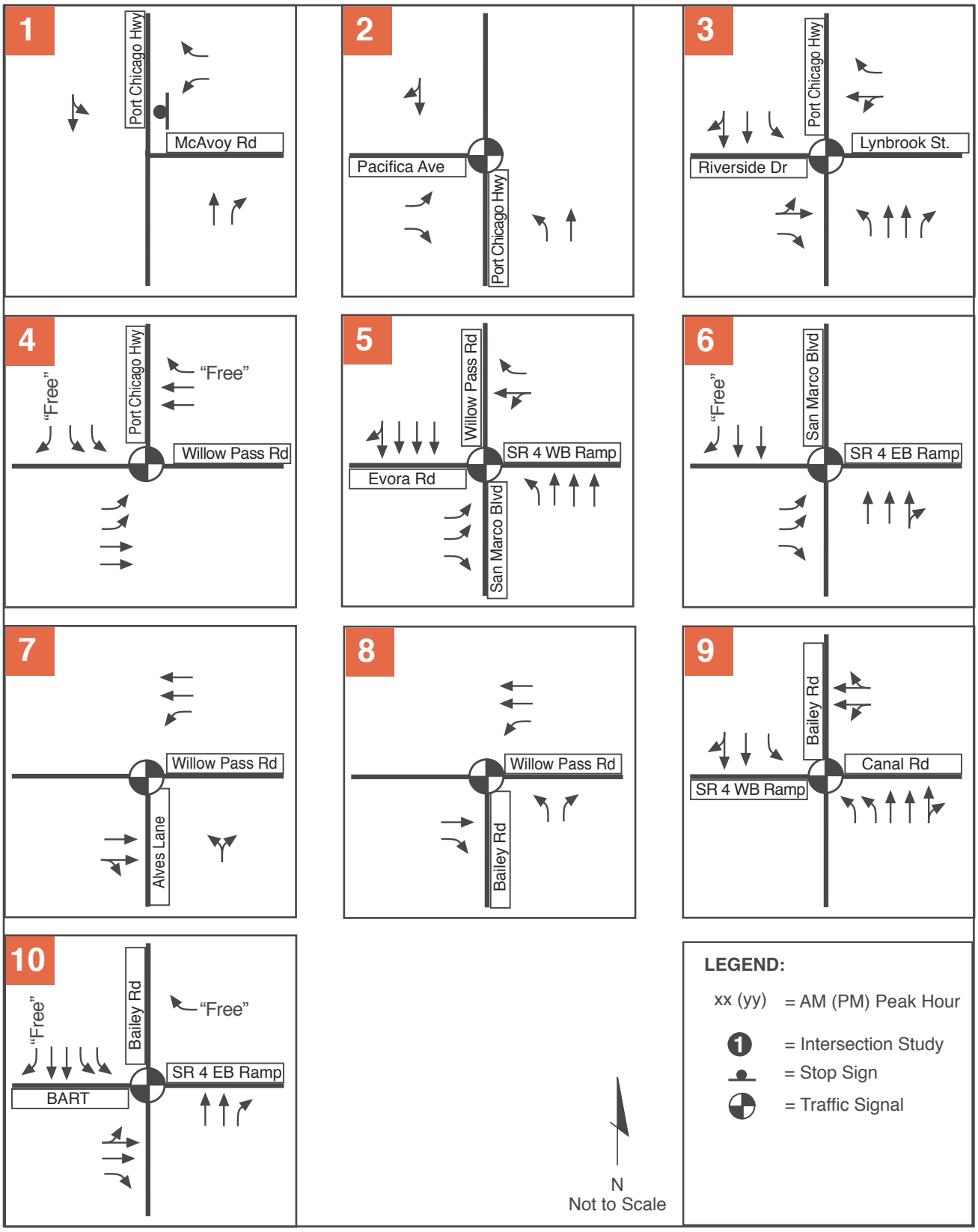
1. McAvoy Road/Port Chicago Highway (*unsignalized*)
2. Pacifica Avenue/Port Chicago Highway
3. Pacifica Avenue/Riverside Drive/Lynbrook Street
4. Pacifica Avenue/Willow Pass Road
5. San Marco Boulevard/Evora Road/SR 4 Westbound (WB) Off-Ramp
6. San Marco Boulevard/SR 4 Eastbound (EB) Ramps
7. Willow Pass Road/Alves Lane
8. Willow Pass Road/Bailey Road
9. Bailey Road/Canal Road/SR 4 Westbound (WB) On-Ramp
10. Bailey Road/SR 4 Eastbound (EB) On-Ramp/BART Driveway

Existing Traffic Volumes at Study Intersections

Fehr & Peers conducted weekday morning (7:00 to 9:00 a.m.), evening (4:00 to 6:00 p.m.), and Saturday midday (12:00 to 2:00 p.m.) peak period turning movement counts at the study intersections in September 2005 to obtain existing traffic volumes. The peak period data indicates that the weekday a.m. peak hour typically occurs from 7:00 to 8:00 a.m., the weekday p.m. peak hour typically occurs from 5:00 to 6:00 p.m., and the Saturday midday peak hour typically occurs from 12:15 to 1:15 p.m.. These time periods were selected as the traffic count periods because the combination of existing background and project-generated traffic is anticipated to be highest during these peak hours. Figure 4.6-3 presents the peak hour volumes for the weekday morning, weekday afternoon, and Saturday midday.

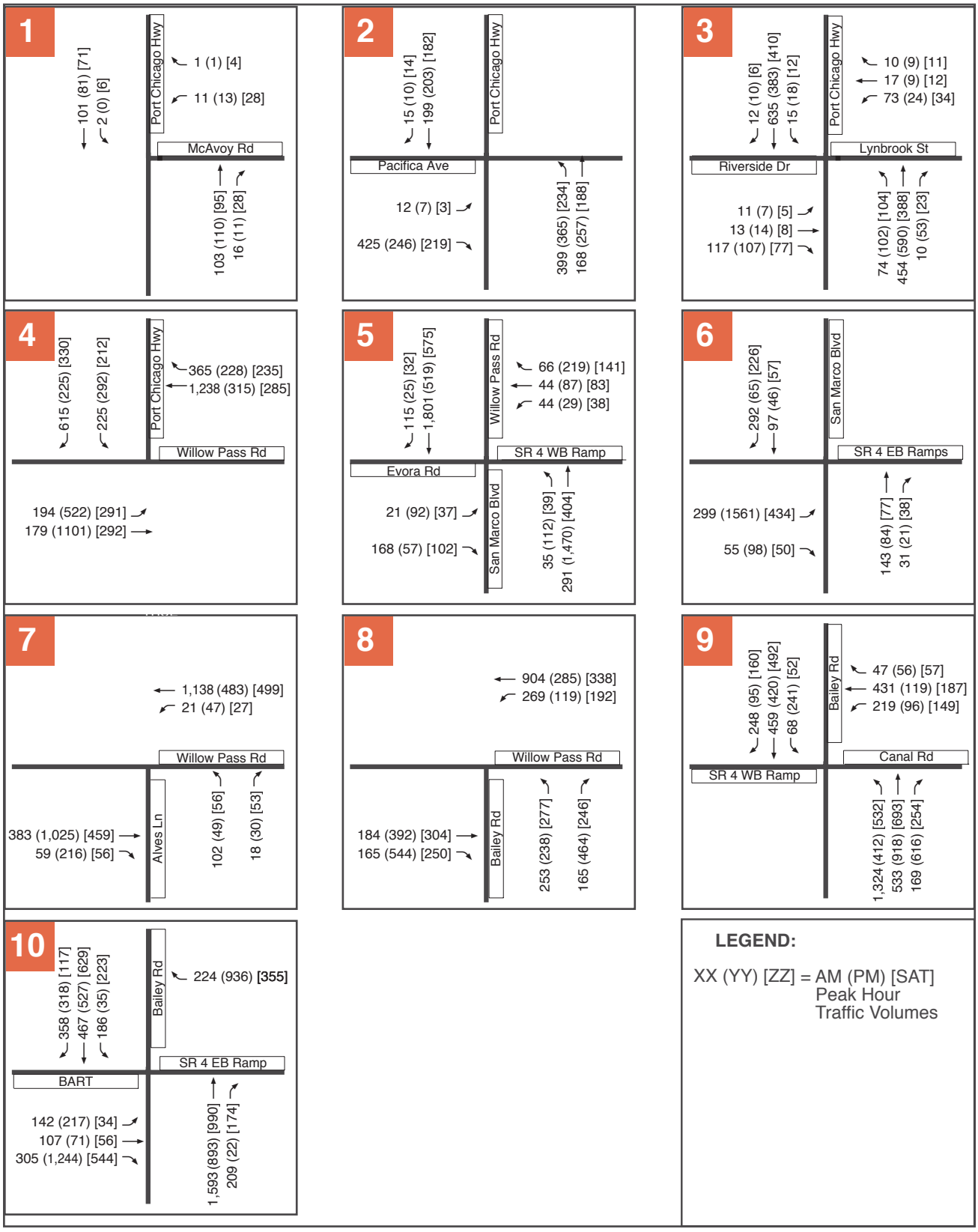
Intersection Analysis Methodology

Transportation engineers and planners commonly use a grading system called level of service (LOS) to measure and describe the operational status of a local roadway network. LOS can be used to describe an intersection's operation, ranging from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity, resulting in long queues and delays).



SOURCE: Fehr & Peers

Figure 4.6-2
Existing Intersection
Lane Configuration and Traffic Control



SOURCE: Fehr & Peers

Bay Point Strategic Plan . 204379

Figure 4.6-3
Existing Volumes

For signalized intersections, traffic conditions were evaluated using the Contra Costa Transportation Authority Level of Service (CCTALOS) methodology as outlined in CCTA's *Technical Procedures*. The CCTALOS methodology relates a service level grade to volume-to-capacity (v/c) ratio. The v/c ratio relates the total traffic volume for critical opposing movements to the theoretical capacity for those movements. The relationships between level of service and v/c ratios are presented in Table 4.6-1.

TABLE 4.6-1
SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Description	Sum of Critical V/C Ratio
A	Uncongested operations, all queues clear in a single cycle.	≤ 0.60
B	Uncongested operations, all queues clear in a single cycle.	0.61 - 0.70
C	Light congestion, occasional backups on critical approaches.	0.71 - 0.80
D	Significant congestion of critical approaches, but intersection remains functional. Some vehicles required to wait through more than one cycle during brief periods. No long queues form.	0.81 - 0.90
E	Severe congestion with long standing queues on critical approaches. Blockage may occur if intersection does not provide protected left-turns. Volumes approaching capacity. Queues may extend into adjacent intersections	0.91 - 1.00
F	Represents conditions at capacity, with extremely long delays. Total breakdown, stop and go conditions.	> 1.00

SOURCE: Contra Costa Transportation Authority, *Technical Procedures* , 1997.

For unsignalized (side street stop-controlled) intersections, the 2000 *Highway Capacity Manual* method for unsignalized intersections was used. At side-street stop-controlled intersections, an LOS rating is calculated for each minor movement based on control delay; the movement with the highest delay is reported. Control delay includes deceleration, total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line, and acceleration. Table 4.6-2 summarizes the relationship between delay and LOS for unsignalized intersections.

TABLE 4.6-2
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

SOURCE: Transportation Research Board, *Highway Capacity Manual*, 2000.

Intersection Level of Service Policies

The Bay Point community is in an unincorporated area of Contra Costa County. Intersections located within the community that are not on a Route of Regional Significance are to maintain LOS D (v/c ratio up to 0.89) or better operations. For intersections located along Routes of Regional Significance, LOS thresholds have been set in the *2004 Update to the Contra Costa Countywide Comprehensive Transportation Plan*. The *Transportation Plan* calls for maintaining low LOS D (v/c ratio up to 0.85) at signalized intersections on suburban arterial routes (such as Willow Pass Road), and LOS E or better at intersections along Bailey Road.

The City of Pittsburg *General Plan* contains policies calling for maintaining low LOS D (v/c ratio up to 0.84) at signalized intersections in suburban areas, and high LOS D (v/c ratio up to 0.89) in urban areas, on routes not designated by the CCTA as Routes of Regional Significance. For this study, the policy for side-street stop controlled intersections has been set to maintain LOS D or better on all approaches.

Existing Intersection Analysis Results

Existing operational conditions at the signalized study intersections were analyzed using the CCTALOS software package, while the unsignalized intersection analysis was based on the methodology outlined in the 2000 *Highway Capacity Manual*. As shown in Table 4.6-3, most of the study intersections currently operate at LOS A, an excellent operating level, during all three analysis periods. The intersection of Bailey Road / SR 4 Westbound Ramp / Canal Road operates at an acceptable LOS D during the a.m. peak hour. The LOS calculations show LOS A during the p.m. peak hour, but based on field observations, this intersection actually operates closer to LOS B/C during the p.m. peak hour, due vehicle queue spillback from the Bailey Road / SR 4 Eastbound Ramps / BART intersection and Madison Avenue / Canal Road intersection.

Existing Traffic Volumes at Study Freeway Segments

Average daily traffic (ADT) and peak hour volumes (both directions) on the study freeway segments in the project vicinity are presented in Table 4.6-4. The volumes were obtained from Caltrans published data.

Existing Freeway Operations

Operational conditions along county freeways are periodically reported by CCTA as part of their Congestion Management Program (CMP). The current status of SR 4 operations in the project vicinity has been documented by the CCTA in its *2005 Update Congestion Management Program LOS Compliance Monitoring Report*. The LOS standard for SR 4 between State Route 242 (SR 242) and Loveridge Road is LOS F, the worst level of service. SR 4 between SR 242 and Bailey Road operates at LOS D in the eastbound direction and LOS A in the westbound direction during the p.m. peak hour. Between Bailey Road and Loveridge Road, SR 4 operates at LOS E in the westbound direction during the a.m. peak hour and LOS F in the eastbound direction during the p.m. peak hour.

TABLE 4.6-3
EXISTING INTERSECTION LEVEL OF SERVICE

Intersection	Traffic Control[1]	Peak Hour	Delay or V/C[2,3]	LOS
1. Port Chicago Highway/McAvoy Road	SSSC	AM	10	B
		PM	9	A
		SAT	9	A
2. Port Chicago Highway/Pacifica Avenue	Signal	AM	0.37	A
		PM	0.34	A
		SAT	0.25	A
3. Port Chicago Highway/Riverside Drive/ Lynbrook Street	Signal	AM	0.31	A
		PM	0.22	A
		SAT	0.22	A
4. Port Chicago Highway/Willow Pass Road	Signal	AM	0.49	A
		PM	0.41	A
		SAT	0.24	A
5. Willow Pass Road/San Marco Boulevard/ Evora Road/SR 4 WB Ramps	Signal	AM	0.42	A
		PM	0.46	A
		SAT	0.21	A
6. San Marco Boulevard/SR 4 EB Ramps	Signal	AM	0.13	A
		PM	0.54	A
		SAT	0.17	A
7. Willow Pass Road/Alves Lane	Signal	AM	0.40	A
		PM	0.43	A
		SAT	0.23	A
8. Willow Pass Road/Bailey Road	Signal	AM	0.41	A
		PM	0.50	A
		SAT	0.45	A
9. Bailey Road/SR 4 WB Ramp/Canal Road	Signal	AM	0.87	D
		PM	0.60	A
		SAT	0.49	A
10. Bailey Road/SR 4 EB Ramps/BART	Signal	AM	0.61	B
		PM	0.86	D
		SAT	0.39	A

1 Signal = Signalized intersection, SSSC = Side-street stop-controlled intersection
2 Volume-to-capacity (v/c) ratio determined for signalized intersections using the CCTA LOS methodology.
3 Average control delay per vehicle (in seconds) for the worst-case stop controlled movement or approach at side-street stop-controlled intersections according to the *Highway Capacity Manual*, Transportation Research Board, 2000.

SOURCE: Fehr & Peers Transportation Consultants, 2005.

TABLE 4.6-4
AVERAGE TRAFFIC VOLUMES ON STATE ROUTE 4

Highway Segment	Daily Volume	Peak Hour Volume
Willow Pass Road to San Marco Boulevard	155,000	11,400
San Marco Boulevard to Bailey Road	141,000	10,200
Bailey Road to Railroad Avenue	122,000	8,800

SOURCE: Caltrans, http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2004all/r002-4i.htm, 2005

In addition to the CCTA-established LOS standards for SR 4, the Measure C-established TRANSPLAN Regional Transportation Committee has set traffic service objectives (TSOs) for SR 4 (and other Routes of Regional Significance). The TSO measurement unit most directly indicative of congestion levels is the Delay Index, which compares point-to-point travel time under free-flow conditions with congested (i.e., peak period) conditions. For example, a Delay Index of 2.0 means the point-to-point travel time for a given corridor under congested conditions is twice as long as under free-flow conditions. The *2004 Update to the Countywide Comprehensive Transportation Plan* sets a Delay Index TSO (objective) for SR 4 at 2.4. As reported in the *2004 Update to the Countywide Comprehensive Transportation Plan Traffic Service Objective Monitoring Report, Action Plan*, SR 4 west of Willow Pass Road currently meets the Delay Index objective with a Delay Index of 1.5 in the westbound direction during the a.m. peak hour and 1.3 in the eastbound direction during the p.m. peak hour. Between Bailey Road and Loveridge Road, SR 4 meets the Delay Index objective with a delay index of 1.2 in the westbound direction during the a.m. peak hour but does not meet the Delay Index objective during the p.m. peak hour with a Delay Index of 3.5 in the eastbound direction.

Bicycle and Pedestrian Facilities

On-street (Class II) bicycle facilities are currently provided on Pacifica Avenue from Port Chicago Highway to about Mariners Cove Drive.[1] According to the *Contra Costa Countywide Bicycle and Pedestrian Plan* (2003), there are plans to extend the bicycle facilities to Driftwood Drive and ultimately to Evora Road. Class II bicycle facilities are also provided on Port Chicago Highway from Willow Pass Road to Skipper Drive, Willow Pass Road east of Port Chicago Highway, and Bailey Road between Willow Pass Road and Leland Road. Off-street bicycle paths (Class I) are provided along the Contra Costa Canal and the Delta De Anza Trail. Bicycle parking is provided at the Pittsburg/Bay Point BART station. The Great Delta Trail, which was created by SB 1556 (Torlakson) and signed into law by Governor Schwarzenegger in September 2006, is proposed on the subject site. The alignment is along the north side of the rail lines and has spurs that lead to the waterfront on the project site.

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signal heads. There is a lack of well connected pedestrian facilities between the project site and the rest of the Bay Point community. McAvoy Road does not provide sidewalk on either side of the street. The intersection of Port Chicago Highway / McAvoy Road is unsignalized, and crosswalks are not provided. Sidewalks are not provided on either side of Port Chicago Highway north of Skipper Road. South of Skipper Road, sidewalk is provided on Port Chicago Highway on the west side. On the east side of Port Chicago Highway, sidewalk is provided south of Pacifica Avenue. The nearest signalized intersection (Port Chicago Highway / Pacifica Avenue) to the Plan Area does provide crosswalks and pedestrian signal heads.

[1] Bicycle facilities are classified as Class I bike paths (paved trails that are separated from the roadways); Class II bike lanes (lanes on roadways that are designated for use by bicycles by striping, pavement legends, and signs); and Class III bike routes (roadways that are designated for bicycle use with signs, but no separate lane width).

Public Transit

The Pittsburg/Bay Point Bay Area Rapid Transit (BART) station is located on the north side of West Leland Road near Bailey Road. This station is located at the end of the Concord-Pittsburg line. Trains from this station provide direct service to Walnut Creek, downtown Oakland and San Francisco, and transfer service to all other points on the BART system. Current ridership at the Pittsburg-Bay Point BART station averages close to 10,000 patrons per day (Forbes, 2004). A pair of one-way driveways allows vehicular access to the BART station and the parking area from West Leland Road. Another connection to the BART station is provided from Bailey Road, allowing access to and from the north. The BART parking lot accommodates approximately 2,000 vehicles, and is full on a typical weekday. Patrons may also reach the station via buses operated by Tri-Delta Transit, which serves the East County communities of Bay Point, Pittsburg, Antioch, Brentwood and Oakley. Nine Tri-Delta Transit routes through these communities connect to the BART station.

Tri-Delta Transit Route 389 provides bus service along Port Chicago Highway and Pacifica Avenue with a connection to the BART station. The nearest bus stop to the Plan Area is located at the intersection of Port Chicago Highway / Pacifica Avenue. Service is only provided on weekdays between about 5:00 a.m. and 10:00 p.m., with one bus in each direction during the a.m. and p.m. peak hour (Tri Delta Transit, 2005).

Baseline Plus Approved Development

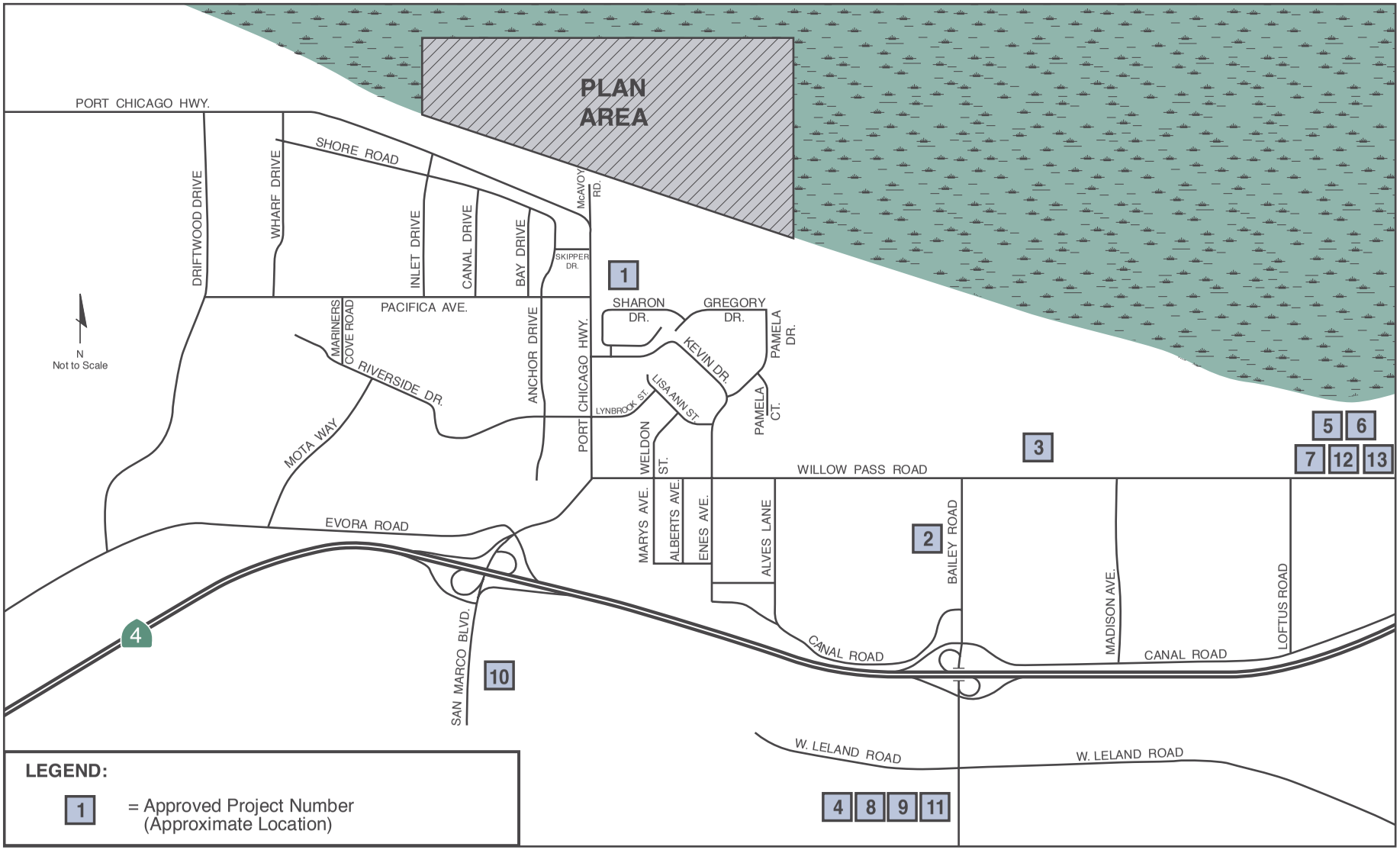
To be consistent with CCTA Technical Procedures requirements for analyzing impacts of traffic generated by new development, the study must evaluate traffic conditions under a scenario in which traffic from approved developments is added to the observed existing conditions.

Trip Generation and Distribution

A list of approved but as yet incomplete development projects in the project area was developed in consultation with the City of Pittsburg and included projects in the County's jurisdiction. Trip generation and distribution, where available, were based on the traffic study performed for each approved project. For approved projects that did not have readily available traffic studies, trip generation was based on average trip rates presented in the Institute of Transportation Engineers, *Trip Generation,* 7th Edition. Trip distribution was based on existing travel patterns in the area and trip distribution patterns presented in available traffic studies for similar land uses.
Figure 4.6-4 shows the approximate locations of the approved projects, and Table 4.6-5 presents the approved projects list and associated trip generation results.

Planned Roadway Improvements

West Leland Road has recently been extended to San Marco Boulevard. Adjustments have been made to the existing observed traffic volumes at some of the study intersections to account for the expected traffic redistribution



SOURCES: Fehr & Peers

Bay Point Strategic Plan . 204379

Figure 4.6-4

Location of Approved Projects

TABLE 4.6-5
APPROVED PROJECTS TRIP GENERATION

No.	Name	Land Use	Size		Total Trips			
					Weekday			Sat. Peak
					Daily	AM	PM	
1	Bay Harbor Commerce Center[1]	Industrial Park	39.9	acres	*2,516*	*405*	*418*	*188*
2	Bay Point/Pittsburg BART Station Area Specific Plan[2]	Multi Family	350	m.f.	2,051	154	182	165
		Office	40	ksf	440	62	60	17
				Total	*2,491*	*216*	*242*	*182*
3	North Broadway Neighborhood[2]	Single Family	69	s.f.	660	52	70	65
		Multi Family	52	m.f.	305	23	27	24
		Commercial	3	ksf	129	3	11	15
				Total	*1,094*	*78*	*108*	*104*
4	Bailey Estates[1]	Single Family	249	s.f.	*2,383*	*187*	*251*	*234*
5	Empire Business Park[1]	Warehouse/Manuf.	104	ksf	506	51	17	12
		Warehouse	326	ksf	1,617	193	165	39
				Total	*2,123*	*244*	*182*	*51*
6	Harbor Lights[2]	Single Family	253	s.f.	*2,421*	*190*	*256*	*238*
7	Heritage Point[1]	Single Family	125	s.f.	*1,268*	*101*	*134*	*118*
8	Lawlor Estates[1]	Single Family	50	s.f.	*479*	*38*	*51*	*48*
9	Oak Hills Crest[2]	Single Family	29	s.f.	*278*	*22*	*29*	*27*
10	San Marco[2]	Single Family	166	s.f.	1,589	125	168	156
		Multi Family	1,526	m.f.	8,942	671	794	718
				Total	*10,531*	*796*	*962*	*874*
11	Vista Del Mar[1]	Single Family	540	s.f.	5,168	405	545	507
		Multi Family	617	m.f.	3,616	271	321	290
				Transit Reduction (6%)	-527	-41	-52	-48
				Sub Total	8,257	635	814	749
		Retail	51.5	ksf	2,211	53	193	256
		Office	206	ksf	2,268	319	307	84
				Internalization (20%)	-884	-20	-78	-104
				Sub Total	3,595	352	422	236
		School	800	stu.	1,355	407	0	0
				Total	*13,207*	*1,394*	*1,236*	*985*
12	Willow Brook[1]	Single Family	60	s.f.	*574*	*45*	*61*	*57*
13	Willow Heights[2]	Single Family	120	s.f.	*1,148*	*90*	*121*	*113*

[1] a.m and p.m. peak hour trip generation based on data presented in traffic impact study report prepared for noted development. Saturday trip generation estimated by Fehr & Peers based on dated presented in ITE *Trip Generation,* 7th Edition.
[2] Trip generation estimated by Fehr & Peers based on data presented in ITE *Trip Generation,* 7th Edition.

SOURCE: Fehr & Peers Transportation Consultants, 2005

effects of the West Leland Road extension. A full description of these adjustments can be found in the Technical Appendix. With the traffic redistribution effects of the West Leland Road extension, it is anticipated that traffic volumes would be increased at the San Marco Boulevard/SR 4 Eastbound Ramps intersection and reduced at the Bailey Road/SR 4 Eastbound Ramps/BART intersection during the a.m., p.m., and Saturday peak hours. Traffic from the approved projects was added to these adjusted traffic volumes to develop "Baseline" conditions in this traffic analysis.

Baseline Plus Approved Development Intersection Operations

Figure 4.6-5 presents the estimated intersection traffic volumes under the Baseline Plus Approved Development scenario, and Table 4.6-6 presents the associated LOS calculation results. The results indicate that operations at most study intersections would not change substantially as compared to Existing Conditions, except at the following locations:

- San Marco Boulevard/SR 4 Eastbound Ramps (LOS A to LOS C during p.m. peak hour)
- Willow Pass Road/Bailey Road (LOS A during all three peak hours to LOS B, C, and B, during the a.m., p.m., and Saturday peak hour, respectively)
- Bailey Road/SR 4 Westbound Ramp/Canal Road (LOS D to LOS E during the a.m. peak hour and LOS A to LOS B during the p.m. peak hour)
- Bailey Road/SR 4 Eastbound Ramps/BART (LOS D to LOS C during the p.m. peak hour)

4.6.3 Regulatory Setting

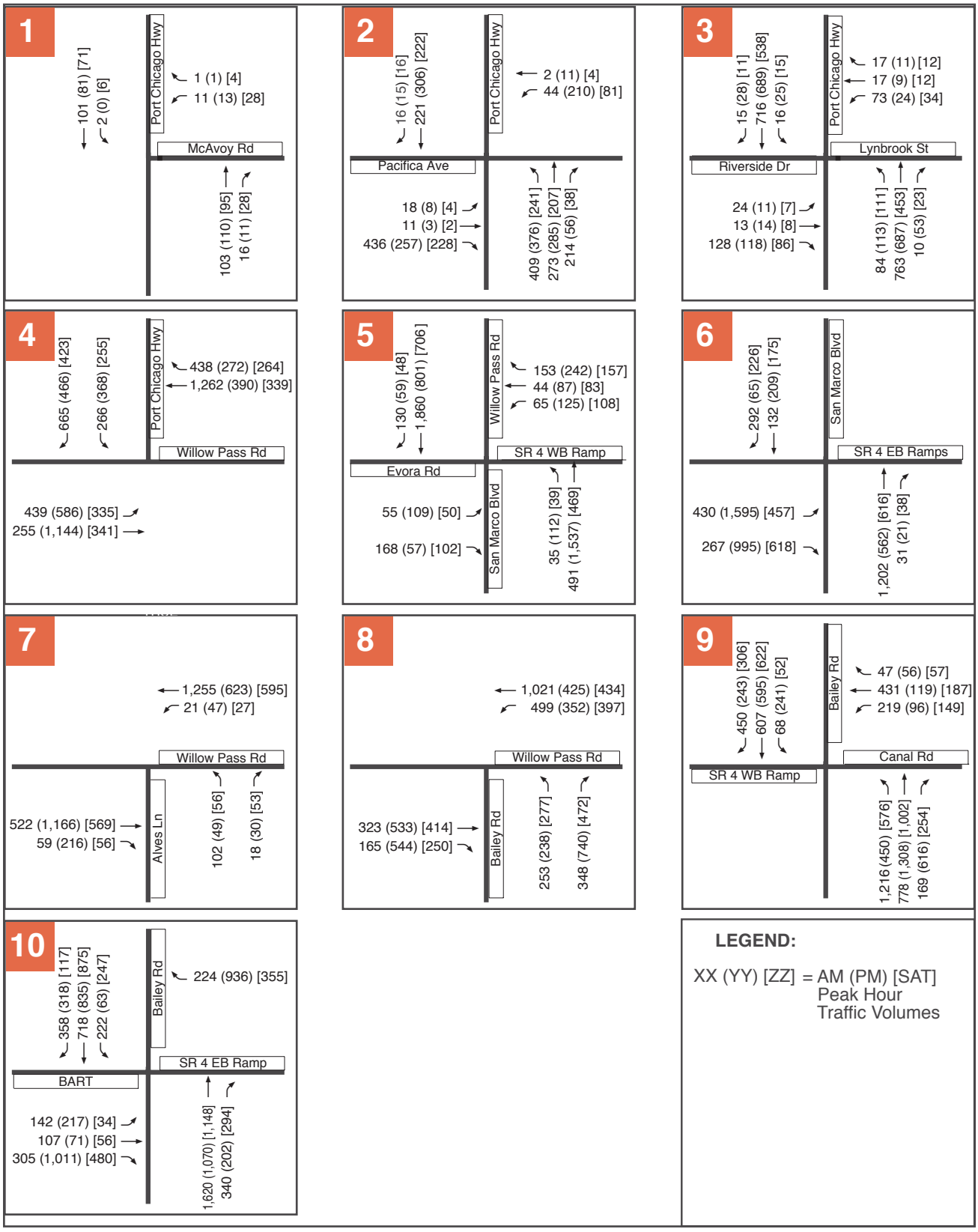
Agencies with Jurisdiction Over Transportation in the Project Area

Contra Costa County has jurisdiction over all County streets and County-operated traffic signals, while the City of Pittsburg has jurisdiction over all City streets and City-operated traffic signals. In addition, several regional agencies, including TRANSPLAN Regional Transportation Planning Committee and the Metropolitan Transportation Commission (MTC), oversee and coordinate funding for regional transportation improvement programs affecting the County. The California Department of Transportation (Caltrans) has jurisdiction of all freeways, freeway ramps, and other state routes, such as SR 4.

Transit service providers in the area, such as BART and Tri-Delta Transit, have jurisdiction over their respective services. These various jurisdictional agencies, their responsibilities and associated funding, are more specifically described below.

Contra Costa Transportation Authority (CCTA)

In 1988, voters in Contra Costa County passed the Measure C Growth Management Program, increasing the county sales tax by 1/2 percent for 20 years to finance construction of a specified set of public transit and highway improvement projects. This ballot measure also created the Contra Costa Transportation Authority (CCTA) to oversee implementation of the improvements contained in Measure C, including the extension of BART to Pittsburg/Bay Point.



SOURCE: Fehr & Peers

Bay Point Strategic Plan . 204379

Figure 4.6-5
Baseline Plus Approved Projects
Peak Hour Traffic Volumes

TABLE 4.6-6
EXISTING PLUS APPROVED PROJECTS CONDITIONS
INTERSECTION LEVEL OF SERVICE (LOS)

Intersection		Traffic Control[1]	Peak Hour	Delay or V/C[2,3]	LOS
1.	Port Chicago Highway/McAvoy Road	SSSC	AM	10	B
			PM	9	A
			SAT	9	A
2.	Port Chicago Highway/Pacifica Avenue	Signal	AM	0.42	A
			PM	0.53	A
			SAT	0.33	A
3.	Port Chicago Highway/Riverside Drive/ Lynbrook Street	Signal	AM	0.34	A
			PM	0.31	A
			SAT	0.27	A
4.	Port Chicago Highway/Willow Pass Road	Signal	AM	0.59	A
			PM	0.45	A
			SAT	0.29	A
5.	Willow Pass Road/San Marco Boulevard/ Evora Road/SR 4 WB Ramps	Signal	AM	0.44	A
			PM	0.49	A
			SAT	0.27	A
6.	San Marco Boulevard/SR 4 EB Ramps	Signal	AM	0.41	A
			PM	0.72	C
			SAT	0.51	A
7.	Willow Pass Road/Alves Lane	Signal	AM	0.43	A
			PM	0.47	A
			SAT	0.26	A
8.	Willow Pass Road/Bailey Road	Signal	AM	0.62	B
			PM	0.74	C
			SAT	0.63	B
9.	Bailey Road/SR 4 WB Ramp/Canal Road	Signal	AM	**0.94**	**E**
			PM	0.62	B
			SAT	0.59	A
10.	Bailey Road/SR 4 EB Ramps/BART	Signal	AM	0.62	B
			PM	0.75	C
			SAT	0.44	A

NOTES: Results in **bold** represent unacceptable levels of service.

1 Signal = Signalized intersection, SSSC = Side-street stop-controlled intersection
2 Volume-to-capacity (v/c) ratio determined for signalized intersections using the CCTA LOS methodology.
3 Average control delay per vehicle (in seconds) for the worst-case stop controlled movement or approach at side-street stop-controlled intersections according to the *Highway Capacity Manual*, Transportation Research Board, 2000.

SOURCE: Fehr & Peers Transportation Consultants, 2005

CCTA has also been assigned responsibility as the Congestion Management Agency (CMA) that sets state and federal funding priorities for improvements affecting the Contra Costa County Congestion Management Program (CMP) roadway system. CCTA-designated CMP roadway system components in the project area include SR 4, Willow Pass Road, and Bailey Road. Under state CMP provisions, any improvements to these CMP components that are to receive state or federal funding must be adopted by the CCTA and included in the Capital Improvement Program (CIP) component of the CCTA-prepared CMP document, which must be updated biennially.

While congestion management programs are no longer required by state law, Contra Costa County, along with most other counties in the Bay Area, has opted to continue with its CMP. To carry out the policies and actions of Measure C and the CMP, CCTA established procedures for analyzing impacts of traffic from new development.

City of Pittsburg

The City of Pittsburg is responsible for planning, constructing, and maintaining local public transportation facilities, including City streets, City-operated traffic signals, City sidewalks, and City bicycle facilities. These local transportation services are funded primarily by gas-tax revenue and developer fees.

TRANSPLAN

Measure C also requires all Contra Costa County jurisdictions to participate in the preparation of Action Plans for Routes of Regional Significance in order to determine the appropriate measures and programs for mitigation of regional traffic impacts. TRANSPLAN is the regional transportation planning committee for eastern Contra Costa County, comprised of the cities of Antioch, Brentwood, Oakley, Pittsburg, and unincorporated Contra Costa County. One elected official from each of these jurisdictions serves on the TRANSPLAN Regional Transportation Planning Committee. This committee provides a forum for carrying out the requirements of Measure C, and is responsible for developing and adopting an East County Action Plan for Routes of Regional Significance. The Action Plans from each Regional Committee are combined to form the CCTA Countywide Comprehensive Transportation Plan.

Metropolitan Transportation Commission (MTC)

MTC is the regional transportation planning agency for the Bay Area. MTC is the clearinghouse for state and federal funds for transportation improvements. Each county or its CMA, including CCTA, forwards a capital improvement project list to MTC. MTC reviews the lists submitted by all nine Bay Area counties and submits a regional priority list to the California Transportation Commission (CTC) and/or the Federal Highway Administration for selection of the hierarchy of projects to receive funding.

Caltrans

Caltrans has authority over the state highway system, including mainline facilities and interchanges. Caltrans must be involved in and approve the planning and design of all improvements involving state highway facilities. State highway facilities in the project area include SR 4 and its interchanges at San Marco Boulevard and Bailey Road.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, telecommunications, natural gas, water and transportation companies, in addition to household

goods movers and rail safety. The CPUC must be involved in and approve the planning and design of all improvements involving railroad right-of-way, including railroad crossings.

Local and Regional Policies

Contra Costa County

The current (1996) Contra Costa County Transportation and Circulation Element includes the following policies pertinent to consideration of proposed development projects in the County.

Levels of Service

Policy 5-1: Cooperation between the cities and the County shall be strongly encouraged when defining level of service standards.

Policy 5-4: Development shall be allowed only when transportation performance criteria are met and necessary facilities and/or programs are in place or committed to be developed within a specified period of time.

Circulation and Access

Policy 5-2: Appropriately planned circulation system components shall be provided to accommodate development compatible with policies identified in the Land Use Element.

Policy 5-3: Transportation facilities serving new urban development shall be linked to and compatible with existing and planned roads of adjoining area, and such facilities shall use presently available public and semi-public rights of way where feasible.

Goal 7-G-5: Provide adequate capacity on arterial roadways to meet LOS standards and to avoid traffic diversion to local roadways or the freeway.

City of Pittsburg

The current (2001) City of Pittsburg General Plan Transportation and Circulation Element includes the following policies pertinent to consideration of proposed development projects in the City:

Levels of Service

Goal 7-G-1: Adopt local intersection service level standards that conform to CCTA's Growth Management requirements for Routes of Regional Significance at signalized intersections. Designate intersections within Pittsburg city limits as being located in rural, semi-rural, suburban, urban, or downtown areas. The following levels of service correspond to those assignments:

- Rural LOS low C (V/C ratio 0.70 to 0.74)
- Semi-Rural LOS high C (V/C ratio 0.75 to 0.79)
- Suburban LOS low D (V/C ratio 0.80 to 0.84)
- Urban LOS high D (V/C ratio 0.85 to 0.89)
- Downtown LOS high D (V/C ratio 0.85 to 0.89)

Goal 7-G-5: Provide adequate capacity on arterial roadways to meet LOS standards and to avoid traffic diversion to local roadways or the freeway.

Policy 7-P-6: Design roadway improvements and evaluate development proposals based on LOS standards prescribed in Goal 7-G-1.

East County Action Plan

The current East County Action Plan (adopted June 20, 2000) establishes the following roads near the project site as Routes of Regional Significance:

- State Route 4
- Bailey Road between Willow Pass Road and West Leland Road
- Willow Pass Road between Bailey Road and State Route 4

The Action Plan also sets forth Traffic Service Objectives (TSOs) for these routes. For SR 4, the TSOs include a maximum Delay Index of 2.4. For Willow Pass Road, the Action Plan TSOs include a maximum Delay Index of 1.9 and a level of service of mid-LOS D or better (V/C ratio of 0.85 or less) at signalized intersections. For Bailey Road in the project vicinity, the Action Plan TSOs include a maximum Delay Index of 1.9 and an LOS of E or better (V/C ratio of 0.99 or less) at signalized intersections.

Contra Costa County Congestion Management Program.

The Contra Costa County Congestion Management Program (CMP) establishes level of service standards for highway segments and specific monitoring intersections along CCTA-identified Routes of Regional Significance. In the project vicinity, the CMP-established level of service standard for SR 4 is LOS F. There are no CMP monitoring intersections in the project vicinity.

4.6.4 Impacts and Mitigation Measures

Standards of Significance

Consistent with CEQA Guidelines Appendix G, the project would result in a significant transportation impact if it would:

- Cause operation of a signalized intersection along Willow Pass Road (except Willow Pass Road/Bailey Road) to decline from acceptable mid-LOS D or better to unacceptable high-LOS D (v/c greater than 0.85) or worse;

- Cause operation of a signalized intersection along Bailey Road to decline from acceptable high-LOS E or better to unacceptable LOS F (v/c greater than 1.00);

- Cause operation of a signalized intersection not identified under criteria (1) or (2) above to decline from acceptable high-LOS D or better to unacceptable LOS E (v/c greater than 0.90) or worse;

- Cause the V/C ratio to increase by 0.01 or more at an intersection operating at unacceptable service levels without the project;

- Cause the side-street stop controlled approach to an unsignalized intersection to decline to unacceptable LOS E or worse;

- Increase the total volume entering an unsignalized intersection by one percent or more with a side-street stop controlled approach operating at unacceptable LOS E or worse without the project;
- Increase volumes at an unsignalized intersection to meet the peak hour traffic signal warrant;
- Cause the Delay Index on Willow Pass Road or Bailey Road to increase to 2.0 or greater;
- Cause the Delay Index to increase by 0.1 or more on Willow Pass Road or Bailey Road where the Delay Index is 2.0 or greater without the project;
- Cause the Delay Index on State Route 4 to increase to 2.5 or greater;
- Cause the Delay Index to increase by 0.1 or more on State Route 4 where the Delay Index is 2.5 or greater without the project;
- Result in projected on-site parking demand that would exceed the proposed on-site parking supply on a regular and frequent basis;
- Result in inadequate on-site vehicle and pedestrian circulation;
- Result in inadequate vehicular or emergency vehicle site access;
- Result in potential safety conflicts for pedestrians or bicyclists, or fail to provide adequate bicycle and pedestrian access; or,
- Increase transit demand above the service levels or the capacity of transit vehicles such that it would:

    1) increase the average ridership on Tri-Delta Transit lines by three percent at bus stops where the average load factor with the project in place would exceed 125 percent over a peak hour; or
    2) increase the peak-hour average ridership on BART by three percent where the passenger volume would exceed the standing capacity of BART trains.

Project Trip Generation

Trip generation for the multi-family residential units was based on data published by the Institute of Transportation Engineers (ITE, 2003), while trip generation for the marina was estimated based on trip rates presented in ITE and field data at the existing marina. Table 4.6-7 presents trip rates determined from traffic counts collected at the existing marina and trip rates from ITE. As shown in this table, a combination of field collected data and ITE information was used to estimate trip generation for the marina, with the higher of the ITE average versus field average comparison selected as the rate used for each analysis scenario.

TABLE 4.6-7
TRIP GENERATION RATES (PEAK-HOUR TRIPS PER BERTH) FOR MARINA USE

Time Period	Field Collected Data[1]		ITE Average	Rate Used in Analysis
	Range	Average		
Weekday AM (7-9 AM)	0.08-0.15	0.11	0.08	0.11
Weekday PM (4-6 PM)	0.12-0.14	0.13	0.19	0.19
Saturday PM (12-2 PM)	-[2]	0.19	0.27	0.27

1 Data collected from 9/10/2005 to 9/16/2005
2 No range is presented because only one Saturday was counted

SOURCES: Institute of Transportation Engineers (ITE); and Fehr & Peers Transportation Consultants, 2005.

Trip generation for the recreational uses was based on the assumption that special events and/or league play (i.e. softball leagues, soccer leagues, etc.) would be allowed. Special event/league play trip generation is higher than the trip generation for casual use of the recreational facilities that would occur on a typical day. Including the higher trip generation estimates in the impact analysis allows for the maximum flexibility of the recreational facilities. To account for potential internalization between the residential uses and the recreational uses, 3 percent of the recreational trips were assumed to come from the residential uses (based on household trip purpose data in the *San Francisco Bay Area Travel Survey 2000*), and engineering judgment (MTC, 2004). These internal trips would not adversely affect off-site roadway facilities.

As shown in Table 4.6-8, the project is estimated to generate about 4,141 net new weekday daily trips, 208 net new weekday morning peak hour trips, 461 net new weekday evening peak hour trips, and 544 net new Saturday peak hour trips.

Project Trip Distribution and Assignment

The CCTA Decennial Travel Demand Model (TransCAD) was used to estimate project trip distribution for the residential and recreational uses. Trip distribution for the marina was developed using residence data for existing users of the marina. Figure 4.6-6 displays the proposed trip distribution patterns for the residential, marina, and recreational uses. These percentages are used to assign the net new project trips to the surrounding roadway system. The trip assignment, showing the magnitude of the project site traffic added to each intersection turning movement is presented in Figure 4.6-7.

Impacts

Baseline Plus Approved Development Plus Project Intersection

Impact 4.6.1: The project would increase traffic volumes at the study intersections. (Less than Significant)

TABLE 4.6-8
PROJECT TRIP GENERATION ESTIMATES

Land Use	Weekday Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips			Saturday Peak Hour Trips		
		In	Out	Total	In	Out	Total	In	Out	Total
Townhomes[1] (*450 Units*)	2,305	29	143	172	138	68	206	93	80	173
Less Internal Townhome Trips[2]	*-70*	*0*	*-1*	*-1*	*-3*	*-3*	*-6*	*-4*	*-5*	*-9*
Marina (*568 Berths*)	1,681	25	37	62	65	43	108	67	86	153
Less Existing Marina Use	*-493*	*-14*	*-20*	*-34*	*-23*	*-15*	*-38*	*-25*	*-32*	*-57*
Recreational Uses (*League Play/Special Events*)[3]										
Baseball Fields (*3 Fields*)[4]	360	0	0	0	45	45	90	45	45	90
Soccer Fields (*2 Fields*)[5]	328	0	0	0	41	41	82	75	75	150
Beach Area[6]	16	0	0	0	2	2	4	19	6	25
Nature trails[7]	40	3	2	5	8	2	10	10	4	14
Small Boat Launch[8]	44	3	2	5	10	1	11	12	2	14
Recreational Sub-Total	788[9]	6	4	10	106	91	197	161	132	293
Less Internal Recreational Trips[2]	*-70*	*-1*	*0*	*-1*	*-3*	*-3*	*-6*	*-5*	*-4*	*-9*
Net New Trips	***4,141***	***45***	***163***	***208***	***280***	***181***	***461***	***287***	***257***	***544***

1 Trip generation for residential units determined from fitted curve equations for Townhomes (Land Use 230) in ITE's *Trip Generation* (7th Edition), as presented below:

Daily Equation: Ln(T) = 0.85 Ln(X) + 2.55
AM Equation: Ln(T) = 0.80 Ln(X) + 0.26 (inbound = 17 percent, outbound = 83 percent)
PM Equation: Ln(T) = 0.82 Ln(X) + 0.32 (inbound = 67 percent, outbound = 33 percent)
Saturday Equation: T = 0.29X + 42.63 (inbound = 54 percent, outbound = 46 percent)
Where: T = trip ends, LN = logarithmic equation, and X = number of dwelling units.

2 During League Play/Events, 3 percent of recreational trips are assumed to come from the residential component.

3 Trip generation for recreational uses assumes an event/league play for the p.m. peak hour and the Saturday peak hour. Trip generation for the baseball fields and soccer fields is assumed to be zero during the AM peak hour.

4 League play assumes one game ends and another begins within the p.m. peak hour, with an attendance of 30 persons per game including players, spectators, and officials. Vehicle occupancy of 2 persons per vehicle was assumed. Daily baseball field trips assumed to be 4 times p.m. peak trips for an event/league play weekday.

5 League play assumes one game ends and another begins within the p.m. peak hour. Each team has 18 players and two coaches, with 0.25 spectators per player for weekday games (1.5 spectators per player for Saturday games), and 2 officials per field. Vehicle occupancy of 2.5 persons per vehicle was assumed. Daily soccer field trips assumed to be 4 times p.m. peak trips for an event/league play weekday.

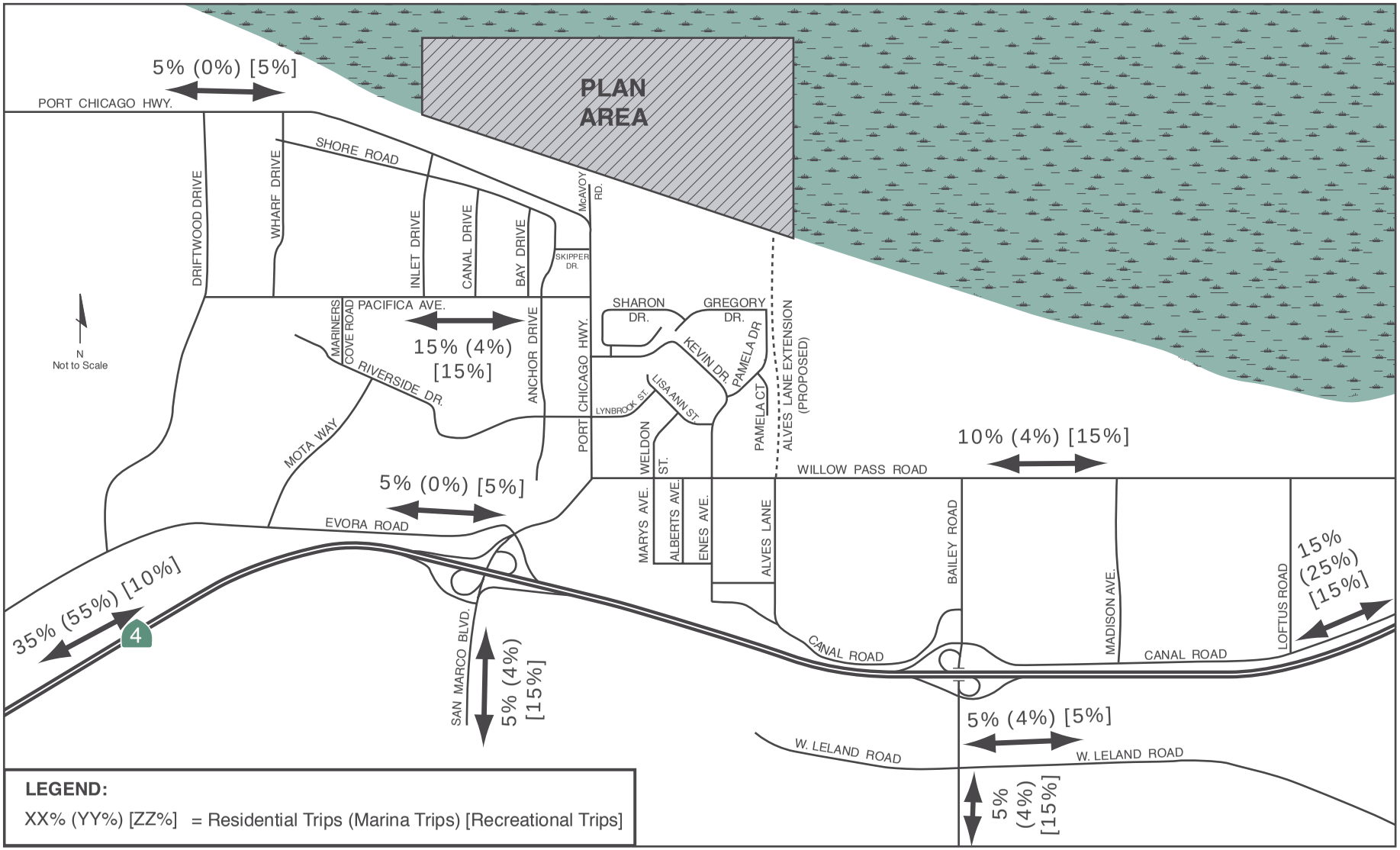
6 Event includes two birthday parties or family gatherings on a Saturday, each with 25 people at 2 persons per vehicle, 75% arriving and 25% leaving during the peak hour. No events are assumed to occur during a typical weekday peak period. However, minimal beach activity was assumed to occur during the p.m. peak hour to reflect sporadic use.

7 Event includes a docent-led hike with 12 total hikers, at 2 persons per vehicle, all arriving during the peak hour (6 trips in during p.m. & Saturday peak periods). Additional trips are assumed to be joggers and hikers.

8 Regular users include people fishing from shore. Event assumes a kayak excursion with 10 boaters, at 1.5 persons per vehicle, all arriving during the peak hour (7 vehicles in) in addition to the regular users.

9 Daily recreational trips assumed to be 4 times p.m. peak trips for an event/league play weekday.

SOURCES: Institute of Transportation Engineers (ITE); and Fehr & Peers Transportation Consultants, 2005.



SOURCES: Fehr & Peers

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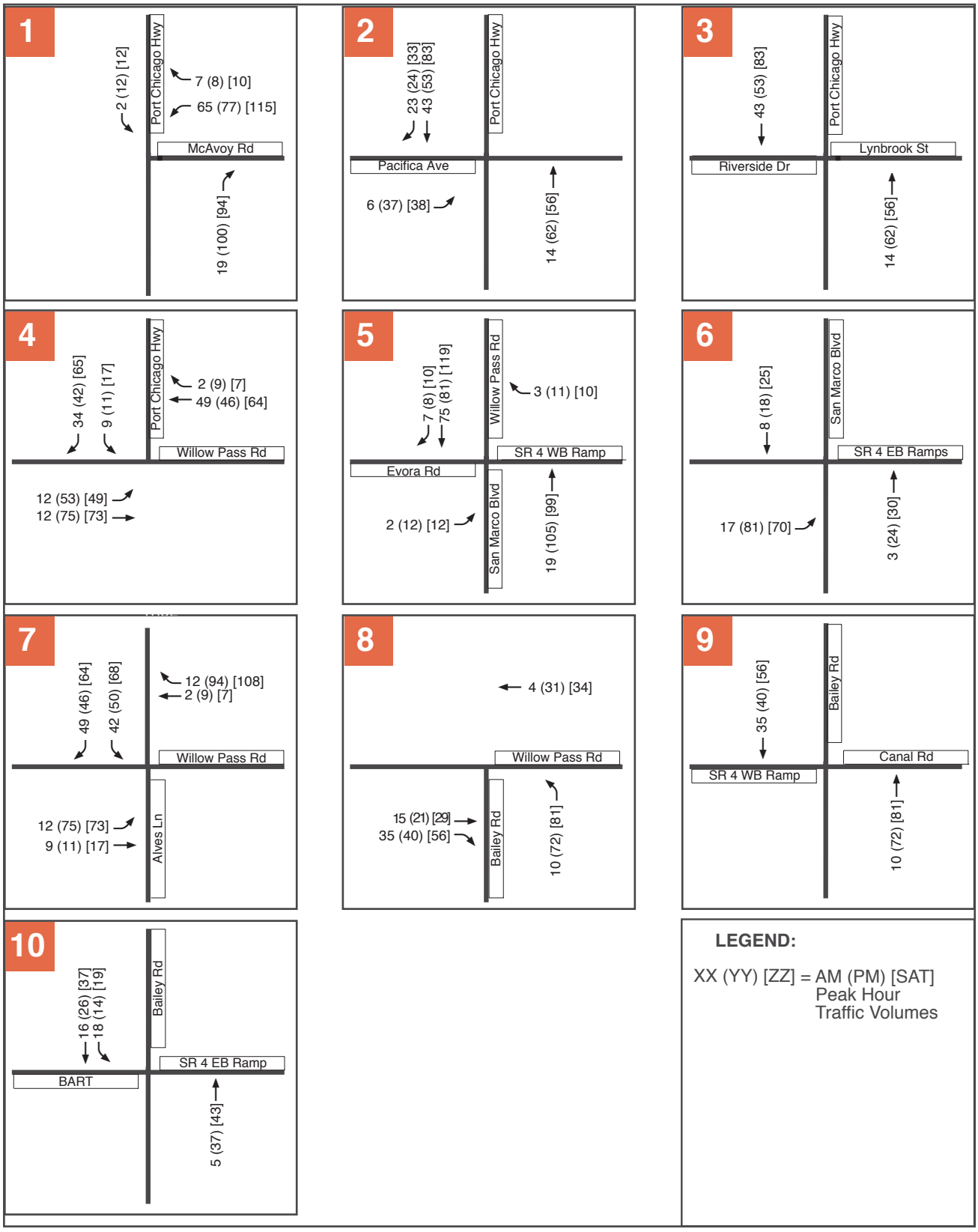
Figure 4.6-6

Project Trip Distribution



SOURCE: Fehr & Peers

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Figure 4.6-7

Project Only Peak Hour Traffic Volumes

Figure 4.6-8 presents the peak hour intersection traffic volumes under the Baseline-Plus-Approved-Development-Plus-Project scenario, and Table 4.6-9 presents the estimated levels of service at the study intersections under this scenario. As shown, the study intersections operate at acceptable LOS C or better, except the intersection of Bailey Road / SR 4 Westbound Ramp / Canal Road during the a.m. peak hour, which would operate at an acceptable LOS E. The proposed project would not degrade any of the study intersections to unacceptable service levels.

Mitigation: None required.

Parking

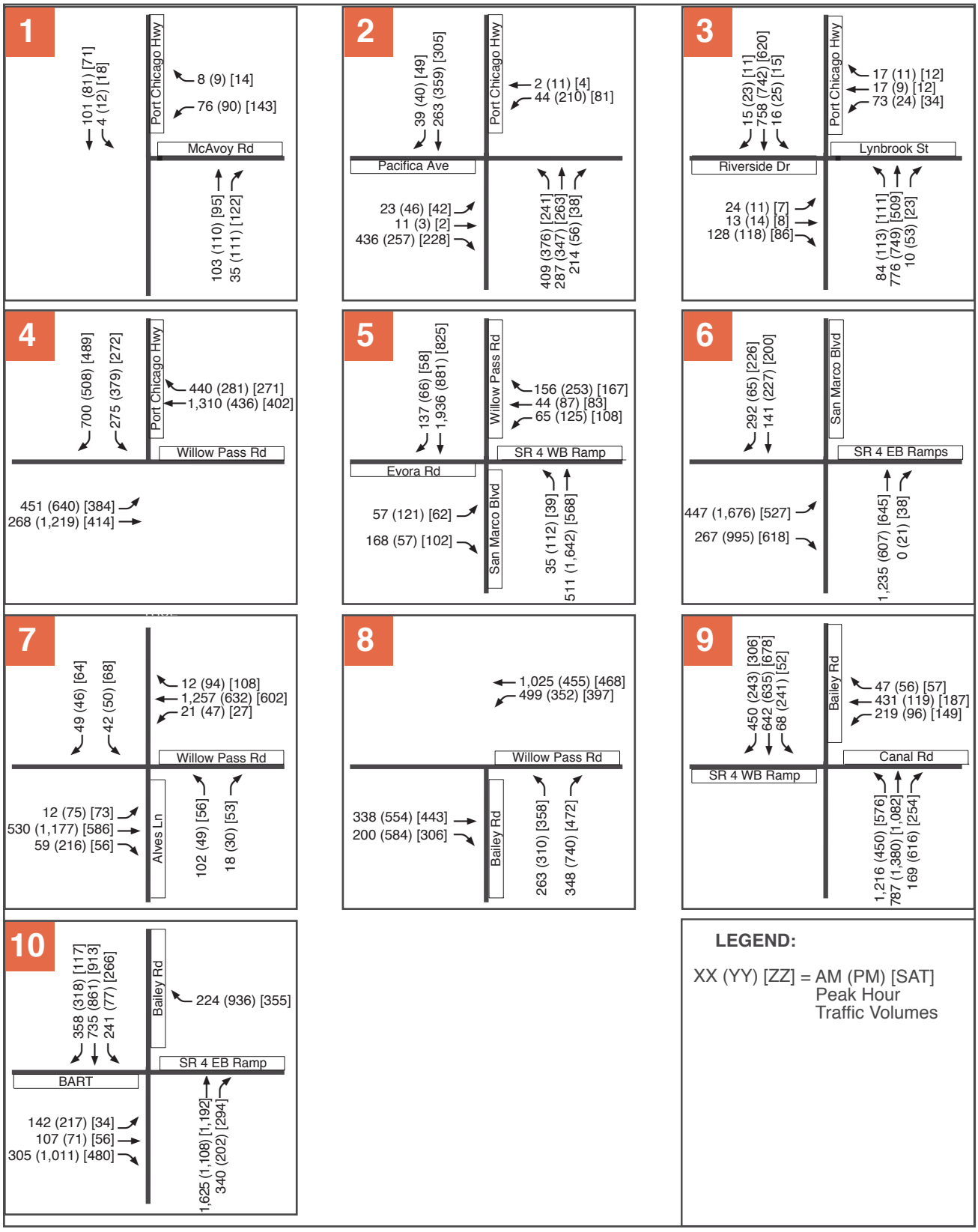
Impact 4.6.2: The project would increase the demand for parking in the project area. (Significant)

The County's Zoning Ordinance does not provide a parking requirement for a marina use. However, based on data published by the Institute of Transportation Engineers, the maximum parking demand is 0.59 parking spaces per berth (ITE, 2004). This data reflects a single site surveyed over two weekends. Currently, the project is proposing 0.60 space per berth, which appears to be adequate.

The parking requirement based on the County's Zoning Ordinance for multi-family residential is between one and two parking spaces per unit depending on the number of bedrooms. Specifically, the ordinance requires 1 resident space for each studio unit, 1.5 resident spaces for each one bedroom unit, and 2 resident spaces for each unit with two or more bedrooms. In addition, the ordinance also requires one guest parking space per four dwelling units. Guest parking can be curb parking along the property's street frontage. Based on ITE data, the average peak parking demand for residential condominiums/townhomes is about 1.46 vehicles per dwelling unit. Currently, the project is proposing 2 parking spaces per dwelling unit, which is higher than the average peak parking demand based on ITE. However, at this time, a detailed site plan has not been developed, and it is unknown if curb parking would be provided to meet the guest parking requirement based on the County's Zoning Ordinance.

The County's Zoning Ordinance does not provide a parking requirement for recreational uses such as baseball fields and soccer fields. Therefore, peak parking demand was estimated based on the potential use of these facilities during special event/league play. Based on the preliminary site plan, the baseball fields, the soccer fields, and the nature trail would share a surface parking lot, while the parking for the beach area and the boat launch would be incorporated into the marina parking.

Based on the estimated number of users, it is estimated that the surface parking lot that serves the baseball fields, soccer fields, and the nature trail should provide a total of 254 parking spaces, which would accommodate the peak parking demand generated by simultaneous baseball and soccer tournaments on a Saturday, as well as nature trail users. If baseball and soccer league play



SOURCE: Fehr & Peers

Figure 4.6-8
Baseline Plus Approved Projects Plus Project
Peak Hour Traffic Volumes

TABLE 4.6-9
EXISTING PLUS APPROVED PROJECTS PLUS PROPOSED PROJECT CONDITIONS
INTERSECTION LEVEL OF SERVICE (LOS)

Intersection		Control[1]	Peak Hour	Existing + Approved Projects		Existing + Approved Projects + Project	
				Measure[2,3]	LOS	Measure[2,3]	LOS
1	Port Chicago Highway/McAvoy Road	SSSC	AM	10	B	11	B
			PM	9	A	11	B
			SAT	9	A	11	B
2	Port Chicago Highway/Pacifica Avenue	Signal	AM	0.42	A	0.46	A
			PM	0.53	A	0.60	A
			SAT	0.33	A	0.42	A
3	Port Chicago Highway/Riverside Drive/ Lynbrook Street	Signal	AM	0.34	A	0.36	A
			PM	0.31	A	0.33	A
			SAT	0.27	A	0.29	A
4	Port Chicago Highway/Willow Pass Road	Signal	AM	0.59	A	0.61	B
			PM	0.45	A	0.48	A
			SAT	0.29	A	0.33	A
5	Willow Pass Road/San Marco Boulevard/ Evora Road/SR 4 WB Ramps	Signal	AM	0.44	A	0.46	A
			PM	0.49	A	0.53	A
			SAT	0.27	A	0.29	A
6	San Marco Boulevard/SR 4 EB Ramps	Signal	AM	0.41	A	0.41	A
			PM	0.72	C	0.73	C
			SAT	0.51	A	0.51	A
7	Willow Pass Road/Alves Lane	Signal	AM	0.43	A	0.49	A
			PM	0.47	A	0.53	A
			SAT	0.26	A	0.37	A
8	Willow Pass Road/Bailey Road	Signal	AM	0.62	B	0.64	B
			PM	0.74	C	0.75	C
			SAT	0.63	B	0.70	B
9	Bailey Road/SR 4 WB Ramp/Canal Road	Signal	AM	0.94	E	0.95	E
			PM	0.62	B	0.63	B
			SAT	0.59	A	0.61	B
10	Bailey Road/SR 4 EB Ramps/BART	Signal	AM	0.62	B	0.63	B
			PM	0.75	C	0.77	C
			SAT	0.44	A	0.46	A

1 Signal = Signalized intersection, SSSC = Side-street stop-controlled intersection
2 Volume-to-capacity (v/c) ratio determined for signalized intersections using the CCTA LOS methodology.
3 Average control delay per vehicle (in seconds) for the worst-case stop controlled movement or approach at side-street stop-controlled intersections according to the Highway Capacity Manual, Transportation Research Board, 2000.

SOURCE: Fehr & Peers Transportation Consultants, 2005.

are not allowed to occur or do not occur at the same time, a total of 164 spaces would be required for the baseball fields, soccer fields, and the nature trail. The parking demand could be furthered reduced if game times are staggered so that departing players have adequate time to leave the fields before the next game's players arrive.

Based on the preliminary site plan, parking for the beach area and boat launch would be incorporated into the marina parking. The beach area is expected to generate 19 trips in and 6 trips out during the Saturday peak hour. Assuming that the parking turnover is less than 3 hours,

it is estimated that peak parking demand for the beach area would be about 42 spaces. The boat launch is expected to generate 12 trips in and 2 trips out during the Saturday peak hour. Assuming that the parking turnover is less than 3 hours, it is estimated that peak parking demand for the boat launch would be 25 spaces. It is unknown at this time how many parking spaces the project is providing for its recreational facilities.

The development application process would require any proposed development in the plan area to provide code-compliant parking. Mitigation Measure 4.6.2 would ensure parking demand would be met and thus, the project would have a less than significant effect on parking.

> **Mitigation Measure 4.6.2:** The development on the site shall provide the following parking supply: 0.60 spaces per berth for the marina; residential parking that would meet the County's parking code and accommodate the estimated parking demand; 254 spaces for its recreational facilities, unless baseball games and soccer games would not be permitted to occur simultaneously (in which case, 164 spaces would be provided); 42 spaces for the beach area; and 25 spaces for the boat launch.

Significance after Mitigation: Less than significant.

Transit

Impact 4.6.3: The project would increase ridership on public transit serving the project area. (Less than Significant)

As currently proposed, only the residential uses are likely to generate transit trips. Transit trips would likely use Tri Delta Transit Route 389 and the Pittsburg/Bay Point BART station. A previous study in the area (Vista del Mar EIR) estimated that up to 6 percent of residential trips could be made by BART. However, a portion of the Vista Del Mar development was more proximate to the BART station than would the proposed project, which is more than two miles from the BART station. Even so, assuming that 1 percent of the transit trips involved taking Route 389 to the Pittsburg/Bay Point BART station and 5 percent of the BART transit trips involve a vehicle trip to the BART station would result in a maximum of two peak-hour trips on Route 389 and 12 peak-hour trips on BART.

As described in the Setting, Route 389 currently provides two buses (one in each direction) during the a.m. and p.m. peak hour. The two Tri Delta Transit peak-hour trips distributed between two buses results in an increase of one passenger per bus. A typical bus has a capacity of 40 passengers, and an increase of one passenger per bus would represent less than three percent of a bus capacity. Therefore, the project would not result in a noticeable increase in Tri Delta Transit usage, and the project impact would be less than significant.

Based on the most recent BART schedule, approximately 10 and 12 trains serve the Pittsburg/Bay Point BART station during the a.m. and p.m. peak hour, respectively (BART, 2005). When the

12 BART trips generated by the project are distributed to among the 10 BART trains in the a.m. and 12 BART trains in the p.m., a maximum increase of one passenger per train would result. Each BART train has between four and nine cars. Based on information provided by BART, each BART car has a capacity of about 67 passengers. Assuming a worst-case scenario of a four-car BART train results in a minimum capacity of 268 passengers. An increase of one passenger per train represents less than one percent of the BART capacity. Therefore, the project would not result in a noticeable increase in BART usage, and the project impact would be less than significant.

Mitigation: None required.

Pedestrian and Bicycle Safety

Impact 4.6.4: The project would increase the potential for pedestrian and bicycle safety conflicts. (Significant)

At this time, only a sketch-level site plan is available for review, and the design for the proposed Alves Lane extension has not been completed. The sketch-level site plan indicates adequate pedestrian connectivity between the marina and residential uses via a large continuous boardwalk along the entire marina waterfront. However, the sketch level site plan does not provide sufficient detail to indicate the location of other internal pedestrian facilities such as sidewalks and crosswalks.

While the project would not interfere with existing pedestrian and bicycle facilities, it is unknown if it would provide adequate connectivity to existing facilities outside the project. Currently, McAvoy Road does not provide sidewalks on either side of the street, and portions of Port Chicago Highway near McAvoy Road also do not provide sidewalks. At this time, it is unknown if the proposed Alves Lane extension would provide pedestrian facilities.

It is also unknown if bicycle facilities would be provided on-site or if bicycle lanes would be provided on McAvoy Road to connect to existing bicycle lanes on Port Chicago Highway and Pacifica Avenue. Furthermore, it has not yet been determined if bicycle lanes would be provided on the Alves Lane extension to connect with bicycle lanes on Willow Pass Road.

Contra Costa County Code would require that future development to be consistent with County Code. The design of future pedestrian and bicycle circulation would be reviewed and approved by the County's traffic engineer and Fire Department as part of the development application process. Mitigation Measure 4.6.4 would ensure consistency with County Code and therefore, the project would have a less than significant effect on bicycle and pedestrian circulation.

> **Mitigation Measure 4.6.4:** Development on the site shall remain consistent with the Contra Costa County Code and to include the following to provide adequate pedestrian and bicycle safety and connectivity to existing facilities:

- Adequate on-site pedestrian facilities including sidewalks (minimum five-foot width) to connect all on-site uses and along both sides of access roads to connect all on-site uses and to connect the project site with the rest of the Bay Point community
- Sidewalks on at least one side of McAvoy Road and the proposed Alves Lane extension
- A marked crosswalk (with standard pedestrian signs) across Port Chicago Highway at the McAvoy Road / Port Chicago Highway intersection
- Bicycle lanes (minimum four-foot width) on either McAvoy Road or the proposed Alves Lane extension to connect the project site to the rest of the Bay Point community
- Bicycle parking for residents, marina users, and recreational facility users

Significance after Mitigation: Less than significant.

Vehicle and Emergency Vehicle Site Access

Impact 4.6.5: The project would increase vehicular traffic, including potential emergency services traffic, from the project site. (Significant)

The sketch-level site plan indicates that an existing road (McAvoy Road) and a new road (proposed Alves Lane extension) would provide vehicle and emergency vehicle access to the site. Based on the projected traffic volumes, those two access points would be adequate to serve the project site. Although the Alves Lane extension has not yet been designed, a two-lane road would be adequate to accommodate the projected traffic volumes.

Both McAvoy Road and the proposed Alves Lane extension cross four active railroad tracks. Three railroad tracks are used by Union Pacific, while the fourth is used by Burlington Northern Santa Fe and the Amtrak Capitol Corridor train. The four railroad tracks serve about 32 trains each day (Kerr, 2005). Flashing signals and railroad crossing pavement markings are currently provided on McAvoy Road to help prevent vehicle/train collisions. Safety railroad crossing arms are currently provided for only two of the four tracks. Based on field observations conducted December 8, 2005 from 9:00 a.m. to 11:30 a.m., traffic on McAvoy Road can be stopped for up to two minutes during the passing of each train. During field observations, a train was observed using one of the railroad tracks that does not have safety railroad crossing arms, and a railroad employee was observed stopping and directing traffic on McAvoy Road to help prevent vehicle/train collisions.

The project does not propose to provide grade separation at the McAvoy Road crossing, and it has not yet been determined if the Alves Lane extension crossing would be at-grade or grade-separated. The McAvoy Road and Alves Lane extension railroad crossings would be approximately 3,000 feet apart. Given the observed length of trains and the time it takes for a

train to pass each railroad crossing, it is likely that both railroad crossings could be closed to vehicular traffic at the same time. Because access to the project site would be limited to these two potentially-blocked locations, at-grade crossings at both McAvoy Road and the proposed Alves Lane extension would result in inadequate immediate emergency vehicle access during train crossings.

The intersection of McAvoy Road / Port Chicago Highway is located along a horizontal curve and is currently unsignalized (traffic on McAvoy Road stops and yields to traffic on Port Chicago Highway). This intersection would operate at acceptable service levels with the project and would not meet the peak-hour traffic signal warrant. Thus, this intersection would remain unsignalized. To ensure adequate sight distance, three sight distances must be considered: (1) stopping sight distance for a vehicle on Port Chicago Highway to a vehicle abruptly exiting the McAvoy Road, (or to a pedestrian crossing Port Chicago Highway) (2) stopping sight distance for a southbound vehicle on Port Chicago Highway approaching a stopped vehicle waiting to make the southbound left-turn movement into McAvoy Road, and (3) the corner sight distance for a vehicle exiting McAvoy Road.[2] Based on the Caltrans *Highway Design Manual*, approximately 300 feet and 440 feet of stopping sight distance and corner sight distance, respectively, should be provided for a design speed of 40 miles per hour and posted speed limit of 35 miles per hour. Table 4.6-10 summarizes the sight distance requirements and field measurements. As shown, adequate sight distance is provided at the McAvoy Road / Port Chicago Highway intersection.

TABLE 4.6-10
SUMMARY OF STOPPING SIGHT AND CORNER SIGHT DISTANCES

Sight Distance	Northbound	Southbound
Stopping sight distance on Port Chicago Highway to vehicle exiting McAvoy Road or pedestrian crossing Port Chicago Highway	1,000' (field measured) 300' (Caltrans standard)	650' (field measured) 300' (Caltrans standard)
Stopping sight distance for southbound vehicle on Port Chicago Highway to vehicle making southbound left turn into McAvoy Road	n/a	580' (field measured) 300' (Caltrans standard)
Corner sight distance for vehicle waiting on McAvoy Road	1,000' (field measured) 440' (Caltrans standard)	650' (field measured) 440' (Caltrans standard)

SOURCE: Fehr & Peers Transportation Consultants, 2005

As discussed earlier, Alves Lane would be extended as part of the project from its current terminus at Willow Pass Road to the project site. It is important to note that due to an existing housing development on the north side of the Alves Lane / Willow Pass Road intersection, the proposed Alves Lane extension would need to be offset from the existing Alves Lane / Willow Pass Road intersection. Offset intersections are generally undesirable because of the increased

[2] Stopping sight distance is the distance required by a driver of a vehicle on Port Chicago Highway to stop after an object on the road becomes visible (e.g., a vehicle abruptly exiting McAvoy Road). Corner sight distance is the sight distance available for a driver waiting at McAvoy Road to enter the Port Chicago Highway traffic stream.

risk of vehicle conflicts. However, these risks are generally minimized through adequate signing, striping, and traffic control.

> **Mitigation Measure 4.6.5:** Prior to residential occupancy, safety railroad crossing arms shall be provided at all four railroad tracks on McAvoy Road. The Alves Lane extension shall be designed for two-way travel and provide a minimum of one lane in each direction. The Alves Lane extension railroad crossing shall be grade-separated to allow for unobstructed emergency vehicle access. The grade separated crossing is not a capacity enhancing mitigation measure but rather an emergency services mitigation measure. Therefore, the grade separated crossing shall be constructed prior to the occupancy of the site. The sidewalk along the grade-separated crossing shall be American with Disabilities Act (ADA) compliant, which may require a longer bridge span or more gentle slopped approaches to meet ADA requirements. Adequate signing and striping shall be provided at the Alves Lane / Willow Pass Road intersection to provide smooth vehicle travel through the intersection and minimize the effects of offset intersections. To minimize vehicle conflicts, split traffic signal phasing shall be provided for the north and south approaches to the Alves Lane / Willow Pass Road intersection. Pedestrian crosswalks and signal heads shall be provided on all approaches to the intersection.

Significance after Mitigation: Less than significant.

On-Site Vehicle Circulation

Impact 4.6.6: The project would increase on-site vehicle traffic. (Significant)

The sketch-level site plan does not provide sufficient detail to determine if the project would create hazards due to unacceptable design features. Typical unacceptable design features include narrow roadways and long cul-de-sacs that do not meet fire department standards, offset or substantially skewed internal intersections, inadequate vehicle turning radii, and inappropriate traffic control. The sketch-level site plan does present the proposed major on-site circulation roadways and the location of two proposed roundabouts. While the major circulation pattern and the location of roundabouts appear to be appropriate, the sketch level site plan does not indicate the design (i.e., width, parking, etc.) of the roadways or the design of the roundabouts. Based on the projected traffic volumes, one lane in each direction on the major internal roadways and left-turn lanes at major intersections would be adequate to serve project traffic. Furthermore, single-lane roundabouts would be adequate to serve project traffic.

Contra Costa County View would require that future development to be consistent with County Code. The design of on-site circulation would be reviewed and approved by the County's traffic engineer and Fire Department as part of the development application process. Mitigation Measure 4.6.6 would ensure consistency with County Code and therefore, the project would have a less than significant effect on on-site circulation.

Mitigation Measure 4.6.6: The final site plan shall be developed to remain consistent with the Contra Costa County Code, and the project shall include the following to provide adequate on-site vehicular circulation:

- Roadway widths and cul-de-sac lengths that meet fire department standards
- Internal intersections that are not offset or intersect below 60 degrees
- Adequate vehicle turning radii to accommodate emergency vehicles and the largest personal vehicle anticipated to access the site. The largest personal vehicle is expected to be a motor home with a boat trailer (American Association of State Highway and Transportation Officials [AASHTO] vehicle type MH/B).
- Adequate internal traffic control based on the *Manual on Uniform Traffic Control Devices* (FHWA, 2000).
- Major internal roadways with two-way travel (one lane in each direction) and left-turn lanes at major intersections
- Roundabouts with adequate design and radius to accommodate the largest vehicle anticipated to access the site. A motor home with boat trailer would require a roundabout with a radius of approximately 55 feet.

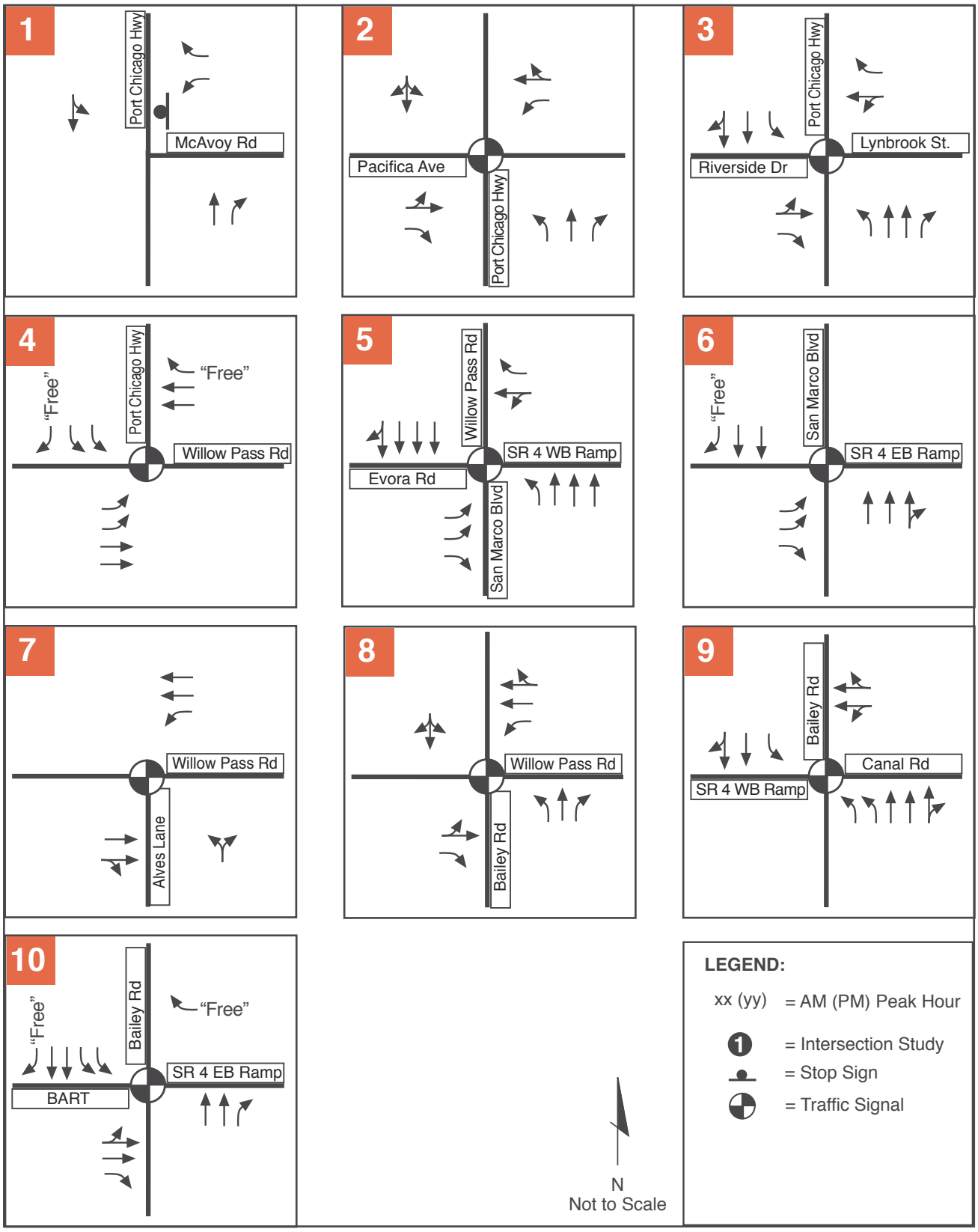
Significance after Mitigation: Less than significant.

4.6.5 Cumulative (Year 2025) Conditions

Traffic Forecasts

Year 2025 traffic forecasts were developed using the CCTA Decennial Model Update developed using the TransCAD software. Land use assumptions coded into the model were based on ABAG *Projections 2000* (employment) and *2002* (households). The model does not include development at the project site beyond what exists today. No adjustments to the land use data were made to develop Cumulative No Project traffic forecasts. Cumulative Plus Project traffic forecasts were developed by manually adding project trips to Cumulative No Project traffic forecasts.

The roadway network assumed in the 2025 cumulative model includes the transportation system improvements identified in the Pittsburg General Plan, as well as planned regional improvements. The analysis also assumes the future development of the now vacant parcel on the north end of the intersection of Willow Pass Road and Bailey Road with a shopping center. Figure 4.6-9 shows the intersection lane configurations assumed for the cumulative conditions analyses.



SOURCE: Fehr & Peers

Figure 4.6-9
Cumulative Intersection Lane Configuration and Traffic Control

It should be noted that some local roads (Riverside Drive and Alves Lane) are not represented in the model network. To develop future year forecasts for these facilities, the model results representing through traffic on the major streets were combined with reasonable assumptions about side-street traffic volumes. In most cases, where the side street serves an area that has already been fully developed, the Baseline Conditions side-street volumes were carried forward to the future year.

Cumulative Intersection Operations

Figures 4.6-10 and 4.6-11 show the Cumulative No Project and Cumulative Plus Project intersection volume forecasts, respectively, based on the model results. As expected, the West Leland Road extension would result in a redistribution of traffic in the project area. Some of the general redistribution effects include higher volumes at the San Marco Boulevard interchange, lower volumes at the Bailey Road interchange, and lower eastbound/westbound through volumes on Willow Pass Road. Table 4.6-11 contains the intersection operations results from these analyses. The Bailey Road / SR 4 Eastbound Ramps / BART and San Marco Boulevard / SR 4 Eastbound Ramps intersections would operate at LOS F both with and without the project during the p.m. peak hour. All other intersections would operate acceptably.

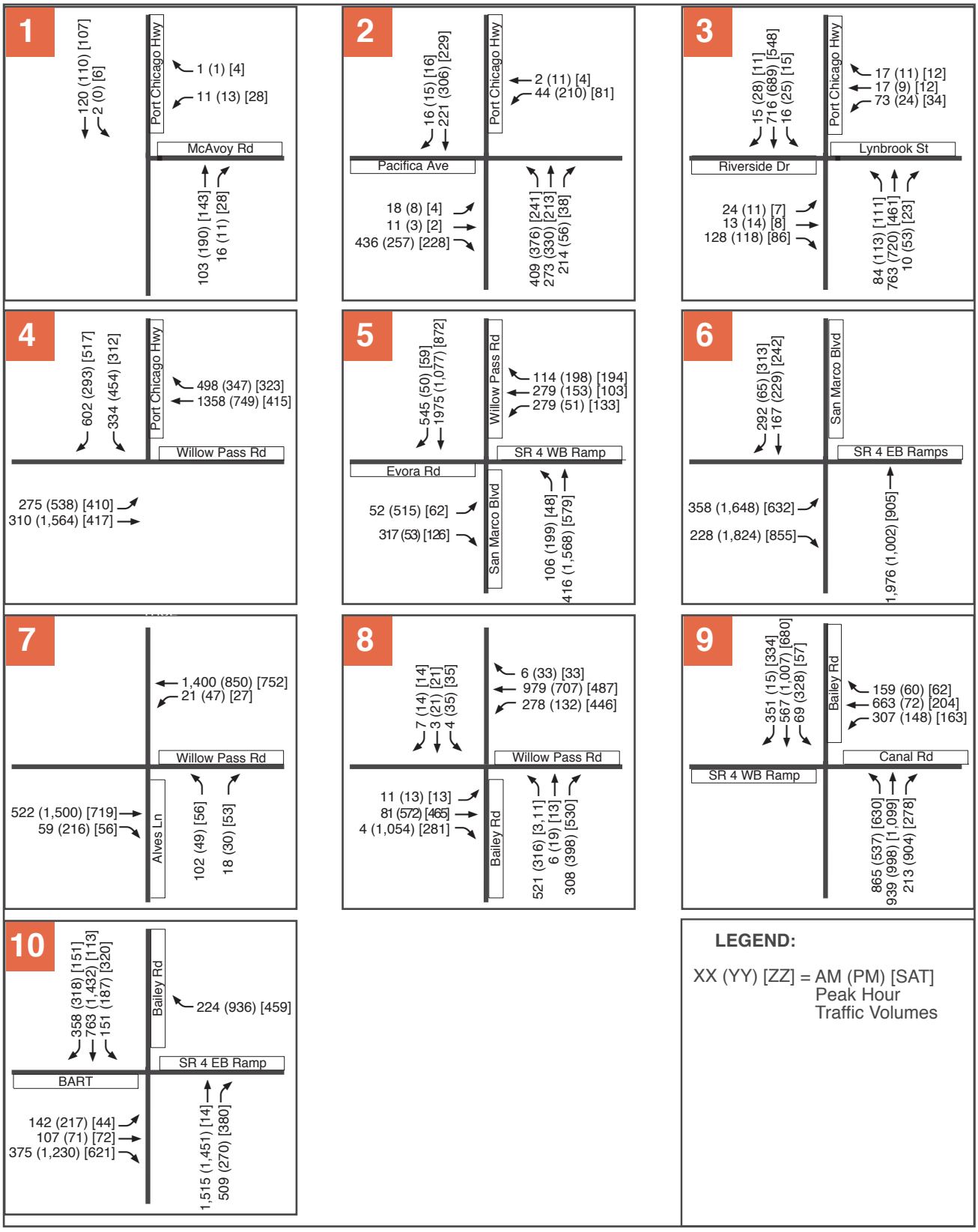
Roadway Conditions on Routes of Regional Significance

As discussed earlier, the East County Action Plan sets Traffic Service Objectives (TSOs) for Routes of Regional Significance in East County. The primary TSO that could be affected by a proposed development project is the Delay Index, which as previously described, compares the travel time during congested conditions with the free-flow travel time. For suburban arterials such as Willow Pass Road and Bailey Road, the TSO is that the Delay Index should not exceed 1.9, meaning that the time required to traverse the segment during congested conditions should be no more than double the time required during free-flow conditions. For the SR 4 segment in the project vicinity, the Delay Index TSO is set at 2.4. Table 4.6-12 presents the results of the Delay Index calculations for the Routes of Regional Significance in the study area, under both Cumulative and Cumulative Plus Project conditions. During the a.m. peak hour, the Delay Index exceeds 2.4 along two segments of westbound SR4: between Willow Pass Road and San Marco and between Bailey Road and Railroad Avenue. The segment of SR 4 between Bailey Road and Railroad Avenue also exceeds the Delay Index TSO of 2.4 in the eastbound direction during the p.m. peak hour.

Cumulative Plus Project Impacts

Intersections

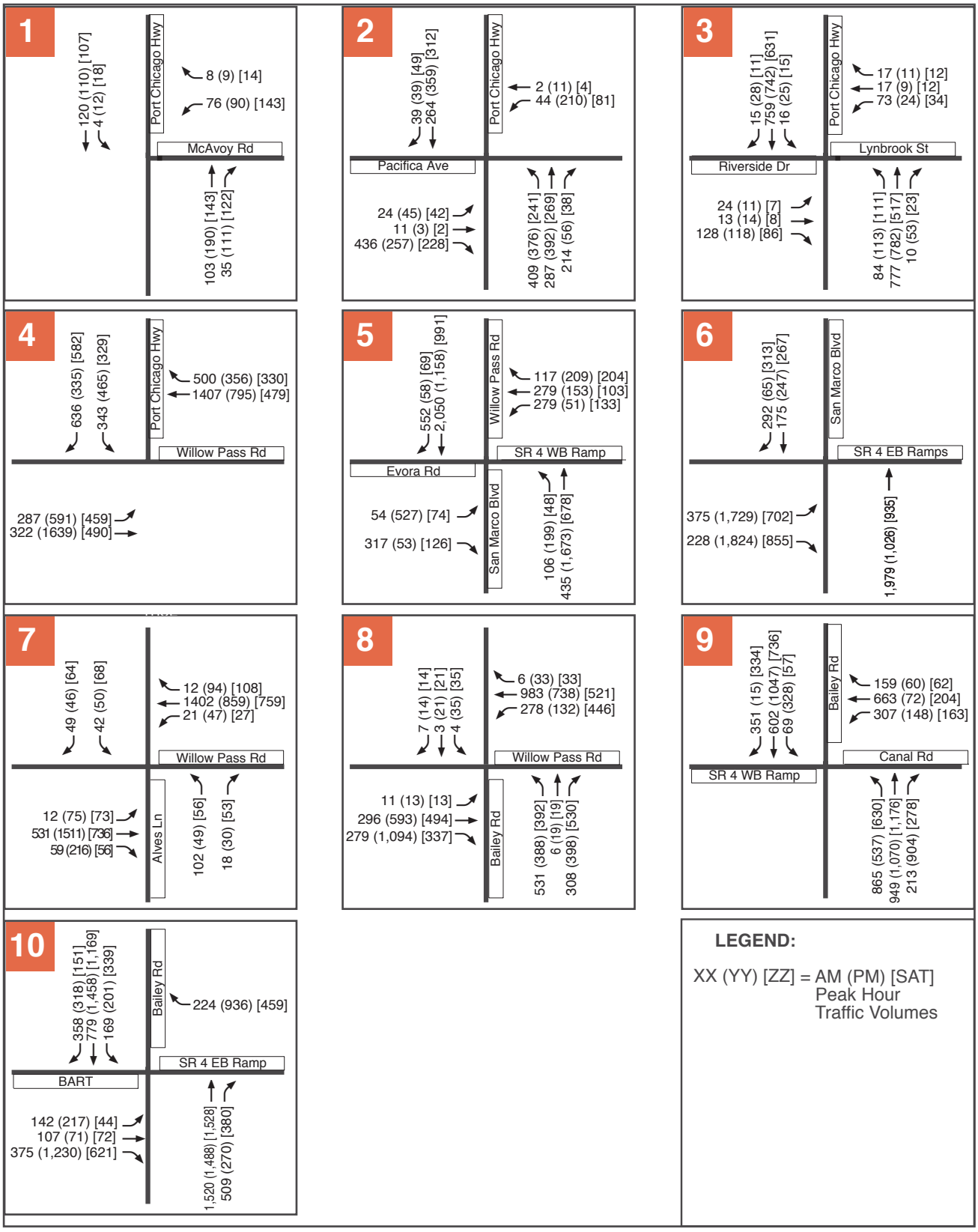
Potential cumulative (year 2025) traffic impacts with the project, and associated mitigation needs for this scenario, are identified below. Table 4.6-11 presents the estimated levels of service at the study intersections under this scenario. The San Marco Boulevard / SR 4 Eastbound Ramps intersection would operate at LOS F with and without the Project during the p.m. peak hour.



SOURCE: Fehr & Peers

Figure 4.6-10

Cumulative No Project Peak Hour Traffic Volumes



SOURCE: Fehr & Peers

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Figure 4.6-11

Cumulative No Project Peak Hour Traffic Volumes

TABLE 4.6-11
CUMULATIVE AND CUMULATIVE PLUS PROPOSED PROJECT CONDITIONS
INTERSECTION LEVEL OF SERVICE (LOS)

Intersection		Traffic Control[1]	Peak Hour	Cumulative No Project		Cumulative + Project	
				Measure[2,3]	LOS	Measure[2,3]	LOS
1.	Port Chicago Highway/McAvoy Road	SSSC	AM	10	B	11	B
			PM	11	B	12	B
			SAT	10	B	12	B
2.	Port Chicago Highway/Pacifica Avenue	Signal	AM	0.42	A	0.46	A
			PM	0.53	A	0.60	A
			SAT	0.33	A	0.42	A
3.	Port Chicago Highway/Riverside Drive/ Lynbrook Street	Signal	AM	0.34	A	0.36	A
			PM	0.32	A	0.33	A
			SAT	0.27	A	0.29	A
4.	Port Chicago Highway/Willow Pass Road	Signal	AM	0.59	A	0.61	B
			PM	0.60	A	0.63	B
			SAT	0.35	A	0.39	B
5.	Willow Pass Road/San Marco Boulevard/ Evora Road/SR 4 WB Ramps	Signal	AM	0.80	C	0.81	D
			PM	0.61	B	0.64	B
			SAT	0.33	A	0.36	A
6.	San Marco Boulevard/SR 4 EB Ramps	Signal	AM	0.49	A	0.49	A
			PM	1.20	F	1.20	F
			SAT	0.64	B	0.65	B
7.	Willow Pass Road/Alves Lane	Signal	AM	0.50	A	0.54	A
			PM	0.60	A	0.63	B
			SAT	0.32	A	0.41	A
8.	Willow Pass Road/Bailey Road	Signal	AM	0.67	B	0.68	B
			PM	0.76	B	0.79	C
			SAT	0.79	C	0.86	D
9.	Bailey Road/SR 4 WB Ramp/Canal Road	Signal	AM	0.91	E	0.92	E
			PM	0.84	D	0.84	D
			SAT	0.65	B	0.66	B
10.	Bailey Road/SR 4 EB Ramps/BART	Signal	AM	0.57	A	0.58	A
			PM	1.08	F	**1.10**	**F**
			SAT	0.58	A	0.60	A

NOTES: Results in **bold** represent significant impact.

1 Signal = Signalized intersection, SSSC = Side-street stop-controlled intersection
2 Volume-to-capacity (v/c) ratio determined for signalized intersections using the CCTA LOS methodology.
3 Average control delay per vehicle (in seconds) for the worst-case stop controlled movement or approach at side-street stop-controlled intersections according to the Highway Capacity Manual, Transportation Research Board, 2000.

SOURCE: Fehr & Peers Transportation Consultants, 2005

Because the project would not increase the V/C ratio by 0.01 or more, this would be a less than significant impact.

TABLE 4.6-12
DELAY INDEX RESULTS ON ROUTES OF REGIONAL SIGNIFICANCE

Route Segment	Direction	Delay Index TSO	Cumulative No Project		Cumulative Plus Project	
			AM	PM	AM	PM
SR 4, Willow Pass Road to San Marco Boulevard	WB	2.4	2.5	1.0	2.5	1.0
	EB	2.4	1.0	1.6	1.0	1.6
SR 4, San Marco Boulevard to Bailey Road	WB	2.4	1.9	1.0	1.9	1.0
	EB	2.4	1.0	1.7	1.0	1.7
SR 4, Bailey Road to Railroad Avenue	WB	2.4	10.3	1.0	10.3	1.1
	EB	2.4	1.0	4.3	1.0	**4.4**
Willow Pass Road, Evora Road to Port Chicago	WB	1.9	1.3	1.0	1.4	1.0
	EB	1.9	1.0	1.2	1.0	1.3
Willow Pass Road, Port Chicago to Bailey Road	WB	1.9	1.2	1.0	1.2	1.0
	EB	1.9	1.0	1.1	1.0	1.2
Willow Pass Road, Bailey Road to Parkside Drive	WB	1.9	1.2	1.5	1.2	1.5
	EB	1.9	1.0	1.0	1.0	1.1
Bailey Road, Willow Pass Road to West Leland Road	NB	1.9	1.0	1.0	1.0	1.0
	SB	1.9	1.0	1.0	1.0	1.0

NOTES: Results in **bold** represent significant impact.
TSO = Traffic Service Objective
SOURCE: Fehr & Peers Transportation Consultants, 2005

Impact 4.6.7: Traffic generated by the project would contribute to cumulatively significant impacts at local intersections in the project vicinity in 2025. (Potentially Significant)

The Bailey Road / SR 4 Eastbound Ramps / BART intersection would operate at LOS F with and without the Project during the p.m. peak hour. The project would increase the V/C ratio by 0.02 (i.e., more than the threshold of significance established in the Standards of Significance). This would be a cumulative significant impact.

> **Mitigation Measure 4.6.7:** In order to achieve acceptable levels of service at this intersection, a second eastbound right-turn lane would be necessary.

The addition of a second eastbound right-turn lane would require acquisition of additional right-of-way on land that has already been developed. Based on the location of existing structures and physical constraints, it would be infeasible to provide a second eastbound right-turn lane.

Significance after Mitigation: Significant and Unavoidable.

Routes of Regional Significance

Potential cumulative (year 2025) traffic impacts with the project, and associated mitigation needs for this scenario, are identified below. Table 4.6-12 presents the results of the Delay Index

calculations for the Routes of Regional Significance in the study area, under this scenario. Projected a.m. peak period traffic congestion levels on the segments of westbound SR 4 from Railroad Avenue to Bailey Road and from San Marco Boulevard to Willow Pass are expected to violate the *East County Action Plan* Traffic Service Objectives (TSOs) Delay Index under cumulative conditions both with and without the project. Because the addition of project traffic would not increase the Delay Index by 0.1 or more, this would be a less than significant impact.

Impact 4.6.8: Traffic generated by the project would contribute to cumulatively significant impacts on Routes of Regional Significance in the project vicinity in 2025. (Significant)

Projected p.m. peak period traffic congestion levels on the segment of eastbound SR 4 from Bailey Road to Railroad Avenue are expected to violate the *East County Action Plan* Traffic Service Objectives (TSOs) Delay Index under cumulative conditions both with and without the project. The addition of project traffic would increase the Delay Index by 0.1 (i.e., more than the threshold of significance established in the Standards of Significance). This would be a cumulative significant impact.

> **Mitigation Measure 4.6.8:** The project applicant shall contribute their fair share to all applicable development impact fee programs, including the East County Regional Impact Fee, which is designed to fund improvements to regional facilities including SR 4. However, the segment of SR 4 between Bailey Road and Railroad Avenue is currently under construction, and no further improvements to this segment are included in the *Strategic Plan* of East Contra Costa County Regional Fee and Finance Authority.

In the absence of additional capacity-enhancing freeway improvement projects, this cumulative impact is considered significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Construction Traffic

Impact 4.6.9: Project construction would result in temporary increases in truck traffic and construction worker traffic. (Significant)

Construction activities for the proposed project would generate off-site traffic that would include the initial delivery of construction vehicles and equipment to the project site, the daily arrival and departure of construction workers, and the delivery of materials throughout the construction period and removal of construction debris. Deliveries would include shipments of concrete, lumber, and other building materials for on-site structures, utilities (e.g., plumbing equipment and electrical supplies) and paving and landscaping materials.

Construction-generated traffic would be temporary, and therefore, would not result in any long-term degradation in operating conditions on roadways in the project locale. The impact of construction-related traffic would be a temporary and intermittent lessening of the capacities of

streets in the project site vicinity because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. However, given the proximity of the project site to regional roadways (i.e., State Route 4), construction trucks would have relatively direct routes. Most construction traffic would be dispersed throughout the day. Thus, the temporary increase would not significantly disrupt daily traffic flow on roadways in the project site vicinity.

Although the impact would be less-than-significant, truck movements could have an adverse effect on traffic flow in the project site vicinity. As such, the impact is considered to be significant.

> **Mitigation Measure 4.6.9:** The project sponsor and construction contractor(s) shall develop a construction management plan for review and approval by the County's Engineering Department. The plan shall include at least the following items and requirements to reduce, to the maximum extent feasible and traffic congestion during construction:
>
> - A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes.
> - Identification of haul routes for movement of construction vehicles that would minimize impacts on motor vehicular, bicycle and pedestrian traffic, circulation and safety, and specifically to minimize impacts to the greatest extent possible on streets in the project area.
> - Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures would occur.

Significance after Mitigation: Less than Significant**.**

Impact 4.6.10: Proposed Project-generated increases in heavy truck traffic on area roadways could result in substantial damage or wear of public roadways. (Significant)

The use of large trucks to transport equipment and material to and from the Proposed Project work sites could affect road conditions on the designated construction route by increasing the rate of road wear. The degree to which this impact would occur depends on the roadway design (pavement type and thickness) and the existing condition of the road. Freeways, such as SR 4, are designed to handle a mix of vehicle types, including heavy trucks. The Proposed Project's impacts are expected to be negligible on those roads. Arterials, such as Port Chicago Highway and Willow Pass Road, are likewise designed to handle a mix of vehicle types. Mitigation Measure 4.6.10 would mitigate the potential for excessive road wear due to proposed project construction trucks, to a less than significant impact.

> **Mitigation Measure 4.6.10:** Prior to commencement of Proposed Project construction activities, which include any construction-related deliveries to the site, the Project Sponsor

shall document to the satisfaction of the Contra Costa County Public Works Department, the road conditions of the construction route that would be used by Proposed Project construction-related vehicles. The Project Sponsor shall also document the construction route road conditions after Proposed Project construction has been completed. The Project Sponsor shall repair roads damaged by construction to County standards and to a structural condition equal to that which existed prior to construction activity. As a security to ensure that damaged roads are adequately repaired, the Project Sponsor shall make an initial monetary deposit, in an amount to be determined by Public Works, to an account to be used for roadway rehabilitation or reconstruction. If the County must ultimately undertake the road repairs, and repair costs exceed the initial payment, then the Project Sponsor shall pay the additional amount necessary to fully repair the roads to pre-construction conditions.

Significance after Mitigation: Less than significant.

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4.7 Air Quality

4.7.1 Introduction

This section discusses existing air quality conditions in the Strategic Plan project area and region, as well as the regulatory framework for air quality management, and analyzes the potential for the project to affect existing air quality conditions, both regionally and locally.

4.7.2 Setting

Climate and Meteorology

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions, including wind speed, wind direction, and air temperature, in combination with local surface topography (i.e., geographic features such as mountains and valleys), determine the effect of air pollutant emissions on local air quality.

The project site is in the unincorporated community of Bay Point in eastern Contra Costa County, and is within the boundaries of the San Francisco Bay Area Air Basin. The project site is in the Carquinez Strait climatological subregion of the Bay Area Air Basin (BAAQMD, 1999). The Carquinez Strait, which runs from Rodeo to Martinez, is the only sea-level gap between the San Francisco Bay and the Central Valley. This subregion includes the lowlands bordering the strait to the north and south as well as the area adjoining Suisun Bay and the western portion of the Sacramento-San Joaquin Delta as far east as Bethel Island. The subregion extends from Rodeo in the southwest and Vallejo in the northwest to Fairfield in the northeast and Brentwood in the southeast.

Summer mean maximum temperatures in the subregion reach about 90 degrees Fahrenheit, while mean minimum temperatures in the winter are in the high 30s. Temperature extremes are less pronounced in areas close to the strait, such Bay Point, than in sheltered areas further form the moderating effects of the strait.

As noted in the *Contra Costa County General Plan*, the Carquinez Straits area has good ventilation characteristics as it is exposed to wind from both the west and east and the local terrain provides little protection from the wind. Prevailing winds in this subregion are from the west as in the summer and fall months high pressure offshore coupled with low pressure in the Central Valley causes marine air to flow to the east through the Carquinez Strait (BAAQMD, 1999). At these times, the winds are strongest in the afternoons, with afternoon winds commonly reaching speeds of 15 to 20 miles per hour (mph) throughout the strait region. When there is high pressure in the Central Valley, air flows through this area from the east. These winds usually contain more air pollutants than the cleaner marine air from the west. Moreover, these high-pressure periods are usually accompanied by low wind speeds, shallow mixing depths, higher

temperatures, and little or no rainfall. Overall, annual average wind speeds are 9 to 10 mph in the area around Bay Point and calm conditions are infrequent.

Pollutants

Criteria Air Pollutants

The federal Clean Air Act of 1970 and its amendments established maximum allowable concentration standards for the following seven ambient air pollutants known as "criteria" pollutants - ozone, carbon monoxide, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), nitrogen dioxide, sulfur dioxide, and lead.[1] Each of these standards was set to meet specific public health and welfare criteria. In addition, individual states were given the option to adopt more stringent state standards for criteria pollutants and to include other pollutants. California has done so with these and other pollutants through the California Clean Air Act. Table 4.7-1 presents the national and state ambient air quality standards for each pollutant and provides a brief discussion of their related health effects and principal sources.

Both the federal and California Clean Air Acts also require that air basins or portions thereof, be classified as either "attainment" or "nonattainment" for each criteria air pollutant, based on whether or not the national and state standards have been achieved. Nonattainment areas are required to prepare air quality plans that include strategies for achieving attainment and maintenance plans are required for attainment areas that had previously been designated nonattainment in order to ensure the continued maintenance of the standards. Air quality plans developed to meet federal requirements are referred to as State Implementation Plans (SIPs). Air quality plans are required to address all nonattainment issues except the state $PM_{2.5}$ and PM_{10} standards.

Toxic Air Contaminants

In addition to criteria air pollutants, toxic air contaminants (TAC) are another group of pollutants of concern in the Bay Area. TACs, termed Hazardous Air Pollutants (HAPs) under Federal regulations, are air pollutants that may cause or contribute to an increase in mortality or serious illness or may pose a hazard to human health. There are various sources of TACs, including industrial processes such as petroleum refining, commercial operations such as gasoline stations and dry cleaners, as well as motor vehicle exhaust. Nearly 200 substances have been designated TACs under California law, including benzene and diesel particulate matter (DPM).

[1] PM_{10} and $PM_{2.5}$ consist of particulate matter with diameters of 10 microns or less and 2.5 microns or less, respectively. A micron is one-millionth of a meter.

TABLE 4.7-1
STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour	0.09 ppm	---[a]	High concentrations can affect lungs directly, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and nitrogen oxides (NO_x) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
	8 hours	0.070 ppm[b]	0.08 ppm		
Respirable Particulate Matter (PM_{10})	24 hours	50 $\mu g/m^3$	150 $\mu g/m^3$	May irritate eyes and respiratory tract, decreases lung capacity, associated with cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial/agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust, ocean spray).
	Annual Arithmetic Mean	20 $\mu g/m^3$	50 $\mu g/m^3$		
Fine Particulate Matter ($PM_{2.5}$)	24 hours	---	65 $\mu g/m^3$	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also formed secondarily from photochemical reactions of other pollutants, e.g., NO_x, sulfur oxides, and organics.
	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$		
Carbon Monoxide	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide	1 hour	0.25 ppm	---	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Avg.	---	0.053 ppm		
Sulfur Dioxide	1 hour	0.25 ppm	---	Irritates upper respiratory tract; damages lung tissue; yellows leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	---	0.5 ppm		
	24 hours	0.04 ppm	0.14 ppm		
	Annual Average	---	0.030 ppm		
Lead	30-day average	1.5 $\mu g/m^3$	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurologic dysfunction.	Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	---	1.5 $\mu g/m^3$		

[a] The national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005.
[b] The state 8-hour ozone standard was approved by the California Air Resources Board (CARB) on April 28, 2005 and is expected to become effective in early 2006.

NOTE: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

SOURCE: California Air Resources Board, Ambient Air Quality Standards, http://www.arb.ca.gov/aqs/aaqs2.pdf, updated November 29, 2005b.

Existing Air Quality

Many industrial facilities with significant air pollutant emissions (e.g., chemical plants and refineries) are located with the Carquinez Strait subregion (BAAQMD, 1999). While the pollution potential of the area is often moderated by high wind speeds that blow pollutants away, upsets at industrial facilities can lead to short-term pollution episodes and emissions of unpleasant odors may occur at any time. Areas downwind of such facilities may be especially at risk from long-term exposure to air contaminants. In addition, areas traversed by major roadways (e.g., Interstate 680) may also be subject to elevated local concentrations of carbon monoxide and particulate matter as well as certain TACs such as DPM and benzene.

Criteria Air Pollutants

A regional network of monitoring stations measure and monitor the ambient concentrations of criteria pollutants in the Bay Area. The station closest to the project site is the Pittsburg-10th Street station approximately three miles east of the site. This site monitors for ozone, PM_{10}, and carbon monoxide. The closest station that monitors for $PM_{2.5}$ is the Concord - 2975 Treat Blvd. station approximately seven miles southwest of the site. **Table 4.7-2** shows a five-year summary of monitoring data for all four pollutants and compares these concentrations with state and national ambient air quality standards.

As shown by the table, the state 1-hour ozone standard was violated once in 2000, twice in 2001, and four times in 2002, but not exceeded in 2003 and 2004. Likewise, while the national 1-hour ozone standard was never violated, the national 8-hour ozone standard was violated once in 2001 and twice in 2002.[2] For all years for were there are data, the state PM_{10} standard was exceeded at least once a year, although concentrations were not above the national standard. The national $PM_{2.5}$ standard was exceeded once in 2001, 2002, and 2004. Lastly, there were no violations of the either the state or national carbon monoxide standards.

Toxic Air Contaminants

There are a number of industrial facilities that emit Toxic Air Contaminants (TACs) in the Carquinez Strait subregion (BAAQMD, 2004). Of these sources, the stationary sources closest to the project site are:

- Criterion Catalysts Company LP (2840 Willow Pass Road) – approximately 1 mile to the south;
- GWF Power Systems, LP (Site 5) (555 Nichols Road) – approximately 1.5 miles to the west;
- Polychemie, Inc (501 Nichols Road) – approximately 1.5 miles to the west; and
- Venoco, Inc. (Nichols Road) – approximately 1 mile to the west.

In addition, major roadways, including State Route 4 approximately one mile south of the site, are sources of benzene and DPM.

[2] As noted earlier, the national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005.

TABLE 4.7-2
AIR QUALITY DATA SUMMARY (2001-2005)
FROM MONITORING STATIONS NEAR THE PROJECT SITE

Pollutant	Standard[b]	Monitoring Data by Year[a] 2001	2002	2003	2004	2005
Ozone						
Highest 1-hour average, ppm		**0.118**	**0.111**	0.094	0.090	0.094
Days over state standard	0.09	2	4	0	0	0
Days over national standard[c]	0.12	0	0	0	0	0
Highest 8-hour average, ppm		**0.092**	**0.096**	0.080	0.081	0.78
Days over national standard	0.08	1	2	0	0	0
PM_{10}						
Highest 24-hour average, state / national, $\mu g/m^3$		**82.9**/97.7	**76.7**/73.2	**59.1**/58.3	**64.0**/61.9	**57.0**/54.1
Measured days over state/national standard[d]	50/150	1/0	3/0	1/0	1/0	1/0
$PM_{2.5}$:						
Highest 24-hour average, $\mu g/m^3$	65	**68.2**	**76.7**	49.7	**73.7**	48.7
Days over national standard		1	1	0	1	0
Carbon Monoxide:						
Highest 8-hour average, ppm		2.44	2.51	1.66	1.91	1.73
Days over state/national standard	9.0/9	0	0	0	0	0

[a] Ozone, PM_{10}, and carbon monoxide data are from the Pittsburg-10th Street monitoring station. $PM_{2.5}$ data are from the Concord-2975 Treat Blvd station.
[b] Generally, state standards are not to be exceeded and federal standards are not to be exceeded more than once per year.
[c] As noted earlier, the national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005.
[d] Measurements are collected every six days. Measured days include the days that a measurement was greater than the level of the standard. The actual number of days exceeding the standard is likely to be greater than presented here had each day been monitored.

NOTES: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter
NA = data not available.
Bold values are in excess of applicable standards.

SOURCE: California Air Resources Board (CARB), *Air Quality Data Statistics – Top Four Summary*, http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start, accessed March 9, 2006.

Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average 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 distress and other air quality-related health problems than the general public. Residential areas are also sensitive to poor air quality because those people who usually stay home do so for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. Local sensitive receptors include existing residential areas to the southwest, south, and southeast. Riverview Middle School is located approximately 0.25-mile to the southwest and Rio Vista Elementary School is located approximately 0.5-mile to the southwest.

4.7.3 Regulatory Setting

Regulatory Agencies

The U.S. Environmental Protection Agency (U.S. EPA) is responsible for implementing the myriad programs established under the federal Clean Air Act, such as establishing and reviewing the national ambient air quality standards and judging the adequacy of the SIPs. The U.S. EPA has delegated the authority of implementing many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

The California Air Resources Board (CARB), California's air quality management agency, is responsible for establishing and reviewing the state ambient air quality standards, compiling the California SIP and securing approval of that plan from U.S. EPA, and identifying TACs. CARB also regulates mobile emissions sources in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air quality management districts, which are organized at the county or regional level.

The county or regional air quality management districts are primarily responsible for regulating stationary emissions sources at industrial and commercial facilities within their geographic areas and for preparing the air quality plans that are required under the federal and California Clean Air Acts. The Bay Area Air Quality Management District (BAAQMD) is the regional agency with regulatory authority over stationary sources in the Bay Area. The BAAQMD has the primary responsibility to meet and maintain the state and national ambient air quality standards in the Bay Area.

Air Quality Plans, Policies and Regulations

Plans and Policies

The San Francisco Bay Area Air Basin is currently designated as nonattainment for the state one-hour ozone standard and the national eight-hour ozone standard. In addition, the Bay Area is designated as nonattainment for the state PM_{10} and $PM_{2.5}$ standards. The Bay Area is designated as either attainment or unclassified with respect to all other criteria pollutants.

The two plans for the San Francisco Bay Area Air Basin developed to meet national and state air quality planning requirements for ozone are:[3]

> *San Francisco Bay Area 2001 Ozone Attainment Plan for the 1-Hour National Ozone Standard* developed by the Association of Bay Area Governments (ABAG), a regional planning agency, to meet federal ozone air quality planning requirements;[4] and

[3] As noted earlier, air quality plans are not required to address nonattainment of the state $PM_{2.5}$ and PM_{10} standards.

[4] In order to avoid losing clean air progress achieved under the revoked national 1-hour standard, U.S. EPA requires that certain emissions control requirements for areas designated as nonattainment (such as the Bay Area) or maintenance for the standard remain in place (U.S. EPA, 2005).

Bay Area 2005 Ozone Strategy, BAAQMD's most recent update of the *1991 Clean Air Plan* developed to meet planning requirements related to the state ozone standard.

In particular, the 2005 Ozone Strategy retains and updates the transportation control measures (TCMs) originally outlined in the 1997 CAP. TCMs, which are strategies to reduce motor vehicle emissions through reductions in vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion, are an especially integral part of the CAP since on-road motor vehicles are the largest source of pollution in the Bay Area (BAAQMD, 1997). Among the transportation control measures outlined in the 1997 CAP and partially implemented at the time of publication of the 2005 Ozone Strategy are the following:

TCM 1: Support Voluntary Employer-Based Trip Reduction Programs;

TCM 9: Improve Bus Access and Facilities;

TCM 13: Transit Use Incentives; and

TCM 14: Improve Rideshare/Vanpool Services and Incentives.

BAAQMD Rules and Regulations

The BAAQMD is responsible for limiting the amount of emissions that can be generated throughout the Basin by stationary sources. Specific *Rules and Regulations* have been adopted that limit the emissions that can be generated by various uses and/or activities, and identify specific pollution reduction measures that must be implemented in association with various uses and activities. These rules regulate not only the emissions of criteria pollutants, but also the emissions of toxic and acutely hazardous materials. The rules are also subject to ongoing refinement by the BAAQMD.

Emissions sources subject to these rules are regulated through the BAAQMD permitting process. Through this permitting process, the BAAQMD also monitors the amount of stationary emissions being generated and uses this information in developing the 2005 Ozone Strategy.

4.7.4 Impacts and Mitigation Measures

Standards of Significance

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would result in a significant air quality impact if it would:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any nonattainment pollutant;
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

The proposed uses of the project site are not identified by the BAAQMD as those associated with odor emissions (BAAQMD, 1999). Nor are there any facilities that the BAAQMD recognizes as sources of odor emissions within a one mile radius of the project site. Therefore, odor issues are not discussed further in this document.

Impact assessment

The *BAAQMD CEQA Guidelines* has established thresholds of significance for emissions of criteria air pollutants associated with both the construction and operation of projects (BAAQMD, 1999). For construction phase impacts, BAAQMD does not require quantification of construction emissions, but rather emphasizes the implementation of effective and comprehensive dust control measures. If a project implements all the measures indicated by BAAQMD, emissions from construction activities would be considered less than significant.

The BAAQMD recommends that individual projects impacts involving direct and/or indirect operational emissions that exceed the following thresholds be considered significant:

- 80 pounds per day of ROG
- 80 pounds per day of NOx
- 80 pounds per day of PM10

Direct emissions are those that are emitted on a site and include stationary sources and on-site mobile equipment. Indirect emissions come from mobile sources that access the project site but generally emit off site. For many types of land-use development projects, the principal sources of air pollutant emissions are the motor vehicle trips generated by the project.

In addition, BAAQMD requires that localized carbon monoxide concentrations be estimated for projects in which: (1) vehicle emissions of carbon monoxide would exceed 550 pounds per day, (2) project traffic would impact intersections or roadway links operating at Level of Service (LOS) D, E, or F or would cause LOS to decline to D, E, or F, or (3) project traffic would increase traffic volumes on nearby roadways by 10 percent or more. For projects that would generate fewer than 10,000 new daily vehicle trips, BAAQMD recommends a manual screening method for estimating carbon monoxide concentrations at local intersections.[5] If the results of the manual method indicate that these concentrations would be below state and national ambient air quality standards, then no further analysis is required. If the manual method predicts that concentrations would be above any of the standards, then a more detailed analysis using the CALINE4 model may be required.

As noted in the *BAAQMD CEQA Guidelines,* if a project individually would have a significant air quality impact, the project would also be considered to have a cumulative air quality impact. For projects that would not individually have significant operational air quality impacts, the determination of significant cumulative impacts is based on an evaluation of the consistency of

[5] This screening method is a simplified version of the model CALINE4, developed by the California Department of Transportation.

the project with the local General Plan *and* of the General Plan with the regional air quality plan (in this case, the Bay Area 2005 Ozone Strategy).

Impacts

Impact 4.7.1: Activities associated with site preparation and construction would generate short-term emissions of criteria pollutants, including particulate matter and equipment exhaust emissions. (Significant)

Foreseeable construction activities would occur during removal of structures and paved areas, site preparation, grading, placement of utilities and other infrastructure, placement of foundations for structures, and fabrication of structures. Construction activities would require the use of heavy trucks, excavating and grading equipment, concrete breakers, concrete mixers, and other mobile and stationary construction equipment. When considered in the context of long-term project operations, construction and demolition-related emissions would be short-term and temporary, but these activities still can cause significant effects on local air quality. The emissions generated from these construction activities include:

- Dust (including PM_{10} and $PM_{2.5}$) primarily from "fugitive" sources (i.e., emissions released through means other than through a stack or tailpipe) such as soil disturbance, material handling, and traffic on unpaved or unimproved surfaces;

- Combustion emissions of criteria air pollutants (e.g., ROG, NO_x, PM_{10}) primarily from operation of heavy equipment construction machinery (primarily diesel operated), portable auxiliary equipment and construction worker automobile trips (primarily gasoline operated); and

- Evaporative emissions (ROG) from asphalt paving and architectural coating applications.

Construction-related fugitive dust emissions would vary from day-to-day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM_{10} concentrations may be adversely affected on a temporary and intermittent basis during the construction period. In addition, the fugitive dust generated by construction would include not only PM_{10}, but also larger particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts. The BAAQMD approach to analyses of fugitive dust emissions from construction is to emphasize implementation of effective and comprehensive dust control measures rather than detailed quantification of emissions. The BAAQMD considers any project's construction-related impacts to be less than significant if the required dust-control measures are implemented. Without these measures, the impact is generally considered to be significant, particularly if sensitive land uses are located in the project vicinity. Therefore, without mitigation, construction-generated particulate emissions would be considered a significant impact.

Construction activities would also result in the emission of criteria air pollutants from equipment exhaust, construction-related vehicular activity, and construction worker automobile trips.

Emission levels for construction activities would vary depending on the number and type of equipment, duration of use, operation schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NO_x from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors during project construction. At the same time, these emissions are already included in the emission inventories of state- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone ambient air quality standards. Therefore, exhaust emissions from construction equipment and trucks would be considered a less than significant impact.

Mitigation Measure 4.7.1: Implement Construction Dust Control Measures. The project sponsor shall require the following practices be implemented by including them in the contractor construction documents:

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at the construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at the construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto the streets.
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the construction site.
- Install wind breaks or plant trees/vegetative wind breaks at the windward sides of the construction areas
- Suspend excavation and grading activities when wind (as instantaneous gusts) exceeds 25 miles per hour.

- Limit the area subject to excavation, grading and other construction activity at any one time.

Significance after Mitigation: Less than Significant

Impact 4.7.2: Operational activities associated with the project would result in regional air pollutant emissions. (Significant)

Regional operational emissions from motor vehicle and area sources associated with the proposed project were compiled using trip generation estimated in the Transportation section and the URBEMIS 2002 for Windows model, which is an emissions estimation/evaluation model developed by the California Air Resources Board. Regional emissions associated with project operations would be generated by on-road vehicles and energy consumption. The project would generate a maximum of approximately 4,141 trips per day. On-road vehicle emissions would include exhaust emissions and PM_{10} emissions from tire wear, brake wear, and entrained road dust emissions. Area source emissions would include natural gas combustion for space and water heating, landscaping equipment, and consumer product use. Table 4.7-3 summarizes emissions estimates from these sources for the proposed project in 2010 and compares them with significance threshold emission levels recommended for use in evaluating project-level impacts. As indicated in Table 4.7-3, project-related area source and motor vehicle emissions in the near-term would be below significance threshold emissions levels for ROG, NOx and PM_{10}. Therefore, this impact would be less than significant.

The increase in marine-related air emissions from recreational boats was estimated based on existing peak daily use. Existing peak daily boat operations at the McAvoy Yacht Harbor were estimated with the assistance of the Harbormaster (Chavez, 2006). The increase in boat activity from an additional 286 berths was assumed to be proportionate to the ratio of existing peak daily boat trips to the number of boats on-site. Emissions factors for recreational boat motors were obtained from source documents of the CARB (CARB, 1998) and adjusted for 2010 based on projections within the document that reflect U.S. EPA's regulation of recreational boat motor emissions that began in 1998. These projected emissions are also presented in Table 4.7-3.

While individually, project vehicle source, area source and marine source emissions are below significance thresholds of the BAAQMD, when summed together the total project emissions of ROG would exceed the 80 pounds per day threshold. Consequently, the project would have a significant operational air quality impact.

The BAAQMD identifies a menu of mitigation measures for residential and commercial projects. Recommended measures include provision of neighborhood-serving shops and services within the project. The proposed project is a mixed-use development that includes a restaurant, laundry and a snack bar and a reduction for internal trip diversion was calculated into the trip generation used in the ROG emission calculations. BAAQMD also identifies mitigation measure for provision of transit facilities. The proposed project is located approximately one and one half

TABLE 4.7-3
NEW OPERATIONAL AIR EMISSIONS

Source	Criteria Air Pollutant Emissions (lbs/day)[a]			
	ROG	NOx	PM10	CO
Operational Vehicle Emissions	31.8	33.0	40.0	356.7
Operational Area Source Emissions	22.4	3.4	0.1	2.6
Operational Marine Emissions[c]	66.0	30.5	31.5	273
Total Project Emissions	**100.2**	66.9	71.5	632.3
Significant? (Yes or No)[b, d]	Yes	No	No	No[d]

a Vehicle and area source emissions estimates were generated using the Air Resources Board's URBEMIS 2002 model for the San Francisco Bay Air Basin, and assume a default vehicle mix. Input assumptions include EMFAC 2002 emission factors for the year 2010. All daily estimates are for summertime conditions except for CO, which assumes wintertime conditions.

b BAAQMD threshold of significance is 80 lbs/day for ROG, NOx, and PM10 and 550 lbs/day for CO.

c Marine emissions aer based on existing peak daily boat trip generation (Chavez, 2006) and the number of on-site vessels and adjusted recreational boat emission factors for 2010 (CARB, 1998).

d Projects for which vehicle emissions of CO exceed 550 pounds per day do not necessarily have a significant air quality impact, but are required to model localized CO concentrations along roadways and compare to the state standard to determine significance. Although total project CO emissions exceed 550 pounds per day, because CO emissions from vehicles are less than 550 pounds per day, localized CO modeling is not required.

NOTE: **Bold** values are in excess of applicable standard.

SOURCE: ESA, 2006.

miles from the Pittsburg-Bay Point BART station with an existing bus connection one half-mile south of the project site. Again, a reduction for trip diversion resulting from the proximity to public transit was calculated into the trip generation used in the ROG emission calculations. Another BAAQMD recommended mitigation measure is for provision of bicycle lanes and paths. This type of measure is recommended in the Transportation section of this EIR and is also recommended for Air Quality impacts:

Mitigation Measure 4.7.2: The final site plan shall be developed to include the following to provide adequate pedestrian and bicycle connectivity to existing facilities:

- Adequate on-site pedestrian facilities including sidewalks (minimum four-foot width) to connect all on-site uses and along both sides of access roads
- Sidewalks on at least one side of McAvoy Road and the proposed Alves Lane and Pacifica Avenue extensions
- Bicycle lanes (minimum four-foot width) on either McAvoy Road or the proposed Alves Lane extension
- Bicycle parking for residents, marina users, and recreational facility users.

Additionally, the following measures should be implemented, as feasible to further reduce project-generated emissions of ROG:

- Implement a carpool/vanpool program (i.e., ride matching) for residents of the proposed housing development to reduce trips (i.e., to BART or San Francisco).
- Provide preferential parking for alternatively fueled and hybrid vehicles.

Significance after Mitigation: While the above mitigation measures would serve to improve connectivity and bicycle safety, potentially resulting in fewer vehicle trips, they would not result in an appreciable reduction of ROG emissions to below the significance threshold. Consequently, this impact is considered significant and unavoidable.

Significance: Significant and Unavoidable.

Impact 4.7.3: Project operations would result in emissions of carbon monoxide that could result in localized "hot spots" of CO concentrations in excess of state standards. (Less than Significant)

The BAAQMD requires that localized carbon monoxide concentrations be estimated for projects in which: (1) vehicle emissions of carbon monoxide would exceed 550 pounds per day, (2) project traffic would impact intersections or roadway links operating at Level of Service (LOS) D, E, or F or would cause LOS to decline to D, E, or F, or (3) project traffic would increase traffic volumes on nearby roadways by 10 percent or more. The proposed project would result in motor vehicle emissions of 357 pounds per day of CO. Analysis in the Transportation section of this EIR predicted that the proposed project would not degrade any of the study intersections to unacceptable service levels. Nor does the transportation analysis indicate that any roadway would increase in volume by 10 percent or more. Consequently, using BAAQMD criteria, modeling of CO concentrations is not required for this project and project-generated emissions of CO are considered to have a less than significant impact to air quality.

While marine operations would also contribute to CO emissions, they would not result in the same accumulations as occur at congested intersections and would be unlikely to result in increases to the 1-hour and 8-hour average concentrations that are the basis of state and federal standards.

Mitigation: None Required.

Impact 4.7.4: The proposed residential development could expose sensitive receptors to objectionable odors. (Less than Significant)

The project does not propose any long-term uses that would generate objectionable odors. Nor are any operations identified by the BAAQMD as potential odor sources located within one mile of

the proposed residences (BAAQMD, 1999). Consequently the revised project would not result in a significant air quality impact relative to odors.

Mitigation: None Required.

Impact 4.7.5: The proposed Strategic Plan would not conflict with or obstruct implementation of the Bay Area 2005 Ozone Strategy and would not result in an adverse impact to air quality. (Less than Significant)

The BAAQMD recommends that specific area plans should be shown to be consistent with the most recently adopted regional air quality plan. The most recently adopted regional air quality plan is the Bay Area 20005 Ozone Strategy. This analysis focuses on determining whether the project is consistent with forecasted future regional growth. If a project is consistent with the regional population, housing and employment growth assumptions upon which air quality policies and assumptions are based, then future development would not impede the attainment of ambient air quality standards and a significant air quality impact would not occur.

Population forecasts which are the basis of emission estimates within the 2005 Ozone Strategy are based upon the Association of Bay Area Governments *Projections 2003*. This document shows a population increase in unincorporated Contra Costa County of 9,500 persons between 2005 and 2010. As discussed in the Population and Housing section of this EIR, it is estimated that the project could result in a population of approximately 1,611 persons at the site. This increase and is well within the planning projections of the 2005 Ozone Strategy and would therefore not be expected to impede ozone attainment in the District. When considered cumulatively with other potential future development in Bay Point and the vicinity, the proposed project would not, by itself, induce a substantial resident or employment population increase, and the project therefore would not result in a cumulatively considerable impact to cumulative population growth.

Mitigation: None Required.

Impact 4.7.6: Implementation of the proposed Strategic Plan would result in a significant cumulative impact to air quality as a result of emissions of ROG from the built-out development. (Significant and Unavoidable)

The proposed project would have a significant impact to air quality as a result of long-term emissions of ROG. BAAQMD Guidelines assert that any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. Consequently, the proposed Strategic Plan would also be considered have a cumulative air quality impact as a result of long-term operational emissions of ROG.

Mitigation: None Feasible.

Significance: Significant and Unavoidable.

References – Air Quality

Bay Area Air Quality Management District (BAAQMD), *BAAQMD CEQA Guidelines – Assessing the Air Quality Impacts of Projects and Plans*, April 1996, revised December, 1999.

Bay Area Air Quality Management District (BAAQMD), *Bay Area '97 Clean Air Plan and Triennial Assessment*, December 17, 1997.

Bay Area Air Quality Management District (BAAQMD), *Toxic Air Contaminant Control Program – Annual Report – 2002*, June 2004.

Bay Area Air Quality Management District (BAAQMD), *Bay Area Ozone Strategy*, http://www.baaqmd.gov/pln/plans/ozone/, accessed on September 14, 2005.

California Air Resources Board (CARB), *Air Quality Data Statistics – Top Four Summary*, http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start, accessed June 16, 2005a.

California Air Resources Board, Ambient Air Quality Standards, http://www.arb.ca.gov/aqs/aaqs2.pdf, updated May 6, 2005b.

California Air Resources Board, *Public Meeting to Consider Approval of California's Pleasure Craft Exhaust Emissions Inventory*, November, 1998.

Chavez, Harbormaster, McAvoy Yacht Harbor, telephone communication, March 9, 2006.

4.8 Noise

4.8.1 Introduction

This section discusses the existing noise environment in the project area and the regulation of noise. In addition, the section analyzes the potential for the project to affect the ambient noise environment at nearby sensitive receptors.

4.8.2 Setting

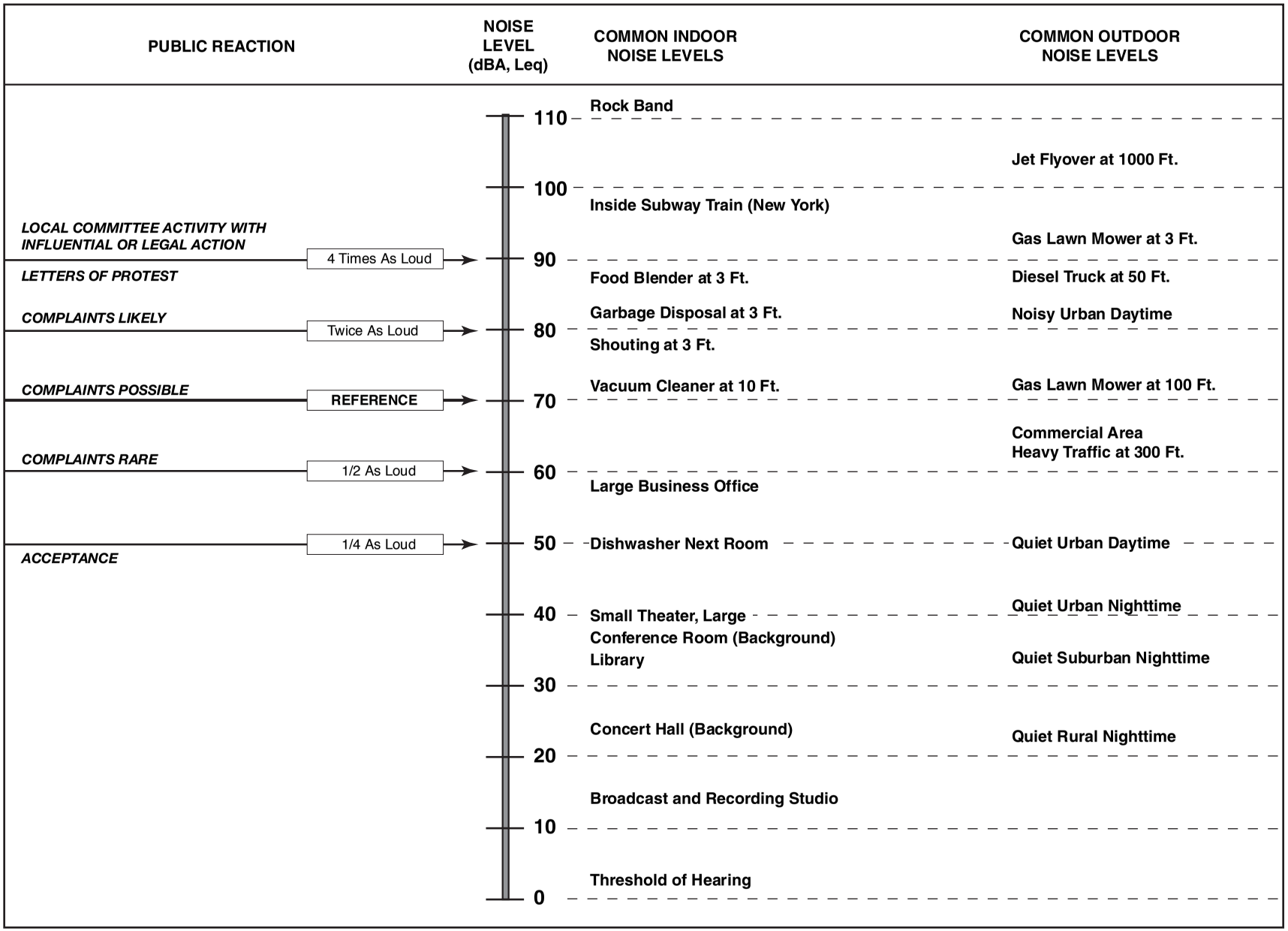
Technical Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), a logarithmic loudness scale with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Because sound pressure can vary by over one trillion times within the range of human hearing, the logarithmic loudness scale is used to calculate and manage sound intensity numbers conveniently.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. Therefore, the sound pressure level constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies and greater sensitivity to mid-range frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).[1] Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown in Figure 4.8-1.

[1] All noise levels reported herein reflect A-weighted decibels unless otherwise stated.



SOURCE: Caltrans Transportation Laboratory Noise Manual, 1982; and modification by ESA

Figure 4.8-1
Effects of Noise on People

Noise Exposure and Community Noise

The noise levels presented in Figure 4.8-1 are representative of measured noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. Rather, noise levels vary with time, such that the noise experienced in any one place, or the community noise environment, varies continuously over time. Specifically, community noise is the result of many distant noise sources that constitute a relatively stable background noise exposure where the individual contributors are unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. At the same time, throughout the day, short duration single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) that are readily identifiable to the individual add to the existing background noise level. The combination of the slowly changing background noise and the single-event noise events give rise to a constantly changing community noise environment.

Given the variation of community noise level from instant-to-instant, community noise levels must be measured over an extended period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.

L_x: The sound level that is equaled or exceeded x percent of a specified time period. The L_{50} represents the median sound level (i.e., the noise level exceeded 50 percent of the time).

DNL: The day-night average sound level (DNL, also written as L_{dn}) is the energy average of the A-weighted sound levels occurring during a 24-hour period, accounting for the greater sensitivity of most people to nighttime noise by weighting ("penalizing") nighttime noise levels by adding 10 dBA to noise between 10:00 p.m. and 7:00 a.m.

CNEL: Similar to the DNL, the Community Noise Equivalent Level (CNEL) adds a 5-dBA "penalty" for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to the 10-dBA penalty between the hours of 10:00 p.m. and 7:00 a.m.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, and learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Therefore, an important way of predicting human reaction to a new or changed noise environment is the way the noise levels compare to the existing environment to which one has adapted: the so-called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- a change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- a 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 to 7.5 dBA per doubling of distance from the source, depending on the topography of the area and environmental conditions (e.g., atmospheric conditions, presence of noise barriers). Thus, a noise measured at 90 dBA 50 feet from the source would be about 84 dBA at 100 feet, 78 dBA at 200 feet, 72 dBA at 400 feet, and so forth. Widely distributed noise, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate, approximately 3 to 4.5 dBA per doubling of distance from the source.

Vibration Principles

Vibration refers to groundborne noise and perceptible motion. There are limited standards established to measure vibration impacts and neither the Federal Highway Administration (FHWA) nor the California Department of Transportation (Caltrans) has established vibration standards. The most common impacts from vibration include annoyance; damage to structures and/or equipment; disruption of vibration-sensitive operations or activities; and triggering of landslides. Ground vibrations from most construction activities very rarely reach the levels that

can damage structures, but can achieve the audible and perceptible ranges in buildings very close to construction sites (FTA, 1995). Certain activities such as pile driving, pavement breaking, blasting, and demolition of structures generate vibrations potentially damaging to buildings at distances of less than 25 feet from the source (Hendricks, 2002). At 50 feet, vibrations are readily perceptible, but pose virtually no risk of damage to normal buildings.

Vibrations caused by construction or rail activities can be interpreted as energy transmitted in waves through the soil mass. These energy waves generally dissipate with distance from the vibration source (i.e., the construction activity such as pile driving or sheet driving), due to spreading of the energy and frictional losses. In order to assess the potential for structural damage associated with vibration, the vibratory ground motion in the vicinity of the affected structure is measured in terms of peak particle velocity in the vertical and horizontal directions, typically in units of inches per second (in/sec). Vibration levels referenced to 1×10^{-6} in/sec are sometimes annotated as VdB.

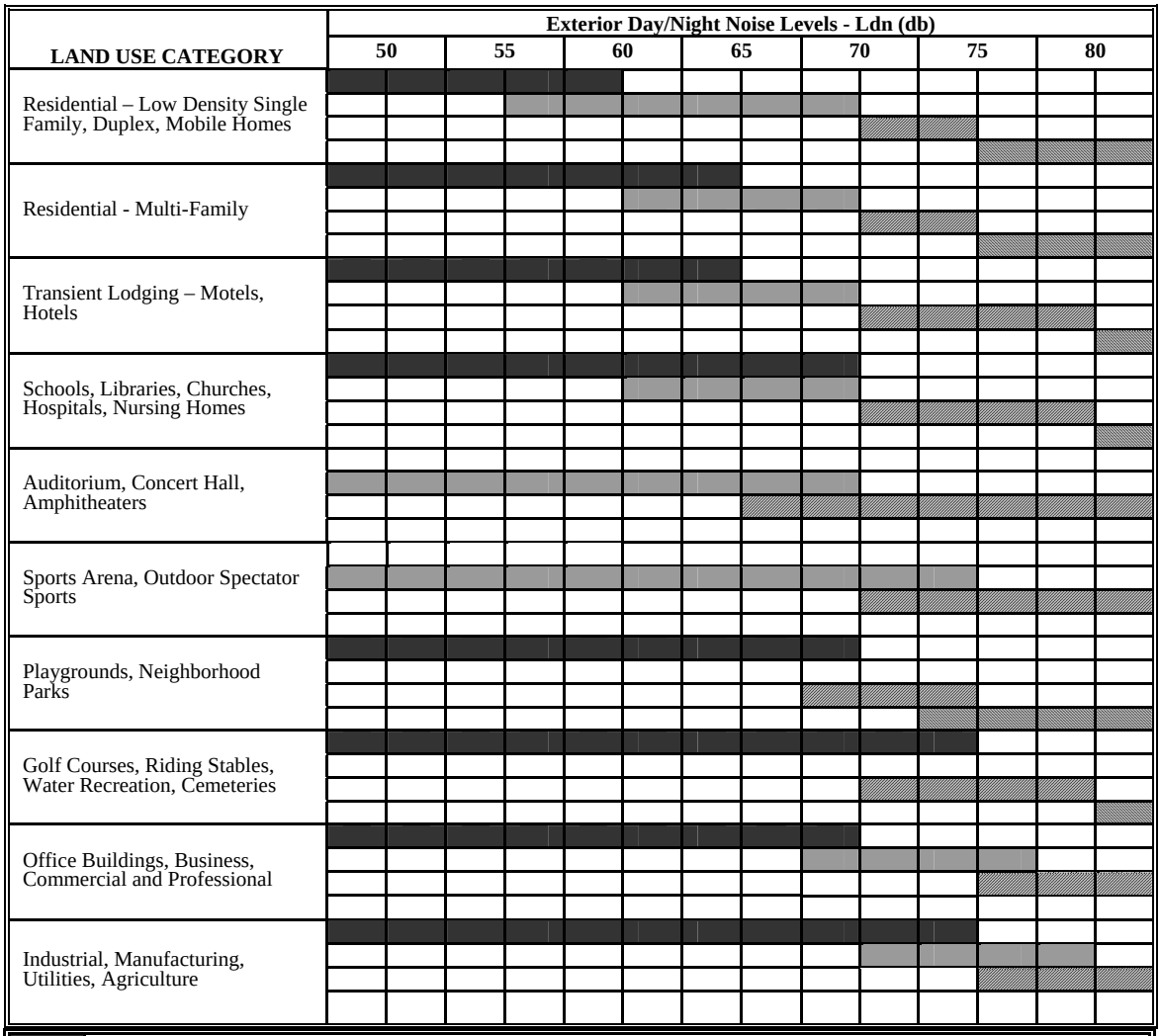
Local Noise Environment

As noted in the *Contra Costa County General Plan*, the major sources of noise in Contra Costa County are traffic along freeways and major arterials, rail operations, air traffic, and industrial plants (Contra Costa County, 2006). As a result of the presence of active Union Pacific Rail lines that run along the southern border of the project site, the noise environment there over the course of a day is greatly influenced by rail noise. As noted in the noise contours displayed in the *Contra Costa County General Plan*, the day night noise levels in the southern portions of the site range from 60 to 65 L_{dn} dBA.

Existing Noise Levels

The ambient noise environment in the project vicinity is influenced by natural sources of sound, such as wind and birds, and by human-caused sources of noise, most notable freight and passenger train traffic on the rail lines that run along the southern border of the project site. In addition, commercial activities to the south, marina activities to the west, and planes flying overhead add to the ambient noise environment. To quantify the existing noise environment, noise levels were monitored on a 24-hour basis at one location. In addition to this long-term measurement, short-term measurements were taken at five locations. All noise measurements were collected using Metrosonics dB308 sound level meters that were calibrated for the measurements using a Metrosonics CL304 calibrator.

Noise measurement locations are displayed in Figure 4.8-2 and results are presented in Table 4.8-1. The short-term measurements presented in Table 4.8-1 do not include the noise generated by passing trains, in particular the sounding of the train horn as it approached the at-grade crossing. Instead, the noise levels generated by trains passing the area were measured at three of the short-term measurement locations during train pass-by events. Noise levels associated with passing trains and the train horn in particular are presented in Table 4.8-2. The noise levels associated with the train's horn were derived from the long-term measurement. Specifically, given



SOURCE: Contra Costa County General Plan.

Bay Point Waterfront Strategic Plan

Figure 4.8-2

Land Use Compatibility for Community Noise Environments

TABLE 4.8-1
EXISTING NOISE MEASUREMENTS[a]

Location	DNL or Time Period	L_{eq} (dBA)[b]	L_{max} (dBA)[c]	Noise Sources & Comments
Long term				
LT1 – ~ 25 feet north of railroad tracks	74 dBA DNL	48–76	60–107	
Short term				
ST1 – On proposed residential site, 100 feet north of railroad tracks	12:50 p.m.	61	64–73	• wind • overhead • airplanes • birds
ST2 – At proposed location of westernmost covered boat slips	1:13 p.m.	62	67–74	
ST3 – West side of proposed pedestrian promenade	1:29 p.m.	64	69–74	
ST4 – at proposed residential site at McAvoy Road	1:41 p.m.	58	60–71	
ST5 – Entrance area to McAvoy Harbor	2:02 p.m.	59	65–71	

[a] The long-term measurement was conducted for 24 hours beginning at 3 PM on Wednesday, August 24, 2005. Short-term measurements were conducted for five to ten minutes each on Wednesday August 24, 2005.
[b] L_{eq} for long-term measurements are hourly values.
[c] L_{max} for long-term measurements are hourly maximums.

SOURCE: Environmental Science Associates (2005)

TABLE 4.8-2
NOISE MEASUREMENTS OF PASSING TRAINS

Location	L_{eq} (dBA)	L_{max} (dBA)[a]	Comments
LT 1 – ~ 50 feet from at-grade crossing	–	95–107	
ST1 – 100 feet north of railroad tracks	81	96	• two locomotives traveling to west
ST3 – approximately 50 feet from crossing	82	94	• approximately 20-car freight train traveling to east
ST5 – approximately 50 feet from crossing	83	92	• approximately 4-car Amtrak train traveling to east

[a] The maximum noise associated with the train's passing is from the sounding of the train horn as it approaches the at-grade crossing.

SOURCE: Environmental Science Associates (2005)

that the train is the only significant source of noise in the area and that trains are required to sound their horn as they approach the at-grade crossing, it is reasonable to assume that the most extreme L_{max} values recorded during the long-term measurement correspond to the noise levels generated by these horns.

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others are due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. People in residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks and outdoor recreation areas are generally more sensitive to noise than are people at commercial and industrial establishments. Consequently, the noise standards for sensitive land uses are more stringent than for those at less sensitive uses. Local sensitive receptors include existing residential areas to the southwest, south, and southeast. Riverview Middle School is located approximately 0.25-mile to the southwest and Rio Vista Elementary School is located approximately 0.5-mile to the southwest.

4.8.3 Regulatory Setting

State

California has also established noise insulation standards (Title 24, California Code of Regulations) for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. The noise insulation standards, which set forth an interior standard of 45 DNL in any habitable room, are typically enforced by local jurisdictions through the building permit application process.

Local

Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans, and noise ordinances set forth the specific standards and procedures for addressing particular noise sources and activities. General plans recognize that different types of land uses have different sensitivities toward their noise environment. Local noise ordinances typically set forth standards related to construction activities, nuisance-type noise sources, and industrial property-line noise levels. Contra Costa County does not have an ordinance specifically addressing noise. Noise complaints within the county are addressed through application of peace disturbance sections of the County Police Code and application of generic nuisance ordinances of the municipal code. Contra Costa County General Plan

The Noise Element of the *Contra Costa County General Plan* contains the following goals and policies applicable to the proposed project (Contra Costa County, 2006):

> *Goal 11-A*: To improve the overall environment in the County by reducing annoying and physically harmful levels of noise for existing and future residents and for all land uses.
>
> *Goal 11-B*: To maintain appropriate noise conditions in all areas of the County.
>
> *Goal 11-C*: To ensure that new developments will be constructed so as to limit the effects of exterior noise on the residents.
>
> *Policy 11-1*: New projects shall be required to meet acceptable exterior noise level standards as established in the Noise and Land Use Compatibility Guidelines contained in Figure 4.8-2. These standards, along with the future noise levels shown in the future

noise contours maps, should be used by the County as a guide for evaluating the compatibility of "noise-sensitive" projects in potentially noisy areas.

Policy 11-2: The standard for outdoor noise levels in residential areas is a DNL of 60 dBA. However, a DNL of 60 dB or less may not be achievable in all residential areas due to economic or aesthetic constraints. One example is small balconies associated with multi-family housing. In this case, second and third story balconies may be difficult to control to the goal. A common outdoor use area that meets the goal can be provided as an alternative.

Policy 11-3: If the primary noise source is train passbys, then the standard for outdoor noise levels in residential areas is a DNL of 70 dB. A higher DNL is allowable since the SNL is controlled by a relatively few number of train passbys that are disruptive outdoors only for short periods. Even though the DNL may be high, during the majority of the time the noise level will be acceptable.

Policy 11-4: Title 24, Part 2, of the California Code of Regulations requires that new multiple-family housing projects, hotels, and motels exposed to a DNL of 60 dB or greater have detailed acoustical analysis describing how the project will provide an interior DNL of 45 dB or less. The County also shall require new single-family housing projects to provide an interior DNL of 45 dB or less.

Policy 11-5: In developing residential areas exposed to a DNL in excess of 65 dB due to single events such as airport, helicopter, or train operations, indoor noise levels due to these single events shall not exceed a maximum A-weighted noise level of 50 dB in bedrooms and 55 dB in other habitable rooms.

Policy 11-6: If an area is currently below the maximum "normally acceptable" noise level, an increase in noise up to the maximum should not be allowed necessarily.

Policy 11-8: Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

Policy 11-9: Sensitive land uses shall be encouraged to be located away from noise areas, or the impacts of nose on these uses shall be mitigated. If residential areas are planned adjacent to industrial noise sources, than a noise survey shall be performed to determine the extent of any noise impacts and recommend appropriate noise mitigation measures.

4.8.4 Impacts and Mitigation Measures

Standards of Significance

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would result in a significant noise impact if it would:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose persons to or generate excessive groundborne vibration or groundborne noise levels;
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or

- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The project site is not within an airport land use plan, within two miles of an airport, or within the vicinity of a private airstrip. Therefore, noise issues related to airports and airstrips will not be discussed further.

Consistent with the Contra Costa County *General Plan*, significant noise impacts would occur if the proposed project would result if the project would locate the proposed residences in a noise environment in excess of 70 DNL.

Consistent with Noise Analysis Protocol of Caltrans (Caltrans, 1998), and the impact assessment guidelines of the U.S. DOT, (U.S. DOT, 1995), a substantial permanent increase in ambient noise levels would be defined as:

- Increase of 3 dBA or greater at noise-sensitive land uses where noise levels already exceed 60 dBA DNL.

- Increase of 5 dBA or greater where future noise levels would remain below 60 dBA DNL.

Impacts

Impact 4.8.1: Construction activities associated with the project could generate intermittent and temporary elevated noise levels in the project vicinity. (Less than Significant)

Construction activities would require the use of heavy equipment for pavement and building removal, site grading and excavation, installation of utilities, paving, and building fabrication and project-related truck traffic. Construction of the proposed project would generate temporary and intermittent noise at and near the project site. Noise levels would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Typical noise levels generated by the construction activities that would be required for construction of the proposed project are shown in Table 4.8-3. As shown in this table, the loudest noise levels expected during construction would occur if pile driving is required, when noise levels would reach up to 96 dBA at 50 feet. If no pile driving is required, the noisiest construction activities would generate noise levels of 89 dBA at 50 feet, occurring during both excavation and finishing. During other phases of construction, average noise levels at 50 feet would be expected to range from 78 dBA to 85 dBA.

TABLE 4.8-3
TYPICAL CONSTRUCTION NOISE LEVELS[A]

Construction Phase	Noise Levels at 50 Feet (dBA L_{eq})	Noise Levels at 50 Feet with Mufflers (dBA L_{eq})
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86
Pile Driving	96	92

[a] Estimates correspond to a distance of 50 feet from the noisiest piece of equipment associated with the given phase and 200 feet from the other equipment associated with that phase.

SOURCE: EPA, *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances*, PB 206717, 1971.

The nearest sensitive receptors are located approximately 0.5-miles from the project site. Given this distance, construction noise would likely be less than 65 dBA at any sensitive receptor. Moreover, these elevated noise levels would occur temporarily and would attenuate both as construction activities occur further from the existing sensitive receptors and as construction becomes largely confined to the interior of new structures. As such, construction noise impacts would be considered less than significant.

Mitigation: None required.

Impact 4.8.2: Future traffic noise associated with the proposed project would increase the ambient noise levels in the project vicinity. (Less than Significant)

To evaluate traffic noise increases resulting from the revised project, six roadway segments were analyzed. These roadways were selected because of their proximity to the project site which resulted in a greater increment of vehicle trip increases. These roadway segments were also selected because they are adjacent to sensitive receptors (existing residences). Table 4.8-4 presents the results of the FHWA traffic-noise modeling for roadside traffic noise levels at peak-hour conditions under Existing, Baseline Plus Approved Projects, Baseline Plus Approved Project Plus Project and 2025 Cumulative conditions. As indicated by the data in Table 4.8-4, the project would result in no significant increases (3 dBA or greater) in roadway traffic noise when compared to No Project conditions. Consequently, traffic noise resulting from the revised project would have a less than significant impacts on off-site sensitive receptors. Additionally, no roadways would experience substantial increases in noise under the cumulative scenario, when compared to existing conditions.

Mitigation: None required.

TABLE 4.8-4
TRAFFIC NOISE INCREASES ALONG ROADS IN THE PROJECT AREA

Road Segment	Modeled Existing Traffic Noise[c]	Modeled Baseline Plus Approved Projects	Modeled Baseline Plus Approved Projects Plus Project	Modeled Incremental Increase (Baseline No Project vs. Baseline with Project)	Modeled Year 2025 Plus Project	Modeled Cumulative Incremental Increase (Existing vs. 2025 Project)
1. Port Chicago Hwy. (between Inlet Dr. And McAvoy Rd.)	61.3	61.3	61.7	+ 0.4	63.6	+2.3
2. Port Chicago Hwy (between Skipper Dr. and Pacifica Ave.)	65.3	66.3	67.5	+2.2	67.7	+2.4
3. Pacifica Ave. (between Anchor Dr. and Port Chicago Hwy.)	64.3	64.6	65.0	+ 0.4	65.0	+ 0.7
4. Willow Pass Rd. (between Port Chicago Hwy and Weldon Ave.)	69.2	69.7	70.0	+ 0.3	71.5	+ 2.3

These listed values represent the modeled existing noise levels from mobile sources along specified roadways and are based on traffic data from Fehr and Peers (See also Section 4.6 *Traffic and Transportation*). These values allow incremental noise increases to be deduced in order to provide an initial screening with respect to the noise level significance standards of either a 3 or 5 dBA increase. However, other noise sources in the vicinity of these roadway segments, such as intersecting roadways and other non-vehicular noise sources, can contribute substantially to the total ambient noise levels along roadways in the project vicinity. Road center to receptor distance is assumed to be 15 meters (approximately 50 feet) on these segments.

SOURCE: ESA, 2006

Impact 4.8.3: Future residents of the project could be exposed to elevated noise levels as a result of train traffic. (Significant)

As noted earlier, much of the project site, in particular the area proposed as residential development experiences elevated noise levels as a result of train traffic on the tracks adjacent to the site. Specifically, as indicated by the 24-hour noise measurements, the area within approximately 25 feet from the railroad tracks, on the very northern edge of the project site, experiences DNL noise levels of 74 dBA. Given that noise from linear sources attenuates at approximately 3 dBA per doubling of distance, it would be expected for noise levels within approximately 60 feet of the train tracks to equal or exceed 70 dBA DNL. If residences are built within 60 feet of the train tracks, the outdoor noise levels would be in excess of the standard of 70 dBA DNL set by *Policy 11-3* of the Noise Element of the Contra Costa County General Plan for residential land uses when the primary noise source is train pass-by events. Moreover, given the proximity of future residences to the elevated noise levels associated with train activity, there is the potential that interior noise levels would exceed the interior standards of 45 dBA DNL set by the State for multi-family housing. Without proper construction materials and techniques, impacts related to interior noise levels would be significant.

Mitigation Measure 4.8.3a: Residential developments should be set back a minimum of 60 feet from the train tracks.

Mitigation Measure 4.8.3b: The project housing developer shall retain a qualified acoustical consultant to ensure that interior noise levels at multi-family residences do not exceed a DNL of 45 dBA. If treatments are necessary, they may include installing acoustically-rated windows and blocking sound transmission paths through vents or other openings in the building shell. The acoustical consultant will prepare and submit to the County a report detailing compliance with the interior noise performance standard or, if necessary, the acoustical treatments to be applied to the buildings, or the exterior measures such as sound walls to be constructed, to achieve compliance with the interior noise performance standard. The report must be reviewed and approved by the County before the building permit is issued.

Significance after Mitigation: Less than Significant.

Impact 4.8.4: Future residents of the project could be exposed to ground-borne vibration as a result of train traffic. (Significant)

The proposed multi-family residences would be located adjacent to an active rail road track and at-grade crossing. Noise monitoring over a 24-hour period indicates that at least 17 train pass-by events occurred over this 24-hour period and a source reports that the tracks serve 32 trains per day (see discussion in Section 4.6 *Transportation*. Depending on the proximity of the proposed residences, soil conditions, train speeds and construction techniques used, train pass-by events could result in vibration impacts to adjacent residences. The effects of groundborne vibration include perceptible movement of the building floors, rattling of windows and shaking of items on shelves or hanging on walls (FTA, 1995).

The U.S. Department of Transportation identifies a screening distances of 200 feet for assessing the potential for vibration impacts to residential land uses from a conventional commuter railroad. It should be noted that this screening distance is for assessing vibration impact from proposed rail projects on existing residences. Newly constructed buildings, such as the proposed residences, would be consistent with the Uniform Building Code and less likely to be adversely affected by vibration from rail activity than buildings constructed prior to implementation of earthquake safety requirements. Consequently, the screening distance may be conservative. Nevertheless, given the proximity of the proposed residences to an active rail line and the frequency of rail activity, mitigation measures are recommended to ensure that future residents are no significantly impacted by groundborne vibrations.

Mitigation Measure 4.8.4: The project sponsor shall retain a qualified vibration/acoustical consultant to ensure that the design and setback of proposed residential buildings are sufficient to ensure groundborne vibrations at the residences would not exceed 80 VdB. If treatments are necessary, they may include installing elastomer pads for building foundation or other vibration isolation techniques. The consultant will prepare and submit to the County a report detailing vibration assessment and, if necessary, the additional treatments to be applied to the building to ensure rail generated vibration will not be significant. The report must be reviewed and approved by the County before the building permit is issued.

Significance after Mitigation: Less than Significant.

References – Noise

Contra Costa County, *Contra Costa County General Plan 2005-2020*, July 2006.

Federal Transit Administration (FTA), U.S. Department of Transportation, *Transit Noise and Vibration Impact Assessment - Final Report*, April 1995.

Hendricks, Rudy, Caltrans, *Transportation Related Earthborne Vibrations, Technical Advisory, Vibration TAV-02-01-R9601*, February 20, 2002.

4.9 Hazards and Hazardous Materials

4.9.1 Introduction

This section discusses the hazards and hazardous materials issues associated with the proposed project site and proposed project operations. The issues evaluated include past chemical use and the potential presence of associated toxic substances in site soil and groundwater; past storage and release of fuels; hazardous waste contamination of the site during construction; and the potential of the project to handle hazardous materials, generate hazardous wastes, or produce discharges. A technical memorandum evaluating the environmental hazards was prepared by Treadwell & Rollo Inc., Environmental & Geotechnical Consultants in January 2006 for the purpose of assessing current and previous land uses at the project site and to document those environmental conditions that could potentially impact development. This section relies largely on this report and the environmental database review that was conducted for the memorandum.

4.9.2 Setting

Hazardous Materials

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in the California Health and Safety Code as:

> Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. (Section 25501[o])

Substances with certain chemical or physical properties can be considered hazardous, including the properties of toxicity, ignitability, corrosivity, and reactivity.

Hazardous Waste

A hazardous waste is any hazardous material that is discarded, abandoned, or is to be recycled. The criteria that render a material hazardous also make a waste hazardous. If improperly handled, hazardous materials and wastes can cause public health hazards when released to the soil, groundwater, or air.

Hazard, Risk, and Exposure

Factors that influence the health effects of exposure to hazardous materials include the dose to which the person is exposed, the frequency of exposure, the exposure pathway, and individual

susceptibility. The four basic exposure pathways through which an individual can be exposed to a chemical agent include: inhalation, ingestion, bodily contact, and injection.

Existing Conditions

The proposed project area is approximately 290 acres and includes the McAvoy Yacht Harbor, the Harris Yacht Harbor (currently unoccupied), and land to the east that is currently used for cattle grazing (Circle A Ranch). The McAvoy Boat Harbor area has several structures, including a bait shop, a former restaurant, a boat ramp, a fueling station, covered boat slips and uncovered boat slips, and a large unpaved boat storage area. The Harris Yacht Harbor property includes covered boat slips and a large metal-clad building.

The adjacent properties include wetland areas, a reservoir owned by Pacific Gas and Electric, a railroad right of way, and an open space preserve. The land south of the property and railroad tracks is developed with residential and commercial uses.

Historical Aerial Photographs, Maps and City Directories

A review of available historical aerial photographs, maps, and city directory information by Environmental Data Resources, Inc. (EDR) was conducted for the site and surrounding area. A summary of those resources follows:

- 1939 – Some structures and roads are present, but the majority of the site is vacant and may be under agricultural use. The railroad tracks are present. There appear to be some channels cut through the marsh areas, but the yacht harbors have not been constructed. Adjacent land use appears to be agricultural and possibly low density residential or commercial use.

- 1958 – The Harris Yacht Harbor has been constructed, as well as part of the McAvoy Yacht Harbor. A large housing development is visible to the southwest of the site.

- 1965 – McAvoy Road is visible crossing the railroad tracks. The two yacht harbors appear to be similar to 1958. The area surrounding the McAvoy Harbor and the parking area south of the harbor appear to be paved. Development in surrounding properties remains the same.

- 1970 – The property and surrounding properties remain the same as in 1965, with the exception of a new housing development south of the site.

- 1982 – The McAvoy harbor has been greatly expanded; a second, larger harbor area has been created north of the original harbor, with what appear to be new docks with covered boat slips. The photograph is not clear enough to discern whether additional structures are present on the McAvoy property. Another housing development has been built southeast of the site. The apparent wetlands area west of the site has been heavily altered with what appear to be channels, dikes, and basins.

- 1993 – New docks and slips are visible in McAvoy Harbor. The restaurant building is visible. Additional housing has been built in the area south of the site.

- 1998 – The property and surrounding properties remain the as they appeared in 1993.

USGS historical topographic maps for the property provided by EDR for the years 1914, 1918, 1953, 1968, 1973, and 1980 indicate site historical land use consistent with that observed in aerial photographs. No Sanborn Fire Insurance Map coverage was available for the area. A search of city directories did not list the subject property and surrounding properties included retail and commercial operations consistent with current use.

Environmental Database Review

An environmental regulatory file search was conducted to identify any reported hazardous materials storage, disposal, or spills/releases on or in the vicinity of the project site. The search, encompassing all mapped hazardous and potentially hazardous sites in the vicinity of the subject property, was conducted using the American Society for Testing Materials (ASTM) Standard E 1527-00 recommended search radii for Environmental Site Assessments. The results of the database search are summarized below:

- The McAvoy Boat Harbor is listed in the following databases: California Hazardous Waste Facilities and Manifest Data (Haznet)[1]; Emergency Response Notification System (ERNS)[2]; and the Contra Costa County Site List.[3]

- The R Trost Moving Company (a former Site tenant) is listed on the Contra Costa County Site List.

- The Harris Yacht Harbor and Coord Electric Motor Corporation (formerly located on the Harris property) are listed on the following databases: Resource Conservation and Recovery Act Information (RCRA Info); and the Contra Costa County Site List.

- The Circle A Ranch was listed on the Statewide Environmental Evaluation and Planning System (SWEEPS)[4]; and the Contra Costa County Site List.

A number of sites south of the project area were also noted in various databases for addresses along Port Chicago Highway. These sites are located more than 1/8 of a mile away and because of the subsurface conditions are unlikely to affect the project area.

Project Area Site Investigations

Numerous site investigations have been previously performed in the project area. A summary of these reports is as follows:

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1 The HAZNET database is produced from copies of hazardous waste manifests received each year by the DTSC. HAZNET records do not indicate whether an accidental release of hazardous materials that could pose a threat the public or the environment has occurred. Instead, this database tracks hazardous manifests and how hazardous waste described in each manifest is disposed.

2 The Emergency Response Notification System (ERNS) database records and stores information on reported releases of oil and hazardous substances that have occurred throughout the United States and have been reported to the National Response Center and/or one of the 10 EPA Regions.

3 The Contra Costa County List is compiled by the Contra Costa Health Services Department which records sites from the underground tank, hazardous waste generator and business plan/2185 programs.

4 The SWEEPS database tracks USTs. The database was updated and maintained by a company contacted by the SWRCB in the early 1980s. As of June 1, 1994, this listing is no longer updated or maintained.

- **1989 PG&E Application for Corps of Engineers Permit to Cover the Carbon Piles:** Past industrial practices by Shell Oil involved dumping carbon piles on what is now the PG&E property. The carbon piles caught fire in 1984 and an application to cover them was made by PG&E in 1989. It is unclear how much of this material is still present at the site or whether any carbon piles exist on the PG & E portion of property that lies within the project area.

- **2003 Brown and Caldwell Site Investigation Report, Harris Yacht harbor, Bay Point, California:** During 2002, soil and groundwater samples were collected and analyzed for a number of different areas of environmental concern. Brown and Caldwell concluded that four areas had been affected by petroleum hydrocarbons. In addition, several metals were detected in groundwater at concentrations exceeding regulatory guidelines. As a result of this investigation, limited remediation efforts were performed onsite.

- **2004 Brown and Caldwell, Additional Investigation and Remedial Activities, Former Harris Yacht Harbor:** More soil sampling and installation of groundwater monitoring wells were completed onsite. Petroleum hydrocarbons in soil did not exceed applicable residential screening levels but one groundwater sample had petroleum hydrocarbons exceeding screening levels. Metals were also detected in the groundwater but the findings of that work were inconclusive. Remedial activities included removal of underground pipes, soil excavation, and abandonment of a water supply well with detections of petroleum hydrocarbons.

- **2003 to 2004: Brown and Caldwell Groundwater Monitoring:** Quarterly groundwater monitoring was conducted at the Harris Yacht Harbor and samples were analyzed for petroleum hydrocarbons, metals, polycyclic aromatic hydrocarbons (PAHs), nitrate, and nitrogen. Based on low concentrations of site contaminants in the groundwater samples, the San Francisco Regional Water Quality Control Board (RWQCB) granted a request to terminate quarterly monitoring.

- **2005 Brown and Caldwell, Sediment Investigation Results, Former Harris Yacht Harbor:** Sediment sampling was conducted in the harbor area east of the former Harris Yacht harbor berths. The area was of interest due to a storm drain outfall that discharges to the harbor in this area and was suspected of being used to dispose of paint residue and other hazardous materials. Brown and Caldwell concluded that copper was present above background levels and that the storm drain was the likely source. No further investigation or remediation of the sediments was recommended.

There was no subsurface data available for the McAvoy Yacht harbor however, the history of use is similar to that of the Harris Yacht Harbor and therefore could have similar conditions (Treadwell & Rollo, 2006).

4.9.3 Regulatory Setting

Federal

Hazardous materials are subject to numerous laws and regulations at all levels of government, the major objective of which is to protect public health and the environment. In general, these regulations provide definitions of hazardous substances; establish reporting requirements; set

guidelines for the handling, storage, transport, remediation, and disposal of hazardous waste; and require health and safety provisions for workers and the public. Regulatory agencies also maintain databases of sites that handle hazardous wastes or store hazardous substances in underground storage tanks, as well as sites where soil or groundwater quality may have been affected by hazardous substances.

The major federal, state, and regional agencies enforcing these regulations include: the U.S. Environmental Protection Agency (EPA), U.S. Department of Labor Occupational Safety and Health Administration (OSHA), U.S. Department of Transportation (DOT), the Department of Toxic Substances Control, the San Francisco RWQCB, and the Contra Costa Health Services, Hazardous Materials Management programs.

Hazardous Materials Management and Emergency Planning

State and federal laws require businesses that handle hazardous materials to ensure that the hazardous materials are properly handled, used, stored, and disposed of, and in the event that such materials are accidentally released, to prevent or reduce injury to health and the environment. California's Hazardous Materials Release Response Plans and Inventory Law, sometimes called the "Business Plan Act," aims to minimize the potential for accidents involving hazardous materials and to facilitate an appropriate response to hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored, to prepare an emergency response plan, and to train employees to use the materials safely. This law is implemented locally by the Contra Costa Health Services, Hazardous Materials Management program.

Hazardous Waste Handling

The California Environmental Protection Agency (Cal EPA), Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The Cal EPA has authorized DTSC to enforce hazardous waste laws and regulations in California. State requirements assign "cradle-to-grave" responsibility for hazardous waste to hazardous waste generators. Anyone who creates a hazardous waste is considered a hazardous waste generator. Generators must ensure that their waste is disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills). All hazardous waste generators must certify that, at a minimum, they make a good faith effort to minimize their waste and select the best waste management method available. Hazardous waste laws and regulations are enforced locally by the Contra Costa Health Services.

In Contra Costa County, remediation of contaminated sites is performed under the oversight of Contra Costa Health Services with the cooperation of the RWQCB. At sites where contamination is suspected or known to occur, the project sponsor is required to perform a site investigation and draw up a remediation plan, if necessary. For typical development projects, actual site

remediation is done either before or during the construction phase of the project. Site remediation or development may be subject to regulation by other agencies. For example, if dewatering of a hazardous waste site were required during construction, subsequent discharge to the sewer collection system could require a permit from Contra Costa Water District, while discharge to a storm drain could require a permit from both the Contra Costa Health Services and the San Francisco RWQCB.

Worker Safety

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the work place. The California Division of Occupational Safety and Health (Cal OSHA) and the federal Occupational Safety and Health Administration are the agencies responsible for assuring worker safety in the workplace. Cal OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. At sites known to be contaminated, a Site Safety Plan must be prepared to protect workers. The Site Safety Plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at a contaminated site.

Hazardous Materials Transportation

The U.S. Department of Transportation (DOT) has developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. The U.S. Postal Service (USPS) has developed additional regulations for the transport of hazardous materials by mail. DOT regulations specify packaging requirements for different types of materials. EPA has also promulgated regulations for the transport of hazardous wastes. These more stringent requirements include tracking shipments with manifests to ensure that wastes are delivered to their intended destinations. In California, the California Highway Patrol, DOT, and DTSC play key roles in enforcing hazardous materials transportation requirements.

Contra Costa County General Plan

The County of Contra Costa has established goals, policies, and programs in regards to hazardous materials. These are outlined in the Conservation and Safety Elements of the Contra Costa County General Plan. The following goals and policies are directly related to the proposed project:

> *Goal 10-I*: To provide public protection from hazards associated with the use, transport, treatment and disposal of hazardous substances.
>
> *Policy 10-62*: Storage of hazardous materials and wastes shall be strictly regulated.
>
> *Policy 10-63*: Secondary containment and periodic examination shall be required for all storage of toxic materials.
>
> *Policy 10-71*: Applications for private or commercial recreation docks which would encroach into waterways used primarily for recreation boating should be reviewed by the County to evaluate their aggregate impact upon public safety.

Contra Costa County Code

The ordinance code for Contra Costa County is current through Ordinance 2005-34 and the October, 2005 code update and includes ordinances relating to Hazardous Materials Release Plans and Responses.

> *450-2.002 Purpose:* Health and Safety Code Chapter 6.95 requires, among other things, that any business which handles a specified quantity of a hazardous material establish a business plan for emergency response to a release or threatened release of a hazardous material, which includes an inventory of hazardous materials handled by the business, and report to the administering agency and the State Office of Emergency Services, occurrences of specified releases or threatened releases of hazardous materials.
>
> The purpose of this division is to impose regulations in addition to Health and Safety Code Chapter 6.95, for the protection of the public and emergency rescue personnel in the county, and to facilitate implementation of said chapter, as authorized by Health and Safety Code Section 25500. (Ordinances. 88-74 § 2, 87-5 § 2).

4.9.4 Impacts and Mitigation Measures

Standards of Significance

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would result in a significant impact to hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

Impacts

Project Construction

Impact 4.9.1: Disturbance and release of contaminated soil, groundwater, or building materials during demolition and construction phases of the project could expose construction workers, the public, or the environment to adverse conditions related to hazardous substance handling. (Significant)

Excavation for installation of project-related utilities, building footings, and regrading would occur at the project site. If any hazardous contaminants in excavated soils or in groundwater should go undetected, health and safety risks to workers and the public could occur. Exposure to hazardous wastes could cause various short-term and/or long-term health effects. Possible health effects could be acute (immediate, or of short-term severity), chronic (long-term, recurring, or resulting from repeated exposure), or both. Health effects would be specific to each hazardous substance.

In general, the results of the soil and groundwater investigations on the Harris Yacht Harbor area indicate that the shallow soil and groundwater quality would not be expected to cause excess risks to human health. Concentrations of these constituents in general were below the environmental screening levels[5] developed and assembled by the San Francisco Regional Water Quality Control Board.

Asbestos

Asbestos could be encountered during structural demolition of the existing buildings and would require disposal. Buildings to be demolished would need appropriate abatement of any identified asbestos prior to demolition or renovation. Asbestos-containing material (ACM) is regulated both as a hazardous air pollutant under the federal Clean Air Act and as a potential worker safety hazard under the authority of Cal-OSHA. The renovation or demolition of buildings containing asbestos would require the use of contractors who are licensed to conduct asbestos abatement work and notification of the Bay Area Air Quality Management District (BAAQMD) ten days prior to initiating construction and demolition activities.

Potential exposure to asbestos, and its related chronic adverse health effects, is possible throughout demolition if materials that contain hazardous substances are present during operations. Testing of ACMs has not been conducted in any of the buildings in the project area, however based on the age of the buildings, asbestos containing materials could be present.

Lead and Lead-based Paint

Lead-based paint could become separated from building materials during the demolition process. Separated paint can be classified as a hazardous waste if the lead content exceeds 1,000 parts per million and would need to be disposed of accordingly. Additionally, lead-based paint chips can

[5] Environmental screening levels are used to assess exposures of contaminants to buildings and occupants.

pose a hazard to workers and adjacent sensitive land uses. Both the federal and California OSHA regulate all worker exposure during construction activities that impact lead-based paint. Interim Final Rule found in 29 CFR Part 1926.62 covers construction work where employees may be exposed to lead during such activities as demolitions, removal, surface preparation for re-painting, renovation, clean up and routine maintenance. The OSHA-specified method of compliance includes respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, training etc.

Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work.

Demolition could create exposure to lead-based paint present in building structures. Dust generating activities that include removal of walls, sanding, welding, and material disposal could produce airborne quantities of lead-laden material. These materials could expose workers and persons in close proximity, including occupants of off-site locations. The project site is also underlain by artificial fill, which could contain lead.

Underground Storage Tanks

No underground storage tanks (USTs) were noted in the Phase I, however records showed that fuels, waste oils, and solvents were used and stored at the project area. Environmental work at the Harris Yacht Harbor mentions the existence of above ground storage tanks and underground pipelines. Underground pipelines were reportedly removed as part of remediation activities in 2005. Petroleum uses were also noted on the McAvoy Harbor site but there is no specific mention of an underground storage tank on that site.

Prior to UST regulations in the 1980s, USTs were commonly installed without being recorded. Therefore, additional unknown USTs that were installed prior to UST regulations could be encountered during project construction.

Soil and Groundwater

Previously unknown contamination may also be encountered during project development based on the presence of undocumented fills and other historical hazardous material use in the project area. Environmental investigations conducted at the project site were based on available historical land use information, such as aerial photographs, fire insurance maps, and evidence of historical hazardous material use apparent during site inspections. Because hazardous material records were not required to be maintained until relatively recently, hazardous materials that may have been used, stored, or disposed of in areas outside of the areas of concern identified during previous environmental investigations may be encountered. If significant releases of hazardous materials

are discovered during construction activities, additional investigation, remediation, and/or coordination with regulatory agencies may be required.

Mitigation Measure 4.9.1a: A pre-demolition ACM survey shall be performed prior to demolition of the structures. The survey shall include sampling and analysis of all structures on the project area.

Mitigation Measure 4.9.1b: In the event asbestos-containing materials (ACMs) are identified in the survey (Measure 4.9.1a), an asbestos abatement plan shall be prepared by a state-certified asbestos consultant. All ACMs shall be removed and appropriately disposed of in accordance with the asbestos abatement plan prior to demolition of the existing buildings in accordance with federal and State construction worker health and safety regulations, the regulations and notification requirements of the Bay Area Air Quality Management District (BAAQMD).

Mitigation Measure 4.9.1c: The project sponsor shall implement a lead-based paint abatement plan, which shall include the following components:

- Development of an abatement specification approved by a Certified Project Designer.
- A site Health and Safety Plan, as needed.
- Containment of all work areas to prohibit off-site migration of paint chip debris.
- Removal of all peeling and stratified lead-based paint on building surfaces and on non-building surfaces to the degree necessary to safely and properly complete demolition activities per the recommendations of the survey. The demolition contractor shall be identified as responsible for properly containing and disposing of intact lead-based paint on all equipment to be cut and/or removed during the demolition.
- Appropriately remove paint chips by vacuum or other approved method.
- Collection, segregation, and profiling waste for disposal determination.
- Appropriate disposal of all hazardous and non-hazardous waste.

Mitigation Measure 4.9.1d: Prior to the issuance of any demolition, grading, or building permit, the applicant shall demonstrate to the satisfaction of the Fire Department, Office of Emergency Services, that the site has been investigated for the presence of lead and does not contain hazardous levels of lead.

Mitigation Measure 4.9.1e: In the event that electrical equipment or other PCB-containing materials are identified prior to demolition activities they shall be removed and disposed of by a licensed transportation and disposal facility in a Class I hazardous waste landfill.

Mitigation Measure 4.9.1f: Any underground storage tanks present shall be removed prior to construction activities in the immediate area. The Contra Costa County Local Oversight Program (LOP) shall be contacted to oversee removal and determine appropriate remediation measures. Removal of the UST shall require, as deemed necessary by the LOP,

over-excavation and disposal of any impacted soil that may be associated with such tanks to a degree sufficient to the oversight agency. In the event that additional USTs are encountered the same procedures described above shall apply.

Mitigation Measure 4.9.1g: Soils and dredged sediments generated by construction activities shall be stockpiled onsite in a secure and safe manner, and sampled prior to reuse or disposal at an appropriate facility. Specific sample procedures (i.e. frequency, etc.) for reuse and disposal shall be determined within a Soil Management Plan. The Soil Management Plan will identify sampling protocols, criteria for the various Class I, II, and III disposal facilities, and applicable laws and regulations for handling, storage, and transport of these materials. The Soil Management Plan shall be submitted to and approved of by the Contra Costa Health Services prior to implementation.

Mitigation Measure 4.9.1h: The project applicant shall develop and implement a project-specific worker Health and Safety Plan (HSP). The HSP shall identify the following, but not be limited to:

- Description of potential contamination,
- Decontamination procedures,
- Nearest hospital with directions, and
- Emergency notification procedures.

Mitigation Measure 4.9.1i: Per the regulatory standards of the Contra Costa Health Services and the Regional Water Quality Control Board, the project sponsor shall coordinate to determine whether any further remediation is required. If warranted, the project sponsor must develop and submit for review by the Contra Costa Health Services a Soil and Groundwater Management Plan for construction and development activities at the site. The plan shall include, as required, any special health and safety precautions to mitigate worker exposure to contaminated soils or sediments, dust control measures to prevent the generation of dust that could migrate off-site, stormwater runoff controls to minimize migration of soils to storm drains, measures to ensure the proper treatment and disposal of groundwater during dewatering activities, steps for ensuring compliance with applicable state and federal regulations governing the transportation and disposal of hazardous wastes, and general protocol for addressing any unexpected hazardous materials conditions in the subsurface and sediments encountered during construction.

Significance after Mitigation: Less than Significant.

Impact 4.9.2: Hazardous materials used on-site during construction activities (i.e., solvents) could be released to the environment through improper handling or storage. (Significant)

Construction activities would require the use of certain hazardous materials such as fuels, oils, solvents, and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality. However, the onsite storage and/or use of large quantities of materials capable of impacting soil and groundwater are not typically required for a project of the proposed size and type.

Mitigation Measure 4.9.2: The use of construction best management practices shall be implemented as part of construction to minimize the potential negative effects of accidental release of hazardous materials to groundwater and soils. These shall include the following:

- Follow manufacturer's recommendations on use, storage and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- During routine maintenance of construction equipment, properly contain and remove grease and oils.
- Properly dispose of discarded containers of fuels and other chemicals.

Significance after Mitigation: Less than Significant

Project Operation

Impact 4.9.3: Project operations would include use and transport of hazardous materials as well as generate general commercial, household, and maintenance hazardous waste. (Significant)

The project proposes to redevelop an existing marina and construct up to 450 residential units along with other supporting structures. The marina would include a fuel dock where petroleum fuels would be stored and dispensed. Commercial activities would use hazardous chemicals common in commercial and office settings. These chemicals would include familiar materials such as toners, correction fluid, paints, lubricants, kitchen and restroom cleaners, and other maintenance materials. Hazardous wastes used in the residential or maintenance areas may include small quantities of lubricants or fuels used in maintaining personal resident's vehicles, pesticides or herbicides, solvents, paints, and lubricants. These common consumer products would be used for the same purposes as in any commercial or residential setting. The types of hazardous materials generally handled in the residences typically constitute small quantities and the health effects associated with them are generally not as serious as industrial uses. Implementation of the proposed project would not cause an adverse effect on the environment with respect to the use, storage, or disposal of general commercial and household hazardous substances generated from proposed building uses, and therefore the impact would be considered less than significant.

Mitigation Measure 4.9.3: The storage and handling of petroleum fuels at the fuel dock shall be in accordance with all applicable laws and regulations including the Contra Costa County Code for the storage of hazardous materials.

Significance after Mitigation: Less than Significant.

Cumulative Impacts

Impact 4.9.4: The proposed Strategic Plan, in conjunction with cumulative development, would result in an increased exposure to hazards and hazardous materials. (Less than Significant)

Future development within the project vicinity is guided by the County's General Plan and associated documents. Planned or approved, but not yet constructed, projects within the vicinity of the proposed Strategic Plan are located south of the project site, as the areas to the east and west are outside of the urban limit line and future development within these areas would not be expected. The area immediately south of the project site is also generally built out pursuant to the General Plan with a mix of residential, industrial and commercial land uses.

As discussed above, the project would result in potentially significant project-level hazardous material impacts related to construction and remediation activities. Hazardous material impacts typically occur in a local or site-specific context versus a cumulative context combined with other development projects. It is possible, however for combined effects of transporting and disposal of hazardous materials to be affected by cumulative development.

The project development, with implementation of the identified mitigation measures above, would have a less than significant hazardous materials impact to the public or the environment within the vicinity of the project area. Other foreseeable development within the area, although likely increasing the potential to disturb existing contamination and the handling of hazardous materials, would be required to comply with the same regulatory framework as the project. This includes federal and state regulatory requirements for transporting (Cal EPA and Caltrans) hazardous materials or cargo (including fuel and other materials used in all motor vehicles) on public roads or disposing of hazardous materials (Cal EPA, DTSC, ACEHD). Therefore, the effect of the project on hazardous materials, in combination with other foreseeable projects, would not be significant.

Mitigation: None required.

References – Hazards and Hazardous Materials

Treadwell & Rollo, *Technical Memorandum, Bay Point Waterfront Strategic Plan, Bay Point, California,* January 23, 2006.

4.10 Hydrology and Water Quality

4.10.1 Introduction

This section describes the existing hydrologic setting and regulatory framework that regulates the surface water, flooding and water quality, and presents potential project impacts with necessary mitigation, where appropriate. This section primarily focuses on surface water drainage, storm water management, and water quality.

Regional Hydrologic Setting

The project area lies within the San Francisco Bay Area Hydrologic Basin. The San Francisco Bay functions as the drainage outlet for waters of the Central Valley and includes the main Bay segments as well as the areas that drain to them. The region's waterways, wetlands, and bays mark the centerpiece of the United States' fourth largest metropolitan region. Because of its highly dynamic and complex environmental conditions, the basin supports an extraordinary diverse and productive ecosystem. The basin's deepwater channels, tidelands, and marshlands provide a wide variety of habitats that have become increasingly vital to the survival of several plant and animal species.

San Francisco Bay can be divided into distinct water bodies that have different physical and chemical properties. The northern reach includes three major embayments: Suisun Bay, San Pablo Bay, and Central Bay. The northern reach conveys outflow from the Delta at its head and thus can be considered to be a typical estuary. Central Bay is deeper and more oceanic in character than the northern and southern reaches because of its proximity to ocean inflow through the Golden Gate, a deep narrow channel through the coastal range. The southern reach is separated from the northern reach by the Central Bay and extends from the Oakland Bay Bridge to San Jose.

Freshwater strongly influences environmental conditions in the San Francisco Bay Estuary. Over 90% of the estuary's fresh water originates from the Sacramento-San Joaquin drainage basin and enters the northern reach (RWQCB, 2004). The Sacramento River provides about 80% of this flow, and the San Joaquin River and other streams contribute the remainder. The remaining 10% of freshwater comes from the San Francisco Bay watershed and flows into the southern reach. The southern reach, like the northern reach, has the physiographic characteristics of an estuary but lacks the fresh water inflow to drive a strong estuarine circulation. As a result, circulation in the southern reach is influenced predominantly by tides, evaporation, and wastewater discharges and thus functions much like a tidally oscillating lagoon for most of the year.

In the San Francisco Bay Basin Plan, the RWQCB identifies a number of beneficial uses of Suisun Bay that must be protected. The beneficial uses include commercial and sport fishing, estuarine habitat, industrial service supply, fish migration, navigation, recreation, wildlife habitat, estuarine habitat, preservation of rare and endangered species, fish spawning, and wildlife habitat (RWQCB, 2004).

4.10.2 Setting

The project area is located on the shores of Suisun Bay in northern Contra Costa County (USGS, 1980). Suisun Bay is just west of the delta where the confluence of the Sacramento and San Joaquin Rivers is located. To the south of the project area, the land slopes up into the rolling hills of Pittsburg. The majority of the project area consists of marshland comprised of soft saturated muds and peat. The project area is relatively flat with elevations that range from 0 to 10 feet above mean sea level. The present McAvoy Harbor on the western side of the project area was constructed within the last 50 years, with changes to the harbor configuration occurring up until the early 1990s. Some portions of the McAvoy Harbor area are slightly higher than adjoining marshes, making is probable that some fill from the dredging of the channel and basin was placed on the project area (Baker, 1990).

The Harris Yacht Club and Harbor, on the eastern side of the project area, was constructed within the last 55 years, with changes to the harbor configuration occurring through the 1970s. It is presumed that the construction of the Harris Yacht Harbor including the entrance channel was dredged sometime after 1947. The property was operated as a public marina for over 50 years, from about 1949 to 2001.

Due to siltation in the harbor's entrance channel, the Army Corp of Engineers permitted dredging of bottom material from the channel entrance in 1976 (ACOE, 1976). The dredge spoils were deposited along the eastern bank of the channel on PG&E property (PG&E, 1976).

Precipitation

The climate of the San Francisco Bay Area is characterized as Mediterranean with cool wet winters and relatively warmer dry summers. The mean annual rainfall in the project site and vicinity, for the period between 1955 and 2005, is approximately 13 inches (WRCC, 2006). Long-term precipitation records indicate that wetter and drier cycles, lasting several years, are common in the region.

Floods in the San Francisco Bay Area generally result from intense rainstorms, which are typically preceded by prolonged rainfall that has saturated the ground. Peak flows are usually of short duration. Historically, major flood problems have occurred in urban areas located in the relatively flat, wide valleys near rivers.

Groundwater Basins

The project area is underlain by the Pittsburg Plain Groundwater Basin which comprises the area along the shores of Suisun Bay between the Clayton and Tracy Groundwater basins (DWR, 2004). The southern boundary extends inland from 1 to 3 miles. The basin includes the communities of Bay Point and Pittsburg. The water bearing units of the basin are alluvium deposits that include sands, gravels, and clays. The maximum thickness of these deposits is 400 feet and they are hydrologically connected to the Sacramento River. Flows from this basin are in a northerly direction towards Suisun Bay

Water Quality

Suisun Bay is an estuary with complex hydrodynamics that result in intricate sediment and chemical fate transport processes. The water quality in the Bay is influenced by a variety of factors including a mix of point and nonpoint source discharges, ground and surface water interactions, and water quality/water quantity relationships. A number of water bodies in the San Francisco Bay are impaired due to excessive siltation, but it is very difficult to distinguish between excessive siltation and impairment due to flow alterations. The State and Regional Boards have implemented the Water Management Initiative as the model for which water resources are to be protected. The RWQCB is now structured to promote a watershed-based approach towards implementation of programs, with particular emphasis on integration of programs within county watershed management areas. RWQCB staff working in the San Francisco Watershed Management Area has identified issues based on consideration of a combination of water quality, customer service, and program requirements.

Suisun Bay is included on the 2002 California 303(d) List (EPA approved in 2003) as an impaired water body resulting from the presence of chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs (non dioxin-like and dioxin-like), and selenium. The 303(d) list identifies the sources of each pollutant-ranging from unknown nonpoint sources (for PCBs) to municipal point sources, resource extraction, atmospheric deposition, natural sources and nonpoint sources (for mercury) and industrial point sources, agriculture, natural sources and exotic species (for selenium). The 303(d) program has been and will continue to be administered through California's permitting process, which is administered by the State Board and its nine Regional Water Quality Control Boards.

Water quality and sediment quality testing within the Harris Yacht Harbor and the McAvoy Harbor was conducted by Applied Marine Sciences, Inc. in September 2005 (AMS, 2005). The results indicated that conventional water quality parameters such as temperature, salinity, pH, and dissolved oxygen all met water quality objectives or were consistent with background conditions (AMS, 2005). Sediment quality sampling by AMS indicated that trace metals and polycyclic aromatic hydrocarbon (PAH) compound levels were within acceptable levels.

An independent investigation of sediment quality by Brown and Caldwell indicated that sediments in the immediate vicinity of a stormwater outfall from the Harris Yacht Harbor property would not meet screening criteria for reuse as a wetland surface or wetland foundation material. Copper associated with paint residue was found in concentrations that exceeded ambient levels. This investigation specifically targeted the sediments of the stormwater outfall and did not include the surrounding sediments of the harbor. Brown and Caldwell did not recommend any further investigation or remediation of the sediments.

4.10.3 Regulatory Setting

Federal

Federal Clean Water Act

Under the Clean Water Act (CWA) of 1977, the U.S. Environmental Protection Agency (EPA) seeks to restore and maintain the chemical, physical, and biological integrity in the nation's waters. The statute employs a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the EPA to implement water quality regulations. The EPA has delegated authority for water permitting to the California State Water Resources Control Board (SWRCB), which has nine regional boards. The San Francisco Bay Regional Water Quality Control Board (RWQCB) regulates water quality in the project area.

Section 303 of the Clean Water Act requires states to establish water quality standards consisting of designated beneficial uses of water bodies and water quality standards to protect those uses for all waters of the United States. Under Section 303(d) of the Clean Water Act, states, territories and authorized tribes are required to develop lists of impaired waters. Impaired waters are those that do not meet water quality standards, even after point sources of pollution have installed the required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for waterways on the lists and develop action plans to improve water quality. This process includes development of Total Maximum Daily Loads (TMDL) that set waste load[1] allocations for point source and load allocations for non-point source pollutants. The Ducheny Bill (AB 1740) requires the State Water Resources Control Board and its nine Regional Water Quality Control Boards to post this list and to provide an estimated completion date for each TMDL.

National Pollutant Discharge Elimination System

Part of the Clean Water Act provides for the National Pollutant Discharge Elimination System (NPDES), in which discharges into navigable waters are prohibited except in compliance with specified requirements and authorizations. Under this system, municipal and industrial facilities are required to obtain a NPDES permit that specifies allowable limits, based on available wastewater treatment technologies, for pollutant levels in their effluent. In California, EPA has delegated the implementation of this program to the State Board and to the Regional Boards.

Storm water discharges are regulated somewhat differently. Storm water runoff from construction areas of one acre or more requires either an individual permit or coverage under the statewide General Construction Storm water Permit. Since the proposed project involves developing more than an acre of impervious area and is subject to the county's NPDES permit, the sponsor would be required to submit a storm water control plan that meets the criteria of the Contra Costa Clean

[1] The load represents the total amount of a pollutant that can be discharged over a given time period. This differs from the discharge limits that usually focus on the concentration of a pollutant in the wastewater discharged into the receiving water.

Water Program (CCCWP) C.3 Guidebook. In February 2003, the California RWQCBs for the San Francisco Bay Region and the Central Valley Region revised Provision "C.3" in the NPDES permit governing discharges from the municipal storm drain systems of Contra Costa County and cities and towns within the County. The new permit provision was phased in from 2004 through 2006. The new "C.3" requirements are separate from, and in addition to, requirements for erosion and sediment control and for pollution prevention measures during construction. Standard facilities used to handle storm water onsite would be an array of structural elements or facilities that would serve to manage, direct, and convey the storm water. All such storm water drainage facilities would be designed as per the Guidebook in a manner so as to minimize the need for maintenance while sufficiently accommodating large storm flows.

The project design would also be required to incorporate post-construction BMPs to treat storm water and control discharge of wastes from the vessels used at the Marina. Typical BMPs include source control and treatment control BMPs as per the municipal NPDES permit. An effective mechanism for documenting the incorporation of storm water quality controls into new development and redevelopment projects on a site, regional, or watershed basis is to develop a written plan known as a Storm water Management Plan (SMP) also referred to as a storm water control plan. An effective SMP clearly sets forth the means and methods for long-term storm water quality protection. The SMP is a valuable document and can be used as part of the construction Storm Water Pollution Prevention Plan (SWPPP) to describe post-construction storm water management. The SMP would review the full suite of BMPs that is available and identify the dominant site factors that should go into the decision-making process. Assessment of the regional area, specific site conditions, site constraints, site hydrology, and project type, are central to minimize pollution during development as well as during the life of the project. The basic steps in the SMP process are to:

- Assess site and watershed conditions,
- Understand hydrologic conditions of concern,
- Evaluate pollutants of concern,
- Identify candidate BMPs, and
- Develop plan for BMP maintenance.

Flood Control

Under Executive Order 11988, the Federal Emergency Management Agency (FEMA) is responsible for management of floodplain areas defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a one percent or greater chance of flooding in any given year (also termed the 100-year floodplain). FEMA requires that local governments covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain. In Contra Costa County, construction requirements are contained in the Floodplain Management Ordinance, adopted in 1982. Along with construction standards, the ordinance also specifies that a Floodplain Permit must be obtained prior to any grading within the 100-year floodplain. The vast majority of the project area is located within the 100-year floodplain (FEMA, 1987).

State

Porter-Cologne Act

The State Board and the Regional Boards share the responsibility under the Porter-Cologne Act to formulate and adopt water policies and plans, and to adopt and implement measures to fulfill Clean Water Act requirements. Specific to the proposed project area, the Regional Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) serves to protect the water quality of the State consistent with identified beneficial uses.

Prior to authorizations of waste discharge by the Regional Board, the Porter-Cologne Act requires reports of waste discharges to be filed. The Regional Board then prescribes Waste Discharge Requirements, which serve as NPDES permits under a provision of the Porter-Cologne Act. The Basin Plan, the Enclosed Bays and Estuaries Plan, and the NPDES permit, regulate discharges from the Refinery wastewater treatment plant into San Pablo Bay.

State Water Resources Control Board

The State Board administers water rights, water pollution control, and water quality functions statewide. The State Board provides policy guidance and budgetary authority to nine Regional Boards, which conduct planning, permitting, and enforcement activities. The State Board shares the authority for implementation of the Clean Water Act and the State Porter-Cologne Act with the Regional Boards. The water quality near the Refinery is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB).

Developed to apply statewide to all enclosed bays and estuaries, the Enclosed Bays and Estuaries Plan was one of the water quality policies that the State Board developed for California. As defined by the State Board, enclosed bays are indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. San Francisco Bay and its constituent parts, including San Pablo Bay, fall under this category. However, State water quality control plans with water quality criteria for priority toxic pollutants were subsequently invalidated by a State court order in 1994.

Water Quality Control Plan for the San Francisco Region (Basin Plan)

The RWQCB is responsible for developing and implementing the Water Quality Control Plan for the San Francisco Region (Basin Plan), which documents approaches to implementing state and federal policies in the context of actual water quality conditions. The Regional Board's other activities include permitting of waste discharges, and implementing monitoring programs of pollutant effects.

On June 21, 1995, the Board adopted a revised Basin Plan, which the SWRCB and the Office of Administrative Law approved in 1995. The Basin Plan identifies beneficial uses of receiving waters, water quality objectives imposed to protect the designated beneficial uses, and strategies and schedules for achieving water quality objectives. Section 303 (c) (2) (B) of the Clean Water

Act requires Basin Plans to include water quality objectives governing approximately 68 of EPA's list of 126 pollutants.

Water Quality objectives are achieved primarily through the establishment and enforcement of Waste Discharge Requirements for each wastewater discharger. The Basin Plan was amended in 1992 to include stricter water quality criteria than had previously been adopted under the 1991 Enclosed Bays and Estuaries Plan. Although the Enclosed Bays and Estuaries Plan was later invalidated by court order, certain water quality criteria that were based on that plan remain in the Basin Plan. State policy for water quality control in California is directed toward achieving the highest water quality consistent with maximum benefit to the people of the State. Therefore, all water resources must be protected from pollution and nuisance that may occur from waste discharges. Beneficial uses of surface waters, ground waters, marshes, and mud flats serve as a basis for establishing water quality standards and discharge prohibitions to attain this goal.

The State Implementation Policy (SIP), also implemented by the RWQCB establishes the policy for determining effluent limitations for toxic pollutants. The SIP establishes the implementation policy for all toxic pollutants including dioxins and furans. The SIP also requires monitoring for a minimum of 3 years by all major NPDES dischargers for the seventeen dioxin and furan compounds, whether or not a limit is necessary to prevent exceedance of the water quality standard that has been established for one of the dioxin compounds (2,3,7,8-TCDD). In summary, the steps involve:

- Identifying applicable criteria and objectives,
- Determining whether there is a reasonable potential for the pollutant to cause or contribute to exceedance of a water quality criterion or objective; and
- Calculating a value for the effluent limit taking into consideration the applicable criteria or objective, and discharge variability; or
- If a TMDL is in effect, assigning a portion of the loading capacity to the discharge.

Local

Bay Conservation and Development Commission

The San Francisco Bay Plan was completed and adopted by the San Francisco Bay Conservation and Development Commission in 1968 and submitted to the California Legislature and Governor in January 1969. The Bay Plan was prepared by the Commission over a three-year period pursuant to the McAteer-Petris Act of 1965 which established the Commission as a temporary agency to prepare an enforceable plan to guide the future protection and use of San Francisco Bay and its shoreline. In 1969, the Legislature acted upon the Commission's recommendations in the Bay Plan and revised the McAteer-Petris Act by designating the Commission as the agency responsible for maintaining and carrying out the provisions of the Act and the Bay Plan for the protection of the Bay and its great natural resources and the development of the Bay and shoreline to their highest potential with a minimum of Bay fill.

The McAteer-Petris Act directs the Commission to exercise its authority to issue or deny permit applications for placing fill, extracting materials, or changing the use of any land, water, or structure within the area of its jurisdiction, in conformity with the provisions and policies of both the McAteer-Petris Act and the San Francisco Bay Plan. Thus the Commission is directed by the Act to carry out its regulatory process in accord with the Bay Plan policies and Bay Plan maps which guide the protection and development of the Bay and its tributary waterways, marshes, managed wetlands, salt ponds, and shoreline. The Bay Plan policies relate to the safety of fills, dredging and protection of shoreline among other issues (see Appendix C for a full list of BCDC policies)

The Commission is charged with:

- Regulating all filling and dredging in San Francisco Bay (which includes San Pablo and Suisun Bays, sloughs and certain creeks and tributaries that are part of the Bay system, salt ponds and certain other areas that have been diked-off from the Bay).

- Protecting the Suisun Marsh, the largest remaining wetland in California, by administering the Suisun Marsh Preservation Act in cooperation with local governments.

- Regulating new development within the first 100 feet inland from the Bay to ensure that maximum feasible public access to the Bay is provided.

- Minimizing pressures to fill the Bay by ensuring that the limited amount of shoreline area suitable for high priority water-oriented uses is reserved for ports, water-related industries, water-oriented recreation, airports and wildlife areas.

- Pursuing an active planning program to study Bay issues so that Commission plans and policies are based upon the best available current information.

- Administering the federal Coastal Zone Management Act within the San Francisco Bay segment of the California coastal zone to ensure that federal activities reflect Commission policies.

- Participating in the region wide State and federal program to prepare a Long Term Management Strategy (LTMS) for dredging and dredge material disposal in San Francisco Bay.

Dredging Permitting

Any proposed dredging would require applying for a Section 404 permit from the USACE prior to dredging. (See also Section 4.9, *Biological Resources*, for additional discussion of Section 404 permit). As a part of the Section 404 permitting process, the project sponsor would be required to obtain a water quality certification from the RWQCB under Section 401 of the CWA. The RWQCB may choose to act under the authority of the state Porter Cologne Water Quality Control Act and issue waste discharge requirements for the project in conjunction with the water quality certification. As discussed previously, the dredged material is disposed at ocean or in-bay disposal sites or reused for wetland restoration or dike maintenance.

The Dredged Material Management Office (DMMO) regulates dredging and dredged material in the San Francisco Bay region. The DMMO consists of representatives from the USEPA-Region 9, U.S. Army Corps of Engineers-San Francisco, San Francisco Bay RWQCB, BCDC, and the State Lands Commission. The DMMO serves as the single point of entry for applicants to the dredging and disposal permitting process. The DMMO regulates two types of dredging projects; 1) small dredging projects defined by a project depth of less than -12 feet mean lower low water (MLLW) and generating less than 50,000 cubic yards per year on average, and 2) other dredging projects defined by project depth greater than -12 feet MLLW or average annual volumes greater than 50,000 cubic yards (USACE, 2001).

The San Francisco Bay Long Term Management Strategy (LTMS) was created by the DMMO to develop a new approach to dredging and dredged material disposal in the San Francisco Bay area. The LTMS serves as the "Regional Dredging Team" for the San Francisco area, implementing the National Dredging Policy in cooperation with the National Dredging Team. The major goals of the LTMS are:

- Maintain in an economically and environmentally sound manner those channels necessary for navigation in San Francisco Bay and Estuary and eliminate unnecessary dredging activities in the Bay and Estuary;
- Conduct dredged material disposal in the most environmentally sound manner;
- Maximize the use of dredged material as a resource; and
- Establish a cooperative permitting framework for dredging and dredged material disposal applications

Contra Costa County Clean Water Program

In 1972, the Federal Water Pollution and Control Act (also referred to as the Clean Water Act (CWA)) was amended to provide that the discharge of pollutants to waters of the United States from any point source is effectively prohibited, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The CWA was amended in 1987 adding Section 402(p), which established a framework for regulating municipal stormwater discharges under the NPDES program.

In accordance with the 1987 CWA amendments, the United States Environmental Protection Agency (EPA) promulgated NPDES permit application regulations for stormwater discharges on November 16, 1990. The regulations require municipalities to obtain NPDES permits, which outline programs and activities to control stormwater pollution.

To comply with these regulations, Contra Costa County, nineteen (19) of its incorporated cities and the Contra Costa County Flood Control & Water Conservation District joined together to form the Contra Costa Clean Water Program (CCCWP). The CCCWP obtained a Joint Municipal NPDES Permit from the San Francisco Bay and Central Valley Regional Water Quality Control Boards on September 1993 and January 1994, respectively. The permits, issued for a five-year period (1993-1998), contain a comprehensive plan to reduce the discharge of pollutants to the

"maximum extent practicable" (MEP). These permits were re-issued on July 21, 1999 (San Francisco Bay Regional Water Quality Control Board Permit) and June 16, 2000 (Central Valley Regional Water Quality Control Board Permit).

Contra Costa County Watershed Program (CWP)

Contra Costa County Watershed Program (CWP) is responsible for implementation and enforcement of the stormwater quality program in the unincorporated area of Contra Costa County. The CWP includes: new development and construction controls; public education and industrial outreach; municipal maintenance; inspection activities; and illicit discharge control activities. CWP staff implement the Contra Costa Clean Water Program Joint Municipal National Pollutant Discharge Elimination System (NPDES) permits issued by the San Francisco Bay Regional Water Quality Control Board and the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) for the unincorporated areas of the County. The Joint Municipal NPDES permits contain a comprehensive plan to reduce the discharge of pollutants in storm water to the "maximum extent practicable" (MEP).

Contra Costa County Flood Control and Water Conservation District

The Contra Costa County Flood Control and Water Conservation District is a planning division of the county Public Works department that acts to control flood and storm waters of the district and of streams flowing into the district; conserve waters of the district for beneficial purposes by spreading, storing, retaining and causing them to percolate into the soil within or without the district, or conserve the waters in any manner; protect the watercourses, watersheds, harbors, public highways, life and property in the district from such waters; prevent waste of water or diminution of the supply in or exportation from the district; obtain, retain and reclaim drainage, storm, flood and other waters for beneficial use in the district; and participate in the National Pollution Discharge Elimination System Program. Engineers and technicians in the Engineering Services Division review developer’s plans for construction of infrastructure to ensure they meet state and County standards. Upon final construction of a project, and acceptance by the County, the Maintenance Division assumes responsibility for ongoing care of the facility.

Contra Costa County General Plan

The Contra Costa County General Plan has a number of policies regarding development within the 100-year floodplain. The following policy is required to be followed if development occurs within the 100-year floodplain:

> *Policy 10-38*: Flood-proofing of structures shall be required in any area subject to flooding; this shall occur both adjacent to watercourses as well as in San Pablo Bay or along the waterfront.

Contra Costa County policies to which the project would be required to conform include those of the Contra Costa County General Plan. Applicable goals and policies of the County General Plan[2] include:

Water Resources Goals

Goal 8-T: To conserve, enhance, and manage water resources, protect their quality, and assure an adequate long-term supply of water for domestic, fishing, industrial, and agricultural use.

General Water Resources Policies

Policy 8-74: Preserve watersheds and groundwater recharge areas by avoiding the placement of potential pollution sources in areas with high percolation rates.

Policy 8-75: Preserve and enhance the quality of surface and groundwater resources.

Policies for New Development Along Natural Watercourses

Policy 8-91: Grading, filling, and construction activity near watercourses shall be conducted in such a manner as to minimize impacts from increased runoff, erosion, sedimentation, biochemical degradation, or thermal pollution.

Policy 8-87: On-site water control shall be required of major new developments so that no increase in peak flows occurs relative to the site's pre-development condition, unless the Planning Agency determines that off-site measures can be employed which are equally effective in preventing adverse downstream impacts.

Water Resources Implementation Measures

IM 8-15: Require groundwater monitoring programs for all large-scale commercial and industrial facilities using wells.

Contra Costa County Code

The ordinance code for Contra Costa County is current through Ordinance 2005-34 and the October, 2005 code update and includes the following ordinances relating to drainage and stormwater management.

914-2.002 Onsite collect and convey requirements.

(a) All portions of the subdivision shall be protected from flood hazard, inundation, sheet overflow and ponding of storm waters, springs and all other surface waters. All finished floors shall be above the water surface of a one-hundred-year frequency storm runoff from the maximum potential development of the drainage basin or watershed.

(b) All surface waters occurring within the subdivision, as well as all surface waters flowing into and/or through the subdivision, shall be collected and conveyed through the subdivision without damage to any improvement, building site or dwelling which may be constructed within the subdivision.

(c) Storm drainage facilities within the subdivision shall be designed and constructed in compliance with the requirements of this title and with current ordinance

[2] Contra Costa County, *Contra Costa County General Plan 2005-2020*, January 2005.

specifications and design standards of the public works department, so as to adequately convey with sufficient freeboard the storm water runoff from the maximum potential development of the drainage basin or watershed.

(d) As required by Section 94-4.214, the final map or parcel map shall include a dedication to the county or other public agency of land rights for construction, maintenance and operation of all necessary storm drainage and access facilities. The land rights shall conform with the width and other requirements of Chapter 914-14. (Ords. 89-28, 78-5).

914-2.004 Offsite collect and convey requirements.

(a) All surface waters flowing from the subdivision in any form or manner shall be collected and conveyed without diversion or damage to any improvement, building or dwelling to a natural watercourse having a definable bed and banks, or to an existing public storm drainage facility having adequate capacity to its point of discharge into a natural watercourse, or the advisory agency, in its discretion, may require that flows from the subdivision be regulated so as not to exceed the capacity of watercourses downstream when considered with regard to the development potential of the drainage basin or watershed.

(b) Storm drainage facilities outside the subdivision shall be designed and constructed in compliance with the requirements of this title and with current ordinance specifications and design standards of the public works department, so as to adequately convey with sufficient freeboard the storm water runoff from the maximum potential development of the drainage basin or watershed.

(c) Wherever surface waters must be collected or conveyed beyond the boundaries of the subdivision in order to discharge into a natural watercourse or into an existing adequate public storm drainage facility, the subdivider shall comply with either subsection (d), (e) or (f) of this section, prior to filing of the final map or parcel map.

(d) The subdivider shall deposit with the public works department:

(1) A copy of a duly recorded conveyance from the adjacent property owners, in a form and content acceptable to the public works director, granting to the subdivider the land rights to construct, maintain and operate all necessary storm drainage and access facilities; and

(2) A copy of a duly recorded offer of dedication from the adjacent property owners, in a form and content acceptable to the public works director, offering to dedicate to the county or other public agency sufficient land rights for construction, maintenance and operation of all necessary storm drainage and access facilities.

(3) Such documents shall be obtained from all property owners between the boundaries of the subdivision and the point at which the surface waters will be discharged into a natural watercourse having definable bed and banks or an existing adequate public storm drainage facility. The land rights shall conform with the width and other requirements of Chapter 914-14.

(e) The subdivider shall deposit with the public works department a copy of a duly recorded drainage release from the adjacent property owners, in a form and content acceptable to the county counsel, accepting the flow of surface waters from the subdivision onto and over that property, without liability by the county for damages occurring therefrom. Such releases shall be obtained from all property owners between the boundaries of the subdivision and the point at which the surface waters will enter a natural watercourse having definable bed and banks or an existing adequate public storm drainage facility.

(f) The subdivider shall present written evidence which proves to the satisfaction of the public works department that it is not feasible to obtain by negotiation from the

adjacent property owners either a drainage release, or land rights, and shall comply with the requirements of Section 94-4.413. The board, in its sole discretion, may then authorize the institution of condemnation proceedings to acquire the land rights at the subdivider's expense. (Ord. 89-28, 78-5; Gov. Code, § 66462.5).

914-2.006 Storm water disposal restrictions.

Storm waters flowing from the subdivision in any form or manner shall not be permitted to flow into any water conveyance facility of the Contra Costa Canal, nor into any other water conveyance or impounding facility for domestic water consumption. (Ords. 89-28, 78-5).

914-2.008 Runoff quantity determination.

Runoff quantities shall be determined by methods consistent with current engineering practices using basic data supplied by the public works department for the frequency of the average recurrence interval stipulated in Section 914-2.010. (Ords. 89-28.78-5).

914-2.010 Drainage facilities--Minimum capacities.

(a) Storm drainage facilities directly affecting the subdivision shall have the following minimum capacities:

(1) Major drainage facilities (i.e., those serving a watershed area four square miles or greater) shall have adequate capacity to contain with sufficient freeboard a fifty-year frequency of average recurrence interval runoff and contain without freeboard a one-hundred-year average recurrence interval runoff;

(2) Secondary drainage facilities (i.e., those serving a watershed area one square mile or greater but less than four square miles) shall have adequate capacity to contain with sufficient freeboard a twenty-five-year frequency of average recurrence interval runoff;

(3) Minor drainage facilities (i.e., those serving a watershed area less than one square mile) shall have adequate capacity to contain with sufficient freeboard a ten-year frequency of average recurrence interval runoff.

(b) As used in this division, the terms "storm drainage facility" and "drainage facility" shall include, without limitation, channels, ditches, conduits (e.g., pipes and culverts), detention basins and all appurtenances. (Ords. 89-28, 78-5).

914-2.012 Reimbursement for supplemental capacity storm drain improvements.

The county may require that a developer install storm drain improvements for the benefit of the development that may contain supplemental size, capacity, number, or length for the benefit of property not within the development and that such improvements shall be dedicated to the public. In the event of the installation of such improvements, the county shall enter into an agreement with the developer to reimburse the developer for that portion of the cost of such improvements equal to the difference between the amount it would have cost the developer to install such improvements to serve the development only and the actual cost of such improvements. Nothing set forth in this section shall prohibit the county from denying a development where reimbursement funds are unavailable and the developer refuses to construct the improvements necessary to mitigate impacts of the proposed development at his or her cost.

(a) The county may utilize any of the following methods to pay the cost of administration and reimbursement:

(1) Collect from other persons, including public agencies, using such improvements for the benefit of real property not within the development, a reasonable charge for such use;

(2) Contribute to the developer that part of the cost of the improvements that is attributable to the benefit of real property outside development and levy a charge upon the real property benefited to reimburse itself for such cost paid to the developer;

(3) Establish and maintain local benefit areas for the levy and collection of such charge or costs from the property benefitted;

(4) Condition as part of the entitlement process property outside the development to pay their proportionate share of costs of such facilities attributed to their benefit.

(b) This section will not apply to storm drain facilities as identified on adopted Contra Costa County, flood control and water conservation district drainage area maps and flood control zone maps and plans that qualify for drainage area fees, credits, or reimbursements. (Ord. 97-44; Gov. Code § 66485 and § 66486)

Division 1010-2 – Drainage

This division is adopted to provide for the implementation of drainage, recreation and riparian vegetation provisions of the general plan, protect watercourse riparian vegetation, permit control of projects that may change the hydraulic characteristics of watercourses and drainage facilities, control erosion and sedimentation, prevent the placement or discharge of polluting matter into watercourses, and require adequate watercourse drainage facilities. (Ordinance 89-27).

Division 1014 – Stormwater Management And Discharge Control

(a) The intent of this division is to protect and enhance the water quality of the county's unincorporated area watercourses pursuant to and consistent with the Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.), the Federal Clean Water Act (33 U.S.C. Section 1251 et seq.) and applicable implementing regulations.

(b) This division also carries out the conditions in the county's National Pollutant Discharge Elimination System (NPDES) permit issued by the San Francisco Bay Regional Water Quality Control Board that require, no later than February 15, 2005, implementation of appropriate source control and site design measures and stormwater treatment measures for projects that create or replace one acre (forty-three thousand five hundred sixty square feet) or more of impervious surface. Effective August 15, 2006, this threshold is reduced to projects that create or replace ten thousand square feet or more of impervious surface.

(c) It is the purpose of the board of supervisors in enacting this division to protect the health, safety and general welfare of the citizens of the unincorporated areas by:

(1) Eliminating, to the maximum extent practicable, illicit stormwater discharges to the stormwater system, pollutants of which otherwise would degrade the water quality of local streams.

(2) Minimizing increases in nonpoint source pollution caused by stormwater runoff from development that otherwise would degrade local water quality.

(3) Controlling the discharge to the county's stormwater system from spills, dumping, or disposal of materials other than stormwater.

(4) Reducing stormwater runoff rates and volumes and nonpoint source pollution whenever possible through stormwater management controls and ensuring that these management controls are properly maintained and pose no threat to public safety.

(5) Promoting no adverse impact (NAI) policies as developed by the Federal Emergency Management Agency (FEMA) and the Association of State Floodplain Managers (ASFPM), to the maximum extent practicable, in an effort to minimize the adverse impact of new development on stormwater quality or quantity. (Ord. 2005-01 § 2, 96-21 § 3).

4.10.4 Impacts and Mitigation Measures

Standards of Significance

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would result in a significant impact to hydrology and water quality if it would:

- Violate water quality standards for construction activities;
- Disturb, expose or otherwise alter the present state of the existing soil contamination leading to significant adverse changes to wastewater effluent quality, or to groundwater and runoff water quality;
- Substantially deplete groundwater supplies or interfere with groundwater recharge or alter the existing drainage pattern of the site to result in substantial erosion, siltation or flooding on- or off-site;
- Cause or significantly contribute to violations of ambient water quality objectives, such as contributions of specific toxic materials that already impair the waters of Suisun Bay.

Impacts

Impact 4.10.1: Project construction would involve activities (excavation, soil stockpiling, boring and pile driving, grading, and dredging, etc.) that would generate loose, erodable soils that, if not properly managed, could affect stormwater runoff and violate any applicable water quality standards or waste discharge requirements; or otherwise substantially degrade water quality. (Significant)

Construction of the project would involve excavation, soil stockpiling, and boring along with pile driving and grading. Construction would include a new marina, up to approximately 450 new residential units, parks and recreational amenities, improved vehicular circulation, and provision of utilities. The project also proposes the easterly extension of Pacifica Avenue from Port Chicago Highway and then north via the northern extension of Alves Lane creating a new second crossing of the railroad tracks to the waterfront area.

The construction activities as discussed above would generate loose, erodable soils that, if not properly managed, could be washed into surface water by rain or by water used during grading operations. Soil erosion could cause excess sediment loads and affect the water quality of the Suisun Bay. However, stormwater control measures such as the installation of silt fences and hay bales would be implemented to prevent stormwater runoff into the harbors or bay.

Construction would involve use of fuel and other chemicals that if not managed properly, could be washed off into the stormwater. These construction impacts would be temporary, but potentially significant, particularly due to the location of the site on the estuary. Adherence to the standard county and RWQCB requirements discussed in Mitigation Measure 4.10-1 would reduce the impact to a less-than-significant level.

Mitigation Measure 4.10.1: The project sponsor shall comply with all NPDES requirements, RWQCB General Construction Permit requirements, and all Contra Costa County regulations and BCDC requirements. The project sponsor shall put into contract specifications that the contractor(s) implement best management practices for erosion and sediment control during construction.

Significance after Mitigation: Less than Significant

Impact 4.10.2: Project construction activities would include dredging and excavation of shoreline deposits and fills, which could involve disturbance of contaminated sediment that may result in adverse impacts to water quality. (Significant)

Construction activities would involve redevelopment of the marina which would require dredging, excavation, and placement of fill. Currently the water depth within the Harris Yacht Harbor is approximately between 0 and 5 feet and between 6.5 and 8 feet at the McAvoy Harbor basin (AMS, 2005). The proposed project would involve dredging to a design water depth of -10 feet MLLW datum[3]. Dredging, excavation and filling activities would cause bottom disturbance, loading of suspended solids, reduction in dissolved oxygen, mobilization and release of toxicants that are adsorbed to the sediments particularly in the area of the stormwater outfall from the Harris Yacht Harbor. Such phenomena could result in adverse impacts to water quality. In addition to the dredging activity, disposal of the dredged material could cause a significant adverse impact depending upon the sediment quality. The handling and disposal of dredged sediments and excavated soils is also discussed in Section 4.9 Hazardous Materials. The impact would be minimized by implementing Mitigation Measure 4.10-2.

Mitigation Measure 4.10.2: The project sponsor shall obtain and comply with all water quality certifications and requirements required for dredging activities, which shall include a Section 404 permit process, if appropriate, pursuant to the Army Corps of Engineers (Corps) and pursuant to the oversight, permitting, and approval of the Dredged Material Management Office (DMMO).

Significance after Mitigation: Less than Significant

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[3] For the purposes of nautical charting in U.S. tidal waters, depth is relative to mean lower low water (MLLW) or the average of the lower of the two low tides each lunar day. It is the job of the tidal surveyor to determine MLLW.

Operational Impacts

Impact 4.10.3: Development of the project would result in a substantial increase in impervious area which could potentially increase nonpoint source pollutants in stormwater runoff. (Significant)

Stormwater from the existing site is discharged either overland or through the existing piped storm drain system directly into the estuary without treatment. Runoff from the remaining pervious surfaces either infiltrates into the subsurface soils or drains as sheet flow.

The strategic plan calls for additional development of the area which would significantly increase impervious surfaces in the project area. Stormwater runoff from the developed site could increase runoff volumes for the area and potentially contribute additional nonpoint source pollution.

> **Mitigation Measure 4.10.3:** The project sponsor shall develop a storm drainage management plan for the proposed project. The plan shall demonstrate, to the satisfaction of the Contra Costa County Flood Control and Water Conservation District, the Contra Costa County Watershed Program and the BCDC, that the proposed drainage system would be sufficient to accommodate increased flows from the project and would be able to comply with all applicable local water quality policies and ordinances.

Significance after Mitigation: Less than Significant

Impact 4.10.4: Project operation would involve increased use of the marinas at the project site. As required by the RWQCB, the project design would incorporate post construction BMPs to treat stormwater and control discharge of wastes from the vessels used at the marinas. Therefore, the project would not violate water quality standards or waste discharge requirements. (Significant)

The proposed project would consist of reconfiguring the marina to accommodate approximately 568 berths from an existing 300 berths. This increased use of the marinas would mean greater number of boats or vessels that would be cleaned and/or used at the site. These activities could cause the chemicals used such as the cleaning agents, to flow into the bay and result in a significant water quality impact.

> **Mitigation Measure 4.10.4:** The project sponsor shall ensure that marina operations include implementation (as a part of the project) the following BMPs, which shall include, but not be limited to, the following:
>
> - Grade the site to prevent stormwater entering the sediment pits and oil/water separators;
> - Prohibit engine cleaning in vehicle wash bay areas because solvents remove oil and dirt from the engines that could enter the storm drains;
> - Prohibit pouring of wastes into drains, into surface water, or onto the ground;

- Prohibit hosing down of spills with water;
- Erect signs that state that the wash area is for washing vehicle exteriors only and that other maintenance or cleaning activities such as oil changes and engine cleaning is prohibited.

The project sponsor shall ensure that marina operations enforce rules and regulations for boat users that shall include, but not be limited to, the following:

- Use only biodegradable, low-phosphate content, water-based cleaners, whenever possible;
- Avoid the use of halogenated compounds, aromatic hydrocarbons, chlorinated hydrocarbons, petroleum-based cleaners or phenolics. (The presence of these substances can be checked in the material safety data sheet sheets for each cleaning agent.)

Implementation of these measures would control the flow of chemicals into the estuary and reduce the water quality impacts to the estuary to a less-than-significant level.

Significance after Mitigation: Less than Significant

Impact 4.10.5: Site development under the project would involve new landscaping and open recreational fields. If not properly handled, chemicals used to establish and maintain landscaping and open lawn areas, such as pesticides and fertilizers, could flow into the waterways and result in water quality impacts to Suisun Bay. (Significant)

Contra Costa County is a participating agency in the CCCWP that protects water quality through implementation of various source control and monitoring measures outlined in the NPDES permit and the *Stormwater Quality Management Plan*. Under the CCCWP *Stormwater Quality Management Plan*, new development is required to comply with existing stormwater runoff controls (e.g., hazardous materials storage requirements, elimination of illicit discharges, etc.). The project would be required to comply with these control requirements. The CCCWP NPDES permit requires the County as a permittee, to address pesticides, which have been found by the RWQCB to have the reasonable potential to cause or contribute to exceedances of water quality standards. The pesticide program has submitted a proactive Diazinon Pollutant Reduction Plan or the "Pesticide Plan". The goals of the Pesticide Plan and of its resulting implementing actions are to reduce or substitute pesticide use (especially diazinon use) with less toxic alternatives. Implementation of Mitigation Measure 4.10.5 would control the contaminants from flowing into the stormwater runoff before their transport into the Bay, therefore the impact would be minimized.

Mitigation Measure 4.10.5: The program sponsor shall prepare a landscape management plan (LMP) for all public open spaces that includes, but is not necessarily limited to, a description of application, storage, and safety measures involving the use of pesticides and fertilizers.

The LMP shall include, but not be limited to, the following:

- Transportation and storage: Pesticides and fertilizers shall be transported and stored as per state and federal guidelines. They shall be stored in designated bermed areas onsite.

- Pesticide Application: Pesticides and fertilizers shall be handled and applied according to the procedures set by the manufacturer. The LMP shall address methods to optimize and reduce the use of pesticides and fertilizers and present strategies to incorporate environmentally-safe (organic) pest and growth enhancement materials. These strategies shall address eventually eliminating the use of chemicals such as diazinon that harm water quality.

- Pesticide and fertilizer application schedules.

- Container Disposal: The contractor shall dispose of empty containers carefully. The containers shall never be disposed at locations that would contaminate natural waterways.

The LMP and its recommendations for use, control, and eventual reduction of nonorganic pesticide and fertilizer use shall be approved by the County prior to installing the landscape and shall be implemented throughout the life of the project.

Significance after Mitigation: Less than Significant

Cumulative Impacts

Hydrology and Water Quality

Impact 4.10.6: The increased construction activity and new development resulting from the project, in conjunction with population and density of other foreseeable development in the County, would not result in cumulative impacts with respect to hydrology and water quality. (Less than Significant)

Implementation of the project, with other reasonably foreseeable future projects in the vicinity, would not result in adverse cumulative effects to hydrology and water quality. These effects could include increases in stormwater runoff and pollutant loading to the Bay. The project and any other projects in the vicinity would be required to comply with drainage and grading ordinances intended to control runoff and regulate water quality at each development site. Additionally, new projects would be required to demonstrate that stormwater volumes could be managed by downstream conveyance facilities. New development projects in the region would also be required to comply with Contra Costa County ordinances regarding water quality, and BCDC permitting requirements. Therefore, the effect of the project on water quality and hydrology, in combination with other foreseeable projects would be less than significant.

Mitigation: None Required.

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4.11 Geology, Soils, and Seismicity

4.11.1 Introduction

This section describes geologic and seismic conditions in the project vicinity and evaluates the potential for the project to result in significant impacts related to exposing people or structures to unfavorable geologic hazards, soils, and/or seismic conditions. Information presented here was obtained from a variety of materials including a technical memorandum prepared for the project by Treadwell and Rollo, Inc. Potential impacts are discussed and evaluated, and appropriate mitigation measures are identified where necessary.

4.11.2 Setting

Regional Geology

The project site lies within the geologically complex region of California referred to as the Coast Ranges geomorphic province.[1] The Coast Ranges province lies between the Pacific Ocean and the Great Valley (Sacramento and San Joaquin valleys) provinces and stretches from the Oregon border to the Santa Ynez Mountains near Santa Barbara. Much of the Coast Range province is composed of marine sedimentary deposits and volcanic rocks that form northwest trending mountain ridges and valleys, running roughly parallel to the San Andreas Fault Zone. The Coast Ranges can be further divided into the northern and southern ranges which are separated by the San Francisco Bay. The San Francisco Bay lies within a broad depression created from an east-west expansion between the San Andreas and the Hayward fault systems.

The Northern Coast Ranges are comprised largely of the Franciscan Complex or Assemblage, which consists primarily of graywacke, shale, greenstone (altered volcanic rocks), basalt, chert (ancient silica-rich ocean deposits), and sandstone that originated as ancient sea floor sediments. Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma and Clear Lake volcanic fields (CGS, 2002a).

Soils

The project area is located on the edge of Suisun Bay which generally consists of marsh lands, reclaimed marsh lands, and sloughs. Marsh land deposits typically include soft compressible clays, silts, peats, saturated sands, and undocumented fills. Previous subsurface exploratory borings in the project area were limited to the upper 15 feet and generally consisted of silts, clayey sands, and clays. The depth to bedrock has not been determined from available documents but likely consists of claystone, siltstone, and sandstone (Treadwell & Rollo, 2006).

[1] A geomorphic province is an area that possesses similar bedrock, structure, history, and age. California has 11 geomorphic provinces.

Seismicity

The proposed project lies within a region of California that contains many active and potentially active faults and is considered an area of high seismic activity (Figure 4.11-1 and Table 4.11.1).[2] The U.S. Geological Survey (USGS) Working Group on California Earthquake Probabilities evaluated the probability of one or more earthquakes of Richter magnitude 6.7 or higher occurring in the San Francisco Bay Area within the next 30 years. The result of the evaluation indicated a 62 percent likelihood that such an earthquake event will occur in the Bay Area between 2003 and 2032 (USGS, 2003b).

Richter magnitude is a measure of the size of an earthquake as recorded by a seismograph, a standard instrument that records groundshaking at the location of the instrument. The reported Richter magnitude for an earthquake represents the highest amplitude measured by the seismograph at a distance of 100 kilometers from the epicenter. Richter magnitudes vary logarithmically with each whole number step representing a ten fold increase in the amplitude of the recorded seismic waves. Earthquake magnitudes are also measured by their Moment Magnitude (Mw) which is related to the physical characteristics of a fault including the rigidity of the rock, the size of fault rupture, and movement or displacement across a fault (CGS, 2002b).

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. For this reason, earthquake intensities are also measured in terms of their observed effects at a given locality. The Modified Mercalli intensity scale (Table 4.11-2) is commonly used to measure earthquake damage due to ground shaking. The Modified Mercalli values for intensity range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from IV to X could cause moderate to significant structural damage.[3] The intensities of an earthquake will vary over the region of a fault and generally decrease with distance from the epicenter of the earthquake.

Regional Faults

The San Andreas, Hayward and Calaveras Faults pose the greatest threat of significant damage in the Bay Area according to the USGS Working Group (USGS, 2003b). These three faults exhibit strike-slip orientation and have experienced movement within the last 150 years.[4] Other principal faults capable of producing significant ground shaking in the Bay Area are listed on Table 4.11-1 and include the Concord–Green Valley, Marsh Creek–Greenville, San Gregorio and Rodgers Creek Faults.

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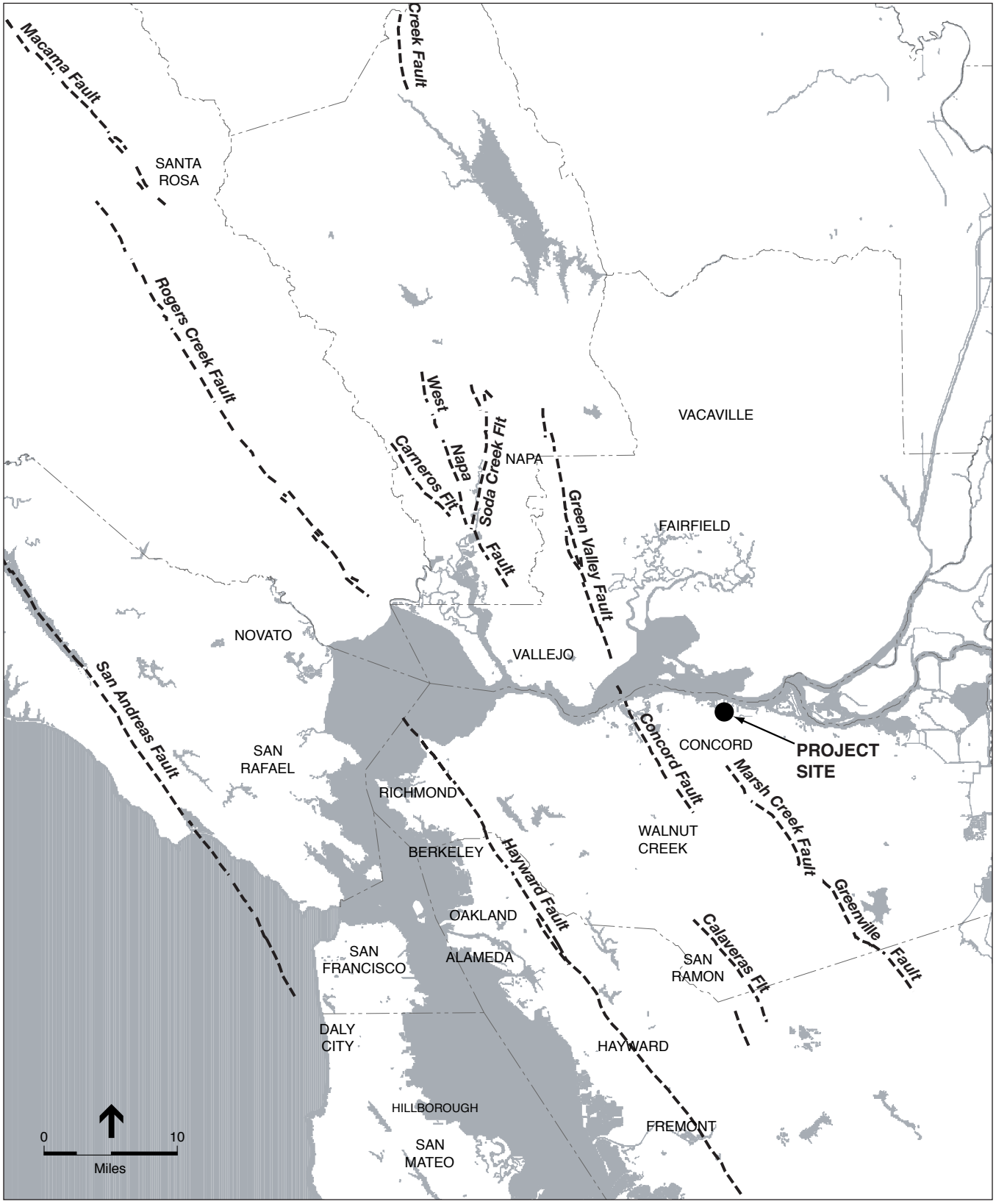
2 An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 1997).

3 The damage level represents the estimated overall level of damage that will occur for various MM intensity levels. The damage, however, will not be uniform. Not all buildings perform identically in an earthquake. The age, material, type, method of construction, size, and shape of a building all affect its performance.

4 A strike-slip fault is a fault on which movement is parallel to the fault's strike or lateral expression at the surface (Jackson, 1997).



SOURCE: ESA

Bay Point Strategic Plan . 204379

Figure 4.11-1
Regional Fault Map

TABLE 4.11-1
ACTIVE FAULTS IN THE PROJECT SITE VICINITY

Fault	Distance and Direction from Project	Recency of Movement	Fault Classification[a]	Historical Seismicity[b]	Maximum Moment Magnitude Earthquake (Mw)[c]
San Andreas	40 miles south	Historic (1906; 1989 ruptures)	Active	M 7.1, 1989 M 7.9, 1906 M 7.0, 1838 Many <M 6	7.9
Hayward	20 miles southwest	Historic (1868 rupture)	Active	M 6.8, 1868 Many <M 4.5	7.1
Rodgers Creek	20 miles northwest	Historic	Active	M 6.7, 1898 M 5.6, 5.7, 1969	7.0
Calaveras	16 miles south	Historic (1861 1911, 1984)	Active	M 5.6–M 6.4, 1861 M 6.2, 1911, 1984	6.8
Marsh Creek–Greenville	5 miles south	Historic (1980 rupture)	Active	M 5.6 1980	6.9
Concord–Green Valley	7 miles west	Historic (1955)	Active	Historic active creep	6.7

[a] See footnote 2.
[b] Richter magnitude (M) and year for recent and/or large events. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave.
[c] Moment Magnitude (Mw) is related to the physical size of a fault rupture and movement across a fault. Moment magnitude provides a physically meaningful measure of the size of a faulting event (CGS, 2002b). The Maximum Moment Magnitude Earthquake, derived from the joint CGS/USGS Probabilistic Seismic Hazard Assessment for the State of California, 1996. (USGS OFR 96-705).

SOURCES: Hart, 1997; Jennings, 1994; Peterson, 1996; USGS, 2003a.

An “active” fault is defined by the State of California as a fault that has had surface displacement within approximately the last 11,000 years. A “potentially active” fault is defined as a fault that has shown evidence of surface displacement during the last 1.6 million years, unless direct geologic evidence demonstrates inactivity for the last 11,000 years or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. “Sufficiently active” is also used to describe a fault if there is some evidence that displacement occurred in the last 11,000 years on one or more of its segments or branches. These faults are considered either active or potentially active. Inactive faults are located throughout the Bay Area. Inactive faults with a long period of inactivity do not provide any guarantee that a considerable seismic event could occur. Occasionally, faults classified as inactive can exhibit secondary movement during a major event on another active fault.

TABLE 4.11-2
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Acceleration (% g[a])
I	Not felt except by a very few persons under especially favorable circumstances.	< 0. 17 g
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	0.17-1.4 g
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly, vibration similar to a passing truck. Duration estimated.	0.17-1.4 g
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	1.4–3.9g
V	Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.	3.5 – 9.2 g
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; and fallen plaster or damaged chimneys. Damage slight.	9.2 – 18 g
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.	18 – 34 g
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.	34 – 65 g
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	65 – 124 g
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 124 g
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 1.24 g
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 1.24 g

[a] g (gravity) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

SOURCE: ABAG, 2003; CGS, 2003

San Andreas Fault

The San Andreas Fault Zone is a major structural feature that forms at the boundary between the North American and Pacific tectonic plates, extending from the Salton Sea in Southern California near the border with Mexico to north of Point Arena, where the fault trace extends out into the Pacific Ocean. In the San Francisco Bay Area, the San Andreas Fault Zone was the source of the two major seismic events in recent history that affected the San Francisco Bay region. The 1906 San Francisco earthquake was estimated at Richter Magnitude 7.9 and resulted in approximately 290 miles of surface fault rupture, the longest of any known continental strike slip fault. Horizontal displacement along the fault approached 17 feet near the epicenter. The more recent 1989 Loma Prieta earthquake, with a moment magnitude 6.9, resulted in widespread damage throughout the Bay Area.

Hayward Fault

The Hayward Fault Zone is the southern extension of a fracture zone that includes the Rodgers Creek Fault (north of San Pablo Bay), the Healdsburg fault (Sonoma County), and the Maacama fault (Mendocino County). The Hayward fault trends to the northwest within the East Bay, extending from San Pablo Bay in Richmond, 60 miles south to San Jose. The Hayward fault in San Jose converges with the Calaveras fault, a similar type fault that extends north to Suisun Bay. The Hayward fault is designated by the Alquist-Priolo Earthquake Fault Zoning Act as an active fault.

Historically, the Hayward fault generated one sizable earthquake in the 1800s.[5] In 1868, a Richter magnitude 7 earthquake on the southern segment of the Hayward Fault ruptured the ground for a distance of about 30 miles. Recent analysis of geodetic data indicates surface deformation may have extended as far north as Berkeley. Lateral ground surface displacement during these events was at least 3 feet.

A characteristic feature of the Hayward fault is its well-expressed and relatively consistent fault creep. Although large earthquakes on the Hayward fault have been rare since 1868, slow fault creep has continued to occur and has caused measurable offset. Fault creep on the East Bay segment of the Hayward fault is estimated at 9 millimeters per year (mm/yr) (Peterson, et al., 1996). However, a large earthquake could occur on the Hayward fault with an estimated moment magnitude of about 7.1 (Table 4.11-1). The USGS Working Group on California Earthquake Probabilities includes the Hayward–Rodgers Creek Fault Systems in the list of those faults that have the highest probability of generating earthquakes of Richter magnitude 6.7 or greater in the Bay Area (USGS, 2003a).

Calaveras Fault

The Calaveras fault is a major right-lateral strike-slip fault that has been active during the last 11,000 years. The Calaveras Fault is located in the eastern San Francisco Bay region and generally trends along the eastern side of the East Bay Hills, west of San Ramon Valley, and

[5] Prior to the early 1990s, it was thought that a Richter magnitude 7 earthquake occurred on the northern section of the Hayward Fault in 1836. However, a study of historical documents by the California Geological Survey concluded that the 1836 earthquake was not on the Hayward Fault (Bryant, 2000).

extends into the western Diablo Range, and eventually joins the San Andreas Fault Zone south of Hollister. The northern extent of the fault zone is somewhat conjectural and could be linked with the Concord Fault.

The fault separates rocks of different ages, with older rocks west of the fault and younger sedimentary rocks to the east. The location of the main, active fault trace is defined by youthful geomorphic features (linear scarps and troughs, right-laterally deflected drainage, sag ponds) and local groundwater barriers. The Calaveras fault is designated as an Alquist-Priolo Earthquake Hazard Zone (see discussion on this zone designation below). The Calaveras Fault has been the source of numerous moderate magnitude earthquakes and the probability of a large earthquake (greater than Richter magnitude 6.7) is much lower than on the San Andreas or Hayward Faults (USGS, 2003a). However, this fault is considered capable of generating earthquakes with upper bound magnitudes ranging from moment magnitude 6.6 to 6.8.

Concord-Green Valley Fault

The Concord-Green Valley Fault extends from Walnut Creek north to Wooden Valley (east of Napa Valley). Historical record indicates that no large earthquakes have occurred on the Concord or Green Valley Faults (USGS, 2003a). However, a moderate earthquake of magnitude M5.4 occurred on the Concord Fault segment in 1955. The Concord and Green Valley Faults exhibit active fault creep and are considered to have a small probability of causing a significant earthquake.

Greenville Fault

The Greenville Fault, also known as the Marsh Creek-Greenville fault, extends along the base of the Altamont Hills, which form the eastern margin of the Livermore Valley. The northern most segment of this fault is also referred to as the Clayton fault. The fault is recognized as a major structural feature and has demonstrated activity in the last 11,000 years. A magnitude 5.6 earthquake on the Greenville fault in 1980 produced a small amount of surface rupture (approximately 3 centimeters) on the fault near Vasco Road in Livermore.

Seismic Hazards

Surface Fault Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude, sense, and nature of fault rupture can vary for different faults or even along different strands of the same fault. Ground rupture is considered more likely along active faults, which are referenced in Table 4.11-1.

The project area is not located within an Alquist-Priolo Fault Rupture Hazard Zone, as designated through the Alquist-Priolo Earthquake Fault Zoning Act, and no mapped active faults are known to pass through the immediate project region. Therefore, the risk of ground rupture at the site is very low.

Ground Shaking

Strong ground shaking from a major earthquake could affect the project site during the next 30 years. Earthquakes on the active faults (listed in Table 4.11-1) are expected to produce a range of ground shaking intensities at the project site. Ground shaking may affect areas hundreds of miles distant from the earthquake's epicenter. Historic earthquakes have caused strong ground shaking and damage in the San Francisco Bay Area, the most recent being the Mw 6.9 Loma Prieta earthquake in October 1989. This earthquake caused strong ground shaking for about 20 seconds and resulted in varying degrees of structural damage throughout the Bay Area, with some very significant damage at more than 50 miles from the epicenter.

The 1906 San Francisco earthquake, with an estimated Mw 7.9, produced very strong (VIII) shaking intensities in the project area (ABAG, 2006c). The 1989 Loma Prieta earthquake, with an Mw of 6.9, produced only moderate (VI) shaking intensities in the project area. (ABAG, 2006d). However, in general, according to the Contra Costa County General Plan, the project area is located in an area that is considered to have the highest susceptibility for damage from groundshaking.

Liquefaction

Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Liquefaction and associated failures could damage foundations, roads, underground cables and piplelines, and disrupt utility service.

In addition, liquefaction can occur in unconsolidated or artificial fill sediments and other reclaimed areas along the margin of San Francisco Bay. The depth to groundwater influences the potential for liquefaction, in that sediments need to be saturated to have a potential for liquefaction.

Hazard maps produced by the Association of Bay Area Governments (ABAG) depict liquefaction and lateral spreading hazards for the entire Bay Area in the event of a significant seismic event (ABAG, 2006b). According to these maps, the project site is largely in an area expected to have a high potential to experience liquefaction with some of the southern portion of the project area showing a low to moderate potential for liquefaction.

Earthquake-Induced Settlement

Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur as a result of the relatively rapid compaction and settling of subsurface materials (particularly loose, uncompacted, and variable sandy sediments above the water table) due to the rearrangement of soil particles during prolonged ground shaking. Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different amounts). Areas underlain by artificial fill would be susceptible to this type of

settlement. Given the geologic setting of the project area, this area could be subjected to earthquake-induced settlement.

Other Geologic Hazards

Expansive Soils

Expansive soils possess a "shrink-swell" behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Insufficient information was available to determine if expansive soils were present in the project area.

Soil Erosion

Erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind and underground water. Excessive soil erosion can eventually lead to damage of building foundations and roadways. At the project site, areas that are susceptible to erosion are those that would be exposed during the construction phase and along the shoreline where soil is subjected to wave action. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or slope protection. Soil erosion is a potential issue at the site and is discussed in the Impacts and Mitigations section below.

Settlement

Settlement can occur from immediate settlement, consolidation, shrinkage of expansive soil, and liquefaction (discussed below). Immediate settlement occurs when a load from a structure or placement of new fill material is applied, causing distortion in the underlying materials. This settlement occurs quickly and is typically complete after placement of the final load. Consolidation settlement occurs in saturated clay from the volume change caused by squeezing out water from the pore spaces. Consolidation occurs over a period of time and is followed by secondary compression, which is a continued change in void ratio under the continued application of the load.

Soils tend to settle at different rates and by varying amounts depending on the load weight or changes in properties over an area, which is referred to as differential settlement. The project area includes some undocumented fills that and compressible soft clays that indicate a potential for differential settlement.

4.11.3 Regulatory Setting

State

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. Published by the International Conference of Building Officials, the Uniform Building Code is a widely adopted model building code in the United States. The CBC is based on the 1997 Uniform Building Code (UBC) with necessary California amendments. These amendments include significant building design criteria that have been tailored for California earthquake conditions.

The project area is located within Zone 4, one of the four seismic zones designated in the United States. Zone 4 is expected to experience the greatest effects from earthquake ground shaking and therefore has the most stringent requirements for seismic design. The national model code standards adopted into Title 24 apply to all occupancies in California except for modifications adopted by state agencies and local governing bodies.

Local

Contra Costa County General Plan

The County of Contra Costa has established goals, policies, and programs in regards to seismic, ground failure and landslide hazards. These are outlined in the Conservation and Safety Element sections of the Contra Costa County General Plan. The following geologic hazard policies are directly related to the proposed project:

- Staff review of application for development permits and other entitlements shall include appropriate recommendations for seismic strengthening and detailing to meet the latest adopted seismic design criteria.

- In areas prone to severe levels of damage from ground shaking, where the risks to life and investments are sufficiently high, geologic-seismic and soils studies shall be required as a precondition for authorizing public or private construction.[6]

- Policies regarding liquefaction shall apply to other ground failures which might result from ground shaking, but which are not subject to such well-defined field and laboratory analysis.

[6] According to the General Plan, the project area is entirely located in an area mapped as having the highest damage susceptibility.

- Soil and geological reports shall be subject to the review and approval of the County Planning Geologist.

- Erosion control procedures shall be established and enforced for all private and public construction and grading projects.

Contra Costa County Code

The ordinance code for Contra Costa County is current through Ordinance 2005-34 and the October, 2005 code update and includes the following ordinances relating to soils and geologic hazards. The County Code also officially adopts the 2001 California Building Code (which is based on the 1997 Uniform Building Code) as its building code. The County Code regulates grading and earthwork activities associated with site development.

San Francisco Bay Conservation and Development Commission – The San Francisco Bay Plan

The San Francisco Bay Plan was completed and adopted by the San Francisco Bay Conservation and Development Commission in 1968 and submitted to the California Legislature and Governor in January 1969. The Bay Plan was prepared by the Commission over a three-year period pursuant to the McAteer-Petris Act of 1965 which established the Commission as a temporary agency to prepare an enforceable plan to guide the future protection and use of San Francisco Bay and its shoreline. In 1969, the Legislature acted upon the Commission's recommendations in the Bay Plan and revised the McAteer-Petris Act by designating the Commission as the agency responsible for maintaining and carrying out the provisions of the Act and the Bay Plan for the protection of the Bay and its great natural resources and the development of the Bay and shoreline to their highest potential with a minimum of Bay fill.

The McAteer-Petris Act directs the Commission to exercise its authority to issue or deny permit applications for placing fill, extracting materials, or changing the use of any land, water, or structure within the area of its jurisdiction, in conformity with the provisions and policies of both the McAteer-Petris Act and the San Francisco Bay Plan. Thus the Commission is directed by the Act to carry out its regulatory process in accord with the Bay Plan policies and Bay Plan maps which guide the protection and development of the Bay and its tributary waterways, marshes, managed wetlands, salt ponds, and shoreline. The Bay Plan policies relate to the safety of fills, dredging and protection of shoreline among other issues (see Appendix C for a full list of BCDC policies).

4.11.4 Impacts and Mitigation Measures

Standards of Significance

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would result in a significant impact to geology, soils, and seismicity if it would:

- Expose persons or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in lateral spreading, subsidence, liquefaction, or collapse; or located on expansive soil creating substantial risks to life or property.[7]

Impacts

Impact 4.11.1: In the event of a major earthquake in the region, seismic ground shaking could potentially injure people and cause collapse or structural damage to proposed structures. (Significant)

The project site would likely experience at least one major earthquake (Richter magnitude (M) 6.7 or higher) within the next 30 years. The intensity of such an event would depend on the causative fault and the distance to the epicenter, the moment magnitude, and the duration of shaking. A seismic event in the Bay Area could produce ground accelerations at the project site ranging from strong (Modified Mercalli VII) to violent (IX) (ABAG, 2006a).

A characteristic earthquake on either the Greenville fault with an estimated Richter magnitude 6.9 or the Concord fault with an estimated M 6.7 could produce violent (IX) shaking in the project area (ABAG, 2006a). Based on the Modified Mercalli Intensity scale, an earthquake of this intensity would cause considerable structural damage, even in well-designed structures. Substantial cracks could appear in the ground, and the shaking could cause other secondary damaging effects, such as the failure of underground pipes.

A preliminary geotechnical review of available documents was conducted by a geotechnical firm; however no site specific analysis or testing has been completed for the project (Treadwell & Rollo, 2006). Development along a bay margin has been done throughout the San Francisco Bay Area and is generally considered feasible provided that appropriate design elements are included into project specifications.

> **Mitigation Measure 4.11.1:** A site-specific, design level geotechnical investigation for each building site area shall be required as part of this project. Each investigation shall include an analysis of expected ground motions at the site from known active faults. The analyses shall be in accordance with applicable County ordinances and policies and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from known active faults. In addition, the investigations shall determine final design parameters for the walls, foundations, foundation slabs, and surrounding related improvements (utilities, roadways, parking lots and sidewalks). The investigations shall be reviewed and approved by a

[7] Per *CEQA Guidelines*, a known earthquake fault is one that has been delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.

registered geotechnical engineer. All recommendations by the project engineer and geotechnical engineer shall be included in the final design. The final seismic considerations for the site shall be submitted to and approved of by the Contra Costa County Inspection Department prior to the commencement of the project.

Significance after Mitigation: Less than significant.

Impact 4.11.2: In the event of a major earthquake in the region, seismic ground shaking could potentially expose people and property to liquefaction and earthquake-induced settlement. (Significant)

A geotechnical investigation has not been completed for the project area and therefore the potential for liquefaction has not been adequately determined. However, it is not uncommon for bay margin locations to have a high liquefaction potential. The effects of liquefaction can cause considerable structural damage if not appropriately mitigated in the design. Standard geotechnical practice is to include the evaluation for liquefaction potential and provide recommendations of design specifications (i.e. foundations types and pile specifications) to minimize potential damage.

Based on the limited subsurface information available for the site, Treadwell & Rollo determined that the types of soil beneath the site indicated a low potential for earthquake-induced settlement, however confirmation would be prudent.

Mitigation Measure 4.11.2: Consistent with Mitigation Measure 4.11.1, prepare a site specific, design level geotechnical investigation for each building site to consider the particular project designs and provide site specific engineering recommendations for mitigation of liquefiable soils. These recommendations shall be in accordance with County ordinances and the most recent California Building Code requirements.

Significance after Mitigation: Less than significant.

Impact 4.11.3: Development at the project site could be subjected to settlement. (Significant)

Based on the location of the project area and its proximity to Suisun Bay, there is a potential for weak compressible soil deposits in the project area. Placement of structural loads on weak soils can result in damage to foundations, roads, utilities, and other improvements. The amount and rate of consolidation settlement would depend on:

- the weight of any new fill or structural loads (i.e., footings)
- the thickness of any existing fill
- the thickness of the weak soil deposits (including dredged fill)
- the degree to which consolidation has already occurred

- the presence and thickness of sand layers

Settlement would have an effect on many aspects of the project:

- Liquefaction and consolidation settlement would cause a negative friction on deep foundations, called "downdrag". The load from downdrag is added to the foundation load, effectively reducing the available capacity of the foundation.

- Settlement beneath pile-supported slabs and buildings would cause damage to utilities where they connect to the structure and create differential settlement at entrances to the building.

- Settlement of gravity utilities can flatten or increase the gradient and/or change the flow direction. Where utilities cross pile-supported structures or old piles remaining in the ground, abrupt differential settlement would occur, potentially causing damage.

- The settlement of the ground surface in streets, sidewalks, and open space would change site topography and may impact surface drainage.

  Mitigation Measure 4.11.3: As with standard geotechnical practices, site specific geotechnical investigations and reports would be required in order to obtain permits from Contra Costa County. Such geotechnical investigations and reports prepared for the project site shall include generally accepted and appropriate engineering techniques for determining the susceptibility of the project site to settlement and reducing its effects. Where settlement and/or differential settlement is predicted, mitigation measures such as lightweight fill, geofoam, surcharging, wick drains, deep foundations, structural slabs, hinged slabs, flexible utility connections, and utility hangers could be used. Engineering recommendations shall be included in the project engineering and design plans. All construction activities and design criteria shall comply with applicable codes and requirements of the most recent California Building Code, and applicable County construction and grading ordinances.

Significance after Mitigation: Less than significant.

Impact 4.11.4: Construction activities at the project area could loosen and expose surface soils. Exposed soils could erode by wind or rain causing potential loss of topsoil and shoreline areas exposed to wave action could be subject to erosion and loss of topsoil leading to reduction in structural integrity of building foundations and other improvements. (Significant)

Construction activities such as backfilling, grading and compaction can expose areas of loose soil that, if not properly stabilized, could be subjected to soil loss and erosion by wind and storm water runoff. Reconfiguration of the Marina would include shoreline improvements such as riprap, geotextile fabric, and vegetation. Concentrated water erosion, if not managed or controlled, can eventually result in significant soil loss. Potentially, this soil loss could lead to a reduction in the structural integrity of building foundations, berms, riprap, or access roads.

Mitigation Measure 4.11.4: Consistent with Mitigation Measure 4.10.1 (which addresses construction-related water quality impacts), the project sponsor shall comply with all applicable NPDES requirements, RWQCB General Construction Permit requirements, and all County regulations. In addition, the project design specifications shall include shoreline protection improvements to minimize loss of shoreline soils consistent with applicable County policies and ordinances and BCDC policies.

During the construction phase, the applicant would comply with erosion and sediment control measures in accordance with Contra Costa County stormwater management requirements and construction best management practices for the reduction of pollutants in runoff and the State Water Quality Control Board National Pollution Discharge Elimination System (NPDES) requirements, including the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) incorporating Best Management Practices (BMPs). The SWPPP would identify BMPs for implementation during construction activities, such as detention basins, straw bales, silt fences, check dams, geofabrics, drainage swales, and sandbag dikes.

Significance after Mitigation: Less than significant.

Impact 4.11.5: The project could potentially expose people or structures to substantial risk or hazards as a result of expansive soils. (Significant)

Structures built on expansive soils that change volume according to changes in moisture content of the soils can be subject to significant structural damage. The presence of expansive soils has not been identified at the project area but would be part of a typical geotechnical investigation. There are a number of methods to design structures to accommodate the effects of expansive soils including deep foundations systems and modifications to the subsurface soil such as treatment of the soil or replacement with engineered fill.

Mitigation Measure 4.11.5: Consistent with Mitigation Measure 4.11.1, a site-specific, design level geotechnical investigation for each building site area shall be required as part of this project. Such geotechnical investigations and reports prepared for the project site shall include generally accepted and appropriate engineering techniques for determining the susceptibility of the project site to expansive soils and reducing its effects. Engineering recommendations shall be included in the project engineering and design plans. All construction activities and design criteria shall comply with applicable codes and requirements of the most recent California Building Code, and applicable County ordinances.

Significance after Mitigation: Less than significant.

Cumulative Impacts

Impact 4.11.6: The development proposed as part of the project would not result in significant cumulative impacts with respect to geology, soils or seismicity. (Less than Significant)

Future development within the project vicinity is guided by the County's General Plan and associated documents. Planned or approved, but not yet constructed, projects within the vicinity of the proposed Strategic Plan are located south of the project site, as the areas to the east and west are outside of the urban limit line and future development within these areas would not be expected. The area immediately south of the project site is also generally built out pursuant to the General Plan with a mix of residential, industrial and commercial land uses.

Development of the project, with implementation of the identified mitigation measures above, would have less than significant impacts related to exposing persons or structures to geologic, soils, or seismic hazards. Therefore, the project, combined with existing or other foreseeable development in the area, would not result in a cumulatively significant impact by exposing people or structures to risk related to geologic hazards, soils, and/or seismic conditions.

Mitigation: None required.

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4.12 Biological Resources

4.12.1 Introduction

This chapter identifies the existing biological resources at the site and surrounding area of the proposed Bay Point Waterfront Strategic Plan, identifies the federal, state, and local regulations pertaining to biological resources within the region, and describes project-related impacts to those biological resources and mitigation measures to reduce significant impacts. Information used in the preparation of this section was obtained from regional biological studies, reports from the California Natural Diversity Database (CNNDB, 2005), California Native Plant Society Electronic Inventory (CNPS, 2005), and U.S. Fish and Wildlife species list (USFWS, 2005), reconnaissance-level field surveys, site-specific estuarine biological resources surveys, and other biological literature.

Vegetation types and wildlife habitats were identified using both records and field observations. Environmental Science Associates (ESA) conducted a reconnaissance-level survey of the project site on August 24, 2005 to gather information and verify existing data on vegetative communities, wildlife habitats, and habitat use on and surrounding the site. Applied Marine Sciences, Inc. (AMS) conducted surveys of water and sediment quality, as well as estuarine biota, of the McAvoy Marina and Harris Yacht Harbor on September 16, 2005 and October 21, 2005 (AMS, 2005).

4.12.2 Setting

Regional Setting

The Plan Area is located in the San Francisco Bay Area, which is characterized by a Mediterranean climate with moderately warm, dry summers and mild, wet winters. More specifically, the Plan Area is situated at the interface between alluvial flats and gently rolling hills to the south and the tidal brackish marshes that border the southern shores of Suisun Bay, just to the west of its confluence with the Sacramento-San Joaquin River Delta. The Plan Area is located on lands that were historically tidal marsh and upland grasslands and is part of the Bay Point waterfront, with the Union Pacific Railroad, residential, commercial, and industrial uses, and State Route 4 to the south. Open space and the city of Pittsburg are located to the east and open space and the Concord Naval Weapons Center to the west.

The Plan Area is located in the Bay Area-Delta Bioregion (as defined by the State's Natural Communities Conservation Program). This Bioregion is comprised of a variety of natural communities, which range from salt marshes to chaparral to oak woodlands. The high diversity of vegetation found in Contra Costa County is a result of topographic and micro-climate diversity and, in combination with the rapid pace of development in the region, has resulted in a high degree of endangerment for local flora and fauna.

Project Site

The project site, located in Bay Point, consists of both terrestrial and aquatic elements and is owned by four property holders: East Bay Regional Parks District (EBRPD), California State Lands Commission (CSLC), the Trost family, and PG&E. The EBRPD and the CSLC properties consist mainly of brackish marsh habitat with the southern portion of the EBRPD property supporting primarily ruderal and barren vegetation types. The McAvoy Harbor property owned by the Trost family is approximately 25 acres of developed marina to the south with aquatic channels leading out to the Sacramento River Delta and with brackish tidal marsh to the north. The eastern portion of the project site owned by PG&E has brackish marsh habitat to the north, including a large pond and tidal channels, ruderal and grazed vegetative types, and a barren area towards the southern railroad tracks. There are three common terrestrial vegetative communities within the project area and one sensitive plant community (CDFG 2006). Sensitive plant communities include those communities that are especially diverse, regionally uncommon, considered sensitive natural communities by CDFG, or are covered by state or federal regulations. In addition the Plan Area encompasses the open water/estuarine aquatic communities comprised of Suisun Bay, tidal channels and the existing harbors. See Figure 4.12-1 for an overview of plant communities and habitat types within the Plan Area.

Vegetation Communities and Wildlife Habitats

Common Plant Communities and Associated Wildlife

Ruderal (disturbed and weedy) habitats are most prevalent in areas subject to frequent and often severe vegetation and soil disturbances including disked or fallow fields, construction sites, levees, vehicle parking lots, and railroad or other public utility rights of way. This habitat type occurs throughout the southern portion of the project area near the railroad tracks. A larger portion in the eastern project area where the residential housing is to be constructed is highly disturbed by cattle grazing, which limits the growth of native vegetation. Where vegetated, these sites are dominated by opportunistic, weedy non-native plant species such as perennial pepperweed (*Lepidium latifolium*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild mustard (*Brassica nigra*), mayweed (*Anthemis cotula*), and bristly ox-tongue (*Picris echioides*).

Ruderal habitats provide limited foraging or nesting habitat for disturbance tolerant and non-native birds and small mammals (*e.g.*, English sparrow (*Passer domesticus*), European starling (*Sternus vulgaris*), house finch (*Carpodacus mexicanus*), Norway rat (*Rattus norvegicus*), and house mouse (*Mus musculus*)). Within the project area, the less disturbed ruderal areas may be occupied by California ground squirrels (*Spermophilus beechyi*) and other rodents. Although these areas generally lack suitable habitat for native wildlife, under appropriate conditions they may support sensitive wildlife species such as burrowing owl (*Athene cunicularia*).

Barren areas occur along the far southern portion of the project area abutting the railroad tracks and in the eastern portion where intense cattle grazing and equipment storage has limited vegetative growth. These are highly disturbed areas and generally either have no vegetative cover

SOURCES: Google (2005) and ESA (2005)

Figure 4.12-1
Habitat Types Found within the Plan Area

or a low growth of introduced, disturbance tolerant species. Flat barren areas may provide nesting substrate for various species of birds including burrowing owl (*Athene cunicularia),* killdeer *(Charadrius vociferous),* and horned lark (*Eremophila alpestris*).

Developed areas support few biological resources and are dominated by buildings and pavement. McAvoy Harbor is an operational marina that is comprised of parking lots, buildings with some limited landscaping, and associated paved storage areas that do not support native vegetation or suitable wildlife habitat. The former Harris harbor now supports native marsh species such as gumplant (*Grindelia stricta*), and saltmarsh fleabane (*Pluchea odorata*), as well as non-native species such as fennel (*Foeniculum vulgare*) and perennial pepperweed along the margins of the abandoned breakwaters. These areas provide limited wildlife habitat and generally support only generalist, and sometimes non-native wildlife species that are tolerant of human presence and activities, such as English sparrow or opossum (*Didelphis virginiana*).

Sensitive Plant Communities and Associated Wildlife

Coastal brackish marsh is identified by CNNDB as a sensitive plant community and covers much of the project area (CNNDB, 2006). The dominant plants of this community possess features that allow them to live in saline soils and to absorb water despite its dissolved salts. Lower marsh vegetation is dominated by cord grass (*Spartina* sp.) or bulrush (*Scirpus* sp.), while in the upper marsh, pickleweed (*Salicornia* sp.) is often the dominant species, growing in association with brass buttons (*Cotula coronopifolia*), alkali heath (*Frankenia salina*), sea-blite (*Suaeda linearis*), saltgrass (*Distichlis* sp.), fleshy jaumea (*Jaumea carnosa*), and others.

The coastal brackish marsh vegetation throughout the project area provides nesting and foraging opportunities and cover for water bird species and small mammals, including mallards (Anas platyrhynchos), green-winged teals (*Anas crecca*), great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), marsh wrens (*Cistothorus palustris*), Suisun song sparrows (*Melospiza melodia maxillaris*), red-winged blackbirds (*Agelaius phoeniceus*), raccoons (*Procyon lotor*), river otter (*Lontra canadensis*), and California voles (*Microtus californicus*).

Raptors that are typical of brackish marsh habitats include northern harrier (Circus cyaneus), red-tailed hawk (Buteo jamaicensis), white-tailed kite (*Elanus leucurus*), and American kestrel (Falco sparverius). Migratory shorebirds that forage in the mudflats along the Sacramento Delta during low tide, as well as the large pond, include black-necked stilt (*Himantopus mexicanus*), American avocet (*Recurvirostra americana*), marbled godwit (*Limosa fedoa*), and several sandpiper species. During high tides, ducks that may be found in tidal marsh environments include northern shoveler (*Anas clypeata*), American wigeon (*Anas americana*), northern pintail (*Anas acuta*), gadwall (*Anas strepera*), and canvasback (*Aythya valisineria*). In and among the pickleweed, salt marsh harvest mice (*Reithrodontomys raviventris*), and salt marsh wandering shrew (*Sorex vagrans halicoetes*) may occur in areas with high quality emergent wetlands and adjacent upland environments. Other common mammals in tidal marsh habitats include California vole (*Microtus californicus),* house mouse (*Mus musculus*), coyote (*Canis latrans*), and black-tailed jackrabbit (*Lepus californicus*).

Open Water Estuarine Communities

The open water areas of the Bay Point Redevelopment site currently range in water depth between 0 and 1.5 meters (m) Mean Lower Low Water (MLLW) within the Harris Yacht Harbor, and between 2 and 2.5 m MLLW at the McAvoy Harbor site (AMS, 2005). Analyses of conventional water quality parameters (temperature, salinity, pH, and dissolved oxygen) at five locations within the proposed project area in 2005 suggest no major water quality concerns (AMS, 2005). In all cases, dissolved oxygen concentrations and pH met water quality objectives (RWQCB, 1995), while salinity and temperature were consistent with expected conditions relative to season and location of the project area (AMS, 2005). All surveyed parameters were also consistent with waters analyzed from adjacent Suisun Bay (AMS, 2005). The biotic communities known or assumed to occur within the open water estuarine areas of the project site are described below.

Invertebrate and Plant Communities. The open water regions of the Harris Yacht Harbor and McAvoy Marina are populated by a variety of aquatic plants, invertebrates and fish species that have adapted to the ecological conditions present at the project site. The benthos, invertebrate organisms inhabiting bottom sediments, show a community structure that is relatively low in diversity (few species) and very patchy in abundance, principally dominated by arthropods, annelid worms and mollusks. Table 4.12-1 presents a listing of the community structure and relative taxonomic composition in the inner, mid and outer regions of each marina. The community structure observed inhabiting the two marinas is consistent with the muddy-sediment and sandy-sediment sub-assemblages identified by the San Francisco Estuary Institute (SFEI) for this region of the delta (Thompson *et al.*, 2000). Slight differences in population structure and overall individual abundances between the two marinas and the inner, mid and outer harbor regions of each marina are expected based on the sediment composition, frequency of sediment disturbance, and organic content of the sediments at the various locations.

Consistent with the observed organic and inorganic contaminant concentrations of the sediments in the two harbors, the species composition, community structure and individual abundances of the benthos identified in the open water areas of the Bay Point redevelopment project are indicative of a relatively non-contaminated and healthy area of the Delta. The exception is the previously reported nearshore area of the Harris Yacht Harbor where elevated concentrations of hydrocarbon and heavy metals have been reported by Brown and Caldwell (2005).

The Harris Yacht Harbor has been unused for at least the three years and most likely longer, and is slowly being reclaimed through natural ecological succession. The open water areas of the marina are slowly filling in with fine sediments and developing more abundant and diverse benthos.

In addition to the invertebrate organisms inhabiting the sediments of the marinas, there are also macro-invertebrates and aquatic plants attached to pier pilings, bulkheads and other structures of the two marinas as well as floating in the open water areas of the site. These organisms principally include barnacles (*Balanus* spp), filamentous algae, eel grass (*Zostera* sp.), and the Eurasian watermilfoil (*Myriophyllum spicatum*) (AMS, 2005). The latter is a non-native invasive

TABLE 4.12-1
BENTHIC INVERTEBRATE COMMUNITY STRUCTURE IN THE OPEN WATER AREAS OF THE BAY POINT REDEVELOPMENT SITE

Station	3	4	5	2	6	7	8	1
	Harris Yacht Harbor				Delta	McAvoy Marina		
Location	Inner Harbor	Inner Harbor	Mid Harbor	Outer Harbor		Outer – Mid Harbor	Inner Harbor	Inner Harbor
Total # of Species Observed	5	7	11	19	11	8	6	9
Total Estimated Organism Abundance (1000 individuals/m^2)	1,279	9,002	20,715	36,726	9,105	6,189	4,501	15,140
Cnidaria								1.0%
Turbellaria		6.8%	2.7%	0.2%	0.0%	2.5%	1.1%	3.4%
Annelida	12.0%	83.5%	92.8%	3.1%	6.7%	93.4%	96.6%	93.6%
Arthropoda	80.0%	5.1%	2.7%	70.6%	85.4%	3.3%		0.7%
Mollusca	8.0%	4.5%	1.5%	26.0%	7.9%	0.8%	2.3%	1.4%

SOURCE: AMS, 2005

species in the San Francisco Bay Estuary. Eel grass beds are known to provide critical nursery habitat for many juvenile fish that inhabit San Francisco Bay and also provide critical spawning habitat for Pacific herring (*Clupea harengus pallasi*). The eel grass plants observed by AMS during their 2005 survey of the project site were located along the entrance channel to the Harris Yacht Harbor portion of the site and represented what appeared to be a very small bed. The bed of Eurasian watermilfoil was also observed in the inner harbor area of the Harris Yacht Harbor.

Although not observed by AMS during their survey of the Bay Point marinas, the East Bay Regional Parks District (EBRPD) reported the presence of water hyacinth (*Eichhornia crassipes*) in the channels of the adjacent EBRD/State Lands Commission (SLC) property (EBRPD, 2001). Water hyacinth is another non-native, highly invasive species frequently found in the San Francisco delta.

Along with these observed organisms, mysid shrimp, copepods, amphipods, shrimp, crabs and other macroinvertebrates inhabit the marshland borders and open waters of Suisun Bay and are expected to be present within the Bay Point marinas. All of these organisms provide important food sources for delta fish and birds species.

Fish Communities. Based on surveys conducted by Pacific Gas & Electric (PG&E) in Suisun Bay in 1991-1992, a total of 29 species of fish are reported to occur in the vicinity of the project site (EBRPD, 2001) and could therefore potentially occur in the open water areas of the Harris and McAvoy Marinas. These are summarized in Table 4.12-2. Although most of the open channel areas can be characterized as simple, low diversity habitat for fish and larger aquatic

TABLE 4.12-2
FISH SPECIES OBSERVED IN THE VICINITY OF THE BAY POINT REDEVELOPMENT SITE, JULY 1991–JUNE 1992

Fish Species	Scientific Name	Native	Introduced
Striped bass	*Morone saxatilis*		X
Sacramento splittail	*Pogonichthys macrolepidotus*	X	
Inland silverside	*Menidia beryllina*		X
Chameleon goby	*Tridentiger trigonocephalus*		X
Chinook salmon	*Oncorhynchus tshawytscha*	X	
Tule perch	*Hysterocarpus traski*	X	
Sacramento pikeminnow	*Ptychocheilus grandis*	X	
Northern anchovy	*Engraulis mordax.*	X	
Threadfin shad	*Dorosoma petenense*		X
Threespine stickleback	*Gasterosteus aculateatus*	X	
Delta smelt	*Hypomesus transpacificus*	X	
American shad	*Alosa sapidissima*		X
Yellowfin goby	*Acanthogobius flavimanus*		X
Staghorn sculpin	*Leptocottus armatus*	X	
Longfin smelt	*Spirinchus thaleichthyes*	X	
Steelhead	*Oncorhynchus mykiss*	X	
White catfish	*Ictalurus catus*		X
Prickly sculpin	*Cottus asper*	X	
Bluegill	*Lepomis macrochirus*		X
White sturgeon	*Acipenser transmontanus*	X	
Green sturgeon	*Acipenser medirostris*	X	
Starry flounder	*Platichthys stellatus*	X	
Largemouth bass	*Micropterus salmoides*		X
White croaker	*Genyonemus lineatus*	X	
Common carp	*Cyrpinus carpio*		X
Golden shiner	*Notemigonus crysaleucas*		X
Channel catfish	*Ictaluras punctatus*		X
California halibut	*Paralichthys californicus*	X	
Pacific herring	*Clupea harengus pallasi*	X	

SOURCE: EBRPD, 2001

organisms because of the limited availability of shallow-water habitat, tidally influenced mudflats, and emergent vegetation, the permanent docks and other marina facilities do provide fish with critical cover. Those species most likely to be observed within the marinas include juvenile and sub-adult striped bass, Sacramento splittail, silversides, and several species of goby, sculpin, catfish and largemouth bass. It is also expected that juvenile and adult green and white sturgeon, as well as Chinook salmon, may use the channels for foraging (EBRPD, 2001). The species composition within the vicinity of the project area is expected to vary by season and regularly changing physical conditions created by the freshwater flow from the San Joaquin and Sacramento Rivers into the Delta.

Waters of the United States

The term “waters” under both federal and State regulations (C.F.R. § 328.3[a]; 40 C.F.R. § 230.3[s]; California Water Code, Division 7, Chapter 2, § 13050 [e]) includes streams, rivers, lakes, ponds, wetlands, and sloughs as well as a variety of other water bodies and their tributaries. Wetlands are ecologically productive habitats that support a rich variety of both plant and animal life. The importance of wetlands has increased due to their value as recharge areas and filters for

water supplies and to their widespread filling and destruction to enable urban and agricultural development. In a jurisdictional sense, there are two commonly used definitions of a wetland, one definition adopted by the Army Corps of Engineers and a separate definition, originally developed by USFWS, which has been adopted by the agencies in the State of California that have regulatory authority over wetlands. Both definitions are presented below.

Federal Wetland Definition

Wetlands are a subset of "waters of the United States" and receive protection under Section 404 of the Clean Water Act (CWA). Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland determination under the federal wetland definition adopted by the Corps requires the presence of three factors: (1) wetland hydrology, as defined above under point 2, (2) plants adapted to wet conditions, and (3) soils that are routinely wet or flooded [33 C.F.R. § 328.3(b)]. The Supreme Court of the United States recently ruled (January 8, 2001: *Solid Waste Agency of Northwestern Cook County v. United States Army Corps of Engineers et al.*) that certain isolated wetlands do not fall under the jurisdiction of the CWA.

California Wetland Definition

CDFG has adopted the Cowardin *et al.*[1] definition of wetlands. The federal definition of wetlands requires three wetland identification parameters to be met, whereas the Cowardin definition can be satisfied under some circumstances with the presence of only one parameter. Thus, identification of wetlands by CDFG consists of the union of all areas that are periodically inundated or saturated, or in which at least seasonal dominance by hydrophytes may be documented, or in which hydric soils are present. The CDFG does not normally assert jurisdiction over wetlands unless they are subject to Streambed Alteration Agreements (California Fish and Game Code Sections 1600-1616) or they support state-listed endangered species.

Jurisdictional Waters at the Project Site

Potentially jurisdictional waters occurring within the Plan Area include wetlands as well as 'other waters' as defined above. The tidal brackish marshes in the northern portions of the Plan Area, open water tidal channels and sloughs, the McAvoy and former Harris Yacht Club harbor waters, and the large pond or seasonal wetland located in the eastern portion of the Plan Area may all potentially be considered jurisdictional waters, under both Army Corps of Engineers and CDFG regulations (see Figure 4.12-2 for locations). However, to date no formal wetland delineation has been conducted within the Plan Area. Activities within these potentially jurisdictional waters will be subject to permitting from a number of agencies (see *Regulatory Setting* discussion).

[1] Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. US Fish and Wildlife Service, Office of Biological Services, Washington, D.C. Publ. No. FWS/OBS-79/31.

SOURCES: Google (2005) and ESA (2005)

Figure 4.12-2
Potentially Jurisdictional Waters

Special-Status Species

Definition

Special-status species are defined as plants and animals that are legally protected under Endangered Species Act (ESA), California Endangered Species Act (CESA), or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing.

Plant and animal species that are covered under the following are considered Special-status species:

- listed or proposed for listing as threatened or endangered under ESA (50 Code of Federal Regulations [CFR] 17.12 [listed plants] and various notices in the Federal Register [FR] [proposed species]);
- candidates for possible future listing as threatened or endangered under the federal ESA (70 FR 24869; May 11,2005);
- listed or candidates for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5);
- determined to meet the definitions of rare or endangered under CEQA (State CEQA Guidelines, Section 15380);

Specifically for special-status plants:

- listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.);
- considered by CNPS to be "rare, threatened or endangered in California" (Lists 1B and 2 in California Native Plant Society 2005); or
- listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4), which may be included as special-status species on the basis of local significance or recent biological information.

Specifically for special-status animals:

- species of special concern (SSC) to CDFG (2005) and the Point Reyes Bird Observatory (PRBO) 2003 (birds) (mammals); or
- fully protected under California Fish and Game Code Section 3511(birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians).

A list of special status plant and animal species reported to occur in the vicinity of the project site was compiled on the basis of data in the California Natural Diversity Data Base (CNDDB, 2005), special status species information from the U.S. Fish and Wildlife Service (USFWS, 2005), and biological literature of the region (see Table D in Appendix D and Figure 4.12-3 for documented locations).

SOURCE: ESRI, 2005; CNDDB, 2006

Figure 4.12-3
Documented Special Status Species Locations
within One Mile of the Plan Area

Species Assessed in Detail

Potential impacts of the project on special status species were assessed based on the literature review, professional judgment, and the following criteria:

1) A determination of susceptibility. This determination is a three-level process that evaluated for each species: a) potential occurrence in the study area (generally, the terrestrial and aquatic habitats of the project site); b) potential occurrence within the project footprint (*i.e.*, the area proposed for future construction under the Bay Point Waterfront Strategic Plan); or, c) absence from either the study area or proposed construction sites. If the species was determined unlikely to be found in the study area, for example, if no potential habitat exists for the species in the project vicinity, then the species was given no further consideration.

2) If a species was determined to have the potential to occur in the project study area, further analyses were made of life history and habitat requirements, as well as the suitability of habitat for the species found within the study area or its immediate vicinity. The results of this determination for each species are provided in the "Potential for Occurrence" column of Table D, located in Appendix D.

3) If suitable habitat was determined present within the proposed project vicinity and the species has been documented as observed within the project area or has at least a moderate potential to occur, additional analysis considered whether the species would be impacted by the project. Both direct effects (e.g., displacement of habitat) and indirect effects (e.g. noise) were considered. In addition, life history and habitat requirements were evaluated to ascertain the likelihood and severity of impact.

Of the special-status plants and animals presented in Appendix D, along with the regulatory basis for their status, only the following species, which were observed or determined to have a moderate to high potential to occur within the project vicinity, were fully considered in the impact analysis:

Special-status Plants
Suisun thistle
Soft bird's beak
Mason's lilaeopsis
Suisun marsh aster
Congdon's tarplant
Delta tule pea
Delta mudwort

Special-status Fish
Steelhead
Chinook salmon
Delta smelt
Longfin smelt
Sacramento splittail
Green sturgeon
Pacific herring

Special-status Reptiles
Northwestern pond turtle

Special-status Birds
California clapper rail
California black rail
Tricolored blackbird
Burrowing owl
Northern harrier
White-tailed kite
Saltmarsh common yellowthroat
Loggerhead shrike
Suisun song sparrow

Special-status Mammals
Salt marsh harvest mouse
Suisun shrew
Western big-eared bat
Yuma myotis
Fringed myotis
Fringed myotis
Long-eared myotis
Harbor seal
California sea lion

Special-Status Plants

Suisun thistle. This federally endangered species has only been found in Suisun Marsh in Solano County at or near sea level. The Suisun thistle is a slender, erect, herbaceous perennial approximately 1-2 meters tall. During July through September, this plant produces small, 2-2.5 centimeter long, bell or cylinder-like flower heads that are pale lavender-rose in color. Factors contributing to the current special status of this species include alteration and disturbance of the marsh areas of Suisun Bay as well as water pollution in this area, which has cumulatively degraded the local brackish marshes capable of supporting this species. Although it is only currently known from two occurrences, suitable habitat for the species exists in the brackish marshes of the Plan Area.

Soft bird's beak. This federally endangered, state rare species, is a member of the figwort family (Scrophulariaceae), and grows as a bushy herbaceous annual from two to four centimeters tall. Soft bird's beak is found in the heavy clay soils of coastal salt and brackish marshes of northern San Francisco Bay. This species forms dull yellow to purple flowers from July to November and is known to occur in the marshes of the Plan Area (CNDDB, 2005).

Mason's lilaeopsis. Mason's lilaeopsis is a small perennial plant which spreads rhizomatously across the exposed mud at the mid to low tide levels of fresh or brackish tidal areas of river banks along the Sacramento, San Joaquin and Napa rivers and along sloughs in the Delta. This member of the celery family (Apiaceae) is listed by California as rare (R and also as a CNPS List 1B species. Mason's lilaeopsis is threatened by loss of habitat due to levee building and repair in the Delta. The species bears three or four small white flowers in an umbel at the top of a quarter to half inch tall flower stalk; leaves are hollow linear and reed-like, round in cross section with walls at intervals dividing the interior of the leaves into chambers. CNDDB (2005) documents locations for this species within the Plan Area.

Suisun marsh aster. This species occurs along rivers levees and sloughs in Suisun and Napa marshes and around Delta islands. The plant is a tall (3 to 6 feet) perennial with fairly large violet heads having ray flowers 10 to 12 mm (half inch) long and flowers between August and November. The species is considered a federal species of concern and a CNPS List 1B species due to severe habitat loss. CNDDB (2005) documents locations for this species within the tidal marshes of the Plan Area.

Congdon's tarplant. This member of the daisy family is known from alkaline grasslands and can be found in highly disturbed areas. This spiny, erect, yellow flowered, herbaceous annual can bloom from June through November. Leaves are green to gray-green and stems are white. Congdon's tarplant is a federal and state species of concern, as well as a CNPS List 1B plant. The species is documented from numerous locations in Contra Costa County, including McNabney Marsh in Martinez.

Delta tule pea. The Delta tule pea might be described as a "wild sweet-pea", clambering over vegetation at levee edge of freshwater sloughs and rivers in the upper estuary. The tule pea has lavender to reddish-purple flowers and wide wings along the stems. It is indistinguishable to the

eye from its upland variety and taxonomic designations are made on the basis of habitat. Loss of natural edges on sloughs and rivers due to levee building and maintenance has resulted in loss of habitat for this species and it is a federal species of concern and CNPS List 1B species. The species is documented by the CNDDB (2005) as occurring within the Plan Area.

Delta mudwort. The mudwort is a small plant that grows across the sandy mudflats along the San Joaquin River by means of underground stems or stolons. This tiny-flowered plant is introduced from the Atlantic Coast of the United States and is listed by CNDDB but not by the California Native Plant Society (CNPS). Limosella was not observed on site.

Special-Status Animals

Fish

Central Valley and central California coast steelhead. Steelhead populations in the Central California Coast ESU and Central Valley Distinct Population Segments (DPS) are listed as threatened under FESA. Steelhead possess the ability to spawn repeatedly, maintaining the mechanisms to return to the Pacific Ocean after spawning in freshwater. Juvenile steelhead may spend up to four years residing in fresh water prior to migrating to the ocean as smelts. Both steelhead DPSs migrate through Suisun Bay waters between breeding areas and the Pacific and may therefore occasionally occur in the waters of the project site.

Sacramento River winter-run, Central Valley spring-run, and Central Valley fall/late fall-run Chinook Salmon. The population of Chinook salmon in San Francisco Bay is comprised of three distinct races: winter-run, spring-run, and fall/late fall-run. These races are distinguished by the seasonal differences in adult upstream migration, spawning, and juvenile downstream migration. Chinook salmon are anadromous fish, spending three to five years at sea before returning to fresh water to spawn. These fish pass through San Francisco Bay waters to reach their upstream spawning grounds. In addition, juvenile salmon migrate through the Bay en route to the Pacific Ocean.

Sacramento River winter-run Chinook salmon, listed as both state and federally endangered, migrate through San Francisco Bay from December through July with a peak in March (Moyle, 2002). Spawning is confined to the mainstream Sacramento River and occurs from mid-April through August (Moyle, 2002). Juveniles emerge between July and October, and are resident in their natal stream 5-10 months followed by an indeterminate residency period in estuarine habitats (Moyle, 2002).

The State and federal-listed threatened Central Valley spring-run Chinook salmon migrate to the Sacramento River from March to September with a peak spawning period between late August and October (Moyle, 2002). Juvenile salmon emerge between November and March, and are resident in streams for a period of 3 to 15 months before migrating to downstream habitats (Moyle, 2002).

The Central Valley fall/late fall-run Chinook salmon is a federal candidate for listing, and a California Species of Special Concern. These salmon enter the Sacramento and San Joaquin Rivers from June through December and spawn from October through December, with a peak in November.

Adult and juvenile (smelts) winter-run, spring-run, and fall-run Chinook salmon are known to occur in Suisun Bay and the waters adjacent to the project area during migrations to upstream freshwater spawning habitat.

Delta smelt, a federal and State listed threatened species, is a small, slender-bodied fish which is able to tolerate a wide salinity range and is native to the Sacramento-San Joaquin estuary. The fish live in schools and primarily feed on planktonic crustaceans, small insect larvae and mysid shrimp (Moyle, 2002). This species, which has a one-year life span, live primarily along the freshwater edge of the saltwater-freshwater interface of the Sacramento-San Joaquin Delta. Prior to spawning, delta smelt migrate upstream from the brackish-water habitat to river channels and tidally influenced backwater sloughs to spawn. Migration and spawning occur between December and June (Moyle, 2002). The species has been collected in large quantities in Suisun Bay, San Pablo Bay and at the Pittsburgh and Contra Costa power plants. The delta smelt has no commercial or recreational value, but is considered a key indicator species of the environmental health of the Delta.

Delta Smelt are known to be present in the region of the Delta adjacent to the project area and presumed to be able to use the channels of the Bay Point marinas as potential spawning and foraging habitat, especially the inactive Harris Yacht Harbor.

Longfin smelt, a California Species of Special Concern, is a small schooling fish that inhabits the freshwater section of the lower Delta and has been observed from south San Francisco Bay to the Delta, with the bulk of the San Francisco Bay population occupying the region between the Carquinez Straight and the Delta (McAllister, 1963; Miller and Lea, 1972). They have been collected in large numbers in Montezuma slough, Suisun Bay and near the Pittsburgh and Contra Costa power plants. In the fall, adults from San Francisco and San Pablo Bays migrate to fresher water in the Delta to spawn. The spawning habits of longfin smelt are similar to the Delta Smelt and both species are known to school together. Larval stages are known to inhabit Suisun Bay and move down bay as they grow larger in April and May (Granssle, 1966). The larvae are pelagic and found in the upper layers of the water column. Longfin Smelt are harvested commercially and sold in local markets. Longfin smelt are known to be present in the region of Suisun Bay adjacent the project area and presumed to be able to use the channels of the Bay Point marinas as potential spawning and foraging habitat.

Sacramento splittail, a federal Species of Concern and State Species of Special Concern, are primarily freshwater fish, but are tolerant of moderate salinity of up to 10-18 parts per thousand (ppt). In the 1950s, they were commonly caught by striped bass anglers in Suisun Bay. During the past 20 years, however, they have been found mostly in slow-moving sections of rivers and in sloughs and have been most abundant in the Suisun Bay and Marsh region. Adults migrate

upstream from brackish areas to spawn in freshwater. Spawning begins by late January and early February and continues through July, with most spawning taking place from February through April. Splittail spawn on submerged vegetation in temporarily flooded upland and riparian habitat. Typically, terrestrial shrubs and herbs are preferred over emergent wetland vegetation such as cattails and tules. Spawning occurs in the lower reaches of rivers, bypasses used for flood management, dead-end sloughs and in the larger sloughs such as Montezuma Slough. Larvae remain in the shallow, weedy areas inshore near the spawning sites and move into the deeper offshore habitat as they mature. Although the waters of the proposed project site do not provide typical Sacramento splittail habitat, the species may occasionally occur there.

The southern DPS of **green sturgeon** has been proposed for listing as a federal threatened species. This anadromous fish is the most widely distributed member of the sturgeon family and the most marine-oriented of the sturgeon species. Green sturgeons range in the nearshore waters from Mexico to the Bering Sea and are common occupants of bays and estuaries along the western coast of the United States (Moyle et al., 1995). Adults in the San Joaquin Delta are reported to feed on benthic invertebrates including shrimp, amphipods and occasionally small fish (Moyle et al., 1995) while juveniles have been reported to feed on opossum shrimp and amphipods. Adult green sturgeons migrate into freshwater beginning in late February with spawning occurring in March through July, with peak activity in April and June. After spawning, juveniles remain in fresh and estuarine waters for 1-4 years and then begin to migrate out to the sea (Moyle et al., 1995). The upper Sacramento River has been identified as the only known spawning habitat for green sturgeon in the southern DPS. Although green sturgeons are caught and observed in the lower San Joaquin River, no spawning is known to occur within the river. Although the Green Sturgeon is not expected to use the Bay Point marinas as spawning ground, they do travel through adjacent Delta waters and may utilize the project area for feeding.

Pacific herring are protected under the Magnuson-Stevens Fishery Conservation and Management Act is both a popular sport fish and a commercially important species. The Pacific herring is a small schooling marine fish that enters estuaries and bays to spawn. This species is known to spawn along the Oakland and San Francisco waterfronts and attach its egg masses to eelgrass, seaweed, and hard substrates such as pilings, breakwater rubble, and other “hard surfaces”. Spawning usually takes place between October and March with a peak between December and February. After hatching, juvenile herring typically congregate in San Francisco Bay during the summer and move into deeper waters in the fall. In San Francisco Bay, eel grass is not abundant, and herring are known to broadcast eggs on rocks, rocky jetties, pilings, sandy beaches, and other submerged objects (Eldridge and Kaill, 1973). An individual can spawn only once during the season, and the spent female returns to the ocean immediately after spawning.

Pacific herring may seasonally be present in the proposed project area. There is potential for this species to spawn within the project site due to the presence of marina structures (such as dock pilings) and eel grass beds which provide suitable substrates on which egg masses could be attached.

Reptiles

Northwestern pond turtle. The western pond turtle, a federal Species of Concern and California Species of Special Concern, is a thoroughly aquatic turtle found in permanent ponds, rivers, streams, channels, and irrigation ditches with rocky or muddy bottoms, and emergent vegetation. Basking areas used by this species include partially submerged logs, rocks, vegetation mats, and open mud banks. Habitat destruction and stream course degradation are the primary threats to this species. With suitable channel habitat along the existing marina, anecdotal sightings of pond turtles by marina employees, and occurrences documented in the Bay Point Regional Shoreline Plan (2000) it is likely that western pond turtles occur within the project boundaries and will be impacted be dredging activities.

Birds

California Clapper rail/ Black rail. Potential breeding habitat for California clapper rail (listed as Endangered by the federal and State governments) and California black rail (a federal Species of Concern and California Threatened species) exists in the tidal marsh habitat in Bay Point. These species live in coastal salt and brackish marshes and tidal sloughs. Year-round residents, these species stay mainly in the upper to lower zones of coastal marshes that are dominated by pickleweed and cordgrass. These rails feed in the lower marsh zone where tidal sloughs and channels provide important foraging habitat and escape cover from predators. Threats to these species include lost and degradation of salt marsh habitat, encroachment of human activities, genetic isolation due to habitat fragmentation, and predation from coyotes, red fox, raptors, possibly river otter, raccoons, and feral cats. Occurrences of black rails, as documented by CNDDB, occur within a mile of the project site to the east and west, and California clapper rails have occurrences within two miles of the proposed project site near Middle Point. Both species are likely to occur within project boundaries.

Tricolored blackbird is both a federal and California Species of Special Concern. Tricolored blackbirds are a colonial species that nest in marsh vegetation such as cattails, tules, and blackberry thickets. This species has been known to forage both along edges of ponds in the immediate vicinity of the nest site and in grasslands and croplands up to four miles from the nest site. Loss of habitat has reduced species nesting sites, and hence species numbers. Because of the ephemeral nature of their habitat, these blackbirds typically nest in different locations from year to year. Brackish marsh vegetation on the project site provides suitable habitat for this species and channel dredging, ground disturbance, and equipment access to the marsh habitat may cause deleterious impacts.

Burrowing owl, a federal and California Species of Special Concern, is a California resident that prefers open annual or perennial grasslands and disturbed sites with existing burrows, elevated perches, large areas of bare ground or low vegetation, and few visual obstructions. Ground squirrel colonies often provide a source of burrows and are typically located near water and areas with large numbers of prey species, primarily insects. Breeding takes place between March and August, with a peak in April and May. The grazed ruderal and barren areas toward to the southern project boundary may potentially support nesting burrowing owls. The project area was observed

to have a few burrow holes and California ground squirrels were seen during the reconnaissance field survey.

Northern harrier. This species, like other raptors and birds in general, is protected under California Code 3503 and 3503.5, which prohibits the taking or destroying of any bird or nest in the order of Falconiformes (falcons, kites, and hawks) and Strigiformes (owls). Northern harrier nest and forage along wet meadows, slough, savanna, prairie, and marshes, feeding on small mammals, such as California vole and mice. The territory for this species is often a minimum of 10-20 acres foraging area. Destruction of marsh habitat is the primary reason for the decline of this species. Northern harrier were identified in the salt marsh complex to the east of the project site and likely to use the project site and surrounding area for foraging and ground nesting. Grounds disturbance and equipment access to the salt marsh areas can impact northern harrier foraging and nesting habitat within the project site.

White-tailed kite is a California resident that shifts its local distribution in response to available food supplies. This species, like the northern harrier, is protected under California Code 3503 and 3503.5. Prior to 1895 this species was common to widespread in valley and lower foothill territory, but is now rare in many sections of the state. The white-tailed kite forages in wetlands and open brushlands, usually near water and streams. Oak woodlands, valley oak or live oak, or trees near marshes are used for nesting sites. The nest made by this species is a frail platform of sticks, leaves, weed stalks, and similar materials located in tree or bush. A combination of habitats is essential, including open grasslands, meadows or marshes for foraging and isolated dense topped trees for perching and nesting. Large eucalyptus trees in the project area can provide suitable nesting platforms. A pair of white-tailed kites was observed foraging and perching over the marshlands within the project site during the reconnaissance survey.

Saltmarsh common yellowthroat. The common yellowthroat is a small warbler with a complex of subspecies. The salt marsh subspecies is recognized as a distinct breeding population, with geographic distribution, habitats, and subtle differences in morphological traits that distinguish it from other subspecies. It inhabits tidal salt and brackish marshes in winter, but breeds in freshwater to brackish marshes and riparian woodlands during spring to early summer. Nests are placed on or near the ground in dense emergent vegetation or shrubs. The subspecies is a federal and state species of concern due to major decline of both habitat and populations in the past decade, but is not currently listed as endangered or threatened. The common yellowthroat is also protected under the Migratory Bird Treaty Act.

Loggerhead shrike, a California species of concern, occupies a variety of habitats, including grasslands, woodlands, and scrub. This shrub nesting species was identified during ESA's biological reconnaissance survey of the Plan Area, perching on top of a marina structure. Shrikes are unique among songbirds in that their diet regularly includes vertebrate prey. Shrikes typically hunt from dead trees, tall shrubs, utility wires and fences, and impale their prey on sharp twigs, thorns, or barbed wire.

Suisun song sparrow is one of three morphologically distinct song sparrow subspecies that occur in the San Francisco Bay region. This particular subspecies is endemic to the marshes bordering Suisun Bay and is a federal and state species of concern. Intermixed stands of bulrush (*Scirpus spp*.), cattail (*Typha spp*.), and other emergent vegetation provide suitable habitat in brackish marsh habitats. Suisun song sparrows nest in tall tules with local pickleweed. They also frequent tall vegetation along the edges of tidal marshes and forage on mudflats and channel beds exposed at low tide.

Mammals

Salt marsh harvest mouse are small, native rodents that are endemic to the salt marshes and adjacent diked wetlands of San Francisco Bay. The **Suisun shrew** is a federal and state species of concern with similar habitat characteristics to the salt marsh harvest mouse. Salt marsh harvest mice are listed as federally and state endangered species. This species is considered a fully protected species by CDFG. These species inhabit the middle to upper levels of dense pickleweed stands in tidal and diked coastal salt marshes bordering San Francisco Bay. A major threat to marsh rodents is habitat destruction caused by filling, diking, subsidence, and changes in water salinity. Occurrences of salt marsh harvest mouse have been recorded just to the east and west of the project site and suitable habitat exists within the project boundaries (CNDDB, 2005, SFRWQCB, 2000). Although there is suitable habitat for the Suisun shrew there are no occurrences recorded in south Suisun Bay and distribution seems to be limited to the north Suisun Bay regions.

Special status bat species. The Plan Area provides potential foraging and roosting habitat for four special-status bat species. Pacific western big-eared bats (*Corynorhinus townsendii townsendii)* occur in a variety of habitats and utilize caves, mines, tunnels, buildings, or other human-made structures for roosting. Yuma myotis (*Myotis yumanensis)* also roost in buildings and mines and have been observed roosting in abandoned swallow nests and under bridges (Zeiner et al, 1990). The fringed myotis (*Myotis thysanodes*) occurs throughout California and is most frequent in coastal and montane forests and near mountain meadows (Jameson and Peeters, 1988). This species uses echolocation to find moths, beetles, and other prey and forms nursery colonies in caves and old buildings (Jameson and Peeters, 1988). The long-eared myotis (*Myotis evotis*) inhabits nearly all brushlands, woodlands, and forests, seeming to prefer coniferous forests and woodlands. Roosts include caves, buildings, snags, and crevices in tree bark. This species is highly maneuverable in its forays for arthropods over water, open terrain, and in habitat edges. These bat species may utilize vacant buildings or eucalyptus trees for roosting in the southern portion of the project site and forage over marsh habitat.

Marine Mammals. Habitat for two marine mammals, the harbor seal and the California sea lion, may occur at the project site. Both species are considered special-status species and are protected under the federal Marine Mammal Protection Act (MMPA). Populations of both species are known to occur within San Francisco Bay and along its corresponding shoreline. Foraging individuals of both species are known to travel as far upstream as the City of Sacramento during spring and fall salmon migrations. Foraging sites for these species are generally close to shore

where medium-sized fish, crab, and herring are taken as prey. Although highly unlikely, it is possible that the structures and/or marina slips in the project area could be used as haul-out sites for these species, though such use would be unlikely given the availability of better haul-out habitat throughout the Bay and Delta. No harbor seals, California sea lions, or other mammal species were observed during field reconnaissance surveys.

Designated Critical Habitat

The National Marine Fisheries Services (NMFS) designated critical habitat for Sacramento winter-run Chinook salmon on June 16, 1993 (NMFS, 1993) and for Central Valley spring-run Chinook salmon and central California coast steelhead, Central Valley steelhead, and Central Valley spring-run Chinook salmon on September 2, 2005 (NMFS, 2005). The proposed project area is located within designated critical habitat for these species.

Critical habitat for delta smelt was designated by the USFWS on December 19, 1994 (USFWS, 1994) and includes the open water portions of Suisun Bay adjacent to the proposed project site. The McAvoy and Harbor and Harris Yacht Harbor, however, are not included in the designation.

4.12.3 Regulatory Setting

This section briefly describes federal, state, and local regulations, permits, and policies pertaining to biological resources and wetlands as they apply to the proposed project.

Special-Status Species

Federal Endangered Species Act

The USFWS (jurisdiction over plants, wildlife, and resident fish) and National Marine Fisheries Service (NMFS; jurisdiction over anadromous fish and marine fish and mammals) oversee the FESA. Section 7 of the Act mandates that all federal agencies consult with the USFWS and NMFS to ensure that federal agencies actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. The federal agency is required to consult with the USFWS and NMFS if it determines a “may effect” situation will occur in association with the proposed project. The FESA prohibits the “take” of any fish or wildlife species listed as Threatened or Endangered, including the destruction of habitat that could hinder species recovery.

Under Section 9 of the FESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the removal, possession, damage or destruction of any Endangered plant from federal land. Section 9 also prohibits acts to remove, cut, dig up, damage, or destroy an Endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9 of the FESA.

Section 10 of the FESA requires the issuance of an "incidental take" permit before any public or private action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an Endangered or Threatened species. The permit requires preparation and implementation of a habitat conservation plan that would offset the take of individuals that may occur, incidental to implementation of the project by providing for the overall preservation of the affected species through specific mitigation measures.

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act states that without a permit issued by the U.S. Department of the Interior, it is unlawful to pursue, hunt, take, capture, or kill any migratory bird.

Federal Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) is the principal Federal legislation that guides marine mammal species protection and conservation policy. The MMPA delegates authority for oceanic marine mammals to the Secretary of Commerce, the parent agency of the National Oceanic and Atmospheric Administration (NOAA). Species of the order Cetacea (whales and dolphins) and species, other than walrus, of the order Carnivora, suborder Pinnipedia (seals and sea lions), are the responsibility of NOAA Fisheries (or the Service). The Department of the Interior's Fish and Wildlife Service is responsible for the dugong, manatee, polar bear, sea otter, and walrus. Marine mammals that are already managed under international agreements are exempt as along as the agreements further the purposes of the MMPA.

The MMPA prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S.

Federal Essential Fish Habitat

The Sustainable Fisheries Act of 1996 (Public Law 104-297), amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to establish new requirements for Essential Fish Habitat (EFH) descriptions in federal Fisheries Management Plans (FMPs) and to require federal agencies to consult with the National Marine Fisheries Service (NMFS) on activities that may adversely affect EFH. The Magnuson-Stevens Act requires all fishery management councils to amend their FMPs to describe and identify EFH for each managed fishery. The Act also requires consultation for all federal agency actions that may adversely affect EFH (i.e., direct versus indirect effects); it does not distinguish between actions in EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside of EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by federal agencies undertaking, permitting, or funding activities that may adversely affect EFH, regardless of the activity's location. Under section 305(b)(4) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation and enhancement recommendations to federal and state agencies for actions that adversely affect EFH. However, state agencies and private

parties are not required to consult with NMFS unless state or private actions require a federal permit or receive federal funding. Although the concept of EFH is similar to that of critical habitat under the FESA, measures recommended to protect EFH by NMFS are advisory, not proscriptive.

NMFS strongly encourages efforts to streamline EFH consultation and other federal consultation processes. EFH consultation can be consolidated, where appropriate, with interagency consultation, coordination and environmental review procedures required by other statutes such as the National Environmental Policy Act (NEPA), Fish and Wildlife Coordination Act, Clean Water Act, FESA, and Federal Power Act. EFH consultation requirements can be satisfied using existing review procedures if they provide NMFS timely notification of actions that may adversely affect EFH and the notification meets requirements for EFH Assessments (i.e., a description of the proposed action, an analysis of the effects, and the Federal agency's views regarding the effects of the action on EFH and proposed mitigation, if applicable).

California Endangered Species Act

California implemented its own Endangered Species Act in 1984. The state act prohibits the take of Endangered and Threatened species; however, habitat destruction is not included in the state's definition of take. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. The CDFG administers the act and authorizes take through Section 2081 agreements (except for designated "fully protected species").

Regarding rare plant species, CESA defers to the California Native Plant Protection Act of 1977, which prohibits importing of rare and endangered plants into California, taking of rare and endangered plants, and selling of rare and endangered plants. State-listed plants are protected mainly in cases where state agencies are involved in projects under CEQA. In this case, plants listed as rare under the California Native Plant Protection Act are not protected under CESA but can be protected under CEQA.

California Fish and Game Code

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.3 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs.

California Fully Protected Species

California law (Fish and Game Code Sections 3511 birds, 4700 mammals, 5050 reptiles and amphibians and 5515 fish) allows the designation of a species as Fully Protected. This is a greater level of protection than is afforded by the California Endangered Species Act, since such a designation means the listed species cannot be taken at any time.

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and State statutes, CEQA Guidelines section 15380(b) provides that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the Guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a "candidate species" that has not yet been listed by either the USFWS or CDFG. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

Regulation of Waters Including Wetlands

U.S. Army Corps of Engineers and U.S. Environmental Protection Agency

The Corps and EPA regulate the discharge of dredged or fill material into waters of the United States, including wetlands, under Sections 404 and 401 of the Clean Water Act. Projects that would result in the placement of dredged or fill material into waters of the United States require a Section 404 permit from the Corps. Some classes of fill activities may be authorized under General or Nationwide permits if specific conditions are met. Nationwide permits do not authorize activities that are likely to jeopardize the existence of a Threatened or Endangered species (listed or proposed for listing under the FESA). In addition to conditions outlined under each Nationwide Permit, project-specific conditions may be required by the Corps as part of the Section 404 permitting process. When a project's activities do not meet the conditions for a Nationwide Permit, an Individual Permit may be issued.

Section 401 of the Clean Water Act requires an applicant for a Corps permit to obtain state certification that the activity associated with the permit will comply with applicable state effluent limitations and water quality standards. In California, water quality certification, or a waiver, must be obtained from the Regional Water Quality Control Board, for both Individual and Nationwide Permits.

The Corps also regulates activities in navigable waters under Section 10 of the Rivers and Harbors Act. The construction of structures, such as tidegates, bridges, or piers, or work that could interfere with navigation, including dredging or stream channelization, may require a Section 10 permit, in addition to a Section 404 permit if the activity involves the discharge of fill.

Finally, the federal government also supports a policy of minimizing "the destruction, loss, or degradation of wetlands." Executive Order 11990 (May 24, 1977) requires that each federal agency take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

Long-term Management Strategy

The Long-term Management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay Region (USACE, 2001) identifies specific work windows for dredging projects to protect salmonids and longfin smelt in the Suisun Bay/Carquinez Straight region. The LTMS was developed during formal consultation between NMFS, USFWS, and CDFG to address impacts to sensitive fisheries and designated critical habitats under their respective jurisdictions and standardize mitigation for dredging projects. The Biological Opinion resulting from the LTMS present specific restrictions on the timing and design of dredging and disposal projects. As the LTMS states, if the dredging project can be accomplished during the identified work windows, the project is authorized for incidental take under federal Endangered Species Act of 1973, as amended. The LTMS serves as the federal and state pathway for determining potential impacts of dredging and dredge disposal projects on fish species, with timing of construction as the single significance criterion.

As identified in the LTMS, restricting dredging and other in-water construction activities to specific work windows would avoid direct and indirect impacts to these species. The work window for Chinook salmon and steelhead extends from June 1 through November 30 while the window for longfin smelt extends from September 1 through November 30.

However, the LTMS does not provide acceptable work windows for delta smelt and Sacramento splittail, indicating that Section 7 consultation (delta smelt) and conferencing (Sacramento splittail) is required. Typical consultation and permit requirements would include, but not necessarily be limited to:

- Clamshell dredging shall be required whenever practicable in areas within 250 feet of a shoreline or in depths less than 20 feet;

- If hydraulic dredging in depths less than 20 feet, dredge head must be maintained at or below substrate surface. Head may not be raised more than 3 feet off bottom for flushing; shut off pump when raising head more than 3 feet off bottom (e.g., at end of dredging).

- For new-work projects where eelgrass will be unavoidably affected, a compensatory mitigation plan must be submitted and approved by USFWS, NMFS, CDFG, USACE, and EPA prior to permitting.

- If project will cause unavoidable direct or indirect effects to submerged or emergent aquatic vegetation, compensatory mitigation at 3:1 ratio is required for lost function and values. Other proposed ratios require consultation with USFWS and CDFG.

- Best Management Practices to reduce turbidity (including silt curtains or other physical or operational measures) shall be required for these projects.

- Restrictions apply within the identified critical period, and within 250 feet of emergent vegetation. USFWS and CDFG must be contacted in these circumstances.

- CDFG must be contacted and the permittee must provide an observer to identify herring spawning activity. Dredging must stop immediately if herring are within 200 meter (m) of the work site, and may not continue until hatch-out is complete (approximately 10-14 days).

The LTMS was developed prior to the proposed listing of green sturgeon as a threatened species and therefore the species is not addressed in the plan, but compliance with LTMS work windows and other permit requirements is assumed to adequately protect this species. Furthermore, the LTMS does not provide work windows for Pacific herring in the Suisun Bay/Carquinez Straight region, although the species is protected under the program in other parts of San Francisco Bay (e.g., south-central San Francisco Bay) (USACE, 2001).

State Policies and Regulations on Streams and Wetlands

The CDFG regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. These activities are regulated under the California Fish and Game Code (Section 1601 for public agencies and Section 1603 for private individuals) through a project-specific Streambed Alteration Agreement (SAA). Requirements to protect the integrity of biological resources and water quality are often conditions of such Agreements. Requirements may include avoidance or minimization of the use of heavy equipment, limitations on work periods to avoid impacts on wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses.

Bay Conservation and Development Commission

The Bay Conservation and Development Commission (BCDC) is authorized by the McAteer Petris Act to analyze, plan and regulate San Francisco Bay and its shoreline. It implements the San Francisco Bay Plan, and regulates filling and dredging in the Bay, its sloughs and marshes, certain creek and tributaries. BCDC jurisdiction includes the Bay and a shoreline band that extends inland 100 feet from the high tide line. BCDC permits are required for all work within either the Bay or the shoreline band.

Other Plans and Polices

Contra Costa County Tree Preservation Ordinance

Contra Costa County has adopted a tree protection and preservation ordinance (Ordinances 94-59, 94-22) that defines “protected trees” and regulates their removal. Trees meeting all of the following criteria are “protected trees”: 1) trees native to Contra Costa County; 2) trees at least 20 inches in circumference as measured 4.5 feet above the ground; and 3) trees occurring on any properties in unincorporated areas of the County, developed properties within any commercial district, or any areas designated on the General Plan as recreational or open space. Persons wishing to remove or alter protected trees from their property must first obtain a permit from the County. The County will regulate the removal of trees from properties proposed for development by setting the conditions for removal when approving project applications. All protected trees to

be affected by development must be shown on all grading, site and development plans. A tabulation of all trees proposed for removal must also be provided to the County.

Contra Costa County *Conservation Element* Policies Related to Vegetation and Wildlife

Goal 8-D: To protect ecologically significant lands, wetlands, plant and wildlife habitats.

Goal 8-E: To protect rare, threatened and endangered species of fish, wildlife and plants, significant plant communities, and other resources which stand out as unique because of their scarcity, scientific value, aesthetic quality or cultural significance. Attempt to achieve a significant net increase in wetland values and functions within the County over the life of the General Plan.

Policy 8-6: Significant trees, natural vegetation, and wildlife populations generally shall be preserved.

Policy 8-7: Important wildlife habitats which would be disturbed by major development shall be preserved, and corridors for wildlife migration between undeveloped lands shall be retained.

Policy 8-8: Significant ecological resource areas in the County shall be identified and designated for compatible low-intensity land uses. Setback zones shall be established around the resource areas to assist in their protection.

Policy 8-9: Areas determined to contain significant ecological resources, particularly those containing endangered species, shall be maintained in their natural state and carefully regulated to the maximum legal extent. Acquisition of the most ecologically sensitive properties within the County by appropriate public agencies shall be encouraged.

Policy 8-10: Any development located or proposed within significant ecological resource areas shall ensure that the resource is protected.

Policy 8-11: The County shall utilize performance criteria and standards which seek to regulate uses in and adjacent to significant ecological resource areas.

Policy 8-17: The ecological value of wetland areas, especially the salt marshes and tidelands of the bay and delta, shall be recognized. Existing wetlands in the County shall be identified and regulated. Restoration of degraded wetland areas shall be encouraged and supported whenever possible.

Policy 8-21: The planting of native trees and shrubs shall be encouraged in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are sustained in urban areas.

Policy 8-22: Applications of toxic pesticides and herbicides shall be kept at a minimum and applied in accordance with the strictest standards designed to conserve all the living resources of the County. The use of biological and other non-toxic controls shall be encouraged.

Policy 8-23: Runoff of pollutants and siltation into marsh and wetland areas from outfalls serving nearby urban development shall be discouraged. Where permitted, development plans shall be designed in such a manner that no such pollutants and siltation will significantly adversely affect the value or function of wetlands. In addition, berms, gutters, or other structures should be required at the outer boundary of the buffer zones to divert runoff to sewer systems for transport out of the area.

Policy 8-25: The County shall protect marshes, wetlands, and riparian corridors from the effects of potential industrial spills.

Policy 8-27: Seasonal wetlands in grassland areas of the County shall be identified and protected.

Policy 8-28: All efforts shall be made to identify and protect the County's mature native oak, bay, and buckeye trees.

4.12.4 Impacts and Mitigation Measures

Standards of Significance

Conclusions regarding the significance of impacts on vegetation and wildlife resources are based on criteria in the California Environmental Quality Act (CEQA).

Consistent with CEQA Guidelines Appendix G, the Strategic Plan would be considered to have a significant effect on the environment if it would:

- Substantially diminish habitat for fish, wildlife or plants species;
- Result in a fish or wildlife population to drop below self-sustaining levels;
- Threaten elimination of a plant or animal community;
- Substantially affect an endangered, rare or threatened species of animal or plant or the habitat of the species;
- Decrease the number of or diminish the range of an endangered, rare or threatened species;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species; impede use of native wildlife nursery sites;
- Substantially degrade the quality of the environment, including but not limited to:
  - a substantial adverse effect on or loss of federally protected wetlands;
  - a substantial degradation or loss of habitat, sensitive natural communities, or other resources identified in local or regional plans, policies, regulations or by lists compiled by CDFG or USFWS.
- Conflict with any local policies or ordinances protecting biological resources or with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other local, regional, or state habitat conservation plan.

CEQA Section 15380 further provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists if, for example, it is likely to become endangered in the foreseeable future.

Evaluation of Impact Significance

For purposes of this EIR, the analysis considered the following three principal components of the guidelines and criteria outlined above:

- Magnitude of the impact (e.g., substantial/not substantial)
- Uniqueness of the affected resource (rarity)

- Susceptibility of the affected resource to perturbation (sensitivity)

The evaluation of significance must consider the interrelationship of these three components. For example, a relatively small magnitude impact to a state or federally listed species would be considered significant because the species is very rare and is believed to be very susceptible to disturbance. Conversely, a plant community such as California annual grassland is not necessarily rare or sensitive to disturbance. Therefore, a much larger magnitude of impact would be required to result in a significant impact. Impacts are generally considered less than significant if the habitats and species affected are common and widespread in the region and the state. Impacts are considered beneficial if the action causes no detrimental impacts and results in an increase of habitat quantity and quality.

For the analysis presented below, impacts resulting from implementation of the Bay Point Waterfront Strategic Plan were considered to be significant if they had the potential to:

- Have a substantial adverse affect on special status species that were found to have moderate or high potential to occur and/or special status species that have been observed in the Plan Area;
- Result in the fill of or otherwise cause degradation of potentially jurisdictional waters;
- Have a substantial adverse affect on areas designated as sensitive habitat in this EIR;
- Otherwise exceed the significance criteria outlined above.

Impacts

Impacts on Terrestrial Communities

Impact 4.12.1: The construction of residential buildings and recreational fields would result in the loss of upland ruderal and barren habitat. (Less than Significant)

Under the proposed project approximately 21.5 acres of ruderal and barren habitat would be utilized for construction of residences and recreational facilities. The loss of this community does not constitute a significant impact to biotic resources as it is locally and regionally abundant. In addition, these habitat types primarily provide habitat for common wildlife and non-native plant species and are thus of limited ecological value.

Mitigation: None required.

Impact 4.12.2: Construction of proposed trails, the education center, and reconfiguration of the marina could result in temporary and permanent loss of sensitive brackish marsh habitat. (Significant)

Coastal brackish marsh habitat is important to many special status species including California clapper rail, California black rail, salt marsh harvest mouse, saltmarsh common yellowthroat, and

Suisun song sparrow. General threats to this sensitive community include shoreline development, diking and filling, water diversion and storage, and contamination. Degradation or destruction of coastal brackish marsh habitat would constitute a significant impact.

> **Mitigation Measure 4.12.2a:** Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFG) impacted by the project will be restored and/or enhanced. Temporary impacts will be compensated for at a 1:1 ratio (mitigation to impact acreage). Permanent impacts will be compensated for by creating or restoring in kind habitat at a 3:1 ratio. In addition, temporary and/or permanent losses of brackish marsh habitat will be addressed in full in the wetland permitting for the project, as outlined under Mitigation Measure 4.12.2b.
>
> **Mitigation Measure 4.12.2b:** Recreational trails will incorporate raised boardwalks in areas that support brackish marsh vegetation and are subject to tidal flooding to limit degradation of this sensitive habitat due to trail traffic. To further reduce trampling of sensitive vegetation, measures to deter human off-trail use (i.e. rails or roping) as well as restrictions on allowing dogs (i.e. on leash only) or horses on trails will be incorporated into trail design.

Significance After Mitigation: Less than significant.

Impact 4.12.3: The project would result in the loss of raptor foraging habitat. (Less than Significant)

Implementation of the proposed project would result in the loss of approximately 21.5 acres of ruderal and barren habitat within the Plan Area, and consequently a potential loss of raptor foraging habitat. The loss of this habitat does not constitute a significant impact to raptors because of the abundance of local grassland and other habitat that provides foraging opportunities for raptors. Therefore, this would be a less than significant impact.

Mitigation: None required.

Impacts on Aquatic Communities

Impact 4.12.4: Dredging, pile driving, removal of existing pilings and moorings, and other "in-water" construction activities will result in temporary disturbances to aquatic biological resources and Essential Fish Habitat (EFH). (Significant)

Short-term impacts on aquatic biological resources would occur from dredging and removal/replacement of docks, piling structures, and concrete embankments and shoreline armoring. Impacts that are typically associated with these activities include harmful sound pressure levels associated with pile-driving, increased turbidity due to in-water construction and dredging, water quality degradation from the use of pressure-treated wood used in, docks,

boardwalks, and other in-water structures, short-term loss of benthic habitat and associated benthos and floating aquatic plants, and short-term loss and disruption of potential fishery habitat.

Potential Impacts of Dredging on Benthos, Fisheries and other Aquatic Biota

Dredging in San Francisco Bay has long been identified as a potential source of impact to fisheries resources and is addressed by the U.S. Army Corps of Engineer's (Corps') Long-term Management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay Region (USACE, 2001). The dredging for the Bay Point marina would result in the total loss of all benthos for one or more years, depending on the time of year dredging occurs. Dredging prior to spring recruitment would result in faster re-colonization while dredging after spring recruitment would result in a delayed and extended recolonization period. Dredging would also result in the loss of any submerged or floating biota, including existing eel-grass beds in the Harris Yacht Harbor. Loss of the benthos would also result in indirect effects on fish and aquatic birds currently using the area for foraging while the infaunal community is reestablishing itself. The direct entrainment (inadvertent capture) of small fish, such as the delta and longfin smelt, juvenile Sacramento splittail, juvenile salmonids, and other Delta fish species during dredging can occur, depending on the method of dredging employed. Any form of suction dredging has a higher potential for entrainment of fish species whereas the use of a clam shell or dragline dredge has a lower probability of direct impact since the pressure wave created by the clam shell moving through the water can be expected to result in increased detection and avoidance by fish.

Indirect Impacts on Salmonids and other Fish Species due to Increased Predation

The addition of new docks, pilings, breakwaters, and other in-water structures may provide increased opportunities for predatory fish to prey upon juvenile listed salmonids and other fish. This can also be assumed to be true for other small or juvenile fish such as delta and longfin smelt and juvenile Sacramento splittail. The proposed project would reconfigure and replace the existing pilings, docks, and other in-water features with equivalent numbers, but would significantly increase the area covered by these structures over current conditions.

As the quantity of in-water features (such as pilings and pier structures) under the proposed waterfront redevelopment project will either be comparable to conditions when both marinas were fully operational, or more than double based on conditions in 2006, an increase in the number of predatory fish may or may not occur. The composition of fish species using the shallow-water aquatic habitats is not expected to change following project implementation. Because of the potential for increased shallow water sheltered habitat, fish abundances can also be expected to increase slightly. As a result, this potential impact from increased predation is considered less than significant.

Indirect Impacts on Pacific Herring and Delta and Longfin Smelt due to Loss of Spawning and Foraging Habitat

Submerged grass and algae beds are a preferred spawning habitat for Pacific herring and to a lesser degree delta and longfin smelt. Because submerged eel grass beds are a limited resource in San Francisco Bay, sexually mature herring have been documented to use artificial structures

such as pier pilings, floating docks, and armor rip rap as spawning habitat (Watters and Larson, 2001). Likewise delta and longfin smelt have been observed to use any submerged vegetation and both hard and soft substrates as spawning substrate (Moyle, 1992). The removal of the small eel grass bed observed in the Harris Yacht Harbor and the other marina structures would have a minor adverse effect on the ability of Pacific herring and delta and longfin smelt to use these locations for spawning. The proposed project area is located outside the currently known herring spawning area (Moyle et al., 1989; Watters and Larson, 2001). The marinas are, however, located immediately adjacent to the region of the Delta determined by the USFWS to be critical spawning habitat for the Delta smelt (USFWS, 1994) and within the documented spawning area for Sacramento splittail. The absence of substantial amounts of submerged vegetation in the Bay Point marinas suggests that the proposed project area does not constitute prime spawning habitat, but may at times be used for opportunistic spawning and foraging.

The loss of artificial reef and other human-induced structures would be offset by the creation of, or replacement with, newer pilings and artificial reef structures at the Bay Point Redevelopment project. The project proponent intends on creating some new moorings and slips over current conditions and similar in number to past condition when both marinas were fully operational. The potential loss of spawning habitat for Pacific herring, delta and longfin smelt and Sacramento splittail will be temporary and is considered less than significant.

The potential loss of benthic foraging habitat for juvenile or adult Chinook salon and steelhead, delta and longfin smelt, Sacramento splittail, and green sturgeon could occur for several years following dredging of the new marina. Although some food prey, such as algae, and amphipods are currently present in the Bay Point marina sediments, preferred food items such as opossum shrimp were not observed. Consequently, the project area provides suboptimal foraging habitat and the temporary loss of foraging habitat is considered less than significant. Furthermore, open-water foraging habitat availability for many of these species may increase with the increase in submerged area under the proposed project.

Potential Impacts of Pile-Driving Activities on Fisheries

Pile-driving activities create increased underwater sound pressure levels. Sound pressure levels in excess of 180 decibels may injure or kill fish. Salmonid species, including Chinook salmon and steelhead, may potentially be present in the project area or vicinity during the period of November through May. Outside of this period, salmonids are less likely to occur in the project vicinity. Delta and longfin smelt and Sacramento splittail may be present at any time during the year, although potentially in low numbers. Spawning adult green sturgeons migrate through the Delta between February and July and juveniles can be found in the Delta throughout the year. These species may be exposed to excessive sound pressure levels during pile-driving activities associated with the construction of the proposed project.

> **Mitigation Measure 4.12.4a:** The proposed project will implement the guidelines of the Corps' Long-term Management Strategy (LTMS). For Chinook salmon, steelhead, and longfin smelt, construction work windows have been established by the LTMS and project construction will occur during those periods. For delta smelt and Sacramento splittail, in-

water construction is restricted throughout the year and formal Section 7 consultation will be required.

As identified in the LTMS, restricting dredging and other in-water construction activities to specific work windows would avoid direct and indirect impacts to these species. The work window for Chinook salmon and steelhead extends from June 1 through November 30 while the window for longfin smelt extends from September 1 through November 30. As the longfin smelt work window is more restrictive in-channel activities such as dredging and pile-driving associated with the proposed project will occur during the period of September 1 through November 30.

However, the LTMS does not provide acceptable work windows for delta smelt and Sacramento splittail, indicating that Section 7 consultation (delta smelt) and conferencing (Sacramento splittail) is required. Typical consultation and permit requirements are presented in above in section 4.12.3 Regulatory Setting.

The LTMS was developed prior to the proposed listing of green sturgeon as a threatened species and therefore the species is not addressed in the plan, but compliance with LTMS work windows and other permit requirements is assumed to adequately protect this species. Furthermore, the LTMS does not provide work windows for Pacific herring in the Suisun Bay/Carquinez Straight region, although the species is protected under the program in other parts of San Francisco Bay (e.g., south-central San Francisco Bay) (USACE, 2001).

Mitigation Measure 4.12.4b: Pile-driving activities will also occur during the work windows specified in the LTMS. This measure will reduce the potential impact of sound pressure levels on salmonids to less than significant. Any pile-driving work occurring outside of these work windows would be conducted in accordance with NMFS directives (e.g., noise levels below 150 decibels at 10 meters) and Corps permits to reduce potential impacts on fish species to less than significant.

Significance after Mitigation: Less than significant.

Impact 4.12.5: The construction and operation of the proposed marina facilities may increase the likelihood of introduction or transport of exotic species that are known to disrupt natural communities. (Significant)

Suisun Bay is listed as a water quality limited segment under the 2002 Clean Water Action Section 303(d) list (RWQB, 2003) due to presence of exotic species. The improvement and enlargement of marina facilities, including slips, is likely to substantially increase the number of trips in and out of the marina property, adding to the possibility that non-native species, such as Eurasian milfoil and water hyacinth, could be transported to and from the marina. Dredging operations may also loosen exotic species, allowing them to drift to other parts of the Bay. During a site assessment for this project, Eurasian milfoil, an invasive species often transported by recreational boats moved between water bodies, was observed growing within the Harris Yacht Harbor (AMS, 2005). Water hyacinth has been reported at the adjacent SLC/EBRPD property, which is within the Bay Point Redevelopment Project boundary.

Mitigation Measure 4.12.5a: To prevent the spread of invasive water plant species during dredging activities, existing beds will be removed and disposed of at a composting facility prior to construction.

The plant beds observed by AMS were very small in the fall of 2005. Manual removal of existing plants or the use of synthetic plant cover materials to block light to the plants will be necessary to completely remove the plant prior to dredging. Removal work needs to be done by personnel experienced in the eradication of water borne invasive plants to prevent the release of small plant parts that can regenerate. Use of herbicides might be an option if the treatment area can be minimized.

Mitigation Measure 4.12.5b: An active boater awareness and education program will be implemented as part of marina operations to prevent the spread of invasive water plant species.

One of the primary means of transporting invasive species from one water body to another is by recreational vessels. Portions of the plant become attached to boats and trailers and are brought aboard recreational fishing boats by fisherman. The plants are then transported to other water bodies when the boat and trailer are taken to new lakes or the delta. Implementation of a boater awareness and education program, consistent with existing programs promoted by California Fish and Game, the US Bureau of Land Management and other federal, state and local agencies, will help prevent the introduction and spread of these plants to the San Francisco Delta and other California water bodies.

Significance after Mitigation: Less than significant.

Impact 4.12.6: The construction and operation of the proposed project could adversely affect fisheries and other aquatic biota by degrading the water quality of surface waters within the marinas. (Significant)

Construction activities associated with the proposed project may disturb sediments near a stormwater outfall on the Harris Yacht Club property that has been identified with elevated concentrations of organic and inorganic pollutants originating from onshore sources. Release of these pollutants to the surrounding aquatic environment may adversely affect fisheries and other aquatic biota.

Furthermore, the operation of the improved marina facilities could result in use by more vessels and vessel trips per day, therein resulting in water quality impacts from raw sewage, spilled hydrocarbons (fuels and oils), organic and inorganic contaminants from antifouling paint, and trash from marine vessels. Raw sewage introduced into marine and estuarine waters may adversely impact the aquatic environment by potentially lowering dissolved oxygen concentrations, potentially leading to eutrophication or anoxia. Accidental or deliberate discharge of hydrocarbons and the release of organic and inorganic compounds into marina and delta water and sediments will result in impacts to benthos, plankton, fish and the entire ecosystem.

Furthermore, the proposed project onshore infrastructure development (intensive mixed-use urban development) could result in increased stormwater runoff to sensitive tidal wetlands and result in deterioration of water and sediment quality and impacts to resident biota and the impairment of the ecosystem. Urban development has been found to increase the volume and velocity of stormwater emanating from development sites by conversion of more pervious surfaces and their associated stormwater retention capabilities into impervious surfaces. Additionally, development often increases the load of pollutants of concern associated with activities accompanying the development, such as pesticides associated with home maintenance and lawn care, oil inputs associated with vehicle usage and maintenance, and bacteria associated with municipal sewage and pet waste. Discharge of these pollutants would adversely affect fisheries and other aquatic biota.

> **Mitigation Measure 4.12.6:** Mitigation Measures identified in Sections 4.9, *Hazardous Materials*, and 4.10, *Hydrology*, will be implemented to reduce potential impact to the water quality of the project area and vicinity.

Significance after Mitigation: Less than significant.

Impact 4.12.7: Pile-driving associated with the construction/renovation of marina facilities and structures could result in disturbance to marine mammals, including special status species. (Significant)

The effects of elevated sound pressure levels on marine mammals may include avoidance of an area, tissue rupturing, hearing loss, disruption of echolocation, masking, habitat abandonment, aggression, pup/calf abandonment, annoyance, and helplessness.

It is possible that California sea lions and harbor seals swimming in the vicinity of the project site during pile-driving may be subject to elevated sound pressure levels that could produce a temporary shift in the animals' hearing threshold. Construction and human activity around the site could also potentially result in behavioral changes in nearby pinnipeds (fin-footed mammals). If present, California sea lions and harbor seals may temporarily cease normal activities, such as feeding, or raise their heads up above water in response to the noise. They may also be curious and choose to investigate the project site. However, existing evidence shows that most marine mammals tend to avoid loud noises and will likely move away from the construction site (NMFS, 2003).

Two similarly scaled projects, both with pile-driving components, were determined by the Corps and NMFS to have negligible effects on California sea lions and harbor seals despite their presence in each area (USACE, 2003; NMFS, 2003).

> **Mitigation Measure 4.12.7:** To avoid impacts to marine mammals, contractors shall "dry fire" pile-driving hammers before construction begins.

Based on the assessments provided by the USACE and NMFS on the above projects, only short-term, negligible impacts are anticipated from the proposed project. As a project improvement measure to further reduce impacts to harbor seals and California sea lions, the technique of "dry firing" would be integrated into pile-driving activities, as necessary, at the start of each day if marine mammals are identified within 150 feet of the work area. Site construction workers would perform this dry firing if the workers were to observe marine mammals in or near the marina prior to construction. No agency notification would be necessary.

"Dry firing" has been used to "herd" California sea lions away from work sites during the installation of pilings at the U.S. Coast Guard Pier, Monterey, California (NMFS, 2003). A "dry fire" occurs when the hammer is raised and dropped with no compression of the pistons, which produces approximately 50 percent of the maximum in-air noise level. This technique allows pinnipeds in the area to voluntarily move from the area prior to operating the hammer at full capacity, and should expose fewer animals to loud sounds, both underwater and above water (NMFS, 2003).

Significance after Mitigation: Less than significant.

Impacts on Waters of the U.S. (including Wetlands)

Impact 4.12.8: Construction activities proposed for the project could result in a substantial adverse effect on potentially jurisdictional waters of the U.S. under the jurisdiction of the Corps, waters of the state under the jurisdiction of the Regional Water Quality Control Board (RWQCB), and waters and land under BCDC jurisdiction. (Significant).

As described above, portions of the Plan Area support wetlands and other waters of the U.S. under the regulatory jurisdiction of the Corps, RWQCB, and BCDC. Under all Project alternatives (with the exception of the No Project Alternative), reconfiguration of the harbors would affect both areas classified as wetland and channels and open water areas that are considered "other waters of the U.S." Additional activities that could potentially impact wetlands or other waters that would occur under the proposed project include the construction of recreational trails into the brackish marshes.

Shoreline Work

Under the proposed project activities associated with the reconfiguration of McAvoy Harbor and the former Harris Yacht Harbor, as well as dredging along the channels leading from Suisun Bay to the harbors would have both permanent and temporary impacts on jurisdictional waters. Impacts would include the discharge of fill materials from dredging and riprap installation, removal of existing brackish marsh vegetation and impacts to water quality from sedimentation or other debris during grading and dredging.

Tidal Open Water Areas

Tidal open water areas in and around the project site fall under the jurisdiction of BCDC and under Section 10 of the Rivers and Harbors Act under Corps jurisdiction. Construction activities that occur within the open water areas would result in impacts to water quality from dredging or pile driving activities associated with removal of existing piers and other associated in-water marina structures and installation of new in-water structures. Potential impacts include sedimentation in channels and in the bay adjacent to the construction areas during demolition of existing structures. Potential impacts also include sedimentation resulting from grading and land clearing activities and construction of new structures, roads, and open spaces.

Brackish Marshes

Under the proposed project, construction of recreational trails into the marshlands in the northern portion of the Plan Area would result in temporary and permanent impacts to jurisdictional wetlands. Impacts could include discharge of fill into wetlands as well as potential discharge of toxic materials during construction.

Fill and excavation in areas considered to be jurisdictional waters with protection under the federal and state CWA, under BCDC jurisdiction, or under jurisdiction of California Fish and Game Code 1600-1616 would require permits and agreements from the appropriate regulatory agencies. Failure to proceed without permits or approvals would be in violation of these regulations. A verified wetland delineation would be required prior to the submittal of regulatory permit applications.

Prior to the initiation of construction activities under the Strategic Plan, the project applicant would obtain all required permit approvals from the Corps, the RWQCB, BCDC, and all other agencies with permitting responsibilities for construction activities within jurisdictional waters. Permit approvals and certifications will likely include the following:

Section 404 / Section 10 Permits. Permit approval from the Corps shall be obtained for the placement of dredge or fill material in waters of the U.S., including, for example, the placement of rip-rap along harbor shorelines, pursuant to Section 404 of the federal Clean Water Act. Any construction along the harbor edges below MHW elevation would be considered dredging by the Corps and would require a Section 10 permit. In addition, dredging of the harbors themselves and the channels that lead from Suisun Bay to the harbors would require a Section 10 permit as well. Preparation of the Section 404 / Section 10 permit applications will require a Pre-construction Notification (PCN) and supporting documentation. A PCN outlines project activities, areas of impact, construction techniques, and methods for avoiding and reducing impacts to jurisdictional features.

Section 401 Water Quality Certification. Approval of Water Quality Certification (WQC) and/or Waste Discharge Requirements (WDRs) shall be obtained from the RWQCB for work within jurisdictional waters. Preparation of the Section 401 Water Quality Certification permit applications will require a permit application and supporting materials including construction techniques, areas of impact, and project schedule.

BCDC Permit. Permit approval from BCDC would be required for placing solid material including pilings, boat docks, or other fill and/or dredging or other extraction of material from or into jurisdictional waters and the 100-foot shoreline band inland from the mean high tide line along the length of the project site. BCDC permit conditions typically include requirements to construct, guarantee, and maintain public access to the bay, specified construction methods to assure safety or to protect water quality, and mitigation requirements to offset the adverse environmental impacts of the project:

Adverse impacts on jurisdictional waters resulting from project activities would be considered potentially significant. Mitigation Measures 4.12.8a and b, as well as the measures set forth in Mitigation Measure 4.12.10 regarding worker education and the retention of a biological monitor for the project will serve to reduce potential impacts levels to less than significant. In addition, the project applicant shall implement standard Best Management Practices to maintain water quality and control erosion and sedimentation during construction as required by compliance with the General National Pollution Discharge Elimination System (NPDES) Permit for Construction Activities and as established by Mitigation Measures set forth in Section 4.10, *Hydrology*, to address impacts to water quality.

Mitigation Measure 4.12.8a: Projects implemented as part of the Bay Point Strategic Plan shall avoid or minimize adverse effects on jurisdictional waters to the extent practicable.

To the extent feasible, final project design will avoid and minimize effects to wetlands and other waters. Areas that are avoided will be subject to BMPs, as described in Section 4.10, *Hydrology*. Such measures include the installation of silt fencing, straw wattles or other appropriate erosion and sediment control methods or devices. Equipment used for the removal of debris and removal and installation of concrete rip-rap along the harbor shorelines will be from land using backhoes and cranes. Construction operations within the harbor waters may also be barge-mounted or involve other water-based equipment such as scows, derrick barges and tugs.

Mitigation Measure 4.12.8b: The project applicant shall provide compensation for temporary impacts to, and permanent loss of, waters of the U.S., including wetlands, as required by regulatory permits issued by the Corps, RWQCB, and BCDC. Measures may include, but will not necessarily be limited to the following:

Development of a Wetland Mitigation and Monitoring Program. Prior to the start of construction or in coordination with regulatory permit conditions, the project applicant shall prepare and submit to the regulatory agencies for approval, a mitigation and monitoring plan program that outlines the mitigation obligations for temporary and permanent impacts to waters of the U.S., including wetlands, resulting from implementation of projects under the Strategic Plan. The Plan Program will include baseline information from existing conditions, anticipated habitat to be enhanced, performance and success criteria, monitoring and reporting requirements, and site specific plans to compensate for wetland losses resulting from the project. The Project Wetland Mitigation and Monitoring Plan shall include, but not be limited to, the following:

Provide onsite mitigation through wetland creation or enhancement of jurisdictional features. This could include: restoration of tidal marsh habitat, enhancement of roosting areas for shore birds and water birds, enhancement of habitat diversity. Shoreline

enhancements could include removal of debris, including concrete rip-rap. Wetland enhancement could include the removal of non-native vegetation and re-introduction of native vegetation or the reintroduction of tidal channels in portions of the Plan Area that appear to have been drained in the past.

Additional wetland creation or enhancement or offsite mitigation. If permanent and temporary impacts to jurisdictional waters cannot be compensated for onsite through the restoration of wetland features incorporated within proposed open space areas, the project sponsor shall negotiate additional compensatory mitigation for these losses with the applicable regulatory agencies. Potential options include the creation of additional wetland acreage onsite or the purchase of offsite mitigation.

Significance after Mitigation: Less than significant.

Impacts on Special Status Plants and Wildlife

Impact 4.12.9: Project activities have the potential for direct take of several special status plant species including: Suisun thistle, soft bird's beak, Mason's lilaeopsis, Suisun marsh aster, Delta tule pea, Delta mudwort, and Congdon's tarplant. (Significant)

Seven special status species are either known to occur or have a moderate potential to occur within the Plan Area. Six of these species occur in brackish marsh habitat or along Delta shorelines and may be affected by activities associated with harbor reconfiguration as well as channel dredging under the proposed project. The seventh species may occur in the ruderal and barren areas in the eastern and southern portions of the Plan Area where residential development may be sited under the proposed project. Take of individual special status plants and their habitat is considered a significant impact under CEQA, as well as a violation of the FESA and CESA. As discussed under Impact 4.12.4, a Section 7 consultation will be required for the project and will include consideration of impacts to federal and State listed rare, threatened and endangered plants (see also discussion of incidental take permitting under Impact 4.12.10).

Mitigation Measure 4.12.9: Focused floristic surveys for Suisun thistle, soft bird's beak, Mason's lilaeopsis, Suisun marsh aster, Delta tule pea, Delta mudwort, and Congdon's tarplant shall be conducted by a qualified biologist throughout the Plan Area prior to initiation of Plan element construction.

If no plants are found within expected impact areas then no further mitigation will be required. If plants are found in the construction vicinity that can be avoided during construction then the population(s) shall be protected with construction fencing and worker training on avoidance shall be conducted. If plants are found and cannot be avoided then appropriate mitigation measures shall be developed in consultation with USFWS and CDFG. Specific measures may include, but will not necessarily be limited to:

- Collection of seed from plants that cannot be avoided by the project. The seed could be donated to a seed bank in order to preserve the genetic line represented by the lost plants. The seed could also be propagated and the resulting plants could be used in

local revegetation or mitigation projects. A likely spot for reintroduction would be areas slated for or already undergoing restoration within the EBRPD lands within the Plan Area.

- Salvage and transplantation of plants that would be destroyed by construction or dredging activities. Plants could be transplanted to areas within the Plan Area that will remain undisturbed by any development anticipated under the Strategic Plan.

- Seed collection, plant salvage, and any propagation shall be carried out by a qualified botanist, plant ecologist, or native plant horticulturist.

Significance after Mitigation: Less than significant.

Impact 4.12.10: Project activities could result in substantial adverse impacts to special status wildlife. (Significant)

There are 16 special status wildlife species (fish and plants were previously discussed) with the potential to occur within the Plan Area. Demolition and construction of buildings, reconfiguration of the marina, vegetation clearing, trail installation, and recreational field development associated with the proposed project and its alternatives could result in the direct or indirect mortality of special status wildlife. In addition, noise and increased disturbance levels associated with construction could result in indirect impacts on special status wildlife by, for example, interfering with reproductive success. As noted under Impact 4.12.4 and Impact 4.12.9, the project will require a Section 7 consultation with USFWS, which will consider all federal and State listed rare, threatened, and endangered plant and wildlife species. As noted in the Regulatory Setting, Section 10 of the FESA and/or Section 2081 of the California Fish and Game Code will likely require the issuance of an "incidental take" permit prior to implementation of the Strategic Plan. These permits will require preparation and implementation of a habitat conservation plan that would offset the take of individuals that may occur, incidental to implementation of the project, by providing for the overall preservation of the affected species through specific mitigation measures.

In addition, Mitigation Measure 4.12.10 will be implemented to reduce adverse impacts to less than significant levels for all special status wildlife. California clapper rail, California black rail, salt marsh harvest mouse, burrowing owl, northwestern pond turtle, and special status bats require additional species specific mitigation in combination with these more general mitigation measures. Species specific mitigation is discussed below.

Other special status species potentially occurring on the project site include grassland and marsh nesting species such as northern harrier, short-ear owl, white-tailed kite, tricolored blackbird, Susiun song sparrow, saltmarsh common yellowthroat, and loggerhead shrike. During ESA's reconnaissance survey on August 24, 2005 a loggerhead shrike was observed perching on marina structures and Suisun song sparrows were seen in marsh reeds. Impacts to these species during

project construction include the potential for destruction of individual birds, if present, and the loss of suitable nesting and foraging habitat which would constitute a significant impact.

Mitigation Measure 4.12.10:

- Pre-construction special status species surveys shall be conducted by a qualified biologist to verify presence or absence of species at risk. Species surveys should occur during the portion of the species' life cycle where the species is most likely to be identified within the appropriate habitat. In all cases, avoidance of the special status species during construction is preferred.

- A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regards to sensitive biological resources.

- A biological monitor shall be appointed to serve as a contact for issues that may arise concerning potential impacts on biological resources (including special status species), implementation of mitigation measures, and to document and report on compliance with all mitigation measures designed to protect biological resources. The biological monitor shall be present on-site whenever project activities have the potential to impact special status species or jurisdictional waters and shall have the authority to stop work at any point that special status wildlife or jurisdictional waters are endangered by project activities.

Significance after Mitigation: Mitigation Measure 4.12.10, in combination with species specific mitigation measures (if applicable) discussed below, will reduce project impacts to a Less than Significant level.

Impact 4.12.11: Project activities in marsh habitat and along tidal channels could disturb federal and state endangered clapper rails and state threatened black rails. (Significant)

Mitigation Measure 4.12.11: If construction activities (i.e., ground clearing and grading, including removal of trees or shrubs, and activities producing excessive noise) are scheduled to occur during the breeding season (February 1 through August 31), the following measures are required to avoid potential adverse effects on nesting California clapper rail and California black rail:

- To the extent feasible perform all construction activities between September 1 and January 31 to avoid rail breeding seasons.

- If activities cannot be restricted to the non breeding season protocol level call count surveys will be conducted by a qualified biologist. Rail locations will be determined and rail territories will be avoided, or the marsh will be determined to be unsuitable rail breeding habitat by a qualified biologist familiar with clapper rails and black rails.

- If breeding rails are detected in the marsh, project activities will not be conducted in contiguous marsh areas within 700 feet from an identified rail calling center to avoid

nest destruction, nest abandonment, and harassment of rails. If the intervening distance between the rail calling center and construction areas is across a major slough channel or other substantial physical barrier and is greater than 200 feet, then project activities may proceed within the breeding season.

Significance After Mitigation: Less than significant in combination with Mitigation Measure 4.12.10.

Impact 4.12.12: Project related construction activities could disturb, or cause the direct mortality due to crushing burrows of burrowing owls. (Significant)

The burrowing owl is a California species of special concern. Under the proposed project, residential development and creation of recreational fields in the non-native ruderal and barren within the project area could result in the direct loss of burrowing owls or active nests which are protected by California Fish and Game Code Section 3503.5. Loss of burrowing owl individuals or nests would result in a significant impact to biological resources.

Mitigation Measure 4.12.12a: No more than two weeks before construction a survey for burrows and burrowing owls shall be conducted by a qualified biologist in areas supporting suitable burrowing owl habitat on site as well as within 500 feet of the construction site.

Areas potentially supporting burrowing owl include the livestock grazed ruderal habitat in the southern portion of the site and the ruderal and barren areas near the railroads tracks adjacent to the project site. Surveys will conform to the protocol described by the California Burrowing Owl Consortium (1993), which includes a habitat assessment and up to four surveys on different dates if there are suitable burrows present.

Mitigation Measure 4.12.12b: If occupied owl burrows are found within the survey area, a determination shall be made by a qualified biologist in consultation with CDFG whether or not project work will impact the occupied burrows or disrupt reproductive behavior.

- If it is determined that construction will not impact occupied burrows or disrupt breeding behavior, construction will proceed without any restriction or mitigation measures.

- If it is determined that construction will impact occupied burrows during August through February, the subject owls will be passively relocated from the occupied burrow(s) using one-way doors. There shall be at least two unoccupied burrows suitable for burrowing owls within 300 feet of the occupied burrow before one-way doors are installed. Artificial burrows shall be in place at least one-week before one-way doors are installed on occupied burrows. One-way doors will be in place for a minimum of 48 hours before burrows are excavated.

- If it is determined that construction will physically impact occupied burrows or disrupt reproductive behavior during the nesting season (March through July) then avoidance is the only mitigation available. Construction shall be delayed within 300 feet of occupied burrows until it is determined that the subject owls are not nesting or

until a qualified biologist determines that juvenile owls are self-sufficient or are no longer using the natal burrow as their primary source of shelter.

Significance after Mitigation: Less than significant in combination with Mitigation Measure 4.12.10.

Impact 4.12.13: Marina reconfiguration and dredging activities could impact northwestern pond turtles. (Significant)

Northwestern pond turtles have the potential to occur in the sloughs and open water channels in McAvoy harbor and adjacent to the marina to the west on the on the project site. Direct mortality and other impacts could occur during dredging, excavation, filling, and reconstruction of the marina harbor. Implementation of Mitigation Measure 4.12.13 would reduce potential impacts to a less-than-significant level.

Mitigation Measure 4.12.13: Two weeks prior to the commencement of harbor reconfiguration or drainage-related activities, a qualified biologist who has permits from CDFG to move turtles and their nests shall perform western pond turtle surveys within suitable habitat on the project site.

Surveys shall be conducted for nests as well as individuals. Harbor reconfiguration or drainage-related activities within suitable habitat will not proceed until the work area is determined to be free of turtles or their nests. If pond turtles are identified within work areas, a qualified biologist will be responsible for relocating pond turtles. If a nest is located within a work area, a qualified biologist may move the eggs to a suitable facility for incubation, and release hatchlings into the creek system on site in late fall. A qualified biologist shall be present when project-related activities within or adjacent to suitable aquatic habitat for northwestern pond turtle is occurring and will be responsible for relocating adult turtles that move into work areas.

Significance after Mitigation: Less than significant in combination with Mitigation Measure 4.12.10.

Impact 4.12.14: Project activities, such as the creation of trails through brackish marsh habitat, could result in the incidental death or destruction of habitat of salt marsh harvest mouse. (Significant)

In addition to being listed as State and federally endangered, the salt marsh harvest mouse is a Fish and Game Fully Protected Species and there are no take authorizations for this species; take includes killing, injuring, or capturing individuals. Therefore avoidance of this species and protection of its habitat is the only measure available.

Mitigation Measure 4.12.14:

- When project activities are in or adjacent to suitable habitat vehicles will be confined to existing roads where possible and disturbed areas revegetated with brackish marsh species.

- Crews will use matting, pontoon boards or other comparable methods whenever feasible to minimize impacts to the existing vegetation. The placement of mats will be verified by a qualified biologist before their placement to minimize habitat impacts. Crews will work exclusively from mat boards and boardwalks to minimize trampling of vegetation.

- Silt fencing shall be installed to act as an exclusion fence between work areas and adjacent brackish marsh habitat.

- Prior to the commencement of construction activities, a qualified biologist will flag the location of an exclusion fence in the field. The fence will be located outside of salt marsh habitat and above the high tide line. Fence installation shall be overseen by a qualified biologist and installation should be timed such that no exceptional high tides have occurred in the week prior to installation.

- Standard silt fencing (4 feet in height) should be used and should be seated below grade to the uppermost line printed on the fencing material. The fencing should be oriented such that the stakes are on the outside of the fence (relative to the area of construction) and one to two inches of the fencing material should be laterally flipped inward, or upslope.

- Wooden silt fence stakes should be reinforced with rebar or t-stakes that are at least four feet in length. The metal stakes should be driven to a depth of at least two feet, so they sit deeper than the wooden stakes, and attached to the wooden stakes with baling wire.

- Soil on both sides of the silt fence should be compacted after installation.

- The exclusion fence shall be maintained during the entirety of the construction activities.

- The fencing shall be monitored by a qualified biologist a minimum of once per week to ensure the integrity of the fence.

Significance After Mitigation: Less than significant in combination with Mitigation Measure 4.12.10.

Impact 4.12.15: Destruction of abandoned buildings or removal of eucalyptus trees within the Plan Area could adversely impact special status bat species. (Significant)

Insects associated with brackish marsh on the project site provide a good potential food source for bats. Pacific western big-eared bat, long-eared myotis, fringed myotis, and Yuma myotis utilizing this food source could potentially roost and breed in eucalyptus trees or vacant buildings on the within the Plan Area.

Several special status bats species have the potential to occur on-site and roost in the abandoned building on the currently PG&E owned property. Demolition of this building would be required for the construction of residential units under the proposed project and could result in the direct mortality of special status bats if present. Mitigation Measure 4.12.15 will reduce impacts to special status bats to less than significant levels.

> **Mitigation Measure 4.12.15:** No mitigation is required if construction activities (i.e., ground clearing and grading, demolition to abandoned buildings) are scheduled to occur during the nonbreeding season (September 1 through February 28). If construction activities are scheduled to occur during the breeding season (March l through August 31), the following measures would be implemented to avoid potential adverse effects on breeding special-status bats:
>
> - A qualified bat biologist, acceptable to the CDFG, shall conduct preconstruction surveys of all potential breeding habitat within 500 feet of construction activities in areas with low existing disturbance levels. In areas where sources of existing noise and/or disturbance due to human activity are located within 500 feet of the project footprint, surveys shall take place within a radius equivalent to the distance of that existing noise or disturbance. In late winter or early spring, potentially suitable habitat shall be located visually. Bat emergence counts shall be made at dusk as the bats depart from any suitable habitat. In addition, an acoustic detector shall be used to determine any areas of bat activity. At least four nighttime emergence counts shall be undertaken on nights that are warm enough for bats to be active, as determined by a qualified bat biologist.
>
> - If active roosts are identified during preconstruction surveys, a no-disturbance buffer shall be created, in consultation with CDFG, around active bat roosts during the breeding season. Bat roosts initiated during construction are presumed to be unaffected, and no buffer is necessary.
>
> - If preconstruction surveys indicate that roosts are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Trees and shrubs that have been determined to be unoccupied by special status bats or that are located outside the no-disturbance buffer for active roosts may be removed.

Significance After Mitigation: Less than significant in combination with Mitigation Measure 4.12.10.

Impact 4.12.16: Construction activities could adversely affect non-listed special-status nesting raptors and other nesting birds. (Significant)

Potential nesting habitat for several non-listed special-status raptor species occurs on or near the project site. Nesting habitat for northern harrier occurs in grassland and marsh habitats throughout the site and white-tailed kites could potentially utilize the few large trees on site for nesting. Both species were observed in the project area during the reconnaissance survey in August 2005. Project disturbances from construction activities could cause nest abandonment and death of

young or loss of reproductive potential at active nests located near the project site. Raptors and their nests and eggs are protected under CDFG Code 3503.5. This would be a significant impact.

Other special status bird species potentially breeding on the project site include grassland and marsh nesting species such as California horned lark, Suisun song sparrow, saltmarsh common yellowthroat, and loggerhead shrike. During the reconnaissance survey on August 24, 2005 a loggerhead shrike was observed perching on marina structures and Suisun song sparrows were seen in marsh reeds. Impacts to these species during project construction include the potential for destruction of individual birds, if present, and the loss of suitable nesting and foraging habitat, which would constitute a significant impact.

In addition, CDFG Code 3503 protects the needless destruction of nests or eggs of all bird species. Common birds that could be found nesting on the project site include killdeer, mourning dove, black phoebe, red-winged blackbird, rock dove, and others.

> **Mitigation Measure 4.12.16:** If construction activities occur only during the non-breeding season between August 31 and February 1, no surveys will be required. Otherwise, a qualified biologist will survey the site for nesting raptors and other birds within 14 days prior to any ground-disturbing activity or vegetation removal. Results of the surveys will be forwarded to the USFWS and CDFG (as appropriate) and, on a case-by-case basis, avoidance procedures adopted. These can include construction buffer areas (several hundred feet in the case of raptors) or seasonal avoidance.

Significance after Mitigation: Less than significant in combination with Mitigation Measure 4.12.10.

Impact 4.12.17: The project would result in disturbance to, or direct mortality of, common wildlife species and could present a barrier to wildlife movement from adjacent habitats. (Less than Significant)

Direct impacts to common wildlife species include both mortality of resident species, habitat loss and degradation, and possibly, introduction of barriers to local wildlife movement. Mortality would include road kills and destruction of burrows of such species as ground squirrels and gophers during both construction and, to a lesser degree, during operational phases of the proposed project. Habitat degradation associated with temporary construction-related disturbances may include displacement of animals due to construction noise and decreased water quality from oil and grease constituents. In addition, small-sized common wildlife populations could be eliminated due to habitat modification. The railroad tracks to the south and the Suisun Bay waters to the north limit the amount of terrestrial movement in the area. Additionally, in relation to the surrounding area, the project will impact only a small percent of regional habitat. Due to the availability of adjacent habitat and the pre-existing conditions in the region, project activities will have minimal impacts to common wildlife species.

Mitigation: None required.

Impact 4.12.18: The construction of a residential development adjacent to marsh habitat could result in long-term adverse impacts to California clapper rail, salt marsh harvest mouse, and other species inhabiting the adjacent marsh habitat through the introduction of human noise and activity, lighting, and domestic animals. (Significant)

The marsh habitat throughout the project site supports a variety of special status species. Currently the site receives human related disturbance from marina operations and local fishing access. Under the proposed project the proposed residential development would include from 70 to 450 residential units along the south portion of the project site in what are currently ruderal and barren habitats. Residential development would result in increased human noise and activity in the adjacent marsh, lighting effects, and domestic animal disturbance of wildlife. Studies have shown that free roaming cats often associated with residential units have a significant impact on native wildlife species. For example, a study conducted on East Bay Regional Park lands showed 85 percent of the total number of deer mice and harvest mice trapped were found in an area with no cats as opposed to 15 percent of the total trapped in an area with cats (Hawkins et al., 2004). Potential impacts to nesting California clapper rails, California black rails, and other breeding birds and salt marsh harvest mouse and additional wildlife species inhabiting the marsh habitats include harassment, disturbance during breeding and nesting, and mortality of adults and young.

Mitigation Measure 4.12.18: The project applicant will develop and implement a Marsh Wildlife and Habitat Protection Plan for the project site. Components of the plan will include, but not be limited to, the following:

- To the extent feasible the project development footprint will maintain a set back of at least 100 feet from marsh habitat on the project site.

- To minimize the potentially-adverse effect of night lighting on the adjacent salt marsh habitat the following will be utilized: street lighting only at intersections, low-intensity street lamps and low elevation lighting poles, and internal silvering of the globe or external opaque reflectors to direct light away from marsh habitat. In addition, private sources of illumination around homes shall also be directed and/or shaded to minimize glare into the marsh.

- A pet policy will be developed and residents will be required to adhere to measures of this policy to prevent impacts to wildlife from domestic animals. The pet policy will limit the number of animals per residence and require adult cats, dogs, and rabbits to be spayed or neutered. Cats and dogs should be kept inside the residence and will be allowed outside residences only if on a leash and under the tenant's control and supervision. To provide effective predator control, feral animal trapping may be necessary. The project proponent shall develop a feral cat monitoring program with provisions for the implementation of feral cat trapping should these animals become a problem for marsh wildlife.

- Residents will be prohibited from creating feeding stations outside for feral cats to prevent feral cat colonies from establishing and to prevent the attraction of other predator wildlife such as red fox, raccoon, or opossums.

- An education program for residents will be developed including posted interpretive signs and informational materials regarding the sensitivity of the marsh habitat, the dangers of unleashed domestic animals in this area, and fines for violation of the pet policy.

Significance after Mitigation: Less than significant.

Cumulative Impacts

This section evaluates whether or not implementation of the Bay Point Waterfront Strategic Plan, in combination with other past, present, and reasonably foreseeable projects, would result in significant cumulative impacts on the biological resources examined in this EIR. This analysis includes the impacts of cumulative growth potentially resulting from implementation of the Strategic Plan as well as several other projects currently under consideration in the Bay Point area.

Impact 4.12.19: The proposed Strategic Plan, in conjunction with cumulative development, would affect biological resources in the Bay Point Area. (Less than Significant)

In this EIR the geographic context for analysis of cumulative impacts to biological resources includes the area encompassed by the Bay Point Redevelopment Area to the north of State Route 4. These lands are contiguous and represent a continuum from relatively undisturbed marshlands to grazing lands to industrial and residential urban land uses.

The Standards of Cumulative Significance for biological resources in this EIR are the same as those established for the project-specific analysis set forth earlier in this chapter. Cumulative analysis consists of two steps: 1) determining whether or not the combined effects of the proposed project and other projects considered in the cumulative context are significant and 2) under circumstances where the answer to 1) is affirmative, consideration of whether or not the proposed project's effects are cumulatively considerable.

Projects considered under the Bay Point Waterfront Strategic Plan, as well as other development taking place within the geographic context outlined above, would combine to reduce open space and available habitat for common wildlife and vegetation as well as, potentially, for special status wildlife and plants. However, the majority of lands that would be affected by cumulative development, including the Strategic Plan are either already developed or comprised of highly disturbed non-native grasslands or ruderal vegetation types. Impacts to these vegetation types and the common wildlife species they support would not be considered significant. Several of the projects under consideration in this cumulative impacts analysis, including Strategic Plan implementation, could result in impacts on jurisdictional wetlands and implementation of the

Strategic Plan could result in impacts on small amounts of coastal brackish marsh, a sensitive natural community, as well as impacts on a number of special status species this community supports. These impacts could be considered potentially significant. However, the magnitude of cumulative effects of development on biological resources is in large part determined by the extent to which resources are protected in plans and during specific project implementation. The planning documents that guide development in the Bay Point Redevelopment area contain policies and guidelines for protecting natural resources, including special status species, sensitive natural communities, and jurisdictional waters. All development under the Strategic Plan would also take place in a regulatory context of federal, state, and local laws that combine to avoid and minimize impacts to special status species, sensitive natural communities, jurisdictional waters, and wildlife migratory corridors and nurseries through a variety of tools including the creation of resource-specific management plans and the application of mitigation measures. Mitigation measures and best management practices applied to specific projects would help to ensure that they would not result in substantial adverse impacts to biological resources. Therefore, any cumulative impacts to biological resources resulting from implementation of the *Bay Point Waterfront Strategic Plan* and the other projects considered in this section would be less than significant.

Mitigation: None required.

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4.13 Cultural/Historic Resources

4.13.1 Introduction

This section includes information on the prehistoric and historic development within the project area and identifies existing recorded resources. An analysis was performed to determine whether properties in the project area can be considered historical resources for the purposes of CEQA.[1] National, state, and local historic preservation listings and surveys are summarized in this section.

The assessment of project impacts on historical resources under CEQA (CEQA Guidelines, Section 15064.5) is a two-step process: (1) determine whether the project site contains a historical resource.[2] If the site is found to contain a historical resource, then (2) determine whether the project would cause a substantial adverse change to the resource. The setting discussion describes the existing properties in the vicinity of the Bay Point Waterfront and assesses whether the properties are historical resources for the purposes of CEQA. The impact discussion reviews the criteria for significant impacts on historical resources.

The methodology used in the historical resources analysis included a literature review and field reconnaissance by qualified cultural resource personnel.

4.13.1 Setting

Prehistoric Setting

While the archaeological record for the Bay Area clearly focuses on bayshore sites, the interior valleys and watersheds exhibit a wide range of sites and traditions (Moratto, 1984). In particular, the Stone Valley site, CA-CCo-308, located in the San Ramon Valley, represented five archaeological sites that collectively reflected at least seven components spanning about 4,000 years (Fredrickson, 1993). The types and patterns of artifacts found at CCo-308 indicate relationships with both the early Central Valley ("Windmiller" tradition) and Berkeley Pattern of the Bay Area; mortars and pestles dominate the lower levels of these sites, suggesting that the acorn was of greater significance in the interior valleys and much earlier than it was in the bayshore region.

Although the Great Central Valley may have been inhabited by humans as early as 10,000 years ago, the evidence of early human use is mostly buried by alluvial deposits that have accumulated during the last several thousand years. The greatest exception to this has been the prolific discoveries at Tulare Lake, which has yielded evidence of the earliest occupation of California.[3]

1 See CEQA Guidelines Section 21084.1.

2 "Historical resources" includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California (CEQA Guidelines 15064.5). For the purposes of this section, the term "historical resources" is synonymous with "cultural resources."

3 An example of the pluvial lakes and marshes (now dry) that covered much of the California interior during the late-Pleistocene and early Holocene (or between about 1 million and 10,000 years ago)

Nonetheless, later periods are better understood because there is more representation in the archaeological record. Over the course of 30-years, a three-part cultural chronological sequence, the Central California Taxonomic System (CCTS) was developed by archaeologists (particularly David Fredrickson and James Bennyhoff) to explain local and regional cultural change in prehistoric central California from about 4,500 years ago to the time of European contact. Fredrickson (1993) defines pattern as an essentially non-temporal, integrative cultural unit - the general life way shared by people within a given geographic region. Three such patterns which overlap somewhat in adjoining areas are recognized for central California: the Windmiller, Berkeley, and Augustine Patterns.

The Windmiller Pattern, which may represent the advent of early Penutian speaking populations, extends from approximately 4,500 to 3,000 B.P. (or Before Present). This pattern was focused primarily on the lower Central Valley and Delta regions, and reflects the influence of a lacustrine or marsh adaption. This economic stance may have preadapted them for the environment of the lower Sacramento-San Joaquin Valley and Delta; that is, this prehistoric population may have entered the region with this adaptation more or less fully developed.

The Berkeley Pattern extends roughly from 3,000 to 1,500 B.P. and became more widespread, or at least more archaeologically visible, than the previous complex. The Berkeley Pattern has a greater emphasis on the exploitation of the acorn as a staple. The Berkeley Pattern initially may represent the spread of proto-Miwok and Costanoans, collectively known as Utians, from their hypothesized lower Sacramento Valley/Delta homeland.

The last complex in this sequence is the Augustine Pattern which extended temporally from circa 1,500 B.P. to European contact. Augustine initially appears to be largely an outgrowth of the Berkeley Pattern but may have become a blend of Berkeley traits with those carried into the state by the migration of Wintuan populations from the north (Moratto, 1984).

Ethnographic Setting

Prior to Euro-American contact, this area of present-day Contra Costa County was occupied by the Ohlone (also known by their linguistic group, Costanoan[4]). Politically, the Costanoan were organized into groups called tribelets. A tribelet constituted a sovereign entity that held a defined territory and exercised control over its resources. It was also a unit of linguistic and ethnic differentiation.

The Ohlone economy was based on fishing, gathering, and hunting, with the land and waters providing a diversity of resources, including acorns, various seeds, salmon, deer, rabbits, insects, and quail. The acorn was the most important dietary staple of the Costanoan, and the acorns were ground to produce a meal that was leached to remove the bitter tannin. The Costanoan crafted tule balsa, basketry, lithics (stone tools) such as mortars and metates (a mortar-like flat bowl used for

[4] "Costanoan" is derived from the Spanish word Costaños meaning "coast people." No native name of the Costanoan people as a whole existed in prehistoric times, as the Costanoan were neither a single ethnic group nor a political entity.

grinding grain), and household utensils. The Costanoan, like many other Native American groups in the Bay Area, likely lived in conical tule thatch houses.

In 1770, the Costanoan-speaking people lived in approximately 50 separate and politically autonomous nations or tribelets. During the Mission Period (1770–1835), native populations, especially along the California coast, where brought—usually by force—to the missions by Spanish missionaries to provide labor. The missionization caused the Costanoan people to experience cataclysmic changes in almost all areas of their life, including a massive decline in population due to introduced diseases and declining birth rate. Following the secularization of the missions by the Mexican government in the 1830s, most Native Americans gradually left the missions to work as manual laborers on the ranchos that were established in the surrounding areas.

Native American archaeological sites that could shed light on the Costanoan ways of life in the pre-mission era tend to be situated near the historic extent of the Bay tidal marshland.

Historic Setting

The historic period in Contra Costa County begins with the expedition of Pedro Fages to the Mount Diablo area in 1771, and with the Juan Bautista de Anza expedition across Contra Costa County to the confluence of the Sacramento and San Joaquin Rivers in 1776. During this period of Mexican rule, the project area was all wetlands, and was outside of any land grants. The western boundary of the 8,859-acre Rancho Los Medanos land grant was about 1.5 miles from the eastern boundary of the project area. The Los Medanos Rancho was conveyed to Jose Antonio Mesa from the Mexican government in 1839. In 1849-50, the rancho was conveyed to Jonathan Stevenson who laid out a new city; 'New York of the Pacific,' which eventually became the City of Pittsburgh. The city began to grow in 1858 when a railroad was built to the town to deliver coal from the nearby Black Diamond Mines on the slopes of Mt. Diablo.

By the 1870s, several coal steamers per day would dock at Pittsburgh Landing to receive the coal brought to it from the Black Diamond Mines. A Government Land Office (GLO) plat maps of 1870 shows no development in the project area; only low lying marshes adjacent to Suisun Bay, with some pasture land for cattle grazing. Willow Pass Road and adjacent telegraph line running to the south of the project site are visible on the 1870 map. By 1878, however, the Central Pacific Railroad had been constructed immediately to the south of the project site, with other smaller gauge railroads operating in the vicinity, including the Pittsburgh Coal Railroad, the Overland Railroad, and the Black Diamond Railroad. New York of the Pacific was a busy port, shipping coal until the 1880s. A small steel industry was begun after 1900, and the town's name was changed to Pittsburgh by 1911 (Baker, 1990).

The name McAvoy was likely a stop on the Southern Pacific Railroad line (formerly the Central Pacific Railroad), as evidenced by a 1918 USGS Honker Bay topographic map, which shows the McAvoy stop on the south side of the tracks about 200 meters west of the north-south branch of the Port Chicago Road. The 1918 map shows that a north-south channel had been cut through the

marshlands by this time in the approximate center of the project site, between the current McAvoy Harbor on the west, and the former Harris Yacht Harbor (now PG&E property) on the east. No other harbor development is evident there or in the immediate area at this time.

A 1938 map of Contra Costa County identifies early ownership of the land on the project site, and prior to when most of the physical modifications to the land were made. The project area is indicated as 'McAvoy' on the map, a portion of which was under the ownership of the Bay Shore Land Co. (178 Acres) to the west of the north-south channel (then called the 'Tidewater Canal'). The land further to the west was under the ownership of the Tormey family (134 acres). Land to the east side of the Tidewater Canal was owned by the Burkhardt Investment Co. (161 acres), and land further to the east was owned by Shell Chemical Company[5] (282 acres) (Contra Costa County, 1938). The land immediately around the former Harris Yacht Harbor basin and areas south of the railroad tracks was owned by Hattie Chapman and William Vlach (88 acres). With the exception of the north-south canals, project site was still primarily wetlands and cattle grazing land at this time. Three parallel railroad lines are also apparent on the 1938 map, located immediately south of the project site; the Atchison Topeka & Santa Fe, Southern Pacific, and Sacramento Northern railroads.

The project area took its current form generally between 1953 and 1980, as evidenced by Honker Bay USGS maps from this time period. A discussion below provides brief histories of the development of McAvoy Harbor property as well as the Harris Yacht Harbor/PG&E property, both of which constitute the project site.

Brief History of McAvoy Harbor

The present McAvoy Harbor on the western side of the project area was constructed within the last 50 years, with changes to both the buildings and the harbor configuration occurring until the early 1990s. The small southern basin of McAvoy Harbor is shown in the 1953 and 1980 USGS Honker Bay maps, but the present configuration of the area is very different than that shown on the 1980 map. In 1981, and other north-south channel, called the 'mitigation slough,' was constructed by the State Lands Commission, and in the same year, a large basin was dug to the north of the older (southern) basin (Baker, 1990). Most of the covered berths associated with McAvoy Harbor are currently in this basin. Since this portion of the project area is slightly higher than adjoining marshes, it is probable that some fill from the dredging of the channel and basin was placed on the project area (Baker, 1990).

McAvoy Harbor was operated as a public marina with a small bait shop beginning in at least 1953, as evidenced by the southern basin and small building on the USGS Honker Bay topographic map of that same year. The small building is in the general location of where Tima's Café is currently located, and may be the same building. Previous owner Clyde Mingear sold to the marina to Ronald and Joyce Trost in 1985. Joyce Trost is the current owner of the property. A

[5] Shell Chemical Company operated the first commercial ammonia plant in the United States in the project vicinity, south of the railroad tracks at Willow Pass and Bailey Roads, from 1930 to 1967. Shell constructed the 72-acre pond just west of the project site to receive and treat wastewater and stormwater from the plant before it entered the Bay. PG&E purchased the property from Shell in October, 1973 (BCDC, 1989).

number of the buildings on the site already existed at the time the property was purchased in 1985, while others were moved there by barge and placed on the site more recently. According to harbormaster Cheri Chavez and her mother and owner of the marina, Joyce Trost, buildings or structures that existed at the marina prior to 1985 were the small harbor office building (moved to this location in the early 1960's), the bait shop and restroom building (which appears to be a modified steel barge or other type of marine vessel), and Tima's Café (which was substantially remodeled by the current owners) (Trost, 2005). The two-story McAvoy Yacht Club building was originally a law office moved to the site in late 1980s from Walnut Creek, and the ground floor was reconstructed at that time. The covered boat sheds were built in 1986, and a 1970s-era former Carlos Murphy's restaurant was moved to the site via barge in the early 1990s (Trost, 2005).

Brief History of Harris Yacht Harbor and PG&E Property

The present Harris Yacht Club and Harbor, currently PG&E Property on the eastern side of the project area, was constructed within the last 55 years, with changes to the buildings and the harbor configuration occurring through the 1970s. The 1953 USGS Honker Bay topographic map identifies the harbor generally in its current configuration, as well as the large Harris Yacht Club boathouse, which had been constructed here by that time. It is likely that the Harris Yacht Harbor was originally called the McAvoy Boat Harbor, since it is identified as such on the 1953 USGS map.

Historical research undertaken for this area indicates that two parcels on the Harris Yacht Harbor property (now PG&E) were deeded from the Erkenbrecher family to brothers Marshall and Russell Harris in January 1947, with one parcel deeded to the Harris brothers from Shell Chemical Company on the same date (Contra Costa County Title Company, 1947). Marshall C. Harris, for whom the Harris Yacht Harbor was named, was president of two firms engaged in contract harbor and land dredging in Central California; the Golden Gate Dredging and Reclamation Company (formed 1895) and its successor, the American Dredging Company (formed in 1925) (Thompson and Dutra, no date). Harris was also senior director of the Harbor Tug and Barge Company, president of Western States Life Insurance Company, president of the American Farms Association and president of the Harris Electric Company of San Francisco (San Francisco Chronicle 1925). According to a more recent newspaper article, "The [Harris] family, which ran a dredging business, had sold an island off Oakland to the Coast Guard[6] and in 14 days, cut a new harbor here for its dredging vessels (Contra Costa Times, 2001). It is presumably Harris who constructed Harris Yacht Harbor including the entrance channel using his own dredging equipment sometime after his purchase of the property in 1947. The property was operated as a public marina for over 50 years, from about 1949 to 2001. The first mention of Harris Yacht Harbor appears in the Pittsburg and Antioch City Directory of 1949-50, located at McAvoy, 817 Port Chicago Highway (Polk, 1950).

It is also around this time (circa 1950) that large corrugated steel boat house was constructed on the property. In the mid-1950s, the boat house was used to build and repair high-speed racing boats for Henry J. Kaiser (Contra Costa Times, 2001). Henry J. Kaiser (1882 - 1967) was a

6 Presumably referring to Coast Guard Island, adjacent to Alameda Island in the Oakland Estuary.

prominent American industrialist known as the father of modern shipbuilding. During World War II, Kaiser's yards constructed more than 1,500 cargo ships and made significant contributions to the automobile industry with Kaiser-Frazer Corporation cars. As an industrialist, Kaiser was the founder of the affiliated Kaiser Companies. As a builder, he constructed roads, dams, tunnels, ships and a dozen industries in a half century. As the founder of a medical care program (Kaiser Permanente), he worked with partnerships of physicians, built hospitals and clinics, established a nursing school and contributed to medical education. (website, 2006)

Kaiser and his son Edgar became avid fans of hydroplane racing in the mid-1950s (Heiner, no date). Kaiser's boat the *Scooter Too* could reach speeds of 180 miles per hour.[7] Designed by Bart Carter in 1955 and driven by Jack Regas, the *Scooter Too* won the Gold Cup Class speed record at Lake Tahoe in 1956 (San Francisco Examiner, 1956). Kaiser's interest in hydroplane racing waned in the late 1950s after seeing a racer nearly die in a boat wreck. After Kaiser's brief use of the building in the mid-1950s for his hydroplane hobby, the boat house was leased to Cord Electric Motor Co., which rewound and repaired electrical motors in the building from about 1969 – 1994, according to local telephone directories from this period (Polk's, various dates).

The marina was owned by the Harris's from 1947 until 1974 when 255 acres were purchased by PG&E. The marina was to serve as a waterfront buffer area between its Pittsburg power plant which it owned at the time and was located further to the east, and a proposed gasified coal generation plant, which PG&E never built (Contra Costa Times, 2001). In about 1975 PG&E leased the property to marina operator Bob Herrenkohl who ran Harris Yacht Harbor for the next 26 years. Due to siltation in the harbor's entrance channel, the Army Corp of Engineers permitted Dutra Dredging Company to dredge approximately 3,000 cubic yards of bottom material from the channel entrance in 1976 (ACOE, 1976). The dredge spoils were deposited along the eastern bank of the channel on PG&E property (PG&E, 1976).

Mr. Herrenkohl operated Harris Yacht Harbor as a public marina from 1975 until 2001 when his lease with PG&E ended in anticipation of the sale of the property. During Herrenkohl's tenancy, the marina was described as having a 2-lane concrete boat ramp, fuel, open and covered berths, guest dock, marine ways and hardware, restaurant, snack bar, showers and a picnic area (Sea Boating Almanac, 1976). After 1994, boat repairs and service were also made at Harris Yacht Harbor in the boathouse building (former Cord Electrical Motor Co.). Many of the smaller buildings shown on earlier maps of the harbor are no longer extant, including two office structures (one adjacent to the boathouse and one for the harbor further to the east), the snack bar, restrooms, or fuel dock. However, the concrete boat ramp is still evident to the east of the boat house. The property is currently vacant.

[7] The *Scooter Too* had a 24-cylinder Allison aircraft engine which was originally designed to power the Lockheed P-38 Lightening during World War II.

Methods

The effort to identify historical resources in the project area included a record search and review of existing documents and reference materials, contacts with Native Americans, and a field survey.

A historical resources records search of pertinent survey and site data was conducted at the Northwest Information Center on August 4, 2005 (File No. 05-128). The records were accessed by viewing the Honker Bay U.S. Geological Survey 7.5-minute quadrangle, which included the proposed project site along with a quarter-mile radius around the project site. In addition to Northwest Information Center maps and site record forms, other sources that were reviewed included the Directory of Properties in the Historic Property Data File for Contra Costa County, the National Register of Historic Places, the California Register of Historical Resources, the California Inventory of Historic Resources, the California Historical Landmarks, and the California Points of Historical Interest.

The Native American Heritage Commission (NAHC) was contacted by an ESA registered professional archaeologist on March 7, 2006 to request information on locations of importance to Native Americans and a list of Native Americans that should be contacted. The NAHC provided a list of Native American organizations that should be contacted concerning locations of importance in the project area. On April 27, 2006, ESA sent a letter to each organization on the NAHC list, providing information about the proposed project and requesting information on locations of importance to Native Americans. No responses have been received to date.

Methods for the historical assessment include a field visit by ESA cultural resources staff in August, 2005, including a reconnaissance-level survey and photography of all buildings and structures on the project site, 2) archival research at Northwest Information Center, 3) oral interviews with property owners, and 4) review of historical information provided by PG&E for the Harris Boat Yard portion of the project site (Jayo, 2005).

Results

A field reconnaissance of the project area was conducted on August 24, 2005 by an ESA Registered Professional Archaeologist and an ESA Architectural Historian. The majority of the project area is characterized by tidal flats and marshland vegetation; as a result, traditional pedestrian survey techniques are constrained due to the lack of visible surface. The eastern parcel of the project area was walked in broad transects (40-meters); areas along the margins of the slough intersecting the marshland was inspected for archaeological deposits, such as dark midden soils, lenses of shell, and layers of botanical remains. The remaining segments of the project area are either paved or have been subject to ranching, which effectively reduced the ability to observe archaeological phenomena. No archaeological deposits were identified during the field reconnaissance.

Estuarine environments—in this case along the margins of the Carquinez Strait—are often subject to both tidal and sea level fluctuations, which tend to deeply obscure or destroy any intact

archaeological deposits through sedimentation and inundation. By and large, areas above flood zones with good soil drainage were more likely occupied by prehistoric inhabitants of the region. However, the easy access to the shoreline would have been attractive for resource procurement and temporary camp sites.

No buildings or structures on the project site are listed as federal, state, or local historical resources. Given their recent dates of construction of the buildings at McAvoy Harbor, modifications to these structures, and relocation from elsewhere in some cases, it is unlikely that any of these buildings would be eligible for listing as historic resources, even upon further research. Similarly, given their relatively recent dates of construction of the buildings and structures at the Harris Yacht Harbor and PG&E property, it is unlikely that the boat house, boat ramp, or the covered boat berths would be eligible for listing as a historic resource, even upon further research. Although at least 50 years old as of 2006, and briefly associated with industrialist Henry J. Kaiser in the mid-1950s, the boat house would not likely be individually eligible as a historic resource for this association with an important individual, as it played a relatively minor role in the life of Henry J. Kaiser. Although relatively large in scale, the industrial-style building would not be considered to have high architectural values, and research did not reveal any associations with master architects. Therefore, none of the buildings on the project site appear to be historic resources for purposes of CEQA (see definition below).

4.13.3 Regulatory Setting

Federal

Numerous federal laws and regulations have been developed to protect cultural resources. The most important is the National Historic Preservation Act of 1966 (as amended). The Act established the Advisory Council on Historic Preservation and the National Register of Historic Places (NRHP). Section 106 of the Act requires that any undertaking located on federal land, or that involves federal funds, or that requires federal permits, take into account the effect of the undertaking on all potential historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment with regard to the undertaking. An inventory must be performed of all potential historic properties within the undertaking's Area of Potential Effects. Properties judged significant in the context of criteria in the NRHP must be avoided or subject to programs that mitigate adverse effects. The Federal Lead Agency would initiate consultation with the State Historic Preservation Officer (SHPO) if the undertaking impacts a historic property.

State

California Environmental Quality Act

CEQA requires that public or private projects financed or approved by public agencies must assess the effects of the project on historical resources. CEQA also applies to effects on archaeological sites, which may be included among "historical resources" as defined by Guidelines Section 15064.5, subdivision (a), or may be subject to the provisions of Public

Resources Code Section 21083.2, which governs review of "unique archaeological resources." Historical resources may generally include buildings, sites, structures, objects, or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance.

Under CEQA, "historical resources" include the following:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Public Resources Code, Section 5024.1).

- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources (Public Resources Code, Section 5024.1), including the following:

  – Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

  – Is associated with the lives of persons important in our past;

  – Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

  – Has yielded, or may be likely to yield, information important in prehistory or history.

- The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Section 5020.1(j) or 5024.1.

Archaeological resources that are not "historical resources" according to the above definitions may be "unique archaeological resources" as defined in Public Resources Code Section 21083.2, which also generally provides that "non-unique archaeological resources" do not receive any protection under CEQA. If an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources will not be considered a significant effect on the environment. It is sufficient that the resource and the effects on it be noted in the EIR, but the resource need not be considered further in the CEQA process.

CEQA requires that if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, or would cause significant effects on a unique archaeological resource, then alternative plans or mitigation measures must be considered. Therefore, prior to assessing effects or developing mitigation measures, the significance of historical resources must first be determined. The steps that are normally taken in a historical resources investigation for CEQA compliance are as follows:

- Identify potential historical resources
- Evaluate the eligibility of historical resources
- Evaluate the effects of the project on eligible historical resources

Local

Contra Costa County General Plan

Historic and Cultural Resource Goals

Policy 9-31: To identify and preserve important archaeological and historic resources within the County.

Historic and Cultural Resource Policies

Policy 9-32: Areas which have identifiable and important archaeological or historic significance shall be preserved for such uses, preferably in public ownership.

Policy 9-33: Buildings or structures that have visual merit and historic value shall be protected.

4.13.4 Impacts and Mitigation Measures

Standards of Significance

In accordance with Appendix G of the CEQA Guidelines, the project would be considered to have a significant impact on cultural resources if it would result in any of the following:

- A substantial adverse change in the significance of a historical resource that is either listed or eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, or a local register of historical resources;
- A substantial adverse change in the significance of a unique archaeological resource;
- Disturbance or destruction of a unique paleontological resource or site or a unique geologic feature; or
- Disturbance of any human remains, including those interred outside or formal cemeteries.

CEQA provides that a project may cause a significant environmental effect where the project could result in a substantial adverse change in the significance of a historical resource (Public Resources Code, Section 21084.1). CEQA Guidelines Section 15064.5 defines a "substantial adverse change" in the significance of a historical resource to mean physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the

significance of a historical resource would be "materially impaired" (CEQA Guidelines, Section 15064.5(b)(1).

CEQA Guidelines Section 15064.5(b)(2) defines "materially impaired" for purposes of the definition of "substantial adverse change" as follows:

> The significance of a historical resource is materially impaired when a project:
>
> (A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
>
> (B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
>
> (C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

In accordance with CEQA Guidelines Section 15064.5(b)(3), a project that follows the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* or *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* is considered to have mitigated impacts to historical resources to a less-than-significant level.

Historical resources are usually 50 years old or older and must meet one or more of the criteria for listing in the California Register, in addition to maintaining a sufficient level of physical integrity (CEQA Guidelines Section 15064.5[a][3]).

Impacts

Impact 4.13.1: Potential adverse effects to unknown historical resources, including unique archaeological resources. (Significant)

While the surveys conducted did not yield surface evidence of prehistoric or historic period use, subsurface historical resources may exist within the project area. The margins of the Carquinez Strait were likely a source of subsistence for both prehistoric and historic settlers; however, given the dynamic landscape, significant artifactual or depositional evidence of past use would tend to be overwhelmed by the rise and fall of the watertable. The following mitigation measure is provided for the unanticipated discovery of historical resources during project excavation.

Mitigation Measure 4.13.1: In the event of a discovery of cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, etc.), work will be suspended and Contra Costa County staff will be contacted. A qualified cultural resource specialist will be retained and will perform any necessary investigations to determine the significance of the find. Contra Costa County will then implement any mitigation deemed necessary for the recordation and/or protection of the cultural resources. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the project proponent will determine whether avoidance is feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is carried out.

In addition, pursuant to Sections 5097.97 and 5097.98 of the California Public Resources Code and Section 7050.5 of the California Health and Safety Code, in the event of the discovery of human remains, all work will be halted and the County Coroner will be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission will be adhered to in the treatment and disposition of the remains.

Significance after Mitigation: Less than significant

Impact 4.13.2: Potential adverse effects on paleontological resources. (Significant)

Paleontologic resources are fossilized evidence of past life found in the geologic record. Despite the prodigious volume of sedimentary rock deposits preserved worldwide and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils (particularly vertebrate fossils) are considered to be nonrenewable resources. Because of their rarity and the scientific information they can provide, fossils are highly significant records of ancient life. Paleontologic resource localities are sites where the fossilized remains of extinct animals and/or plants have been preserved.

The project site contains mostly artificial fill and bay mud deposits that would not likely yield significant paleontologic remains.

Nevertheless, significant fossil discoveries can be made even in areas designated as having a low potential for such resources and could result from excavation activities related to the proposed project. Excavation activities can have a deleterious effect on such resources. This impact would be reduced to a less-than-significant level with the incorporation of the following mitigation measure.

Mitigation Measure 4.13.2: An appointed representative of Contra Costa County staff will notify a qualified paleontologist of unanticipated discoveries, document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in Section 15064.5 of the CEQA Guidelines. In the event a fossil is discovered during construction, excavations within 50 feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards (SVP, 1995). The paleontologist will notify Contra Costa County staff to determine procedures to be followed before construction is allowed to resume at the location of the find. If Contra Costa County staff determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and the plan will be implemented. The plan will be submitted to Contra Costa County staff for review and approval.

Significance after Mitigation: Less than significant.

Impact 4.13.3: The proposed project would demolish existing buildings that are not considered historic architectural resources under CEQA. (No Impact)

The proposed project would demolish all buildings and structures on the project site to accommodate the proposed development identified in the Strategic Plan. The Plan would also modify some of the existing landforms to accomplish the proposed level of development. Given the relatively recent dates of construction of the buildings at McAvoy Harbor, modifications to these structures, and relocation from elsewhere in many cases, it is unlikely that any of these buildings would be eligible for listing as a historic resource (i.e. would meet any of the criteria under CEQA Section 15064.5), even upon further research. Similarly, given their relatively recent dates of construction of the buildings and structures at the Harris Yacht Harbor/PG&E property, it is unlikely that the boat house, boat ramp, or the covered boat berths would be eligible for listing as historic resources, even upon further research. Although at least 50 years old as of 2006, and briefly associated with industrialist Henry J. Kaiser in the mid-1950s, the boat house would not likely be individually eligible as a historic resource for an association with an important individual, as the building played a relatively minor role in the life of Henry J. Kaiser. Although relatively large in scale, the industrial-style building would not be considered to have high architectural values, and research did not reveal any associations with master builders or architects. Demolition of structures that are not listed or eligible for listing under federal, state or local criteria would not be considered a significant impact on the environment under CEQA. No mitigation measures required.

Mitigation: None required.

Cumulative Impacts

Impact 4.13.4: The proposed Strategic Plan, in conjunction with cumulative development, would alter the visual character in the project vicinity. (Less than Significant)

Future development within the project vicinity is guided by the County's General Plan and associated documents. Planned or approved, but not yet constructed, projects within the vicinity of the proposed Strategic Plan are located south of the project site, as the areas to the east and west are outside of the urban limit line and future development within these areas would not be expected. The area immediately south of the project site is also generally built out pursuant to the General Plan with a mix of residential, industrial and commercial land uses.

The proposed project would have no known cumulative effects on cultural resources. All recorded sites in the vicinity of the project site would be avoided, and mitigation measures provided above, would reduce the potential for significant effects on paleontological, archaeological, or architectural resources.

Mitigation: None required.

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CHAPTER 5
Alternatives

5.1 Criteria for Selecting Alternatives

The California Environmental Quality Act (CEQA) requires that the EIR compare the effects of a "reasonable range of alternatives" to the effects of the project. The alternatives selected for comparison would attain most of the basic objectives of the project and avoid or substantially lessen one or more significant effects of the project (CEQA Guidelines Section 15126.6). The "range of alternatives" is governed by the "rule of reason" which requires the EIR to set forth only those alternatives necessary to permit an informed and reasoned choice by the decision-making body and informed public participation (CEQA Guidelines Section 15126.6[f]). CEQA generally defines "feasible" to mean an alternative that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors.

The alternatives addressed in this EIR were selected based on the following factors:

1. The extent to which the alternative would accomplish most of the basic objectives of the project, as identified in Section 3.1 of Chapter 3

2. The extent to which the alternative would avoid or lessen any of the identified significant environmental effects of the project, as discussed throughout Chapter 4

3. The feasibility of the alternative, taking into account site suitability, availability of infrastructure, property control (ownership), and consistency with applicable plans and regulatory limitations

4. The extent to which an alternative was compatible with the BCDC Bay Plan;

5. The extent to which an alternative contributes to a "reasonable range" of alternatives necessary to permit a reasoned choice

6. The requirement of the CEQA Guidelines to consider a no project alternative and to identify an environmentally superior alternative in addition to the no-project alternative (CEQA Guidelines, Section 15126.6[e]).

5.2 Significant Project Impacts

To determine alternatives that would avoid or lessen any of the identified significant environmental effects of the project (no. 2 above), the significant impact of the project must be considered and are listed below. Impacts that are not mitigated to less-than-significant levels are considered "significant and unavoidable" and are indicated in parentheses and by "SU". This list is intended to provide context for the extent to which an alternative would avoid or lessen any of the identified significant environmental effects of the project.

4.1 Land Use and Planning
4.2 Aesthetics
4.3 Public Services and Recreation
4.4 Utilities
4.5 Population and Housing
4.6 Transportation
4.7 Air Quality
4.8 Noise
4.9 Hazards and Hazardous Materials
4.10 Hydrology and Water Quality
4.11 Geology, Soils and Seismicity
4.12 Biological and Marine Resources
4.13 Cultural/Historic Resources

The significant environmental effects of the project and each alternative are summarized in **Table 5-2** at the end of this chapter.

5.3 Alternatives Selected for Consideration

With consideration given to the selection criteria identified in Section 5.1, the following reasonable project alternatives are addressed in this EIR

Alternative 1: No Project Alternative

Alternative 2: Marina Only Alternative (568 berths)

Alternative 3: Marina (568 berths)/Reduced Residential (70 units) Alternative

5.4 Description and Analysis of Alternatives

Throughout this section, a description of each alternative is followed by a discussion of impacts and how those impacts differ from those of the project. As permitted by CEQA, the significant effects of the alternatives are discussed in less detail than are the effects of the project (CEQA Guidelines Section 15126.6[d]). However, the analysis is conducted at a sufficient level of detail to provide County decision-makers adequate information to fully evaluate the alternatives and to approve any of the alternatives without further environmental review. In the future, there will be further County review of site specific plans for the area once development applications are submitted.

Unless indicated, the impacts associated with the project and each alternative are for buildout conditions, approximately year 2020 and are stated as levels of significance *after* implementation of mitigation measures identified in Chapter 4. Cumulative impacts for year 2025 are also identified.

5.4.1 Alternative 1: No Project

Description

In this scenario, the existing site conditions would remain essentially as discussed in the setting sections of Chapter 3. Land uses would remain the same in terms of existing Zoning and General Plan Land Use designations.

Under the No Project Alternative, the Bay Point Waterfront will continue to be owned by four parties with no clear uniform vision for the area. State Lands Commission property (88 acres) and EBRPD property (52 acres) would continue to be used as open space and marshlands respectively. The Bay Point Regional Shoreline Land Use Plan, adopted in 2001 has set an overall goal of resource management for the Bay Point area, including wetland restoration, public recreation and shoreline access. Much of the State Lands Commission property is marshland and designated as Open Space.

PG&E owns three properties north and east of the McAvoy Harbor, totaling 126 acres. Two of the properties are marshlands and the other is buildings no longer in use (Harris Yacht Club building, former restaurant building).

The McAvoy Harbor (25 acres), although old and in need of repair is currently operating about 300 boat slips. Presumably the harbor would continue its operations, with possible repairs and upgrades as allowed under current zoning.

Impacts

As compared with the proposed project, this alternative would not create many of the impacts described in Chapter 4 of this EIR. Impacts under the No Project Alternative would be as described in the setting sections of the impact analysis. In particular, the No Project Alternative would avoid the significant transportation impacts associated with the project, because it would not increase traffic in the plan area. Both the PG&E property and the McAvoy Harbor property could be sold and redeveloped in the future under the No Project Alternative. This alternative does not meet the *Bay Point Waterfront Strategic Plan* goals and objectives, including eliminating piecemeal development and developing underutilized property.

5.4.2 Alternative 2: Marina Only Alternative

Description

In this scenario, only the marina component of the proposed Strategic Plan would be implemented, including the reconfiguration and expansion of the existing marina from 300 berths to 568 berths. In addition, five buildings would be constructed to support the expanded marina development. The new buildings would provide space for restroom and laundry facilities, bait and tackle, administrative offices, café-snack bar, yacht club, harbor masters office, a restaurant, and an environmental education center. The residential uses would not be included in the alternative. The Marina Only Alternative would retain the existing and proposed recreational trail access in and near the project site; however, the proposed baseball and soccer fields would be eliminated as part of the recreational improvements.

This alternative would greatly reduce the significant impact to transportation that would be created by the proposed project, but would not achieve most of the Strategic Plan goals for the site. Apart from the other disadvantages of the Marina Only Alternative, the facility would still require substantial financial investment for redevelopment, without ensure the financial viability of the project. The alternative would reduce transportation impacts, but would continue to have biological, hydrological, and geological impacts.

Impacts

Land Use, Plans and Policies

Existing buildings and land uses are assumed to remain under the Marina Only Alternative. The existing use of the site as a harbor with associated accessory buildings is permitted under the current General Plan and Zoning land use designations (Commercial Recreation and Open Space). This alternative would not require a General Plan amendment or Rezoning. No significant impacts would occur relative to land use compatibility or the applicable Zoning Regulations and General Plan policies. However, like the proposed project, the Marina Only Alternative would need to conform to mitigation measures to reduce impact from the marina development (including adhering to BCDC policies) to a less-than-significant level.

Aesthetics

The Marina Only Alternative would expand the existing marina from 300 berths to 568 berths and would include five buildings to accommodate marina related businesses, similar to the proposed project. This alternative would limit visual impacts to the marina area, as the residential development and the playfields would not be developed and no change to the visual conditions of this area would occur. Similar to the proposed project, the waterfront aesthetics would be improved by upgrading the marina facilities and establishing a more vibrant waterfront area. Potential light and glare generated by the residential development and playfields as well as alterations to the visual environment attributed to new structures would be eliminated under this alterative. The Marina Only Alternative would reduce the project's less than significant impacts to aesthetics by reducing new development on the site and maintaining improvements to the

visual conditions of the marina area as discussed in this EIR. The Marina Only Alternative would have no significant impacts to aesthetics.

Public Services and Recreation

No significantly different land uses would occur under Marina Only Alternative. The addition of a net 268 berths would increase population in the area. However, under this alternative, the residential portion of the project would be completely eliminated (employees, visitors) resulting from the replacement uses would likely be less than with the project, but would result in the same less-than-significant increased demand for police, fire, schools, parks, and libraries. Therefore, the proposed Marina Only Alternative would have no significant unavoidable impacts to public services and recreation.

Utilities

With the Marina Only Alternative, as with the proposed project, there would be an increased demand for water, wastewater, and storm drain service and facilities, solid waste, and gas and electricity services. However, since the alternative would only be adding 268 berths to the marina and only 55 would be live aboard berths, the demand for utilities and services would remain at a less than significant level. Further, this alternative would eliminate 450 residential units from the original project, thereby further reducing the need for utility services. Therefore, the proposed Marina Only Alternative would have no significant unavoidable impacts to utilities.

Population and Housing

Similar to the proposed project, the Marina Only Alternative would create 268 net new berths (which could house up to 55 live aboard boats) and provide employment opportunities for about 10 persons (potential restaurant employees). No new residential or playfield development would occur. As discussed further in this EIR, the employment generated by the proposed project would result from redevelopment of the marina, and therefore, and the effects to population and housing with respect to the marina would be the same under this alternative. The Marina Only Alternative would not result in substantial employment growth that has not been planned for, or that could not be accommodated. Compared to the proposed project, the Marina Only Alternative would reduce the project's less than significant impact to population and housing as the project would not increase the site's resident population. Therefore, this alternative would have no significant impacts from to population and housing.

Transportation

Anticipated changes to the project site under the Marina Only Alternative would be to improve and expand the existing marina. An additional 268 berths would be added to the existing 300 berths on site, for a total of 568 berths. This development would generate about 1,188 net new weekday daily trips, reducing the net new peak-hour trips by more than 80 percent, and impacts would be similarly less than with the proposed project. The project's less-than-significant traffic impacts (compared to existing conditions) would also be less than significant with this alternative. The project's significant cumulative impact at the Bailey Road / SR 4 Eastbound Ramps / BART

intersection would not occur under this alternative (i.e., the V/C ratio would not increase by 0.01 or more). Similarly, the project's significant cumulative impact on the segment of eastbound SR 4 from Bailey Road to Railroad Avenue would not occur under this alternative (i.e., the addition of project traffic would not increase the Delay Index by 0.1 or more. Therefore the Marina Only Alternative would have no significant unavoidable impacts to transportation.

Air Quality

Air Quality impacts associated with the Marina Only Alternative would be less than that for the proposed project because it would eliminate both the residential component of the proposed project and the recreation component. The net increase of 268 berths would not have a significant impact on air quality on the project site because it would not produce a doubling in traffic volume. Air quality conditions under the Marina Only Alternative would be comparable to what exists today and would therefore this alternative would have no significant unavoidable impacts to air quality.

Noise

Noise impacts associated with the Marina Only Alternative would be less than that for the proposed project because it would eliminate both the residential component of the proposed project and the recreation component. The expansion of the Marina to 568 berths under this alternative would not result in any long-term increases in noise levels in the project area. The construction of the additional berths (net increase of 268 berths) project site would occur create temporary noise impacts, which would be less than significant. The existing noise levels at the project site are less than significant, and the Marina Only Alternative would produce no significant unavoidable impacts to noise.

Hazards and Hazardous Materials

Hazards identified in Chapter 4 of this report have mitigation measures identified to reduce impacts to a less than significant level. The Marina Only Alternative would expand the existing marina from 300 berths to 568, but would not create any additional hazards than those already present and discussed as part of the proposed project.

Hydrology and Water Quality

The Marina Only Alternative would expand the marina from 300 berths to 568 berths and five buildings to accommodate marina related businesses. No new residential units will be constructed. This alternative would not produce any new impacts that were not already identified as part of the same marina expansion for the proposed project, and no significant impacts after mitigation were identified as part of the proposed project. Further, the Marina Only Alternative would avoid any hydrology and water quality impacts identified as part of the residential portion of the proposed project.

Geology, Soils, and Seismicity

A total of five buildings are proposed as part of the Marina Only Alternative to provide room for restrooms and laundry facilities, bait and tackle, administrative offices, café-snack bar, yacht club, harbor masters office, a restaurant and an environmental education center. Therefore, this alternative would have less of an impact related to geology, soils, and seismic hazards then that would occur with the project would occur with the proposed project.

Biological and Marine Resources

The Marina Only Alternative would not produce any new impacts that were not already identified for the marina expansion portion of the proposed project, which had no significant impacts after mitigation. Further, by reducing development to only recreational uses, this alternative would also reduce potential impacts to biological resources. Construction activities would occur with the implementation of the Marina Only Alternative, including the same shoreline improvements as proposed for the project. Therefore, the same potentially significant impacts to potential jurisdictional wetlands, fisheries, and nesting/breeding habitats and specific status species that would occur with the project (and be reduced to less than significant, after mitigation) would occur with this alternative.

Cultural/Historic Resources

No archaeological or paleontological resources were found to exist on the project site. The Marina Only Alternative would decrease the potential area of disturbance and would have no significant and unavoidable impacts to cultural and historical resources on the project site.

5.4.3 Alternative 3: Marina and Reduced Residential Development

Description

Under the Reduced Residential Alternative, project activities would remain the same with the exception of residential density. The number of residential units would be reduced to 70 units from 450 units. This alternative would retain the existing and proposed recreational trail access in and near the project site; however, the proposed baseball and soccer fields would be eliminated as part of the recreational improvements. The project site would be developed with the same number of marina berths (568) as the project. A total of five buildings would support the expanded marina development. The new buildings would provide space for restroom and laundry facilities, bait and tackle, administrative offices, café-snack bar, yacht club, harbor masters office, a restaurant and an environmental education center.

This alternative would share most of the advantages and disadvantages of the proposed project, although impacts would vary in some respects (e.g., this alternative would generate fewer vehicle trips). However, developing the site with fewer residential units would not make the Plan Area as economically viable when compared to the Project.

Impacts

Land Use, Plans and Policies

The existing use of the site as a harbor with associated accessory buildings is permitted under the current General Plan and Zoning land use designations (Commercial Recreation and Open Space). The Reduced Residential Alternative would still require a General Plan Amendment and Rezoning for the proposed 70 residential units. No significant impacts would occur relative to land use compatibility or the applicable Zoning Regulations and General Plan policies. However, like the proposed project, the Reduced Residential Alternative would need to conform to mitigation measures to reduce impact from the marina development (including adhering to BCDC policies) to a less-than-significant level.

Aesthetics

The Reduced Residential Alternative would redevelop the marina as evaluated in this EIR, but would reduce the proposed residential development from 450 units to 70 units. No playfields would be constructed. Changes to the visual environment as well as potential increases in light and glare attributed to new residential and playfield development as a result of the project would be less than those discussed in this EIR. Similar to the proposed project, the waterfront aesthetics would be improved by upgrading the marina facilities and establishing a more vibrant waterfront area. Compared to the proposed project, the Reduced Residential Alternative would reduce the project's less than significant impact to aesthetics by reducing new development on the site and maintaining improvements to the visual conditions of the marina area. Therefore, the Reduced Residential Alternative would have no significant aesthetic impacts.

Public Services and Recreation

Under the Reduced Residential Alternative, proposed land uses would remain the same, except this alternative would build 70 units instead of 450 units. In addition, a net 268 berths would include berths for 55 on live aboard boats. However, population on the site (employees, visitors) resulting from the replacement uses would be less than with the project, but would increase the demand for police and fire services, but would have a less-than-significant increased demand for schools, parks, and libraries. Therefore, the Reduced Residential Alternative would have no significant public service and recreation impacts.

Utilities

With the Reduced Residential Alternative, as with the proposed project, there would be an increased demand for water, wastewater, and storm drain service and facilities, solid waste, and gas and electricity services. However, since this alternative would add only 70 residential units, and 268 berths to the marina (55 live aboard berths), the demand for utilities and services would remain at a less than significant level, less than the proposed project. This alternative would not be expected to exceed existing utility capacities in the area and therefore would not exceed existing nor future capacity of the utility systems. The Reduced Residential Alternative would have no significant utility impacts.

Population and Housing

Similar to the proposed project, the Reduced Residential Alternative would create 268 net new berths (which could house up to 55 live aboard boats) and provide employment opportunities for about 10 persons (potential restaurant employees). New playfields would not be constructed and new residential development would be less than that proposed under the project, with 70 units developed rather than 450. This alternative would increase the on-site resident population by roughly 400. New employment opportunities generated by the proposed project would result from redevelopment of the marina, and therefore, and the effects of this alternative to population and housing with respect to the marina would be the same as discussed in this EIR. Residential development would be lower than that evaluated in this EIR. The Reduced Residential Alternative would not result in substantial employment or resident growth that has not been planned for, or that could not be accommodated. Compared to the proposed project, the Reduced Residential Alternative would reduce the project's less than significant impact to population and housing, and this alternative would have no significant impacts to population and housing.

Transportation

Anticipated changes to the project site under the Reduced Residential Alternative would be to develop and expand the existing marina to a total of 568 berths and add 70 residential units to the project site. This development would generate about 1,548 net new weekday daily trips, reducing the net new peak-hour trips by more than 75 percent, and impacts would be similarly less than with the proposed project. The project's less-than-significant traffic impacts (compared to existing conditions) would also be less than significant with this alternative. The project's significant cumulative impact at the Bailey Road / SR 4 Eastbound Ramps / BART intersection would not occur under this alternative (i.e., the V/C ratio would not increase by 0.01 or more). Similarly, the project's significant cumulative impact on the segment of eastbound SR 4 from Bailey Road to Railroad Avenue would not occur under this alternative (i.e., the addition of project traffic would not increase the Delay Index by 0.1 or more). Therefore, the Reduced Residential Alternative would have no significant transportation impacts.

Air Quality

Air Quality impacts associated with the Reduced Residential Alternative would be less than that for the proposed project because this alternative would build only 70 units and the baseball and soccer fields would be eliminated. Thus, the Reduced Residential Alternative would have less of an impact to air quality due to vehicle emissions then the proposed project. The net increase of 268 berths (from 300 berths to 568 berths) would have the same impact on air quality as the proposed project. Air quality conditions under this alternative would be comparable to what exists today and there would be no significant air quality impacts.

Noise

Noise impacts associated with the Reduced Residential Alternative would be less than that for the proposed project because this alternative would reduce residential component of the proposed project to 70 units and eliminate the recreation component. The expansion of the marina to 568

berths under this alternative would not result in any long-term increases in noise levels in the project area. The construction of the additional berths (net increase of 268 berths) project site would create temporary noise impacts, which would be less than significant. The existing noise levels at the project site are produced by train traffic. The impact from this noise would be reduced by this alternative because the number of residential units would be substantially reduced, allowing more flexibility in site design to build the housing a greater distance from the train tracks. Therefore, the Reduced Residential Alternative would not produce significant noise impacts.

Hazards and Hazardous Materials

The Reduced Residential Alternative would expand the existing marina from 300 berths to 568 berths, but would reduce the proposed number of residential units to 70 units from 450. This alternative would be affected by the same hazards identified for the proposed project; however the amount of exposure would be considerably reduced due to the reduced scale of the residential component of this alternative. The Reduced Residential Alternative would not create any additional hazards than those already present and discussed as part of the proposed project.

Hydrology and Water Quality

The Reduced Residential Alternative would expand the marina from 300 berths to 568 berths and five buildings to accommodate marina related businesses. This alternative would also construct 70 of the planned 450 residential units. This alternative would not produce any new impacts that were not already identified for the marina expansion portion of the proposed project, which had no significant impacts after mitigation. Further, by reducing the number of residential units by 380 units, this alternative would also reduce potential impacts identified as part of the residential portion of the proposed project. No significant impacts after mitigation were identified in the Hydrology section related to the construction of 450 housing units on the project site.

Geology, Soils, and Seismicity

Building development would occur with the Reduced Residential Alternative. Therefore, consistent with the determinations with project, the same potentially significant (reduced to less than significant after mitigation related to geology, soils, and seismic hazards that would occur with the project would occur with this alternative.

Biological and Marine Resources

The Reduced Residential Alternative would not produce any new impacts that were not already identified for the proposed project, which had no significant impacts after mitigation. Further, by reducing the number of residential units by 380 units, this alternative would also reduce potential impacts to biological resources. Construction activities would occur under this alternative, including the same shoreline improvements as proposed for the project. Therefore, the same potentially significant impacts to potential jurisdictional wetlands, fisheries, and nesting/breeding

habitats and specific status species that would occur with the project (and be reduced to less than significant, after mitigation) would occur with this alternative.

Cultural/Historic Resources

Building development would occur with the Reduced Residential Alternative, therefore the same potentially significant impacts (reduced to less than significant, after mitigation) related to archaeological and paleontological resources that would occur with the project would occur with this alternative. Therefore, cultural and historic impacts (project and cumulative) that would occur with the project, and that were identified for the project would also occur with this alternative.

TABLE 5-1
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

	Proposed Bay Point Strategic Plan	Alternative 1 No Project	Alternative 2 Marina Only	Alternative 3 Marina – Reduced Residential
Land Use and Planning				
4.1.1: Adoption of the Strategic Plan or implementation of the Strategic Plan projects would not disrupt or divide an established community. Construction generated by infrastructure and roadway improvements and the eventual construction of a full-scale marina and approximately 450 residential units could result in temporary disruptions to adjacent land uses.	No Impact	No Impact	No Impact	No Impact
4.1.2: Implementation of the Strategic Plan, including the proposed amendments to the General Plan and P-1 Zoning District, and construction and operation of the new marina, marina support uses, and the approximately 450 residential units would result in changes in land uses within the Bay Point Waterfront Area and could conflict with adopted applicable land use plans and policies.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.1.3: Adoption and implementation of the Strategic Plan, including the proposed amendments to the General Plan and P-1 Zoning District, and construction and operation of the new marina, marina support uses, and the approximately 450 residential units together with other cumulative development in the Bay Point Area would result in land use changes.	No Impact	No Impact	No Impact	No Impact
Aesthetics				
4.2.1: Development proposed as part of the Strategic Plan would not result in a substantial adverse effect on a scenic resource, or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	No Impact	No Impact	No Impact	No Impact
4.2.2: Development as part of the proposed Strategic Plan would not substantially degrade the existing visual character or quality of the site and its surroundings.	No Impact	No Impact	No Impact	No Impact
4.2.3: The proposed Strategic Plan would result in an increase in development that would generate light and glare at the project site.	No Impact	No Impact	No Impact	No Impact
4.2.4: The proposed Strategic Plan, in conjunction with cumulative development, would alter the visual character in the project vicinity.	No Impact	No Impact	No Impact	No Impact
Public Services and Recreation				
4.3.1: The increased population and density resulting from the implementation of the Strategic Plan would not involve or require new or physically altered governmental facilities in order to maintain acceptable service ratios, response time, or other performance objectives for fire protection and emergency medical services and facilities.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project

TABLE 5-1 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

	Proposed Bay Point Strategic Plan	Alternative 1 No Project	Alternative 2 Marina Only	Alternative 3 Marina – Reduced Residential
4.3.2: The increased population and density resulting from the implementation of the Strategic Plan may require new or physically altered governmental facilities in order to maintain acceptable service ratios, response time, or other performance objectives for police protection services.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.3.3: The students generated by the project would not require new or physically altered school facilities in order to maintain acceptable service ratios or other performance objectives at local public schools.	Less than Significant w/Mitigation	No Impact	No Impact	Less than the project
4.3.4: The additional residential units generated by the proposed Strategic Plan could potentially increase the demand for parks and other recreational facilities.	No Impact	No Impact	No Impact	No Impact
4.3.5: The additional residential units generated by the proposed project may affect existing park resources.		No Impact	No Impact	No Impact
4.3.6: Development of the project, when combined with other foreseeable development in the vicinity, could result in cumulative impacts to the provision of public services.	No Impact	No Impact	No Impact	No Impact
Utilities				
4.4.1: The Strategic Plan would result in additional demand for domestic water service from Golden State Water Company (GSWC) and additional water supply from Contra Costa Water District (CCWD).	Less than Significant w/Mitigation	No Impact	No Impact	Less than the project
4.4.2: Implementation of the Bay Point Strategic Plan would increase sewage generation to Delta Diablo Sanitation District's wastewater treatment plant and could require construction of onsite wastewater collection lines, the construction of which could result in adverse environmental effects.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.4.3: The implementation of the proposed Strategic Plan would result in generation of solid waste.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.4.4: The implementation of the proposed Strategic Plan could result in an increase in inefficient energy use.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.4.5: Development of the project, when combined with other foreseeable development in the vicinity, could result in cumulative impacts to the provision of utilities services.	No Impact	No Impact	No Impact	No Impact
Population and Housing				
4.5.1: Development proposed as part of the Strategic Plan would result in an increase in the residential population within Bay Point.	No Impact	No Impact	No Impact	No Impact
4.5.2: Development proposed as part of the Strategic Plan could result in an increase in employment within Bay Point.	No Impact	No Impact	No Impact	No Impact
4.5.3: Development as part of the proposed Strategic Plan would not result in the displacement of existing housing or the displacement of substantial numbers of people.	No Impact	No Impact	No Impact	No Impact

TABLE 5-1 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

	Proposed Bay Point Strategic Plan	Alternative 1 No Project	Alternative 2 Marina Only	Alternative 3 Marina – Reduced Residential
4.5.4: The proposed Strategic Plan would increase the on-site population, but would not result in a cumulatively considerable contribution to population growth in Bay Point or the vicinity.	No Impact	No Impact	No Impact	No Impact
Transportation				
4.6.1: The project would increase traffic volumes at the study intersections.	No Impact	No Impact	No Impact	No Impact
4.6.2: The project would increase the demand for parking in the project area.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.6.3: The project would increase ridership on public transit serving the project area.	No Impact	No Impact	Less than the project	Less than the project
4.6.4: The project would increase the potential for pedestrian and bicycle safety conflicts.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.6.5: The project would increase vehicular traffic, including potential emergency services traffic, from the project site.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.6.6: The project would increase on-site vehicle traffic.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.6.7: Traffic generated by the project would contribute to cumulatively significant impacts at local intersections in the project vicinity in 2025.	Significant and Unavoidable	No Impact	Less than the Project	Less than the Project
4.6.8: Traffic generated by the project would contribute to cumulatively significant impacts on Routes of Regional Significance in the project vicinity in 2025.	Significant and Unavoidable	No Impact	Less than the Project	Less than the Project
4.6.9: Project construction would result in temporary increases in truck traffic and construction worker traffic.	Less than Significant w/Mitigation	No Impact	Less than the Project	Less than the Project
4.6.10: Proposed Project-generated increases in heavy truck traffic on area roadways could result in substantial damage or wear of public roadways.	Less than Significant w/Mitigation	No Impact	Less than the Project	Less than the Project
Air Quality				
4.7.1: Activities associated with site preparation and construction would generate short-term emissions of criteria pollutants, including particulate matter and equipment exhaust emissions.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.7.2: Operational activities associated with the project would result in regional air pollutant emissions.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.7.3: Project operations would result in emissions of carbon monoxide that could result in localized “hot spots” of CO concentrations in excess of state standards.	No Impact	No Impact	Less than the project	Less than the project
4.7.4: The proposed residential development could expose sensitive receptors to objectionable odors.	No Impact	No Impact	No Impact	Less than the project

TABLE 5-1 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

	Proposed Bay Point Strategic Plan	Alternative 1 No Project	Alternative 2 Marina Only	Alternative 3 Marina – Reduced Residential
4.7.5: The proposed Strategic Plan would not conflict with or obstruct implementation of the Bay Area 2005 Ozone Strategy and would not result in an adverse impact to air quality.	No Impact	No Impact	Less than the project	Less than the project
4.7.6: The proposed Strategic Plan would result in a significant cumulative impact to air quality as a result of emissions of ROG from the built-out development.	Significant and Unavoidable	No Impact	Less than the project	Less than the project
Noise				
4.8.1: Construction activities associated with the project could generate intermittent and temporary elevated noise levels in the project vicinity.	No Impact	No Impact	No Impact	No Impact
4.8.2: Future traffic noise associated with the proposed project would increase the ambient noise levels in the project vicinity.	No Impact	No Impact	No Impact	No Impact
4.8.3: Future residents of the project could be exposed to elevated noise levels as a result of train traffic.	Less than Significant w/Mitigation	No Impact	No Impact	Less than the project
4.8.4: Future residents of the project could be exposed to ground-borne vibration as a result of train traffic.	Less than Significant w/Mitigation	No Impact	No Impact	Less than the project
Hazards and Hazardous Materials				
4.9.1: Disturbance and release of contaminated soil, groundwater, or building materials during demolition and construction phases of the project could expose construction workers, the public, or the environment to adverse conditions related to hazardous substance handling.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.9.2: Hazardous materials used on-site during construction activities (i.e., solvents) could be released to the environment through improper handling or storage.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.9.3: Project operations would include use and transport of hazardous materials as well as generate general commercial, household, and maintenance hazardous waste.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.9.4: The proposed Strategic Plan, in conjunction with cumulative development, would result in an increased exposure to hazards and hazardous materials.	No Impact	No Impact	No Impact	No Impact
Hydrology and Water Quality				
4.10.1: Project construction would involve activities (excavation, soil stockpiling, boring and pile driving, grading, and dredging, etc.) that would generate loose, erodable soils that, if not properly managed, could affect stormwater runoff and violate any applicable water quality standards or waste discharge requirements; or otherwise substantially degrade water quality.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project

TABLE 5-1 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

	Proposed Bay Point Strategic Plan	Alternative 1 No Project	Alternative 2 Marina Only	Alternative 3 Marina – Reduced Residential
4.10.2: Project construction activities would include dredging and excavation of shoreline deposits and fills, which could involve disturbance of contaminated sediment that may result in adverse impacts to water quality.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.10.3: Development of the project would result in a substantial increase in impervious area which could potentially increase nonpoint source pollutants in stormwater runoff.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.10.4: Project operation would involve increased use of the marinas at the project site. As required by the RWQCB, the project design would incorporate post construction BMPs to treat stormwater and control discharge of wastes from the vessels used at the marinas. Therefore, the project would not violate water quality standards or waste discharge requirements.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.10-5: Site development under the project would involve new landscaping and open recreational fields. If not properly handled, chemicals used to establish and maintain landscaping and open lawn areas, such as pesticides and fertilizers, could flow into the waterways and result in water quality impacts to Suisun Bay.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.10.6: The increased construction activity and new development resulting from the project, in conjunction with population and density of other foreseeable development in the County, would not result in cumulative impacts with respect to hydrology and water quality.	No Impact	No Impact	No Impact	No Impact
Geology, Soils, and Seismicity				
4.11.1: In the event of a major earthquake in the region, seismic ground shaking could potentially injure people and cause collapse or structural damage to proposed structures.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.11.2: In the event of a major earthquake in the region, seismic ground shaking could potentially expose people and property to liquefaction and earthquake-induced settlement.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.11.3: Development at the project site could be subjected to settlement.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.11.4: Construction activities at the project area could loosen and expose surface soils. Exposed soils could erode by wind or rain causing potential loss of topsoil and shoreline areas exposed to wave action could be subject to erosion and loss of topsoil leading to reduction in structural integrity of building foundations and other improvements.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.11.5: The project could potentially expose people or structures to substantial risk or hazards as a result of expansive soils.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project

TABLE 5-1 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

	Proposed Bay Point Strategic Plan	Alternative 1 No Project	Alternative 2 Marina Only	Alternative 3 Marina – Reduced Residential
4.11.6: The development proposed as part of the project would not result in significant cumulative impacts with respect to geology, soils or seismicity.	No Impact	No Impact	No Impact	No Impact
Biological and Marine Resources				
4.12.1: The construction of residential buildings and recreational fields would result in the loss of upland ruderal and barren habitat.	No Impact	No Impact	No Impact	No Impact
4.12.2: Construction of proposed trails, the education center, and reconfiguration of the marina could result in temporary and permanent loss of sensitive brackish marsh habitat.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.12.3: The project would result in the loss of raptor foraging habitat.	No Impact	No Impact	No Impact	No Impact
4.12.4: Dredging, pile driving, removal of existing pilings and moorings, and other "in-water" construction activities will result in temporary disturbances to aquatic biological resources and Essential Fish Habitat (EFH).	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.12.5: The construction and operation of the proposed marina facilities may increase the likelihood of introduction or transport of exotic species that are known to disrupt natural communities.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.12.6: The construction and operation of the proposed project could adversely affect fisheries and other aquatic biota by degrading the water quality of surface waters within the marinas.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.12.7: Pile-driving associated with the construction/renovation of marina facilities and structures could result in disturbance to marine mammals, including special status species.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.12.8: Construction activities proposed for the project could result in a substantial adverse effect on potentially jurisdictional waters of the U.S. under the jurisdiction of the Corps, waters of the state under the jurisdiction of the Regional Water Quality Control Board (RWQCB), and waters and land under BCDC jurisdiction.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.12.9: Project activities have the potential for direct take of several special status plant species including: Suisun thistle, soft bird's beak, Mason's lilaeopsis, Suisun marsh aster, Delta tule pea, Delta mudwort, and Congdon's tarplant.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.12.10: Project activities could result in substantial adverse impacts to special status wildlife.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.12.11: Project activities in marsh habitat and along tidal channels could disturb federal and state endangered clapper rails and state threatened black rails.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project

TABLE 5-1 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

	Proposed Bay Point Strategic Plan	Alternative 1 No Project	Alternative 2 Marina Only	Alternative 3 Marina – Reduced Residential
4.12.12: Project related construction activities could disturb, or cause the direct mortality due to crushing burrows of burrowing owls.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.12.13: Marina reconfiguration and dredging activities could impact northwestern pond turtles.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.12.14: Project activities, such as the creation of trails through brackish marsh habitat, could result in the incidental death or destruction of habitat of salt marsh harvest mouse.	Less than Significant w/Mitigation	No Impact	Same as the project	Same as the project
4.12.15: Destruction of abandoned buildings or removal of eucalyptus trees within the Plan Area could adversely impact special status bat species.	Less than Significant w/Mitigation	No Impact	Less than the project	Same as the project
4.12.16: Construction activities could adversely affect non-listed special-status nesting raptors and other nesting birds.	Less than Significant w/Mitigation	No Impact	Less than the project	Less than the project
4.12.17: The project would result in disturbance to, or direct mortality of, common wildlife species and could present a barrier to wildlife movement from adjacent habitats.	No Impact	No Impact	No Impact	No Impact
4.12.18: The construction of a residential development adjacent to marsh habitat could result in long-term adverse impacts to California clapper rail, salt marsh harvest mouse, and other species inhabiting the adjacent marsh habitat through the introduction of human noise and activity, lighting, and domestic animals.	Less than Significant w/Mitigation	No Impact	No Impact	Less than the project
4.12.19: The proposed Strategic Plan, in conjunction with cumulative development, would affect biological resources in the Bay Point Area.	No Impact	No Impact	No Impact	No Impact
Cultural/Historic Resources				
4.13.1: Potential adverse effects to unknown historical resources, including unique archaeological resources.	Less than Significant w/Mitigation	No Impact	Same	Same
4.13.2: Potential adverse effects on paleontological resources.	Less than Significant w/Mitigation	No Impact	Same	Same
4.13.3: The proposed project would demolish existing buildings that are not considered historic architectural resources under CEQA	No Impact	No Impact	No Impact	No Impact
4.13.4: The proposed Strategic Plan, in conjunction with cumulative development, would alter the visual character in the project vicinity.	No Impact	No Impact	No Impact	No Impact

CHAPTER 6
Other Statutory Sections

6.1 Significant Unavoidable Environmental Impacts

Significant unavoidable environmental effects could occur in two basic forms: impacts that could be attributable to the proposed Strategic Plan itself, and cumulative impacts to which the Strategic Plan would contribute. Environmental effects of the Strategic Plan have been projected with a certainty that reflects the information comprising the environmental setting and the propose Strategic Plan development assumptions. By definition, the possible cumulative effects are less certain because their analysis and evaluation are dependent on a prediction of future events and environmental changes. However, significant unavoidable effects that have been identified in this analysis include:

- Traffic generated by the project would contribute to cumulatively significant impacts at the Bailey Road / SR 4 Eastbound Ramps / BART intersection during the p.m. peak hour local intersections in the project vicinity in 2025 (Impact 4.6.7).

- Traffic generated by the project would contribute to cumulatively significant impacts on eastbound SR 4 from Bailey Road to Railroad Avenue, a Route of Regional Significance in 2025 (Impact 4.6.8).

- The project would result in a significant cumulative impact to air quality as a result of emissions of ROG from the built-out development. (Impact 4.7.6)

6.2 Growth Inducement

The Strategic Plan would add up to 450 multi-family residential units and up to 55 berths that would be available for live-aboard boats units to the Bay Point community. The Strategic Plan would also result in the replacement of the existing marina with a new marina and associated facilities, and the construction of new recreation facilities (i.e. public trails, soccer and baseball fields). The new marina would be entirely reconfigured and would include an additional 268 berths. The marina would also include support buildings that would be up to a maximum of 28,000 square feet. New employment opportunities would be minimal given that there is an operating marina on-site. Additionally, most of the proposed uses would be passive (i.e. boat storage, trails, etc.) and would therefore not require a substantial number of employees to manage such uses. Employment opportunities would likely include service jobs associated with management and support of the marina facilities and other recreation facilities.

Adoption of the Strategic Plan is intended to increase the size of the Marina, provide added supporting commercial development, add housing and improve recreational opportunities on-site. Thus, the Strategic Plan also will encourage or accelerate future urban development in and near the Strategic Plan area. However, although the project would include infrastructure improvements, given the characteristics of the bordering properties, either open space or developed areas, the project would not be anticipated to indirectly induce substantial population growth by the provision of public services and infrastructure all in accordance with the *Contra Costa County General Plan* and the *Bay Point Redevelopment Plan.*

6.3 Cumulative Analysis

The California Environmental Quality Act (CEQA) defines cumulative impacts as two or more individual impacts which, when considered together, are substantial or which compound or increase other environmental impacts. The cumulative analysis is intended to describe the "incremental impact of the project when added to other, closely related past, present, or reasonably foreseeable future projects" that can result from "individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines Section 15355). The analysis of cumulative impacts is a two-phase process that first involves the determination of whether the project, together with reasonably foreseeable projects, would result in a significant impact. If there would be a significant cumulative impact of all such projects, the EIR must determine whether the project's incremental effect is cumulatively considerable, in which case, the project itself is deemed to have a significant cumulative effect. (CEQA Guidelines Section 15130).

The cumulative effects of the Strategic Plan are described in individual sections of this environmental document. Projects identified in the *General Plan* and reasonably foreseeable projects were considered in the cumulative analysis. Reasonably foreseeable projects are identified in Table 4.6-5 and illustrated in Figure 4.6-4 of *Section 4.6, Transportation*, are reproduced as Table 6-1 in this section. Cumulative development was incorporated into the year 2025 CCTA Decennial Model to assess traffic impacts of the Strategic Plan, as well as air quality and noise. Cumulative analysis for population, employment, housing, water demand, wastewater generation, and solid waste generation were based on the identified foreseeable projects, the Contra Costa General Plan Update Report, and master plans prepared by service providers.

Cumulative traffic and air quality impacts were identified for the year 2025. These cumulative impacts assumed certain transportation system improvements, identified in the *Pittsburg General Plan*, as well as planned regional improvements were implemented; however, impacts are not mitigable. No other cumulative impacts were determined to be significant.

TABLE 6-1
APPROVED PROJECTS TRIP GENERATION

No.	Name	Land Use	Size		Total Trips			
					Weekday			Sat. Peak
					Daily	AM	PM	
1	Bay Harbor Commerce Center[a]	Industrial Park	39.9	acres	*2,516*	*405*	*418*	*188*
2	Bay Point/Pittsburg BART Station Area Specific Plan[b]	Multi Family	350	m.f.	2,051	154	182	165
		Office	40	ksf	440	62	60	17
				Total	*2,491*	*216*	*242*	*182*
3	North Broadway Neighborhood[b]	Single Family	69	s.f.	660	52	70	65
		Multi Family	52	m.f.	305	23	27	24
		Commercial	3	ksf	129	3	11	15
				Total	*1,094*	*78*	*108*	*104*
4	Bailey Estates[a]	Single Family	249	s.f.	*2,383*	*187*	*251*	*234*
5	Empire Business Park[a]	Warehouse/Manuf.	104	ksf	506	51	17	12
		Warehouse	326	ksf	1,617	193	165	39
				Total	*2,123*	*244*	*182*	*51*
6	Harbor Lights[b]	Single Family	253	s.f.	*2,421*	*190*	*256*	*238*
7	Heritage Point[a]	Single Family	125	s.f.	*1,268*	*101*	*134*	*118*
8	Lawlor Estates[a]	Single Family	50	s.f.	*479*	*38*	*51*	*48*
9	Oak Hills Crest[b]	Single Family	29	s.f.	*278*	*22*	*29*	*27*
10	San Marco[b]	Single Family	166	s.f.	1,589	125	168	156
		Multi Family	1,526	m.f.	8,942	671	794	718
				Total	*10,531*	*796*	*962*	*874*
11	Vista Del Mar[a]	Single Family	540	s.f.	5,168	405	545	507
		Multi Family	617	m.f.	3,616	271	321	290
				Transit Reduction (6%)	-527	-41	-52	-48
				Sub Total	8,257	635	814	749
		Retail	51.5	ksf	2,211	53	193	256
		Office	206	ksf	2,268	319	307	84
				Internalization (20%)	-884	-20	-78	-104
				Sub Total	3,595	352	422	236
		School	800	stu.	1,355	407	0	0
				Total	*13,207*	*1,394*	*1,236*	*985*
12	Willow Brook[a]	Single Family	60	s.f.	*574*	*45*	*61*	*57*
13	Willow Heights[b]	Single Family	120	s.f.	*1,148*	*90*	*121*	*113*

[a] a.m and p.m. peak hour trip generation based on data presented in traffic impact study report prepared for noted development. Saturday trip generation estimated by Fehr & Peers based on dated presented in ITE *Trip Generation,* 7th Edition.
[b] Trip generation estimated by Fehr & Peers based on data presented in ITE *Trip Generation,* 7th Edition.

SOURCE: Fehr & Peers Transportation Consultants, 2005

6.4 Effects Found to be Less than Significant

All impacts identified in Chapter 4 of this Draft EIR for the following topics are less than significant:

- Aesthetics
- Population, Jobs and Housing
- Public Services and Recreation
- Utilities

The following topics were determined in the Initial Study prepared for this Draft EIR to have no impact or a less-than-significant environmental effect:

- Agricultural Resources
- Mineral Resources

CHAPTER 7
Report Preparation

7.1 EIR Report Authors

Contra Costa County
Redevelopment Agency/Community Development Department
651 Pine Street 4th Floor, North Wing
Martinez, California 94553-1296

Executive Director/County Administrator: John Cullen
Community Development Director: Dennis M. Barry, AICP
Redevelopment Director: James Kennedy
Principal Planner: Patrick Roche, AICP
Project Manager: Maureen Toms, AICP

7.2 EIR Consultants

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Jack Hutchison, P.E., *Transportation, Circulation and Parking*
Martha Lowe, *Biology*
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Craig A. Hall, G.E.

APPENDIX A
Notice of Preparation

APPENDIX B
Comment Letters on the NOP

Document Details Report
State Clearinghouse Data Base

SCH# 2004092009
Project Title Bay Point Waterfront Strategic Plan
Lead Agency Contra Costa County Community Development

Type NOP Notice of Preparation

Description In the Final Concept Plan a marina with 568 berths is suggested. Most of the berths (80%) would be covered. A large parking lot area for trailers as well as dry storage area is proposed on the east end of the site where it is in close proximity to a new boat launch location. Other proposed support uses consist of a fuel dock, centrally located harbormaster building, restroom laundry, and showers, chandlery store with bait and tackle, administrative offices, cafe/snack bar and yacht club. The proposal also incorporates approximately 20 acres of multi-famillt medium density housing. The plan also includes the northern extension of Alves Lane from Willow Pass Road and eastern extension of Pacifica Avenue from Port Chicago Highway to the waterfront area, via a second crossing of the railroad lines.

Lead Agency Contact

Name Maureen Toms
Agency Contra Costa County Community Development
Phone 925 335 1250 **Fax**
email
Address 651 Pine Street
4th Floor
City Martinez **State** CA **Zip** 94553

Project Location

County Contra Costa
City
Region
Cross Streets
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use The project site includes Commercial Recreation (Marina), Open Space, and Public/Semi-Public Uses (Railroad). Industrial uses, vacant land, Commercial land (along Port Chicago Highway) and Residential (Shore Acres) are located to the south of the site and open space uses are to the west and east. The Sacramento/San Joaquin River Delta is to the north of the site.

Project Issues Aesthetic/Visual; Biological Resources; Geologic/Seismic; Toxic/Hazardous; Water Quality; Landuse; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Traffic/Circulation; Other Issues

Reviewing Agencies Resources Agency; Department of Conservation; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; Department of Water Resources; Department of Fish and Game, Region 3; Native American Heritage Commission; Public Utilities Commission; State Lands Commission; California Highway Patrol; Caltrans, District 4; Department of Toxic Substances Control

Date Received 09/02/2004 **Start of Review** 09/02/2004 **End of Review** 10/01/2004

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

County: Contra Costa **SCH#** 2004092005

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  Wayne Hubbard
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Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Debby Eddy
- [ ] **Office of Emergency Services**
  Dennis Castrillo
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  State Clearinghouse

- [■] **Native American Heritage Comm.**
- [■] **Public Utilities Commission**
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- [■] **State Lands Commission**
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Regional Water Quality Control Board (RWQCB)

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  Santa Ana Region (8)
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- [ ] **Other** _____

_____

_____

Last Updated on 7/29/04

Department of Toxic Substances Control

04 SEP 13 PM 3:36

Terry Tamminen
Agency Secretary
Cal/EPA

700 Heinz Avenue, Suite 200
Berkeley, California 94710-2721

Arnold Schwarzenegger
Governor

September 10, 2004

Maureen Toms
Contra Costa County Community Development Department
651 Pine Street, 4th floor
Martinez, CA 94553

Dear Ms. Toms:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the proposed Bay Point Waterfront Strategic Plan General Plan Amendment (SCH # -no number provided). As you may be aware, the California Department of Toxic Substances Control (DTSC) oversees the cleanup of sites where hazardous substances have been released pursuant to the California Health and Safety Code, Division 20, Chapter 6.8. As a Responsible Agency, DTSC is submitting comments to ensure that the environmental documentation prepared for this project to address the California Environmental Quality Act (CEQA) adequately addresses any remediation of hazardous substance releases that may be necessary.

The project proposes the development of a medium density housing development as part of a full scale marina on the Bay Point waterfront. According to the Baypoint Waterfront Strategic Plan, PG&E is currently in the process of cleaning up the site and preparing it for sale. Because the project site involves residential development, it is important that groundwater and soil meet applicable remediation standards for residential use. The EIR should not only address existing conditions at the project site but should also provide historical background. The discussion should include mention of hazardous materials that were used, stored or handled in significant quantities at the project site or adjacent locations and should note any releases and/or contamination that occurred, or currently exists.

At project sites where contamination is suspected, DTSC recommends sampling in order to characterize the extent and magnitude of contamination prior to any construction activities. Based on sampling results, appropriate mitigation measures can be proposed and analyzed subsequent to site clean-up. If any sites were previously contaminated but the contamination was subsequently mitigated, please include a discussion of the contamination that existed and the clean-up measures that were implemented and residual contaminant levels.

DTSC can assist your agency in overseeing characterization and cleanup activities through our Voluntary Cleanup Program. A fact sheet describing this program is

enclosed. We are aware that projects such as this one are typically on a compressed schedule, and in an effort to use the available review time efficiently, we request that DTSC be included in any meetings where issues relevant to our statutory authority are discussed.

Please contact Monica Gan of my staff at (510) 540-3748 if you have any questions or would like to schedule a meeting. Thank you in advance for your cooperation in this matter.

Sincerely,

Barbara J. Cook, P.E., Chief
Northern California - Coastal Cleanup
Operations Branch

Enclosures

cc: without enclosures

Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Guenther Moskat
CEQA Tracking Center
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Making San Francisco Bay Better

September 30, 2004

Maureen Toms
Contra Costa County Community Development
651 Pine Street, 4th Floor – North Wing
Martinez, CA 94553

SUBJECT:NOP for Bay Point Waterfront Strategic Plan; SCH # 2004092009
BCDC Inquiry File No 7136.3 (West Pittsburg);
Related Files: BCDC Permit File Nos. 1-89 and 12-90 (McAvoy Yacht Harbor);
BCDC Claim of Exemption File No. CE 74-9 (Crites);
BCDC Cease and Desist Order No. 7-88 (Trost);
BCDC Legal File No. 7402.317 (McAvoy Yacht Harbor); and
BCDC Permit No. M76-82 (Harris Yacht Harbor)

Dear Ms. Toms:

Thanks you for the Notice of Preparation of a Draft EIR ("DEIR") for the Bay Point Waterfront Strategic Plan ("Bay Point Plan"), dated September 2, 2004, that we received September 7, 2004. Our staff had previously discussed the concepts of this plan with the County staff on October 29, 2002, at which time we received three plans. The first, a September 20, 2002 "Existing Conditions – Bay Point Waterfront Redevelopment Area, Bay Point, California," prepared by Concept Marine Associates, is an aerial photograph that depicts parcels, zoning, BCDC's jurisdiction (incorrectly), and redevelopment project area. The second and third plans, both dated September 21, 2002, are entitled "Refined Concept Plan" and "Opportunities and Constraints," prepared by RRM Design Group.

The Commission is a responsible agency for this project, a significant portion of which must be authorized by a San Francisco Bay Conservation and Development Commission ("BCDC" or "Commission") permit. The Commission will rely on the DEIR prepared by the County when it considers the project. The Bay Point Plan is not specific enough for us to comment on every issue raised with respect to the Commission's laws and policies. However, several important issues in BCDC's laws and policies are raised by the Bay Point Plan and these points are discussed below. In summary, three of the most significant issues we can identify now are: (1) the amount and quality of public access; (2) the appropriateness of this location for a marina including the impact of dredging on adjacent tidal marsh habitat and wildlife; and (3) the effect of prior unauthorized fill, and BCDC's jurisdictional determination, on the design of the Bay Point Plan. Once we receive more clear details of the project, we will be able to provide more detailed responses and can work closely with your staff to ensure the project would be consistent with Commission laws and policies.

A large portion of the project will be located within the Commission's Bay and shoreline band jurisdictions. The Bay jurisdiction includes all tidally influenced portions of the site up to Mean High Tide or, in tidal marshes, up to 5 feet above mean sea level. The shoreline band

jurisdiction is a 100-foot-wide portion of the upland measured inland from the edge of the Bay jurisdiction.

Due to the history of the Trost site, the Commission has Bay jurisdiction over a larger portion of the site than one might assume based on a visual inspection. Previously, material dredged out of the "State Lands Channel" that borders the Trost's west property line was illegally sidecast onto the Trost site and a road and parking area were created on top of this fill for the marina. Much of that fill occurred within tidal marshes. The edge of the Bay was established based on a review of aerial photographs and the history of fill at the site, and was accepted by the Trosts in a stipulated judgment on behalf of itself and its successors in interest. See below for a discussion of BCDC's jurisdiction and the judgment. I have enclosed a separate copy of Exhibit D from the stipulated judgment that depicts the Commission's jurisdiction.

At the Harris Yacht Harbor site, we have some historical evidence of the location of tidal marsh and upland portions of the site in past years but we have not yet made a conclusive jurisdictional determination.

Our files are available for review. The files contain many aerial photos and maps of the entire project site and these may be helpful to the County in moving forward with the project.

Comments on the NOP Materials

Included with the NOP is an 8-1/2" x 11" map entitled "Bay Point Waterfront Strategic Plan – Current." This plan does not accurately represent the existing conditions at the Trost marina. The basins are much larger than shown. It is difficult to evaluate the map further because the 20 different shadings shown on the legend do not show well in the black and white copy I received. Please refer to the aerial photograph submitted to our staff on October 29, 2002, prepared by Concept Marine for a better outline of existing conditions. Please note, however, that Concept Marine's depiction of "BCDC 100'" is not correct. The map of current conditions should be amended to reflect the current arrangement of boat basins, debris, shoreline areas and jurisdictions.

The "Proposed" map is similarly difficult to evaluate, although I can identify the commercial recreation, open space, marina berths and residential portions of the site.

I agree generally with the checklist's identification of environmental factors that are potentially affected by this project. The Commission will need to know the impacts of the project on Bay fish, wildlife, flora, and sedimentation and hydrology, among other topics. These issues are also discussed below.

The "Final Plan" on pages 14 and 15 of the Bay Point Waterfront Strategic Plan is too small to be able to read the details. The County's web site does not have a usable link to the plan to examine it in more detail. However, the discussion in the Bay Point Plan, in concert with this diagram, allows us to highlight some BCDC issues that are discussed below in the Bay and Shoreline Band sections.

The final section of the Bay Point Plan discuses permitting issues. The BCDC process should be amended. First, the Commission's 100-foot-wide "shoreline band" jurisdiction is not a "setback." The Commission may authorize development in this area if the public access is the maximum feasible consistent with the project; see below for discussion of this criterion. Second, an applicant must submit a certified EIR to BCDC before its project application is complete. Even though an application may not be filed without the EIR, the Commission may accept a draft application and will work with the applicant as much as possible in advance of filing the application, including design review.

The DEIR should include a summary of the laws and policies that apply to the proposed project, including the Commission's laws at California Government Code Section 66600 *et seq.* and policies of the *San Francisco Bay Plan* ("Bay Plan"). These may be found on the Commission's web site at www.bcdc.ca.gov.

The DEIR should include a detailed site plan that depicts the Commission's Bay and shoreline band jurisdictions, the existing conditions and the proposed project, areas where fill would be placed and removed, and proposed public access areas and improvements.

Existing BCDC Requirements at the Trost Marina Site

The Commission has taken several actions in the past that affect the Trost marina site. On February 25, 1975, the Commission approved a portion of a claim of exemption from the Commission's laws that was filed by Floyd Crites, a predecessor in interest to the Trosts. The exemption was granted for specific construction and uses of a recreational marina including new dredging to create an eight-acre boat basin and the disposal of dredged material; placement of pile supported or floating fill for boat berths; and placement of fill on top of existing roadways and parking areas. The claim was denied for maintenance dredging, disposal of maintenance dredged spoils, and other work not specifically shown on Mr. Crites' development plan.

On March 26, 1991, the Commission issued Amended Cease and Desist Order No. CCD 7-88 to the Trosts. That order required removal of several types of unauthorized fill and uses including covered and uncovered boat berths, trailer and boat storage and fencing, to the extent the Commission was not able to approve these structures and uses.

On May 16, 1991 the Commission considered BCDC Permit Application No. 12-90 and denied it because, in part, the project would result in non-water-related fill and uses, and the project did not include adequate mitigation for the fill.

In January 1993, the Commission and the Trosts stipulated to an entry of judgment in the Superior Court of the State of California for the County of Solano. In that judgment, the Commission agreed to the construction of 416 berths, construction and use of several marina-related facilities, a limited fenced boat storage area, an entry gate, pavement, a café, in-kind maintenance of these improvements, and maintenance dredging. The judgment also contains conditions for the construction and use of the marina similar to those conditions that would have been imposed in 1993 by a Commission permit.

As a term of the judgment, the Trosts agreed to install public access, starting at the harbor entry to and along the west property line, and starting at the harbor entrance to, and including a picnic and viewing area next to, the boat launch ramp. These areas, along with an open space area in the marsh to the north of the harbor, were permanently reserved by the recordation of a restriction instrument with the County Recorder's office. The Trosts also agreed to restore an area of tidal marsh at the northwest corner of the road to the north boat basin, remove all unauthorized fill and materials to approved removal sites, and pay a fine.

The Trosts also agreed to the Commission's jurisdictional determination at the site and agreed that they and their successors in interest would be bound by it. That determination is described starting on page 12 of the attached entry of judgment, and is also generally shown on the enclosed diagram.

Effect of Prior Actions. The 1975 claim of exemption does not likely apply to the proposed Bay Point Plan because that plan is quite different than the exempt project. The Trosts appear to have complied with the Cease and Desist Order. The Judgment applies to the successors to the

Trosts but, if the project changes, the successor in interest must either obtain a Commission permit or amend the judgment.

Evaluation of the Project under Commission Laws and Policies

A significant portion of the Trost marina facilities was developed on fill in the Bay that was not authorized when it was placed. Although the areas have been filled and are now used for parking and roadways through the marina, these areas remain within the Commission's Bay jurisdiction and are subject to the laws that apply to uses on Bay fill.

The Commission's Bay jurisdiction also applies to the tidally influenced waters and marshes at the PG&E property as well as the marshes to its east that are shown on the property map on page 3 of the Bay Point Plan.

The following is a discussion of the proposed conceptual project in light of the Commission's laws and policies that apply within its Bay and shoreline band jurisdictions.

Projects in the Bay. The Commission will use the criteria specified in Government Code Section 66605 to evaluate projects within its Bay jurisdiction. Generally, those criteria allow Bay fill when the public benefits from filling clearly exceed the public detriment from the loss of the water areas and should be limited to water-oriented uses, or minor fill for improving shoreline appearance or public access to the Bay. The section also states that fill should be authorized only when no alternative upland location is available for such purpose; that the water area to be filled should be the minimum necessary; that the nature, extent and location of any fill should be designed to minimize harmful effects to the Bay Area such as the reduction or impairment of the volume surface area or circulation of water, water quality, fertility of marshes or fish and wildlife resources; and that the project would establish a permanent shoreline.

It appears from the conceptual diagram that at least some of the area within the Commission's Bay jurisdiction that was previously filled without authorization would be retained for a road and parking. The Commission would evaluate the project as if it were on new fill in the Bay. The EIR should examine whether an alternative configuration could result in less fill or whether some of the non-water-related uses such as parking could be relocated to the upland portion of the site, and off the formerly filled wetlands.

In particular, the plan proposes to retain the westerly roadway and develop parking along the north side of the harbor. The area north of the boat basin appears to be located in an area that the Commission had previously required to be cleaned up because it is a part of the tidal wetland habitat to the north.

Further, any pile supported, floating and cantilevered structures constitute Bay fill. Thus, the area occupied by berths, including their covers, would constitute Bay fill and subject to the same evaluation under Section 66605.

The Commission will evaluate whether mitigation would be required for Bay fill at the site including the fill previously placed within an area of the Commission's Bay jurisdiction, and fill that will be placed for docks, berths, or other structures and uses within the Bay. The DEIR should provide square footage of the areas of proposed solid fill and solid fill to remain, the net gain and total area covered by berths, docks etc., and current and proposed size of basins. Te DEIR should also evaluate the opportunities for mitigation at this site or at a nearby site.

Several areas are proposed to be excavated including a tidal marsh at the Harris marina and other areas to create a large boat basin. Please identify the adverse impacts on fish and wildlife and on sediments and the adjacent tidal marshes, and any mitigation that would be provided.

Projects in the Shoreline Band. For the project in the shoreline band, the Commission would evaluate whether the project provides the maximum feasible public access consistent with the project. In other words, a project that increases the numbers of people who will be using this portion of the shoreline and Bay should also provide a proportional increased public access improvements to serve that need. The DEIR should address whether the proposed project would provide the maximum feasible public access consistent with the size and extent of the project. The Commission will likely require the public access areas to be reserved through a recorded legal instrument.

The Bay Point Plan's discussion of public access on page 31 states that a continuous boardwalk would be built along the entire marina waterfront. Please explain whether the boardwalk would be located over the Bay or would occur within the shoreline. The Bay Plan policies disfavor all but minor fill in the Bay for public access. In general, public access should occur within the shoreline.

The Bay Point Plan shows dashed lines with arrows flowing north across the marshes north of the Trost and Harris marinas. Please clarify whether these are proposed public access improvements. Please also discuss impacts on the marsh and tidal habitats and wildlife from an increasing number of people who would use the waterways and shoreline for example, impacts could include increased trash in the waterways and marshes, and adverse impacts due to pets in wildlife habitat. I have briefly reviewed the "Final Concept Plan" and it appears that access areas are very limited and opportunities for public parking may also be constrained due to the parking demand for a large numbers of boat owners, visitors, restaurant users and residents.

In evaluating the public access areas, the Commission would rely on the advice of its highly respected Design Review Board. The Board would, at an early stage of the application, review the project and make suggestions for configuration of the public and private areas in order to maximize the value of public access areas and improvements. We encourage the County to make use of this free service as soon as possible. Please contact Brad McCrae, our Bay Design Analyst, at 415-352-3615 or bradm@bcdc.ca.gov, for an appointment at a Board meeting.

Commission Policies.

The Bay Point Plan raises several categories of issues that the Commission has addressed through its Bay Plan policies. The DEIR should evaluate the project in light of these policies. Once we have the project details we can help identify all relevant policies

Fish, Other Aquatic Organisms and Wildlife. The policies of this section place importance on protecting existing marshes, mudflats and subtidal habitats, species that are natives, threatened and endangered species and candidates for listing as endangered or threatened. In addition, the policies state that any habitat restoration program should be guided by the recommendations in the Baylands Ecosystem Habitat Goals report.

Water Quality. Among other policies, this section states that non-point source pollution should be controlled including water quality of dredged material, stormwater runoff control, and other means to prevent pollution of the Bay.

Tidal Marshes and Mudflats. Policies 1 and 2 state that these areas should be conserved, and that any fill or dredging project should be evaluated to determine the adverse effects on tidal marshes and mudflats, and should be designed to minimize those effects. Other policies in this section address the contents of restoration plans.

Subtidal Areas. Policy 1 states that any fill or dredging project should be evaluated for its effect on introduction of invasive species, tidal hydrology and sediments, fish or other aquatic life, and the Bay's bathymetry.

Protection of the Shoreline. Policies 2, 3 and 4 discuss riprap revetments and other shoreline protection methods, and set criteria for their use.

Dredging. The Bay Plan contains a number of policies relevant to dredging and the disposal of dredged materials. For example, Policy 7 states that all channels, berths, and related areas should be carefully designed so as not to undermine the stability of adjacent dikes, fills, or fish and wildlife habitats. The DEIR should describe these impacts, if any, and describe the proposed disposal of materials excavated from the basins.

Recreation. Policy 4 sets out criteria for marinas: marinas should not be allowed at unsuitable sites which include those that tend to fill up rapidly with sediment, have insufficient upland, or contain valuable marsh or other habitat. Fill should be permitted at sites with difficult land configurations provided that the fill is the minimum necessary and unavoidable losses of Bay habitat, surface or volume is offset. No new marina should be approved unless water circulation will be protected and an adequate number of vessel sewage pumpout facilities that are convenient in location and time of operation should be provided free or at a reasonable fee, as well as receptacles to dispose of waste oil. All marinas should provide public amenities such a viewing areas, restrooms, public parking substantial visual and physical access. Frequent dredging should be avoided.

Please identify whether the marina would allow live-aboard boats. If so, the criteria of Policy 4 will apply. Other policies in this section address live-aboard boats, water-oriented commercial recreation and signage.

Public Access policies discuss the criteria for access in marinas and related development.

Appearance, Design and Scenic Views. These policies discuss the siting of a project to protect or enhance access to the Bay.

Mitigation. These policies set out the criteria for mitigation projects.

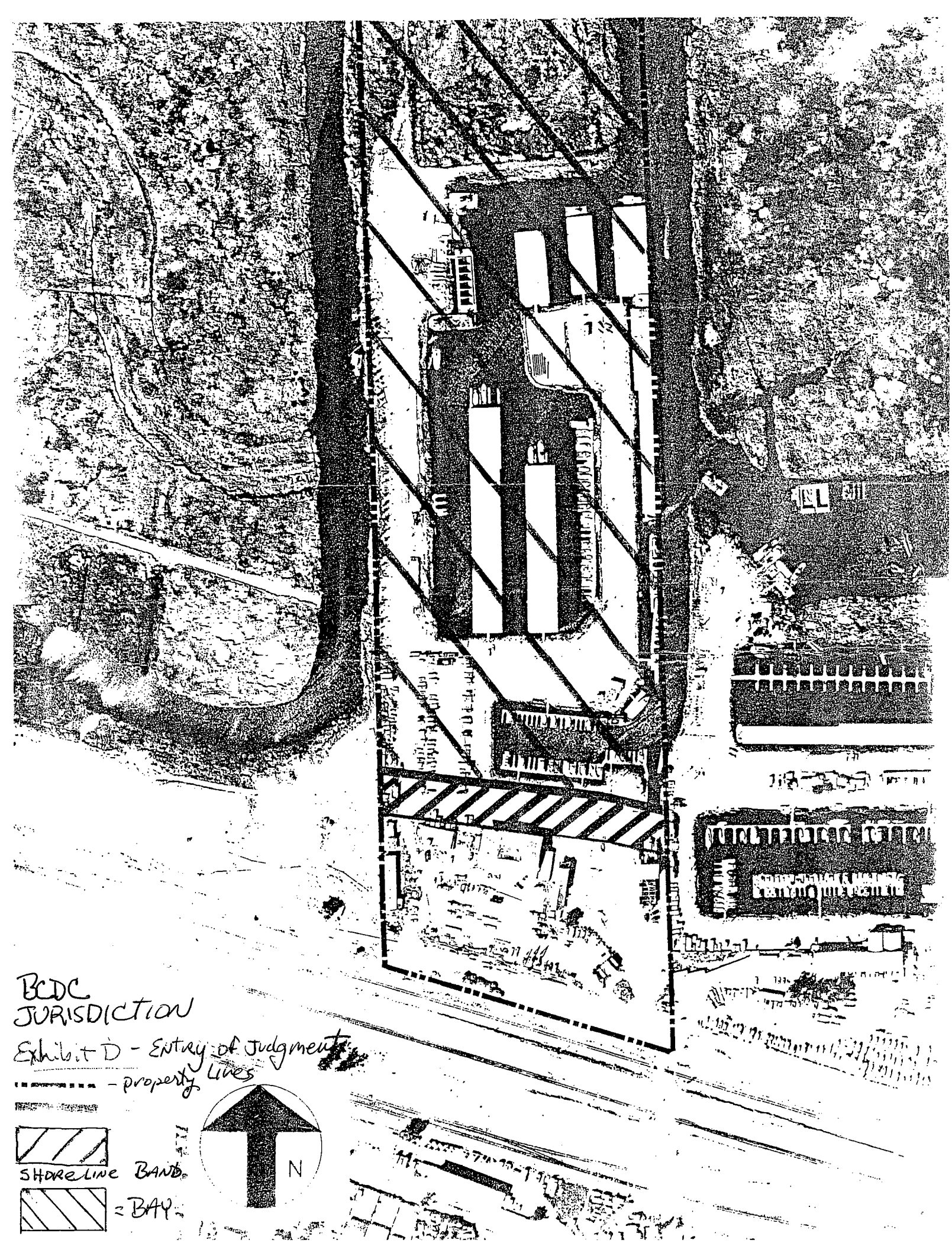
Thank you for your consideration of these issues. Feel free to call if you have questions. I may be reached at 415-352-3610 or ellens@bcdc.ca.gov.

Sincerely,

Ellen Sampson

ELLEN M. SAMPSON
Staff Counsel

Enclosures


BCDC
JURISDICTION
Exhibit D - Entry of Judgment
- property lines
SHORELINE BAND
= BAY
N

CONTRA COSTA COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
255 GLACIER DRIVE, MARTINEZ, CALIFORNIA

DATE: September 29, 2004

TO: Maureen Toms, Project Planner, Community Development Department

FROM: Tim Jensen, Associate Civil Engineer, Flood Control

SUBJECT: **NOP EIR - Baypoint Waterfront Strategic Plan, General Plan Amendment**

FILE: 97-83 — APN 098-010-007 / 098-020-022 / 098-020-023 / 098-020-024 / 098-020-025 / 098-020-026 / 098-250-013

We have reviewed the Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the proposed Baypoint Waterfront Strategic Plan General Plan Amendment. We received the NOP on September 2, 2004, and submit the following comments:

1. The project is in the unformed Drainage Area 83 (DA 83), and therefore no drainage fees are due for any of the development within this drainage area at this time.

2. The NOP states that the land use will change from Commercial Recreation and Open Space Commercial for some parcels to Multiple Family Residential-Medium Density and Parks and Recreation. As shown on the proposed plan in the NOP, the future developments would alter the existing drainage pattern, and the increased runoff would exceed the capacity of the existing and planned drainage systems. We recommend that a Drainage Master Plan be drafted and implemented.

   The Drainage Master Plan should closely analyze any increase in flowrate and volumes of stormwater runoff proposed by this Strategic Plan. The Master Drainage Plan should result in a plan with descriptions of proposed upsizing of existing flood control facilities or new flood control facilities (which typically includes basins, channels, and storm drains), compliance with discharge requirements, cost estimates, and a schedule.

3. We request the opportunity to review the Drainage Master Plan, Draft EIR, and Final EIR for this project when they become available.

We appreciate the opportunity to review plans involving drainage matters and welcome continued coordination. If you have any questions, please call Jocelyn LaRocque at (925) 313-2315 or me at (925) 313-2396.

TJ:JL:cw
G:\GrpData\PldCtl\CurDev\CITIES\Bay Point\Baypoint Waterfront Strategic Plan\NOP EIR.doc
c: G. Connaughton, Flood Control
B. Farnone, Flood Control
C. Lau, Engineering Services

State of California – The Resources Agency ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

September 10, 2004

04 SEP 13 PM 3:35

Ms. Maureen Toms
Contra Costa County Community Development
651 Pine Street, 4th Floor
Martinez, CA 94553

Dear Ms. Toms:

Bay Point Waterfront Strategic Plan
Contra Costa County, SCH# 2004092009

Department of Fish and Game (DFG) personnel have reviewed the subject document and have the following comments: A complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats, should be provided. Rare, threatened and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, Section 15380). The assessment should identify any rare plants and rare natural communities, following DFG's Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (revised May 8, 2000). The Guidelines are available at www.dfg.ca.gov/whdab/pdfs/guideplt.pdf.

Please be advised that a California Endangered Species Act (CESA) Permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the project will impact CESA listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Streambed

Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of SAAs is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the SAA notification process, please access our website at www.dfg.ca.gov/1600; or to request a notification package, contact the Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Mr. Carl Wilcox, Habitat Conservation Manager, at (707) 944-5525.

Sincerely,

Robert W. Floerke
Regional Manager
Central Coast Region

cc: State Clearinghouse

APPENDIX C
BCDC Bay Plan Policies

Part IV
Development of the Bay and Shoreline: Policies

Safety of Fills
Policies Concerning Safety of Fills in the Bay

1. The Commission has appointed the Engineering Criteria Review Board consisting of geologists, civil engineers specializing in geotechnical and coastal engineering, structural engineers, and architects competent to and adequately empowered to: (a) establish and revise safety criteria for Bay fills and structures thereon; (b) review all except minor projects for the adequacy of their specific safety provisions, and make recommendations concerning these provisions; (c) prescribe an inspection system to assure placement and maintenance of fill according to approved designs; (d) with regard to inspections of marine petroleum terminals, make recommendations to the California State Lands Commission and the U.S. Coast Guard, which are responsible for regulating and inspecting these facilities; (e) coordinate with the California State Lands Commission on projects relating to marine petroleum terminal fills and structures to ensure compliance with other Bay Plan policies and the California State Lands Commission's rules, regulations, guidelines and policies; and (f) gather, and make available performance data developed from specific projects. These activities would complement the functions of local building departments and local planning departments, none of which are presently staffed to provide soils inspections.

2. Even if the Bay Plan indicates that a fill may be permissible, no fill or building should be constructed if hazards cannot be overcome adequately for the intended use in accordance with the criteria prescribed by the Engineering Criteria Review Board.

3. To provide vitally-needed information on the effects of earthquakes on all kinds of soils, installation of strong-motion seismographs should be required on all future major land fills. In addition, the Commission encourages installation of strong-motion seismographs in other developments on problem soils, and in other areas recommended by the U.S. Coast and Geodetic Survey, for purposes of data comparison and evaluation.

4. To prevent damage from flooding, structures on fill or near the shoreline should have adequate flood protection including consideration of future relative sea level rise as determined by competent engineers. As a general rule, structures on fill or near the shoreline should be above the wave runup level or sufficiently set back from the edge of the shore so that the structure is not subject to dynamic wave energy. In all cases, the bottom floor level of structures should be above the highest estimated tide elevation. Exceptions to the general height rule may be made for developments specifically designed to tolerate periodic flooding.

5. To minimize the potential hazard to Bay fill projects and bayside development from subsidence, all proposed developments should be sufficiently high above the highest estimated tide level for the expected life of the project or sufficiently protected by levees to allow for the effects of additional subsidence for the expected life of the project, utilizing the latest information available from the U.S. Geological Survey and the National Ocean Service. Rights-of-way for levees protecting inland areas from tidal flooding should be sufficiently wide on the upland side to allow for future levee widening to support additional levee height so that no fill for levee widening is placed in the Bay.

6. Local governments and special districts with responsibilities for flood protection should assure that their requirements and criteria reflect future relative sea level rise and should assure that new structures and uses attracting people are not approved in flood prone areas or in areas that will become flood prone in the future, and that structures and uses that are approvable will be built at stable elevations to assure long-term protection from flood hazards.

Amended August 2001

Protection of the Shoreline
Policies Concerning Shoreline Protection Around the Bay

1. New shoreline erosion control projects and the maintenance or reconstruction of existing erosion control facilities should be authorized if: (a) the project is necessary to protect the shoreline from erosion; (b) the type of the protective structure is appropriate for the project site and the erosion conditions at the site; and (c) the project is properly designed and constructed. Professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes, should participate in the design of erosion control projects.

2. Riprap revetments, the most common shoreline protective structure, should be constructed of properly sized and placed material that meet sound engineering criteria for durability, density, and porosity. Armor materials used in the revetment should be placed according to accepted engineering practice, and be free of extraneous material, such as debris and reinforcing steel. Generally, only engineered quarrystone or concrete pieces that have either been specially cast or carefully selected for size, density, durability, and freedom of extraneous materials from demolition debris will meet these requirements. Riprap revetments constructed out of other debris materials should not be authorized.

3. Authorized protective projects should be regularly maintained according to a long-term maintenance program to assure that the shoreline will be protected from tidal erosion and that the effects of the erosion control project on natural resources during the life of the project will be the minimum necessary.

4. Shoreline protective projects should include provisions for nonstructural methods such as marsh vegetation where feasible. Along shorelines that support marsh vegetation or where marsh establishment has a reasonable chance of success, the Commission should require that the design of authorized protective projects include provisions for establishing marsh and transitional upland vegetation as part of the protective structure, wherever practicable.

Adopted March 1989

Dredging
Policies Concerning Dredging in the Bay

1. Dredging and dredged material disposal should be conducted in an environmentally and economically sound manner. Dredgers should reduce disposal in the Bay and certain waterways over time to achieve the LTMS goal of limiting in-Bay disposal volumes to a maximum of one million cubic yards per year. The LTMS agencies should implement a system of disposal allotments to individual dredgers to achieve this goal only if voluntary efforts are not effective in reaching the LTMS goal. In making its decision regarding disposal allocations, the Commission should confer with the LTMS agencies and consider the need for the dredging and the dredging projects, environmental impacts, regional economic impacts, efforts by the dredging community to implement and fund alternatives to in-Bay disposal, and other relevant factors. Small dredgers should be exempted from allotments, but all dredgers should comply with policies 2 through 12.

2. Dredging should be authorized when the Commission can find: (a) the applicant has demonstrated that the dredging is needed to serve a water-oriented use or other important public purpose, such as navigational safety; (b) the materials to be dredged meet the water quality requirements of the San Francisco Bay Regional Water Quality Control Board; (c) important fisheries and Bay natural resources would be protected through seasonal restrictions established by the California Department of Fish and Game, the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service, or through other appropriate measures; (d) the siting and design of the project will result in the minimum dredging volume necessary for the project; and (e) the materials would be disposed of in accordance with Policy 3.

3. Dredged materials should, if feasible, be reused or disposed outside the Bay and certain waterways. Except when reused in an approved fill project, dredged material should not be disposed in the Bay and certain waterways unless disposal outside these areas is infeasible and the Commission finds: (a) the volume to be disposed is consistent with applicable dredger disposal allocations and disposal site limits adopted by the Commission by regulation; (b) disposal would be at a site designated by the Commission; (c) the quality of the material disposed of is consistent with the advice of the San Francisco Bay Regional Water Quality Control Board and the inter-agency Dredged Material Management Office (DMMO); and (d) the period of disposal is consistent with the advice of the California Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

4. If an applicant proposes to dispose dredged material in tidal areas of the Bay and certain waterways that exceeds either disposal site limits or any disposal allocation that the Commission has adopted by regulation, the applicant must demonstrate that the potential for adverse environmental impact is insignificant and that non-tidal and ocean disposal is infeasible because there are no alternative sites available or likely to be available in a reasonable period, or because the cost of disposal at alternate sites is prohibitive. In making its decision whether to authorize such in-Bay disposal, the Commission should confer with the LTMS agencies and consider the factors listed in Policy 1.

5. To ensure adequate capacity for necessary Bay dredging projects and to protect Bay natural resources, acceptable non-tidal disposal sites should be secured and the Deep Ocean Disposal Site should be maintained. Further, dredging projects should maximize use of dredged material as a resource consistent with protecting and enhancing Bay natural resources, such as creating, enhancing, or restoring tidal and managed wetlands, creating and maintaining levees and dikes, providing cover and sealing material for sanitary landfills, and filling at approved construction sites.

6. Dredged materials disposed in the Bay and certain waterways should be carefully managed to ensure that the specific location, volumes, physical nature of the material, and timing of disposal do not create navigational hazards, adversely affect Bay sedimentation, currents or natural resources, or foreclose the use of the site for projects critical to the economy of the Bay Area.

7. All proposed channels, berths, turning basins, and other dredging projects should be carefully designed so as not to undermine the stability of any adjacent dikes, fills or fish and wildlife habitats.

8. The Commission should encourage increased efforts by soil conservation districts and public works agencies in the 50,000-square-mile Bay tributary area to continuously reduce soil erosion as much as possible.

9. To protect underground fresh water reservoirs (aquifers): (a) all proposals for dredging or construction work that could penetrate the mud "cover" should be reviewed by the San Francisco Bay Regional Water Quality Control Board and the State Department of Water Resources; and (b) dredging or construction work should not be permitted that might reasonably be expected to damage an underground water reservoir. Applicants for permission to dredge should provide additional data on groundwater conditions in the area of construction to the extent necessary and reasonable in relation to the proposed project.

10. Interested agencies and parties are encouraged to explore and find funding solutions for the additional costs incurred by transporting dredged materials to nontidal and ocean disposal sites, either by general funds contributed by ports and other relevant parties, dredging applicants or otherwise.

11. a. A project that uses dredged material to create, restore, or enhance Bay or certain waterway natural resources should be approved only if:

(1) The Commission, based on detailed site-specific studies, appropriate to the size and potential impacts of the project, that include, but are not limited to, site morphology and physical conditions, biological considerations, the potential for fostering invasive species, dredged material stability, and engineering aspects of the project, determines all of the following:

(a) the project would provide, in relationship to the project size, substantial net improvement in habitat for Bay species;

(b) no feasible alternatives to the fill exist to achieve the project purpose with fewer adverse impacts to Bay resources;

(c) the amount of dredged material to be used would be the minimum amount necessary to achieve the purpose of the project;

(d) beneficial uses and water quality of the Bay would be protected; and

(e) there is a high probability that the project would be successful and not result in unmitigated environmental harm;

(2) The project includes an adequate monitoring and management plan and has been carefully planned, and the Commission has established measurable performance objectives and controls that would help ensure the success and permanence of the project, and an agency or organization with fish and wildlife management expertise has expressed to the Commission its intention to manage and operate the site for habitat enhancement or restoration purposes for the life of the project;

(3) The project would use only clean material suitable for aquatic disposal and the Commission has solicited the advice of the San Francisco Bay Regional Water Quality Control Board, the Dredged Material Management Office and other appropriate agencies on the suitability of the dredged material;

(4) The project would not result in a net loss of Bay or certain waterway surface area or volume. Any offsetting fill removal would be at or near as feasible to the habitat fill site;

(5) Dredged material would not be placed in areas with particularly high or rare existing natural resource values, such as eelgrass beds and tidal marsh and mudflats, unless the material would be needed to protect or enhance the habitat. The habitat project would not, by itself or cumulatively with other projects, significantly decrease the overall amount of any particular habitat within the Suisun, North, South, or Central Bays, excluding areas that have been recently dredged;

(6) The Commission has consulted with the California Department of Fish and Game, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service to ensure that at least one of these agencies supports the proposed project; and

(7) After a reasonable period of monitoring, if either:

(a) the project has not met its goals and measurable objectives, and attempts at remediation have proven unsuccessful, or

(b) the dredged material is found to have substantial adverse impacts on the natural resources of the Bay, then the dredged material would be removed, unless it is demonstrated by competent environmental studies that removing the material would have a greater adverse effect on the Bay than allowing it to remain, and the site would be returned to the conditions existing immediately preceding placement of the dredged material.

b. To ensure protection of Bay habitats, the Commission should not authorize dredged material disposal projects in the Bay and certain waterways for habitat creation, enhancement or restoration, except for projects using a minor amount of dredged material, until:

(1) Objective and scientific studies have been carried out to evaluate the advisability of disposal of dredged material in the Bay and certain waterways for habitat creation, enhancement and restoration. Those additional studies should address the following:

(a) The Baywide need for in-Bay habitat creation, enhancement and restoration, in the context of maintaining appropriate amounts of all habitat types within the Bay, especially for support and recovery of endangered species; and

(b) The need to use dredged materials to improve Bay habitat, the appropriate characteristics of locations in the Bay for such projects, and the potential short-term and cumulative impacts of such projects; and

(2) The Commission has adopted additional Baywide policies governing disposal of dredged material in the Bay and certain waterways for the creation, enhancement and restoration of Bay habitat, which narratively establish the necessary biological, hydrological, physical and locational characteristics of candidate sites; and

(3) The Oakland Middle Harbor enhancement project , if undertaken, is completed successfully.

12. The Commission should continue to participate in the LTMS, the Dredged Material Management Office, and other initiatives conducting research on Bay sediment movement, the effects of dredging and disposal on Bay natural resources, alternatives to Bay aquatic disposal, and funding additional costs of transporting dredged materials to non-tidal and ocean disposal sites.

Amended April 2002

Water-Related Industry
Policies Concerning Water-Related Industry on the Bay

1. Sites designated for both water-related industry and port uses in the Bay Plan should be reserved for those industries and port uses that require navigable, deep water for receiving materials or shipping products by water in order to gain a significant transportation cost advantage.

2. Linked industries, water-using industries, and industries which gain only limited economic benefits by fronting on navigable water, should be located in adjacent upland areas. However, pipeline corridors serving such facilities may be permitted within water-related industrial priority use areas, provided pipeline construction and use does not conflict with present or future water-transportation use of the site.

3. Land reserved for both water-related industry and port use will be developed over a period of years. Other uses may be allowed in the interim that, by their cost and duration, would not preempt future use of the site for water-related industry or port use.

4. Water-related industry and port sites should be planned and managed so as to avoid wasteful use of the limited supply of waterfront land. The following principles should be followed to the maximum extent feasible in planning for water-related industry and port use:

a. Extensive use of the shoreline for storage of raw materials, fuel, products, or waste should not be permitted on a long-term basis. If required, such storage areas should generally either be at right angles to the main direction of the shoreline or be as far inland as feasible, so other use of the shoreline may be made possible.

b. Where large acreages are available, site planning should strive to provide access to the shoreline for all future plants and port facilities that might locate in the same area. (As a general rule, therefore, the longest dimension of plant sites should be at right angles to the shoreline.) Marine terminals should also be shared as much as possible among industries and port uses.

c. Waste treatment ponds for water-related industry and port uses should occupy as little land as possible, be above the highest recorded level of tidal action, and be as far removed from the shoreline as possible.

d. Any new highways, railroads, or rapid transit lines in existing or future water-related industrial and port areas should be located sufficiently far away from the waterfront so as not to interfere with industrial use of the waterfront. New access roads to waterfront industrial and port areas should be approximately at right angles to the shoreline, topography permitting.

5. Water-related industry and port uses should be planned so as to make the sites attractive (as well as economically important) uses of the shoreline. The following criteria should be employed to the maximum extent possible:

a. Air and water pollution should be minimized through strict compliance with all relevant laws, policies and standards. Mitigation, consistent with the Commission's policy concerning mitigation, should be provided for all unavoidable adverse environmental impacts.

b. When bayfront hills are used for water-related industries, terracing should generally be required and leveling of the hills should not be permitted.

c. Important Bay overlook points, and historic areas and structures that may be located in water-related industrial and port areas, should be preserved and incorporated into the site design, if at all feasible. In addition, shoreline not actually used for shipping facilities should be used for some type of public access or recreation, to the maximum extent feasible. Public areas need not be directly accessible by private automobiles with

attendant parking lots and driveways; access may be provided by hiking paths or by forms of public transit such as elephant trains or aerial tramways.

d. Regulations, tax arrangements, or other devices should be drawn in a manner that encourages industries and port uses to meet the foregoing objectives.

6. The Commission, together with the relevant local governments, should cooperatively plan for use of vacant and underutilized water-related industrial priority use areas. Such planning should include regional, state and federal interests where appropriate, as well as public and special interest groups. Resulting plans should include: (a) a program for joint use of waterfront facilities where this is beneficial and feasible; (b) a regulatory or management program for reserving the entire waterfront site or parcel for water-related industrial and port use; and (c) a program for minimizing the environmental impacts of future industrial and port development. Such plans, if approved by the relevant local governments and by the Commission, could be amended into the Bay Plan as special area plans.

7. The Bay Plan water-related industrial findings, policies, and priority use areas, together with any detailed plans as described above in 6., should be included as the waterfront element of any Bay regional industrial siting plan or implementation program.

Amended January 1987

Navigational Safety and Oil Spill Prevention

Policies Concerning Navigational Safety and Oil Spill Prevention

1. Physical obstructions to safe navigation, as identified by the U.S. Coast Guard and the Harbor Safety Committee of the San Francisco Bay Region, should be removed to the maximum extent feasible when their removal would contribute to navigational safety and would not create significant adverse environmental impacts. Removal of obstructions should ensure that any detriments arising from a significant alteration of Bay habitats are clearly outweighed by the public and environmental benefits of reducing the risk to human safety or the risk of spills of hazardous materials, such as oil.

2. The Commission should ensure that marine facility projects are in compliance with oil spill contingency plan requirements of the Office of Spill Prevention and Response, the U.S. Coast Guard and other appropriate organizations.

3. To ensure navigational safety and help prevent accidents that could spill hazardous materials, such as oil, the Commission should encourage major marine facility owners and operators, the U. S. Army Corps of Engineers and the National Oceanic and Atmospheric Administration to conduct frequent, up-to-date surveys of major shipping channels, turning basins and berths used by deep draft vessels and oil barges. Additionally, the frequent, up-to-date surveys should be quickly provided to the U.S. Coast Guard Vessel Traffic Service-San Francisco, masters and pilots.

Adopted August 2001

Ports
Policies Concerning Ports on the Bay

1. Port planning and development should be governed by the policies of the Seaport Plan and other applicable policies of the Bay Plan. The Seaport Plan provides for:

a. Expansion and/or redevelopment of port facilities at Benicia, Oakland, Redwood City, Richmond, and San Francisco, and development of new port facilities at Vallejo and Selby;

b. Further deepening of ship channels needed to accommodate expected growth in ship size and improved terminal productivity;

c. The maintenance of up-to-date cargo forecasts and existing cargo handling capability estimates to guide the permitting of port terminals; and

d. Development of port facilities with the least potential adverse environmental impacts while still providing for reasonable terminal development.

2. Some filling and dredging will be required to provide for necessary port expansion, but any permitted fill or dredging should be in accord with the Seaport Plan.

3. Port priority use areas should be protected for marine terminals and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses including trucking and railroad yards, freight forwarders, government offices related to the port activity, chandlers, and marine services. Other uses, especially public access and public and commercial recreational development, should also be permissible uses provided they do not significantly impair the efficient utilization of the port area.

Amended March 2000

Airports
Policies Concerning Airports on the Bay

1. To enable the Bay Area to have adequate airport facilities, and to minimize the harmful effects of airport expansion upon the Bay, a regional airport system plan should be prepared at the earliest possible time by a responsible regional agency. The study should have the full participation of all governmental agencies having regionwide planning responsibilities and all other agencies, including private groups, having a substantial interest in the Bay Area's present or future aviation needs and facilities. The plan should include as a minimum:

a. An analysis of expected air traffic in the Bay Area, by types-commercial, military, and general (small plane);

b. An analysis of alternative sites for building new airports or expanding present ones, taking into account the effect of each site on the surrounding environment;

c. An analysis of the surface transportation necessary to serve the alternative sites for future airports; and

d. An analysis of the effects of new airports upon the location of jobs and homes within the Bay Area.

2. Pending completion of a comprehensive airport system plan, and recognizing that various classes of airports must be included in any plan for the region or the Bay, it is assumed that:

a. A system of **reliever airports** will be created throughout the region instead of one or two very large facilities. Some short-range traffic (500 miles or less, e.g., San Francisco-Los Angeles), which is a major portion of total air carrier traffic, will be diverted to reliever airports, and improved ground and air transportation links will be provided among the airports in the system. Under this concept, it is assumed that San Francisco and Oakland International Airports will continue to service most long-distance flights and that pressures for continued expansion of these airports can be reduced by diverting a portion of the short-range and general aviation traffic to reliever airports in such cities as San Jose, Santa Rosa, and Napa.

It is assumed that three years will be needed to complete an adequate regional airport system plan, and as many as five to seven years thereafter to build facilities proposed in the plan. Therefore, pending completion of the comprehensive airport system plan, capital investment in, and any Bay filling for, major airports in the Bay region should be limited to improvements needed within the next 10 years (i.e., before 1979).

b. Airports for **general aviation** can and should be at inland sites whenever possible. New airports for this purpose should be constructed away from the Bay; Bay shore sites and Bay filling should be allowed only if there is no feasible alternative. Expansion of existing general aviation airports should be permitted on Bay fill only if no feasible alternative is available.

c. **Heliports** may in some instances need to be located on the shores of the Bay to be close to a traffic center with minimum noise interference. In general, existing piers should be used for this purpose and new piers, floats, or fill should be permitted only if it is demonstrated that no feasible alternative is available.

3. Airports on the shores of the Bay should be permitted to include within their premises terminals for passengers, cargo, and general aviation; parking and supporting transportation facilities; and ancillary activities such as aircraft maintenance bases that are necessary to the airport operation. Airport-oriented industries (those using air transportation for the movement of goods and personnel or providing services to airport users) may be located within airports designated in the Bay Plan if they cannot feasibly be located elsewhere, but no fill should be permitted to provide space for these industries directly or indirectly.

4. If some airports in the regional system do not have the funds necessary to complete facilities needed by the region, a regional agency may be required to finance or develop them. Otherwise, there will be tremendous pressure to allow the airports with the strongest finances to provide all of the regional facilities, even though this might result in unnecessary filling of the Bay.

5. To enable airports to operate without additional Bay filling, tall buildings and residential areas should be kept from interfering with aircraft operations. The Commission should prevent incompatible developments within its area of jurisdiction around the shoreline.

Amended November 1995

Transportation
Policies Concerning Transportation On and Around the Bay

1. Because of the continuing vulnerability of the Bay to filling for transportation projects, the Commission should continue to take an active role in Bay Area regional transportation and related land use planning affecting the Bay, particularly to encourage alternative methods of transportation and land use planning efforts that support transit and that do not require fill. The Metropolitan Transportation Commission, the California Department of Transportation, the California Transportation Commission, the Federal Highway Administration, county congestion management agencies and other public and private transportation authorities should avoid planning or funding roads that would require fill in the Bay and certain waterways.

2. If any additional bridge is proposed across the Bay, adequate research and testing should determine whether feasible alternative route, transportation mode or operational improvement could overcome the particular congestion problem without placing an additional route in the Bay and, if not, whether a tunnel beneath the Bay is a feasible alternative.

3. If a route must be located across the Bay or a certain waterway, the following provisions should apply:

a. The crossing should be placed on a bridge or in a tunnel, not on solid fill.

b. Bridges should provide adequate clearance for vessels that normally navigate the waterway beneath the bridge.

c. Toll plazas, service yards, or similar facilities should not be located on new fill and should be located far enough from the Bay shoreline to provide adequate space for maximum feasible public access along the shoreline.

d. To reduce the need for future Bay crossings, any new Bay crossing should be designed to move the largest number of travelers possible by employing technology and operations that increase the efficiency and capacity of the infrastructure, accommodating non-motorized transportation and, where feasible, providing public transit facilities.

4. Transportation projects on the Bay shoreline and bridges over the Bay or certain waterways should include pedestrian and bicycle paths that will either be a part of the Bay Trail or connect the Bay Trail with other regional and community trails. Transportation projects should be designed to maintain and enhance visual and physical access to the Bay and along the Bay shoreline.

5. Ferry terminals should be sited at locations that are near navigable channels, would not rapidly fill with sediment and would not significantly impact tidal marshes, tidal flats or other valuable wildlife habitat. Wherever possible, terminals should be located near higher density, mixed-use development served by public transit. Terminal parking facilities should be set back from the shoreline to allow for public access and enjoyment of the Bay.

Amended Dec 2005

Commercial Fishing
Policies Concerning Commercial Fishing, Shellfishing, and Mariculture in the Bay

1. Commercial fishing facilities are water-oriented uses (port and water-related industry) for which the Commission can allow some Bay fill subject to the fill policies contained in the McAteer-Petris Act and elsewhere in the Bay Plan.

2. Modernization of existing commercial fishing facilities and construction of new commercial fishing boat berthing, fish off-loading, and fish handling facilities on fill may be permitted at appropriate sites with access to fishing grounds and to land transportation routes, if no alternative upland locations are feasible. Support facilities for the resident fleet and transient fishing vessel crew use, such as restrooms, parking, showers, storage facilities, and public fish markets should be provided, and, where feasible, located on land.

3. Existing commercial fishing mooring areas, berths, and onshore facilities should not be displaced or removed unless adequate new facilities are provided or the Commission determines that adequate facilities of the same or better quality are available.

4. New commercial fishing facilities should be approved at any suitable area on the shoreline, preferably with good land transportation and space for fish handling and directly related ancillary activities. Because commercial fishing boats do not need deep water to dock and off-load cargo, they should not preempt deep water berthing needed for marine terminals or water-related industry.

5. If commercial shellfish harvesting is reactivated in the Bay Area, handling and depuration facilities should be allowed only on land. Commercial shellfish harvesting facilities and activities should not interfere unduly with recreational uses of San Francisco Bay or cause significant adverse impacts on fish and wildlife resources. New Bay projects should not destroy or otherwise adversely impact existing shellfish beds.

6. Where consistent with the protection of fish and wildlife, mariculture operations should be permitted in salt ponds if salt production is no longer economically feasible or if the mariculture operations would not interfere with the overall economic viability of salt production.

7. Consistent with the protection of fish and wildlife resources, mariculture ponds should be permitted in managed wetlands that cannot be retained in their existing uses.

Adopted June 1986

Recreation
Policies Concerning Recreation On and Around the Bay

1. As the population of the Bay region increases, more people will use their leisure time in water-oriented recreation activities. Water-oriented recreation facilities such as marinas, launch ramps, beaches, and fishing piers should be provided to meet those needs. For parks, there is no practical estimate of the acreage that should be provided on the shoreline of the Bay, but it is assumed the largest possible portion of the total regional requirement should be provided adjacent to the Bay.

2. The Commission should also allow additional marinas, boat-launching lanes, and fishing piers elsewhere on the Bay, provided they would not preempt land or water area needed for other priority uses and provided they would be feasible from an engineering viewpoint, would not have significant adverse effects on water quality and circulation, would not result in inadequate flushing, would not destroy valuable tidal marshes or tidal flats, and would not harm identified valuable fish and wildlife resources.

3. The Bay Plan maps include about 5,000 acres of existing shoreline parks and 5,800 acres of new parks on the waterfront. In addition, 4,400 acres of military establishments (especially around the Golden Gate) are proposed as parks if and when military use is terminated.

4. The following general standards have been used in determining locations for each type of recreational facility (and should be used as a guide in allowing additional ones):

a. **General**. Each type of facility should be well distributed around the shores of the Bay to the extent consistent with more specific criteria below. Any concentrations of facilities should generally be as close to major population centers as is feasible. Recreational facilities should not preempt sites needed for ports, waterfront industry, or airports, but efforts should be made to integrate recreation into such facilities to the extent they might be compatible. Different types of compatible public and commercial recreational facilities should be clustered to the extent feasible to permit joint use of ancillary facilities and provide greater range of choice for users. Water-oriented recreational facilities, such as waterfront parks, marinas, fishing piers, boat launch facilities and beaches, should be sited, designed and managed to be compatible with and to prevent significant adverse effects on Bay resources. Sites, features or facilities within designated waterfront parks that provide optimal conditions for specific water-oriented recreational uses should be preserved and, where appropriate, enhanced for those uses, consistent with natural and cultural resource preservation.

b. **Marinas**. (1) Marinas should be allowed at any suitable site on the Bay. Unsuitable sites are those that tend to fill up rapidly with sediment; have insufficient upland; contain valuable marsh, mudflat, or other wildlife habitat; or are subject to unusual amounts of fog. At suitable sites, the Commission should encourage new marinas, particularly those that result in the creation of new open water through the excavation of areas not part of the Bay and not containing valuable wetlands. (2) Fill should be permitted for marina facilities that must be in or over the Bay, such as breakwaters, shoreline protection, boat berths, ramps, launching facilities, pumpout and fuel docks, and short-term unloading areas. Fill for marina support facilities may be permitted at sites with difficult land configurations provided that the fill in the Bay is the minimum necessary and any unavoidable loss of Bay habitat, surface area, or volume is offset to the maximum amount feasible, preferably at or near the site. (3) No new marina or expansion of any existing marina should be approved unless water quality and circulation will be adequately protected and, if possible, improved, and an adequate number of vessel sewage pumpout facilities that are convenient in location and time of operation to recreational boat users should be provided free of charge or at a reasonable fee, as well as receptacles to dispose of waste oil. (4) In addition, all projects approved should provide public amenities such as viewing areas, restrooms, and public parking; substantial physical and visual access; and maintenance for all facilities. Frequent dredging should be avoided.

c. **Live-aboard boats**. Live-aboard boats should be allowed only in marinas and only if: (1) The number would not exceed ten percent of the total authorized boat berths unless the applicant can demonstrate clearly that a greater number of live-aboard boats is necessary to provide security or other use incidental to the marina use; (2) The boats would promote and further the recreational boating use of the marina (for example, providing a degree of security), and are located within the marina consistent with such purpose; (3) The marina would provide, on land, sufficient and conveniently located restrooms, showers, garbage disposal facilities, and parking adequate to serve live-aboard boat occupants and guests; (4) The marina would provide and maintain an adequate number of vessel sewage pumpout facilities in locations that are convenient in location and time of operation to all boats in the marina, particularly live-aboard boats, and would provide the service free of charge or at a reasonable fee; and (5) There would be adequate tidal circulation in the marina to mix, dilute, and carry away any possible wastewater discharge. Live-aboard boats moored in a marina on July 1, 1985, but unauthorized by the Commission, should be allowed to remain in the marina provided the tests of (2), (3), (4), and (5) above are met. Where existing live-aboard boats in a marina exceed ten percent of the authorized berths, or a greater number is demonstrated to be clearly necessary to provide security or other use incidental to the marina use, no new live-aboard boats should be authorized until the number is reduced below that number and then only if the project is in conformance with tests (1), (2), (3), (4), and (5) above.

d. **Launching Lanes**. (1) Launching lanes should be placed where wind and water conditions would be most favorable for smaller boats. (2) Some launching lanes should be located near prime fishing areas and others near calm, clear water suitable for waterskiing. (3) Additional launching facilities should be located around the Bay shoreline, especially where there are few existing facilities. These facilities should be available free or at moderate cost. Launching facilities should include adequate car and trailer parking, restrooms, and public access. (4) In marinas, launching facilities should be encouraged where there is adequate upland to provide needed support facilities. (5) Fill for ramps into the water, docks, and similar facilities should be permitted. Other fill should not be permitted.

e. **Fishing Piers**. Fishing piers should not block navigation channels, nor interfere with normal tidal flow.

f. **Beaches**. Sandy beaches should be preserved, enhanced, or restored for recreation use, consistent with wildlife protection. Beaches for swimming and sun-bathing should generally be in warm areas protected from the wind. Some new beaches could be planned adjacent to power plants or other industrial plants that warm the nearby waters as they discharge heated water that has been used to cool industrial machinery.

g. **Water-oriented commercial-recreation**. Water-oriented commercial-recreational establishments, such as restaurants, specialty shops, theaters, and amusements, should be encouraged in urban areas adjacent to the Bay. Some suggested locations for this type of activity are indicated on the Plan maps. Effort should be made to link commercial-recreation centers (and major shoreline parks) by a fleet of small, inexpensive ferries similar to those operating on some European lakes and rivers.

5. To assure optimum use of the Bay for recreation, the following facilities should be encouraged in shoreside parks and in or near yacht harbors or commercial ferryboat facilities.

a. **In waterfront parks**. (1) Where possible, parks should provide some camping facilities accessible only by boat, and docking and picnic facilities for boaters. (2) To capitalize on the attractiveness of their bayfront location, parks should emphasize hiking, bicycling, riding trails, picnic facilities, viewpoints, beaches, and fishing facilities. Recreational facilities that do not need a waterfront location, e.g., golf courses and playing fields, should generally be placed inland, but may be permitted in shoreline areas if they are part of a park complex that is primarily devoted to water-oriented uses. (3) Where shoreline open space includes areas used for hunting waterbirds, public areas for launching rowboats should be provided so long as they do not result in overuse of the hunting area. (4) Public launching facilities for a variety of boats and other water-oriented recreational craft, such as kayaks, canoes and sailboards, should be provided in waterfront parks where feasible. (5) Where open areas include ecological reserves, access via catwalk or other means should be provided for nature study to the extent that such access does not excessively disturb the natural habitat. (6) Limited commercial recreation facilities, such as small restaurants, should be permitted within waterfront parks provided they are clearly incidental to the park use, are in keeping with the basic character of the park, and do not obstruct public access to and enjoyment of the Bay. Limited commercial development may be appropriate (at the option of the park agency responsible) in all parks shown on the Plan maps except where there is a specific note to the contrary. (7) Trails that can be used as components of the San Francisco Bay Trail, the Bay Area Ridge Trail or links between them should be developed in waterfront parks. San Francisco Bay Trail segments should be located near the shoreline unless that alignment would have significant adverse effects on Bay resources; in this case, an alignment as near to the shore as possible, consistent with Bay resource protection, should be provided. Bay Area Ridge Trail segments should be developed in waterfront parks where the ridgeline is close to the Bay shoreline. (8) Bus stops, kiosks and other facilities to accommodate public transit should be provided in waterfront parks to the maximum extent feasible. Public parking should be provided in a manner that does not diminish the park-like character of the site. Traffic demand management strategies and alternative transportation systems should be developed where appropriate to minimize the need for large parking lots and to ensure parking for recreation uses is sufficient. (9) Interpretive information describing natural, historical and cultural resources should be provided in waterfront parks where feasible.

b. **In yacht harbors and ferryboat terminals**. In or near yacht harbors or commercial ferryboat facilities, private boatels and restaurants should be encouraged where adequate shoreline land is available. Public docks for visiting boaters should be provided where feasible in order to give public access from the water.

c. **In former bayfront military installations designated as waterfront parks.** Former bayfront military installations designated for waterfront park use should be developed and managed for recreation uses to the maximum practicable extent consistent with the Bay Plan Map Policies and with all of the following:

i. Physical and visual access corridors between inland public areas, vista points and the shoreline should be created, preserved or enhanced. Corridors for Bay-related wildlife should also be created, preserved and enhanced where needed and feasible.

ii. Historic structures and districts listed on the National Register of Historic Places or California Registered Historic Landmarks should be preserved consistent with applicable state and federal Historic Preservation law and should be used consistent with the Bay Plan recreation policies. Public access to the exterior of these structures should be provided. Public access to the interiors of these structures should be provided where appropriate.

iii. To assist in generating the revenue needed to preserve historic structures and develop and maintain park improvements and to achieve other important public objectives, uses other than water-oriented recreation, commercial recreation and public assembly facilities may be authorized on former military installations designated on the Bay Plan maps for waterfront park uses only at locations identified in the Bay Plan map policies. Even at these designated locations, these other uses should be allowed only if they would: (1) not diminish recreation opportunities or the park-

like character of the site; (2) preserve historic buildings where present for compatible new uses; and (3) not significantly, adversely affect the site's fish, other aquatic life and wildlife and their habitats.

d. **In all recreation facilities**. Access to marinas, launch ramps, beaches, fishing piers, and other recreation facilities should be clearly signed and easily available from parking reserved for the public or from public streets.

6. All the waterfront land needed for waterfront parks and beaches by the year 2020 should be reserved now, because delay may mean that needed shoreline will otherwise be preempted for other uses. However, recreational facilities need not be built all at once; their development can proceed in accordance with recreational demand over the years.

7. In addition to the major recreational facilities indicated on the Plan maps, public access should be included wherever feasible in any shoreline development, as described in the policies for Public Access to the Bay. That policy is intended to result in much more access to the Bay than can be provided by public parks alone, especially in urban areas, and to encourage private development of the shoreline.

8. To enhance the appearance of shoreline areas, and to permit maximum public use of the shores and waters of the Bay, flood control projects should be carefully designed and landscaped and, whenever possible, should provide for recreational uses of channels and banks.

9. Because of the need to increase the recreational opportunities available to Bay Area residents, small amounts of Bay filling may be allowed for shoreline parks and recreational areas that provide substantial public benefits and that cannot be developed without some filling.

10. Signs and other information regarding shipping lanes, U.S. Coast Guard rules for navigation, such as U.S. Coast Guard Rule 9, and safety guidelines for smaller recreational craft, should be provided at marinas, boat ramps, launch areas, personal watercraft and recreational vessel rental establishments, and other recreational water craft use areas.

Amended October 2002

Public Access
Policies Concerning Public Access to the Bay

1. A proposed fill project should increase public access to the Bay to the maximum extent feasible, in accordance with the policies for Public Access to the Bay.

2. In addition to the public access to the Bay provided by waterfront parks, beaches, marinas, and fishing piers, maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline, whether it be for housing, industry, port, airport, public facility, wildlife area, or other use, except in cases where public access would be clearly inconsistent with the project because of public safety considerations or significant use conflicts, including unavoidable, significant adverse effects on Bay natural resources. In these cases, in lieu access at another location preferably near the project should be provided.

3. Public access to some natural areas should be provided to permit study and enjoyment of these areas. However, some wildlife are sensitive to human intrusion. For this reason, projects in such areas should be carefully evaluated in consultation with appropriate agencies to determine the appropriate location and type of access to be provided.

4. Public access should be sited, designed and managed to prevent significant adverse effects on wildlife. To the extent necessary to understand the potential effects of public access on wildlife, information on the species and habitats of a proposed project site should be provided, and the likely human use of the access area analyzed. In determining the potential for significant adverse effects (such as impacts on endangered species, impacts on breeding and foraging areas, or fragmentation of wildlife corridors), site specific information provided by the project applicant, the best available scientific evidence, and expert advice should be used. In addition, the determination of significant adverse effects may also be considered within a regional context. Siting, design and management strategies should be employed to avoid or minimize adverse effects on wildlife, informed by the advisory principles in the Public Access Design Guidelines. If significant adverse effects cannot be avoided or reduced to a level below significance through siting, design and management strategies, then in lieu public access should be provided, consistent with the project and providing public access benefits equivalent to those that would have been achieved from on-site access. Where appropriate, effects of public access on wildlife should be monitored over time to determine whether revisions of management strategies are needed.

5. Whenever public access to the Bay is provided as a condition of development, on fill or on the shoreline, the access should be permanently guaranteed. This should be done wherever appropriate by requiring dedication of fee title or easements at no cost to the public, in the same manner that streets, park sites, and school sites are dedicated to the public as part of the subdivision process in cities and counties.

6. Public access improvements provided as a condition of any approval should be consistent with the project and the physical environment, including protection of Bay natural resources, such as aquatic life, wildlife and plant communities, and provide for the public's safety and convenience. The improvements should be designed and built to encourage diverse Bay-related activities and movement to and along the

shoreline, should permit barrier free access for the physically handicapped to the maximum feasible extent, should include an ongoing maintenance program, and should be identified with appropriate signs.

7. In some areas, a small amount of fill may be allowed if the fill is necessary and is the minimum absolutely required to develop the project in accordance with the Commission's public access requirements.

8. Access to and along the waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available. Diverse and interesting public access experiences should be provided which would encourage users to remain in the designated access areas to avoid or minimize potential adverse effects on wildlife and their habitat.

9. Roads near the edge of the water should be designed as scenic parkways for slow-moving, principally recreational traffic. The road-way and right-of-way design should maintain and enhance visual access for the traveler, discourage through traffic, and provide for safe, separated, and improved physical access to and along the shore. Public transit use and connections to the shoreline should be encouraged where appropriate.

10. Federal, state, regional, and local jurisdictions, special districts, and the Commission should cooperate to provide appropriately sited, designed and managed public access, especially to link the entire series of shoreline parks, regional trail systems (such as the San Francisco Bay Trail) and existing public access areas to the extent feasible without additional Bay filling and without significant adverse effects on Bay natural resources. State, regional, and local agencies that approve projects should assure that provisions for public access to and along the shoreline are included as conditions of approval and that the access is consistent with the Commission's requirements and guidelines.

11. The Public Access Design Guidelines should be used as a guide to siting and designing public access consistent with a proposed project. The Design Review Board should advise the Commission regarding the adequacy of the public access proposed.

12. Public access should be integrated early in the planning and design of Bay habitat restoration projects to maximize public access opportunities and to avoid significant adverse effects on wildlife.

13. The Commission should continue to support and encourage expansion of scientific information on the effects of public access on wildlife and the potential of siting, design and management to avoid or minimize impacts. Furthermore, the Commission should, in cooperation with other appropriate agencies and organizations, determine the location of sensitive habitats in San Francisco Bay and use this information in the siting, design and management of public access along the shoreline of San Francisco Bay.

Amended March 2001

Appearance, Design, and Scenic Views
Policies Concerning Appearance, Design, and Scenic Views of Development Around the Bay

1. To enhance the visual quality of development around the Bay and to take maximum advantage of the attractive setting it provides, the shores of the Bay should be developed in accordance with the Public Access Design Guidelines.

2. All bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay. Maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline, especially from public areas, from the Bay itself, and from the opposite shore. To this end, planning of waterfront development should include participation by professionals who are knowledgeable of the Commission's concerns, such as landscape architects, urban designers, or architects, working in conjunction with engineers and professionals in other fields.

3. In some areas, a small amount of fill may be allowed if the fill is necessary-and is the minimum absolutely required-to develop the project in accordance with the Commission's design recommendations.

4. Structures and facilities that do not take advantage of or visually complement the Bay should be located and designed so as not to impact visually on the Bay and shoreline. In particular, parking areas should be located away from the shoreline. However, some small parking areas for fishing access and Bay viewing may be allowed in exposed locations.

5. To enhance the maritime atmosphere of the Bay Area, ports should be designed, whenever feasible, to permit public access and viewing of port activities by means of (a) view points (e.g., piers, platforms, or towers), restaurants, etc., that would not interfere with port operations, and (b) openings between buildings and other site designs that permit views from nearby roads.

6. Additional bridges over the Bay should be avoided, to the extent possible, to preserve the visual impact of the large expanse of the Bay. The design of new crossings deemed necessary should relate to others nearby and should be located between promontories or other land forms that naturally suggest themselves as connections reaching across the Bay (but without destroying the obvious character of the promontory). New or

remodeled bridges across the Bay should be designed to permit maximum viewing of the Bay and its surroundings by both motorist and pedestrians. Guard rails and bridge supports should be designed with views in mind.

7. Access routes to Bay crossings should be designed so as to orient the traveler to the Bay (as in the main approaches to the Golden Gate Bridge). Similar consideration should be given to the design of highway and mass transit routes paralleling the Bay (by providing frequent views of the Bay, if possible, so the traveler knows which way he or she is moving in relation to the Bay). Guardrails, fences, landscaping, and other structures related to such routes should be designed and located so as to maintain and to take advantage of Bay views. New or rebuilt roads in the hills above the Bay and in areas along the shores of the Bay should be constructed as scenic parkways in order to take full advantage of the commanding views of the Bay.

8. Shoreline developments should be build in clusters, leaving open area around them to permit more frequent views of the Bay. Developments along the shores of tributary waterways should be Bay-related and should be designed to preserve and enhance views along the waterway, so as to provide maximum visual contact with the Bay.

9. "Unnatural" debris should be removed from sloughs, marshes, and mudflats that are retained as part of the ecological system. Sloughs, marshes, and mudflats should be restored to their former natural state if they have been despoiled by human activities.

10. Towers, bridges, or other structures near or over the Bay should be designed as landmarks that suggest the location of the waterfront when it is not visible, especially in flat areas. But such landmarks should be low enough to assure the continued visual dominance of the hills around the Bay.

11. In areas of the Bay where oil and gas drilling or production platforms are permitted, they should be treated or screened, including derrick removal, so they will be compatible with the surrounding open water, mudflat, marsh or shore area.

12. In order to achieve a high level of design quality, the Commission's Design Review Board, composed of design and planning professionals, should review, evaluate, and advise the Commission on the proposed design of developments that affect the appearance of the Bay in accordance with the Bay Plan findings and policies on Public Access; on Appearance, Design, and Scenic Views; and the Public Access Design Guidelines. City, county, regional, state, and federal agencies should be guided in their evaluation of bayfront projects by the above guidelines.

13. Local governments should be encouraged to eliminate inappropriate shoreline uses and poor quality shoreline conditions by regulation and by public actions (including development financed wholly or partly by public funds). The Commission should assist in this regard to the maximum feasible extent by providing advice on Bay-related appearance and design issues, and by coordinating the activities of the various agencies that may be involved with projects affecting the Bay and its appearance.

14. Views of the Bay from vista points and from roads should be maintained by appropriate arrangements and heights of all developments and landscaping between the view areas and the water. In this regard, particular attention should be given to all waterfront locations, areas below vista points, and areas along roads that provide good views of the Bay for travelers, particularly areas below roads coming over ridges and providing a "first view" of the Bay (shown in Bay Plan Map No. 8, Natural Resources of the Bay).

15. Vista points should be provided in the general locations indicated in the Plan maps. Access to vista points should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where parking or public transportation is available. In some cases, exhibits, museums, or markers would be desirable at vista points to explain the value or importance of the areas being viewed.

Amended March 1979

Salt Ponds and Other Managed Wetlands
Policies Concerning Salt Ponds and Other Managed Wetlands Around the Bay

1. As long as is economically feasible, the salt ponds should be maintained in salt production and the wetlands should be maintained in their present use. Property tax policy should assure that rising property taxes do not force conversion of the ponds and other wetlands to urban development. In addition, the integrity of the salt production system should be respected (i.e., public agencies should not take for other projects any pond or portion of a pond that is a vital part of the production system).

2. If, despite these provisions, the owner of the salt ponds or the owner of any managed wetland desires to withdraw any of the ponds or marshes from their present uses, the public should make every effort to buy these lands, breach the existing dikes, and reopen these areas to the Bay. This type of purchase should have a high priority for any public funds available, because opening ponds and managed wetlands to the Bay represents man's last substantial opportunity to enlarge the Bay rather than shrink it. (In some cases, if salt ponds are opened to the Bay, new dikes will have to be built on the landward side of the ponds to provide the flood control protection now being provided by the salt pond dikes.)

3. If public funds do not permit purchase of all the salt ponds or marshes proposed for withdrawal from their present uses, and if some of the ponds or marshes are therefore proposed for development, consideration of the development should be guided by the following criteria:

a. Just as dedication of streets, parks, etc., is customary in the planned unit development and subdivision laws of many local governments, dedication of some of the pond or marsh areas as open water can and should be required as part of any development. Highest priority to such dedication should be given to ponds that (1) would, if opened to the Bay, significantly improve water circulation, (2) have especially high wildlife values, or (3) have high potential for water-oriented recreation.

b. Depending on the amount of pond or marsh area to be dedicated as open water, the public may wish to purchase additional areas. Plans to purchase any ponds or marshes should give first consideration to the priorities in paragraph a. above.

c. Development of the ponds or marshes should provide for retaining substantial amounts of open water, should provide for substantial public access to the Bay, and should be in accord with the Bay Plan policies for non-priority uses of the shoreline.

d. Mariculture operations should be encouraged in abandoned salt ponds to provide salt pond owners with an economic use of their property that does not require the ponds to be drained or filled. Managed wetlands no longer used as duck clubs may be developed for mariculture to allow an economic use of the land which does not require filling.

4. As soon as possible, recreational developments such as marinas and small parks should be built in appropriate areas outboard of the present salt ponds, or in sloughs; but these developments should in no way jeopardize the salt production system or be so located as to prevent opening of ponds to the Bay at any future time.

5. The Commission should study the possibility of public purchase of "development rights" to the ponds. If these rights were bought by the public, the owner of the ponds would remain fully able to continue using them for salt production but would not be able to fill the ponds for urban development. Similar study should be given to acquisition of "development rights" to the duck clubs and other diked wetlands, to continue them in their present uses.

Amended June 1986

Other Uses of the Bay and Shoreline
Policies Concerning Other Uses of the Bay and Shoreline

1. Shore areas not proposed to be reserved for a priority use should be used for any purpose (acceptable to the local government having jurisdiction) that uses the Bay as an asset and in no way affects the Bay adversely. This means any use that does not adversely affect enjoyment of the Bay and its shoreline by residents, employees, and visitors within the site area itself or within adjacent areas of the Bay or shoreline.

2. Accessory structures such as boat docks and portions of a principal structure may extend on piles over the water when such extension is necessary to enable actual use of the water, e.g., for mooring boats, or to use the Bay as an asset in the design of the structure.

3. Wherever waterfront areas are used for housing, whenever feasible, high densities should be encouraged to provide the advantages of waterfront housing to larger numbers of people.

4. Because of the requirements of existing law, the Commission should not allow new houseboat marinas. The Commission should authorize houseboats used for residential purposes in existing houseboat marinas only when each of the following conditions is met:

a. The project would be consistent with a special area plan adopted by the Commission for the geographic vicinity of the project;

b. As to marina expansions, the houseboats would be limited in number and would be only a minor addition to the existing number of authorized houseboat berths;

c. All wastewater producing facilities would be connected directly to a shoreside sewage treatment facility;

d. No additional fill would be required except for the houseboat itself, a pedestrian pier on pilings, and for minor fill for improving shoreline appearance or for producing new public access to the Bay;

e. The houseboats would float at all stages of the tide to reduce impacts on benthic organisms and to allow light penetration to the Bay bottom, unless it is demonstrated that requiring flotation at all tidal stages would have a greater adverse environmental effect on the Bay, and would not result in increased sedimentation in the area;

f. The houseboats would not block views of the Bay significantly from the shoreline;

g. The project would comply with local government plans and enforceable regulations and standards for mooring locations and safety, wastewater collection, necessary utilities, building and occupancy standards, periodic monitoring and inspection, and provide for the termination of the residential use when the lands are needed for public trust purposes;

h. The project would be limited in cost and duration so that the tidelands and submerged lands could be released for water-oriented uses and public trust needs and, in no case, would the initial or any subsequent period of authorization exceed 20 years. The Commission should conduct a study of public trust needs of the project area within five years of project authorization or reauthorization and every five years thereafter. If the Commission determines within the first five years of authorization that the area is needed for water-oriented uses and public trust needs, the project should be terminated at the end of the 20-year authorization period. If after the first five-year period of project authorization the Commission determines that the area is needed for water-oriented uses and public trust needs, the project should be terminated no less than 15 years from the date of Commission determination. In any event, the original 20 years of the permit's authorization period cannot be extended or renewed by the Commission unless an application is filed for such purpose; and

i. The project would be consistent with the terms of any legislative grant for the area.

Houseboats moored in recreational boat marinas in the Bay on July 1, 1985 but unauthorized by the Commission should be allowed to remain in the marina provided that the total number of houseboats and live-aboard boats would meet all the live-aboard boat policy tests and the tests of houseboat policies (b), (c), (d), (e), (f), (g), (h), and (i) above.

5. High voltage transmission lines should be placed in the Bay only when there is no reasonable alternative. Whenever high voltage transmission lines must be placed in the Bay or in shoreline areas:

a. New routes should avoid interfering with scenic views and with wildlife, to the greatest extent possible; and

b. The most pleasing tower and pole design possible should be used. High voltage transmission lines should be placed underground as soon as this is technically and economically feasible.

6. Power distribution and telephone lines should either be placed underground (or in an attractive combination of underground lines with streamlined overhead facilities) in any new residential, commercial, public, or view area near the shores of the Bay.

7. Whenever waterfront areas are used for sewage treatment or wastewater reclamation plants, the plants should be located where they do not interfere with and are not incompatible with residential, recreational, or other public uses of the Bay and shoreline.

8. New AM and short-wave radio transmitters may be placed in marsh or other natural areas. Whenever possible, however, consolidation of transmitting towers should be encouraged.

9. Desalinization and power plants may be located in any area where they do not interfere with and are not incompatible with residential, recreational, or other public uses of the Bay and shoreline, provided that any pollution problems resulting from the discharge of large amounts of heated brine into Bay waters, and water vapor into the atmosphere, can be precluded.

10. Pipeline terminal and distribution facilities near the Bay should generally be located in industrial areas but may be located elsewhere if they do not interfere with, and are not incompatible with, residential, recreational, or other public uses of the Bay and shoreline.

11. To eliminate any further demand to fill any part of the Bay solely for refuse disposal sites, new waste disposal systems should be developed; these systems should combine economical disposition with minimum consumption of land. Pending development of new waste disposal systems, immediate waste disposal problems should be solved through full utilization of existing dump sites and through development of new dump sites, if needed, in acceptable inland locations.

12. Types of development that could not use the Bay as an asset (and therefore should not be allowed in shoreline areas) include:

a. refuse disposal (except as it may be found to be suitable for an approved fill);

b. use of deteriorated structures for low-rent storage or other nonwater-related purposes; and

c. junkyards.

Amended March 1986

Fills in Accord with the Bay Plan
Policies Concerning Fills in Accord with the Bay Plan

The Commission's decisions on permit matters are governed by the provisions of the McAteer-Petris Act and the policies of the Bay Plan. The Commission should approve a permit application if it specifically determines that a proposed project meets the following conditions, each of which is necessary for effectively carrying out the Bay Plan.

1. Fills in Accord with Bay Plan. A proposed project should be approved if the filling is the minimum necessary to achieve its purpose, and if it meets one of the following five conditions:

a. The filling is in accord with the Bay Plan policies as to the Bay-related purposes for which filling may be needed (i.e., ports, water-related industry, and water-related recreation) and is shown on the Bay Plan maps as likely to be needed; or

b. The filling is in accord with Bay Plan policies as to purposes for which some fill may be needed if there is no other alternative (i.e., airports and utility routes); or

c. The filling is in accord with the Bay Plan policies as to minor fills for improving shoreline appearance or public access.

Fill for Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly on Privately-Owned Property
Policies Concerning Filling for Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly on Privately-Owned Property

1. Filling for Bay-oriented commercial recreation and Bay-oriented public assembly on privately-owned property should be approved only if the filling would provide for new public access to the Bay and for improvement of shoreline appearance--in addition to what would be provided by the other Bay Plan policies--and the filling would be for Bay-oriented commercial recreation and Bay-oriented public assembly purposes, with a substantial part of the project built on existing land and the proposed fill would fully comply with all of the following additional criteria:

a. The proposed project would limit the use of area to be filled to:

(1) public recreation (beaches, parks, etc.); and

(2) Bay-oriented commercial recreation and Bay-oriented public assembly, defined as facilities specifically designed to attract large numbers of people to enjoy the Bay and its shoreline, such as restaurants, specialty shops, and hotels.

b. The proposed project would be designed so as to take advantage of its nearness to the Bay, and would provide opportunities for enjoyment of the Bay in such ways as viewing, boating, fishing, etc., by keeping a substantial portion of the development, and a substantial portion of the new shoreline created through filling, open to the public free of charge (though an admission charge could apply to other portions of the project).

c. The proposed private project would not conflict with the adopted plans of any agency of local, regional, state, or federal government having jurisdiction over the area proposed for filling, and would be in an area where governmental agencies have not planned or budgeted for projects that would provide adequate access to the Bay.

d. The proposed project would either provide recreational development in accordance with the Bay Plan maps or would provide additional recreational development that would not unnecessarily duplicate nearby facilities.

e. A substantial portion of the project would be built on existing land, and the project would be planned to minimize the need for filling. (For example, all automobile parking should, wherever possible, be provided on nearby land or in multi-level structures rather than in extensive parking lots.)

f. The proposed project would result in permanent public rights to use specific areas set aside for public access and recreation; these areas would be improved at least by filling to finished grade and by installation of necessary basic utilities, at little or no cost to the public.

g. The proposed project would, to the maximum extent feasible, establish a permanent shoreline in a particular area of the Bay, through dedication of lands and other permanent restrictions on all privately-owned and publicly-owned property Bayward of the area approved for filling.

h. The proposed project would provide, to the maximum extent feasible, for enhancement of fish, wildlife, and other natural resources in the area of the development.

Fill for Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly on Privately-Owned or Publicly-Owned Property
Policies Concerning Filling for Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly on Privately-Owned or Publicly-Owned Property

1. Filling for Bay-oriented commercial recreation and Bay-oriented public assembly on privately-owned or publicly-owned property should be approved only if the filling would provide, for new public access to the Bay and for improvement of shoreline appearance-in addition to what would be provided by the other Bay Plan policies-and the filling would be limited to replacement piers for Bay-oriented commercial recreation and Bay-oriented public assembly purposes, covering less of the Bay than was being uncovered and the proposed fill would fully comply with all of the additional criteria:

a. The proposed replacement fill in its entirety, including all parts devoted to public recreation, open space, and public access to the Bay, would cover an area of the Bay smaller in size than the area being uncovered by removal of piers (pile-supported platforms), and those parts of the replacement fill devoted to uses other than public recreation, open space, and public access would cover an area of the Bay no larger than 50 percent of the area being uncovered (or such greater percentage as was previously devoted to such other uses that were destroyed involuntarily, in whole or in part, by fire, earthquake, or other such disaster, and will be devoted to substantially the same uses).

b. The volume (mass) of structures to be built on the replacement pier (pile-supported platform) would be limited to the minimum necessary to achieve the purposes of the project.

c. The replacement fill would be limited to piers (pile-supported platforms), rather than earth or other solid material, and, wherever possible, a substantial portion of the replacement project would be built on existing land.

d. The pier (pile-supported platform-not a bridge) to be removed from the Bay must have:

(1) been destroyed involuntarily, in whole or in part, by fire, earthquake, or other such disaster, or

(2) become obsolete through physical deterioration, or

(3) become obsolete because changes in shipping technology make it no longer needed or suitable for maritime use.

If the platform itself, or the structures on it, have become obsolete, but the pilings that support the platform are structurally sound, consideration must be given to using the existing pilings in any replacement project.

e. The proposed project must be consistent with a comprehensive special area plan for the geographic vicinity of the project, a special area plan that the Commission has determined to be consistent with the policies of the San Francisco Bay Plan, except that this provision would not apply to any project involving replacement of only a pier that had been destroyed involuntarily.

f. The proposed project would involve replacement fill and removal of material in the same geographic vicinity (as set forth in the applicable special area plan).

g. The proposed replacement pier would not extend into the Bay any farther than (i) the piers (pile-supported platforms) to be removed from the Bay as part of the project or (ii) adjacent existing piers.

h. The proposed project would limit the use of the replacement pier to:

(1) public recreation (beaches, parks, etc.); and

(2) Bay-oriented commercial recreation and Bay-oriented public assembly, defined as facilities specifically designed to attract large numbers of people to enjoy the Bay and its shoreline, such as restaurants, specialty shops, and hotels.

i. The proposed project would be designed so as to take advantage of its nearness to the Bay, and would provide opportunities for enjoyment of the Bay in such ways as viewing, boating, fishing, etc., by keeping a substantial portion of the development, and a substantial portion of the new shoreline created on the replacement pier, open to the public free of charge (though an admission charge could apply to other portions of the project).

j. The proposed project would not conflict with the adopted plans of any agency of local, regional, state, or federal government having jurisdiction over the area proposed for the replacement piers, and would be in an area where governmental agencies have not planned or budgeted for projects that would provide adequate access to the Bay.

k. The proposed project would either provide recreational development in accordance with the Bay Plan maps or would provide additional recreation development that would not unnecessarily duplicate nearby facilities.

l. The project would be planned to minimize the need for filling. (For example, all automobile parking should, wherever possible, be provided on nearby land or in multi-level structures rather than in extensive parking lots.)

m. The proposed project would result in permanent public rights to use specific areas set aside for public access and recreation; these areas would be improved at least to finished grade and by installation of necessary basic utilities, at little or no cost to the public.

n. The proposed project would, to the maximum extent feasible, establish a permanent shoreline in a particular area of the Bay, through dedication of lands and other permanent restrictions on all privately-owned and publicly-owned property bayward of the area approved for piers.

o. The proposed project would provide, to the maximum extent feasible, for enhancement of fish and wildlife and other natural resources in the area of the development, and in no event would result in net damage to these values.

Filling for Public Trust Uses on Publicly-Owned Property Granted in Trust to a Public Agency by the Legislature
Policies Concerning Filling for Public Trust Uses on Publicly-Owned Property Granted in Trust to a Public Agency by the Legislature

1. Filling should be approved if the filling is undertaken on land granted in trust by the Legislature to a public agency and the Commission finds that the filling and use proposed on the fill are consistent with the Public Trust Doctrine, the terms of the legislative trust grant, and with a Special Area Plan for the area that the Commission has found:

a. Is necessary to the health, safety, and welfare of the public in the entire Bay Area; and

b. Provides for major shoreline parks, regional public access facilities, removal of existing pile-supported fill, open water basins, increased safety of fills, mechanisms for implementation, enhanced public views of the Bay, and other benefits to the Bay, all of which exceed the benefits that could be accomplished through BCDC's permit authority for individual projects through the application of other Bay Plan policies.

Mitigation
Policies Concerning Mitigation

1. Projects should be designed to avoid adverse environmental impacts to Bay natural resources such as to water surface area, volume, or circulation and to plants, fish, other aquatic organisms and wildlife habitat, subtidal areas, or tidal marshes or tidal flats. Whenever adverse impacts cannot be avoided, they should be minimized to the greatest extent practicable. Finally, measures to compensate for unavoidable adverse impacts to the natural resources of the Bay should be required. Mitigation is not a substitute for meeting the other requirements of the McAteer-Petris Act.

2. Individual compensatory mitigation projects should be sited and designed within a Bay-wide ecological context, as close to the impact site as practicable, to: (1) compensate for the adverse impacts; (2) ensure a high likelihood of long-term ecological success; and (3) support the improved health of the Bay ecological system. Determination of the suitability of proposed mitigation locations should be guided in part by the information provided in the *Baylands Ecosystem Habitat Goals* report.

3. When determining the appropriate location and design of compensatory mitigation, the Commission should also consider potential effects on benefits provided to humans from Bay natural resources, including economic (e.g., flood protection, erosion control) and social (e.g., aesthetic benefits, recreational opportunities).

4. The amount and type of compensatory mitigation should be determined for each mitigation project based on a clearly identified rationale that includes an analysis of: the probability of success of the mitigation project; the expected time delay between the impact and the functioning of the mitigation site; and the type and quality of the ecological functions of the proposed mitigation site as compared to the impacted site.

5. To increase the potential for the ecological success and long-term sustainability of compensatory mitigation projects, resource restoration should be selected over creation where practicable, and transition zones and buffers should be included in mitigation projects where feasible and appropriate. In addition, mitigation site selection should consider site specific factors that will increase the likelihood of long-term ecological success, such as existing hydrological conditions, soil type, adjacent land uses, and connections to other habitats.

6. Mitigation should, to the extent practicable, be provided prior to, or concurrently with those parts of the project causing adverse impacts.

7. When compensatory mitigation is necessary, a mitigation program should be reviewed and approved by or on behalf of the Commission as part of the project. Where appropriate, the mitigation program should describe the proposed design, construction and management of mitigation areas and include:

(a) Clear mitigation project goals;

(b) Clear and measurable performance standards for evaluating the success of the mitigation project, based on measures of both composition and function, and including the use of reference sites;

(c) A monitoring plan designed to identify potential problems early and determine appropriate remedial actions. Monitoring and reporting should be of adequate frequency and duration to measure specific performance standards and to assure long-term success of the stated goals of the mitigation project;

(d) A contingency plan to ensure the success of the mitigation project, or provide means to ensure alternative appropriate measures are implemented if the identified mitigation cannot be modified to achieve success. The Commission may require financial assurances, such as performance bonds or letters of credit, to cover the cost of mitigation actions based on the nature, extent and duration of the impact and/or the risk of the mitigation plan not achieving the mitigation goals; and

(e) Provisions for the long-term maintenance, management and protection of the mitigation site, such as a conservation easement, cash endowment, and transfer of title.

8. Mitigation programs should be coordinated with all affected local, state, and federal agencies having jurisdiction or mitigation expertise to ensure, to the maximum practicable extent, a single mitigation program that satisfies the policies of all the affected agencies.

9. If more than one mitigation program is proposed, the Commission should consider the cost of the alternatives in determining the appropriate program.

10. To encourage cost effective compensatory mitigation programs, especially to provide mitigation for small fill projects, the Commission may extend credit for certain fill removal and allow mitigation banking provided that any credit or resource bank is recognized pursuant to written agreement executed by the Commission. Mitigation bank agreements should include: (a) financial mechanisms to ensure success of the bank; (b) assignment of responsibility for the ecological success of the bank; (c) scientifically defensible methods for determining the timing and amount of credit withdrawals; and (d) provisions for long-term maintenance, management and protection of the bank site. Mitigation banking should only be considered when no mitigation is practicable on or proximate to the project site.

11. The Commission may allow fee-based mitigation when other compensatory mitigation measures are infeasible. Fee-based mitigation agreements should include: (a) identification of a specific project that the fees will be used for within a specified time frame; (b) provisions for accurate tracking of the use of funds; (c) assignment of responsibility for the ecological success of the mitigation project; (d) determination of fair and adequate fee rates that account for all financial aspects of the mitigation project, including costs of securing sites, construction costs, maintenance costs, and administrative costs; (e) compensation for time lags between the adverse impact and the mitigation; and (f) provisions for long-term maintenance, management and protection of the mitigation site.

Amended October 2002

Public Trust
Policies Concerning the Public Trust

1. When the Commission takes any action affecting lands subject to the public trust, it should assure that the action is consistent with the public trust needs for the area and, in case of lands subject to legislative grants, should also assure that the terms of the grant are satisfied and the project is in furtherance of statewide purposes.

APPENDIX D

Special Status Species with Potential to Occur in the Bay Point Strategic Plan Area

TABLE D
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
Federal or State Threatened and Endangered Species				
Invertebrates				
Lange's metalmark butterfly *Apodemia mormo langei*	FE/--	Stabilized dunes, primary host plant is *Eriogonum nudum* var. *auriculatum*	**Low.** Currently found only at Antioch Dunes National Wildlife Refuge in Contra Costa County.	Adults: August-September; Larvae and pupae: October-August
Conservancy fairy shrimp *Branchinecta conservatio*	FE/--	Inhabits vernal pools and swales in the Central Valley	**Low.** Unsuitable habitat within project site.	Year-round (cysts, larvae, adults)
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/--	Grassland vernal pools	**Low.** Unsuitable habitat within project site.	Year-round (cysts, larvae, adults)
Delta green ground beetle *Elaphrus viridis*	FT/--	Muddy substrate at edges of vernal pools between Jepson Prairie and Travis AFB.	**Low.** Unsuitable habitat and only found in central Solano county.	February-May
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/--	Vernal pools	**Low.** Unsuitable habitat within project site.	Year-round (cysts, larvae, adults)
Fish				
Sacramento winter-run Chinook salmon *Oncorhynchus tshawytscha*	FE/CE	Spawns and rears in Sacramento River and tributaries where gravelly substrate and shaded riparian habitat occurs.	**Moderate.** Migrates through project vicinity. May occasionally stray into project area.	Year-round
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	FT/CT	Spawns and rears in Sacramento River and tributaries where gravelly substrate and shaded riparian habitat occurs.	**Moderate.** Migrates through project vicinity. May occasionally stray into project area.	Year-round
Central California coast steelhead *Oncorhynchus mykiss*	FT/CSC	Spawns and rears in coastal streams between the Russian River and Aptos Creek, as well as drainages of the SF and San Pablo Bays, where gravelly substrate and shaded riparian habitat occurs.	**Moderate.** Migrates through project vicinity. May occasionally stray into project area.	Year-round
California Central Valley steelhead *Oncorhynchus mykiss*	FT/CSC	Spawns and rears in the Sacramento/ San Joaquin River systems and tributaries where gravelly substrate and shaded riparian habitat occurs.	**Moderate.** Migrates through project vicinity. May occasionally stray into project area.	Year-round
Delta smelt *Hypomesus transpacificus*	FT/CT	Restricted to the Sacramento-San Joaquin Delta, including Suisun and San Pablo Bays and the Carquinez Strait.	**Moderate.** Critical habitat designated in Sacramento-San Joaquin Delta bordering the project site. May stray into project area.	Year-round

TABLE D (Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
Federal or State Threatened and Endangered Species (continued)				
Amphibians				
California tiger salamander *Ambystoma californiense*	FT/CSC	Seasonal freshwater ponds with little or no emergent vegetation. Utilizes mammal burrows in upland habitat for aestivation during the dry season.	**Low.** Unsuitable habitat within project site.	November- May
California red-legged frog *Rana aurora draytonii*	FT/CSC	Breed in stock ponds, pools, and slow-moving streams with emergent vegetation for escape cover and egg attachment. Where water is seasonal often utilizes mammal burrows in upland habitat for aestivation	**Low.** Unsuitable habitat within project site.	Year-round
Reptiles				
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT/CT	Preferred habitat a mosaic of open coastal scrub or chaparral and grassland with rocky outcrops	**Low.** Unsuitable habitat within project site.	March-November
Giant garter snake *Thamnophis gigas*	FT/CT	Freshwater marsh and slow streams	**Low.** Unsuitable habitat within project site.	March-November
Birds				
Swainson's hawk *Buteo swainsoni*	--/CT	Breeds in stands with few trees in juniper-sage flats, riparian areas and oak savannah. Requires adjacent suitable foraging areas such as grasslands, alfalfa or grain fields supporting rodents	**Low.** Migratory, wintering in Delta. Not known to breed in project area.	Winter
California black rail *Laterallus jamaicensis coturniculus*	--/CT	Nests and forages in tidal emergent wetland with pickleweed and cordgrass	**High.** Suitable marsh habitat within the project site and documented occurrences within 1 mile (CNDDB 2005).	Year- round
California clapper rail *Rallus longirostris obsoletus*	FE/CE	Nests and forages in emergent wetlands with pickleweed, cordgrass, and bulrush	**Moderate/High.** Suitable marsh habitat within project site and occurrences within two miles (CNDDB 2005).	Year-round
California least tern *Sterna antillarum browni*	FE/CE	Colonial breeder on bare or sparsely vegetated flat substrates including sand beaches, alkali flats, land fills, or paved areas	**Low.** No sandy beaches suitable for nesting colonies within the project area	Spring-Summer
Mammals				
Salt marsh harvest mouse *Reithrodontomys raviventris*	FE/CE	Saline emergent marsh with dense pickleweed	**High.** Suitable habitat and recorded occurrences (CNDDB 2005) surrounding the project vicinity.	Year-round

TABLE D (Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
Federal or State Threatened and Endangered Species (continued)				
Mammals (cont.)				
San Joaquin kit fox *Vulpes macrotis mutica*	FE/CT	Annual grasslands or open scrublands with loose textures soils for burrowing and suitable prey base	**Low.** Unsuitable habitat within project site. Not known from the project area or vicinity.	Year-round
Plants				
Large-flowered fiddleneck *Amsinckia grandiflora*	FE/CE/List 1B	Cismontane woodland, valley and foothill grassland. Known from only three natural occurrences in eastern Contra Costa County (CNPS 2005).	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	April-May
Suisun thistle *Cirsium hydrophilum var. hydrophilium*	FE/--/List 1B	Currently known only from two occurrences in tidal marshes of Suisun Marsh at Grizzly Island and Peytonia Slough (CNPS 2005).	**Low to Moderate.** Current known distribution limited but suitable habitat present within project area.	July-September
Soft bird's beak *Cordylanthus mollis* ssp. *Mollis*	FE/CR/ List 1B	Coastal salt marsh. Known from fewer than fifteen occurrences (CNPS 2005).	**Present.** Documented occurrences within the project area on the State Lands Commission parcel (CNDDB, 2005). May occur elsewhere within the project area. In suitable habitat.	July-November
Mt. Diablo bird's beak *Cordylanthus nidularis*	--/CR/List 1B	Grassy or rocky areas within serpentine chaparral	**Low.** No suitable habitat within the project area.	July-August
Contra Costa goldfields *Lasthenia conjugens*	FE/--/List 1B	Moist grasslands, vernal pools, cismontane woodlands, alkaline playas	**Low.** Marginally suitable habitat present in southeastern portion of project area is heavily impacted by cattle grazing. Nearest documented locations from 1800's in Antioch area have been extirpated (CNDDB, 2005).	March-June
Mason's lilaeopsis *Lilaeopsis masonii*	--/CR/List 1B	Brackish or freshwater marshes and swamps, riparian scrub. Many populations ephemeral, exploiting newly deposited or exposed sediments (CNPS 2005).	**Present.** Documented locations within the project area (CNDDB, 2005). Suitable habitat found along tidal channels throughout the project area.	April-November
Colusa grass *Neostapfia colusana*	FT/CE/List 1B	Vernal pools	**Low.** No suitable habitat within the project area.	May-August
Antioch dunes evening primrose *Oenothera deltoides* ssp *howelii*	FE/CE/ List 1B	Interior dunes and river bluffs	**Low.** No suitable habitat within the project area. Known only from Antioch Dunes National Wildlife Refuge (CNDDB 2005).	March-September
Rock sanicle *Sanicula saxitilis*	--/CR/List 1B	Rocky areas in valley and foothill grassland, broadleafed upland forest, chaparral	**Low.** No suitable habitat within the project area.	April-May

TABLE D (Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
		Federal or State Species of Concern		
Invertebrates				
Midvalley fairy shrimp *Branchinecta mesovallensis*	FSC/--	Vernal pools in Sacramento, Solano, Merced, Madera, San Joaquin, Fresno, and Contra Costa Counties.	**Low.** Unsuitable habitat within project site.	Year-round (cysts, larvae, adults)
San Joaquin dune beetle *Coelus gracilis*	FSC/--	Inhabits fossil dunes and sites with other sandy substrates along the western edge of the San Joaquin valley	**Low.** Unsuitable habitat within project site.	Adults: November-April; Larvae: Year-round
Monarch butterfly *Danaus plexippus*	--/*	Winter in California. Roost in wind protected eucalyptus, Monterey pine, and cypress groves, with water and nectar sources nearby.	**Low.** Unsuitable habitat within project site.	Winter
Antioch efferian robberfly *Efferia antiochi*	FSC/--	Known only from Contra Costa County (Antioch Dunes) and Fresno County (Fresno).	**Low.** Unsuitable habitat within project site.	
Bridge's coast range shoulderband snail *Helminthoglypta nickliniana bridgesi*	FSC/--	Found in tall grasses and weeds on open grassy hillsides	**Low.** Unsuitable habitat within project site.	Year-round
Middlekauf's shieldback katydid *Idiostatus middlekaufi*	FSC/--	Antioch Dunes	**Low.** Unsuitable habitat within project site.	Unknown
California linderiella fairy shrimp *Linderiella occidentalis*	FSC/--	Seasonal pools in intact grasslands where alluvial soils are underlaid by hardpan or in sandstone depressions	**Low.** Unsuitable habitat within project site.	Year-round (cysts, larvae, adults)
Molestan blister beetle *Lytta molesta*	FSC/--	Inhabits vernal pool vegetation in the Central Valley of California; from Contra Costa to Kern and Tulare Counties.	**Low.** No suitable habitat within the project area.	Unknown
Hurd's metapogon robberfly *Metapogon hurdi*	FSC/--	Habitat information unavailable	Habitat information unavailable	Unknown
Antioch mutilid wasp *Myrmulosa pacifica*	FSC/--	Antioch Dunes	**Low.** Unsuitable habitat within project site.	Unknown
Antioch andrenid bee *Perdita scituta antiochensis*	FSC/--	Visits flowers of a variety of native plants in Antioch Dunes	**Low.** Unsuitable habitat within project site.	Unknown
Fish				
Southern DPS green sturgeon *Acipenser medirostris*	FP/CSC	Inhabit near-shore marine waters from Mexico to the Bering Sea and are commonly observed in bays and estuaries along the western coast of North America. Southern DPS is only known to spawn in upper Sacramento River.	**Moderate.** May enter project area marinas to forage.	Year-round.

TABLE D(Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
		Federal or State Species of Concern (continued)		
Fish (cont.)				
Central Valley fall/late fall-run Chinook salmon *Oncorhynchus tshawytscha*	FSC/CSC	Spawns and rears in Sacramento River and tributaries where gravelly substrate and shaded riparian habitat occurs.	**Moderate.** Migrates through project vicinity. May occasionally stray into project area.	Year-round
Sacramento perch *Archoplites interruptus*	FSC/CSC	Historically occurred in slow moving sloughs, streams, rivers, and lakes. Currently restricted to Clear Lake and reservoirs and farm ponds.	**Low.** Project area is outside known current range of the species.	Year-round
Sacramento splittail *Pogonichthys macrolepidotus*	FSC/CSC	Slow moving river sections and dead-end sloughs with flooded vegetation for spawning and foraging for young.	**Moderate/High.** May enter project area marinas.	Year-round
Longfin smelt Spirinchus thaleichthyes	--/CSC	Occur in the middle or bottom of water column in salt or brackish water portions of the Sacramento/San Joaquin estuary. Concentrated in Suisun, San Pablo, and North SF Bays.	**Moderate/High.** Known to rear in Suisun Bay. May enter project area marinas.	Year-round
Reptiles				
Silvery legless lizard *Aniella pulchra pulchra*	FSC/--	Sandy or loose loamy soils in areas with sparse vegetation	**Low.** Unsuitable habitat within project site.	Year-round
Northwestern pond turtle *Clemmys marmorata marmorata*	FSC/CSC	Freshwater ponds and slow streams, marshes, rivers, and irrigation ditches with upland sandy soils for laying eggs	**High.** Suitable aquatic habitat within channels but limited basking areas. Occurrences identified in Bay Point Regional Shoreline Plan (EBRPD, 2001)	Year-round
California horned lizard *Phrynosoma coronatum frontale*	FSC/CSC	Patchy open areas with sandy soils	**Low.** Unsuitable habitat within project site.	Year-round
Birds				
Tricolored blackbird *Agelaius tricolor*	FSC/CSC	Riparian thickets and emergent vegetation	**Moderate/High.** Marsh cattails and reeds provide suitable habitat.	Spring
Short-eared owl *Asio flammeus*	--/CSC	Fresh water and salt marshes and swamps, lowland meadows, irrigated fields	**High.** Open marsh provides foraging and nesting habitat.	Year-round
Burrowing owl *Athene cunicularia hypugea*	FSC/CSC	Nests in mammal burrows in open, sloping grasslands	**Moderate.** Some suitable burrows present on site.	February-June
Mountain plover *Charadrius montanus*	--/CSC	Winters in areas with short-grassed or plowed fields with bare ground and flat topography. Prefer grazed areas and those with burrowing rodents.	**Low. (Breeding)** Does not breed in California. Occasional winter occurrences in San Francisco area.	Winter

TABLE D(Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
		Federal or State Species of Concern (continued)		
Birds (cont.)				
Northern harrier *Circus cyaneus*	--/CSC	Mostly nests in emergent vegetation, wet meadows or near rivers and lakes, but may nest in grasslands away from water.	**Present.** Observed during field reconnaissance survey. Suitable nesting habitat available.	Year-round
White-tailed kite *Elanus leucurus*	FSC/CSC	Nests near wet meadows and open grasslands dense oak, willow or other large tree stands.	**Present.** Observed during field reconnaissance survey. Suitable nesting habitat available.	March-July
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	FSC/CSC	Saline and freshwater marshes	**High.** PBRO records shown high distribution and breeding in Suisun Bay region. (Herzog, et. al, 2004)	Year-round
Loggerhead shrike *Lanius ludovicianus*	FSC/CSC	Nests in shrublands and forages in open grasslands	**Present.** Observed during field reconnaissance survey. Suitable nesting habitat present.	Year-round
Suisun song sparrow *Melospiza melodia maxillaris*	FSC/CSC	Brackish water marshes and sloughs with cattails, tules, and pickleweed	**Present.** Observed during field reconnaissance survey. Suitable nesting habitat present.	April-July
Double-crested cormorant *Phalacrocorax auritus*	--/CSC	Nests along coast on isolated islands or in trees along lake margins	**Low.** No nesting colonies reported in project vicinity.	April-July
Mammals				
Pacific western big-eared bat *Corynorhinus townsendii townsendii*	FSC/CSC	Inhabits a variety of habitats, requires caves or man-made structures for roosting	**Moderate Potential.** Vacant structures on the project site may provide roosting habitat.	April–August
Greater western mastiff bat *Eumops perotis californicus*	FSC/CSC	Breeds in rugged, rocky canyons and forages in a variety of habitats	**Low Potential.** Project site is not likely to provide suitable roosting habitat.	March–August
Long-eared myotis *Myotis evotis*	FSC/--	Inhabits woodlands and forests up to approximately 8,200 feet in elevation	**Moderate Potential.** Vacant structures on the project site may provide roosting habitat.	March–August
Fringed myotis *Myotis thysanodes*	FSC/--	Inhabits a variety of habitats including pinyon-juniper woodland, valley-foothill woodland, hardwood-conifer forests, and desert scrub	**Moderate Potential.** Vacant structures on the project site may provide roosting habitat.	March–August
Long-legged myotis *Myotis volans*	FSC/--	Inhabits forests and woodland habitats, primarily oak and juniper woodlands	**Low Potential.** Project site is not likely to provide suitable roosting habitat.	March–August
Yuma myotis *Myotis yumanensis*	FSC/CSC	Open forests and woodlands below 8,000 feet in close association with water bodies	**Moderate Potential.** Vacant structures on the project site may provide roosting habitat.	March–August

TABLE D(Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
		Federal or State Species of Concern (continued)		
Mammals (cont.)				
Berkeley kangaroo rat *Dipodomys heermanni berkeleyensis*	FSC/--	Open grasslands and open spaces in chaparral with fine, deep, well drained soil for burrowing	**Low.** Unsuitable habitat within project site.	Year-round
San Joaquin pocket mouse *Perognathus inornatus inornatus*	FSC/--	Grasslands and blue oak savanna with friable soils	**Low.** Unsuitable habitat within project site.	Year-round
Suisun shrew *Sorex ornatus sinuosus*	FSC/CSC	Tidal marshes, require dense low cover above the mean tide line for nesting and foraging	**Low/Moderate.** Suitable habitat within project site but known occurrences restricted to north Suisun Bay	Year-round
American badger *Taxidea taxus*	--/CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	**Low.** Unsuitable habitat within project site.	Year-round
Plants				
Bent-flowered fiddleneck *Amsinckia lunaris*	--/--/List 1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	March-June
Mt. Diablo manzanita *Arctostaphylos auriculata*	--/--/List 1B	On sandstone in chaparral	**Low.** No suitable habitat within the project area.	January-March
Contra Costa manzanita *Arctostaphylos manzanita* ssp. *laevigata*	--/--/List 1B	Rocky slopes in chaparral	**Low.** No suitable habitat within the project area.	January-February
Suisun marsh aster *Aster lentus*	FSC/--/List 1B	Brackish and freshwater marshes, sloughs	**Present.** Documented locations within the project area (CNDDB, 2005). Suitable habitat present elsewhere in sloughs and tidal channels throughout the northern portions of project site.	May-November
Alkali milk-vetch *Astragalus tener* var. *tener*	--/--/List 1B	Alkali flats, valley grasslands	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	March-June
Heartscale *Atriplex cordulata*	FSC/--/List 1B	Chenopod scrub, alkaline meadows, sandy soils in valley and foothill grassland	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	April-October
Brittlescale *Atriplex depressa*	FSC/--/List 1B	Chenopod scrub, meadows, playas, valley and foothill grassland, vernal pools, often in alkaline situations	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	May-October
San Joaquin spearscale *Atriplex joaquiniana*	FSC/--List 1B	Alkaline soils in chenopod scrub, meadows, playas, valley and foothill grassland	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	April-October

TABLE D(Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
		Federal or State Species of Concern (continued)		
Plants (cont.)				
Big tarplant *Blepharizonia plumosa* var. *plumosa*	FSC/--List 1B	Sometime on serpentine soils in chaparral, cismontane woodland, valley and foothill grassland	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	July-October
Mt. Diablo fairy lantern *Calochortus pulchellus*	--/--/List 1B	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland	**Low.** Suitable habitat not present on project site.	April-June
Butte County morning-glory *Calystegia atriplicifolia ssp. buttensis*	--/--/List 1B	Chaparral and rocky lower montane coniferous forests. Plants from Contra Costa County probably an undescribed taxon (CNPS 2005).	**Low.** Suitable habitat not present on project site.	May-July
Chaparral harebell *Campanula exigua*	--/--/List 1B	Rocky areas in chaparral, usually on serpentinite derived soils	**Low.** Suitable habitat not present on project site.	May-June
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	FSC/CSC/List 1B	Alkaline areas in valley and foothill grassland	**Low to Moderate.** May occur in disturbed grasslands on the project site.	May-November
Pappose tarplant *Centromadia parryi* ssp. *parryi*	--/--/List 1B	Coastal prairie, meadows and seeps, coastal salt marshes and swamps, and valley and foothill grassland (often alkaline)	**Low.** Highly disturbed grasslands and marshes on project site offer marginal to suitable habitat for this species. However, species not known from Contra Costa County.	May-November
Hispid bird's beak *Cordylanthus mollis* ssp. *hispidus*	FSC/--/List 1B	Alkaline microhabitat in meadows, playas, valley and foothill grassland. Not recorded from Contra Costa County (CNPS 2005).	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	June-September
Hoover's cryptantha *Cryptantha hooveri*	--/--/List 1A	Sandy soils in valley and foothill grassland	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species. Presumed extinct in CA (CNPS 2005)	April-May
Hospital Canyon larkspur *Delphinium californicum* ssp. *interius*	FSC/--/List 1B	Opening in chaparral, cismontane woodland	**Low.** Suitable habitat not present on project site.	April-June
Dwarf downingia *Downingia pusilla*	--/--/List 1B	Mesic sites in valley and foothill grassland, vernal pools, Not known form Contra Costa County (CNPS 2005).	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species. No vernal pool habitat present.	March-May
Brandegee's eriastrum *Eriastrum brandegeeae*	--/--/ List 1B	Chaparral and cismontane woodland	**Low.** Suitable habitat not present on project site.	April-August

TABLE D(Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
		Federal or State Species of Concern (continued)		
Plants (cont.)				
Mt. Diablo buckwheat *Eriogonum truncatum*	--/--/List 1A	Sandy soils in chaparral, coastal scrub, and valley and foothill grassland	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species. Presumed extinct in California (CNPS 2005).	April-November
Round-leaved filaree *Erodium macrophyllum*	--/--/List 2	Clay soils in cismontane woodland and valley and foothill grassland	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	March-May
Contra Costa wallflower *Erysimum capitatum* ssp. *angustatum*	--/--/List 1B	Inland dunes. Known only from Antioch Dunes National Wildlife Refuge (CNPS 2005).	**Low.** Suitable habitat not present on project site.	March-July
Diamond-petaled poppy *Eschscholzia rhombipetala*	FSC/--/ List 1B	Alkaline areas and clay soils in valley and foothill grassland	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	March-April
Fragrant fritillary *Fritillaria liliacea*	FSC/--/ List 1B	Coastal scrub, valley and foothill grassland, coastal prairie; on heavy clay soils, often on ultramafic soils	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	February-April
Diablo helianthella *Helianthella castanea*	FSC/--/ List 1B	Openings in chaparral and broadleaved upland forest	**Low.** Suitable habitat not present on project site.	March-June
Brewer's western flax *Hesperolinon breweri*	FSC/--/ List 1B	Often in rocky serpentine soils in chaparral and grasslands, also cismontane woodland	**Low.** Suitable habitat not present on project site.	May-July
Carquinez goldenbush *Isocoma arguta*	FSC/--/ List 1B	Valley and foothill grassland, alkaline soils, flats	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	August-December
Delta tule pea *Lathyrus jepsonii* var. *jepsonii*	FSC/--/ List 1B	Freshwater and brackish marshes and swamps, usually on marsh and slough edges	**Present.** Documented locations within project area on State Lands Commission parcel (CNDDB 2005). Suitable habitat occurs along tidal channels and sloughs throughout the northern portions of the project area.	May-September
Legenere *Legenere limosa*	--/--/List 1B	Vernal pools	**Low.** Suitable habitat not present on project site.	April-June
Woolly-headed lessingia *Lessingia hololeuca*	--/--/List 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, and valley and foothill grassland, clay and serpentinite soils	**Low.** Suitable habitat not present within project site.	June-October

TABLE D(Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
		Federal or State Species of Concern (continued)		
Plants (cont.)				
Delta mudwort *Limosella subulata*	--/--/List 2	On mud banks in freshwater and brackish marshes and swamps, riparian scrub	**Moderate to High.** Suitable habitat occurs along tidal channels and sloughs within the marshes of the project area. Nearest documented Contra Costa County location west of Antioch more than 5 miles from project site (CNDDB 2005).	May-August
Showy madia *Madia radiata*	--/--/List 1B	Often on adobe clay in cismontane woodland, valley and foothill grassland	**Low.** Suitable habitat not present on project site.	March-May
Hall's bush mallow *Malacothamnus hallii*	--/--/List 1B	Chaparral, sometimes on serpentine soils	**Low.** Suitable habitat not present on project site.	May-September
Mt. Diablo cottonweed *Micropus amphibolus*	--/--/List 3	Broadleafed upland forest, chaparral, cismontane woodland, and valley and foothill grassland with rocky soils	**Low.** Suitable habitat not present on project site.	Mar-May
Robust monardella *Monardella villosa* ssp. *globosa*	--/--/List 1B	Cismontane woodland, openings in chaparral	**Low.** Suitable habitat not present on project site.	June-August
Mt. Diablo phacelia *Phacelia phacelioides*	FSC/--/List 1B	Rocky substrates in chaparral, cismontane woodland	**Low.** Suitable habitat not present on project site.	April-May
Bearded popcorn-flower *Plagiobothrys hystriculus*	--/--/1A	Vernal pools, mesic areas in valley and foothill grassland	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species. Suspected extirpated from Honker Bay Quad (CNDDB 2005).	April-May
Rayless ragwort *Senecio aphanactis*	--/--/List 2	Alkaline flats in coastal scrub, chaparral, cismontane woodland	**Low.** Suitable habitat not present on project site.	January-April
Most beautiful jewelflower *Streptanthus albidus* ssp. *peramoenus*	FSC/--/List 1B	Serpentine grassland, chaparral	**Low.** Suitable habitat not present on project site.	April-June
Mt. Diablo jewelflower *Streptanthus hispidus*	FSC/--/List 1B	Talus or rocky outcrops in chaparral, valley and foothill grassland	**Low.** Suitable habitat not present on project site.	March-June
Saline clover *Trifolium depauperatum var. hydrophilum*	--/--/List 1B	Marshes and swamps, valley and foothill grassland with mesic /alkaline soils and vernal pools	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species.	April-June
Coastal triquetrella *Triquetrella californica*	--/--/List 1B	Coast bluff scrub, coastal scrub	**Low.** Suitable habitat not present on project site.	n/a

TABLE D(Continued)
LIST OF SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE BAY POINT STRATEGIC PLAN AREA

Common Name *Scientific Name*	Status USFWS/ CDFG/CNPS	General Habitat	Potential for Occurrence	Period of Identification
		Federal or State Species of Concern (continued)		
Plants (cont.)				
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	FSC/--/List 1A	Alkaline hills, grasslands	**Low.** Highly disturbed grasslands on project site offer only marginal habitat for this species. Believed to be extirpated from Contra Costa County (CNDDB 2005).	March-April
Oval-leaved viburnum *Viburnum ellipticum*	--/--/List 2	Chaparral, cismontane woodland, and lower montane coniferous forest	**Low.** Suitable habitat not present on project site.	May-June

Sensitive Plant Communities

Name	Global Rank	State Rank
Coastal brackish marsh	G2	S2.1
Northern claypan vernal pool	G1	S1.1
Serpentine bunchgrass	G2	S2.2
Stabilized interior dunes	G1	S1.1
Sycamore alluvial woodland	G1	S1.1
Valley needlegrass grassland	G1	S3.1

Status Codes:

FEDERAL: (U.S. Fish and Wildlife Service)
FE = Listed as Endangered (in danger of extinction) by the Federal Government.
FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the Federal Government.
FP = Proposed for Listing as Endangered or Threatened.
FSC = Federal Species of Concern. May be Endangered or Threatened, but not enough biological information has been gathered to support listing at this time.

STATE: (California Department of Fish and Game)
CE = Listed as Endangered by the State of California
CT = Listed as Threatened by the State of California
CR = Listed as Rare by the State of California (plants only)
CSC = California Species of Special Concern

California Native Plant Society
List 1A=Plants presumed extinct in California
List 1B=Plants rare, Threatened, or Endangered in California and elsewhere
List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere
List 3= Plants about which more information is needed

SOURCES: CNDDB 2006; USFWS 2005; CNPS 2005

APPENDIX E

Golden State Water Company
Waterfront Project at Bay Point
Water Supply Assessment and Verification

Golden State Water Company

Waterfront Project at Bay Point

Water Supply Assessment and Verification

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This Water Supply Assessment and Verification ("WSAV") assesses the sufficiency of water supplies in the Bay Point Customer Service Area ("Bay Point CSA" or "CSA") owned and operated by Golden State Water Company ("GSWC") to meet projected water demands for the proposed Waterfront Project ("Project") in the unincorporated community of Bay Point. This WSAV concludes and verifies that there will be sufficient water supplies for the Project during all hydrologic conditions, including normal, single dry and multiple dry years, for at least the next 20 years.

1.1 Purpose

Water Code sections 10910 through 10915 require land use planning entities, when evaluating certain development projects, to request an assessment of the availability of water supplies from the public water system that will provide water to the project. In conjunction with an assessment under the Water Code, the public water system must also verify that it will have sufficient supplies available to meet the water demands of the project, pursuant to Government Code section 66473.7. The water supply assessment and verification must be performed in conjunction with the land-use approval process associated with the project and must include an evaluation of the sufficiency of water supplies available to the public water system to meet existing and anticipated future demands, including the demand associated with the project, over a 20-year horizon that includes normal, single dry and multiple dry years.

The water supply assessment must identify any existing water supply entitlements, water rights or water service contracts held by the public water system or associated with the proposed project, and include a description of the quantities of water received in prior years by the public water system.

If the public water system relies on groundwater supplies, the water supply assessment must describe all groundwater basins from which the proposed project will be supplied. For each basin that has not been adjudicated, the assessment should indicate whether the California Department of Water Resources ("DWR") has identified the basin as overdrafted, or has projected that the basin will become overdrafted if present management conditions continue, and should provide a detailed description of efforts being undertaken in the basin to eliminate any overdraft condition that may exist.

If the water supply assessment concludes that additional water supplies are necessary, the public water system must submit plans for acquiring the additional water supplies, setting forth the measures that are being undertaken to acquire and develop those supplies. The discussion of future water supply projects and programs should include proposed methods of financing, estimated costs, information related to federal, state or local permits, and the estimated timeframes within which the public water system expects to be able to acquire the additional supplies.

1.2 Scope of the Water Supply Assessment and Verification

This WSAV discusses historical water supplies, current water supplies and additional sources of water that will be available to serve planned future growth in the Bay Point CSA. This information is intended to satisfy the requirements of Water Code sections 10910 through 10915 and Government Code section 66473.7 and includes:

- A description of the Bay Point CSA, including current and projected population, climate and other factors affecting water demands;
- Descriptions of existing and projected water supply sources, including groundwater and surface water supplies and other sources currently available to the Bay Point CSA;
- Discussion of plans to acquire additional water supplies; and
- An assessment and verification of the availability of these sources during normal, single dry, and multiple dry years for a 20-year projection.

1.3 Coordination with Urban Water Management Plan

Bay Point's 2005 Urban Water Management Plan ("UWMP") does not include water demands for the proposed Project. Nonetheless, water supply and demand information contained in that report shows that the Bay Point CSA can provide adequate water supplies to additional developments currently outside the CSA, including the proposed Project.

1.4 Project Description

The Project will include up to 450 multi-family residential units, 28,000 square feet of commercial space (including a restaurant, Laundromat, bait shop, and snack bar), two baseball and two soccer fields, and a 568-berth marina with 55 live-aboard boats. The Project will receive its entire water supply from the Bay Point CSA. The Project will require approximately 150,000 gallons per day ("GPD"), which is equal to 168 acre-feet of water per year ("AFY"). A detailed explanation of Project's anticipated water demands is presented in section 2.3 below.

The Project is located within the unincorporated community of Bay Point in Contra Costa County. Specifically, the Project site is bounded on the north by Suisun Bay, on the east by the Concord Naval Weapons Station, on the south by Southern Pacific Railroad and on the west by Pacific Gas and Electric Company lands. As noted above, the site is not presently within the certificated service area of the Bay Point CSA, and therefore was not included in the CSA's 2005 UWMP. GSWC intends to expand the Bay Point CSA service area to include the Project, subject to approval from the California Public Utilities Commission.

This WSAV provides an analysis of available water supplies for a 20-year projection as required by Water Code section 10910, through 2030. Although this analysis only extends to 2030, GSWC fully expects that available water supplies will be sufficient to meet demands beyond 2030.

1.5 Overview of GSWC and the Bay Point CSA

GSWC is a public water utility regulated by the California Public Utilities Commission. GSWC obtains, treats, and distributes water to more than 240,000 customer connections throughout California. GSWC operates 41 separate water distribution systems, which provide safe and reliable municipal and industrial water supplies to approximately 75 communities in 10 counties, from Lake County in the northern part of the state to Imperial County in the south. GSWC owns and operates the Bay Point CSA.

In 2005, the Bay Point CSA provided water to approximately 5,208 customer connections. (Bay Point 2005 Urban Water Management Plan, p. 4-5.) The CSA is bounded by Nichols Avenue to the west, Route 4 Freeway to the south, Loftus Road to the east, and Southern Pacific Railroad to the north. (Bay Point UWMP, p. 2-1.) The CSA area used for the current population analysis also included proposed service area annexations on the eastern and western boundaries of Bay Point. (*Id.*) The service area is largely residential, but also includes some commercial and industrial land uses. (*Id.*)

The Bay Point CSA area has cool, humid winters and hot, dry summers. The Western Regional Climate Center has collected 30 years of historical data for the nearby city of Antioch, 8 miles from Bay Point. Monthly precipitation during winter months ranges from 2 to 3 inches. Low humidity occurs in the summer months from May to September. Average historical annual precipitation is approximately 9.5 inches. The rainy season typically begins in November and ends in March. Peak water demands occur during the summer months. Table 1-1 shows average monthly and annual precipitation and monthly temperature for the Antioch monitoring station.

Table 1-1. Climate Data

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Total Rainfall (in.)	2.8	2.43	1.93	0.88	0.38	0.1	0.02	0.05	.21	0.7	1.66	2.12	9.5
Avg. Max. Temp. (ºF)	53.6	60.2	65.4	71.4	78.5	86.1	91.0	90.0	86.3	77.6	64.2	54.6	N/A
Avg. Min. Temp. (ºF)	37.0	40.9	43.4	46.2	51.2	56.0	57.2	56.7	55.1	50.1	42.7	37.2	N/A

SECTION 2 - HISTORICAL AND PROJECTED WATER DEMANDS

2.1 Current and Projected Population Estimates

Population, housing and employment estimates were developed for the Bay Point CSA using data from the Association of Bay Area Governments ("ABAG"), which is a regional planning agency that provides demographic and economic data analysis for Bay Area counties, including Contra Costa County. ABAG recently updated its population projections through 2030 using 2000 U.S. Census data.

The population projections for the CSA were developed by superimposing the service area over census tract boundaries, identifying the applicable overlying tracts, then developing a percentage estimate for each overlying tract. For tracts entirely within the service area, it was assumed that 100 percent of the associated census data was applicable to the Bay Point CSA. For areas where the overlap was not complete, the percentage overlap was used to estimate the approximate population. Table 2-1 shows current and projected population data for the area served by the Bay Point CSA.

Table 2-1. Past and Projected Service Area Population and Customer Connections

Year	Population	Households*	Connections
2000	22,394	6,791	4,889
2005	23,923	7,233	4,927
2010	25,142	7,632	5,494
2015	28,087	8,556	6,159
2020	30,069	9,212	6,630
2025	31,502	9,745	7,011
2030	33,184	10,271	7,389

* The number of households typically exceeds the number of customer connections because multi-family housing units often have only one service connection.

2.2 Past, Current and Projected Water Demands for the Bay Point CSA

In 2005, as part of its UWMP, GSWC estimated future water demands in the Bay Point CSA using two different methods, a historical-trend approach and a population-based projection. The historical-trend approach uses a trend line from past water use in the Bay Point CSA to predict future water demand. Population-based water demand projections are determined using the census tract method described in section 2.1 above.

The population-based projections resulted in significantly higher water use estimates than did the historical-trend analysis because ABAG's projected growth rates exceed the historical growth rates observed in the Bay Point CSA service area over the past 20 years. It is unlikely

that the actual water demands in the Bay Point CSA will be as high as the projected water demands set forth within ABAG's projected growth rates. (Bay Point UWMP, p. 2-4.) Nonetheless, GSWC chose to use the more conservative population-based estimates in the Bay Point UWMP for projections of the CSA's projected future water demands. Table 2-2 shows past, current and projected annual water demands of customers served by the Bay Point CSA, based on historical records up to 2005 and population growth estimates for 2010 to 2030.

Table 2-2. Past, Current and Projected Water Demands in Bay Point CSA

Year	1999	2000	2001	2002	2003	2004	2005	2010	2015	2020	2025	2030
Demand (AFY)	2,674	2,777	2,895	2,997	2,851	2,861	2,918	3,076	3,445	3,704	3,909	4,119

Residential and commercial water users are the two main types of users in the Bay Point CSA. Residential water needs were determined using the population projections for the number of households within the Bay Point CSA, coupled with a water use factor per household. Commercial water needs were determined using the projections for developed acreage within the Bay Point CSA, coupled with a water use factor per acre. For each category, a water use factor was calculated based on total water sales for that category divided by the number of active service connections for that category. The water factors for each customer type were averaged over the data range from 1999 to 2004 in order to obtain a representative water use factor that can be used for water demand projections by customer type. (Bay Point UWMP, p. 4-6.) Table 2-3 sets forth current water demands by sector. (Bay Point UWMP, p. 4-5.)

Table 2-3. Water Demand by Sector for the Bay Point CSA (AFY)

Year	Single Family Housing	Multifamily	Commercial	Industrial	Institutional/ Government	Landscape	Agriculture	Other	Total System Demand
2000	1,487	482	36	404	99	135	0	0	2,643
2005	1,582	492	41	412	100	147	0	3	2,777
2010	1,669	520	43	433	105	154	0	3	2,927
2015	1,871	582	48	484	117	172	0	4	3,278
2020	2,014	627	51	518	126	185	0	4	3,525
2025	2,131	663	54	543	132	193	0	4	3,720
2030	2,246	699	57	572	139	204	0	4	3,921

Unaccounted for water is unmetered water use such as water used for fire protection and training, water used in operations, system leaks, unauthorized connections and inaccurate meters.

Unaccounted for water accounts for the difference in total water demand projections between Table 2-2 and Table 2-3.

As noted above, the projected water demands in Table 2-2 based on population growth are greater than the projected water demands in Table 2-3 based on water use factors by sector. For planning purposes, this WSA uses the greater demand figures for its analysis of water supply adequacy and reliability.

2.3 Project Water Demands

Upon completion, the proposed Project will require approximately 137,000 GPD. Table 2-4 shows the water use factors and calculations used to arrive at this estimate. Contra Costa County's planning consultant made an independent estimate of 150,000 GPD, which verifies the accuracy of these calculations. This WSAV is based on the more conservative number of 150,000 GPD, which equals 168 AFY.

Table 2-4. Total Water Demand for the Project

Proposed Use	Water Use Factor*	Quantity	Water Demand (GPD)
Multi-Family Housing	200 GPD/unit	450 units	90,000
Restaurant	156 GPD/employee	10 employees	1,560
Laundromat	184 GPD/washer	10 washers	1,840
Commercial Office Space	0.75 GPD/sq. ft.	14,000 sq. ft.	10,500
Landscaping/Ball fields	2,664 GPD/acre	10 acres	26,640
Shoreline Regional Park	N/A	N/A	665**
Live-aboard boats	100 GPD/boat	55 boats	5,500
Total Project Demand	**N/A**	**N/A**	**136,705**

* Water use factors were taken from Larry Mays, "Water Resources Handbook," and JMM Consulting Engineering, "Water Treatment Principles and Design," and in several cases increased to allow for more conservative, i.e. higher, water demand estimates.

** Actual use.

2.4 Demand Management Planning and Conservation

GSWC is a signatory to the California Urban Water Conservation Council's Memorandum of Understanding Regarding Urban Water Conservation in California ("MOU"). By signing the MOU, water purveyors agree to undertake certain Best Management Practices ("BMPs") that result in reductions in urban water demands. The program conducted by GSWC for the Bay Point CSA includes the following BMPs:

- Residential plumbing retrofits;
- Water survey programs for residential customers;
- Large landscape conservation programs and incentives;
- Conservation programs for commercial and industrial accounts;
- System water audits, leak detection and repair;
- Installation of meters and commodity rates for all new customers and retrofit of existing connections;
- High-efficiency washing machine rebate programs;
- Public information programs;
- Conservation pricing;
- Water conservation coordinator; and
- Water waste prohibition.

When these demand management measures are fully implemented, the Bay Point CSA is expected to realize the water demand reductions listed in Table 2-5 below. These figures were reported in Table 5-5 of the 2005 UWMP for the Bay Point CSA.

Table 2-5. Projected Demand Reductions from Best Management Practices

Year	2010	2015	2020	2025	2030
Savings (AFY)	172	130	130	106	106

SECTION 3 - HISTORICAL AND EXISTING WATER SUPPLIES

GSWC's Bay Point CSA currently utilizes a combination of local groundwater and surface water purchased from the Contra Costa Water District ("CCWD") as its water supply sources. GSWC's water supply is projected to increase by 41 percent from 2005 to 2030 to meet anticipated new water demands. (Bay Point 2005 UWMP, p. 3-3.) Most of the new water supplies will be obtained from additional water purchased from CCWD, as discussed in detail below. (*Id.*) Table 3-1 summarizes GSWC's current and planned water procurements for the Bay Point CSA.

Table 3-1. Current and Planned Water Supplies for the Bay Point CSA (AFY)

Source	2005	2010	2015	2020	2025	2030
Purchased Water from CCWD	2,634	2,830	3,199	3,458	3,663	3,873
Groundwater	194	246	246	246	246	246
Total Supplies	2,828	3,076	3,445	3,704	3,909	4,119

The figures in Table 3-1 show the amounts of water available for the Bay Point CSA under GSWC's current agreement with CCWD and existing water treatment and pumping capacities. As discussed in detail below, additional water supplies are available under GSWC's purchase agreement with CCWD or by expanding GSWC's current groundwater pumping capacity.

3.1 Surface Water

3.1.1 *Purchases from the Contra Costa Water District*

GSWC purchases the majority of the Bay Point CSA's water supply from CCWD. GSWC purchases both raw and treated water from CCWD, and has a separate delivery point for each. The system includes a raw water connection at the Contra Costa Canal and an interconnection with CCWD's treated water delivery system at GSWC's Port Chicago interconnection. Treated water deliveries are governed by a "Partnership Agreement" between GSWC and CCWD, originally entered into in 1994. The Partnership Agreement has been amended six times, most recently in 1998.

3.1.1.1 *CCWD Raw Water Deliveries*

GSWC treats the raw water delivered from the Contra Costa Canal at its own Hill Street water treatment plant. This facility has a capacity of 2,880 GPM (4,648 AFY). This capacity and the availability of water from CCWD are the only potentially limiting factors on GSWC's raw water purchases. The Partnership Agreement does not limit the amount of raw water GSWC can purchase other than requiring GSWC to obtain permission from CCWD before expanding the capacity of the Hill Street water treatment facility

Raw water from CCWD is GSWC's primary water source for the Bay Point CSA. In 2005, GSWC purchased 2,450 acre-feet of raw water, approximately 93 percent of the Bay Point CSA's total water demand for that year. Although that amount constituted a large portion of the CSA's total usage, it represented only 53 percent of the Hill Street Water Treatment Plant's capacity due to seasonal variation in water demands. An additional 2,198 AFY of treatment capacity is available to treat additional raw water deliveries from CCWD to satisfy future demands.

3.1.1.2 *CCWD Treated Water Deliveries*

Water received by GSWC via the Port Chicago interconnection is treated by CCWD at CCWD's Bollman Water Treatment Plant. The original 1994 Partnership Agreement provided that CCWD would make available, and GSWC would purchase, 550 GPM (896 AFY) of initial capacity in CCWD's water treatment and distribution facilities. In 1998, the amount of initial capacity was increased by 196 GPM to a total of 746 GPM (1,204 AFY) by Amendment No. 6 to the Partnership Agreement. GSWC agreed to make an initial payment followed by an amortized schedule of payments as a "buy-in" charge for this initial capacity of 746 GPM.

The Partnership Agreement further requires that GSWC pay to CCWD a Bay Point Facilities Reserve Charge ("FRC") as a connection fee, based on meter size, to cover the costs incurred by CCWD for the additional treated water capacity necessary to serve the maximum day needs of future GSWC customers. GSWC has paid $1,186,607 in FRC payments as new customers have been connected, resulting in an additional 70 GPM (113 AFY) of treated water capacity entitlement from CCWD. GSWC, therefore, may presently purchase up to 816 GPM of CCWD treated water. GSWC's entitlement will continue t to increase as it makes additional FRC payments for new connections.

In sum, GSWC pays two fees for the treated water capacity from CCWD. First, GSWC has and continues to make payments as a "buy-in" charge for the initial treated water capacity of 746 GPM. Second, GSWC (or developers in lieu of GSWC) makes additional FRC payments as new connections are added to reimburse CCWD for the capacity necessary to serve new customers.

Under the Partnership Agreement, GSWC estimated that the ultimate treatment capacity to be purchased from CCWD would be 1,980 GPM (3,195 AFY) based on an estimated expansion of the Bay Point CSA to 6,300 customer connections by the year 2020. In 2005, the Bay Point CSA purchased only 203 acre-feet of treated water from CCWD, leaving approximately 93 percent of its treated water capacity for future development and expansion of the CSA. According to the historical trend analysis in the Bay Point CSA's 2005 UWMP, fewer than 6,300 connections will be online by 2020. Hence, the Partnership Agreement provides the Bay Point CSA with a surplus of water supplies to meet additional water demands through 2020 and beyond.

Table 3-2 shows the two sources of CCWD water available to the Bay Point CSA, and the usage of each in 2005. The surplus could be used to serve new developments outside the current Bay Point CSA service area, such as the proposed Project.

Table 3-2. Surface Water Supplies Available Under Partnership Agreement (AFY)			
	Raw Water	**Treated Water***	**Total**
Available Water	4,648	3,195	7,843
2005 Usage	2,450	203	2,653
Surplus Water Available for CSA Expansion	2,198	2,992	5,190

* Pursuant to the Partnership Agreement, a total of 3,195 AFY of water treatment capacity is available based on Bay Point CSA's "Ultimate Required Capacity."

The surplus water figures represent the amount of water available to the Bay Point CSA under GSWC's Partnership Agreement with CCWD. Therefore, GSWC can procure additional water supplies from CCWD for Bay Point CSA expansion, including demand from the Project, in the following ways:

- Purchasing additional raw water for treatment at GSWC's Hill Street WTP up to the facility's current maximum capacity of 4,648 AFY;

- Purchasing additional capacity at the Bollman WTP up to the estimated required capacity of 3,195 AFY pursuant to the Partnership Agreement with CCWD.

As discussed in the following sections, CCWD has sufficient water supplies to meet not only the current demands of the Bay Point CSA, but also the additional water demands associated with new development, including the Project. CCWD's existing supplies are discussed in detail in section 3.1.2. Future water supplies that could become available to CCWD are discussed in section 3.1.3.

3.1.2 *Existing CCWD Water Supplies*

CCWD obtains the water that GSWC ultimately receives for the Bay Point CSA from the San Joaquin River through a contract with the U.S. Bureau of Reclamation ("Bureau") for the Central Valley Project ("CVP"). The water is diverted from the San Joaquin River and conveyed to the CCWD service area through the Contra Costa Canal ("Canal"), which is owned by the Bureau and operated by CCWD through contract. Other sources of water for CCWD include recycled water, a minor amount of local well water and water transfers. (Contra Costa Water District 2005 Urban Water Management Plan, pp. 17-19.) Each source is discussed below.

3.1.2.1 *Central Valley Project*

CCWD is the largest urban water contractor from the CVP and has a contract entitlement to receive 195,000 AFY for municipal and industrial purposes. This amount can be reduced by the Bureau during water shortages, including regulatory restrictions and drought. The Municipal and Industrial Water Shortage Policy defines the reliability of CCWD's Central Valley Project water supply and was developed by the Bureau to establish CVP water supply levels that would sustain urban areas during severe or continuing droughts. The M&I Water Shortage Policy

provides for a minimum allocation of 75 percent of adjusted historical use until irrigation allocations fall below 25 percent. (CCWD 2005 Urban Water Management Plan.)

Since 2000, the average amount of CVP water received by CCWD was approximately 152,100 AFY. If the CVP water were CCWD's only source of supply, this amount would be used to calculate CCWD's minimum allocation during water shortages following regulatory restrictions or drought. However, the alternative supplies discussed below are available to CCWD to improve its water supply reliability during water shortages.

3.1.2.2 *Los Vaqueros Project*

CCWD possesses additional water rights to surplus San Joaquin River flows as part of the Los Vaqueros Project. Pursuant to State Water Resources Control Board ("SWRCB") Permit No. 20749, CCWD may divert up to 95,980 acre-feet for storage in Los Vaqueros between November 1 to June 30. This Los Vaqueros supply can be used in lieu of, or in addition to, CCWD's CVP supply. However, as set forth in CCWD's contract with the CVP, combined deliveries between the two sources (CVP supplies and state water rights) cannot exceed 195,000 AFY. Therefore, water from the Los Vaqueros Project does not increase the total amount of water available to Bay Point, but does increase the reliability of obtaining the full amount of 195,000 AFY.

3.1.2.3 *Mallard Slough Supply*

Pursuant to SWRCB License No. 10514 and Permit No. 19856, CCWD has additional water rights at Mallard Slough for a maximum diversion of water up to 26,700 AFY. Diversions from Mallard Slough are unreliable due to frequently poor water quality in the San Joaquin River at this downstream point of diversion. Water quality conditions have restricted diversions from Mallard Slough to approximately 3,100 AFY on average, with no water available in dry years. When Mallard Slough supplies are used, CCWD's CVP diversions are reduced by an equivalent amount.

3.1.2.4 *Groundwater*

Groundwater resources in the CCWD Service Area do not supply significant amounts of water to meet or augment CCWD's water demands. Besides the Pittsburgh Plains Groundwater Basin, which underlies the Bay Point Service Area, CCWD pumps water from the Ygnacio and Clayton groundwater sub-basins. CCWD estimates total groundwater use within its service area is 3,000 AFY. Existing wells in the vicinity of the Bollman Water Treatment Plant (Mallard Well Fields) can provide approximately 1,000 AFY but are limited by the threat of contamination from adjacent industrial areas and physical factors such as air entrapment.

3.1.2.5 *East Contra Costa Irrigation District*

CCWD also entered an agreement with the East Contra Costa Irrigation District in 2000 to purchase surplus irrigation water for municipal and industrial purposes, which creates an additional supply of up to 8,200 AFY in normal years and 9,700 AFY in dry years.

3.1.2.6 *Total CCWD Water Supplies*

Table 3-3 on the following pages shows the total water supplies available to CCWD during normal, single dry and multiple dry year periods. The data was taken from CCWD's 2005 Urban Water Management Plan, Table 2-3, at pages 20 and 21.

3.1.3 *Future CCWD Water Supplies*

CCWD has taken steps to ensure the reliability of its CVP water supply during normal, single dry and multiple dry years. These efforts are described in CCWD's Future Water Supply Study (FWSS), which was most recently updated in 2002. CCWD's water supply reliability goal, as set forth in the FWSS, is to provide 100 percent reliability in normal and single year dry periods, and 85 percent reliability in the second and third years of multiple year dry periods. The FWSS includes the following preferred alternatives for achieving these goals.

3.1.3.1 *Renegotiation of CCWD's Central Valley Project Contract*

On May 10, 2005, CCWD signed a new 40-year CVP contract with the Bureau. The amount of water that the Bureau will make available to CCWD for municipal and industrial purposes remained 195,000 AFY, the amount available under CCWD's previous CVP contract. However, the new contract addresses improving water supply reliability and lists five actions the Bureau will take to do so. These include:

- Assisting in the development of integrated resource management plans for CCWD and seeking authorizations for implementation of partnerships to improve water supply, water quality and reliability;

- Pursuing programs and project implementation and authorization to improve water supply, water quality and reliability;

- Coordinating with other CVP contractors to improve reliability state-wide;

- Coordinating with other agencies in the Department of Interior that might affect CCWD's water supply reliability;

- Holding division-level meetings to discuss CVP operations and management activities.

Table 3-3. Total Water Supplies Available to CCWD (AFY)

Condition	CVP	Industrial Diversions	Mallard Slough	Antioch Diversion	Groundwater	ECCID Purchases	Recycled Water	Total Firm Supply	Conservation Savings	Planned Purchases	Total Planned Supply
2005											
Normal	174,100	10,000	3,100	6,700	3,000	5,700	7,500	210,100	0	0	210,000
Single Dry Year	148,000	0	0	0	3,000	9,700	7,500	168,200	0	0	168,200
Multiple Dry Year 1	148,000	0	0	0	3,000	9,700	7,500	168,200	0	0	168,200
Multiple Dry Year 2	130,600	0	0	0	3,000	9,700	7,500	150,800	0	0	150,800
Multiple Dry Year 3	113,200	0	0	0	3,000	9,700	7,500	133,400	0	0	133,400
2010											
Normal	194,700	10,000	3,100	6,700	3,000	7,000	12,000	236,500	3,800	0	240,300
Single Dry Year	165,500	0	0	0	3,000	11,000	12,000	191,500	3,800	0	195,300
Multiple Dry Year 1	165,500	0	0	0	3,000	11,000	12,000	191,500	3,800	0	195,300
Multiple Dry Year 2	146,000	0	0	0	3,000	11,000	12,000	172,000	3,800	9,000	184,800
Multiple Dry Year 3	126,000	0	0	0	3,000	11,000	12,000	152,000	3,800	9,000	164,800
2015											
Normal	195,000	10,000	3,100	6,700	3,000	8,200	12,000	238,000	6,200	0	244,200
Single Dry Year	165,800	0	0	0	3,000	12,200	12,000	193,000	6,200	5,000	204,200
Multiple Dry Year 1	165,800	0	0	0	3,000	12,200	12,000	193,000	6,200	5,000	204,200
Multiple Dry Year 2	146,300	0	0	0	3,000	12,200	12,000	173,500	6,200	13,000	192,700
Multiple Dry Year 3	126,800	0	0	0	3,000	12,200	12,000	154,000	6,200	13,000	173,200
2020											
Normal	195,000	10,000	3,100	6,700	3,000	8,200	12,000	238,000	8,500	0	246,500
Single Dry Year	165,800	0	0	0	3,000	12,200	12,000	193,000	8,500	11,000	212,500
Multiple Dry Year 1	165,800	0	0	0	3,000	12,200	12,000	193,000	8,500	11,000	212,500
Multiple Dry Year 2	146,300	0	0	0	3,000	12,200	12,000	173,500	8,500	18,000	200,000
Multiple Dry Year 3	126,800	0	0	0	3,000	12,200	12,000	154,000	8,500	18,000	180,500

Continued

Table 3-3. Total Water Supplies Available to CCWD (AFY)

Condition	CVP	Industrial Diversions	Mallard Slough	Antioch Diversion	Groundwater	ECCID Purchases	Recycled Water	Total Firm Supply	Conservation Savings	Planned Purchases	Total Planned Supply
2025											
Normal	195,000	10,000	3,100	6,700	3,000	8,200	12,000	238,000	11,100	0	249,100
Single Dry Year	165,800	0	0	0	3,000	12,200	12,000	193,000	11,100	14,000	218,100
Multiple Dry Year 1	165,800	0	0	0	3,000	12,200	12,000	193,000	11,100	14,000	218,100
Multiple Dry Year 2	146,300	0	0	0	3,000	12,200	12,000	173,500	11,100	19,500	204,100
Multiple Dry Year 3	126,800	0	0	0	3,000	12,200	12,000	154,000	11,100	19,500	184,600
2030											
Normal	195,000	10,000	3,100	6,700	3,000	8,200	12,000	238,000	13,600	0	251,600
Single Dry Year	165,800	0	0	0	3,000	12,200	12,000	193,000	13,600	16,000	222,600
Multiple Dry Year 1	165,800	0	0	0	3,000	12,200	12,000	193,000	13,600	16,000	222,600
Multiple Dry Year 2	146,300	0	0	0	3,000	12,200	12,000	173,000	13,600	21,500	208,600
Multiple Dry Year 3	126,800	0	0	0	3,000	12,200	12,000	154,000	13,600	21,500	189,100

3.1.3.2 *Implementation of Conservation Programs*

Three conservation program alternatives were examined by CCWD in the Future Water Supply Study. CCWD chose a conservation program that will expand current conservation efforts (many of which are similar to those adopted by GSWC for the Bay Point CSA as described in Section 2.4 above). The FWSS projects that these measures will reduce district-wide demands by at least five percent by 2040. State and federal regulations are also projected to reduce district demands by an additional six to 10 percent.

3.1.3.3 *Water Transfers*

Water transfers are CCWD's preferred method of strengthening drought protection. In February of 2000, CCWD entered into a long-term transfer agreement with the East Contra Costa Irrigation District ("ECCID"). This agreement obligates ECCID to transfer up to 5,700 AFY in normal years and 9,700 AFY in CVP shortage years to CCWD. In the next decade, up to 12,200 AFY will be available from ECCID. (*See* Table 3-3.)

CCWD is also evaluating the following types of long-term water supply opportunities, as described in CCWD's 2005 Urban Water Management Plan, pages 22-23.

> *Conjunctive use with long-term contract*. CCWD would partner with an agricultural district holding pre-1914 surface water rights and co-invest in conjunctive use facilities such as new groundwater wells, allowing the agricultural district to shift its water use from surface water to groundwater supplies in dry years in exchange for the district making its surface water supplies available to CCWD to backstop its CVP supply and increase reliability.
>
> *Groundwater banking*. CCWD would improve the reliability of its water supply by banking a portion of surplus CVP water in a groundwater storage bank.
>
> *Lease/purchase water rights*. CCWD would enter into a long-term supply lease or purchase an existing water right for a fixed amount of annual supplies.
>
> *Co-investment in agricultural conservation*. CCWD would invest in agricultural conservation infrastructure, such as canal lining or weed abatement projects, benefiting an agricultural partner holding pre-1914 water rights. The agricultural partner would convey a fixed amount of the conserved supplies to CCWD.
>
> *Fallowing or crop shifting option contract*. This option includes a long-term option contract with an agricultural district. When called upon through exercise of the option, the agricultural district would fallow or shift crops to make water supplies available.

CCWD has also incorporated short-term water transfers and water recycling into its long-term sustainable water supply strategy. Short-term transfers and the use of recycled water for nonpotable water uses will further augment CCWD's water supply reliability.

CCWD's 2005 Urban Water Management Plan sets forth calculations of CCWD's current and projected water supplies, demands and water supply surpluses. These calculations are shown in Table 3.4 below. (CCWD 2005 UWMP, pp. 20-21, 25.)

Table 3-4. Sufficiency of CCWD Water Supplies (AFY)			
Year	**Total Available Water Supplies**	**Projected Demand**	**Surplus (Deficit)**
2005	210,000	165,300	44,700
2010	240,300	194,700	45,600
2015	244,200	203,400	40,800
2020	246,500	212,000	34,500
2025	249,100	217,200	31,900
2030	251,600	222,300	29,300

3.2 Groundwater Supplies

GSWC produces groundwater from the Pittsburg Plain Groundwater Basin ("Basin"). For the past five years, GSWC's yearly production from the Basin has been between 218 and 268 AFY. Historically, GSWC's Bay Point CSA has reliably produced as much as 550 acre-feet in a single year. (Bay Point 2005 UWMP, p. 3-7.) As discussed below, GSWC's right to pump groundwater from the Basin is based on appropriative water rights acquired and developed since 1993.

3.2.1 *Description of the Basin*

The Pittsburg Plain Groundwater Basin underlies the Bay Point CSA. It is bounded by the Suisun Bay on the north, the Tracy Basin on the east, the Los Medanos Hills on the south and the Clayton Basin on the west. It extends approximately 1 to 3 miles inland from the Suisun Bay, and covers approximately 11,600 acres (18 square miles). The Basin is overlain by Kirker Creek and Willow Creek, both of which drain from the hills northward into Suisun Bay. The Basin has not been adjudicated.

Table 3-5 presents a list of technical studies that have been performed on the Basin. There have been few studies because the Basin is a relatively unused source of water.

Table 3-5. Technical Studies of the Pittsburg Plain Groundwater Basin	
RMC Geoscience, Inc., Geologic Evaluation for Groundwater Supply, Southern California Water Company Bay Point CSA, Pittsburg, California, for GSWC	2004
California Department of Water Resources, *California's Groundwater*, Bulletin 118 (2003 Update)	2003
Luhdorff & Scalmanini Consulting Engineers, *Investigation of Ground-Water Resources in the East Contra Costa Area*	1999
DWR, *Groundwater Basins in California*, Bulletin 118	1980
DWR, *Groundwater Basins in California*, Bulletin 118	1975

3.2.2 *Overdraft Status*

Water Code section 10631 requires that this WSAV: (a) identify whether the California Department of Water Resources ("DWR") has determined, in the most recent official department bulletin, whether the Basin is presently in a state of overdraft or at risk of becoming overdrafted under current conditions; and (b) provide an analysis of the sufficiency of the Basin's groundwater supply to meet the projected water demands of the Project. DWR's most recent assessment of conditions in the Basin was the 2003 Update of Bulletin 118. Bulletin 118 does not state that any portion of the Basin is presently or was previously in a state of overdraft. (DWR Bulletin 118, Pittsburg Plain Groundwater Basin, Basin No. 2-4.)

Bulletin 118 further explains that well data in the Basin indicate that groundwater levels have remained fairly stable over the period of record with the exception of static water level drops and subsequent recovery associated with the 1976-1977 and 1987-1992 drought periods. The report does recognize that "due to a lack of groundwater budget data, inflows, including natural, applied, and artificial recharge and outflows, including urban and agricultural extraction have not been included." (*Id*.) Given how little pumping occurs, however, there is no reason to believe that the Basin will experience overdraft in the foreseeable future. (Bay Point 2005 UWMP, p. 3-4.)

3.2.3 *GSWC's Production of Water From the Basin*

GSWC possesses appropriative rights to extract groundwater from the Basin that have been established by its historical and continuous extraction and delivery of water for beneficial use by its customers. GSWC began pumping from the Basin in 1993 and has continued to do so since that time. All of GSWC's current groundwater rights have been dedicated to the public located within the company's service area.

Based upon historical groundwater production, GSWC possesses at least 246 acre-feet of appropriative groundwater rights. If the Basin were adjudicated in the future, GSWC would likely establish an adjudicated groundwater right of at least this amount. Further, if additional groundwater rights were required to satisfy demands beyond those established by any future adjudication, GSWC would have the option of obtaining those additional rights through perfecting additional appropriative rights.

GSWC currently owns and operates three wells in the Basin. The current active capacity of these wells is 306 AFY and the average annual production between 2000 and 2004 was 238 AFY. GSWC only expects to pump an average of 230 AFY through 2030, using raw water purchases from CCWD to meet the majority of the Bay Point CSA's water demands. Nonetheless, GSWC could increase production from its three existing wells if additional supplies were needed. Furthermore, GSWC is considering the construction of additional wells in the Basin as the number of customer connections increases. The company has undertaken preliminary research into the feasibility of doing so.

SECTION 4 - AVAILABILITY OF SUFFICIENT SUPPLIES, RELIABILITY AND PLANS FOR ACQUIRING ADDITIONAL SUPPLIES

4.1 Sufficiency of Supplies

GSWC possesses sufficient contractual rights with CCWD and groundwater rights in the Pittsburg Plain Groundwater Basin to supply the current and projected water demands of the Bay Point CSA, including the Project, over the next 20 years. These water supplies will be sufficient in normal, single dry and multiple dry years.

GSWC anticipates being able to procure all of the additional water supplies necessary for it to satisfy anticipated future demands within the Baypoint CSA, including the 168 AFY of demand created by the Project, by purchasing additional water supplies from CCWD. Currently, the Bay Point CSA demands far less water than is available through the Hill Street raw water connection alone. (*See* Table 3-2.)

In addition, GSWC has already purchased additional capacity in CCWD's Bollman Water Treatment Plant to allow GSWC to purchase additional treated water from CCWD in the future if necessary to meet full anticipated build out of the Bay Point CSA. Pursuant to the most recent amendment of the Partnership Agreement in 1998, GSWC purchased an initial 746 GPM (1,204 AFY) of treated water capacity from CCWD. The Bay Point CSA used only 203 AF to meet its demands in 2005. Hence, under the Partnership Agreement, GSWC can purchase an additional 1,001 AFY (620 GPM) of treated water capacity from the Bollman Water Treatment Plant. GSWC has purchased additional treatment capacity since 1998 through the payment of Facilities Reserve Charges for new connections. This excess capacity was purchased for expansions of the Bay Point CSA such as the Project. The capacity purchased in the 1998 Amendment is sufficient to meet the demands of the Project without any other source.

Table 4-1 illustrates that GSWC possesses sufficient supplies through 2030 to satisfy all existing demands, projected growth within the current Bay Point CSA, and expansion of the Bay Point CSA to include the Project.

Table 4-1. Sufficiency of Water Supplies for the Bay Point CSA (AFY)

	Raw Water	Treated Water	Groundwater	Total
Available 2030 Supply	4,648	3,195	246	8,089
2005 Usage	2,450	203	193	2,846
Current Surplus	2,198	2,992	53	5,243
Projected Demand of Bay Point CSA in 2030 Without Project				4,119
Project Demand				168
Projected Total Demand in 2030 Including Project				4,276
Surplus Available for CSA Expansion Through 2030 After Project Demand				3,813

4.2 Reliability Assessment

Water Code sections 10910 and 10911 require an assessment of water supply reliability and vulnerability to seasonal or climatic water shortages. Reliability is a measure of a water system's anticipated ability to manage water shortages. This WSAV must therefore analyze the reliability of the Bay Point CSA's water supply during normal water years, single dry years and multiple dry years.

4.2.1 *CCWD's Water Supply Reliability*

Section 3.1.3. describes CCWD's projected water supply reliability goals during single dry and multiple dry years. CCWD plans to be 100 percent reliable during normal and single dry years, and 85 percent reliable during the second and third years of a multiple year dry period. (CCWD, *Future Water Supply Implementation Final EIR*, 2005.)

4.2.2 *Groundwater Supply Reliability*

DWR's Bulletin 118 contains no data related to the Basin's groundwater storage capacity or the quantity of groundwater in storage within the Basin. However, a geological study commissioned by GSWC concluded that the Pittsburg Plain Basin "may yield sufficient water to provide a reliable supplemental water supply for the Bay Point CSA service area." (RMC Geoscience, Inc., 2004.)

Given the relatively few users of groundwater and the stable condition of the Basin's water tables, it appears unlikely that the Basin will become overdrafted or oversubscribed in the foreseeable future. (Bay Point 2005 UWMP, p. 3-4.) Therefore, the Basin's groundwater supply is expected to be 100 percent reliable over the next twenty years.

Groundwater production accounts for a relatively small portion of the Bay Point CSA's annual supply (between 8 and 10 percent historically). GSWC may desire to expand its groundwater production in the future to augment its water supply reliability. Based upon current Basin conditions, it appears that GSWC could increase its production of groundwater from the Basin without adversely affecting the Basin. GSWC has additional groundwater production capacity among its three pumps to support a modest increase in its groundwater production without needing to develop additional wells or other infrastructure.

4.2.3 *Overall Reliability of the Bay Point CSA Water Supplies*

Table 4-2 presents GSWC's estimated water supply, demand, and surplus supply for the Bay Point CSA during normal precipitation years in five year increments from 2010 through 2030.

Table 4-2. Projected Water Supply Reliability During Normal Years, 2010-2030					
	2010	**2015**	**2020**	**2025**	**2030**
Total Available Supply (AFY)*	8,089	8,089	8,089	8,089	8,089
Total Projected Demand (AFY)**	3,233	3,602	3,861	4,066	4,276
Total Surplus Supply (AFY)	4,856	4,487	4,228	4,023	3,813
Reliability (%)	100	100	100	100	100

* Total Available Supply includes the CCWD Raw and Treated Water that is available under the Partnership Agreement and groundwater from current wells and groundwater infrastructure.

** Demand projections include projected demands within the Bay Point CSA, as set forth within GSWC's 2005 UWMP, and the demands associated with the Project.

As shown in Table 4-2, GSWC anticipates the Bay Point CSA's supply will be 100 percent reliable through 2030 in normal water years. GSWC does not anticipate any of its water supplies for the Bay Point CSA to decrease during single dry years. This prediction is based upon predictions by CCWD that its supplies will remain 100 percent reliable during single dry years, and the amount of groundwater in storage within the Basin that can be relied upon to assist in meeting the demands of the Bay Point CSA. However, GSWC anticipates that demands within the Bay Point CSA will increase by roughly 8.5 percent during dry years. That dry year demand multiplier is based upon projected increases in water demand during dry years as set forth by DWR in the *California Water Plan*, Bulletin 160-98, Table 4-11. That table estimates that during dry years urban water demands in 2020 within the San Francisco Bay hydrologic region will increase from 1,317,000 AFY to 1,428,000 AFY, which equals an increase of approximately 8.5 percent. Table 4-3 presents GSWC's estimated water supply, demand and surplus for the Bay Point CSA during single dry years in five-year increments from 2010 through 2030.

Table 4-3. Projected Water Supply Reliability During Single Dry Years, 2010-2030					
	2010	**2015**	**2020**	**2025**	**2030**
Total Available Supply (AFY)*	8,089	8,089	8,089	8,089	8,089
Total Projected Demand (AFY)**	3,508	3,908	4,189	4,412	4,639
Total Surplus Supply (AFY)	4,581	4,181	3,900	3,677	3,450
Reliability (%)	100	100	100	100	100

* Total Available Supply includes the CCWD Raw and Treated Water that is available under the Partnership Agreement and groundwater from current wells and groundwater infrastructure.

** Single dry year demand projections include projected demands within the Bay Point CSA as set forth within GSWC's 2005 UWMP, and the demands associated with the Project. Both categories of demand were increased by 8.5 percent to reflect DWR's predictions for increased water demand within the San Francisco Bay hydrologic region during dry years.

During multiple dry years, GSWC anticipates that surface water deliveries from CCWD

will be reduced to only 85 percent of normal deliveries. This estimate is based upon CCWD's projections for its system-wide water supply reliability within multiple dry years. As in single dry years, GSWC anticipates demands within the Bay Point CSA to increase by roughly 8.5 percent during multiple dry years, consistent with DWR's projections. Nevertheless, the Bay Point CSA will maintain fully reliable water supplies during multiple dry years because CCWD water supplies available to the Bay Point CSA substantially exceed the anticipated growth in demand within the CSA through 2030, including the demand associated with the Project, and groundwater supplies can be relied upon more heavily during dry years to replace reductions in surface water deliveries, if necessary. Table 4-3 presents the Bay Point CSA's estimated water supply, demand and reliability during multiple dry years.

Table 4-4. Projected Water Supply Reliability During Multiple Dry Years, 2010-2030

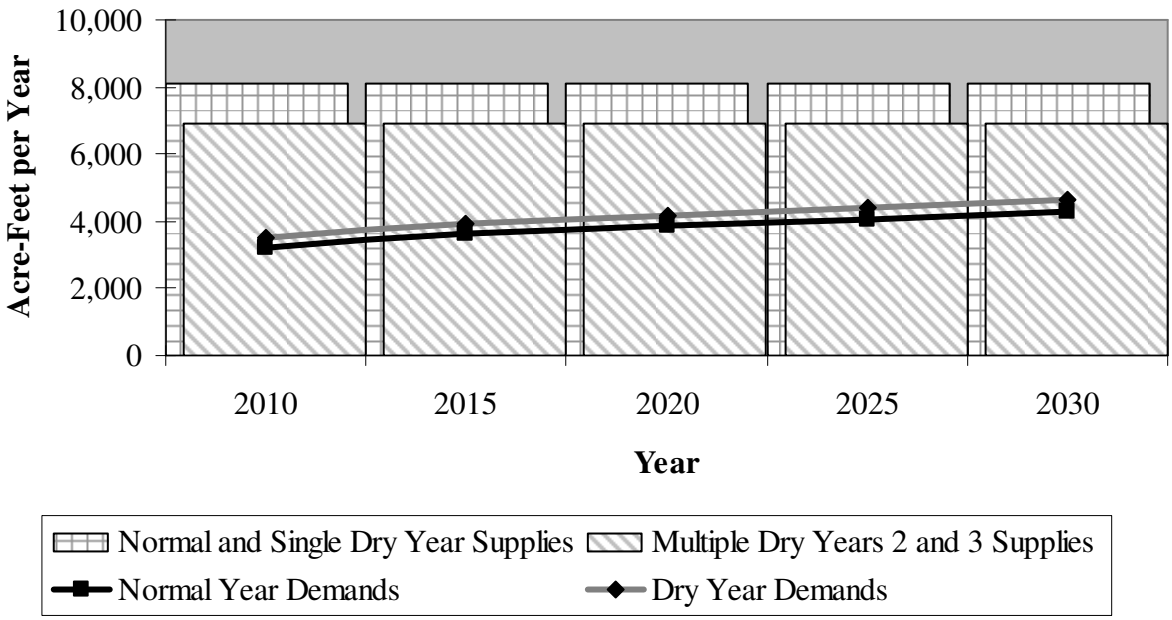
	2010	2015	2020	2025	2030
Total Available Supply (AFY)*	6,876	6,876	6,876	6,876	6,876
Total Projected Demand (AFY)**	3,508	3,908	4,189	4,412	4,639
Total Surplus Supply (AFY)	3,368	2,968	2,687	2,464	2,237
Reliability (%)	100	100	100	100	100

* Total Available Supply is estimated to include 85 percent of the CCWD Raw and Treated Water that is available under the Partnership Agreement, and 100 percent of the groundwater from current wells and groundwater infrastructure.

** Multiple dry year demand projections include projected demands within the Bay Point CSA as set forth within GSWC's 2005 UWMP, and the demands associated with the Project. Both categories of demand were increased by 8.5 percent to reflect DWR's predictions for increased water demand within the San Francisco Bay hydrologic region during dry years.

Based on the total available supplies and demands of the Bay Point CSA, including the Project, in normal, single dry and multiple dry years as calculated above, GSWC will have sufficient water supplies with 100 percent reliability. That conclusion is also shown graphically in Figure 4-1. That figure shows water supply coverage for all hydrologic conditions through 2030.

Figure 4-1. Projected Water Supplies for Bay Point CSA Including the Project, 2010-2030



4.2.4 *Potential Actions to Enhance Reliability*

Although GSWC anticipates 100 percent water supply reliability for the Bay Point CSA through 2030, GSWC has means to procure additional water supplies if necessary to meet future demands. GSWC might amend the Partnership Agreement to purchase additional treated water capacity beyond the 1,980 GPM ultimate capacity in the Partnership Agreement from CCWD's Bollman WTP. Moreover, GSWC can procure further supplies by pumping additional groundwater from the Pittsburg Plain Groundwater Basin. Additional wells would be necessary for groundwater to become a significant source of water for the Bay Point CSA. GSWC has conducted preliminary research into this prospect and found that it would most likely be financially feasible.

4.3 Water Shortage Contingency Plan

As discussed above, GSWC anticipates that the Bay Point CSA's current water supply sources will provide reliable water supplies for all projected demands within the current CSA, and the 168 AFY of demand attributable to the Project, through 2030. Nonetheless, because water shortages can have serious economic and environmental impacts, GSWC has developed a Water Shortage Contingency Plan to plan for temporary shortage conditions. The plan includes four stages of action to be taken in response to water supply shortages, including actions to be taken in response to as much as a 50 percent reduction in supply. The plan is summarized in Table 4-4 below.

Table 4-5. Water Supply Shortage Stages				
Stage	**Shortage Type**	**Demand Reduction Goal**	**Type of Program**	**Actions to be Taken**
I	Minimum (5-10%)	10%	Voluntary Phase	Public information campaign Educational programs in area schools 1-800 conservation hotline
II	Moderate (10-20%)	20%	Mandatory Conservation Phase	Conservation may be voluntary, consist of allotments, or include mandatory conservation rules Prior to mandatory reductions, GSWC obtains approval from the CPUC
III	Severe (20-35%)	35%	Rationing Phase	Rate increases to penalize excess use Use restrictions (no daytime watering, excessive watering or hosing down paved surfaces) If customer abuses are documented, a flow restrictor is installed
IV	Critical (35-50%)	50%	Intense Rationing Phase	Intensify all actions for prior stages and implement allotments and conservation rules Daily compliance monitoring

4.4 Impact on Agricultural and Industrial Water Uses

Pursuant to Water Code section 10910(c)(3) and Government Code section 66473.7(g), a water supply assessment and written verification must describe any impacts caused by supplying the development project with water, on the availability of water for agricultural and industrial uses within the public water system's service area that are supplied from the same sources of water. GSWC does not serve agricultural water supply to customers within its Bay Point CSA. Moreover, because the Basin is not currently in a state of overdraft, GSWC's groundwater production will likely not have any impact on local agricultural water users that rely upon the Basin for agricultural water supply. Because all industrial development within the CSA is served with water by GSWC, there will be no impacts on the availability of water for industrial purposes.

SECTION 5 - CONCLUSION

GSWC obtains its water supply for the Bay Point CSA from two sources: CCWD; and groundwater from the Pittsburg Plain Groundwater Basin. GSWC purchases both raw and treated water from CCWD pursuant to a long-term Partnership Agreement. This agreement anticipates significant growth in the Bay Point CSA and provides for additional deliveries of water to GSWC to satisfy the CSA's additional water demands as they develop.

The Bay Point CSA currently uses less than 60 percent of the capacity of its raw water treatment plant. It can therefore increase its purchases and treatment of CCWD raw water deliveries by more than 2,000 AFY. Under the Partnership Agreement, GSWC initially purchased capacity in CCWD's Bollman Water Treatment Plant, allowing it to receive up to 1,204 AFY of treated water from CCWD. GSWC currently only uses about 17 percent of this allotment of treated water capacity. GSWC has purchased additional treatment capacity since 1998 through the payment of Facilities Reserve Charges for new connections. This combined surplus capacity will ensure sufficient water supplies to meet future demands within the Bay Point CSA, including expansion of the CSA to include the Project. CCWD has undertaken significant water supply reliability planning efforts to ensure that its surface water deliveries will be reliable during all hydrologic conditions.

Groundwater constitutes a relatively small portion of the Bay Point CSA's total water supply. However, because the Basin's water table has been stable throughout historical hydrologic cycles, the CSA's groundwater supplies are anticipated to be reliable regardless of variations in annual precipitation. The three wells supplying the Bay Point CSA have additional production capacity. This affords GSWC the ability to produce additional groundwater as the CSA grows. GSWC also is considering locating additional wells in the Basin to further increase its groundwater supplies.

The projected water demand for the Project is 150,000 GPD, or 168 AFY. For the reasons discussed above, GSWC possesses water supplies that will be 100 percent reliable during normal, single dry, and multiple dry years to serve both its existing service area and the Project.

REFERENCES

California Department of Water Resources, *San Francisco Bay Hydrologic Region, Pittsburg Plains Groundwater Basin*, Bulletin 118 (Update 2003)

— , *Groundwater Basins in California*, Bulletin 118 (2003 Update)

California Urban Water Conservation Council, *Memorandum of Understanding Regarding Urban Water Conservation in California* (Amended March 10, 2004)

Contra Costa Water District and United States Bureau of Reclamation, Long-Term Renewal Contract for Project Water Service and Facilities Repayment, Contract No. I75r-3401A-LTR1 (2005)

Contra Costa Water District, *Urban Water Management Plan* (2005)

Contra Costa Water District, *Partnership Agreement for Sale of Wholesale Treated Water to Southern California Water Company* (1994)

— , *Amendment No. 6 to Partnership Agreement* (1998)

Golden State Water Company, *Urban Water Management Plan – Bay Point* (2005)

VERIFICATION

This Water Supply Assessment and Verification has been prepared by Golden State Water Company and its representatives as of the date below. The undersigned hereby represents that he or she has the authority on behalf of Golden State Water Company to execute and make effective this Water Supply Assessment and Verification.

_____ _____

Date