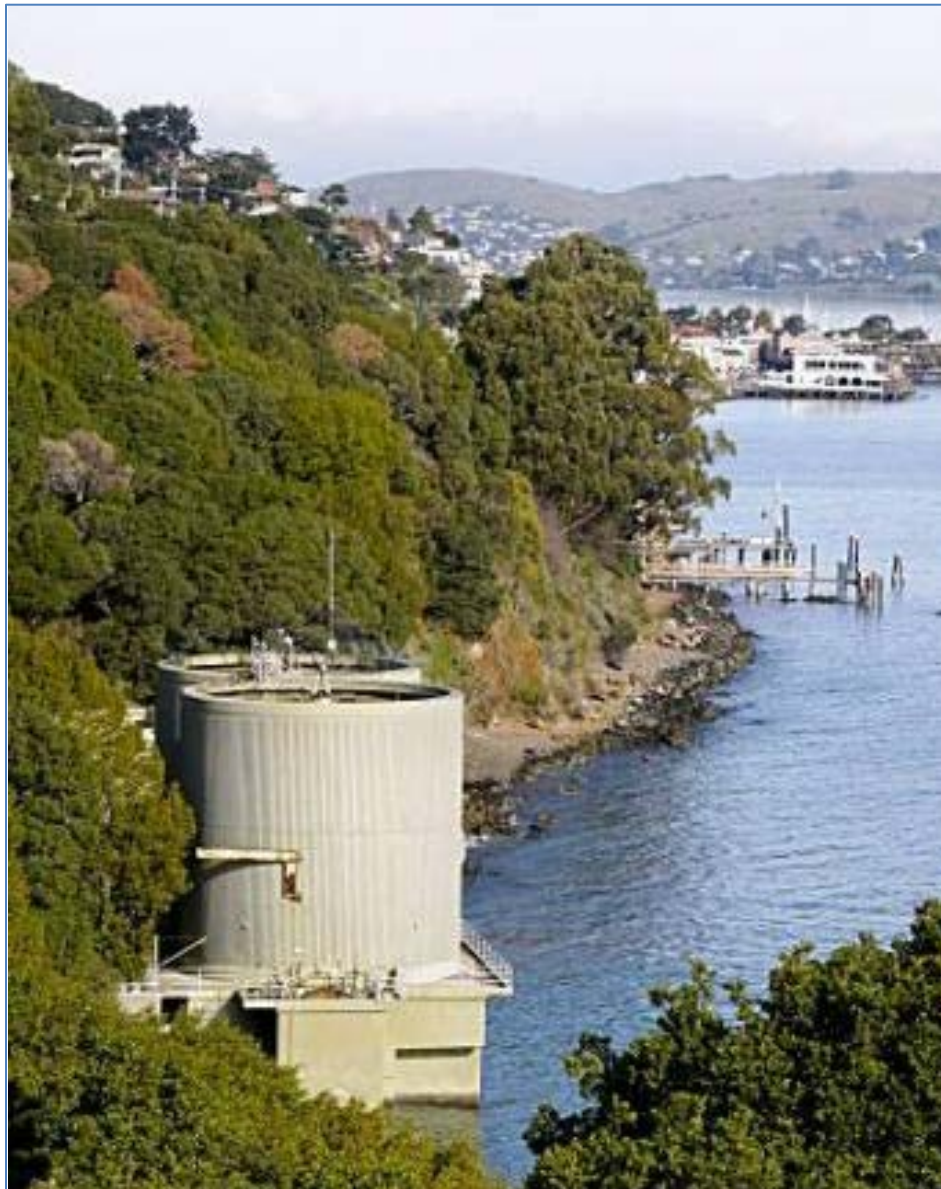


Sausalito-Marin City Sanitary District



Sausalito-Marin City Sanitary District Treatment Plant Upgrade Project Environmental Assessment/Initial Study (PEPC 40411)



November 2013

Sausalito-Marín City Sanitary District



General Information about this Document

What is in this Document?

The Sausalito-Marín City Sanitary District (SMCSD) has prepared this Environmental Assessment/Initial Study (EA/IS) in coordination with the National Park Service (NPS) to examine the potential environmental impacts for the proposed SMCSD Treatment Plant Upgrade Project (proposed action) in the Golden Gate National Recreation Area (GGNRA) in Marin County, California. This EA/IS describes the need for the proposed action, alternatives, the existing environment that could be affected by the proposed action, the potential impacts from construction and operation, and measures proposed to avoid, minimize, and/or mitigate potential adverse impacts on the environment. The purpose of the review and comment period for this EA/IS is to provide the opportunity to comment on the adequacy and completeness of the environmental analysis.

What you should do:

Please read this EA/IS. In addition to the SMCSD's office listed below, additional copies of this document are available for review online at http://parkplanning.nps.gov/SMCSD_Upgrade, the Sausalito Public Library, and the Marin City Library. For individuals with sensory disabilities, this EA/IS can be made available in large print or on compact disk. To obtain a copy in one of these alternate formats, please contact the GGNRA at 415-561-4700 or goga_planning@nps.gov.

We welcome your comments. Submissions must be in writing and postmarked, or submitted online at http://parkplanning.nps.gov/SMCSD_Upgrade no later than **December 13, 2013**. Comments may also be mailed to:

Mr. Craig Justice
General Manager
Sausalito-Marín City Sanitary District
1 East Road
Sausalito, CA 94965
Attn: SMCSD Treatment Plant Upgrade Project

What happens next?

After comments are received from the public and reviewing agencies, the SMCSD and NPS may: (1) grant environmental approval to the proposed action, (2) undertake additional environmental studies, or (3) revise the proposed action. If the proposed action is granted environmental approval and funding is appropriated, the SMCSD could design and construct all or part of the proposed action.

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SECTION 1.0 PURPOSE AND NEED

1.1 INTRODUCTION

The Sausalito-Marin City Sanitary District (SMCSD) provides sewage collection, treatment and disposal to approximately 18,000 people in the City of Sausalito, the unincorporated community of Marin City, the Marin Headlands, including Fort Baker, Fort Cronkhite, Fort Barry, the Marine Mammal Center of the Golden Gate National Recreation Area (GGNRA), and the Tamalpais Community Services District. The SMCSD serves residences, businesses, and public facilities.

The SMCSD wastewater treatment facility is at 1 East Road, near Alexander Avenue, just south of the city limit of Sausalito and in the GGNRA of the National Park Service (NPS), in a cove along San Francisco Bay, in the Fort Baker area of the GGNRA. The fort's historic artillery batteries and buildings are south of the facility. The SMCSD operates the wastewater treatment plant as an independent local agency regulated by State of California water and other resource protection agencies. The facility contains SMCSD storage and administrative buildings and treats wastewater through primary, secondary, and tertiary filters and processes before discharging the treated wastewater into San Francisco Bay. The SMCSD plant supports NPS and its park partners' sanitary waste treatment requirements at Fort Baker and the Marin Headlands pursuant to the terms of the Department of Army (DOA) and successor agencies right-of-way easements.

The SMCSD treatment facility is on land formerly under the jurisdiction of the US Army. The Army authorized the construction of the facility in the 1950s pursuant to the May 1953 Easement SFRE(s)409. This easement was superseded in 1967 by Easement DA-04-167-ENG 67015 for a 50-year term to accommodate the facility secondary treatment upgrade project. Areas of Fort Baker and the Marin Headlands, including the SMCSD plant and the DOA Easement, were transferred to the National Park Service (GGNRA) pursuant to a March 10, 1986 Letter of Acceptance from the Secretary of the Interior to the Army which continues in effect. The SMCSD, an independent special district authorized under state law, was formed in 1950. Its governing body is composed of a Board of Directors, elected by the residents who reside in the service area. The SMCSD staff reports to the Board of Directors and are responsible for operation and maintenance activities of all SMCSD treatment facilities, and compliance with state and federal regulations and permitting.

The original wastewater treatment facility, constructed in 1953, consisted of a primary treatment plant and a system of pump stations and lines. A sludge dewatering facility was added around 1974. In response to increasing capacity needs and state and federal regulatory requirements, the facility had a major upgrade in 1987 that included the addition of secondary treatment with fixed film reactors on top of new secondary sedimentation tanks. Two contact tanks were constructed to improve the facility's chlorination/dechlorination processes, and a sludge thickener and secondary digester were added to better manage the flow of solids.

Since that upgrade, several smaller improvements have occurred, including upgrading the facility's electrical equipment and pump stations. Process efficiencies have been incorporated into existing facilities, including new mixing systems added to the primary digester.

NPS coordination and approval is required for the proposed action because any modifications or construction subsequent to the easement transfer is subject to the approval of the GGNRA Park Superintendent, who is effectively the successor of the commanding officer of the Army at Fort Baker. The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) requires that federal agencies consider the potential significant effects associated with implementation of a proposed action under federal jurisdiction. Internal and external scoping with agencies and the public indicated that the proposed action would not likely have a significant negative effect on the environment, so this Environmental Assessment (EA) is the appropriate NEPA document.

The proposed action qualifies as a project under California Environmental Quality Act (CEQA) Guidelines Sec. 15378 et seq. (PRC Sec. 21065), so it is subject to environmental review under CEQA. Based on the scope of the proposed action, an Initial Study (IS) determined the appropriate level of CEQA documentation. This Initial Study addressed all required items of the CEQA checklist, as revised in 2010, and 2011.

The NPS is the lead agency under NEPA, and the SMCSD is the CEQA lead agency.

1.2 PURPOSE AND NEED

The purpose of this project is to upgrade the SMCSD wastewater treatment plant by installing primary, secondary, and tertiary improvements to address wet-weather flows, improve the quality of water discharging into San Francisco Bay, and respond to state and federal regulatory compliance directives. Additional facility improvements would provide administrative office and meeting space for SMCSD personnel by conversion of an existing site residence, precluding the need for construction of new buildings or building additions.

This project is needed, in part, because the US Environmental Protection Agency (EPA) issued administrative orders in recent years directing the SMCSD to upgrade the facility in response to several discharges exceeding federal Clean Water Act Section 402 requirements. These discharges were caused by a lack of capacity during peak wet weather flows. During these events, effluent from the facility was discharged into the Bay without complete secondary treatment.

The EPA directed the SMCSD to install primary system improvements to eliminate debris entering the primary clarifier. The improvements proposed at this time include the primary system improvements, as directed by the EPA, and other secondary and tertiary improvements.

The facility currently operates under National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038067. NPDES regulations at 40 Code of Federal Regulations (CFR) 122.48 require that all NPDES permits specify requirements for recording and reporting monitoring results. California Water Commission (CWC) Sections 13267 and 13383 authorize the Regional Water Quality Control Board (RWQCB) to require technical and monitoring reports. This permit establishes monitoring and reporting requirements to implement federal and state requirements.

The SMCSD wastewater treatment facility currently has a maximum design flow capacity of 6.0 million gallons per day (MGD). The capacity is limited by the secondary fixed-film reactor treatment capacity. The average dry weather flow rate is 1.5 MGD and maximum daily wet

weather flow is 6.6 MGD, based on measurements taken over 4 years from 2007 to 2011. Wet weather conditions sometimes cause influent flow to exceed 6.0 MGD. Under these conditions, flow above 6.0 MGD is diverted from a primary clarifier directly to secondary clarifiers.

The NPDES permit specifically prohibits the facility from passing untreated or partially treated wastewater (also known as blending) to waters of the United States, unless approved under bypass conditions specifically applicable to wet weather events when influent flow volumes exceed 6.0 MGD. Conditions of the permit set standards of operation in accordance with the operation and maintenance manual for the facility, requiring optimizing storage and use of equalization units and use of fixed-film reactors and sand filters. Any sanitary sewer overflow that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.

In compliance with the conditions of the permit, and EPA directives, the SMCSD proposes the Treatment Plant Upgrade Project. The project would comply with regulations and eliminate wet weather blending events at flow capacities of up to 9.0 MGD, and improve plant reliability and overall performance. The project would provide additional treatment of the wastewater, but it would not add additional overall treatment capacity. The 9.0 MGD flow would represent the upgraded secondary treatment capacity. Specifically the project would:

- Protect public health and bay water quality by avoiding wet weather blending during peak flows
- Improve wastewater treatment plant operation during peak flows and at other times by:
 - Increasing treatment and reliability
 - Increasing operational flexibility
 - Minimizing maintenance requirements
 - Allowing for storage and equalization of wet weather flows

The project also addresses long-standing administrative office improvement needs. The existing administrative facilities consist of two separate buildings: a 300 square-foot office used for office administration and a 200-square-foot modular building. Monthly board meeting attendance in these buildings is restricted because the office building can only accommodate the five board members and up to six additional people and the facilities do not meet all the standards for Americans with Disabilities Act (ADA) accessibility. Due to these constraints, board meetings are currently held at off-site locations. The current facilities also lack space for records storage. The present 200-square-foot building does not comply with current seismic standards.

The existing SMCSD onsite residence has 1,750 square feet. The conversion of this residence to administrative offices would bring the SMCSD into compliance with ADA and earthquake safety building codes, and provide needed space for facility administration, meeting space and future records storage. The remodeled building would allow the SMCSD to better serve the public by providing accessibility for disabled employees and visitors, and enable it to continue its primary mission of safeguarding the water quality of San Francisco Bay. The proposed remodeled building would provide the capacity to accommodate larger board meetings, and training and committee meetings. The residence conversion would result in the 2,250 square feet in three buildings for administrative office purposes.

1.3 APPLICABLE LAWS AND REGULATIONS

This document considers the project's compliance with all state and federal laws and regulations applicable to the project site, its surroundings, and affected environmental setting.

1.3.1 National Park Service Organic Act

Per the NPS Organic Act, the NPS manages its units "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner as will leave them unimpaired for the enjoyment of future generations." Under the NPS Organic Act and the General Authorities Act, as amended, the NPS cannot allow impairment of park resources and values except as specifically authorized by Congress. Impairment is an impact that would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. After public review of the EA for the proposed SMCSD treatment facility upgrade project, a Determination of No Impairment (DNI) would be prepared for the selected alternative and attached to the anticipated Finding of No Significant Impact (FONSI). The DNI would be rendered solely by the park manager.

1.3.2 National Park Service Management Policies

The NPS's *Management Policies* requires that the NPS determine that implementation of project activities would not would impair park resources and values. The NPS analyzes impairment by evaluating "the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts." The NPS must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on park resources and values. The laws do give the NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values.

1.3.3 Golden Gate National Recreation Area General Management Plan

The GGNRA *General Management Plan* (GMP), the guiding plan for the park, and its corresponding EA were reviewed in the development of this EA. Relevant management objectives identified in the GMP include:

- To offer recreational opportunities to a diversity of park users and to impart knowledge necessary for full enjoyment of park resources through a particular emphasis on interpretation, education, and information programs;
- To retain opportunities for recreation activities pursued in the park today;
- To maintain and restore the character of natural environment lands by maintaining the diversity of native park plant and animal life, identifying and protecting threatened and endangered plant and animal species and other sensitive natural resources, controlling exotic plants, and checking erosion whenever feasible; and
- To recognize the importance of the cultural resources within the recreation area through a positive program of their identification, evaluation, preservation, management, and interpretation.

1.3.4 National Park Service Director's Orders

As required by Director's Order 12, Conservation Planning, Environmental Impact Analysis and Decision Making, this EA analyzes the context, duration, and intensity of impacts related to the proposed action.

1.3.5 National Historic Preservation Act, Section 106

Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for listing on the National Register of Historic Places. Section 106 of the NHPA (36 CFR Part 800) requires federal agencies, and agencies using either federal funds or operating under federal permit, to take into account the effect of their undertakings on historic properties, including properties listed or potentially eligible for listing on the National Register of Historic Places. The NHPA does not require preservation of historic properties, but it does ensure that federal agency decisions concerning the treatment of these resources result from meaningful consideration of cultural and historic values, and identification of options available to protect the resources.

1.3.6 Archaeological Resource Protection Act of 1979

The Archeological Resources Protection Act of 1979 as amended (PL 96-95; 93 Stat. 721; 16 USC 470aa et seq.) sets felony-level penalties for excavating, removing, damaging, altering, or defacing any archaeological resource more than 100 years old, on public or Indian lands, unless authorized by a permit. It applies to archaeological resources regardless of National Register of Historic Places (NRHP) status. It prohibits the sale, purchase, exchange, transportation, receipt, or offering of any archaeological resource obtained in violation of any regulation or permit under the act or under any federal, state, or local law. The Act is implemented by uniform regulations and Department of Interior-specific regulations, found at 43 CFR Part 7.

1.3.7 Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA), Pub. L. 101-601, 25 U.S.C. 3001 et seq., 104 Stat. 3048, requires federal agencies and institutions that receive federal funding to return Native American "cultural items" to lineal descendants and culturally affiliated Indian tribes and Native Hawaiian organizations. Cultural items include human remains, funerary objects, sacred objects, and objects of cultural patrimony. A program of federal grants assists in the repatriation process and the Secretary of the Interior may assess civil penalties on museums that fail to comply. NAGPRA also establishes procedures for the inadvertent discovery or planned excavation of Native American cultural items on federal or tribal lands. While these provisions do not apply to discoveries or excavations on private or state lands, the collection provisions of the Act may apply to Native American cultural items if they come under the control of an institution that receives federal funding.

1.3.8 Coastal Zone Management Plan

The authority to analyze projects conducted, funded, or approved by the federal government is granted to coastal states under the Coastal Zone Management Act of 1972, 16 USC, Section 3501 et seq. (CZMA). The CZMA encourages coastal states to develop local coastal management plans, balancing environmental concerns, such as recreation use and environmental control, with development concerns. Under Section 307(c)(i) of the CZMA,

projects that directly affect lands or water of the coastal zone must be carried out in a manner consistent with the approved state coastal zone management program. The “directly affecting” level, which applies to operation of the federal consistency provision, applies to all federal activities and determines the degree of state influence over these activities.

The coastal management plans applicable to the SMCSD treatment facility bordering San Francisco Bay include the McAteer-Petris Act, and the San Francisco Bay Conservation and Development Commission (BCDC) *San Francisco Bay Plan*, including all amendments.

1.3.9 Additional Guidance Documents

The grounds of the SMCSD are in East Fort Baker, the updated management of which is addressed in the Final Environmental Impact Statement for the *Fort Baker Plan* (NPS 1999). The *Fort Baker Plan* amended the GMP at Fort Baker and establishes more site-specific management policies in the Fort Baker area and includes the SMCSD facility, although it does not address SMCSD directly.

1.4 ENVIRONMENTAL RESOURCE IMPACTS

This document assesses potential impacts to environmental resources, including air quality and greenhouse gases, cultural resources, geology and soils, land use, noise, public health and safety, socioeconomics and environmental justice, transportation, utilities and public services, vegetation and wildlife, visual resources, water resources, and coastal resources. Some of these resource areas may be dismissed from detailed evaluation because they are not applicable to this project or there is no potential impact to these resources.

SECTION 2.0 ALTERNATIVES

2.1 INTRODUCTION

The NPS NEPA handbook requires federal agencies to examine a full range of reasonable project alternatives as part of the environmental analysis. These alternatives must meet project objectives to a large degree, although not necessarily completely. The alternatives must be developed with consideration of environmental resources as the primary factor.

The CEQ defines reasonable alternatives as those that are economically and technically feasible, and that show evidence of common sense. Alternatives that could not be implemented if they were chosen, or that do not resolve the need for action and fulfill the stated purpose in taking action to a large degree, should be eliminated as unreasonable before impact analysis begins. Unreasonable alternatives may be those that are unreasonably expensive; that cannot be implemented for technical or logistic reasons; that do not meet park mandates; that are inconsistent with carefully considered, up-to-date park statements of purpose and significance or management objectives; or that have severe environmental impacts—although none of these factors automatically renders an alternative unreasonable.

CEQA Guidelines Sec. 15126.6 states that the environmental analysis include a range of reasonable alternatives of the project, or to the location of the project, which would feasibly attain most of the basis objectives of the project but would avoid or substantially lessen any of the significant effects of the project. Further, the analysis of alternatives per CEQA includes the “rule of reason” that requires only an analysis of alternatives that the lead agency determines could feasibly and reasonably attain most of the basic objectives of the project.

CEQ regulations and the CEQA Guidelines require that an agency include a No Action Alternative as one of the alternatives it considers (40 CFR 1502.14[d], CEQA Guidelines Sec. 15126.6.e. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action and Alternatives are compared.

This section describes the alternatives considered, including the No Action Alternative and three action alternatives. The alternatives described include specific requirements proposed to minimize or avoid environmental impacts. This section addresses those alternatives considered in the process but eliminated from further evaluation, and why they were eliminated.

The following alternatives are analyzed in this EA/Initial Study.

No Action Alternative – The SMSCD wastewater treatment facility would continue to operate in its existing condition.

Proposed Action – The SMCS D wastewater treatment facility would implement facility and process improvements to the existing treatment operations, including the addition of a headworks, new primary clarifier, secondary upgrades, tertiary polishing, and equalization storage. The existing on-site residence would be converted for administrative office uses.

2.2 NO ACTION ALTERNATIVE

CEQ regulations require the No Action Alternative as a baseline against which the impacts of the Proposed Action and other alternatives can be evaluated.

Under the No Action Alternative, the proposed headworks improvements, secondary and tertiary upgrades, and wet weather flow upgrades would not occur. The existing wastewater treatment facility would continue to operate in violation of federal and state directives. The facility would continue to discharge partially treated wastewater into the San Francisco Bay during peak wet weather events, potentially compromising water quality in violation of the existing NPDES permit. The No Action Alternative would leave the site of administrative and staff meeting functions in their present location. The buildings would continue to experience ADA-compliance issues, and SMCS D would continue to need off-site spaces for meetings and various administrative functions. Coordination and efficient communication between SMCS D personnel would continue to be negatively impacted. The existing residence would continue per its current use and would not comply with seismic improvement standards providing greater safety to staff during earthquakes.

2.3 PROPOSED ACTION

The SMCS D Treatment Plant Upgrade Project would implement facility and process improvements to the existing treatment operations, including the addition of a headworks, new primary clarifier, secondary upgrades, tertiary polishing, and equalization storage. The project has been developed to address regulatory compliance, plant operation, reliability, performance, and to prevent wet weather blending events for influent flows of up to 9.0 MGD. The project includes these components:

- **Headworks Improvements**
 - New screening and grit removal facilities
 - New material handling area with truck turntable
- **Primary Treatment Improvements**
 - New circular primary clarifier
- **Secondary and Tertiary Improvements (located within the existing treatment area)**
 - New Fixed Film Reactor (FFR) feed pumps with 9.0 MGD capacity
 - Replacement of existing FFR media
 - FFR odor control covers
 - Replacement and increased capacity of existing tertiary filtration process
- **Equalization Storage**
 - Minimum of 0.6 million gallons (MG)
- **Administration Building Remodel**
 - Address ADA access requirements
 - Remodel existing building to minimize construction cost and impacts
- **Relocated Access Road**
 - Relocate existing access road to accommodate headworks, primary and material handling facilities and to improve plant safety.

The SMCSD would be implementing these facility upgrades on lands owned and managed by the NPS, subject to the terms of the existing easement granted to the treatment facility. Therefore, the proposed upgrades would constitute a federal action, since NPS approval would be required per the terms of the easement. All of the proposed improvements would be within SMCSD's existing easement, and 95 percent of the proposed improvements would be constructed on the existing 2.0 acre SMCSD facility footprint increasing the existing plant footprint by less than 0.1 acres in the area north of the existing access road. The northern edge of the treatment facility would be extended approximately 40 feet at its widest point as shown in Figure 2.

The increased footprint would extend onto undeveloped land, including the site of a suspected Sailors' Cemetery. This site was thought to have the potential to contain human remains from several historic burials; however, recent testing has determined that no human remains exist at the portion of the site to be impacted by construction of the Proposed Action. The history of the suspected Sailors' Cemetery is discussed further in Section 3.5, and in Appendix B: *Archaeological Survey Report*, and Appendix C: *Archaeological Testing Plan and Archaeological Resource Protection Act Permit*.

The public currently has access to the San Francisco Bay and the SMCSD intends to maintain public access as part of the BCDC permit amendment for the project. The project would allow public access along the relocated road but would prevent public access to the treatment plant site.

The new treatment facilities would be above the anticipated mid-century sea level rise of 16 inches and end of century sea level rise of 55 inches, with the possible exception of pipelines connecting one or more of the proposed treatment components (BCDC, 2013). These pipelines would be designed to withstand the impacts of a submerged or partially submerged environment. Mechanical and electrical components of the new facilities are expected to have a service life of 30 years. Structural components are expected to have a service life of more than 50 years.

A more detailed description of the individual project components is presented in the following paragraphs.

2.3.1 Headworks (Screenings and Grit Removal)

Screening and grit removal is critical to the protection of wastewater treatment equipment as trash and inert particles in wastewater, including sand and gravel, can cause unnecessary abrasion and wear on mechanical equipment, the build-up of deposits in pipelines, channels, and process structures. Screening and grit facilities will allow SMCSD to remove trash and grit at the beginning of the wastewater process to provide a more effective method for handling these materials.

2.3.2 Primary Treatment

The SMCSD treatment plant currently has one circular primary clarifier built in the 1950s. Since all flow to the treatment plant passes through it, the clarifier cannot be taken out of service for maintenance or repairs without adversely impacting plant performance. The flow rate through the primary clarifier during wet weather flow exceeds the peak design value, so the clarifier's solids removal capacity is greatly reduced at peak flow rates. Another primary clarifier is needed to treat peak flows, and to provide the redundancy during dry weather to allow maintenance without impacting plant operations.

2.3.3 Secondary Treatment Upgrade

During peak wet weather events, the influent flow to the treatment plant can exceed the process capacity of the FFRs that is limited to the 6.8 MGD capacity of the FFR feed pump station. At flows greater than 6.8 MGD, primary effluent is passively routed around the FFRs and directed to the secondary clarifiers. This operational strategy of mixing primary effluent and secondary effluent is commonly referred to as “blending” and is currently allowed under the SMCSD NPDES permit.

Blending requires additional sampling, data collection and record keeping, and the RWQCB has required the SMCSD to consider minimizing or eliminating blending. These alternatives include equalization, increasing secondary treatment capacity, and adding treatment specifically for blended flows. The RWQCB could eliminate the practice of blending from future SMCSD NPDES permits, which are renewed every 5 years.

2.3.4 Tertiary Treatment Upgrade

The SMCSD has continuously backwashing sand filters to remove additional suspended solids from the secondary effluent. They were added as a side stream process that can treat a maximum flow of 1.0 MGD. The sand filters are a necessary part of the treatment process because they reduce the total suspended solids (TSS) concentration in the secondary effluent from 45 milligrams per liter (mg/L) to below the SMCSD NPDES permit limit of 30 mg/L (monthly average). The SMCSD has worked to optimize the filters over the years and they are currently performing adequately as a polishing step during dry weather. The filters have been in service for approximately 30 years and are approaching the end of their useful life.

Because the sand filters only have a capacity of 1.0 MGD, they are ineffective at providing polishing treatment during peak wet weather events. Increasing the tertiary treatment capacity to 6.0 MGD would improve operational flexibility and improve treatment plant performance during wet weather.

2.3.5 Equalization

A minimum of 0.6 MG of equalization storage (along with the described FFR upgrades) would allow the SMCSD to limit flow to the secondary process to 9 MGD, which would allow the SMCSD to avoid blending up to and including the estimated 5-year wet weather event. The equalization storage tank would be integrated into the new headworks structure and would have the capacity to store a minimum of 0.6 MG of primary influent or effluent. The final volume would be determined during final design based on the volume that can be readily made available in the new headworks structure.

2.3.6 Administrative Office Space

The project would remodel the existing district residence into approximately 1,750 square feet of administrative office use for SMCSD personnel. The additional room would alleviate the crowded office space that currently exists in the small structures in the maintenance yard. The project would provide staff with an ADA office and accessible parking that currently does not exist at the facility. The administrative office space modifications would also include minor access road improvements to facilitate better access to the new administration space and the existing facility storage/staging area. These improvements would be constructed with the

proposed relocated access road improvements. The service life of the administrative office space is expected to be approximately 20 years, and would be built above both anticipated mid-century and end of century sea level rise scenarios.

2.3.7 Relocated Access Road

Approximately 0.1 acre of land in the immediate north of the existing access road would be cleared of vegetation to make room for a relocated access road. Approximately 38 trees would be removed in this area, of which approximately 19 would be live oak trees ranging from 4 inches to 39 inches in diameter.

2.4 *ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER STUDY*

Both NEPA Regulations Sec. 102(2)(E) and CEQA Guidelines Sec. 15126.6 require the analysis of a range of alternatives that can be considered reasonable and feasible that meet most or all of the project objectives. Several sites at and near the existing SMCSD treatment plant have been considered that would meet all or most of the project objectives. Due to the physical requirements of the facility as a working utility, the constrained geographical setting, and the limitations in the terms of the existing easement with the NPS, the development of reasonable and feasible alternatives include only the following development scenarios at or near the current facility.

2.4.1 Dewatering Building Site (Bayside Alternative)

The site of the existing solids dewatering building along the Bay was considered as a site for the proposed project. This site was considered due to proximity to the influent pipeline, existing access road, and primary clarifier. This site would allow for the primary treatment process to be elevated to maintain the necessary gravity flow to the existing diversion box. This alternative includes significant disadvantages that preclude it from further consideration. Among these is the location of the dewatering building that would require a stacked arrangement for the new headworks building that would place it directly above the new primary treatment process. This would entail the use of compact treatment technology that has not been sufficiently proven in wastewater applications leaving the facility with potentially high risk in meeting RWQCB discharge requirements. This would result in a cramped treatment and operating environment, increasing safety concerns and maintenance costs due to the constrained access. This limited space would preclude options for addressing the administrative space necessary for current SMCSD employees and related office and meeting functions.

The Bayside Alternative would be precluded for the operational reasons in the preceding paragraph. The Bayside Alternative would not provide the same level of operation, safety and process improvements as the Proposed Action.

2.4.2 Hillside Alternative

This site is on a hillside along the existing facility access road. This alternative would have the advantage of not requiring the stacking of the proposed headworks facility. Construction would occur primarily outside the main facility, resulting in fewer disruptions to current operations than from the Bayside Alternative. The Hillside Alternative would not occupy areas currently used for

administrative office and meeting activities as the Bayside Alternative would, further minimizing potential operational and construction impacts.

The Hillside Alternative is not considered reasonable or feasible for a number of reasons. First, it would split the treatment process across the existing access road, resulting in less-efficient operations. Second, it does not have the required space to accommodate the new primary treatment process, so it would have to be at another site in the SMCSD easement that would not be guaranteed given the existing site topography and setting along the base of a steep hillside. The use of compact technologies would result in a potential risk of not meeting RWQCB discharge requirements, thereby not adequately addressing the purpose and need of the project.

The Hillside Alternative cannot be considered reasonable or feasible because of environmental concerns. This location would require the construction of a new or extended access road that would require additional hillside excavation and grading, disrupting soils beyond what would be required for the Proposed Action. This Alternative would require the removal of an estimated 80 trees. This is greater than the number of trees to be removed under the Proposed Action.

SECTION 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the affected environment (environmental setting) and environmental consequences of the Proposed Action and No Action Alternative. It provides information on the physical, biological, cultural, socioeconomic, and other resources with the potential to affect or be affected from implementing the Proposed Action. These resources include those that occur in the proposed project area, or adjacent to or otherwise associated with it. More detailed information is provided for these resources that are more likely to be affected by the Proposed Action. These include cultural resources, air quality and greenhouse gases, biological resources, hydrology, geology, and public safety and hazardous materials. Other resource areas, including land use, transportation, visual resources, noise, and socioeconomics, are summarized in less detail due to the unlikely potential for the Proposed Action to have a significant impact.

For each resource analyzed in detail, a discussion of applicable plans, policies, and regulations is provided. All applicable federal, state, and local laws, regulations, and policies are summarized and their applicability to the Proposed Action is explained. It is assumed in the analysis that the SMCS D will fully comply with all regulations applicable to the Proposed Action, will prepare any required plans, and will obtain any necessary permits or waivers.

The environmental setting (existing conditions) of the project area is described using information from literature reviews, fieldwork, and input from appropriate federal, state, and local agencies. Where appropriate, the resource sections in this chapter define and describe each resource-specific region of influence (ROI) that provides the baseline for the environmental impact analysis. Defining these conditions (such as existing air quality, biological and cultural resources, and water resources) allows for characterization and anticipation of the Proposed Action's impacts and forms the basis for the environmental analysis. Sources for the literature reviews included published technical reports, internet resources, data from government sources, aerial photographs, and information provided by the NPS and the SMCS D. Where existing information regarding the project area was insufficient or outdated or where surveys or studies were specifically required by jurisdictional agencies, surveys and studies were completed to determine the existing environmental conditions.

3.1.1 General Methodology

This Environmental Assessment/Initial Study (EA/IS) has been prepared per the requirements of the National Environmental Policy Act (42 U.S.C. 4321 et seq.), the California Environmental Quality Act (Cal P.R.C. § 21000 et seq.), and the CEQA Guidelines (C.C.R. Title 14 § 15000 et seq.). This document has been prepared pursuant to subsequent federal actions, including the Environmental Quality Improvement Act, as amended (42 U.S.C. 4371 et seq.), § 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and E.O. 11514 (Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

This is a joint NEPA and CEQA document, prepared in accordance with CEQA Guidelines Sec. 15220-15229, and the environmental analysis covers the environmental resource areas of both statutes. This document is an Environmental Assessment per NEPA, and an Initial Study

per CEQA. NEPA requires that environmental documents disclose the environmental impacts of a proposed federal action, reasonable alternatives to that action, and any adverse environmental effects that cannot be avoided should the Proposed Action be implemented. NEPA requires that the analysis include discussion of the intensity and duration of environmental impacts, indirect impacts, cumulative impacts, and measures to mitigate impacts if feasible and necessary.

Similarly, CEQA requires that the analysis include a determination of the significance of impacts based on whether a direct physical change in the environment is a direct or indirect physical change caused by and immediately related to the project. (CEQA Guidelines 15064.b) Since this document serves as an Initial Study per CEQA, the determination of significant is based on whether the project will have:

- a) No impact
- b) Less than Significant Impact
- c) Less than Significant Impact with Mitigation Incorporated
- d) Potentially Significant Impact

Should the Initial Study determine that the project will have either no impact or a less than significant impact, a Negative Declaration will be prepared. If the Initial Study determines that mitigations are required to reduce potential impacts to a less than significant level, a Mitigated Negative Declaration (MND) will be prepared, and approved by the SMCSD (please see Appendix A). An Environmental Impact Report will be prepared if the Initial Study finds that the project will cause potentially significant impacts.

In accordance with NEPA, all resources areas required for analysis per CEQ regulations and all applicable federal Executive Orders (EO), including those concerning floodplains and environmental justice, are discussed. Should the analysis determine that the project will not result in potentially significant direct, indirect, or cumulative impacts, a FONSI will be prepared and approved by the NPS. Should the analysis determine that the project would result in significant impacts in any of these resource or issue areas, an Environmental Impact Statement (EIS) will be prepared.

3.1.2 Analysis of Environmental Impacts

Because this EA/Initial Study satisfies both NEPA and CEQA requirements, it is critical that it include an analysis of the environmental resource areas required by both NEPA and CEQA regulations and guidelines. This document integrates the CEQA resources and topics into the typical resource areas addressed under NEPA. This approach ensures a thorough and consolidated discussion of the applicable conditions and impacts.

Each of these resource areas are addressed with the appropriate level of detail for each resource. These determinations considered the affected environment and the resources that could be impacted by implementation of the Proposed Action. Per the NPS NEPA Handbook, the geographic area of the affected environment, also referred to as the ROI, has been individually determined for each resource area to be analyzed. In all decisions concerning the boundary of the resource-specific affected environment, available input from local, state and federal agencies has been considered, including the California Department of Fish and Wildlife (CDFW), US Fish and Wildlife Service (USFWS), and the State Historic Preservation Office (SHPO).

Determining the affected environment is important for potentially impacted resources and for jurisdictional purposes. The project site is on federal land, but there are state and local agencies that exercise land use jurisdiction over resources, such as water or tides, that could affect the project site. For example, the BCDC has state jurisdiction over projects occurring on San Francisco Bay within 100 feet of the high-tide line. Therefore, BCDC statutes and planning documents, including the *San Francisco Bay Plan*, have been consulted to ensure that the accurate identification of their jurisdictional boundary is incorporated into the EA/Initial Study.

3.1.3 Cumulative Impacts and Projects

"Cumulative impact" is the impact on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7) CEQA defines cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. CEQA further defines this as:

- a) The individual effects may be changes resulting from a single project or a number of separate projects.
- b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines Sec. 15355).

The cumulative impacts analysis includes projects identified in a physical and geographical setting that could result in cumulative impacts to one or more of the environmental resource areas discussed below. Cumulative impacts for the Proposed Action were determined by combining the impacts of each alternative with other past, present, and reasonably foreseeable future actions in this geographical setting.

3.1.3.1 Summary of Cumulative Projects

Projects that make up the cumulative impact scenario are listed below, and include specific projects and completed or current plans as directed by the NPS and other applicable jurisdictions. Projects too geographically distant from the project area or otherwise not considered likely to produce effects that could reasonably be expected to add cumulatively to the project effects are not included.

SMCSD

Main Street Sanitary Sewer Pump Station.

Improvements to the Main Street Sewer Pump Station, located at the foot of Main Street in the City of Sausalito, are being undertaken in the summer of 2013 to comply with EPA Order requirements and to improve the reliability of existing wet weather pumps. The scope of work includes replacement of two wet weather pumps, electrical upgrades to maintain National Electric Code (NEC) compliance, repair and structural reinforcement of the wet well, installation of a new submersible pump in the wet well, and associated piping and appurtenances. Upon

completion of this project, the District's Main Street portable engine driven pump will no longer be required during wet weather months to maintain capacity and reliability.

NPS-GGNRA

Marin Headlands and Fort Baker (MHFB) Transportation Infrastructure and Management Plan. The MHFB *Transportation Infrastructure and Management Plan* provides improved access to and in the Marin Headlands and Fort Baker for a variety of users and initiates these improvements in a way that minimizes impacts to Park resources. A specific component of the plan relevant to the SMCSD treatment plant upgrade project is the widening of the north portion of East Road to provide a consistent shoulder width for a bicycle route and space for the San Francisco Bay Trail. This widening has been completed.

Fort Baker Plan

The *Fort Baker Plan* provides a framework for the future of Fort Baker with the help of private, public and non-profit organizations. More than 20 historic buildings, including houses, barracks, a gymnasium and a chapel, were rehabilitated to national historic preservation standards to ensure that the significant historic features were maintained. New lodging units are environmentally-friendly and architecturally-sensitive to the historic area. Landscape improvements, such as the restoration of the main parade ground by NPS to its historic period, were also part of the project.

General Management Plan (GMP) for the GGNRA and Muir Woods Monument Update.

A new GMP that builds on the 1980 GMP is currently underway. The Park anticipates completing the final plan and EIS in 2013. This multi-year planning process would result in a document that articulates the long range vision for the future of NPS-managed lands in the Park boundary. The new GMP would have a particular emphasis on lands where conditions or knowledge of resource sensitivity has changed since the 1980 plan was completed. As part of the GMP process, NPS would study long-term locations for Park operational facilities, including needs for maintenance and public safety.

Alexander Avenue and Danes Drive Intersection Improvements, Fort Baker.

This project corrects existing deficiencies and substandard roadway conditions at the Alexander Avenue left-turn lane to Danes Drive. The project will help reduce off-site transportation impacts associated with intensified operation of Fort Baker by improving the Alexander Avenue/Danes Drive intersection functionality and enhancing multi-modal use opportunities along Alexander Avenue. For the project to be successful, it must accomplish these project objectives:

- Enhance the safety of the Alexander Avenue/Danes Drive intersection by providing additional turn lane storage capacity and improved geometric configuration;
- Support the overall goals and objectives of the Draft Alexander Avenue Planning Study to enhance multi-modal access through and within the Alexander Avenue corridor;
- Contribute to the improvement of the GGNRA Marin Headlands area transportation network as envisioned in the *Marin Headlands and MHFB Transportation Infrastructure and Management Plan*; and

- Respect the special natural and visitor attributes of the GGNRA and minimize adverse effects to natural, scenic, and historic resources associated with the Alexander Avenue corridor to the greatest extent possible.

Bay Trail Project.

The Bay Trail is a planned recreational corridor that will circle San Francisco and San Pablo Bays with a continuous 400-mile trail for bicycling, hiking, and walking. The San Francisco Bay Trail Project, a nonprofit organization, makes available grant funds for trail construction and maintenance. Individual trail segments are built, owned, and managed by various non-profit entities and organizations, and private property owners. Improvements to the Bay Trail in the GGNRA and nearby locations could occur with increase in demand, particularly for sensitive users.

Marin Equestrian Stables Plan

The GGNRA has approved the *Marin Equestrian Stables Plan*. The Plan proposes options for the future use of four Marin County stables on GGNRA land in the Marin Headlands (Rodeo Valley), Tennessee Valley, and Muir Beach. The plan proposes actions to improve Best Management Practices and site planning, increase protection of natural resources, and preserve the cultural resources that abound at the stables.

3.1.4 Permits and Approvals Required

The following approvals and permits are required for construction and/or operation of the Proposed Action:

1. **BCDC Permit**, Amendment to Existing Permit No. 1980.024.00
2. **NPS Approval for Construction**
3. **State Water Resources Control Board (SWRCB) Construction General Permit**, pursuant to the NPDES regulations established under the Clean Water Act. This permit requires preparation, approval, and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

3.2 *VEGETATION AND WILDLIFE*

This section describes the project setting for vegetation and wildlife, including the presence of any state or federal sensitive, threatened or endangered species. Information will be presented in the context of applicable laws, regulations, and policies including NEPA and CEQA. The purpose of this section is to evaluate any impacts to vegetation and wildlife by implementing the Proposed Action.

3.2.1 Regulatory Environment

3.2.1.1 *Federal*

Executive Order 13112, Invasive Species

Executive Order 13112 was signed by President Clinton in 1999, under the authority of the NEPA, as amended (42 U.S.C. 4321 et seq.); Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended (16 U.S.C. 4701 et seq.); Lacey Act, as amended (18 U.S.C.42); Federal Plant Pest Act (7 U.S.C. 150aa et seq.); Federal Noxious Weed Act of

1974, as amended (7 U.S.C. 2801 et seq.); and the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The purpose of this order is to prevent the introduction of invasive species, provide for their control, and to minimize the economic, ecological, and human health impacts that invasive species cause. This project includes design criteria addressing invasive species.

Coastal Zone Management Act

The authority to analyze projects conducted, funded, or approved by the federal government is granted to coastal states under the CZMA, 16 USC, Section 3501 et seq. The CZMA encourages coastal states to develop local coastal management plans, balancing environmental concerns, such as recreation use and environmental control, with development concerns. Under Section 307(c)(i) of the CZMA, projects that directly affect lands or water of the coastal zone must be carried out in a manner consistent with the approved state coastal zone management program. The “directly affecting” level, which applies to operation of the federal consistency provision, applies to all federal activities and determines the degree of state influence over these activities.

Endangered Species Act

The Federal Endangered Species Act (ESA) of 1973 and Title 16 (implementing regulations) of CFR 17.1 et seq. designate and provide for protection of threatened and endangered plants and animals and their critical habitat. The USFWS and National Marine Fisheries Service-National Oceanic and Atmospheric Administration were contacted regarding this project. The Project Record includes letters and species lists from both agencies that identify federally listed species with the potential to occur in the Bay and in the United States Geological Survey (USGS) San Francisco North quadrangle map. No species protected by the ESA would be affected by this project.

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C., Sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Migratory birds include geese, ducks, shorebirds, raptors, songbirds and many others. The Migratory Bird Executive Order of January 11, 2001 directs executive departments and agencies to take certain actions to further implement the MBTA, and defines the responsibilities of each federal agency taking actions that have, or are likely to have, a measurable effect on migratory bird populations. All project actions must comply with this act, so they cannot result in unauthorized take of migratory birds.

National Park Service Management Policies

The NPS *Management Policies* (NPS 2006) requires parks to maintain animals native to park ecosystems (Sec. 4.4.1). They are to preserve and restore natural abundances, diversities, distribution and behaviors, restore native animal populations where they have been eliminated by past human actions, and minimize human impacts. Lists of federally Threatened, Endangered, and Candidate species, and any designated or proposed critical habitat was provided by the USFWS and National Marine Fisheries Service and are in the Project Record. The California Department of Fish and Wildlife’s (CDFW) California Natural Diversity Data Base (CNDDB) and the California Native Plant Society (CNPS) database were reviewed to identify any special-status species known from the project area (CNPS 2006; CDFG 2012). The Biological

Assessment for the GGNRA Fire Management Plan (NPS 2005) was reviewed to identify any other known sensitive species occurrences. No special-status plant or animal species was considered to have a likelihood of occurring at the project site.

3.2.1.2 State

California Environmental Quality Act

CEQA (PRC. 21000 et seq.) was enacted in 1970 to provide for full disclosure of environmental impacts on the public before state and local public agencies issue a permit. With regard to biological resources, CEQA gives consideration to “sensitive” (or “special status”) plants, in addition to federally or state listed species. Sensitive species include wildlife species of special concern listed by the CDFW. Sensitive species include plants on the CNPSs List 1A (presumed extinct), List 1B (rare, threatened, or endangered in California and elsewhere; eligible for state listing), or List 2 (rare, threatened, or endangered in California but more common elsewhere; eligible for state listing). To be conservative, CNPS List 3 (plants for which more information is needed) and List 4 (plants of limited distribution) are also considered sensitive.

California Coastal Act

The California Coastal Act was enacted by the State Legislature to: (a) protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources; (b) assure orderly, balanced use and conservation of coastal zone resources, taking into account the social and economic needs of the people of the state; (c) maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners; (d) assure priority for coastal dependent and coastal-related development over other development on the coast; and (e) encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone. The Act states that all public agencies and all federal agencies, to the extent possible under federal law or regulations or the United States Constitution, shall comply with the provisions of this division. The BCDC has jurisdiction over this project and is in negotiation with the applicant on an amendment to its existing permit to include the Proposed Action.

California Endangered Species Act

The California Endangered Species Act (CESA; Fish and Game Code 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates state agencies to not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under CESA. For projects that affect a species listed under both CESA and the federal ESA, compliance with the federal ESA would satisfy CESA if the CDFW were to determine that the federal incidental take authorization is consistent with CESA under Fish and Game Code Section 2080.1. For projects that would result in a take of only a state listed species, an applicant must apply for a take permit under Section 2081(b) of the CESA.

Native Plant Protection Act

California's Native Plant Protection Act (Fish and Game Code, 1900-1913) requires all state agencies to use their authorities to carry out programs to conserve endangered and rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows the CDFW to salvage listed plant species that would otherwise be destroyed. An applicant is required to do botanical inventories and to consult with the CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

California Fish and Wildlife Code, Sections 1600-1616

Under these sections, CDFW is determined to have jurisdiction in any natural river, stream, or lake. The term stream, including creeks and rivers, is defined in Title 14, CCR, Section 1.72. An applicant is required to notify the CDFW before constructing any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When a fish or wildlife resource may be substantially adversely affected, the CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a streambed alteration agreement that becomes part of the plans, specifications, and bid documents for the project.

California Fish and Wildlife Code, Sections 3511, 4700, 5515, and 5050

The classification of fully protected species was the state's initial effort to identify and provide additional protection to those animals that were rare or that faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists were subsequently listed under either the state or federal endangered species act or both, although there are several exceptions, including the golden eagle.

The Fish and Wildlife Code sections dealing with fully protected species state that these species "...may not be taken or possessed at any time and no provision of this code or any other law would be construed to authorize the issuance of permits or licenses to take any fully protected species, although take may be authorized for necessary scientific research." This language arguably makes the "fully protected" designation the strongest and most restrictive regarding the take of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

California Fish and Wildlife Code, Sections 3503 and 3513

Section 3503 prohibits the take and possession of any bird egg or nest, except as otherwise provided by this code or subsequent regulations. Section 3513 provides for the adoption of the MBTA's provisions. As with the MBTA, this state code offers no statutory or regulatory mechanism for obtaining an incidental take permit for the loss of nongame migratory birds. The administering agency for these sections is the CDFW.

3.2.1.3 Local

The site is not part of any adopted local habitat conservation or management plan. There are no local laws regarding the conservation or preservation of biological resources which apply to the site.

3.2.2 Affected Environment

The SMCSD project site is composed of several small administrative buildings east of the access road and the wastewater treatment system is beyond that along the San Francisco Bay. The buildings are on a steep, forested slope, with a canopy of approximately 50-year-old trees, dominated by coast live oak (*Quercus agrifolia*), California bay (*Umbellularia californica*), and coast redwood (*Sequoia sempervirens*). When the facility was constructed in the 1950s, this land was cleared of vegetation and the existing trees were planted after permitting of the facility. There is limited understory vegetation due to the ongoing landscape maintenance. The new project construction would occur on existing, previously-disturbed space, on the hillside slopes to the east and west of the relocated access road.

3.2.3 Environmental Consequences

Would the project:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

3.2.3.1 No Action Alternative

Under the No Action Alternative, the SMCSD treatment plant would remain unchanged and the proposed construction including site work and tree removal would not occur. The facility operations and maintenance, including landscaping, would continue as before.

3.2.3.2 Proposed Action

The Proposed Action would result in the removal of an estimated 75 trees. Approximately 38 trees would be removed above the existing access road. Another 34 trees would be removed between the existing access road and primary clarifier, plus another 3 trees that would be removed as part of the upper access road improvements. These trees range in diameter from 2 to 39 inches. The removed trees would include 16 redwoods (*Sequoia sempervirens*), 28 live oaks (*Quercus agrifolia*), 8 toyon (*Heteromoles arbutifolia*), 2 California bay laurel (*Umbellularia californica*), 13 western cedars (*Thuja plicata*), 2 giant sequoias (*Sequoiadendrum giganteum*), 3 black acacias (*Acacia melanoxylon*), 2 privets (*Ligustrum* sp.), and 1 atlas cedar (*Cedrus atlantica*). The tree removal would reduce habitat for birds that potentially use them as nesting or roosting habitat, potentially resulting in a significant impact. Impacts to biological resources from tree removal would be minimized to a less than significant level by Mitigation Measure BIO-1.

No special-status species are likely to occur in the project area. The mission blue butterfly (*Icaricia icaroides missionensis*) is a 1- to 1.5-inch blue and brown butterfly native to the San Francisco Bay area. The mission blue is federally endangered, primarily due to habitat loss from development and non-native plant invasions. Known colonies exist on San Bruno Mountain in San Mateo County, Twin Peaks in San Francisco County, and the Marin Headlands and Fort Baker in Marin County, in coastal chaparral and grassland areas. The species is dependent on lupine plants (*Lupinus albifrons*, *L. variicolor*, and *L. formosus*, with *L. albifrons* being the preferred host), on which eggs are deposited and that are the sole food source for larvae. Although the current project area is part of Fort Baker, the area is covered by forest and has very little understory vegetation due to pruning. There are no lupine or other nectar sources present that could serve as food sources to adult butterflies.

The monarch butterfly (*Danaus plexippus*) is a 3.5- to 4-inch orange and black butterfly found across North America, famous for its long-distance annual migrations that take four generations to complete. Breeding habitats are meadows, weedy fields, and wetlands with milkweeds. Overwintering sites include coastal Monterey pine (*Pinus radiata*), Monterey cypress (*Cupressus macrocarpa*), or eucalyptus groves in California, and fir forests in Mexico. Overwintering sites are widely threatened by development in California and logging in Mexico. Monarchs have been observed roosting at many locations in Marin County, often in Monterey pines and eucalyptus groves including nearby sites at Fort Baker. Although observed nearby, there is no recorded observation of Monarchs at the project site and no Monterey pine, Monterey cypress, or eucalyptus trees are present, so the Proposed Action would not impact the monarch butterfly.

Construction of the SMCSO project would result in an increase of less than 0.1 acre of impervious surface beyond the existing developed area of the facility. This would not be a measurable impact to GGNRA lands. No known sensitive biological resources would be directly or indirectly affected by implementing the project, and impacts would be *negligible to less than significant*.

3.2.3.3 Cumulative Impacts

Implementation of the Proposed Action, combined with cumulative projects in the GGNRA, could have the potential to impact special status species of vegetation and wildlife if one or more of these projects together resulted in a negative impact on the species, such as loss of habitat. Other plans and projects within the Fort Baker area, including the *Fort Baker Plan*, have

determined that no significant adverse impacts to special status species would occur with implementation of these projects. In addition, cumulative projects must comply with EO 13112, the ESA, the MBTA, and other federal and state laws concerning impacts to vegetation and wildlife. Construction and operation of the Proposed Action would include mitigation measures to address any potential impacts to vegetation and wildlife; these measures, combined with the determinations regarding vegetation and wildlife for cumulative projects, would ensure that cumulative impacts to vegetation and wildlife would be *less than significant*.

3.2.3.4 Mitigation Measures

These mitigation measures will be implemented to reduce impacts associated with vegetation and wildlife to the extent feasible.

Mitigation Measure BIO-1. To avoid impacts on birds protected by the Migratory Bird Treaty Act, a pre-construction breeding season survey of the proposed project area and immediate vicinity would be done by an NPS-approved biologist during the calendar year in which construction is planned to begin. If migratory nesting birds covered by the statute are identified on or adjacent to the proposed project area, construction would be delayed, if necessary within 500 feet of active bird nests until any eggs have hatched and young have fledged. As a result, impacts on Migratory Bird Treaty Act-protected species would not be significant.

Mitigation Measure BIO-2. Tree removal and trimming would occur between August 1 and December 31 to avoid any impacts to nesting birds and minimize the potential for weeping wounds that are susceptible to disease, such as Sudden Oak Death (SOD). To avoid the potential spread of SOD, vegetation shall be left on site or hauled to a permitted recycling center in Marin County. To further minimize the spread of SOD and noxious weeds, prior to arrival and departure from the project area, all vehicles, equipment, tools, and clothing shall be cleaned of vegetation and mud.

3.3 COASTAL AND MARINE RESOURCES

This section describes coastal and marine resources, processes, and hazards in the project area. Information will be presented in the context of applicable laws, regulations, and policies including NEPA and CEQA. The purpose of this section is to evaluate any impacts to coastal and marine resources or processes by implementing the Proposed Action.

3.3.1 Regulatory Environment

3.3.1.1 Federal

Clean Water Act

The Clean Water Act established water quality standards for surface waters and the basis for regulating the discharge of pollutants into the waters of the United States. Under the Clean Water Act, the EPA has implemented pollution control programs including wastewater standards for industry and water quality standards for contaminants in surface water, including coastal and marine water bodies (EPA 2013a).

Coastal Zone Management Act

The CZMA, discussed in Section 3.2.1.1, is a law that encourages states and territories with coastlines to develop and implement programs to manage their coastal resources (BCDC 2013b).

NPS Management Policies

The NPS *Management Policies* provides additional policies and guidance for managing coastal resources including the protection of shorelines and barrier islands in the NPS jurisdiction. According to the NPS document, natural shoreline processes (such as erosion, deposition, dune formation, overwash, inlet formation, and shoreline migration) will be allowed to continue without interference. Where human activities or structures have altered the nature or rate of natural shoreline processes, the Service will, in consultation with appropriate state and federal agencies, investigate alternatives for mitigating the effects of such activities or structures and for restoring natural conditions. The NPS will comply with the provisions of Executive Order 11988 (Floodplain Management) and state coastal zone management plans prepared under the CZMA (NPS 2006).

3.3.1.2 State

McAteer Petris Act

The McAteer-Petris Act was enacted on September 17, 1965 to preserve the San Francisco Bay from indiscriminate filling. The law established the BCDC as a temporary agency to prepare the San Francisco Bay Plan as a guidance and policy document for long-term use of the bay. The BCDC became a permanent agency in 1969, and the law was amended to make the policies in the San Francisco Bay Plan into State law (BCDC 2013a).

California Coastal Act

With the powers granted under the federal CZMA, the State of California voluntarily enacted the California Coastal Act in 1976. The law was enacted by the State Legislature to: (a) protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources; (b) assure orderly, balanced use and conservation of coastal zone resources, taking into account the social and economic needs of the people of the state; (c) maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners; (d) assure priority for coastal dependent and coastal-related development over other development on the coast; and (e) encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone. The Act states that all public agencies and all federal agencies, to the extent possible under federal law or regulations or the United States Constitution, shall comply with the provisions of this division (California Coastal Act 2013).

In February 1977, the U.S. Department of Commerce approved the BCDC coastal management program for the San Francisco Bay. The BCDC coastal management program is based on the provisions and policies of the McAteer-Petris Act, the Suisun Marsh Preservation Act of 1977, the San Francisco Bay Plan, the Suisun Marsh Protection Plan, and the BCDC administrative regulations (BCDC 2013b).

3.3.1.3 Local

San Francisco Bay Conservation and Development Commission

The BCDC has jurisdiction over the greater San Francisco Bay coastal resources. Operation of the SMCSD Treatment Plant is under BCDC Permit No. 1980.024.00 (also known as BCDC Permit No. 24-80), originally issued on April 20, 1981, and amended through October 22, 2012 (the eighth permit amendment) (BCDC 2012). As part of previous amendments, the BCDC found that although sewage treatment plants are not typically water-related uses consistent with McAteer-Petris Act and Bay Plan provisions and policies, the SMCSD facility is necessary to promote the safety and welfare of the Bay Area because the facility is a necessary component of the regional wastewater treatment program as adopted by the Regional Water Quality Control Board and for which there is no reasonable alternative.

SMCSD staff has applied for an amendment to this permit to address the Proposed Action. If approved, the BCDC permit would be issued after completion of the environmental review process and issuance of other necessary agency approvals and permits required for the Proposed Action.

3.3.2 Affected Environment

Coastal Zone. The San Francisco Bay was formed during alternating interglacial and glacial periods, beginning with the first known presence of estuarine rocks approximately 600,000 years ago. During glacial periods, while the sea level was low, the San Francisco Bay was a valley. Over the past half million years, up to seven different estuarine periods corresponding to high sea level have been recorded by studying subsurface cores from the San Francisco Bay. The estuarine conditions were caused by rising temperatures that melted glaciers. Currently the estuarine waters of the San Francisco Bay fill the valley. The coastline in southern Marin County near the project area is characterized by steep hillsides and a rocky coastline made up of a mixture of bedrock and rock fragments of the Marin Headlands terrane of the Franciscan Complex. The coastline of the project area is characterized by basalt bedrock and may include chert, basalt, and sandstone rock fragments, and miscellaneous clastic sediment as beach sand (Stoffer, P.W., and Gordon, L.C., eds. 2001).

Sea Level Rise. Sea level rise from climate change has the potential to affect the coastline of the San Francisco Bay. The BCDC, incorporating maps from the USGS, projects that sea level in the San Francisco Bay and its shoreline will rise approximately 16 inches by mid-century and 55 inches by the end of the century (BCDC 2013c).

Coastal Zone Public Access. The driveway leading from East Road to the SMCSD treatment facility is open to the public during normal facility operating hours. This driveway provides public access to the shoreline and marine resources including recreational fishing.

3.3.3 Environmental Consequences

3.3.3.1 No Action Alternative

No impact to coastal and marine resources would occur under the No Action Alternative.

3.3.3.2 *Proposed Action*

All of the proposed improvements would be in SMCSD's existing easement, and 95 percent of the proposed improvements would be constructed in the existing 2.0-acre SMCSD facility footprint. The construction would increase the existing plant footprint by less than 0.1 acre to the north of the existing access road. The expansion area is the only part of the project where ground excavation will occur. There are no coastal resources in this part of the project area.

Coastal zone resources will not be directly impacted by the Proposed Action. The ground disturbance associated with the expansion of the existing access road will be close to the coastline, but the coastline would not be altered. There would be no direct impact to the coastline or marine resources.

The potential for excessive erosion during construction is considered an indirect, potentially significant impact to coastal and marine resources, requiring mitigation. To control erosion, and keep stormwater runoff and sedimentation from impacting the San Francisco Bay waters, the construction contractor would be required to follow the NPDES regulations for stormwater discharges at construction sites; this requirement is further detailed in Section 3.4.1.2 (Water Resources).

Sea level rise is likely to increase the risk of flooding at the site. Most of the project area is not identified as being vulnerable to flooding associated with a predicted sea level rise during the next century. The sea level would rise gradually and would result in shallow flood depths, with ample warning, and presents a low risk of injury or loss of life. The headworks, secondary and tertiary treatment components would be constructed above the sea levels currently projected for mid-century and end of the century scenarios, with the possible exception of several connecting pipelines. These pipelines would be designed and constructed to withstand the potential impacts of a submerged or partially submerged environment. The existing residence conversion for administrative uses as part of the Proposed Action also occurs above these projected sea levels. Therefore, there would be *less than significant* impacts from sea level rise.

A concern of the BCDC has been the continuation of safe public access to the shoreline for hiking, wildlife viewing, and fishing. The access road leading from the Bay Trail and East Road to the treatment facility is open to the public during normal facility operating hours to accommodate public access to this part of the coast. Expansion of the existing access road would be designed and constructed in a manner that would guarantee continued public access to the shoreline. Construction of the Proposed Action could result in short-term, intermittent closures of this access road for construction equipment and activities. This impact would be temporary, occurring only during certain periods of construction activity. Public access to the coast would not be affected by operation of the Proposed Action, and *no impact* would occur.

3.3.3.3 *Cumulative Impacts*

Other projects within the Bay shoreline portion of East Fort Baker could increase impacts to coastal resources when combined with impacts from the Proposed Action. Since no projects capable of contributing to cumulative impacts occur within this setting, *no impact* would occur.

3.3.3.4 Mitigation Measures

To mitigate the possibility of excessive erosion during construction from impacting coastal and marine resources, the contractor is required to use BMPs for controlling stormwater runoff, erosion, and sedimentation. The construction contractor would be required to abide by the requirements of a SWPPP prepared specifically for the project and all applicable regulations including NPDES regulations for stormwater discharges at construction sites as discussed in Section 3.4.1.2 (Water Resources). No additional mitigation measures are required.

3.4 WATER RESOURCES

This section describes water resources, processes, and hazards in the project area. Analysis of these resources will be presented in the context of applicable laws, regulations, and policies including NEPA and CEQA. The purpose of this section is to evaluate any impacts to water resources by implementing the Proposed Action.

3.4.1 Regulatory Environment

3.4.1.1 Federal

Clean Water Act

The Clean Water Act established water quality standards for surface waters and the basis for regulating the discharge of pollutants into the waters of the United States. Under the Clean Water Act the EPA has implemented pollution control programs including wastewater standards for industry and water quality standards for contaminants in surface water (EPA 2013a).

It became unlawful to discharge any pollutant from a point source (a discrete conveyance such as a pipe or man-made ditch) under the Clean Water Act, unless a permit was obtained. The EPA NPDES controls discharges of pollutants to navigable waters by requiring permits that help regulate point source discharges from industry, municipalities, and other facilities (EPA 2013a). Any construction activities must comply with the post-construction stormwater management requirements mandated by Section 438 of the Energy Independence and Security Act (EISA). EISA requires replication of predevelopment hydrology (with respect to temperature, rate, volume, and duration of flow) for any development or redevelopment project that exceeds 5,000 square feet (EPA 2013b).

Executive Order 11990

Executive Order 11990 of 1977, Protection of Wetlands, was an amendment to the NEPA legislation of 1969. The purpose of Executive Order 11990 is to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands (Federal Emergency Management Agency [FEMA] 2013a).

Executive Order 11988

Executive Order 11988 of 1977, Floodplain Management, was another amendment to the NEPA legislation of 1969. It requires federal agencies to avoid to the extent possible adverse impacts to flood plains including direct and indirect development of them if there is a practical alternative (FEMA 2013b).

NPS Management Policies

The *NPS Management Policies* provides additional policies and guidance for managing water resources including the protection of surface water and groundwater, wetlands, and floodplains in the NPS jurisdiction. According to the document the NPS will perpetuate surface waters and groundwater as integral components of park aquatic and terrestrial ecosystems (NPS 2006).

3.4.1.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act was enacted in the State of California in 1969 to protect water resources, including groundwater. Through this legislation the SWRCB and its nine Regional Boards were given authority to preserve and enhance water resources in the State. The legislature “finds and declares that the people of the state have a primary interest in the conservation, control, and utilization of the water resources of the state, and that the quality of all the waters of the state shall be protected for use and enjoyment by the people of the state” (SWRCB 2013a).

The SWRCB carries out its duties under the Porter-Cologne Water Quality Control Act through the use of regional, water basin plans. The project area is in the California Regional Water Quality Control Board San Francisco Bay Region jurisdiction. The *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)* is the master document for protecting water resources in the region (SFBR 2011).

Any construction activities of more than 1 acre would require coverage under the SWRCB NPDES General Permit for Discharges from Construction Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 (Construction General Permit) (SWRCB 2013b). It is this general permit that requires the development of a SWPPP and the implementation of BMPs to minimize offsite sedimentation during construction projects.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife is responsible for conserving, protecting, and managing the State’s fish, wildlife, and native plant resources. Fish and Game Code, Section 1602 requires that the agency be notified of proposed actions that may substantially modify a river, stream, or lake. This includes ephemeral streams, desert washes, and watercourses. If it is determined that the proposed activity may adversely affect fish and wildlife resources then a Streambed Alteration Agreement would be prepared to comply with CEQA. The Proposed Action would proceed in accordance with the agreement (CDFW 2013).

3.4.1.3 Local

Marin County Watershed Program

The Marin County Watershed Program was created on May 13, 2008, as a project of the Marin County Department of Public Works. The goal of the program is to develop a framework that integrates flood protection, creek and wetland restoration, fish passage and water quality improvements with public and private partners to protect and enhance Marin’s watersheds (MCDPW 2013).

The Marin County Community Development Agency includes policies and guidance pertaining to water resources in Marin County in their Hydrology and Water Quality Technical Background

Report that was updated in November 2005 (MCCDA 2005). These policies address the existing hydrologic environment, and regulatory framework affecting surface and ground waters, including stream conservation areas, and other resource conservation zones.

In the early 1990s the County of Marin and the Marin County Flood Control and Water Conservation District began addressing stormwater pollution. In 1993, the Marin County Stormwater Pollution Prevention Program (MCSTOPPP) was created to prevent stormwater pollution, protect and enhance water quality in creeks and wetlands, preserve beneficial uses of local water resources, and to comply with State and Federal regulations (MCSTOPPP 2013).

3.4.2 Affected Environment

Basin and Watershed. The project area is in the San Francisco Bay Basin. Its dominant feature is a 1,100 square mile portion of the San Francisco Bay estuary, where the terrestrial fresh water mixes with ocean saline water. Most of the fresh water introduced to the Bay is from the Sacramento and San Joaquin rivers, as the Bay functions as a major drainage outlet for the Central Valley of California (SFBR 2011). In the San Francisco Bay basin, the project area is in what is known as the Richardson Bay Watershed which drains to Richardson Bay; a shallow, protected, and biologically-rich portion of San Francisco Bay in southern Marin County (MCDPW 2013).

Surface Water. The major surface water bodies near the project area are the Richardson Bay and the San Francisco Bay to the north and west, respectively. The project area is characterized by relatively steep concave hillsides that slope down to sea level. Surface water flow is expected to generally mimic the topography, flowing by way of manmade drainage improvements, and small drainage channels such as gullies or ravines that discharge to the San Francisco Bay. Local creeks near the site include Coyote Creek and Nyhan Creek to the north, but runoff from the property does not flow to either of these creeks. A culvert at the top of the hillside above the existing access road discharges stormwater into a small gully lined with riprap that flows directly through the project area into a concrete channel along the existing access road. This channel is approximately 1 to 2 feet wide and has a defined bed and bank. The channel carries water along the existing access road and into another culvert that discharges into the bay. A groundwater seep from the fractured bedrock above the drainage channel along the existing access road was observed discharging water into the stormwater channel during the wet season, but otherwise dry conditions (Tetra Tech 2013).

Groundwater. All groundwater is considered suitable, or potentially suitable, for municipal or domestic use unless otherwise designated by the SWRCB. The SWRCB seeks to maintain high quality groundwater resources by limiting bacteria, organic and inorganic chemical constituents, and maintaining acceptable taste and odor so that potential beneficial uses are not adversely affected. No groundwater basins have been identified near the project area (SFBR 2011) and there is little available information about the quality and presence of useable groundwater near the project area. The bedrock of the Marin Headlands terrane is relatively impermeable. Shallow groundwater is expected to flow toward the San Francisco Bay.

Water Quality and Beneficial Uses. Near the project area the principal streams, lakes and embayments are designated as having existing or potential beneficial uses (CDC 2005). The 2010 California 303 (d) List and Total Daily Maximum Load (TDML) Project Schedule

describes regulated pollutants, sources, priorities, and the expected date of TDML implementation for many water bodies in the San Francisco Bay area. The San Francisco Bay and the Richardson Bay are both identified as impaired water bodies on the California 303 (d) List (SWRCB 2010).

Floods and Tsunamis. The lower portion of the project area is in a 100-year floodplain (Zone VE). Areas designated as Zone VE floodplains are subject to inundation by the 1-percent-annual-chance flood event (100-year flood) with additional hazards from storm-induced wave action. Mandatory flood insurance purchase requirements and floodplain management standards apply (FEMA 2013c). The NPS Water Resources Division (WRD) was consulted and determined that a Statement of Findings (SOF) for floodplain exposure was not required for the Proposed Action.

Tsunamis are large sea waves generated primarily through large undersea seismic events, volcanoes, or similar significant natural events. The project area is on the tsunami inundation boundary line, as defined on the Tsunami Inundation Map for Emergency Planning, San Francisco North Quadrangle; therefore, an identified tsunami hazard exists at the site.

A seiche is an oscillation of a water body, such as a bay, that may cause local flooding. A seiche could occur on San Francisco Bay due to seismic or atmospheric activity. Even though seiches are rare, it is possible for the project area to be impacted by a seiche because of its location along the San Francisco Bay.

Wetlands. There are no wetlands near the project area (SFBR 2011).

3.4.3 Environmental Consequences

3.4.3.1 No Action Alternative

No impact on water resources would occur under the No Action Alternative.

3.4.3.2 Proposed Action

All of the proposed improvements would be in SMCSD's existing easement, and 95 percent of the proposed improvements would be constructed in the existing 2.0-acre SMCSD facility footprint increasing the existing plant footprint by less than 0.1 acre in the area north of the existing access road. The expansion area of 0.1 acre is the only part of the project where ground disturbance will occur. Water resources in this part of the project are groundwater and surface water.

Uncontrolled construction during the wet season could increase erosion and affect surface water quality in the short term by discharging sediment (and pollutants bound to sediment) and other pollutants associated with construction, such as trash, paint, solvents, sanitary waste from portable restrooms or sewage treatment facilities, and concrete curing compounds. The discharge of these pollutants during construction could impair the quality of any surface water flowing into the San Francisco Bay. Because project area construction exceeds 1 acre, the project is subject to the requirements of the NPDES Construction General Permit. To obtain coverage under the Construction General Permit, the project applicant must provide, by electronic submittal, a notice of intent, a SWPPP, and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground. Construction activities covered

under the Construction General Permit are regulated at the local level by the San Francisco Bay Region of the California Regional Water Quality Control Board.

The Construction General Permit exercises a risk-based permitting approach and mandates certain requirements based on the risk level of the project (Level 1, Level 2, or Level 3). The risk levels are based on the risk of sediment discharge and risk to the receiving water. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season). The receiving water risk depends on whether the project would discharge to sediment-sensitive receiving waters, defined by specific beneficial uses of the receiving water in the Basin Plan, a listing on the 303(d) list due to sediment impairment, or a TMDL in place to address the potential for excessive sedimentation.

The performance standard in the Construction General Permit is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized discharges unrelated to stormwater. This would be accomplished through controls, structures, and management practices that achieve best available technology (BAT) for treatment of toxic and nonconventional pollutants and best conventional technology (BCT) for treatment of conventional pollutants.¹ The permit requires minimum BMPs implemented at all sites and imposes numeric action levels for Level 2 and Level 3 projects and numeric effluent limits for pH and turbidity for Level 3 projects.

The construction SWPPP would be prepared by a qualified SWPPP developer to meet the certification requirements in the Construction General Permit. The SWPPP would require that:

- All pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction would be controlled;
- Where not otherwise required to be under a Regional Board permit, all discharges unrelated to stormwater would be identified and eliminated, controlled, or treated;
- Site BMPs would be effective and would reduce or eliminate pollutants in stormwater discharges and authorized discharges unrelated to stormwater from construction to the BAT/BCT standard;
- Calculations and design details, and BMP controls for site run-on, would be complete and correct; and
- Stabilization BMPs would be installed after construction to reduce or eliminate pollutants.

The SWPPP would include BMPs for:

- Erosion control (including wind erosion) and tracking controls to minimize tracking of mud from the site,

¹As defined by the EPA, BAT is a technology-based standard established by the Clean Water Act as the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. The BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable. BCT is a technology-based standard that applies to treatment of conventional pollutants, such as total suspended solids.

- Sediment control,
- Controls for water discharges unrelated to stormwater (e.g., water from vehicle and equipment cleaning), and
- Waste management and materials pollution control.

There is a groundwater seep in the project area. Dewatering would likely not be required, but the SWPPP would include a dewatering plan for groundwater. There is presently no documented contaminated groundwater at the site.

Construction would not have any other effect on groundwater.

The construction of the relocated road on the west side of the existing access road would result in the alteration of an existing stormwater drainage channel. A culvert at the top of the hillside above the existing access road discharges stormwater into a small gully lined with riprap that flows directly through the project area into a concrete channel along the existing access road. This channel is approximately 1 to 2 feet wide and has a defined bed and bank. Water flows downhill in the channel along the existing access road and into another culvert that discharges into the Bay. A groundwater seep from the fractured bedrock above the drainage channel discharges to the channel at least seasonally, during the wet season.

Operation of the Proposed Action has the potential to adversely affect water quality because the Proposed Action would slightly increase site impervious area and thereby slightly increase the frequency, duration, and volume of stormwater runoff. Because of the change in land use, an increase in pollutant loading from runoff is also possible. Development of the Proposed Action, including alteration of the naturally occurring groundwater seep and stormwater drainage infrastructure along the existing access road, must comply with the post-construction stormwater management requirements mandated by Section 438 of the EISA. EISA requires replication of predevelopment hydrology (with respect to temperature, rate, volume, and duration of flow) for any development or redevelopment project that exceeds 5,000 square feet. EISA allows for two compliance methods: (1) retain all runoff from the site up to the 95th percentile rainfall, or (2) do a site-specific hydrologic analysis of pre-project runoff conditions and design stormwater management controls to preserve pre-project hydrology. The EPA recommends the use of green infrastructure or low impact development to meet the requirements of EISA; examples include bioretention areas, vegetated swales, and rainwater harvesting and reuse.

The Proposed Action would not increase the potential for flooding. The project area is in a 100-year floodplain designated by FEMA as Zone VE. To avoid flooding impacts, site grading and new structures constructed in the floodplain and would be designed to avoid expanding the floodplain boundary. Grading and fill activities in and adjacent to the floodplain could redirect and increase flows to the San Francisco Bay, resulting in the potential for increased erosion or alignment modification. Due to the small area of the 100-year floodplain in the project footprint, construction and operation would result in *less than significant* impacts on floodplain function.

The Proposed Action would not increase hazards associated with tsunamis or seiche flows for the SMCSF facility, and any impacts would be *less than significant*.

3.4.3.3 Cumulative Impacts

Other projects within a reasonable distance from the project area could increase impacts to water resources when combined with impacts from the Proposed Action. The cumulative impacts to water resources from these projects would be *less than significant*, assuming that any construction activities associated with the nearby projects use similar mitigation measures as the Proposed Action to control erosion, and polluted stormwater from impacting surface water in the area.

3.4.3.4 Mitigation Measures

Compliance with the Construction General Permit discussed above, including SWPPP preparation and BMP implementation, would help preserve pre-construction water quality and reduce short-term impacts to surface water during construction. Preservation of water quality during post-construction operation of the facility would be achieved by complying with EISA and implementing one of the following compliance methods: (1) retain all runoff from the site up to the 95th percentile rainfall, or (2) do a site-specific hydrologic analysis of pre-project runoff conditions and design stormwater management controls to preserve pre-project hydrology. No additional mitigations would be required.

3.5 CULTURAL RESOURCES

Cultural resources are artifacts of human activity, occupation, or use. They include expressions of human culture and history in the physical environment, such as archaeological sites, historic buildings and structures, or other culturally significant places.

Archaeological resources refer to surface or buried material remains, buried structures, or other items used or modified by people. Prehistoric archaeological resources date to the time before the European presence in the region and can include villages or campsites, food remains, and stone tools and tool-making debris. Ethnohistoric or protohistoric archaeological resources are those that can be attributed to native cultures, but include evidence of European contact, such as trade beads in a site that otherwise appears to be prehistoric. Historic archaeological sites are those deposits that postdate European contact.

Architectural resources refer to historic building and structures that are generally more than 50 years old and are typically identified through archival and library research, followed by field reconnaissance and recordation. Historic buildings and structures are architecturally, historically, or artistically important individual and groups of residential, commercial, industrial, and transportation properties.

Traditional cultural properties are places associated with the cultural practices or beliefs of a living community. The significance of these places is derived from the role the property plays in a community's cultural identity, as defined by its beliefs, practices, history, and social institutions. For example for Native American communities these could include natural landscape features, plant gathering places, sacred sites, and burial locations. They can also include urban neighborhoods whose structures, objects, and spaces reflect the historically rooted values of a traditional social or ethnic group.

3.5.1 Regulatory Environment

3.5.1.1 Federal

National Historic Preservation Act of 1966

A number of federal statutes address cultural resources and federal responsibilities regarding them.² Foremost among these statutes is the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470). Section 106 of the NHPA (36 CFR Part 800) requires federal agencies, and agencies using either federal funds or operating under federal permit, to take into account the effect of their undertakings on historic properties. The NHPA does not require preservation of historic properties, but it does ensure that federal agency decisions concerning the treatment of these resources result from meaningful consideration of cultural and historic values, and identification of options available to protect the resources.

- a) The term “historic properties” refers to cultural resources that contribute significantly to history and meet the specific criteria outlined in 35 CFR Part 60.4 for listing on the National Register of Historic Places (NRHP). Historic properties include those cultural resources that are formally listed on the NRHP and those that have been determined to meet the criteria for listing. To be eligible for listing, a property must typically be 50 years old or more; it must possess historic significance; and it must possess integrity of location, design, setting, materials, workmanship, feeling, and association. Historic significance is the importance of a property to the history, architecture, archaeology, engineering, or cultural aspects of a community. These significant resources can be in the form of districts, sites, buildings, or structures. To qualify for the National Register, a property must be significant to American history at the local, state, or federal levels (36 CFR 60.4(a-d)), and must be associated with events that have made a significant contribution to the broad patterns of history;
- b) be associated with the lives of persons significant to our past;
- c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) have yielded, or may be likely to yield, information important to prehistory or history.

In June 1992, the NPS, the SHPO, and the Advisory Council on Historic Preservation entered into a programmatic agreement (PA) regarding operation and maintenance activities within the GGNRA.³ This PA provides alternative cultural resource compliance procedures that are tailored to the resources and routine undertakings at the GGNRA.

² Programmatic Agreement Among the Western Region, National Park Service, USDI (NPS_WR), Golden Gate National Recreation Area, National Park Service, USDI (NPS-GOGA), the California State Historic Preservation Officer (SHPO) and the Advisor Council on Historic Preservation (ACHP) Regarding the Operation and Maintenance Activities in Golden Gate National Recreation Area,

³ Programmatic Agreement Among the Western Region, National Park Service, USDI (NPS_WR), Golden Gate National Recreation Area, National Park Service, USDI (NPS-GOGA), the California State Historic Preservation Officer (SHPO) and the Advisor Council on Historic Preservation (ACHP) Regarding the Operation and Maintenance Activities in Golden Gate National Recreation Area,

Archeological Resources Protection Act of 1979

The Archeological Resources Protection Act of 1979 as amended (PL 96-95; 93 Stat. 721; 16 USC 470aa et seq.) sets felony-level penalties for excavating, removing, damaging, altering, or defacing any archaeological resource more than 100 years old, on public or Indian lands, unless authorized by a permit. It applies to archaeological resources regardless of NRHP status. It prohibits the sale, purchase, exchange, transportation, receipt, or offering of any archaeological resource obtained in violation of any regulation or permit under the act or under any Federal, State, or local law. The Act is implemented by uniform regulations and Department of Interior-specific regulations, both found at 43 CFR Part 7.

The Native American Graves Protection and Repatriation Act (NAGPRA), Pub. L. 101-601, 25 U.S.C. 3001 et seq., 104 Stat. 3048,

NAGPRA requires federal agencies and institutions that receive federal funding to return Native American "cultural items" to lineal descendants and culturally affiliated Indian tribes and Native Hawaiian organizations. Cultural items include human remains, funerary objects, sacred objects, and objects of cultural patrimony. A program of federal grants assists in the repatriation process and the Secretary of the Interior may assess civil penalties on museums that fail to comply. NAGPRA also establishes procedures for the inadvertent discovery or planned excavation of Native American cultural items on federal or tribal lands. While these provisions do not apply to discoveries or excavations on private or state lands, the collection provisions of the Act may apply to Native American cultural items if they come under the control of an institution that receives federal funding.

Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)

The Executive Order 13175 provides for regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications. NPS Management Policies (NPS 2006; chapter 8.2 and 8.6) state that the NPS will make reasonable efforts to provide for the protection, safety, and security of park visitors, employees, concessionaires, and public and private property; and to protect the natural and cultural resources entrusted to its care.

3.5.1.2 State

Under CEQA, cultural resources listed on, or determined to be eligible for listing on, the California Register of Historical Resources (CRHR) or a local register are those that must be given consideration in the CEQA process.⁴ The CRHR is in the California Code of Regulations, Title 14, Chapter 11.5. According to this code, properties listed on or formally determined to be eligible for listing on the National Register of Historic Places (NRHP) are automatically eligible for listing on the CRHR. A resource is generally considered to be historically significant under CEQA if it meets the criteria for listing on the CRHR.

The CRHR criteria closely parallel those of the NRHP, and historic significance is judged by applying both sets of criteria.

⁴ Cultural resource—A generic term that may be used to refer to architectural resources, archaeological resources, traditional cultural properties, or sacred sites regardless of NRHP or CRHR evaluation.

Under the CRHR criteria, each resource must be determined to be significant at the local, state, or national level under one of the four criteria paraphrased below:

- Criterion 1:** Resources associated with important events that have made a significant contribution to the broad patterns of our history;
- Criterion 2:** Resources associated with the lives of persons important to our past;
- Criterion 3:** Resources that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master;
- Criterion 4:** Resources that have yielded, or may be likely to yield, information important in prehistory or history.⁵

A resource is considered eligible for inclusion on the CRHR, and therefore a potential historical resource under CEQA, if it is at least 45 years old. To be eligible for listing to the CRHR under Criteria 1, 2, or 3, an archaeological resource must contain artifact assemblages, features, or stratigraphic relationships associated with important events or important persons, or be exemplary of a type, period, or method of construction. To be eligible under Criterion 4, a resource need only show the potential to yield important information.

CEQA requires that the effects of a project on an archaeological resource be taken into consideration. CEQA recognizes archaeological resources as being potential instances of a “unique archaeological resource” or of a “historical resource.” However, it must first be determined if the archaeological resource is a historical resource, that is, if the archaeological resource meets the criteria for listing on the CRHR.

An archaeological resource that qualifies as a historical resource under CEQA generally qualifies for listing under Criterion 4 of the CRHR. An archaeological resource may qualify for listing under Criterion 4 when it can be demonstrated that it could significantly contribute to questions of scientific/historical importance. The research value of an archaeological resource can be evaluated only within the context of the prehistoric/historical background of the site of the resource and within the context of prior archaeological research related to the property type.

Artifacts, objects, or sites that do not meet the above criteria are not considered unique archaeological resources. Impacts on archaeological resources that are not unique and those that do not qualify for listing on the CRHR or a local register receive no further consideration under CEQA.

Regulations Concerning Discovery of Human Remains

California Health and Safety Code (Section 7050.5)

California Health and Safety Code Section 7050.5 requires that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are

⁵ California Public Resources Code, Sections 4850 through 4858; California Office of Historic Preservation, “Instructions for Nominating Historical Resources to the California Register of Historical Resources,” August 1997.

discovered has determined that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

California Public Resources Code (Section 5097.98)

Section 5097.98 of the California Public Resources Code stipulates that whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The decedents may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 24 hours of their notification by the Native American Heritage Commission. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

3.5.1.3 Local

Marin County, Countywide Plan

The *Marin Countywide Plan, Cultural Resources Technical Background Report*, includes the following policies pertaining to preservation of cultural and archaeological resources.

- Policy EQ-3.29 Review Sensitivity Map. The Community Development Agency shall review the archaeological sensitivity map for all development applications to determine potential impacts.
- Policy EQ-3.30 Evaluate Presence of Site. Development sites identified as having a potential for the presence of archeological resources (through review of the sensitivity map or other available sources) shall be further evaluated to ascertain if an archeological site is actually present. This evaluation shall be the responsibility of the applicant and may be undertaken by conducting a record search at the Northwest Information Center of the California Archaeological Inventory to determine if the project area has been previously surveyed and if resources have been identified. If the record search reveals that no survey has been undertaken, the applicant may be required to undertake a survey of the site, depending upon the sensitivity of the site.
- Policy EQ-3.31 Avoid Impact. When a site has been identified as an archeological resource, development shall be situated or designed to avoid impact on the archeological resources. This may be accomplished through one or more methods:
 - Siting buildings to completely avoid the archeological site;
 - Providing parks, or some type of open space to incorporated archeological sites;
 - “Capping” (covering the site with a layer of soil);
 - Deeding the site as a permanent conservation easement.

- Policy EQ-3.32 Discovery of Resources. In the event archaeological resources are uncovered during construction, all work must halt and an evaluation must be undertaken by a qualified archaeologist.
- Policy EQ-3.33 Buildings with Historical Significance. The County Community Development Agency should require that buildings of historical significance are preserved when new development is proposed.
- Policy EQ-3.34 Consultation with Local Organizations. Development applications received for projects in areas identified as having potential to impact cultural and/or archeological impacts shall be forwarded to interested organizations and/or individuals for their review and comment.

3.5.2 Affected Environment

Prehistoric Overview

This prehistoric affected environment is taken from the archaeological survey done for the proposed project (Archeo-Tec 2013a). Due to the very steep slopes and lack of beach access at the project site, evidence of indigenous occupation in the project area is not expected. The Headworks and Facility Upgrade Project is situated in what was, prior to the arrival of the first Europeans in the closing decades of the eighteenth century, territory occupied by a group of Native Californians known as the Coast Miwok.

A great many of the prehistoric midden sites in Marin were identified by Nels C. Nelson in 1907–8, then working as a graduate student at U.C. Berkeley. He hiked and traveled by horse around the shores of San Francisco Bay, which was then relatively undeveloped. At that point the above-ground aspects of some shellmounds were already damaged or destroyed, but Nelson identified more than 190 such sites in Marin County alone (Goerke 1994).

Ethnographic Overview

The Coast Miwok are derived from Penutian Stock (Callaghan 1967; Pitkin and Shipley 1958), a theoretical linguistic construct which may have its origins in the northwestern Great Basin (Hattori 1982:208). Penutian-speaking peoples presumably slowly migrated into central California, perhaps as early as around 2500 B.C. (Moratto 1984:552). By A.D. 300-500, speakers of Penutian stock were firmly ensconced in the San Francisco Bay region.

The Coast Miwok used the nearby bay and coastline for food and vegetal resources, including shellfish, fish, reeds, water birds and small game. Willow, hazel and sedge were available along Corte Madera Creek; these materials were used in basket making. Bone tools were used for basketry, and to scrape animal hides. Acorns and buckeye which could be ground into flour were plentiful, as were grasses, ferns, wood and tule, which had many applications (Goerke 1994).

Historic Period

All of southern Marin County, including the project area, was granted by the Mexican government to William Richardson in 1836 under the name Rancho Sausalito (NPS 2005:7). Richardson ranched cattle on his land and bottled spring water from the Rancho for sale in San Francisco. Richardson's primary business was maritime trade, however.

A Cultural Landscape Report prepared by the National Park Service for Fort Baker describes the natural terrain as it appeared in the 1850s-1860s:

“Alternating between rocky cliffs descending more than two hundred feet, and small crescent shaped coves at the water’s edge, the property had been the southernmost extent of Richardson’s Rancho Sausalito. Inland from the rocky precipice, rolling hills, ravines, and small valleys characterized the landforms of the Lime Point Military Reservation” (NPS 2005:7–8).

The project area and its surroundings in 1850 was mostly the cliffs and coves that characterized the southern portion of Rancho Sausalito. During the Rancho period, vegetation was kept low by grazing cattle, and the hillslopes were devoid of trees (NPS 2005:69). Visibility from the project area to the Bay and the shorelines beyond would have been excellent. Richardson’s fortunes were dashed in 1855 when one of his ships sank with uninsured cargo (NPS 2005:7). He sold Rancho Sausalito to Samuel R. Throckmorton, who knew the federal government was interested in establishing a fort for coastal defense at the entrance to the Bay. The transition from Mexican government to American government resulted in competing claims to property. Although under Mexican law Rancho Sausalito extended all the way south to the Bay, in 1850 the American government had claimed a portion of that land to guard the entrance to the Bay.

After purchasing Rancho Sausalito from Richardson, Throckmorton attempted to sell it to the American government. As the government believed it had already claimed this land, lawsuits ensued, and it was not until 1866 that an agreement was reached and the Lime Point Military Reservation was established (National Park Service 2005:7–8).

Military Construction Near the Project Area

In 1867, a post-and-pole fence was constructed at the northern edge of the reservation, separating the military land from the rancho land immediately north of it. Granite posts were placed at the angles of the boundary line (NPS 2005:8). These markers were near, but outside, the project area.

No further development took place near the project area until almost 30 years later, when residents of Sausalito petitioned for construction of a road to join the town with the new fog station on Lime Point. Congress finally approved construction of the road in 1894, but left the funding of it to the town of Sausalito.

The residents were unable to raise the necessary funds, but in 1901 the Army saw the usefulness of overland access to its fort and undertook its construction (NPS 2005:10). The road, now called East Road, was originally 18 feet wide but was expanded in 1945 (NPS 2005:10, 37). An entrance gate was built at the boundary between the Reservation and the town, just north of the project area, and a post-and-pole fence was built on the cliff side of the road from this entrance gate south to Battery Cavallo in 1905 (NPS 2005:10, 56), separating the project area from the road.

The Lime Point Military Reservation was renamed Fort Baker in 1897, in honor of Colonel Edward Dickinson Baker (NPS 2005:11). The Army expanded the fort facilities, primarily far south of the Project area near the Parade Ground, and introduced nonnative grasses and trees to

control erosion and reduce wind. Nearer the project area, the 1901 entrance gate was replaced in 1903 with a more substantial structure.

The Sausalito entrance gate featured cast iron ornamental finials on brick pillars with cannons set in their centers. The Benicia Arsenal provided the cannons and two 10-inch cannonballs to adorn the gate that was built circa 1903. This substantial structure replaced the wood gate that had been built in conjunction with the road to Sausalito (NPS 2005:18).

The cove in which the project area is situated was known by several informal names by local residents. One of these names was Tide Gauge Beach, because of a tide gauge that the Coast Guard had reportedly mounted on the cliff face there (Frank 1994). Another source identifies the Coast Guard facility as a station, rather than simply a gauge mounted on a cliff face (Marin Conservation League 1946). In 1937, the Army replaced the tide gauge with a mine dispersion pier in the cove, at which mine-planting vessels were berthed in the 1930s and 1940s (NPS 2005:23, 35). The dispersion pier remained in place until the wastewater treatment plant was built.

Sailors' Cemetery

According to historical documents, an informal cemetery was established somewhere in the vicinity of the project site to receive the remains of sailors who died while serving on ships anchored in the Bay. The earliest record that has been found so far, in an 1880 history of Marin County, describes the cemetery and its location:

“Some distance south of the site of old Sausalito, on the brow of a hill overlooking the bay, there is an enclosure about forty feet square containing, perhaps, a dozen graves of seamen” (Munro- Fraser 1880:390).

The account transcribes the headstones of two sailors, Henry Mortimer and Maurice McGrath, who died in 1850 and 1855, respectively. The enclosure probably consisted of a wooden fence, although it is not described; it is additionally thought that the other graves may have been marked with wooden markers rather than stone markers. Munro-Fraser also states that many Russian sailors who had died on ship of a contagious disease had been buried not in the cemetery but “in shallow graves extending from the beach back some distance in a little gulch,” which were already being washed out by the tide (Munro-Fraser 1880:390).

The shoreline along the Bay is prone to erosion. As early as 1904, the Sausalito News reported that:

“Last Monday Coroner Sawyer was called to Fort Baker to secure the remains of two bodies which had been buried near the shore years ago, and by the continual washing of the water the banks had given away exposing the skeletons. They were buried at the county farm” (Anon 1904).

Given that isolated burials outside of formal cemeteries was relatively common in the mid-nineteenth century in this area, it is not clear whether the two burials referenced above had been buried at the Sailors' Cemetery or whether they were buried elsewhere. However, it is clear that burial along the bayshore was a temporary establishment—the erosion caused by the Bay

constantly eats away at the land, creating the dramatic bluffs and steep slopes that characterize southern Marin County.

In 1916, the bodies of Mr. Mortimer and Mr. McGrath were removed from an unspecified location within Fort Baker and reinterred along with their grave markers at the cemetery on Mare Island (Sharpe 1916:6). The headstones, exactly as transcribed in 1880, have been restored and mark some of the earliest remains at the historic cemetery at Mare Island. However, no mention is made of the removal of any other burials from Fort Baker, suggesting that the other graves were no longer visible in 1916—a particular probability if they were marked with crude wooden markers rather than stones.

Around the same time, according to an oral history given in the 1980s, two sailors aboard a German merchant ship were interred either at the Sailors' Cemetery or near to it during World War I:

“There were two dead soldiers aboard. They were buried side by side at a site below the present road to Fort Baker – between the Beach and the road – after you passed the guards [the Fort Baker entrance gate] and before coming to Fisherman’s Beach. Two head stones were set in place where the German sailors were buried. The Sausalito Sewage Disposal plant is located where Fisherman’s Beach once was” (Nau 1984).

A search was made through the Sausalito News during the 1910s for details of this incident. Several articles were written about the German merchant ship *Ottawa* that anchored in Richardson’s Bay in 1914 and was still present when war broke out. It was seized by the U.S. government and its crew was interned. The crew, which had been welcomed into Sausalito society, was eventually sent back to Germany in 1919 aboard the *U.S.S. Princess Matoika* (Anon 1919). No mention was found of any deaths associated with *Ottawa* or any other German ship.

Mr. Nau’s recollection provides evidence that the area around the project site—that is, between the northern edge of Fort Baker and the treatment plant, and between the road and the beach, was used as a burial ground. Presumably the German sailors were buried at the Sailors’ Cemetery, if the cemetery was still visible at the time. Considering that two stone-marked graves were removed from the Sailors’ Cemetery in 1916 and no other stone-marked graves have been recorded in the area, it is possible that Mr. Nau somehow confused the graves of the German sailors with those of Mr. Mortimer and Mr. McGrath.

Local memory of the suspected cemetery persisted through the mid-twentieth century. A 1946 guide to sights in Marin County identified the project location as sitting within “Dead Man’s Cove.” The guide attributed the name to “a graveyard, now moulded away, in which American and English merchant ships buried seamen who died in port.” (Marin Conservation League 1946) The guide incorrectly claims that all markers, including that of Mr. Mortimer, were wooden.

The suspected cemetery seems to have disappeared from public consciousness by the late twentieth century. In the 1980s or early 1990s, a member of the Sausalito Historical Society came upon the description of the cemetery while reading the 1880 history of Marin County, and various members of the Society undertook the task of re-locating the cemetery.

The informal investigation in December 1994 located a potential site that was distinguished by its flatness, the presence of a partially subsurface brick structure or possible burial vault; and a series of short, upright iron posts about one foot high, possibly marking the boundaries of the cemetery. In January 1995, members of the Sausalito Historical Society met with representatives of the NPS to examine the location and develop a treatment plan for the resource (Haller and Barker 1995). At the meeting, it was determined that the identified site and its surroundings should be archaeologically surveyed and recorded, but it appears this task was not completed. The historical society had no records of any action regarding the Sailors' Cemetery after the January 1995 meeting. A portion of the flat area, including the brick feature, fell to the beach below during a storm sometime between 1995 and 2001 (Stewart et al. 2001).

Wastewater Treatment Plant

In 1953, a wastewater treatment plant was constructed near the project area. In its original format, the plant consisted of an office, an access road, a main structure containing primary sedimentation tanks and a filter building, and a 20-inch-diameter outfall line that emptied 400 feet offshore (Rudo 1981).

While the office was mid-slope near East Road, the main structure was located within tidal waters. The treatment plant was expanded in 1987 to include secondary treatment facilities adjacent to the primary facility along the beach, a sludge thickener, and a secondary digester (Sausalito-Marin City Sanitary District 2013). A third major upgrade was implemented in 1992, when four sand filters were installed. Other minor upgrades have occurred since then, largely without earth disturbance (Sausalito-Marin City Sanitary District 2013).

Resource Identification Methods and Results

Archaeological

On December 19, 2012, Archeo-Tec staff surveyed all areas within the project area that are currently undeveloped but could be affected by the project actions. The archaeologists recorded brick sections found on the beach, the flat suspected cemetery site, and portions of the slope above as a single historic feature. The results of the survey revealed that although it is certainly possible that the flat "cemetery site" is indeed the historic location of the cemetery, no evidence of it was observed. The brick structure, which was intact at the edge of the flat area in 1994 but has since fallen onto the beach below, appeared to be of relatively modern construction and is more likely associated with the treatment plant than with the Fort Baker gate house or with a nineteenth century cemetery. The iron stakes observed in 1994 and still present on site might be markers from the cemetery, but again are equally likely associated with shoring activities. No human remains or grave indicators were observed anywhere, with the possible exception of a partially buried and disintegrating board that might also be a boundary marker or a piece of shoring.

Subsequent to this survey, the staff conducted a records search (File#12-0688) at the Northwest Information Center of the California Historical Resources Inventory System on January 11, 2013. Staff reviewed all archaeological records within one-half mile of the project area. There were no site records documenting the suspected cemetery. Archeo-Tec staff also visited the Sausalito Historical Society on January 23, 2013 to review the documents in their collection pertaining to the Sailors' Cemetery.

If the location of the suspected cemetery site is correct, there could be a dozen or so burials within it, possibly interred as late as the 1910s. It is also possible that the suspected cemetery was in this general area but has fully eroded into the bay. The cemetery was reported to be 40 feet square in 1880, which is larger than the area now thought to be the cemetery site. Even if the cemetery had been in the identified place, at least half of it must have already fallen into the Bay. Considering no human remains have been seen in this area, it seems unlikely that an intact cemetery existed in this location.

The NPS recommended further identification efforts to determine whether there are burials within the project APE in the suspected cemetery site. An Archaeological Testing Plan (ATP) was prepared by Archeo-Tec for review by the NPS that clarified the proposed subsurface investigation methods and immediate actions or legal obligations that would arise if human remains were discovered (Archeo-Tec 2013b). The principal objectives of the testing plan were to identify whether there are portions of the historic cemetery in the portion of the project footprint nearest to and overlapping the suspected cemetery site. If archaeological remains associated with the cemetery would have been encountered, the testing plan further aimed to establish the boundaries—both horizontal and vertical—of the overlap between the project area and the cemetery (Archeo-Tec 2013b). The ATP is attached as Appendix C.

Archaeological testing was done at the suspected cemetery site on August 6 and 7, 2013. The testing methods, as detailed in the ATP, included use of primary and secondary augers throughout the portion of the site potentially impacted by construction of the Proposed Action. The testing uncovered a clear glass bottle finish/neck at the interface of the upper and lower soils (at 24-28 inches) at one location, likely dating from around 1870 to 1930 based on the tooled finish. The bottle was photographed and recorded, and was the only artifact found. No evidence was recovered that would indicate the presence of a cemetery in the testing area (Archeo-Tec 2013).

Architectural

A cultural landscape report for Fort Baker was prepared by the NPS in 2005. The treatment plant was not documented as contributing to the characteristics of the cultural landscape, any historic district or recognized as an individual historic property (NPS 2005). After this report, Tetra Tech staff (historian and/architectural historian) surveyed, researched, evaluated and prepared the applicable state resource record forms for the wastewater treatment facility in March of 2013 to determine potential eligibility as a NRHP property. Although the original wastewater facility was constructed in 1953 and was associated with events and persons significant to national, state, and local history; alterations and modifications to the plant, including new construction, throughout its history affected the integrity of the resource. The treatment plant does not appear to meet the criteria for listing on the NRHP, and SHPO has been asked to concur in this determination. The building has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and does not appear to meet the significance criteria as outlined in these guidelines. Therefore, the building is not eligible for listing on the CRHR. The survey forms, and associated SHPO consultation letter, are in Appendix D.

Native American

On January 29, 2013, as part of the present Phase I cultural resources assessment of the cemetery site, Archeo-Tec established formal contact with the Native American Heritage Commission (NAHC) in Sacramento to determine whether any portion of the present project area may encroach upon any sites or associated cultural resources that may be deemed sacred by members of the local Native American community and to determine any relevant Native American groups that should be contacted regarding this undertaking. This letter formally requested that the Native American Heritage Commission consult its “Sacred Lands” file to obtain the requested information. In a return letter, the NAHC confirmed that there were no records of Native American traditional cultural resources near the project area and provided Native American points-of-contact for individuals and organization that may have additional knowledge of any culturally sensitive resources. Archeo-Tec contacted representatives of the Ya-Ka-Ama and the Federated Indians of Graton Rancheria by e-mail letter on March 26, 2013, and followed up by phone on May 14, 2013. The Ya-Ka-Ama had no comment on the project. The Federated Indians of Graton Rancheria had no concerns, and requested a copy of the survey results. A record of these correspondences is in Appendix B.

3.5.3 Environmental Consequences

3.5.3.1 No Action Alternative

Under the No Action Alternative, the proposed headworks improvements, secondary and tertiary upgrades, and wet weather flow upgrades would not occur. No historic properties or historic resources would be disturbed as there would be no construction or upgrades to the facility. Therefore, there would be ***no impact*** on cultural resources.

3.5.3.2 Proposed Action

Area of Potential Effect

The Proposed Action is within the eastern boundaries of the National Register-listed Forts Baker, Barry and Cronkhite Historic District. The treatment facility is not located near the military-era historic buildings and coastal fortifications that make up the district and changes to the existing facility and adjacent landscape would not be visible or impact the setting of the historic district. The area of potential effect (APE) for cultural resources under the NHPA and CEQA to be analyzed is the wastewater treatment facility footprint and boundaries of the Proposed Action, including the suspected Sailors’ Cemetery site. To determine the potential impacts on archaeological resources, the APE includes the surface and subsurface areas that would be directly affected by ground disturbance and project activities. To determine the potential impacts on above ground, historic resources within the built environment, the APE is defined as boundary of the project.

Archaeological

Because oral histories identify this as the possible location of a cemetery, further identification and evaluation was done to determine the possibility for disturbing human remains. No evidence was recovered that would indicate the presence of a cemetery. Based on the negative archaeological survey and the testing program, no archaeological resources are present and no effects on historic properties are anticipated. ***No impact*** is anticipated, but there is the remote potential that buried archaeological resources could be encountered during ground disturbances.

Architectural

The wastewater facility is more than 50 years old but due to the loss of integrity has been evaluated as not eligible for listing on the NRHP or CRHR, pending SHPO concurrence. Provided SHPO concurs, the facility is not a contributor to the Forts Baker, Barry and Cronkhite National Register District at Fort Baker nor is it part of a recognized cultural landscape. The proposed alterations to the treatment facility under the Proposed Action would not be readily visible from the contributing elements of the historic district. **No impact** on the setting of the district or the historic built environment is anticipated from the Proposed Action.

Native American

The NAHC said that there are no records of Native American cultural resources or contemporary Native American use of the project area. Contacts with Native American groups are continuing, but no Native American resources have been identified. **No impact** is anticipated.

Conclusions

Pending SHPO concurrence on NRHP non-eligibility of the Treatment Facility, the Fort Baker, Barry and Cronkhite National Register District is believed to be the only historic property present in the immediate project site but the Facility's proposed improvements pose **no impact** on that historic resource.

3.5.3.3 Cumulative Impacts

Other anticipated projects and plans may impact cultural resources. These actions would be either Federal undertakings subject to consideration of effects under the Section 106 process or under the CEQA process and thus impacts on cultural resource would be avoided or reduced. With completion of the Section 106 process and resolution of any adverse effects, no impacts on cultural resources are anticipated to result from this project. No archaeological resources have been recorded. The treatment facility is not a historic property and the proposed alterations to the treatment facility would not be readily visible from the contributing elements of the historic district. No effects on the setting of the historic district or the historic built environment are anticipated. Therefore, *pq'tli p'htecpv'ewo w'w'xg'lo r'cew'lon* cultural resources are anticipated from the incremental impact of this action when added to other past, present, and reasonably foreseeable future actions.

3.5.3.4 Mitigation Measures

The following mitigation measure will be implemented to reduce impacts associated with cultural resources, to the extent feasible.

Mitigation Measure CUL-1. The applicant would implement these protocols for unanticipated archeological discoveries and uncovered human remains:

- Prior to construction, workers and supervisors would be briefed on the potential for encountering buried archaeological resources and human remains that could be found in the project area and the response procedures to be followed if there is an unanticipated discovery;

- If buried archeological resources such as chipped stone or groundstone, historic debris, building foundations, or human bone are discovered during ground disturbances, work shall stop in that area (typically a minimum of 50 feet radius) of the project until a qualified archaeologist can assess the significance of the find;
- The SMCSD Treatment Plant Upgrade Project Manager (415-332-0244) and the GGNRA Park Archeologist will immediately be notified (415-289-1891 or 415-289-1893).
- Inadvertent discoveries will be treated in accordance with 36 CFR 800.13 (Protection of Historic Properties: Post-review discoveries). Archaeological resources will be assessed for eligibility for listing on the NRHP and a determination of the project effects on the property will be made;
- Assessment of inadvertent discoveries may require archeological excavations or archival research to determine resource significance. If the site will be adversely affected, a treatment plan will be prepared in consultation with the SHPO;
- Treatment plans will fully evaluate avoidance, project redesign, and data recovery alternatives before outlining actions proposed to resolve adverse effects;
- If human skeletal remains or burial features are encountered all work shall stop near the discovery, and the find will be secured and protected in place;
- The Marin County Coroner, Park Archaeologist, and the SMCSD Treatment Plant Upgrade Project Manager will be immediately notified;
- If remains are determined to be Native American, and no further coroner investigation of the cause of death is required, the coroner will be required to contact the NAHC (pursuant to Section 7050.5(c) of the California Health and Safety Code) and the County Coordinator of Indian Affairs;
- The NPS will also initiate consultation with relevant tribes. No additional work shall take place near the find until the identified actions have been implemented. Discovered remains will be treated in accordance with the NAGPRA Regulations at 43 CFR 10.4 (Inadvertent discoveries) as appropriate.

3.6 GEOLOGIC AND SOILS RESOURCES

This section describes the geology, soils, and geologic hazards including earthquakes and landslides in the project area. Information on these resources and hazards will be presented in the context of applicable laws, regulations, and policies including NEPA and CEQA. The purpose of this section is to evaluate any impacts to geologic resources or processes by implementing the Proposed Action.

3.6.1 Regulatory Environment

3.6.1.1 Federal

NPS Management Policies

The NPS *Management Policies* provides policies and guidance for managing geologic resources including geologic features and processes within the NPS jurisdiction. According to the document the NPS “will (1) assess the impacts of natural processes and human related events on

geologic resources;(2) maintain and restore the integrity of existing geologic resources; (3) integrate geologic resource management into NPS operations and planning and (4) interpret geologic resources for park visitors.” Geologic resources and processes managed by the NPS include shoreline erosion, paleontological resources, seismic hazards, and soils, rocks, and minerals. Paleontological resources are further addressed by Sec. 4.8.2.1, *Paleontological Resources and Their Components*. This policy requires projects to include a preconstruction surface assessment to determine the presence of paleontological resources, and if those resources are present, the project must either avoid disturbing them, or provide for their collection and care prior to site disturbance (NPS 2006).

3.6.1.2 State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1971 provides laws meant to reduce loss of life and property associated with surface fault rupture throughout the State of California. The act requires earthquake faults to be identified and zoned to ensure public safety. This is done by prohibiting the building of most structures for human occupancy across active faults that are a potential hazard (CDC 2013a).

The California Alfred E. Alquist Seismic Safety Commission was established in 1975 when the Seismic Safety Act was passed. The Seismic Safety Act was made based on evidence for the following: “First, many different agencies at various levels of government have substantial responsibilities in the fields of earthquake preparedness and seismic safety. Second, there is a pressing need to provide a consistent policy framework and a means for coordinating on a continuing basis the earthquake-related programs of agencies at all governmental levels and their relationships with elements of the private sector involved in practices important to seismic safety. This need is not being addressed by any continuing state government organization. Third, through concerted efforts of broad scope, coordinated by a Seismic Safety Commission, long-term progress should be made toward higher levels of seismic safety. Fourth, it is not the purpose of this chapter to transfer to the commission the authorities and responsibilities now vested by law in state and local agencies” (Seismic Safety Act 2006).

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 directs the State of California Department of Conservation, California Geological Survey, Seismic Hazards Zonation Program to “identify and map areas prone to liquefaction, earthquake-induced landslides and amplified ground shaking.” The purpose of the act is to mitigate damage to property and loss of life by identifying, evaluating, and minimizing seismic hazards (CDC 2013b).

State Mining and Reclamation Act

The State Mining and Reclamation Act of 1975 requires that Marin County adopt policies to protect mineral resources, designated by the State of California, from land uses that preclude or inhibit the timely extraction of mineral resources to meet the local market demand (CDC 2005).

3.6.1.3 Local

Marin County

The Marin County Community Development Agency, Planning Division, provides policies and procedures for implementing CEQA in Marin County in their *Environmental Impact Review*

Guidelines, adopted May 17, 1994 (MCCDA 1994). The Agency meets the requirements of the State Mining and Reclamation Act of 1975 by implementing policies described in their *Geology, Mineral Resources and Hazardous Materials Technical Background Report* that was updated in November, 2005 (MCCDA 2005).

3.6.2 Affected Environment

Geologic Resources. The geology of the project area is a part of the Franciscan Complex. These rocks were formed in a subduction zone, as the Pacific Ocean floor (Pacific Plate) was subducted or moved beneath the western edge of the North American Plate. The Franciscan Complex is a group of rocks, known as an accretionary wedge, that were episodically scraped from the subducting Pacific Plate in blocks called terranes. Most of the Marin Headlands peninsula including the entire project area is in the Marin Headlands terrane of the Franciscan Complex. These oceanic rocks underlie much of coastal Northern California, and in the San Francisco Bay area range from about 200 to 80 million years old. The Marin Headlands terrane is an oceanic rock sequence including a basaltic crust covered by open-ocean chert deposits, and overlying continentally derived sandstone.

About 20 to 25 percent of the exposed rock of the Marin Headlands terrane is basalt. The basalt was presumably altered at the mid-ocean ridge resulting in low-grade metamorphism and the formation of the minerals chlorite and pumpellyite. The basalt is commonly called by the name *greenstone*, as these minerals give the rock a dark green color. Basalt of the Marin Headlands terrane is not commonly exposed at the ground surface because the rock is typically deeply weathered. The weathering forms a zone of orange-brown clay that can be as thick as 30 feet. The sedimentary chert deposits underlie about 50 percent of the Marin Headlands terrane. The chert is bedded in mostly 2 to 10 centimeter thick red layers that alternate with thinner dark red shale layers. The red color of the chert is from the oxidized state of iron in the rocks. The chert contains many radiolarian fossils that are silt to sand sized. Studies have shown that the chert contains species that have been dated from 200 million years old in the oldest deposits to 100 million years old in the youngest deposits. Exposed chert in depositional contact with the underlying basalt or overlying sandstone is most commonly formed by faults, but can be observed otherwise (Stoffer, P.W., and Gordon, L.C., eds. 2001). The basalt and chert of the Marin Headlands terrane are the two major geologic units expected to be in the project area.

Mineral Resources. The purpose of the State Mining and Reclamation Act of 1975 is to control the availability and cost of construction materials made from mineral resources. The California State Division of Mines and Geology designated eight sites in Marin County as probably having significant mineral resources. Two no longer meet the threshold requirements, and are exempt; four are in incorporated areas; and one, Ring Mountain, has been designated as a scientific resource zone and has been preserved as 300 acres of open space. The project area is not close enough to any of the designated sites to have an effect on mineral resources within the context of the State Mining and Reclamation Act (CDC 2005).

Seismic Hazards. Earthquakes are a significant hazard in the Marin Headlands and San Francisco Bay area, as several active and potentially active faults are in the region (ABAG 2013). The Pacific and North America Plate boundary in the San Francisco Bay area is no longer a subduction zone (the process that created many of the exposed rocks in the area).

Today the plates are sliding past each other forming a transform fault known as the San Andreas Fault Zone (Stoffer, P.W., and Gordon, L.C., eds. 2001). The San Andreas Fault is the closest active fault to the project area, about 4 miles west. The Hayward Fault, another major active fault zone in the region, is about 19 miles east of the project area. There are several other regional faults including the West Napa Fault to the northeast, the Rodgers Creek Fault to the north, and the Maacama Fault to the west (ABAG 2013). An April 2008 report called the Uniform California Earthquake Rupture Forecast was prepared in coordination with the California Geological Survey. The report concluded that there is a 63 percent probability that a 6.7 magnitude or greater earthquake would occur in the greater San Francisco Bay area in the next 30 years. In comparison, the probability that an earthquake greater than 6.7 in magnitude would occur at the San Andreas Fault over the next 30 years is 21 percent (2007 Working Group on California Earthquake Probabilities, 2008). If an earthquake of this magnitude occurred at the San Andreas Fault, the project area would likely experience strong to very strong ground shaking. Those faults farther from the project area would likely cause moderate to strong ground shaking at the project area (ABAG 2013).

Landslide and Debris Flow Hazards. Landslides and debris flows can be a serious hazard to life and property in the hillside terrain of the Marin Headlands, including the project area.

Landslides rarely threaten life directly because they move relatively slowly, compared to debris flows or mudslides. Landslides occur in response to changes in water content, ground shaking, increased load, or removal of downslope support. They can result in damage to building foundations, road offset, or damage to underground utilities. The distinctive topographic shapes created by landslides can persist in the landscape for thousands of years, and have been well documented in the Marin Headlands providing a basis for evaluating vulnerable areas (USGS 1997a).

Debris flows or mudslides are flows of mud that might include rocks, vegetation and debris. They are characterized by rapid movement and sudden onset following intense rainfall, and are, as a result of these attributes, a hazard to life and property during and immediately following a triggering rain event. Debris flows are more likely on steep, concave parts of hillsides. These topographic characteristics have been used to map future debris flow source areas in the Marin Headlands (USGS 1997b).

The project area is in an area where landslide and debris flow source areas have been mapped, and are close enough to effect the project area should an event occur (USGS 1997a) (USGS 1997b) (CDC 2005).

Prime Farmland. Prime farmland soils are protected under the Farmland Protection Policy Act (FPPA) of 1981. The FPPA ensures that federal programs are administered in a manner that, to the extent practical, is compatible with private, state, and local government programs and policies to protect farmland. The intent of the FPPA is to minimize unnecessary or irreversible alteration of farmland soils from nonagricultural uses.

The Natural Resources Conservation Service (NRCS) oversees compliance with the FPPA and has developed rules and regulations for implementing the act (Title 7 of the CFR, Part 658). According to the FPPA, “Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed and other agricultural

crops with minimum inputs of fuel, fertilizer, pesticides and labor, and without intolerable soil erosion. Prime farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber. It does not include land already in or committed to urban development or water storage.”

None of the land in the project area is considered prime farmland. The soils are classified as other land (CDC 2012); therefore, a Farmland Conversion Impact Rating (Form AD-1006) of the project area is not warranted, and no further action is required under the FPPA.

3.6.3 Environmental Consequences

All of the proposed improvements would be in SMCSD’s existing easement, and 95 percent of the proposed improvements would be constructed in the existing 2.0-acre SMCSD facility footprint, increasing the existing plant footprint by less than 0.1 acre to the north of the existing access road. The increased footprint would extend into undeveloped land, and result in the removal of soil and rock. The 0.1 acre cut and fill expansion to relocate the existing access road is the only part of the Proposed Action that would directly affect geologic resources.

3.6.3.1 No Action Alternative

No impact to geology or soils is expected, and no geologic resources or processes would be disturbed under the No Action Alternative.

3.6.3.2 Proposed Action

Implementing the proposed action would result in ground-disturbing construction including but not limited to, cut and fill, grading, and retaining wall installation. Long-term effects on geology and soils expected from the Proposed Action include the removal of approximately 5,900 cubic yards of soil and rock (with about 500 cubic yards of aggregate base rock being imported) in the following areas: north of the existing access road, at the headworks/equalization structure, and the primary clarifier. The earth material removed during excavation is expected to be mostly soil. Any rock material removed is expected to be mainly basalt and chert (Marin Headlands terrane). If the chert of the Marin Headlands terrane is removed during excavation to relocate the existing access road, then the radiolarian fossils commonly found in that rock formation would likely also be removed. The radiolarian fossils are considered very common (Stoffer, P.W., and Gordon, L.C., eds. 2001). The loss of geologic resources is considered a significant impact requiring mitigation.

The project area is susceptible to seismic hazards and may be susceptible to landslide and debris flow hazards. There are several active earthquake faults and steep hillsides that may be debris flow or landslide source areas and are close enough to the project area to present significant hazards to life and property (ABAG 2013) (USGS 1997a) (USGS 1997b). Implementing the Proposed Action is not expected to change the level of hazard associated with these geological processes; however, implementation of the Proposed Action must consider them to ensure that the level of hazard is not increased. The construction of improvements associated with the Proposed Action will be designed according to appropriate building codes to ensure seismic safety; therefore, impacts related to seismic or related geologic events would be *less than significant*.

The potential for excessive erosion during construction is considered a significant impact requiring mitigation. To control erosion, stormwater runoff, and sedimentation from impacting the San Francisco Bay waters the construction contractor will be required to follow the NPDES regulations for stormwater discharges at construction sites; this requirement is further detailed in Section 3.4.1.2 (Water Resources). Additional mitigation measures, discussed below, will address potential impacts to geologic or paleontological resources. Compliance with these measures will ensure that impacts from construction and operation of the Proposed Action are *less than significant*.

No impact to mineral resources or prime farmland would occur from implementing the Proposed Action.

3.6.3.3 Cumulative Impacts

Other projects within a reasonable distance from the project area could increase impacts to geologic resources when combined with impacts from the Proposed Action. Approximately 26,500 cubic yards of earth material removal is associated with the proposed Alexander Avenue/Danes Drive Intersection Improvement Project, which is within 1-mile of the Proposed Action (GGNRA 2011). Cumulative impacts to geologic resources from these projects would be expected to include the removal of about 32,400 cubic yards (including the 5,900 cubic yards associated with the Proposed Action). Cumulative effects to geologic resources would be addressed by measures designed for these projects, and would be *less than significant*.

3.6.3.4 Mitigation Measures

These mitigation measures will be implemented to reduce impacts associated with geologic and soils resources, to the extent feasible.

Mitigation Measure GEO-1. To mitigate the loss or degradation of geologic materials associated with the Proposed Action, the removal of soil or rock, and importing of aggregate base rock will be done in accordance with the Golden Gate National Recreation Area, Standard Operating Procedures for Managing Earth Materials. Earth materials generated within the park should be reused in other parts of GGNRA to mitigate the loss of geologic resources. Reuse of earth materials not tested for hazardous materials before removal may require testing before reuse. Earth materials from developed areas near roads, parking lots, and infrastructure will likely require testing for hazardous materials (GGNRA 2012).

Any chert excavated during the Proposed Action that is appropriate for use as a trail, overlook, or parking area tread should be used for tread rather than to backfill areas or for trail or road base. Good quality chert is considered valuable and should be used as tread whenever possible. The reuse of chert as tread would also mitigate the loss of radiolarian fossils commonly found in that rock (GGNRA 2012).

Mitigation Measure GEO-2. Paleontological resources are protected as described in the NPS *Management Policies 2006*, Section 4.8.2.1, Paleontological Resources and Their Contexts. According to the policy “All NPS construction projects in areas with potential paleontological resources must be preceded by a preconstruction surface assessment prior to disturbance. For any occurrences noted, or when the site may

yield paleontological resources, the site will be avoided or the resources will, if necessary, be collected and properly cared for before construction begins. Areas with potential paleontological resources must also be monitored during construction projects” (NPS 2006).

If there is no source within the GGNRA for the approximately 500 cubic yards of imported aggregate base rock needed for the Proposed Action, then the material can be imported from an outside source. All earth materials must be tested before being imported into the GGNRA. Earth materials brought into GGRNA can either be from an approved vender or be tested for hazardous materials before being imported (GGNRA 2012).

3.7 *AIR QUALITY*

This section discusses existing air quality and greenhouse gas (GHG) emissions at the project site and evaluates the potential for implementation of the Proposed Action to affect those resources.

3.7.1 *Regulatory Environment*

3.7.1.1 *Federal*

Clean Air Act

The NPS has a responsibility to protect air quality under the Clean Air Act and the 1916 Organic Act (16 USC §1). NPS management policies state: “The Service will seek to perpetuate the best possible air quality in parks to (1) preserve natural resources and systems; (2) preserve cultural resources; and (3) sustain visitor enjoyment, human health, and scenic vistas. Vegetation, visibility, water quality, wildlife, historic and pre-historic structures and objects, cultural landscapes, and most other elements of a park environment are sensitive to air pollution and are referred to as ‘air quality- related values.’ The Service will assume an aggressive role in promoting and pursuing measures to protect these values from the adverse impacts of air pollution. In cases of doubt as to the impacts of existing or potential air pollution on park resources, the Service will err on the side of protecting air quality and related values for future generations.” (NPS 2006)

The federal Clean Air Act requires each state to identify areas with ambient air quality in violation of federal standards. States are required to develop, adopt, and implement a State Implementation Plan (SIP) to achieve, maintain, and enforce federal ambient air quality standards in these nonattainment areas. Deadlines for achieving the federal air quality standards vary according to air pollutant and the severity of air quality problems. The SIP must be submitted to and approved by the EPA. SIP elements are developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated.

Section 176(c) of the Clean Air Act, also known as the General Conformity Rule, requires federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the Clean Air Act and the applicable SIP. The General Conformity Rule is codified at 40 CFR, Part 51, Subpart W, and 40 CFR, Part 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans. General conformity requirements are intended to demonstrate that the proposed federal action would not cause or contribute to new

violations of federal air quality standards, increase the frequency or severity of existing violations, or delay the timely attainment of federal air quality standards. Compliance with the general conformity rule is presumed if the net increase in direct and indirect emissions from a federal action would be less than the relevant de minimis emissions thresholds.⁶

The EPA has established the National Ambient Air Quality Standards (NAAQS) to regulate common air pollutants known as criteria pollutants: carbon monoxide, sulfur oxides, nitrogen oxides, ozone, lead, and particulate matter.

The Clean Air Act requires the EPA to identify National Emission Standards for Hazardous Air Pollutants (NESHAP) to protect public health and welfare. Hazardous air pollutants (HAP) are those pollutants known or suspected to cause cancer or other serious health effects or adverse environmental effects. The NESHAPs are found in 40 CFR Part 61 and 40 CFR Part 63. Collectively, the NESHAPs regulate nearly 200 HAPs. These include asbestos, certain volatile organic compounds, mercury, vinyl chloride, pesticides, herbicides, and radionuclides.

GHGs are components of the atmosphere that trap heat relatively near the surface of the earth and contribute to the greenhouse effect and global warming. Most GHGs occur naturally in the atmosphere, but atmospheric concentrations can come from human activities, such as burning fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide (CO₂), methane, nitrous oxides, and other greenhouse (or heat-trapping) gases to the atmosphere. Whether rainfall increases or decreases remains difficult to project for specific regions (EPA 2013; Intergovernmental Panel on Climate Change 2007).

Executive Order 13514

Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance, outlines policies intended to ensure that federal agencies evaluate climate change risks and vulnerabilities and manage the short- and long-term effects of climate change on their operations and mission. The EO specifically requires the Army to measure, report, and reduce its GHG emissions from direct and indirect activities. The CEQ recently released draft guidance on when and how federal agencies should consider GHG emissions and climate change in NEPA analyses. The draft guidance includes a presumptive effects threshold of 27,563 tons of CO₂-equivalent emissions annually from a federal action (CEQ 2010).

3.7.1.2 State

California Air Resources Board

In California, air quality regulation is a joint responsibility between the California Air Resources Board (CARB) and local air quality management agencies. CARB's responsibilities include coordination and oversight of state and local air pollution control programs, developing and implementing air pollution control plans to achieve and maintain the NAAQS, and implementing the California Clean Air Act.

⁶ Emissions associated with stationary sources that are subject to permit programs incorporated into the SIP are not counted against the de minimis threshold.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the agency with local air quality management authority in the nine-county San Francisco Bay Area Air Basin. The BAAQMD has primary responsibility for most air quality regulatory programs, with CARB exercising oversight responsibilities. EPA has delegated implementation and enforcement of some New Source Performance Standards and NESHAPS to BAAQMD. California has adopted criteria pollutant standards similar to and generally more stringent than the NAAQS known as the California Ambient Air Quality Standards (CAAQS).

BAAQMD has published CEQA Guidelines that include thresholds of significance to assist lead agencies in evaluating the air quality impacts of projects and plans proposed in the San Francisco Bay Area Air Basin. BAAQMD's original CEQA Guidelines were published in 1999. Revised thresholds of significance were adopted in June 2010 and a revised version of the Guidelines was adopted in May 2011. On March 5, 2012 the Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when it adopted the June 2010 thresholds of significance. BAAQMD's appeal is pending. Although lead agencies may rely on the 2011 CEQA Guidelines for assistance in calculating air pollution emissions and identifying potential mitigation measures, BAAQMD has been ordered to set aside the thresholds of significance and is no longer recommending that they be used as a general measure of a project's significant air quality impacts. Lead agencies may continue to rely on the thresholds of significance in the 1999 CEQA Guidelines and may continue to make determinations regarding the significance of a project's air quality impacts based on the substantial evidence in the record for that project (BAAQMD 1999, 2012a, 2012b).

At the state level, HAPs are generally referred to as toxic air contaminants (TACs). CARB regulates TACs through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. The primary state regulations for TACs are the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). These in conjunction with additional rules set forth by the BAAQMD establish the regulatory framework for TACs.

BAAQMD prepared the *2010 Clean Air Plan* to address noncompliance with and to create a plan to attain the federal and state ambient air quality standards for ozone. The plan updates the *Bay Area 2005 Ozone Strategy* in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone. The plan evaluates recent air quality data, establishes new emission control measures, and evaluates the impacts of existing control measures.

In 2006, the California legislature passed Assembly Bill 32 (California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires the reduction of statewide GHG emissions to 1990 levels by 2020. California Executive Order S-3-05, signed by Governor Schwarzenegger in 2005, reiterates this goal and adds a goal to reduce GHG emissions to 80 percent below 1990 levels by 2050. The main strategies for meeting these goals are outlined in CARB's Scoping Plan. The Scoping Plan and the emissions targets have been recently revised due to the economic recession. A reduction of an estimated 80 million metric tons of CO₂-equivalent is necessary to reduce statewide emissions to the 2020 target of 427 million metric tons of CO₂-equivalent (CARB undated).

3.7.1.3 Local

Marin CEQA Guidelines

The MCCDA, Planning Division provides policy and procedures for implementing CEQA in Marin County in their *Environmental Impact Review Guidelines*, adopted May 17, 1994 (MCCDA 1994). To assess air quality, the Marin CEQA guidelines recommends the use of evaluation criteria similar to those found in Appendix G of the State CEQA Guidelines. The evaluation criteria include assessing whether the project would contribute to violations of air quality standards, expose sensitive receptors to substantial pollutant concentrations, create objectionable odors, contribute to climate change, or exceed the local air district's level of significance for health risks. The Marin CEQA guidelines do not recommend specific methodologies for assessing air quality impacts.

3.7.2 Affected Environment

Air quality can be thought of as the extent to which chemicals in the air are present in quantities sufficient to adversely affect human health and the environment. Common sources of air pollutants are vehicles, machinery and equipment, and commercial and industrial processes (such as smelting and dry cleaning). Natural processes such as volcano eruptions and the decomposition of plant matter contribute to air pollution. In addition to harming human health, air pollutants can cause effects such as reducing visibility (such as dust and smog) and contribute to climate change.

Because outdoor air continuously moves and mixes, outdoor air quality is generally assessed at a regional rather than local level. Pollutants released to outdoor air would be more concentrated near an emissions source, but over time would disperse and have a regional impact. Pollutant movement in air is influenced by conditions such as wind, topography, and temperature.

The project site is in the San Francisco Bay Area Air Basin. Air quality in the basin is assessed by comparing concentrations of criteria pollutants to federal and state standards (NAAQS and CAAQS). For each standard the basin is designated as attainment if pollutant concentrations are below the standard, nonattainment if concentrations exceed the standard, or unclassified. The basin is designated as nonattainment for the federal 8-hour ozone and 24-hour fine particulate matter (PM_{2.5}) standards. The basin is designated as nonattainment for the state ozone, particulate matter (PM₁₀), and PM_{2.5} standards. The basin is designated as attainment or unclassified for the other NAAQS and CAAQS (BAAQMD 2013).

Air quality in the San Francisco Bay Area Air Basin is measured at monitoring stations throughout the region. Each monitoring station measures selected pollutants based on local and regional conditions. Data from these monitoring stations provides an idea of air quality in the area; however, the data may or may not be indicative of air quality at the project site due to the distance from the site to the monitoring stations and differences in weather and topography between the two. The monitoring stations nearest the project site are the San Francisco station 7 miles southeast and the San Rafael station 9 miles north. In 2011 concentrations of PM_{2.5} exceeded the NAAQS on 2 days at the San Francisco station and 1 day at the San Rafael station. PM₁₀ exceeded the CAAQS on 1 day at the San Rafael station. In 2010, PM_{2.5} exceeded the NAAQS on 3 days at the San Francisco station and PM₁₀ exceeded the CAAQS on 1 day at the San Rafael station (BAAQMD 2010, 2011).

Sensitive receptors are those segments of the population most susceptible to poor air quality, specifically children, the elderly, and those with health problems affected by air quality. Places where sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, convalescent centers, and residential communities (CARB 2005, BAAQMD 2012a). The nearest sensitive receptor to the project site is a residential area. The boundary of the nearest residence is approximately 850 feet north of the project footprint.

Odors are generally considered an annoyance rather than a health hazard, although they can cause physiological reactions such as nausea or headaches. People's reactions to odors vary. An odor that is offensive to one person may be acceptable to another, such as a chlorine odor from a swimming pool. Potential odor sources associated with wastewater treatment plants typically are the headworks area where the wastewater enters the facility and large solids and grit are removed, the primary clarifiers where suspended solids are removed, and the aeration basins if poor mixing characteristics lead to inadequate dissolved oxygen levels. In 2004, the facility installed bioscrubbers and made other odor control improvements that resulted in a reduced frequency of odor complaints. The facility received three to six odor complaints in the past 2 to 3 years, primarily from residents to the north (CH2M Hill undated; Justice 2013).

The facility has a BAAQMD permit to operate. The emission sources included in the permit are a waste gas burner; two diesel-powered emergency generators; multiple boilers; primary, secondary, and tertiary treatment system components; chlorine tanks; the sludge handling process unit; and anaerobic digesters. The permit contains operating conditions for selected equipment to maintain compliance with applicable air quality regulations (BAAQMD 2012c). The facility's emissions from all permitted sources are:

Permitted Plant Emissions	
Pollutant	Amount (annual average in pounds per day)
Particulate matter	0.1
Reactive organic gases	1.82
Nitrogen oxides	4.22
Sulfur dioxide	0.24
Carbon monoxide	1.28
Chloroform	0.05
Methylene chloride	0.43
Ammonia	0.20

Source: BAAQMD 2012c

3.7.3 Environmental Consequences

Impacts on air quality and GHG emissions would be considered significant if they would exceed the significance criteria in BAAQMD's CEQA Guidelines or Appendix G of the State CEQA Guidelines. Although these significance criteria were developed for CEQA analyses, they are also applicable to the NEPA analysis. The NEPA determination of significance considers the

context, intensity, duration, and timing of impacts. The NEPA analysis states whether impacts are short or long-term and whether they are direct, indirect, and cumulative. The significance criteria questions are, does the Proposed Action:

- 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?
- Expose sensitive receptors to substantial pollution concentrations?
- Create objectionable odors affecting a substantial number of people?
- Expose people to substantial levels of TACs, such that the exposure could cause an incremental human cancer risk greater than 10 in one million or exceed a hazard index of one for the maximally exposed individual?
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

3.7.3.1 No Action Alternative

Under the No Action Alternative, the project would not be implemented. No emissions would be generated and existing ambient air quality would not be altered. There would be no direct, indirect, or cumulative impacts.

3.7.3.2 Proposed Action

Implementing the Proposed Action could affect air quality through airborne dust and other pollutants from construction and by introducing new stationary sources of air emissions, such as new treatment system components and electric motors to run pumps.

Construction Emissions. Construction of the Proposed Action would occur over approximately 24 months. Construction would generate emissions from construction equipment, workers commuting to and from the site, ground disturbance, truck trips for delivery and removal of supplies and equipment, and painting and other architectural coatings. The most intensive period for construction traffic would occur over approximately 2 months for soil excavation, and would involve approximately 12 truck trips per day. Construction would comply with relevant federal, state, and BAAQMD rules and regulations. The impact on air quality and GHGs would be short-term and limited to the duration of construction. With implementation of these control measures from BAAQMD's 1999 CEQA Guidelines for a site less than 4 acres, air quality impacts from construction would be *less than significant*:

- 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 construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

With implementation of these measures, construction activities would not conflict with or obstruct implementation of the applicable air quality plan; violate any air quality standard; contribute substantially to an existing or projected air quality violation; expose sensitive receptors to substantial pollution concentrations, including TACs; or cause an incremental increase in human health cancer risk.

Operational Emissions. Operational emissions would primarily be off-gassing from wastewater and sludge, and emissions from new mechanical equipment. Net operational emissions would be similar to or less than current emissions because:

- All new treatment system components would be covered and connected to the air scrubbing/odor control system to control emissions;
- Some existing system components not currently connected to the air scrubbing system would be connected to this system to reduce emissions; and
- Although several new pumps with engines ranging in size from approximately 5 horsepower to 15 horsepower would be installed, the engines would be electric and no new diesel-powered equipment would be installed.

Because emissions from implementing the Proposed Action would be similar to or less than current emissions, net new emissions would be below the General Conformity Rule applicability thresholds. Therefore, an applicability analysis and formal conformity determination under the General Conformity Rule (40 CFR 93.153) for the activities under the proposed action would not be required. The Proposed Action would be exempt from the General Conformity Rule.

Because emissions from implementing the Proposed Action would be similar to or less than current emissions, the Proposed Action would not conflict with or obstruct implementation of regional air quality plans developed by BAAQMD. Because the project would comply with BAAQMD's air quality plans it would also comply with the SIP. Because emissions would be similar to or less than current emissions, implementing the Proposed Action would not violate any air quality standard; contribute substantially to an existing or projected air quality violation; expose sensitive receptors to substantial pollution concentrations, including TACs; or cause an incremental increase in human health cancer risk.

BAAQMD would classify some of the new treatment system components as new sources of air emissions and would require that they be included in the facility's permit to operate. These new

components could be subject to federal, state, and BAAQMD air permitting regulations, including New Source Review, Prevention of Significant Deterioration, National Emission Standards for Hazardous Air Pollutants, or New Source Performance Standards. The SMCSD would do an air quality regulatory analysis to determine what if any permitting would be required for the operation of any sources of air emissions and obtain the necessary permits prior to implementing the Proposed Action.

Operational emissions from vehicular traffic associated with the Proposed Action would not change substantially with implementation of the project. The number of trips associated with employees commuting to the site and deliveries of supplies and materials would not change. Sludge is picked up twice a week and this frequency would not change. Screening and grit are picked up once a week; this would increase to twice a week with implementation of the proposed action, resulting in one additional truck trip per week (Takemoto 2013). Even if there were somewhat more than one additional truck trip per week, the number of vehicle trips would not increase substantially, so emissions associated with vehicle trips would not increase substantially.

Because the overall emissions would not increase and could decrease somewhat, air quality and GHG impacts from operation of the Proposed Action would be *less than significant*.

Odors. Odors generated at the site could be detected by pedestrians and bicyclists on Fort Baker Road or by neighbors to the north and could result in complaints. Construction activities could generate localized odors, primarily from combustion of fuel in construction equipment and vehicles; however, these odors would not be expected to be perceptible off-site or result in complaints. Odors could be generated during operation since handling wastewater is a task that can inherently produce odors. These components have been included in the project design to reduce odor generation:

- Headworks, grit removal—A mechanical vortex or headcell grit removal system that has excellent odor control would be installed. An aerated grit system that does not control odors as effectively is not proposed for use.
- Headworks, screening—Screens with smaller openings are preferred since they more effectively remove biodegradable materials that are putrescible and potentially odorous. If screens with smaller openings are used, screens would be washed regularly to minimize odor generation.
- Materials handling—Dewatered sludge would be placed in bins that would be covered or stored in a garage near the headworks building to reduce odors. Grit and screenings would be contained in plastic bags and stored inside the headworks building; they would also be hauled off-site twice a week.
- Primary treatment—The new primary clarifier would be covered with a flat, aluminum, exposed-trussed cover to minimize odors. The new primary treatment system would be connected to the existing odor control system if the existing system has sufficient capacity or to new odor control equipment that provides a similar level of odor control that would be installed.

- Secondary treatment upgrades—Although the FFRs have an odor control connection, occasionally wind over the top of the FFRs could cause air from the FFRs to be carried to Fort Baker Road and other surrounding areas. A cover would be added to the existing FFRs to help control odors.
- Tertiary treatment—The process upgrades in the tertiary process area would have a minimal potential for odor generation so odor control would not be necessary. There is some potential for odor generation during the filling and operation of the equalization storage basin. If necessary it would be connected to the plant odor control system.

These project design components would provide increased odor control compared to current conditions. The potential for odors to be perceptible off-site and result in complaints would not increase and would likely decrease somewhat, so odor impacts would be *less than significant*.

GHGs and Global Warming. Under the Proposed Action, all construction activities combined would generate a de minimis amount of GHG emissions, primarily from the combustion of fuel in construction equipment and worker vehicles. Annual operational activities would generate GHG emissions similar to or less than current conditions since all new components and some existing components would be connected to the air scrubbing system and vehicle trips would not increase substantially. The GHG emissions associated with the Proposed Action would fall below the CEQ threshold of 27,563 tons of CO₂-equivalent emissions annually, so direct and indirect impacts on air quality from GHG emissions would be short- and long-term and would be less than significant. GHG emissions would not conflict with CARB's Scoping Plan to reduce GHG emissions as directed by California Assembly Bill 32 and Executive Order S-3-05.

3.7.3.3 Cumulative Impacts

The cumulative air quality and GHG analysis evaluates whether the impacts of the Proposed Action, together with the impacts of cumulative development in the region, would have a significant impact based on the significance criteria presented in this section and, if so, whether the contribution of the proposed action to this impact would be cumulatively considerable. Both conditions must apply for the project's cumulative impacts to be significant.

The Proposed Action's direct and indirect emissions of criteria pollutants, TACs, and GHGs or their precursors would be negligible; therefore, the Proposed Action's contribution to air quality impacts from cumulative development in the region would not be cumulatively considerable and cumulative impacts on air quality and GHG emissions would be *less than significant*.

3.7.3.4 Mitigation Measures

These mitigation measures will be implemented to reduce impacts associated with air quality, to the extent feasible.

Mitigation Measure AIR-1. The control measures from BAAQMD's 1999 CEQA Guidelines would be implemented to reduce air quality impacts from construction. These measures would be specified in the construction management plan and the construction site supervisor would be responsible for ensuring, verifying, and documenting compliance.

- 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 construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Minimize idling times either by shutting equipment off when not in use or reducing the maximum idling time to 30 seconds (as required GGNRA Vehicle Idling Standard Operating Procedures adopted by GGNRA in compliance with State of California regulations for In-Use Off-Road Diesel Vehicles [Title 13 CCR, Section 2449(d)(3)]). Clear signage shall be provided for construction workers at all access points.

Mitigation Measure AIR-2. The BAAQMD would classify some of the new treatment system components as new sources of air emissions. These components could be subject to federal, state, and BAAQMD air permitting regulations, including New Source Review, Prevention of Significant Deterioration, National Emission Standards for Hazardous Air Pollutants, or New Source Performance Standards. The SMCSD would perform an air quality regulatory analysis to determine what, if any, permitting is required for the operation of any new sources of air emissions and obtain the necessary permits prior to implementing the project.

3.8 PUBLIC HEALTH AND SAFETY

This section describes public health and safety related to hazards and hazardous materials in the project area. Hazardous materials are any materials that, because of quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. Hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. A release is any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of into the environment, unless permitted or authorized by a regulatory agency.

3.8.1 Regulatory Environment

3.8.1.1 Federal

The EPA has ultimate jurisdiction over the handling, use, storage, and disposal of hazardous materials in the project area. Other agencies who may regulate hazardous materials management are the US Department of Labor, Occupational Safety and Health Administration, and the US Department of Transportation.

Comprehensive Environmental Response, Compensation, and Liability Act

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the EPA has authority to respond to hazardous material releases that would affect public safety. CERCLA establishes cleanup standards for National Priority Sites, and creates liability for waste site operators, and uses a trust fund to clean up abandoned sites, also known as Superfund sites.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was established in 1976 (42 USC s/s 6901 et seq.) by the EPA to regulate all aspects of hazardous waste, including generation, transportation, storage, and disposal. It establishes national minimum requirements for solid waste disposal sites, and requires states to develop plans for managing wastes in their jurisdictions. RCRA Subtitle I requires monitoring and containment systems for underground storage tanks that hold hazardous materials.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (15 USC s/s 2601 et seq.) gives EPA the ability to track and control chemicals through record-keeping and testing requirements. The Toxic Substances Control Act addresses the importation, use, and disposal of chemicals such as polychlorinated biphenyls, asbestos, lead-based paint, and radon.

National Park Service Management Policies

The NPS *Management Policies* provides policies and guidance for hazardous waste management. Chapter 9.1.6 of the NPS policy handbook specifies that, “The Service will implement solid and hazardous waste management practices that integrate waste reduction, reuse, and recycling programs to minimize the generation and disposal of solid and hazardous waste at and from NPS sites,” and that, “Any hazardous waste that the Service generates will be disposed of separately from solid waste, in full accord with all applicable legal requirements.”

Chapter 9.1.3 provides guidance for construction activities within NPS jurisdiction, stating that, “Solid, volatile, and hazardous wastes will be avoided when possible. When they cannot be avoided, they will be properly stored, transported, and disposed of in compliance with federal, state, and local laws and regulations. All materials will be recycled whenever possible.” NPS requires that, “Construction equipment will be in satisfactory condition; i.e., it will be equipped with required safety components and not be leaking hazardous liquids or emitting hazardous or undesirable fumes above allowable legal limits.” (NPS 2006)

3.8.1.2 State

State regulations require planning and management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human and environmental health. The Department of Toxic Substances Control (DTSC) is a sub agency of the California State Environmental Protection Agency (Cal/EPA), and is authorized to enforce the provisions of RCRA. Cal/EPA adopted regulations developed in the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program that is implemented at the local level.

California Hazardous Waste Control Law

The Hazardous Waste Control Law (HWCL) is the primary hazardous waste statute in California. HWCL implements the RCRA as a comprehensive waste management system. HWCL exceeds federal requirements by mandating a broad requirement for permitting facilities that treat hazardous waste. It also regulates a number of types of wastes and waste management activities that are not covered by federal law with RCRA. The DTSC enforces the HWCL and tracks hazardous waste shipments through the state.

State Water Resources Control Board

As discussed in Section 3.4 (Water Resources), the SWRCB has the authority to preserve and enhance water resources in the state. SWRCB regulates and maintains records of releases of hazardous substances and petroleum-based materials and releases that could impact groundwater or surface water.

3.8.1.3 Local

As stipulated by Cal/EPA, hazardous materials and hazardous waste management at the project area is regulated by the Certified Unified Programs Agency (CUPA), of the Marin County Department of Public Works. The Marin County Department of Public Works enforces the hazardous waste management policies in the Marin County Hazardous Waste Management Plan. The Hazardous Waste Management Plan provides for the safe storage, treatment, transportation, and disposal of hazardous wastes (Marin County 1988).

General waste disposal policies are developed and implemented by the Marin County Solid and Hazardous Waste Joint Powers Authority.

3.8.2 Affected Environment

Hazardous Materials. Operation of the SMCSD wastewater treatment facility requires the use, storage, and disposal of a variety of hazardous materials and waste. The chemicals handled and stored in the project area are discussed in the hazardous materials business plan that is updated and submitted annually to the Marin County CUPA.

The SMCSD treatment facility contains a 1,000-gallon diesel emergency generator underground storage tank (UST), by the plant library door. The UST was installed in 1986, and undergoes periodic secondary containment testing. No spills or violations have been reported.

The chemical building and main plant house above-ground storage tanks (AST) containing: ferric chloride (526 to 2,350-gallon tanks); sodium bisulfate (405 to 4,000-gallon tanks); and sodium hypochlorite bleach (4,100-gallon tanks).

Other chemicals stored at the facility are: sodium bisulfite (350-gallon ASTs) stored at south side of the plant by sand filters; polymer flocculant stored in 275-gallon ASTs by the secondary digester; and waste motor oil stored in 55-gallon drums by the oil shed under the car port (SMCSD 2012).

Potentially Contaminated Sites. Online database searches from the SWRCB and DTSC websites did not find corrective action cleanup sites, leaking USTs, or other hazardous materials sites near the project site. Sites reported within 0.5-mile of the project site were reviewed and due to their

distance, status of the sites as closed, or the likely direction of groundwater flow, it is unlikely that these sites have impacted the project site (SWRCB 2013; DTSC 2013).

3.8.3 Environmental Consequences

All of the proposed improvements would be within SMCSD's existing easement, and 95 percent of the proposed improvements would be constructed in the existing 2.0-acre SMCSD facility footprint increasing the existing plant footprint by less than 0.1 acre in the area north of the existing access road. The routine transport, use, and storage of hazardous materials during construction are the only part of the Proposed Action that will affect public health and safety.

3.8.3.1 No Action Alternative

No impacts on public health and safety are expected under the No Action Alternative. However, if the project is not constructed, the risk of sanitary sewer overflow and discharge of untreated or partially treated wastewater to the San Francisco Bay would remain an environmental concern.

3.8.3.2 Proposed Action

Under the Proposed Action, the emergency generator UST will be removed and replaced with an AST. The UST will be emptied prior to removal, and the contents disposed of in accordance with federal, state, and local regulations. Upon removal, the UST will be inspected for evidence of holes or corrosion by a certified hazardous materials inspector. Immediately following removal, confirmation soil samples will be collected from the UST excavation sidewalls and submitted for analysis for the presence of petroleum hydrocarbons. A closure report including the laboratory analysis results will be submitted to the CUPA.

Implementing the Proposed Action may involve the use of hazardous substances in quantities typical of construction. The project sponsor would ensure that the storage, labeling, and disposal of hazardous materials are in accordance with federal, state, and local regulations, and the SMCSD's approved Hazardous Materials Business Plan. Construction may include cut and fill, grading, and retaining wall installation. Cut and fill may require fill soils to be brought from off site.

The project sponsor and any contractor involved in implementation of the Proposed Action will comply with the policies in the SMCSD's Chemical Hazard Communication Plan. (SMCSD 2009)

When construction of the Proposed Action is complete, operations at the site will be consistent with current land uses. The volume of handling, storage, and transport of hazardous materials at the facility would remain similar to existing conditions.

As discussed in Section 3.4 (Water Resources), the project will require an NPDES permit and associated SWPPP that would include BMPs intended to eliminate or reduce the release of contaminants into the environment during wet weather conditions. Compliance with these requirements will ensure that any impacts to public health and safety will be *negligible*.

will be negligible

3.8.3.3 Cumulative Impacts

The routine transport of hazardous material and waste during implementation of the Alexander Avenue and Danes Drive Intersection Improvements at Fort Baker could increase impacts to public health and safety when combined with impacts from the Proposed Action. However, compliance with federal, state, and local regulations regarding the transport of these materials will reduce the cumulative impacts to public health and safety from these projects to *less than significant*.

3.8.3.4 Mitigation Measures

To reduce the risk to public health and safety, existing NPS policies, and other federal, state, and local regulations toward construction and management of hazardous materials would be enforced. Fill soils transported to the project site would be demonstrated to be clean. The SMCSO's existing Chemical Hazard Communication Plan shall be implemented throughout completion of the Proposed Action, in addition to any contractor's site-specific health and safety plan. In the event that a release of hazardous materials occurs during removal of the UST or other construction activities, the project sponsor or contractor will immediately stop work and implement the Chemical Hazard Communication Plan protocols. No other mitigation measures would be necessary.

3.9 OTHER RESOURCES

The following resource areas are discussed per their requirements of NEPA and CEQA. However, no direct, indirect, or cumulative impacts to any of these resource actions would result from the Proposed Action, and no mitigation measures are required.

Resource topics discussed per NEPA and federal Executive Orders include socioeconomic and environmental justice. The remaining topics are discussed per the requirement of both NEPA and CEQA.

3.9.1 Socioeconomics

The Proposed Action would have an adverse impact on socioeconomic if it resulted in reduced access or opportunity for employment, housing, and related services or altered land uses in a manner that exceeded or deviated from planned growth. The Proposed Action would occur in a primarily undeveloped and unpopulated setting. It would not induce unplanned residential growth nor would it result in reduced access or impairment of existing residential areas or services necessary for those areas. It would not add or detract from permanent employment opportunities at the site or nearby. The project would result in temporary construction and related employment due to implementation of the treatment upgrades, administration building conversion, and other project components. Therefore, the proposed action would have *no impact* to socioeconomic.

3.9.2 Population and Housing

Impacts to population and housing occur when the Proposed Action results in the displacement of these resources, or induces population and housing growth in a manner inconsistent with planned growth or adopted population and housing goals. The Proposed Action would not displace residential uses, nor would it induce population or housing demand. The site is not on or

adjacent to land zoned or reserved for residential use, nor is residential use likely in the foreseeable future near the project site due to its location on federal park land. Therefore, the Proposed Action would have ***no impact*** on population and housing.

3.9.3 Environmental Justice

Executive Order EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, provides that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” (59 F.R. 7629)

Potential impacts to minority and low-income populations occur when the impacts of the proposed action fall disproportionately on these populations. These impacts can be from disproportionate environmental health and safety impacts, displacement, or adverse land use impacts. As the Proposed Action would not occur near residential areas predominantly occupied by minority or low-income residents, it would not result in adverse land use impacts, displacement, or similar issues concerning these populations. The Proposed Action would not result in environmental impacts that would disproportionately affect minority or low-income residents. Therefore, ***no impact*** to environmental justice populations would occur.

3.9.4 Visual Resources

The Proposed Action could impact visual resources if it caused a substantial adverse impact to scenic resources, a scenic vista or highway, or resulted in a source of light or glare visible from one or more of these locations.

The SMCSD treatment facility is in a cove along the San Francisco Bay surrounding by steep, wooded ridgelines. The facility is accessed by a long, narrow driveway extending from East Road to the administrative office and treatment facility along the shore of the bay. With the exception of the utility building along East Road, it is largely invisible from vehicle, bicycle and pedestrian traffic along East Road and Alexander Avenue, the two principal roads near the site.

Because the facility is along the shore of the bay, the wastewater treatment buildings, pumps, and related appurtenant features are visible from the Bay and the southern shoreline and west-facing ridge locations in the City of Belvedere. They are visible from various scenic viewsheds across the Bay, including Angel Island. However, when viewed from these locations, the facility is not visibly prominent, primarily due to its distance from these visual settings and its location in a sheltered bayside cove. The facility is not visible from most locations in the GGNRA, including Fort Baker and most locations in the Forts Baker, Barry and Cronkhite historic district. The facility is not visible from notable public vantage points, including the Golden Gate Bridge, the Golden Gate Bridge Visitor Center, Ayala Vista Point, or Point Cavallo.

The facility is not visible from any state scenic highway, as designated by the California Scenic Highway Program (California Streets and Highways Code Sections 260-263). The facility is not visible from proposed state scenic highways, including California State Highway 1, or any Marin County-designated Scenic County Highways, including the proposed Lucas Valley Road.

The Proposed Action would include physical features, such as secondary and tertiary treatment systems, that would be largely integrated into the current footprint. None of these features would be in areas in the facility easement that would result in noticeable increased visibility from any of the above-mentioned locations. The Proposed Action would not include components that would result in sources of visible light or conditions causing glare that would be visible from viewsheds, scenic vistas, or residential areas. Therefore, the Proposed Action would have ***no impact*** on visual resources.

3.9.5 Land Use

The Proposed Action could result in adverse impacts to land use if it conflicted with an adopted land use plan, policy or regulation, or physically divided an established community.

3.9.5.1 Federal

NPS-GGNRA

The SMCS D treatment facility is on land owned by the United States government, under the jurisdiction of the NPS as part of the GGNRA. The facility operates under an easement with the NPS. This easement was first granted to the facility by the U.S. Army in 1967 when the Army still had jurisdiction over Fort Baker. When the Army transferred Fort Baker to the NPS as part of the GGNRA, the easement continued with the operation of the facility. The current operation and Proposed Action would be consistent with the terms and provisions of this easement. The Proposed Action does not require a modification or extension of the current easement or its conditions. The facility is subject to all federal laws concerning the use and operation of the GGNRA, including the GGNRA General Management Plan, and the NPS Management Policies (2006). No change in the land use of the operation is proposed, and ***no impact*** to NPS-related land uses would occur.

Coastal Zone Management Plan

As discussed in Section 3.2.1.1, the authority to analyze projects conducted, funded, or approved by the federal government is granted to coastal states under the Coastal Zone Management Act of 1972, 16 USC, Section 3501 et seq. (CZMA).

The CZMA encourages coastal states to develop local coastal management plans, balancing environmental concerns, such as recreation use and environmental control, with development concerns. Under Section 307(c)(i) of the CZMA, projects that directly affect lands or water of the coastal zone must be carried out in a manner consistent with the approved state coastal zone management program. The “directly affecting” level, which applies to operation of the federal consistency provision, applies to all federal activities and determines the degree of state influence over these activities.

3.9.5.2 State

San Francisco Bay Conservation and Development Commission (BCDC)

The San Francisco BCDC, through its enforcement of the San Francisco Bay Plan (1969), has jurisdiction over the San Francisco Bay shoreline of a 100-foot-wide band, extending inland from mean high tide. The BCDC has jurisdiction over other water features flowing to the bay, including salt ponds, wetlands and sloughs, and some waterways. The SMCS D treatment facility operates under an existing permit with the BCDC (Permit No. 1980.024.00). This permit, originally issued on April 21, 1981, has been amended eight times, most recently on October 22, 2012.

As part of previous amendments, the BCDC found that although sewage treatment plants are not typically water-related uses consistent with McAteer-Petris Act and *Bay Plan* provisions and policies, the SMCSD facility is necessary to promote the safety and welfare of the Bay Area because the facility is a necessary component of the regional wastewater treatment program as adopted by the Regional Water Quality Control Board and for which there is no reasonable alternative. A concern of the BCDC through past amendments has been the continuation of safe public access to the shoreline for hiking, wildlife viewing and fishing. The SMCSD has provided this public access on its existing service road that traverses the facility and provides access to the shoreline for public enjoyment of these activities (BCDC Permit No. 1980.024.00).

The SMCSD has submitted an application with the BCDC to amend its existing permit for the Proposed Action. The components of the Proposed Action, including the relocated service road, would be designed and constructed to guarantee continued public access to the shoreline. Although the BCDC's actions concerning this permit amendment are unknown at this time, the Proposed Action is consistent with the conditions of the original permit and subsequent amendments.

3.9.5.3 Local

City of Sausalito

Although the City of Sausalito does not have land use jurisdiction over the SMCSD facility, the City of Sausalito General Plan discusses the eventual inclusion of the East Fort Baker area of the GGNRA as part of the Sphere of Influence of the City. This inclusion would be subject to Local Agency Formation Committee (LAFCO) approval, and approval from the NPS and the City. The Sphere of Influence (SOI) designation would not give the City land use jurisdiction over federal actions occurring in East Fort Baker; instead, it would provide for land use policies and agreements giving the City the opportunity to review federal and other agency actions for consistency with adopted City plans, policies, and programs.

The General Plan also includes policies concerning land uses at East Fort Baker. The City General Plan Map GP-8 has a land use designation of the SMCSD facility as "Public Institutional." This land use designation is consistent with the current uses of the SMCSD wastewater treatment facility, and all of the components of the Proposed Action.

The City's land use policies concerning East Fort Baker from the Land Use and Growth Management Element of the Plan are:

Policy LU-6.10

East Fort Baker. Promote the continued recreational and educational uses and preservation of existing facilities in the area known as East Fort Baker within the Golden Gate National Recreation Area (GGNRA).

Program LU-6.10.1

LAFCO. Work with Marin County LAFCO, the US Army and the GGNRA to establish the East Fort Baker area, as shown on map GP 8, as a part of Sausalitos' Sphere of Influence.

Program LU-6.10.2

Permitted East Fort Baker Uses. Adopt a proposed list of specific permitted uses for the East Fort Baker area that promotes the preservation of the twelve existing historical facilities and surrounding area.

Program LU-6.1 0. 3

Coordination with the GGNRA and US Army. Coordinate with the GGNRA and US Army in their future attempts to enact existing land use policies identified in the GGNRA General Management Plan.

Development of the Proposed Action would not conflict with these policies, and ***no impact*** to land use would occur.

3.9.6 Recreation and the Visitor Experience

Public Law 92-589 established the GGNRA to “preserve for public use and enjoyment the outstanding natural, historic, scenic, and recreational values, and to provide for the maintenance of needed recreational open space necessary to urban environment and planning” (16 U.S.C. 460bb).

The GGNRA provides many opportunities for pedestrian hiking, bicycling, sight-seeing, wildlife viewing, fishing, and marine access. Facilities for hiking and bicycling include many established trails, and existing roadways. One of the primary trails in the Bay Area is the Bay Trail. The Bay Trail is an approximately 400 mile loop trail that, when completed, will provide a continuous recreational trail around the entire perimeter of the San Francisco Bay linking all the shoreline communities together in the nine counties that comprise the Bay Area. Currently, about 60 percent of the Bay Trail is complete. Portions of the Bay Trail are in the GGNRA, primarily sharing the right-of-way along existing roads. The Bay Trail accesses the East Fort Baker area of the GGNRA via the Golden Gate Bridge, then continues as a separate trail parallel with East Road before sharing the right-of-way with East Road directly above the SMCSD treatment facility. The Bay Trail then continues in the right-of-way of Alexander Avenue as it approaches the City of Sausalito. Construction and operation of the Proposed Action would not impact the use and enjoyment of the Bay Trail for either pedestrians or bicyclists.

The driveway leading from the Bay Trail and East Road to the treatment facility is open to the public during normal facility operating hours. This driveway provides public access to the Bay shoreline for marine access, wildlife viewing, and fishing. Construction of the Proposed Action could result in short-term, intermittent closures of this driveway for construction equipment and activities. However, this impact would be temporary only during certain periods of construction. Public access to the Bay would not be affected by operation of the Proposed Action, and ***no impact*** would occur.

3.9.7 Noise

Noise is generally defined as unwanted sound. Impacts from noise occur if a project conflicts with an adopted noise policy or threshold, or results in a substantial permanent increase in ambient noise in the project vicinity. The site is within the GGNRA, and although the NPS does not maintain an adopted policy of acceptable noise levels for the project site, it does provide direction regarding acceptable levels of noise within the park system. NPS Director’s Order 47

states “The Service will take action to prevent or minimize all noise that, through frequency, magnitude, or duration, adversely affects the natural soundscape or other park resources or values, or that exceeds levels that have been identified as being acceptable to, or appropriate for, visitor uses at the sites being monitored” (NPS 2006).

The existing wastewater treatment plant is the primary source of noise at the site and immediate vicinity. This noise results primarily from the existing treatment equipment, including pumps, motors and clarifiers. This noise is barely audible beyond their immediate location, due to the effective screening of the hillsides, dense vegetation, and shoreline noises along the bay. Visitors to the bay shoreline along the existing access driveway can hear the low vibration of the pumps and equipment from locations adjacent the facility, but this does not degrade the visitor experience from the shoreline in a manner inconsistent with Order 47. Nearby noise sources include U.S. 101, which is audible from locations along Alexander Avenue and East Road in proximity to this highway. Existing noise levels from traffic on Alexander Avenue and East Road are insignificant due to low traffic volumes.

Operation of the Proposed Action would not result in a significant permanent increase in ambient noise levels either at the site or nearby. The addition of the headworks, secondary and tertiary treatment systems would result in additional pumping operations and use of engines and appurtenant equipment, but this added equipment would not increase noise levels in a significant way or noticeably degrade from the visitor experience to the shoreline adjacent the facility.

Construction of the Proposed Action, including the additional treatment systems and conversion of the existing residence for administrative purposes, may result in an increase in temporary noise levels. Construction noise could result from equipment, vehicles, and staging area activities. The duration of construction has not been finalized, nor has the location of staging area activities. These activities would be coordinated with NPS staff in a manner that would not result in noise levels with the potential to significantly degrade the visitor experience to the GGNRA. Any noticeable increase in construction noise levels would be temporary and would occur during normal daytime business hours. Therefore, any impacts from construction-related noise would be *less than significant*.

3.9.8 Transportation

The Proposed Action would result in a negative adverse traffic and transportation impact if it degraded the level of service capacity at intersections that served the site or carried project-related traffic or if the project resulted in an unsafe traffic condition or conflicted with an adopted transportation plan.

There are currently about 3-5 SMCSD employees at the site on average during normal weekday working hours and the facility receives an average of three trips per day from vendors, delivery persons, engineers, members of the public, SMCSD directors, and regulatory personnel. The facility receives limited truck traffic from twice-weekly pick-ups of dewatered sludge and twice-weekly pick-ups of grit and screenings.

The Proposed Action would not result in an increase in daily traffic to the facility, nor would it change the scheduled pic-ups of dewatered sludge and other debris materials.

3.9.8.1 Construction Impacts

Construction of the Proposed Action would occur over approximately 24 months. Construction traffic would consist of vehicles delivering project components, including aggregate base rock, to the site and vehicles hauling excavation materials from the site to a soil delivery location in the GGNRA. The most intensive period for construction traffic would occur over approximately 6 months for soil excavation, and would involve approximately 12 truck trips per day. Given the steep driveway access to the site and the tight radial turn accessing the site southbound from East Road, visibility for vehicular, bicycle and pedestrian traffic along East Road could be impacted.

Traffic control measures would be employed during construction truck ingress and egress from the site. These measures would include the use of traffic guards at the intersection of East Road and the facility access driveway. The traffic guard would be responsible for the display of traffic control materials including signal flags or hand signs to warn oncoming vehicles, pedestrians, and bicyclists of the presence of a truck entering or exiting the facility driveway. For larger trucks carrying excavated materials or larger project components, the traffic guard may install traffic cones, warning signs, and reduced-speed signage at various locations along East Road to act as traffic calming features to guide and reduce the speed of oncoming traffic. The size and type of materials would be coordinated with the NPS prior to installation, and the location for traffic signage along East Road. These construction traffic components would reduce the potential for impacts between construction vehicles and other traffic to a ***less than significant*** level.

As an alternative component to reduce truck traffic along East Road and nearby roads, barges could be incorporated into the construction activities. The barges would be used for construction staging, demolition, hauling of imported aggregate and excavated fill, deliveries and/or crane construction. The use of barges would preclude the use of heavy construction vehicles for larger project components, and would reduce the number of truck trips, reducing the potential visibility and clearance impacts to vehicular, bicycle and pedestrian traffic on East Road and nearby roads. The use of barges would be coordinated with NPS staff to determine feasibility, and the location of deposited fill would be subject to the geologic mitigation measures discussed in Section 3.6.3.3.

3.9.9 Utilities and Public Services

The SMCSD is a public utility providing wastewater treatment services to its service area. The Proposed Action would improve the quality of its service capacity by adding secondary and tertiary treatment services and added flow capacity for wet-weather events. The Proposed Action would not result in a significant impact to other utilities and public services, including water and electricity. The addition would not impact local public services, including police and fire protection, or schools, libraries, and other public facilities.

SECTION 4.0 PUBLIC SCOPING AND AGENCY COORDINATION

4.1 INTRODUCTION

The public scoping process is designed to provide information about the Proposed Action and its alternatives; to receive input from the public and interested federal, state, and local agencies about the issues that need to be identified; and to inform on the process of the environmental analysis.

The scoping process is important since it provides an early opportunity for the public and interested agencies to provide input on what issues and resource topic areas require attention in the environmental analysis. These topic areas may include those already anticipated by the proponents of the Proposed Action and the public agencies directly involved; however, they may also include resource topic areas and issues of concern not already identified to the proponents. The scoping process may identify issues of potential controversy that need to be addressed during the environmental analysis.

4.2 AGENCY COORDINATION

The purpose and need for the Proposed Action has been specified through several EPA and RWQCB administrative orders and by the SMCSD's staff and engineers who understand the need for headworks, secondary and tertiary treatment plant upgrades and related components. Early coordination with the NPS was conducted to identify the issues and resource areas the NPS felt were significant and warranted detailed analysis in the environmental review. The GGNRA Planning Division held a project review committee meeting on May 2, 2012 to discuss the Proposed Action and several other upcoming projects. The topics discussed were:

- The possible relocation of the plant due to sea-level rise and climate change. SMCSD staff presented NPS with several alternative sites that had been under consideration, including the City of Sausalito, the Headlands, and the possible consolidation of wastewater treatment services with Marin City, the TMCSD, and other smaller districts.
- The potential impacts to the Sailors' Cemetery which may exist at the facility. The SMCSD staff indicated they were aware of the site, including brick remnants and other artifacts on the beach that had originally been upslope but had fallen onto the beach due to cliffside erosion. NPS asked for the site to be included in the APE for the site and requested an archaeological survey be done as part of the environmental analysis.
- Subsequent to the meeting, NPS staff confirmed that the suspected cemetery site is a non-contributing element of the Fort Baker, Barry and Cronkhite National Register District.

4.2.1 State Historic Preservation Office

On April 17, 2013, the NPS, in accordance with Section 106 of the NHPA, initiated consultation with the SHPO regarding the project. The consultation letter stated that the environmental review for the project would include preparing a determination of eligibility for the SMCSD facility as a historical architectural property. The consultation also included that an archaeological survey would be conducted for the presence of archaeological resources in the project area. The analysis methods and findings of both the historical evaluation and the archaeological survey will be presented to the SHPO in subsequent consultation to request their concurrence.

4.3 TRIBAL CONSULTATION

As part of the cultural resources evaluation of the Proposed Action the NAHC in Sacramento was contacted to determine whether any portion of the present project area may encroach upon sites or associated cultural resources that may be deemed sacred by members of the local Native American community and determine any relevant Native American groups that should be contacted regarding this undertaking. The NAHC maintains map files of “Sacred Lands” and current tribal contact information.

In a return letter, the NAHC confirmed that there were no records of Native American traditional cultural resources near the project area and provided Native American points-of-contact for individuals and organization that may have additional knowledge of the culturally sensitive resources. Representatives of the Ya-Ke-Ama and the Federated Indians of Graton Rancheria were contacted. The Ya-Ke-Ama had no comments on the Proposed Action. The Federated Indians of Graton Rancheria (FIGR) confirmed that they have received correspondence regarding the Proposed Action, but have provided no comments. Separately, the FIGR were copied on the Sec. 106 initial consultation letter to the SHPO. The FIGR responded that they had no concerns, and asked to receive the results of the survey when it is completed. The record of correspondence with these tribal representatives is part of the Archaeological Survey Report in Appendix B, and the SHPO Consultation in Appendix D.

4.4 PUBLIC SCOPING

Subsequent to agreement on the components and parameters of the Proposed Action, the NPS and the SMCSO began public scoping per the requirement of NEPA and the NPS NEPA Handbook. This included the distribution of the public scoping notice prepared by both agencies. Hard copies of the notice were sent to approximately 50 local, state, and federal agencies, including the City of Sausalito. A complete list of recipients is in Appendix E.

Electronic copies of the scoping notice were delivered to approximately 1,300 recipients on the NPS electronic mailing list for activities concerning the GGNRA, through its Planning, Environment, and Public Comment website. This electronic mailing allows recipients to respond electronically to the notice and provide scoping comments.

A public notice of scoping activities was published in the *Marin Independent-Journal* on December 18, 2012. A copy of the public notice is in Appendix E.

The 45-day public scoping period began on December 18, 2012 and ended on January 31, 2013. The scoping period was extended beyond the normal 30 days because of the Christmas-New Year’s Day holiday period when many members of the public and public agencies tend to be busy or working shortened holiday hours.

The SMCSO project was featured during two open house events held by the NPS at Fort Mason on March 19, 2013, and the Bay Model Visitor Center in Sausalito on July 16, 2013. These open house events served as an opportunity for members of the public and other agency officials to learn more about projects currently being administered by the NPS in the GGNRA and NPS-sponsored environmental programs and activities. Approximately 50 members of the public attended each event. The SMCSO exhibit included an informative project display highlighting

features of the project and a timeline for project improvements. Questions from members of the public and inter-agency staff were fielded by SMCSD staff and the environmental consultant. The open house events were an added component to the public scoping process.

4.5 SCOPING COMMENTS

From notices sent to the hard copy and e-mail recipient lists, one comment was received. This comment, received on December 18, 2012, requested that the environmental analysis consider:

- Alternatives for reducing impacts on the Bay by reducing effluent flows to the Bay, including use of tertiary-treated wastewater for irrigation purposes at Fort Baker and the Conference Center
- Alternatives for reducing sewage flow to the treatment plant:
 - Implement a comprehensive program of sewer lateral and sewer main repair to reduce groundwater infiltration into the system.
 - Create economic incentives for water conservation/reduced household sewage generation by tying the sewer bill to the wet-weather water consumption.
- Alternatives for reducing greenhouse gas emissions, especially those of methane:
 - Bio-gas capture and use in electric power generation.
 - Create economic incentives for water conservation/reduced household sewage generation by tying the sewer bill to the wet-weather water consumption.

4.6 AGENCY AND PUBLIC REVIEW OF THE EA/INITIAL STUDY

Agency and public review of the EA/Initial Study and proposed MND will be done per the requirements of the NPS NEPA Handbook and CEQA Guidelines Sec. 15072 and 15073. Public notice of the availability of this document will be published in the *Marin Independent Journal*, and at the following NPS website: <http://parkplanning.nps.gov/goga>. Notice of the EA/Initial Study and proposed MND will be provided to responsible and trustee State agencies through the State Clearinghouse.

The public review and comment period for the EA/Initial Study and proposed MND is 30 days. Individuals and organizations will be instructed on how to request this document in writing, and by e-mail. The EA/Initial Study and proposed MND will be circulated to various federal and state agencies, individuals, businesses, and organizations on the NPS mailing list for a 30-day public comment period. Copies of this document will be available for public review at:

Sausalito-Marin City Sanitary District
1 East Road
Sausalito, CA 94965

Sausalito Public Library
420 Litho Street
Sausalito, CA 94965

Marin City Library
164 Donahue Street
Marin City, CA 94965

In addition to the locations listed above, additional copies of this document will be available for review online at http://parkplanning.nps.gov/SMCSD_Upgrade. For individuals with sensory disabilities, this document can be made available in large print or on compact disk. To obtain a copy in one of these alternate formats, please contact the GGNRA at 415-561-4700 or goga_planning@nps.gov.

The purpose of the 30-day review and comment period is to seek substantive comments on the Proposed Action in which specific issues or concerns are addressed. This period will provide the public and interested agencies the opportunity to comment on the adequacy and completeness of the environmental analysis.

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SECTION 6.0 ACRONYMS

AB	Assembly Bill
ADA	Americans with Disabilities Act
APE	Area of Potential Effects
ARPA	Archaeological Resources Protection Act
AST	Aboveground Storage Tank
ATP	Archaeological Testing Plan
BAAQMD	Bay Area Air Quality Management District
BAT	Best Available Technology
BCT	Best Conventional Technology
BMP	Best Management Practices
Cal/EPA	California State Environmental Protection Agency
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO ₂	Carbon Dioxide
CUPA	Certified Unified Programs Agency
CWC	California Water Commission
CZMA	Coastal Zone Management Act
DNI	Determination of No Impact
DOA	Department of the Army
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
FEMA	Federal Emergency Management Agency
FFR	Fixed Film Reactor
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act

GGNRA	Golden Gate National Recreation Area
GHG	Greenhouse Gases
GMP	General Management Plan
HAP	Hazardous Air Pollutants
HWCL	Hazardous Waste Control Law
IS	Initial Study
MBTA	Migratory Bird Treaty Act
MCCDA	Marin County Community Development Agency
MCSTOPPP	Marin County Stormwater Pollution Prevention Program
MG	Million Gallons
MGD	Million Gallons Per Day
MND	Mitigated Negative Declaration
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NEC	National Electric Code
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PM	Particulate Matter
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SFBCDC	San Francisco Bay Conservation and Development Commission
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SMCSD	Sausalito-Marín City Sanitary District
SOD	Sudden Oak Death
SOF	Statement of Findings
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board

TAC	Toxic Air Contaminant
TDML	Total Daily Maximum Load
TIMP	Transportation Infrastructure and Management Plan
TSCA	Toxic Substances Control Act
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank
WRD	Water Resources Division

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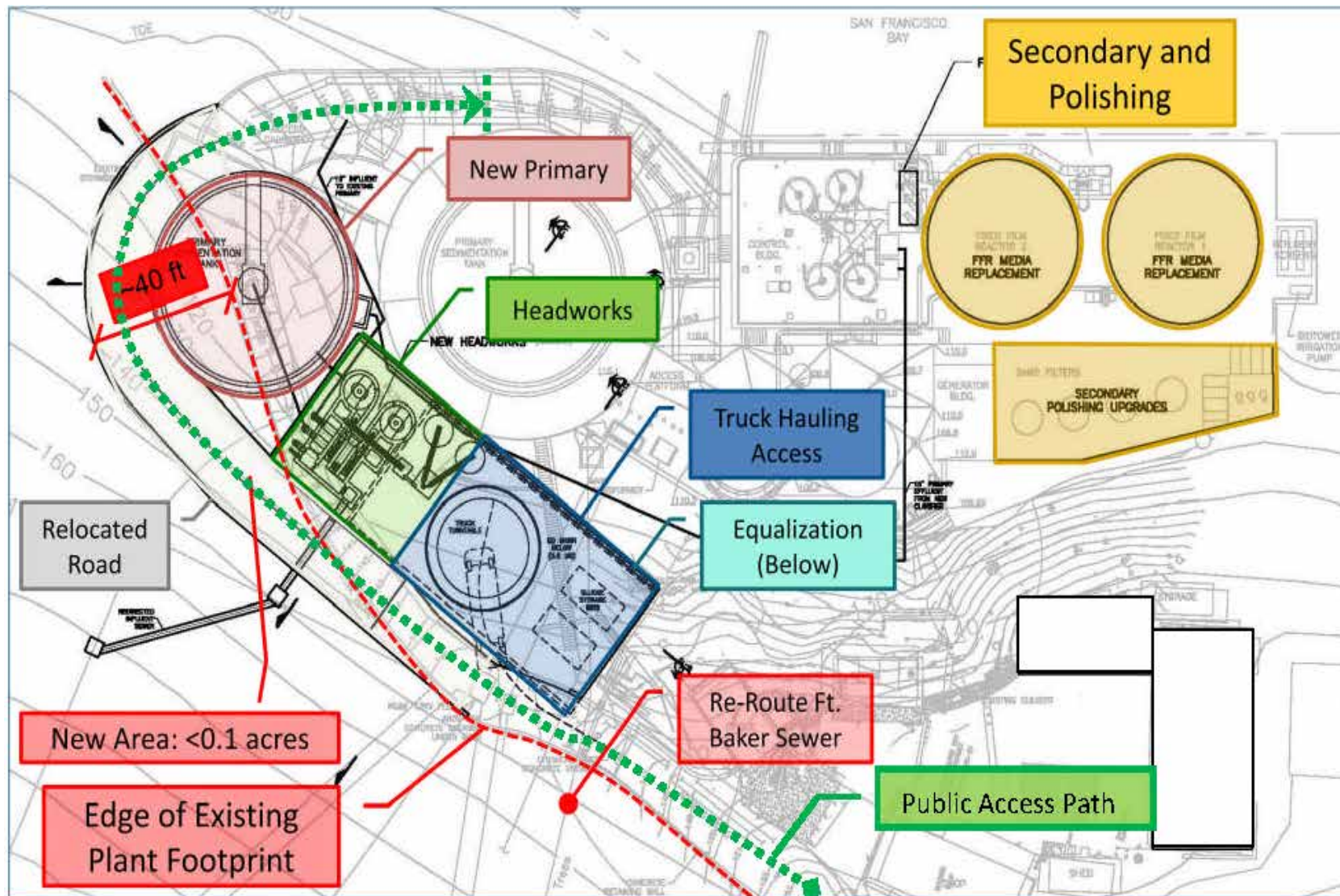
Chauna Winkler, Editor

FIGURES

FIGURE 1 SITE LOCATION

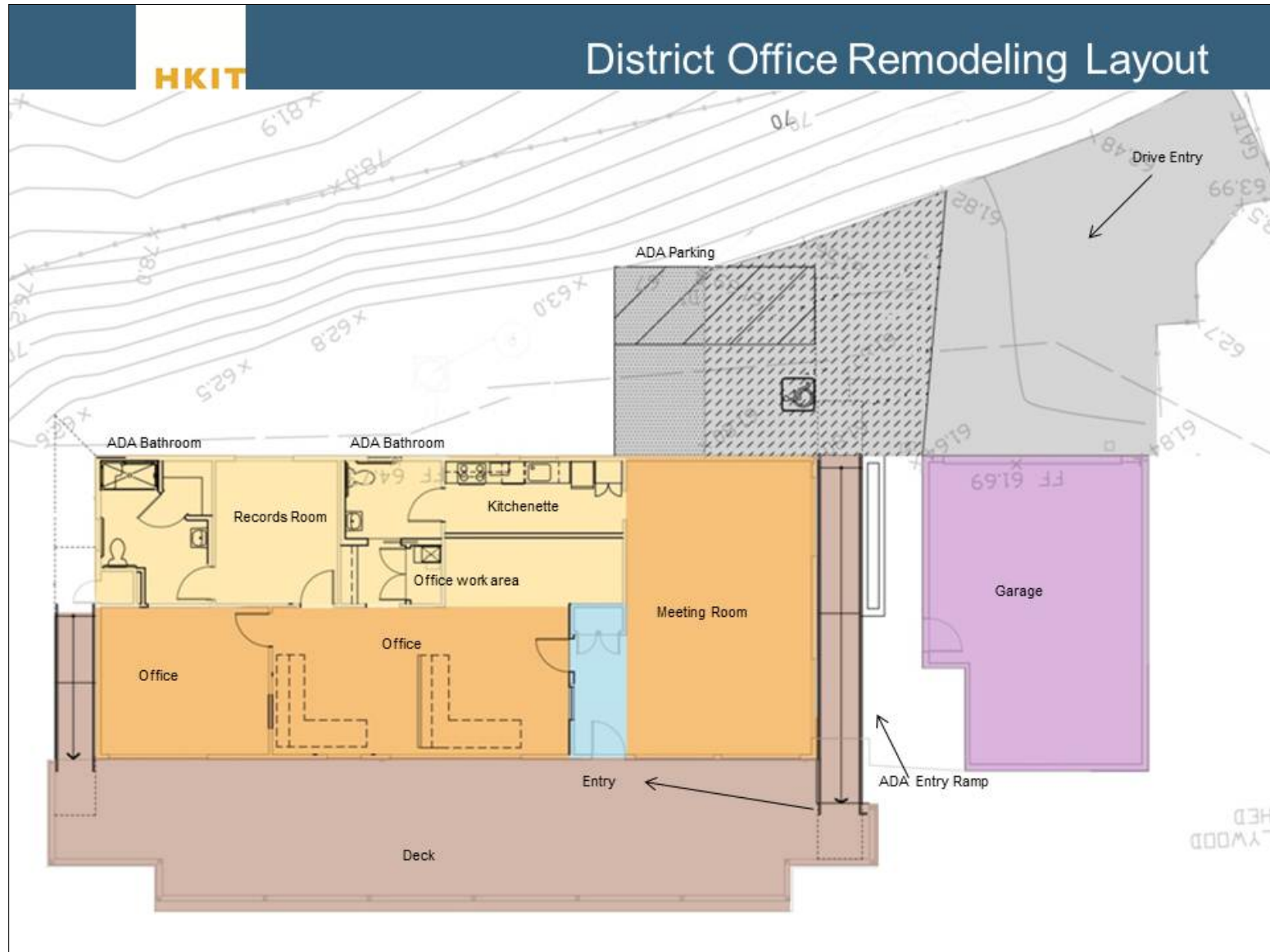


FIGURE 2 PROPOSED SITE PLAN



Source: RMC, Inc.

FIGURE 3 PROPOSED DISTRICT OFFICE REMODELING LAYOUT



Source: HKIT Architects

[illegible]

FIGURE 5 **VIEW OF SMCSD WASTEWATER TREATMENT COMPONENTS**



FIGURE 6 **VIEW OF SUSPECTED SAILORS' CEMETERY SITE**



FIGURE 7 VIEW OF EXISTING ACCESS DRIVEWAY LOOKING NORTH



FIGURE 8 VIEW OF BAYSHORE INCLUDING BRICK REMNANT LOOKING NORTH



APPENDIX A

Proposed Mitigated Negative Declaration



PROPOSED MITIGATED NEGATIVE DECLARATION

This proposed Mitigated Negative Declaration has been prepared pursuant to the requirements of CEQA, Public Resources Code, Section 21000 et seq, and the *State CEQA Guidelines*, California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq.

PROJECT DESCRIPTION

The Sausalito-Marin City Sanitary District (SMCSD) Treatment Plant Upgrade Project would implement facility and process improvements to the existing treatment operations, including the addition of a headworks, new primary clarifier, secondary upgrades, tertiary polishing, and equalization storage. The project has been developed to address regulatory compliance, plant operation, reliability, performance, and to prevent wet weather blending events for influent flows of up to 9.0 million gallons per day (MGD). The project includes the following components:

- Headworks Improvements
 - New screening and grit removal facilities
 - New material handling area with truck turntable
- Primary Treatment Improvements
 - New circular primary clarifier
- Secondary and Tertiary Improvements (located within the existing treatment area)
 - New Fixed Film Reactor (FFR) feed pumps with 9.0 MGD capacity
 - Replacement of existing FFR media
 - FFR odor control covers
 - Replacement and increased capacity of existing tertiary filtration process
- Equalization Storage
 - Minimum of 0.6 million gallons (MG)
- Administration Building Remodel
 - Address Americans with Disabilities Act (ADA) access requirements
 - Remodel existing building to minimize construction cost and impacts
- Relocated Access Road
 - Relocate existing access road to accommodate headworks, primary and material handling facilities and to improve plant safety.

All of the proposed improvements would be within SMCSD's existing easement, and 95 percent of the proposed improvements would be constructed within the existing 2.0 acre SMCSD facility footprint

increasing the existing plant footprint by less than 0.1 acres in the area north of the existing access road. The northern edge of the treatment facility would be extended approximately 40 feet at its widest point

The public currently has access to the San Francisco Bay and SMCSD intends to maintain public access as part of the San Francisco Bay Conservation and Development Commission (BCDC) permit amendment for the project. The project will allow public access along the relocated road but will prevent public access to the treatment plant site.

A more detailed description of the individual project components is presented in the following paragraphs.

Headworks (Screenings and Grit Removal)

Screening and grit removal is critical to the protection of wastewater treatment equipment as trash and inert particles in wastewater including sand and gravel, can cause unnecessary abrasion and wear on mechanical equipment, the build-up of deposits in pipelines, channels, and process structures. Screening and grit facilities will allow SMCSD to remove trash and grit at the beginning of the wastewater process to provide a more effective method for handling these materials.

Primary Treatment

The SMCSD treatment plant currently has one circular primary clarifier built in the 1950s. Since all flow to the treatment plant passes through it, the clarifier cannot be taken out of service for maintenance or repairs without adversely impacting plant performance. The flow rate through the primary clarifier during wet weather flow exceeds the peak design value. As a result, the clarifier's solids removal capacity is greatly reduced at peak flow rates. An additional primary clarifier is needed to treat peak flows, and to provide the redundancy during dry weather to allow maintenance operations without impacting plant operations.

Secondary Treatment Upgrade

During peak wet weather events, the influent flow to the treatment plant can exceed the process capacity of the FFRs that is limited to the 6.8 MGD capacity of the FFR feed pump station. At flows greater than 6.8 MGD, primary effluent is passively routed around the FFRs and directed to the secondary clarifiers. This operational strategy of mixing primary effluent and secondary effluent is commonly referred to as "blending" and is currently allowed under the SMCSD National Pollutant Discharge Elimination System (NPDES) permit.

Blending requires additional sampling, data collection and record keeping, and the Regional Water Quality Control Board (RWQCB) has required the SMCSD to consider minimizing or eliminating blending. These alternatives include equalization, increasing secondary treatment capacity and adding treatment specifically for blended flows. The RWQCB could eliminate the practice of blending from future SMCSD NPDES permits, which are renewed every 5 years.

Tertiary Treatment Upgrade

The SMCSD has existing continuously backwashing sand filters to remove additional suspended solids from the secondary effluent. They were added as a side stream process that can treat a maximum flow of 1.0 MGD. The sand filters are a necessary part of the treatment process because they reduce the total suspended solids (TSS) concentration in the secondary effluent from 45 milligrams per liter (mg/L) to below the SMCSD NPDES permit limit of 30 mg/L (monthly average). The SMCSD has worked to optimize the filters over the years and they are currently performing adequately as a polishing step during dry weather. The filters have been in service for approximately 30 years and are approaching the end of their useful life.

Because the sand filters only have a capacity of 1.0 MGD, they are ineffective at providing polishing treatment during peak wet weather events. Increasing the tertiary treatment capacity to 6.0 MGD would improve operational flexibility and improve treatment plant performance during wet weather.

Equalization

A minimum of 0.6 MG of equalization storage (along with the described FFR upgrades) would allow the SMCSO to limit flow to the secondary process to 9 MGD, which would allow the SMCSO to avoid blending up to and including the estimated five-year wet weather event. The equalization storage tank would be integrated into the new headworks structure and would have the capacity to store a minimum of 0.6 MG of primary influent or effluent. The final volume would be determined during final design based on the volume that can be readily made available in the new headworks structure.

Administrative Office Space

The project would remodel the existing district residence into approximately 1,750 square feet of administrative office use for SMCSO personnel. The additional room would alleviate the crowded office space that currently exists in the small structures in the maintenance yard. The project would provide staff with an ADA office and accessible parking that currently does not exist at the facility. The administrative office space modifications would also include minor access road improvements to facilitate better access to the new administration space and the existing facility storage/staging area. These improvements would be constructed with the proposed relocated access road improvements.

Relocated Access Road

Approximately 0.1-acres of land in the immediate north of the existing access road would be cleared of vegetation to make room for a relocated access road. Approximately 38 trees would be removed in this area, of which approximately 19 would be live oak trees ranging in size from 4 inches to 39 inches in diameter.

DETERMINATION

This document is provided to give notice to interested agencies and the public that the SMCSO intends to adopt a Mitigated Negative Declaration for the proposed project. This does not mean that the SMCSO's decision regarding the proposed project is final. This Mitigated Negative Declaration is subject to modification based on comments received by interested agencies and the public.

The SMCSO has prepared an Initial Study for this proposed project, and pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would result in no impact on agricultural resources, land use and planning, mineral resources, population and housing, public services, or utilities and service systems.

The proposed project would have less than significant impacts on visual resources, water resources, coastal and marine resources, recreation, noise, transportation, and public health and safety; and no significant adverse impacts on vegetation and wildlife, cultural resources, geology and soils, and air quality and greenhouse gases, because the following avoidance, minimization and mitigation measures would reduce potential impacts to a less than significant level:

Mitigation Measure BIO-1. To avoid impacts on birds protected by the Migratory Bird Treaty Act, a pre-construction breeding season survey of the proposed project area and immediate vicinity would be done by a National Park Service (NPS)-approved biologist during the calendar year in which

construction is planned to begin. If migratory nesting birds covered by the statute are identified on or adjacent to the proposed project area, construction would be delayed, if necessary within 500 feet of active bird nests until any eggs have hatched and young have fledged. As a result, impacts on Migratory Bird Treaty Act-protected species would not be significant.

Mitigation Measure BIO-2. Tree removal and trimming would occur between August 1 and December 31 to avoid any impacts to nesting birds and minimize the potential for weeping wounds that are susceptible to disease, such as Sudden Oak Death (SOD). To avoid the potential spread of SOD, vegetation shall be left on site or hauled to a permitted recycling center in Marin County. To further minimize the spread of SOD and noxious weeds, prior to arrival and departure from the project area, all vehicles, equipment, tools and clothing shall be cleaned of vegetation and mud.

Mitigation Measure CUL-1. The applicant would implement the following protocols for unanticipated archeological discoveries and human remains during construction:

- Prior to construction, workers and supervisors would be briefed on the potential for encountering buried archaeological resources and human remains that could be found in the project area and the response procedures to be followed if there is an unanticipated discovery;
- If buried archeological resources such as chipped stone or groundstone, historic debris, building foundations, or human bone are discovered during ground disturbances, work shall stop in that area (typically a minimum of 50 feet radius) of the project until a qualified archaeologist can assess the significance of the find;
- The SMCSD Treatment Plant Upgrade Project Manager (415-332-0244) and the Golden Gate National Recreation Area (GGNRA) Park Archaeologist will immediately be notified (415-289-1891 or 415-289-1893).
- Inadvertent discoveries will be treated in accordance with 36 CFR 800.13 (Protection of Historic Properties: Post-review discoveries). Archaeological resources will be assessed for eligibility for listing on the National Register of Historic Places and a determination of the project effects on the property will be made;
- Assessment of inadvertent discoveries may require archeological excavations and/or archival research to determine resource significance. If the site will be adversely affected, a treatment plan will be prepared in consultation with the State Historic Preservation Office;
- Treatment plans will fully evaluate avoidance, project redesign, and data recovery alternatives before outlining actions proposed to resolve adverse effects;
- If human skeletal remains or burial features are encountered all work shall stop in the vicinity of the discovery, and the find will be secured and protected in place;
- The Marin County Coroner, Park Archeologist and the SMCSD Treatment Plant Upgrade Project Manager will be immediately notified;
- If remains are determined to be Native American, and that no further coroner investigation of the cause of death is required, the coroner will then be required to contact the Native American Heritage Commission (pursuant to Section 7050.5(c) of the California Health and Safety Code) and the County Coordinator of Indian Affairs;
- The NPS will also initiate consultation with relevant tribes. No additional work shall take place near the find until the identified actions have been implemented. Discovered remains will be treated in accordance with the Native American Graves Protection and Repatriation Act Regulations at 43 CFR 10.4 (Inadvertent discoveries) as appropriate.

Mitigation Measure GEO-1. To mitigate the loss or degradation of geologic materials associated with the Proposed Action, the removal of soil or rock, and importing of aggregate base rock will be performed in accordance with the Golden Gate National Recreation Area, Standard Operating Procedures for Managing Earth Materials. Earth materials generated within the park should be reused in other parts of the GGNRA to mitigate the loss of geologic resources. Reuse of earth materials not tested for hazardous materials before removal may require testing before reuse. Earth materials from developed areas near roads, parking lots, and infrastructure will likely require testing for hazardous materials (GGNRA 2012).

Any chert excavated during the Proposed Action that is appropriate for use as a trail, overlook, or parking area tread should be used for tread rather than to backfill areas or for trail or road base. Good quality chert is considered valuable and should be used as tread whenever possible. The reuse of chert as tread would also mitigate the loss of radiolarian fossils commonly found in that rock (GGNRA 2012).

Mitigation Measure GEO-2. Paleontological resources are protected as described in the NPS *Management Policies 2006*, Section 4.8.2.1, Paleontological Resources and Their Contexts. According to the policy “All NPS construction projects in areas with potential paleontological resources must be preceded by a preconstruction surface assessment prior to disturbance. For any occurrences noted, or when the site may yield paleontological resources, the site will be avoided or the resources will, if necessary, be collected and properly cared for before construction begins. Areas with potential paleontological resources must also be monitored during construction projects (NPS 2006).”

If there is no source within the GGNRA for the approximately 500 cubic yards of imported aggregate base rock needed for the Proposed Action, then the material can be imported from an outside source. All earth materials must be tested before being imported into the GGNRA. Earth materials brought into GGRNA can either be from an approved vender or be tested for hazardous materials before being imported (GGNRA 2012).

Mitigation Measure AIR-1. The control measures from the Bay Area Air Quality Management District (BAAQMD) 1999 CEQA Guidelines would be implemented to reduce air quality impacts from construction. These measures would be specified in the construction management plan and the construction site supervisor would be responsible for ensuring, verifying, and documenting compliance.

- 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 construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Minimize idling times either by shutting equipment off when not in use or reducing the maximum idling time to 30 seconds (as required GGNRA Vehicle Idling Standard Operating Procedures adopted by GGNRA in compliance with State of California

regulations for In-Use Off-Road Diesel Vehicles [Title 13 CCR, Section 2449(d)(3)]. Clear signage shall be provided for construction workers at all access points.

Mitigation Measure AIR-2. The BAAQMD would classify some of the new treatment system components as new sources of air emissions. These components could be subject to federal, state, and BAAQMD air permitting regulations, including New Source Review, Prevention of Significant Deterioration, National Emission Standards for Hazardous Air Pollutants, or New Source Performance Standards. The SMCSO would perform an air quality regulatory analysis to determine what if any permitting is required for the operation of any new sources of air emissions and obtain the necessary permits prior to implementing the project.

PUBLIC REVIEW AND COMMENT

Public review of this proposed Mitigated Negative Declaration will be done pursuant to CEQA Guidelines Sec. 15072 and 15073. Public notice of the availability of this document will be published in the *Marin Independent Journal*, and at the following National Park Service website: <http://parkplanning.nps.gov/goga>. Notice of the availability of this document will be provided to responsible and trustee State agencies through the State Clearinghouse.

The public review and comment period for this proposed Mitigated Negative Declaration is 30 days. Copies of this document, including the Initial Study and all appendices, will be available for public review at:

Sausalito-Marín City Sanitary District
1 East Road
Sausalito, CA 94965

Sausalito Public Library
420 Litho Street
Sausalito, CA 94965

Marín City Library
164 Donahue Street
Marín City, CA 94965

In addition to the offices listed above, additional copies of this document are available for review online at http://parkplanning.nps.gov/SMCSO_Upgrade

For individuals with sensory disabilities, this document can be made available in large print or on compact disk. To obtain a copy in one of these alternate formats, please contact the NPS at 415-561-4700 or goga_planning@nps.gov.

The purpose of the 30-day review and comment period is to seek substantive comments on the adequacy and completeness of the environmental analysis for the proposed project. Comments received will be considered in preparation of the Final Mitigated Negative Declaration.

Comments must be in writing and postmarked, or submitted online at
http://parkplanning.nps.gov/SMCSD_Upgrade. Written comments may be mailed to:

Mr. Craig Justice
General Manager
Sausalito-Marin City Sanitary District
1 East Road
Sausalito, CA 94965
Attn: SMCSD Treatment Plant Upgrade Project

APPENDIX B

Archaeological Survey Report

**Archaeological Survey Report for the
Sausalito-Marín City Sanitary District
Headworks and Facility Upgrade Project,
Fort Baker, Marin County, California**



Photograph of the suspected location of the historical Sailors Cemetery, January 2013.

Prepared for:

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May 2013

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Introduction

This report documents the methods and findings of a Phase I cultural resources evaluation of a suspected small historic period cemetery site situated at Fort Baker, a part of the Golden Gate National Recreation Area, located near Sausalito in southern Marin County, California. The scope of work was designed to conform to both State of California (CEQA) and Federal Section 106 standards.

The suspected cemetery site is within the Area of Potential Effects (APE) for the Headworks and Facility Upgrade Project, an undertaking of the Sausalito-Marín City Sanitary District (SMCSD). The Project calls for several improvements to the water treatment plant to bring it into compliance with regulatory requirements, including the relocation of the access road to allow construction of new treatment facilities within the existing plant footprint. The relocated road would extend outside of the existing footprint, and would pass through part of the suspected cemetery site.

The treatment plant sits in a shallow cove on the bayshore, surrounded by very steep slopes. The suspected cemetery site is a small level area mid-slope adjacent to the treatment plant; the hillside below it has been eroded away into a cliff with a narrow rocky beach below.

Figures 1 and 2 depict the location of the Headworks and Facility Upgrade Project and of the suspected cemetery site in relation to the Project area.

Regulatory Context

Section 106 of the National Historic Preservation Act (36 CFR Part 800) requires federal agencies, and agencies using either federal funds or operating under federal permit, to take into account the effect of their undertakings on historic properties.

The National Register is a listing of properties that are important to the history of our nation. To be eligible for listing, a property must typically be 50 years of age or more; it must possess historic significance; and it must possess integrity of location, design, setting, materials, workmanship, feeling, and association. Historic significance is the importance of a property to the history, architecture, archaeology, engineering, or cultural aspects of a community. These significant resources can be in the form of

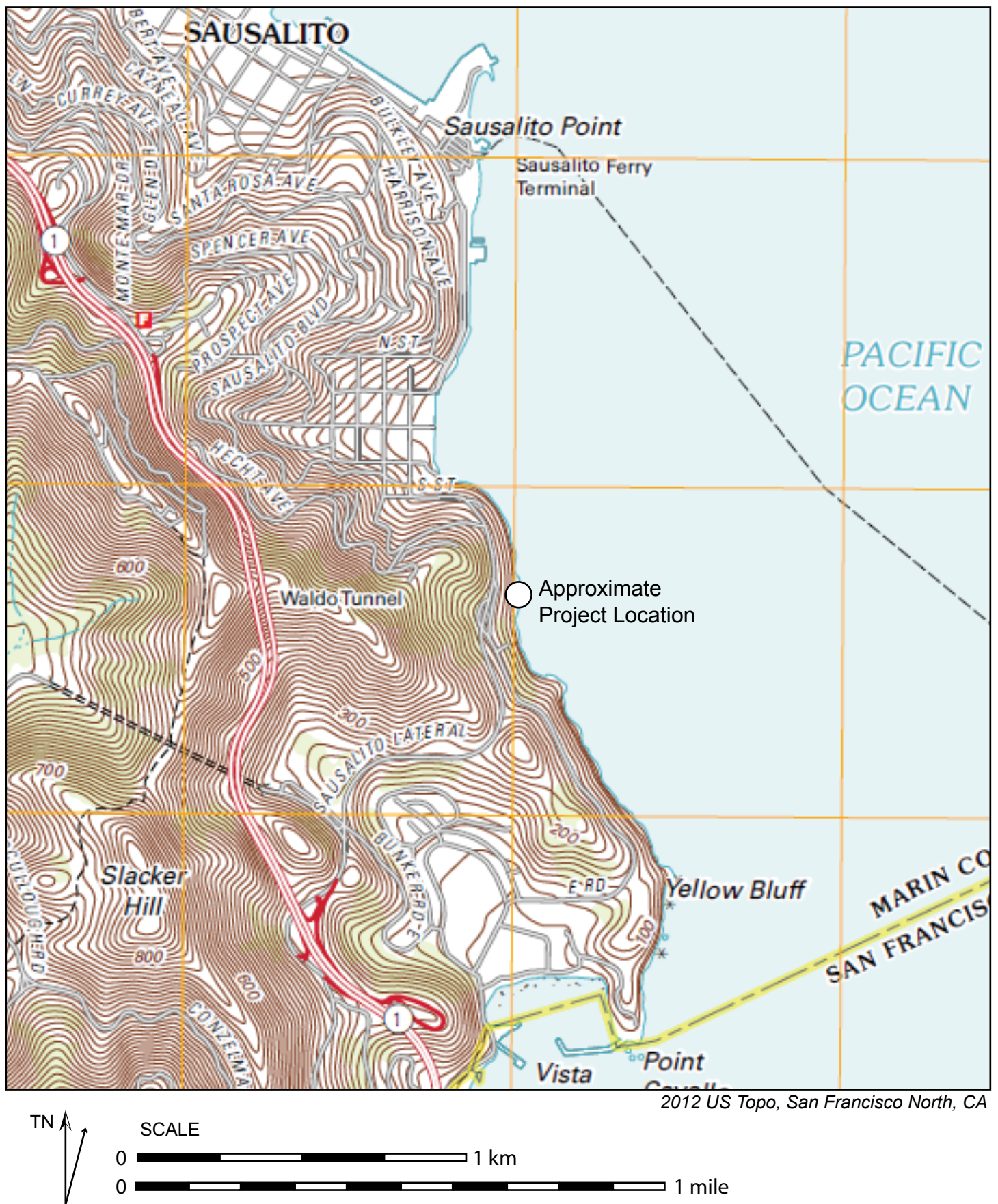
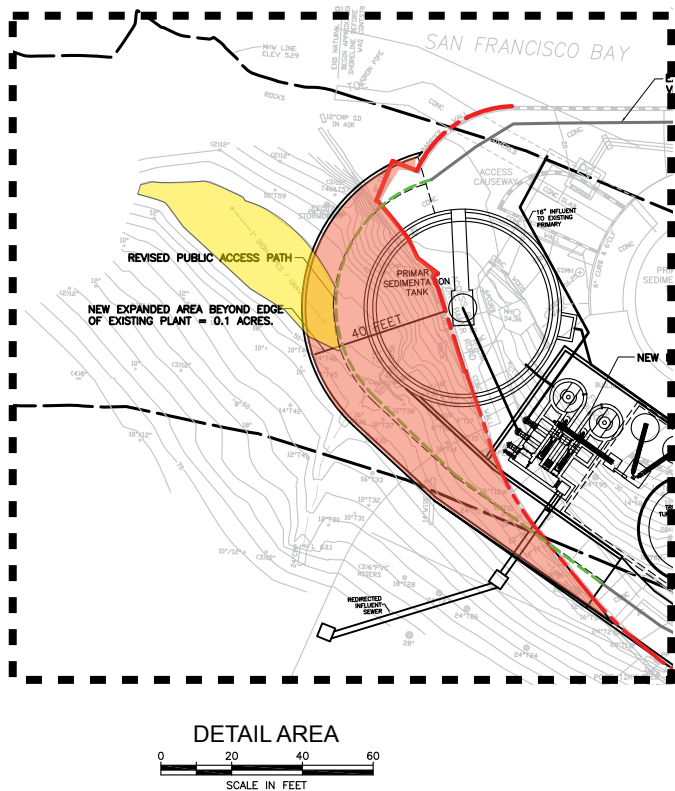
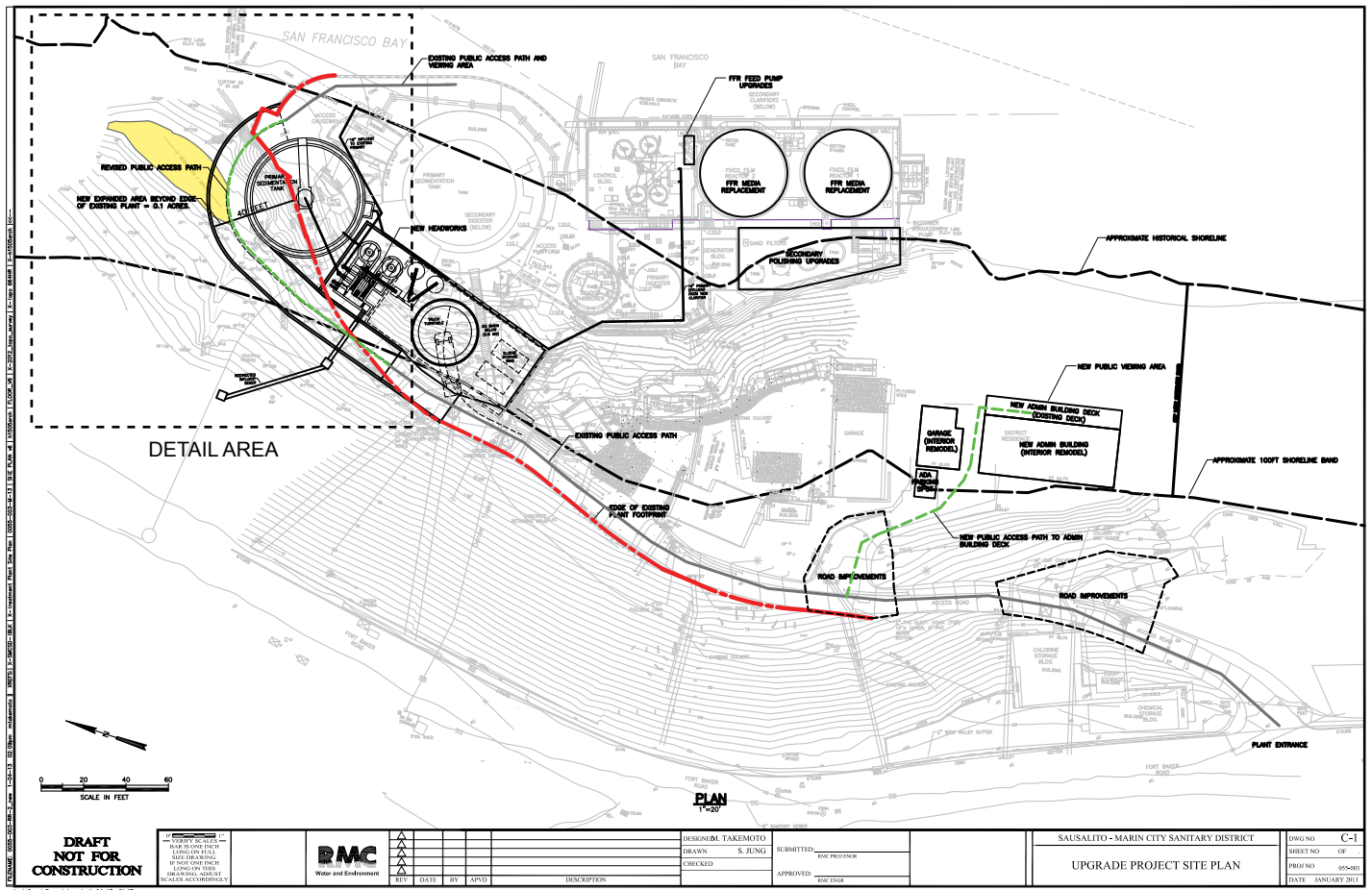


Figure 1. Project Location Map.

Headworks and Facility Upgrade Project





-  = AREA OF SUSPECTED HISTORIC CEMETERY
-  = AREA OF PROPOSED EXCAVATION

Figure 2. Project Site Map with Area of Suspected Historic Cemetery
 Headworks and Facility Upgrade Project

districts, sites, buildings, or structures. To qualify for the National Register, a property must be significant to American history at the local, state, or federal levels (36 CFR 60.4(a-d)), and must:

- a) be associated with events that have made a significant contribution to the broad patterns of history;
- b) be associated with the lives of persons significant to our past;
- c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) have yielded, or may be likely to yield, information important to prehistory or history.

The Project area is within a property already listed on the National Register: the Forts Baker, Barry and Cronkhite historic district. This district derives its significance from the coastal defense history of the site during the period 1866-1945 (National Park Service 2005:3–4); none of the currently listed contributing properties are within the Project area. However, it is possible that a feature may be found within the Project area that is eligible for nomination in its own right.

Archaeological Resources in the Vicinity of the Project Area

Michelle Touton of Archeo-Tec searched the archaeological records on file at the Northwest Information Center (NWIC) of the California Historical Resources Inventory System on January 11, 2013 (File #12-0688). Ms. Touton reviewed all archaeological records within one half mile of the Project area.

Two archaeological sites are located within the search radius. The first, called East Fort Baker (CA-MRN-648H, Primary Number P-21-000682), consists of both archaeological and architectural elements and encompasses the Project site. The second, called Nelson No. 1 (CA-MRN-1, Primary Number P-21-000034), consists of an indigenous shellmound site and is located near the bayshore in south Sausalito.

The East Fort Baker site consists of approximately 260 acres of Fort Baker located to the east of Highway 101, including the Project area (Anthropological Studies Center 2001). The entirety of the East Fort Baker site was surveyed in 2001 by the Anthropological Studies Center (Stewart et al. 2001). The archaeologists examined the area where the cemetery was reported to be located, but found no evidence of it and theorized that perhaps it had been destroyed when the treatment plant was built in the early twentieth century. A brick feature, currently in pieces on the beach below the Project site, was identified as belonging to a series of in situ foundations further upslope from the Project area and thought to relate

to an early twentieth century entry gate¹. No evidence of indigenous resources were observed anywhere within the East Fort Baker site.

When he first recorded CA-MRN-1 in 1907, Nels C. Nelson noted that “the mound is practically all carted away...Nothing was found; but informants (two of them) affirm independently that several skeletons have been unearthed” (Hamilton 1983). Nelson described the site as being located in the mouth of a small canyon on a gentle slope near the water’s edge; geological evidence suggests that the canyon resulted from a now-disappeared stream that would have provided the site with fresh water. By the end of the twentieth century, the site had been entirely developed with an apartment complex and several private residences.

¹ As discussed below in Consultation with Interested Parties, this brick feature was intact in 1994 and is clearly not associated with the entry gate upslope.

Historical Context

Due to the very steep slopes and lack of beach access at the Project site, indigenous occupation within the Project area is not expected. Therefore this section provides only a brief discussion of native culture, followed by a more extensive description of the historic use of the area with a focus on the use and possible location of the Sailors Cemetery.

Indigenous Culture

The Headworks and Facility Upgrade Project is situated in what was, prior to the arrival of the first Europeans in the closing decades of the eighteenth century, territory occupied by a group of Native Californians known as the Coast Miwok.

The Coast Miwok are derived from Penutian Stock (Callaghan 1967; Pitkin and Shipley 1958), a theoretical linguistic construct which may have its origins in the northwestern Great Basin (Hattori 1982:208). Penutian-speaking peoples presumably slowly migrated into central California, perhaps as early as around 2500 B.C. (Moratto 1984:552). By A.D. 300-500, speakers of Penutian stock were firmly ensconced in the San Francisco Bay region.

The Coast Miwok exploited the nearby bay and coastline for food and vegetal resources, including shellfish, fish, reeds, water birds and small game. Willow, hazel and sedge were available along Corte Madera Creek; these materials were used in basket making. Bone tools were used for basketry, and to scrape animal hides. Acorns and buckeye which could be ground into flour were plentiful, as were grasses, ferns, wood and tule, which had many applications (Goerke 1994).

The preceding remarks are intended to provide only a few introductory comments about the ethnography of the Coast Miwok people. More comprehensive ethnographic, archaeological and popular accounts of these Native Americans may be found in the following sources: Volume 8 of *The Handbook of North American Indians* (Kelly 1978:414–425); *The Ohlone Way* (Margolin 1978); and *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area, 1769-1810* (Milliken 1995).

Archaeological remains of Coast Miwok habitation sites appear as midden soil deposits; these are mounds or areas that typically include charcoal, ash, dirt, shells, mammalian bones, acorn and buck-eye processing implements, lithic tools, and other debris of daily life. Some such sites include human remains *in situ* (as they were buried), or in fragmentary condition due to prehistoric or modern disturbance.

A great many of the prehistoric midden sites in Marin were identified by Nels C. Nelson in 1907-8, then working as a graduate student at U.C. Berkeley. He hiked and traveled by horse around the shores of San Francisco Bay, which was then relatively undeveloped. At that point the above-ground aspects of some shellmounds were already damaged or destroyed, but Nelson identified more than 190 such sites in Marin County alone (Goerke 1994), including the aforementioned CA-MRN-1.

Historical Background

All of southern Marin County, including the Project area, was granted by the Mexican government to William Richardson in 1836 under the name Rancho Sausalito (National Park Service 2005:7). Richardson ranched cattle on his land and bottled spring water from the Rancho for sale in San Francisco. Richardson's primary business was maritime trade, however.

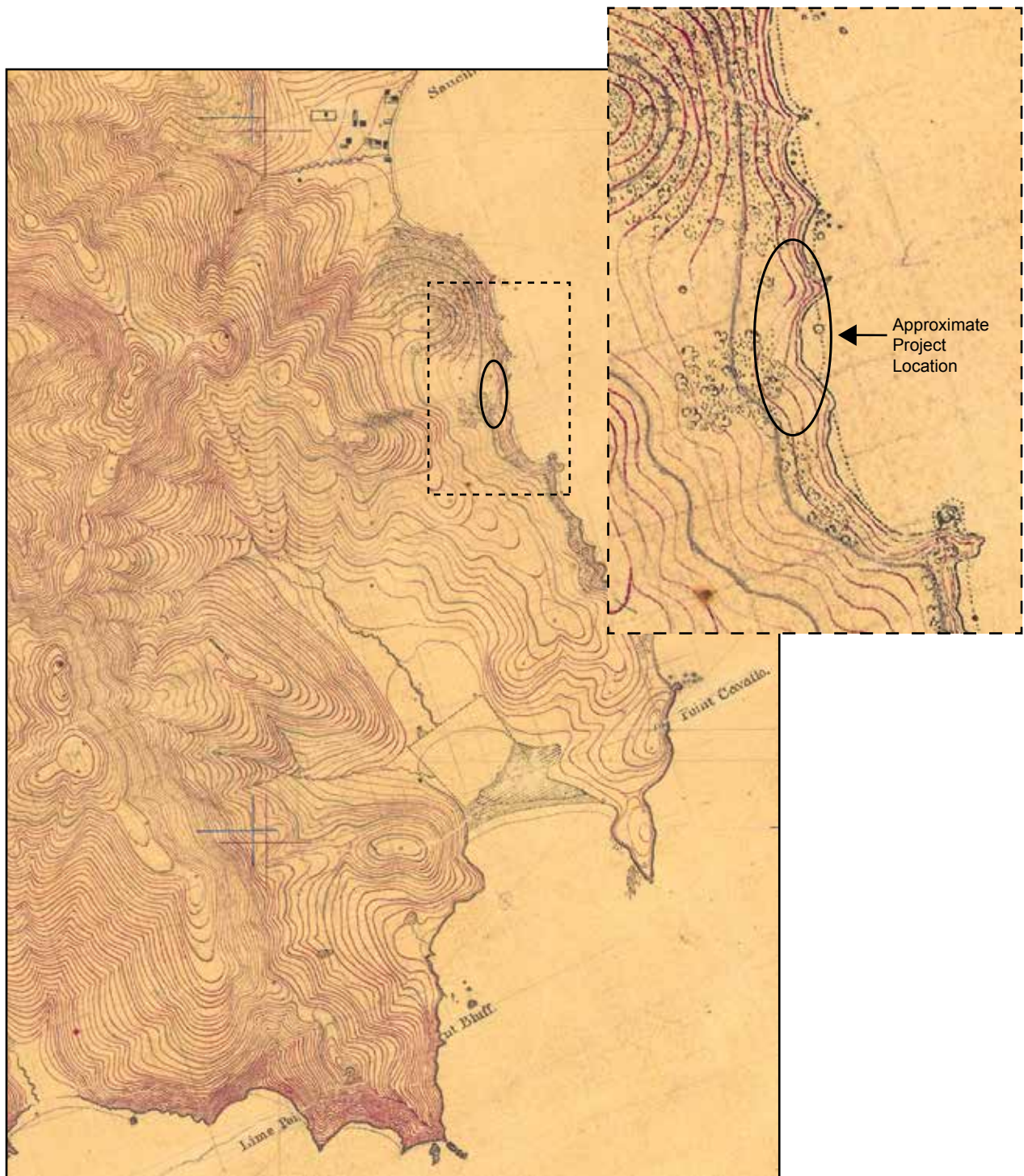
A Cultural Landscape Report prepared by the National Park Service for Fort Baker describes the natural terrain as it appeared in the 1850s-1860s:

Alternating between rocky cliffs descending more than two hundred feet, and small crescent-shaped coves at the water's edge, the property had been the southernmost extent of Richardson's Rancho Sausalito. Inland from the rocky precipice, rolling hills, ravines, and small valleys characterized the landforms of the Lime Point Military Reservation (National Park Service 2005:7-8).

Figure 3 depicts the Project area and its surroundings in 1850, illustrating the cliffs and coves that characterized the southern portion of Rancho Sausalito. During the Rancho period, vegetation was kept low by grazing cattle, and the hillslopes were devoid of trees (National Park Service 2005:69). Visibility from the Project area to the Bay and the shorelines beyond would have been excellent.

Richardson's fortunes were dashed in 1855 when one of his ships sank with uninsured cargo (National Park Service 2005:7). He sold Rancho Sausalito to Samuel R. Throckmorton, who knew the federal government was interested in establishing a fort for coastal defense at the entrance to the Bay.

The transition from Mexican government to American government resulted in competing claims to property. Although under Mexican law Rancho Sausalito extended all the way south to the Bay, in 1850 the American government had claimed a portion of that land to guard the entrance to the Bay.



North Side of the Entrance to San Francisco Bay. A.F. Rogers, U.S.C.S., San Francisco



Figure 3. 1850 U.S. Coast Survey Map Detail

Headworks and Facility Upgrade Project

After purchasing Rancho Sausalito from Richardson, Throckmorton attempted to sell it to the American government. As the government believed it had already claimed this land, lawsuits ensued, and it was not until 1866 that an agreement was reached and the Lime Point Military Reservation was established (National Park Service 2005:7–8).

Military Construction Near the Project Area

In 1867, a post-and-pole fence was constructed at the northern edge of the reservation, separating the military land from the rancho land immediately north of it. Additionally, granite posts were placed at the angles of the boundary line (National Park Service 2005:8). These markers were near, but outside, the Project area.

No further development took place near the Project area until almost 30 years later, when residents of Sausalito petitioned for construction of a road to join the town with the new fog station on Lime Point. Congress finally approved construction of the road in 1894, but left the funding of it to the town of Sausalito. The residents were unable to raise the necessary funds, but in 1901 the Army saw the usefulness of overland access to its fort and undertook its construction (National Park Service 2005:10). The road, now called East Road, was originally 18 feet wide but was expanded in 1945 (National Park Service 2005:10, 37). An entrance gate was built in 1901 at the boundary between the Reservation and the town, just north of the Project area, and a post-and-pole fence was built on the cliff side of the road from this entrance gate south to Battery Cavallo in 1905 (National Park Service 2005:10, 56), separating the Project area from the road.

The Lime Point Military Reservation was renamed Fort Baker in 1897, in honor of Colonel Edward Dickinson Baker (National Park Service 2005:11). The Army expanded the fort facilities, primarily far south of the Project area near the Parade Ground, and introduced nonnative grasses and trees to control erosion and reduce wind. Nearer the Project area, the 1901 entrance gate was replaced in 1903 with a more substantial structure:

The Sausalito entrance gate...featured cast iron ornamental finials on brick pillars with cannons set in their centers. The Benicia Arsenal provided the cannons as well as two 10-inch cannonballs to adorn the gate, which was built circa 1903. This substantial structure replaced the wood gate that had been built in conjunction with the road to Sausalito (National Park Service 2005:18).

The cove in which the Project area is situated was known by several informal names by local residents. One of these names was Tide Gauge Beach, because of a tide gauge that the Coast Guard had reportedly mounted on the cliff face there (Frank 1994). Another source identifies the Coast Guard facility as a station, rather than simply a gauge mounted on a cliff face (Marin Conservation League 1946). In 1937, the Army replaced the tide gauge with a mine dispersion pier in the cove, at which mine-planting

vessels were berthed in the 1930s and 1940s (National Park Service 2005:23, 35). The dispersion pier remained in place until the wastewater treatment plant was built, and is visible in Figure 4.

Sailors Cemetery

According to historical documents, an informal cemetery was established somewhere in the vicinity of the Project site to receive the remains of sailors who died while serving on ships anchored in the Bay. The earliest record that has been found so far, in an 1880 history of Marin County, describes the cemetery and its location:

Some distance south of the site of old Saucelito, on the brow of a hill overlooking the bay, there is an enclosure about forty feet square containing, perhaps, a dozen graves of seamen (Munro-Fraser 1880:390).

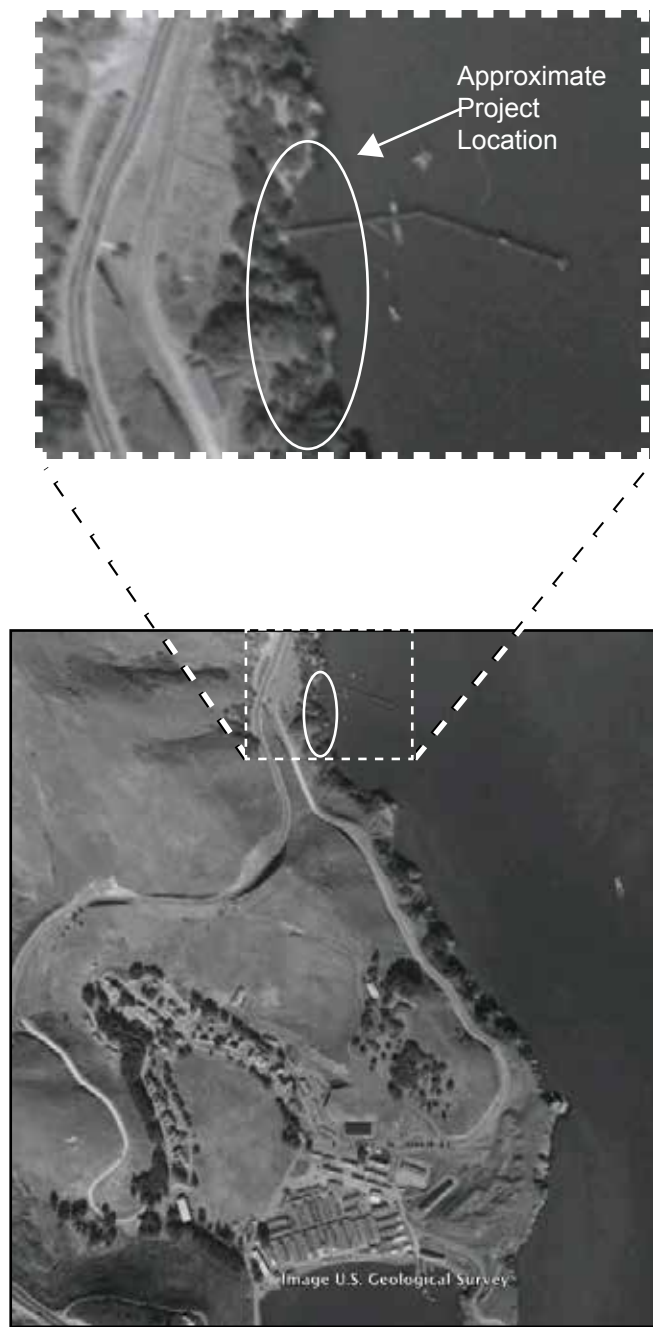
The account transcribes the headstones of two sailors, Henry Mortimer and Maurice McGrath, who died in 1850 and 1855, respectively. The enclosure probably consisted of a wooden fence, although it is not described; it is additionally thought that the other graves may have been marked with wooden markers rather than stone markers. Munro-Fraser also states that many Russian sailors who had died on ship of a contagious disease had been buried not in the cemetery but “in shallow graves extending from the beach back some distance in a little gulch”, which were already being washed out by the tide (Munro-Fraser 1880:390).

Unfortunately for the eternal sleepers, the shoreline along the Bay is prone to erosion. As early as 1904, the *Sausalito News* reported that:

Last Monday Coroner Sawyer was called to Fort Baker to secure the remains of two bodies which had been buried near the shore years ago, and by the continual washing of the water the banks had given away exposing the skeletons. They were buried at the county farm (Anon 1904).

The “county farm” was the Marin County Poor Farm, which was established in 1880 to provide shelter and a useful vocation to the county’s elderly and poor residents (Geary 2011). The farm, located in present-day San Rafael, contained a cemetery in which indigent and unclaimed burials were interred.

Given that isolated burials outside of formal cemeteries was relatively common in the mid-nineteenth century in this area, it is not clear whether the two unidentified burials referenced in the news article above had been buried at the Sailors Cemetery or whether they were buried elsewhere. However, it is clear that burial along the bayshore was a temporary establishment—the erosion caused by the Bay constantly eats away at the land, creating the dramatic bluffs and steep slopes that characterize southern Marin County.



Source: Google Earth



Figure 4. 1946 Aerial Photograph

Headworks and Facility Upgrade Project



Figure 5. Gravestones of Henry Mortimer (left) and Maurice McGrath (right) in the Mare Island historical cemetery. Source: findagrave.com

In 1916, the bodies of Mr. Mortimer and Mr. McGrath along with their grave markers were removed from an unspecified location within Fort Baker and reinterred at the cemetery on Mare Island (Sharpe 1916:6). The headstones, engraved exactly as transcribed in 1880, have been restored and mark some of the earliest remains at the historic cemetery at Mare Island (Figure 5). However, no mention is made of the removal of any other burials from Fort Baker, suggesting that the other graves were no longer visible in 1916—a particular probability if they were marked with crude wooden markers rather than stones.

Around the same time, according to an oral history given in the 1980s, two sailors aboard a pair of German merchant ships were interred either at the Sailors Cemetery or near to it:

During World War I, two German sailing ships anchored out off the Walhalla, and asked for refuge. There were two dead sailors aboard. They were buried side by side at a site below the present road to Fort Baker – between the Beach and the road – after you passed the guards [the Fort Baker entrance gate] and before coming to Fisherman’s Beach. Two head stones were set in place where the German sailors were buried. The Sausalito Sewage Disposal plant is located where Fisherman’s Beach once was (Nau 1984).

A search was made through the *Sausalito News* during the 1910s for details of this incident. Several articles were written about the German merchant ship *Ottawa*, which anchored in Richardson’s Bay in 1914 and was still present when war broke out. It was seized by the U.S. government and its crew was interned. The crew, which had been welcomed into Sausalito society, was eventually sent back to

Germany in 1919 aboard the U.S.S. *Princess Matoika* (Anon 1919). However, no mention was found of any deaths associated with *Ottawa* or any other German ship.

Mr. Nau's recollection provides evidence that the area in the vicinity of the Project site—that is, between the northern edge of Fort Baker and the treatment plant, and between the road and the beach, was used as a burial ground. Presumably the German sailors were buried at the Sailors Cemetery, if said cemetery was still visible at the time. However, considering that two stone-marked graves were removed from the Sailors Cemetery in 1916 and no other stone-marked graves have been recorded in the area, it is possible that Mr. Nau somehow confused the graves of the German sailors with those of Mr. Mortimer and Mr. McGrath.

Local memory of the cemetery persisted through the mid-twentieth century. A 1946 guide to sights in Marin County identified the Project location as sitting within "Dead Man's Cove." The guide attributed the name to "a graveyard, now moulded away, in which American and English merchant ships buried seamen who died in port" (Marin Conservation League 1946). The guide incorrectly claims that all markers, including that of Mr. Mortimer, had been wooden.

The cemetery seems to have disappeared from public consciousness by the late twentieth century. In the 1980s or early 1990s, a member of the Sausalito Historical Society came upon the description of the cemetery while reading the 1880 history of Marin County, and various members of the Society undertook the task of re-locating the cemetery. Their search and findings are discussed below in Consultation with Interested Groups.

Wastewater Treatment Plant

In 1953, a wastewater treatment plant was constructed near the Project area. In its original format, the plant consisted of an office, an access road, a main structure containing primary sedimentation tanks and a filter building, and a 20-inch-diameter outfall line that emptied 400 feet offshore (Rudo 1981). While the office was mid-slope near East Road, the main structure was located within tidal waters. The treatment plant was expanded in 1987 to include secondary treatment facilities adjacent to the primary facility along the beach, a sludge thickener, and a secondary digester (Sausalito-Marín City Sanitary District 2013). A third major upgrade was implemented in 1992, when four sand filters were installed. Other minor upgrades have occurred since then, largely without earth disturbance (Sausalito-Marín City Sanitary District 2013).

Consultation with Interested Groups

Native American Heritage Commission

Danielle Brown of Archeo-Tec wrote to the Native American Heritage Commission (NAHC) in Sacramento on January 29, 2013, to ask whether any portion of the present project area may encroach upon any sites or associated cultural resources that may be deemed sacred by members of the local Native American Community. On behalf of the NAHC, Debbie Pilas-Treadway wrote back on March 15, 2013, that the NAHC knew of no specific sacred lands near the Project site. Ms. Pilas-Treadway provided contact information for four individuals who might have more specific knowledge of the area.

Ms. Brown wrote to each of the individuals on March 26, 2013. Having received no response, Michelle Touton called each of the individuals on May 14, 2013; the following table summarizes those calls:

Name	Affiliation	Result
Greg Sarris, Tribal Chairman	Federated Indians of Graton Rancheria	Left voicemail with Mr. Sarris' assistant
Frank Ross	Federated Indians of Graton Rancheria	Left voicemail
Gene Buvelot	Federated Indians of Graton Rancheria	Phone number no longer valid
C.J. Belleau	Ya-Ka-Ama	Ya-Ka-Ama has no comment

Copies of all written correspondence with Native American groups and individuals are contained in Appendix I.

Sausalito Historical Society

Ms. Touton visited the Sausalito Historical Society on January 23, 2013, to review the documents in their collection pertaining to the Sailors Cemetery. Many of the documents cited in the Historical Background above were graciously provided by the historical society.

As mentioned in the Historical Background, members of the historical society undertook to re-locate the site of the Sailors Cemetery beginning in the early 1990s. Phil Frank, then chairman of the Sausalito Historical Society, documented the search for the cemetery site in a letter to a historian at the Golden Gate National Recreation Area (Frank 1994). As part of the search, Mr. Frank interviewed longtime Sausalito residents Pauline and Vivian Ratto. As transcribed by Mr. Frank, the Rattos recalled:

In the 1920's we'd go to swim at Tide Gauge Beach. To get to it we'd walk past the little Fort Baker guard house, we'd climb over the fence and we'd go down this very steep trail. About half way down you could see a level place with oak trees. This was the Old Sailors' Graveyard. It was quite abandoned at the time. There was a wooden bench and you could see the outlines of where the graves were – maybe a dozen graves. Antoinette Martola told us recently that her parents said that long ago picnickers going to Tide Gauge Beach would take the fences and crosses from the graves to use as firewood (Frank 1994).

In December 1994, following the Rattos' directions, Mr. Frank identified the top of a trail near the stop sign at Alexander Avenue and East Road and followed it down to the area now thought to be the cemetery site. Mr. Frank and other members of the historical society cleared as much of the invasive Scotch broom that covered the site as they could, and removed the bottles, cans, and other debris that had fallen from the road above. At the time, the suspected cemetery site was distinguished by three characteristics:

1. Its flatness, being cut into the hillslope;
2. The presence of a partially subsurface brick structure, which Mr. Frank identified as a possible burial vault; and
3. A series of short, upright iron posts about one foot high, possibly marking the boundaries of the site.

The find was reported in several local papers, including *Marinscope*, *the Marin Independent Journal*, and *the San Francisco Chronicle* (Nolte 1994; Peterzell 1995; Wright 1994). The papers included photographs of the cleared area with stakes visible, as well as of the brick feature. Unfortunately, the three articles contained many inconsistencies and errors. The *Marinscope* article mentioned the existence of “part of a bench” on site, but did not mention the brick feature, so it is possible the writer confused the Rattos' account of a wooden bench with the brick feature or interpreted the brick feature as a foundation on which a bench had been placed (Wright 1994). The *Marinscope* article reported that there were five stakes, which the writer said were grave markers, while the *Marin Independent Journal* reported only four stakes, which it said were part of the brick feature (Peterzell 1995; Wright 1994).

A portion of the cleared area, including the brick feature, fell to the beach below during a storm sometime between 1995 and 2001; pieces of the brick feature are still on the beach and were examined as part of the site survey. The 2001 archaeological survey of East Fort Baker linked the pieces of the brick feature with intact brick foundations further upslope that matched the location of the 1901/1903 entrance gates (Anthropological Studies Center 2001:20), but given that the feature was intact and within the suspected cemetery area in 1994, this tentative identification was clearly incorrect.

Mr. Frank reported his findings to the Golden Gate National Recreation Area (Frank 1994), and in January 1995 members of the Sausalito Historical Society met with representatives of the National Park Service to examine the identified location and develop a treatment plan for the resource (Haller and Barker 1995). At the meeting, it was determined that the identified site and its surroundings should be archaeologically surveyed and recorded on State of California Archaeological Site Inventory forms. As the records search at the NWIC did not identify any information about the rediscovery of the cemetery, and no site records were found specific to it, it appears this task was not completed.

The historical society had no records of any action regarding the Sailors Cemetery after the January 1995 meeting.



Figure 6. Pieces of the brick feature on the beach below the suspected cemetery site, amongst boulders and other fallen debris.

Archaeological Survey

On December 19, 2012, archaeologists Michelle Touton and Austen Wianecki performed a survey of all areas within the Project site that were currently undeveloped but would be affected by the Project, including the suspected cemetery area. The archaeologists found no evidence of cultural resources in any of the areas they surveyed outside the areas described below.

The archaeologists recorded the brick sections on the beach, the suspected cemetery site, and portions of the slope above as a single historic feature. All aspects of the beach area and suspected cemetery site areas were photographed, and the brick sections were drawn and measured. A note was made of the historic-era and recent trash and debris found at the suspected cemetery site and upslope of it. Two brick samples were collected, one from the beach and one from upslope of the suspected cemetery site.

Beach Area

On the beach area, five major sections of the brick structure as well as a dozen or more smaller sections and individual bricks were recorded scattered across an area 70' by 30' (Figure 6). It is likely that some bricks or small brick sections have been washed into the bay by tidal action. The largest brick section measured 9' by 3'5.5", but was incomplete. The smallest of the major sections measured 2' by 2'0.1". Each section was 8.5" thick. The brick sample collected from the beach area, which was representative of all of the bricks from the structure, measured 8.5" by 3.75" by 2.5". The major sections appear to consist of the four walls of the brick structure identified within the suspected cemetery area in 1994, and appear to have a finished top edge rather than having been fully enclosed.

Elsewhere within the brick scatter area on the beach, two items were noted but not collected: a relatively unweathered wooden board measuring 6" by 2" by about 20', and a length of rebar embedded in a piece of concrete.

Halfway up the cliff face separating the suspected cemetery site from the beach scatter, other parts of the brick structure were identified on top of a slough of earth. The slough clearly resulted from the landslide that brought the brick structure to the beach. The two features on the slough were a sheet of



Figure 7. Small wooden ladder/steps visible within the slough halfway up the cliffside between the suspected cemetery site and the beach.

mortared bricks, only one course thick, that appeared to be either a floor or ceiling to the brick structure, and a short wooden ladder or set of steep steps. A picture of the brick structure in 1994 (Nolte 1994) showed that it had no visible ceiling, which suggests the brick sheet was its floor. As the floor would have been the deepest buried portion of the structure, and thus the most resistant to movement, it makes sense that it would have slid only as far as the dirt slough while the superstructure would have fallen all the way to the beach. The brick sheet measured about 2' by 3.5', with uneven edges, and was 4.5" thick. One face was partially covered in smooth mortar or plaster.

The ladder segment was partially buried, so overall dimensions could not be determined. However, two steps were visible (Figure 7). The ladder was constructed of boards measuring 1" by 4". The legs of the ladder had notches carved into them into which the steps were fitted and nailed at a slight angle. The steps were spaced approximately 8" apart. On the visible end of the ladder, one corner was notched in each leg; each notch had three holes indicating where the end of the ladder had been nailed into something else. It was unclear whether the ladder was associated with the brick structure.

Suspected Cemetery Area

The flat suspected cemetery area had become overgrown again since the historical society members cleared it in 1994, although many of the Scotch broom and other shrubs had recently been trimmed or



Figure 8. The suspected cemetery area, showing one of the iron stakes in the foreground. In the background, the land stops abruptly where it has fallen to the beach below.

removed by a survey team. The ground was thickly covered in needles and other vegetative debris, which the archaeologists partially cleared in order to view the ground surface directly. The soil was observed to be highly organic and contained large amounts of decomposing vegetable matter. It was generally described as a reddish/purplish medium brown moist friable silt with a slight clay content.

Two types of stakes were observed: the iron stakes noted in the newspaper articles of the discovery in 1994 and visible in a photo of the cleared suspected cemetery site taken at that time (Peterzell 1995), and recently placed wooden surveyors stakes marking an estimate of the APE and a later formal survey of the APE. Although one newspaper account mentioned five iron stakes in 1994, only four were observed. The stakes were hollow iron pipes, about 1" in diameter, identical to those employed elsewhere along the steep slopes to hold shoring boards in place (Figure 8). Although the stakes were identical in form to those shoring posts, they were possibly different in function as the suspected cemetery site is level and should not have required shoring in its interior.

In addition to the stakes, one long board was observed parallel to the cliff face and mostly buried. The board measured 2" by 4" by 22.5', but was highly disintegrated in places and may have originally been longer (Figure 9). This board may have marked the cemetery edge, or might have been used for shoring.



Figure 9. Partially buried and disintegrating wooden board (parallel to and underneath tape measure).

Several pieces of debris were identified in the suspected cemetery site as having obviously fallen from farther upslope. The largest of these was a gatepost, recorded in the 2001 archaeological survey but not in the 1994 reports on the finding of the cemetery (Figure 10). It probably fell from upslope in the late 1990s, possibly at the same time that the brick structure fell onto the beach. The gate post was a stout whitewashed post, 6" by 6" by 8', with a pyramidal top and a broken bottom. A large iron hinge was attached to the post 3' from the bottom end, with axe notches cut around it. On one side, several nail heads extended about $\frac{3}{4}$ " from the post, suggesting that they had once secured a fenceboard to the post. Other debris observed on the suspected cemetery site were alcohol bottles dating from the mid-twentieth century to the modern day and a piece of Styrofoam.

Upslope Area

Upslope of the suspected cemetery site, the archaeologists encountered the path described by the Rattos and followed it up to the road. They also walked transects immediately upslope of the suspected cem-



Figure 10. Wooden gate post, probably dating to the Fort Baker era, lying within suspected cemetery area.

etary area and within ten feet of the path, where it was safe to do so despite the otherwise steep slope. The archaeologists found and collected a brick, possibly relating to the brick foundations described in the 2001 archeological survey and which was thought at the time to be the origin of the brick segments currently on the beach. Although the collected brick had the same dimensions as the sample collected from the beach, it was of a cruder paste, had larger inclusions, was more friable, and was more orange in color. The mortar attached to the upslope brick was similarly less uniform than the mortar attached to the beach brick. The upslope brick was consistent with an early twentieth-century construction, such as the entrance gate, while the beach brick appeared far more modern.

Other debris observed on the slopes above the suspected cemetery site and around the path included plastic reflectors, pieces of guard rail, chunks of concrete, relatively modern food cans, and alcohol bottles dating from the mid-twentieth century to the present.

Preliminary Findings

Although it is certainly possible that the flat “cemetery site” is indeed the historic location of the Sailors Cemetery, no evidence of it was observed. The brick structure, which was intact at the edge of the flat area in 1994 but has since fallen onto the beach below, appeared to be of relatively modern construction and is more likely associated with the treatment plant than with the Fort Baker gate house or with a nineteenth-century cemetery. The iron stakes observed in 1994 and still present on site might be markers from the cemetery, but again are equally likely associated with shoring activities. No human remains or grave indicators were observed anywhere, with the possible exception of the partially buried and disintegrating board, which might be a boundary marker or might be a piece of shoring.

If the identification of the cemetery site is correct, there would probably still be a dozen or so burials within it, possibly interred as late as the 1910s. However, bearing in mind the dramatic changes to the shoreline in the last twenty years, let alone the last 150 years, it is also possible that the cemetery had formerly been located in this area but has fully eroded into the bay. Indeed, the cemetery was reported to be 40 feet square in 1880, which is larger than the area now thought to be the cemetery site. Even if the cemetery had indeed been in the identified place, at least half of it must have already fallen into the bay. Considering no human remains have been seen in this area, it seems unlikely that an intact cemetery existed in this location.

However, because oral histories do identify this general location as having housed a cemetery, it is recommended that testing take place within those portions of the suspected cemetery site that will be directly impacted by proposed construction. Considering the instability of the suspected cemetery site, the parameters of the testing program would be largely determined by safety concerns. For instance, while employing machine excavation would be easier and more cost-effective in locating burials that may be several feet underground, the instability of the suspected cemetery area may preclude the use of heavy machinery. In such a case, it may be preferable to remove a relatively shallow layer of soils in an attempt to identify burial pit outlines, or to place a grid of hand-augered test holes instead.

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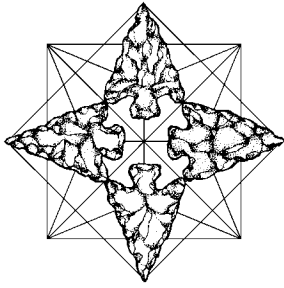
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Appendix I: Consultation



ARCHEO-TEC
CONSULTING ARCHAEOLOGISTS

Ms. Debbie Pilas-Treadway
Native American Heritage Commission
915 Capital Mall, Room 364
Sacramento, CA 95814

29 January 2013

Subject: Fort Baker Cemetery Project, site located at Fort Baker, a Portion of the Golden Gate National Recreation Area, Marin County, California.

Dear Ms. Pilas-Treadway,

I am conducting a cultural resources assessment in the county of Marin, California. The proposed project is located and described as follows:

Upgrade and expand their wastewater treatment facility located on the north east side of Fort Baker as provided by a 1953 Army Easement Agreement (expires in 2017). The upgrades will reduce the current frequency of system problems and improve SMCS D's ability to prevent sewage leaks and spills into the Bay. The project is located within Township 1S and Range 6W of the 2012 US Topo, San Francisco North, CA.

At this time, I request that you consult the Native American Heritage Commission's Sacred Land File to determine whether the above-mentioned project will encroach upon any areas deemed sacred by the Native American community. If possible, please send any response you may have by February 12, 2013. As always, please feel free to fax the information you may find in regard to this project.

Sincerely,

Danielle M. Brown
Archeo-Tec, Inc.

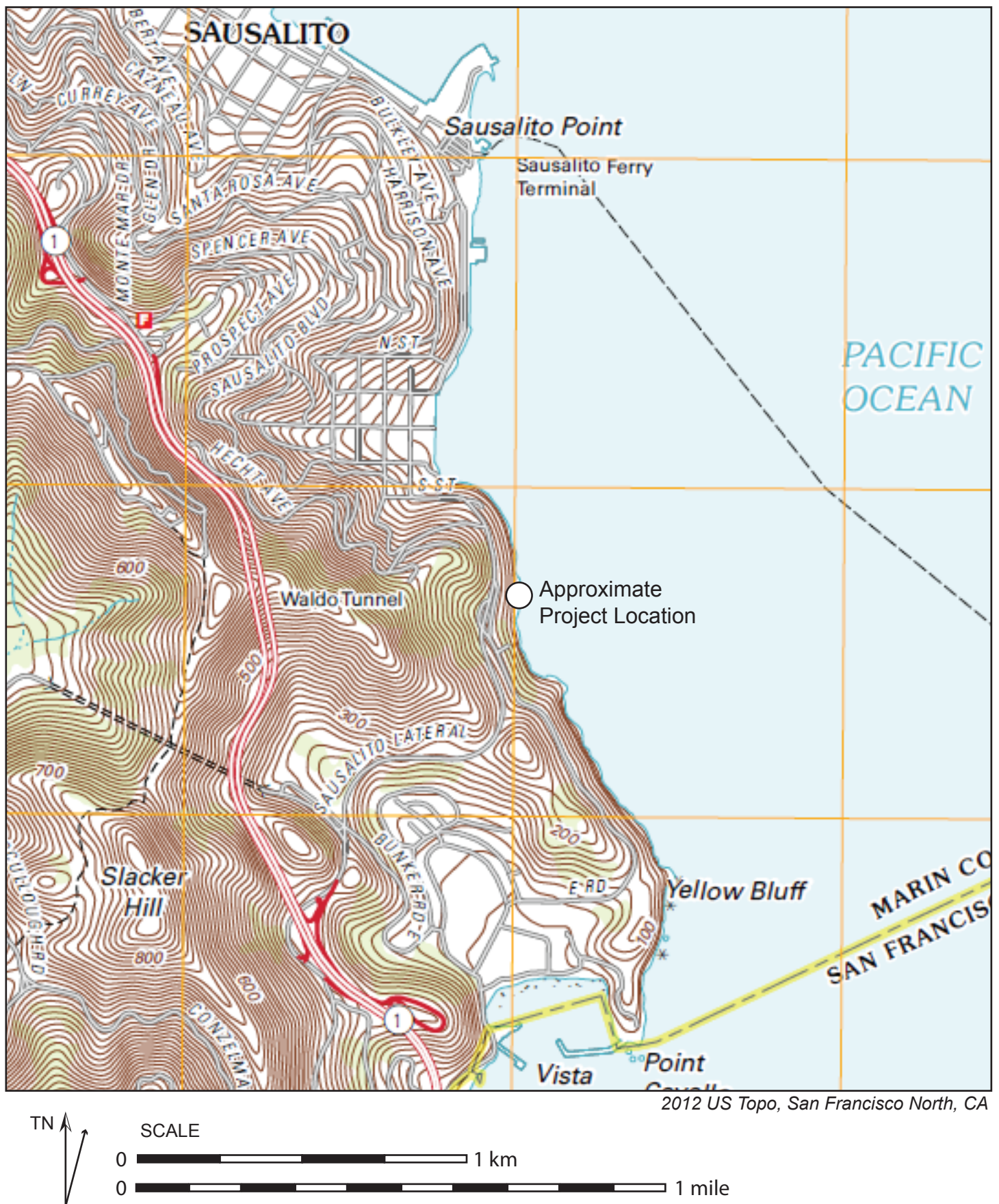


Figure 1. Project Location Map.

Headworks and Facility Upgrade Project

STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 384
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390



March 15, 2013

Danielle Brown
Archeo-Tec
5283 Broadway
Oakland, CA 94618

Sent by Fax: 510-601-8203
Number of Pages: 2

Re: Fort Baker Cemetery Project, Marin County

Dear Mr. Brown:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

A handwritten signature in dark ink, appearing to read "Debbie Pilas-Treadway".

Debbie Pilas-Treadway
Environmental Specialist III

**Native American Contacts
Marin County
March 13, 2013**

The Federated Indians of Graton Rancheria

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coastmiwok@aol.com
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The Federated Indians of Graton Rancheria

Greg Sarris, Chairperson

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Ya-Ka-Ama

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Forestville , CA 95436 Coast Miwok
cbelleau@yakaama.org, Wappo
(707) 887-1541

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Fort Baker Cemetery project, Marin County

Subject: SMCSD Headworks and Facility Upgrade Project
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 3/26/2013 11:17 AM
To: coastmiwok@aol.com

Dear Mr. Buvelot and Mr. Sarris,

The Sausalito-Marin City Sanitary District (SMCSD) is proposing improvements to its water treatment plant to bring it into compliance with regulatory requirements, including the relocation of the access road to allow construction of new treatment facilities within the existing plant footprint. We are conducting a cultural resources evaluation for this project, within Fort Baker, a part of the Golden Gate National Recreation Area, located near Sausalito in southern Marin County, California (see attached map).

The Native American Heritage Commission in Sacramento has conducted a search of the Sacred Lands File and reports no Native American cultural resources in the project area. A cultural resources record search conducted at the Northwest Information Center at Sonoma State University found that despite several archaeological studies of the area, no evidence of any indigenous sites has been found. Additionally since the site is on a steep slope, it appears unsuitable for habitation.

If you have any information concerning surface or sub-surface cultural resources, including sacred sites, near this project area, please contact us as soon as possible.

Sincerely,
Danielle Brown
Archeo-Tec

Archeo-Tec
5283 Broadway
Oakland, CA 94618
(510)601-6185
(510)601-8203 fax

—Attachments:—

SMCSD Headworks and Facility Upgrade Project.pdf

1.1 MB

Subject: SMCSD Headworks and Facility Upgrade Project
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 4/15/2013 1:19 PM
To: gsarris@gratonrancheria.com

Dear Mr. Sarris,

The Sausalito-Marín City Sanitary District (SMCSD) is proposing improvements to its water treatment plant to bring it into compliance with regulatory requirements, including the relocation of the access road to allow construction of new treatment facilities within the existing plant footprint. We are conducting a cultural resources evaluation for this project, within Fort Baker, a part of the Golden Gate National Recreation Area, located near Sausalito in southern Marin County, California (see attached map).

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If you have any information concerning surface or sub-surface cultural resources, including sacred sites, near this project area, please contact us as soon as possible.

Sincerely,
Danielle Brown
Archeo-Tec

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Oakland, CA 94618
(510)601-6185
(510)601-8203 fax

—Attachments:—

SMCSD Headworks and Facility Upgrade Project.pdf

1.1 MB

Subject: RE: SMCSO Headworks and Facility Upgrade Project
From: Greg Sarris <GSarris@gratonrancheria.com>
Date: 4/15/2013 1:22 PM
To: Archeo-Tec <archeo-tec@archeo-tec.com>

Hello Danielle,

I have forwarded this email to appropriate staff.

Thank you,
Angela

Angela M. Hardin
Assistant to Greg Sarris
Tribal Chairman
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300 ☎ Rohnert Park, CA 94928
P 707.566.2288 ☎ F 707.586.2955
ahardin@gratonrancheria.com
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Federated Indians of Graton Rancheria and Tribal TANF of Sonoma & Marin - Proprietary and Confidential
CONFIDENTIALITY NOTICE: This transmittal is a confidential communication or may otherwise be privileged. If you are not the intended recipient, you are hereby notified that you have received this transmittal in error and that any review, dissemination, distribution or copying of this transmittal is strictly prohibited. If you have received this communication in error, please notify this office, and immediately delete this message and all its attachments, if any

Subject: SMCSD Headworks and Facility Upgrade Project
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 3/26/2013 11:20 AM
To: miwokone@yahoo.com

Dear Mr. Ross,

The Sausalito-Marín City Sanitary District (SMCSD) is proposing improvements to its water treatment plant to bring it into compliance with regulatory requirements, including the relocation of the access road to allow construction of new treatment facilities within the existing plant footprint. We are conducting a cultural resources evaluation for this project, within Fort Baker, a part of the Golden Gate National Recreation Area, located near Sausalito in southern Marin County, California (see attached map).

The Native American Heritage Commission in Sacramento has conducted a search of the Sacred Lands File and reports no Native American cultural resources in the project area. A cultural resources record search conducted at the Northwest Information Center at Sonoma State University found that despite several archaeological studies of the area, no evidence of any indigenous sites has been found. Additionally since the site is on a steep slope, it appears unsuitable for habitation.

If you have any information concerning surface or sub-surface cultural resources, including sacred sites, near this project area, please contact us as soon as possible.

Sincerely,
Danielle Brown
Archeo-Tec

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5283 Broadway
Oakland, CA 94618
(510)601-6185
(510)601-8203 fax

— Attachments: —

SMCSD Headworks and Facility Upgrade Project.pdf

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Subject: SMCSD Headworks and Facility Upgrade Project
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 3/26/2013 3:47 PM
To: cbelleau@ya-ka-ama.org

Dear Mr. Belleau,

The Sausalito-Marin City Sanitary District (SMCSD) is proposing improvements to its water treatment plant to bring it into compliance with regulatory requirements, including the relocation of the access road to allow construction of new treatment facilities within the existing plant footprint. We are conducting a cultural resources evaluation for this project, within Fort Baker, a part of the Golden Gate National Recreation Area, located near Sausalito in southern Marin County, California (see attached map).

The Native American Heritage Commission in Sacramento has conducted a search of the Sacred Lands File and reports no Native American cultural resources in the project area. A cultural resources record search conducted at the Northwest Information Center at Sonoma State University found that despite several archaeological studies of the area, no evidence of any indigenous sites has been found. Additionally since the site is on a steep slope, it appears unsuitable for habitation.

If you have any information concerning surface or sub-surface cultural resources, including sacred sites, near this project area, please contact us as soon as possible.

Sincerely,
Danielle Brown
Archeo-Tec

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5283 Broadway
Oakland, CA 94618
(510)601-6185
(510)601-8203 fax

— Attachments: —

SMCSD Headworks and Facility Upgrade Project.pdf

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Subject: SMCSD Headworks and Facility Upgrade Project
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 4/15/2013 1:40 PM
To: director@ya-ka-ama.org

Dear Ms. Steele,

The Sausalito-Marín City Sanitary District (SMCSD) is proposing improvements to its water treatment plant to bring it into compliance with regulatory requirements, including the relocation of the access road to allow construction of new treatment facilities within the existing plant footprint. We are conducting a cultural resources evaluation for this project, within Fort Baker, a part of the Golden Gate National Recreation Area, located near Sausalito in southern Marin County, California (see attached map).

The Native American Heritage Commission in Sacramento has conducted a search of the Sacred Lands File and reports no Native American cultural resources in the project area. A cultural resources record search conducted at the Northwest Information Center at Sonoma State University found that despite several archaeological studies of the area, no evidence of any indigenous sites has been found. Additionally since the site is on a steep slope, it appears unsuitable for habitation.

If you have any information concerning surface or sub-surface cultural resources, including sacred sites, near this project area, please contact us as soon as possible.

Sincerely,
Danielle Brown
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APPENDIX C

Archaeological Testing Plan and Archaeological Resources Protection Act
(ARPA) Permit

**Archaeological Testing Plan for the
Sausalito-Marín City Sanitary District
Headworks and Facility Upgrade Project,
Fort Baker, Marin County, California**



Photograph of Fort Baker and Sausalito, including the Project area, taken in 1925.

Prepared for:

John Bock
Derek Farmer

Tetra Tech
1999 Harrison Street, Suite 500
Oakland, CA 94612

Prepared by:

Allen G. Pastron
Michelle Touton Staley

Archeo-Tec
5283 Broadway
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Introduction

This report presents an archaeological testing plan for a suspected small historic period cemetery site situated at Fort Baker, a part of the Golden Gate National Recreation Area, located near Sausalito in southern Marin County, California. The scope of work was designed to conform to both State of California (CEQA) and Federal historic preservation regulations (Section 106 of the National Historic Preservation Act, and the Archaeological Resources Protection Act).

Project Description

The suspected cemetery site is within the Area of Potential Effects (APE) for the Headworks and Facility Upgrade Project, an undertaking of the Sausalito—Marin City Sanitary District (SMCSD). The Project calls for several improvements to the water treatment plant to bring it into compliance with regulatory requirements, including the relocation of the access road to allow construction of new treatment facilities within the existing plant footprint. The relocated road would extend outside of the existing footprint, and would pass through part of the suspected cemetery site.

The treatment plant sits in a shallow cove on the bayshore, surrounded by very steep slopes. The suspected cemetery site is a small level area mid-slope adjacent to the treatment plant; the hillside below it has been eroded away into a cliff with a narrow rocky beach below.

Figures 1 and 2 depict the location of the Headworks and Facility Upgrade Project and of the suspected cemetery site in relation to the Project area.

The Archaeological APE consists of the areas in which the ground will be disturbed (Figure 3), and consists broadly of the footprint of the treatment plant itself and its access road. Vertical effects vary, reaching up to 30 feet in some places. Further detail of the horizontal and vertical extent of the Archaeological APE in the vicinity of the suspected cemetery area is given in the Research Design.

Regulatory Context

Section 106 of the National Historic Preservation Act (36 CFR Part 800) requires federal agencies, and agencies using either federal funds or operating under federal permit, to take into account the effect of their undertakings on historic properties.

The National Register is a listing of properties that are important to the history of our nation. To be eligible for listing, a property must typically be 50 years of age or more; it must possess historic significance; and it must possess integrity of location, design, setting, materials, workmanship, feeling, and association. Historic significance is the importance of a property to the history, architecture, archaeology, engineering, or cultural aspects of a community. These significant resources can be in the form of districts, sites, buildings, or structures. To qualify for the National Register, a property must be significant to American history at the local, state, or federal levels (36 CFR 60.4(a-d)), and must:

- a) be associated with events that have made a significant contribution to the broad patterns of history;
- b) be associated with the lives of persons significant to our past;
- c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) have yielded, or may be likely to yield, information important to prehistory or history.

The Project area is within a property already listed on the National Register: the Forts Baker, Barry and Cronkhite historic district. This district derives its significance from the coastal defense history of the site during the period 1866-1945 (National Park Service 2005:3–4); none of the currently listed contributing properties are within the Project area. However, it is possible that a feature may be found within the Project area that is eligible for nomination in its own right.

As the Project area is situated on federal land, any archaeological investigation must be conducted under a Permit for Archeological Investigations issued under the Archaeological Resources Protection Act (ARPA), the Antiquities Act, or both (16 USC 470ee, ff, gg; 16 USC 433). Accordingly, no part of this testing plan may be undertaken until such a permit has been secured.

Previous Findings

In February 2013, a Phase I cultural resources evaluation was carried out for the Headworks and Facility Upgrade Project (Pastron and Touton 2013). The scope of work included extensive archival

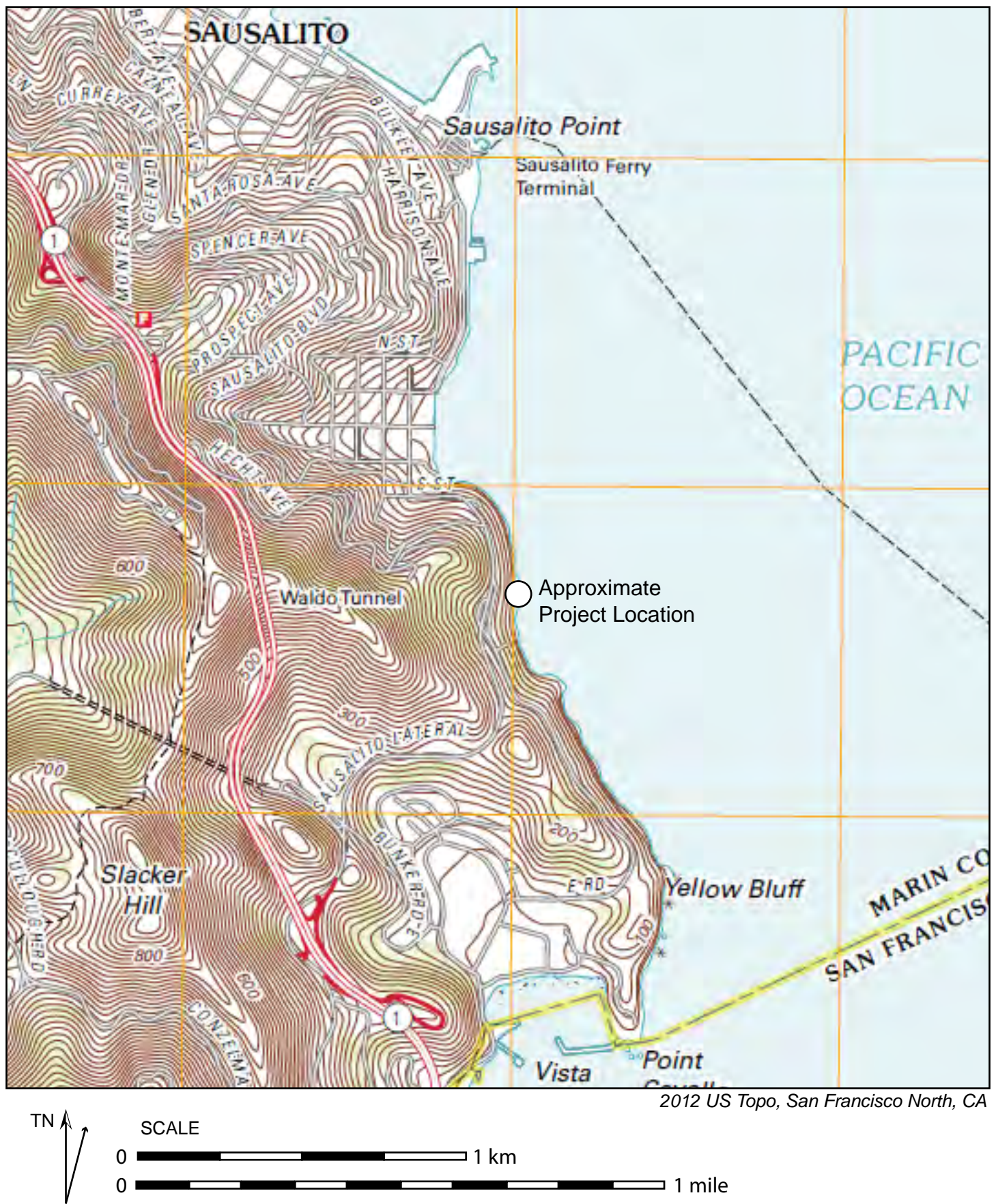
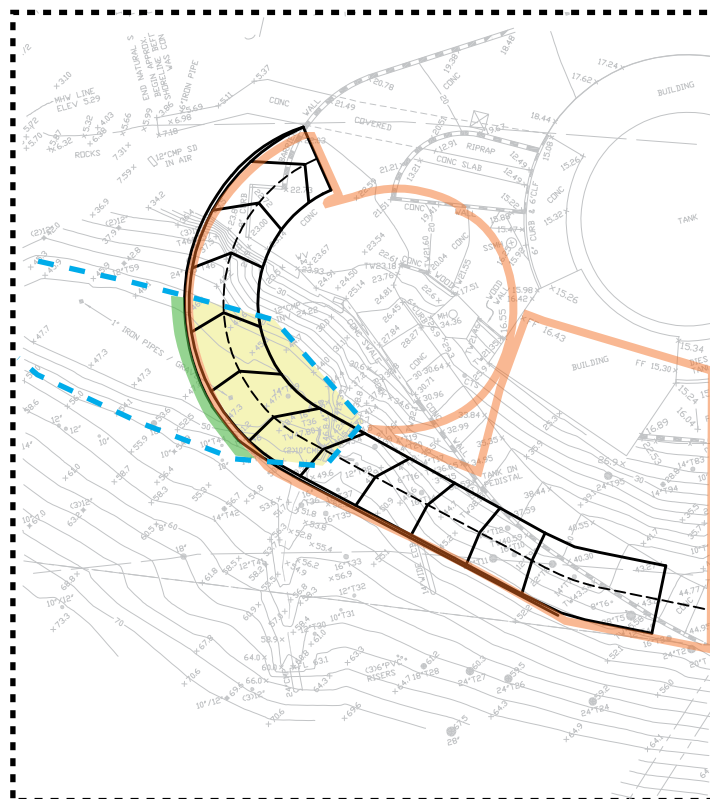
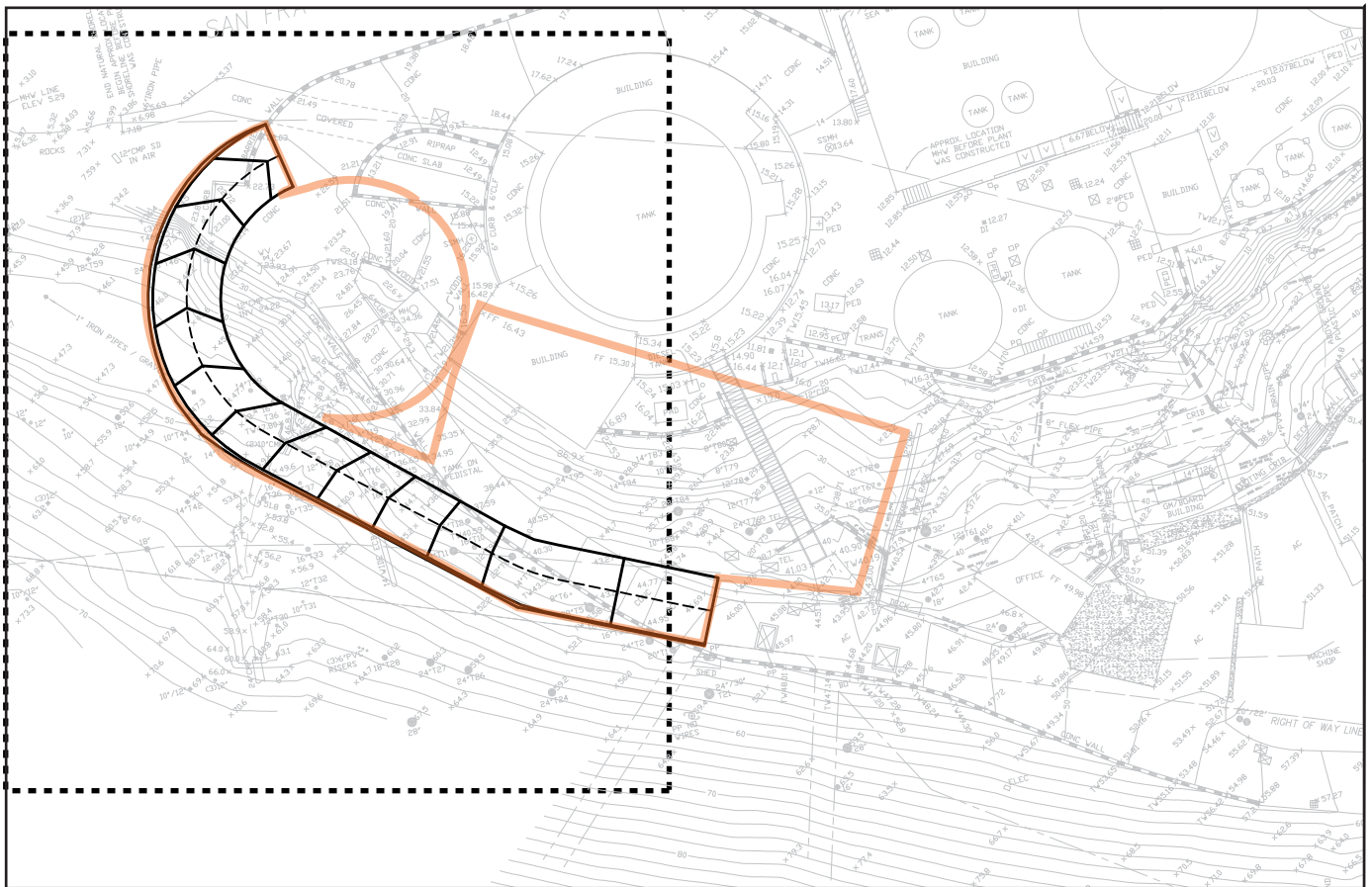


Figure 1. Project Location Map.

Headworks and Facility Upgrade Project









-  = APPROXIMATE AREA OF EXCAVATION
-  = AREA OF SUSPECTED HISTORIC CEMETERY
-  = ARCHAEOLOGICALLY SENSITIVE AREA WITHIN AREA OF MASS EXCAVATION (30 FEET)
-  = 4 FEET OF EXCAVATION FOR ROAD SLOPING
-  APPROXIMATE SCALE
0 15
-  NORTH

Figure 2. Project Site Map with Area of Suspected Historic Cemetery

Headworks and Facility Upgrade Project

research, consultation with the Sausalito Historical Society, and performance of a pedestrian archaeological surface survey. The purpose of the Phase I investigations was to determine whether the historic cemetery was present on site, what its likely location and characteristics would be, and what effect the Project would have on it.

The Phase I investigation produced mixed results. Although twentieth-century oral histories place a cemetery within the vicinity of the Project area, no archaeological evidence of it was observed and geological and historical evidence suggest that, as the shoreline is prone to heavy erosion, the landforms that existed at the time of the cemetery's founding may not have survived intact. Accordingly, further investigation is warranted.

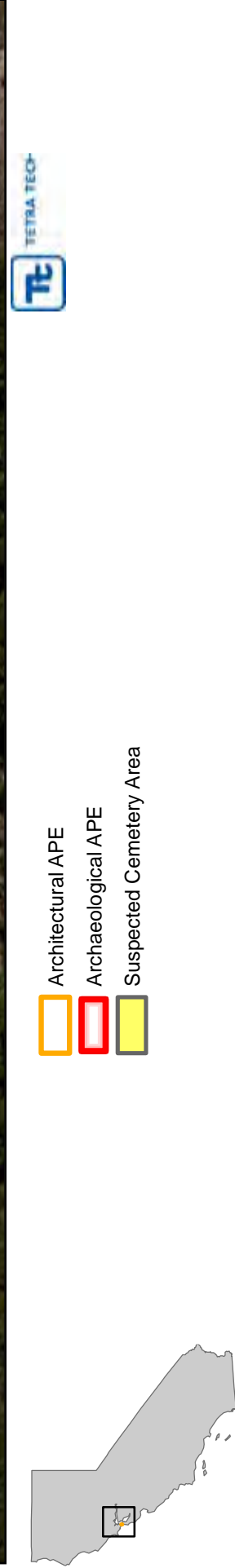


Figure 3. Area of Potential Effects (APE) Map (courtesy Tetra Tech)

Headworks and Facility Upgrade Project

Historical Background

Historical Context

The Headworks and Facility Upgrade Project is situated in what was, prior to the arrival of the first Europeans in the closing decades of the eighteenth century, territory occupied by a group of Native Californians known as the Coast Miwok.

The Coast Miwok are derived from Penutian Stock (Callaghan 1967; Pitkin and Shipley 1958), a theoretical linguistic construct which may have its origins in the northwestern Great Basin (Hattori 1982:208). Penutian-speaking peoples presumably slowly migrated into central California, perhaps as early as around 2500 B.C. (Moratto 1984:552). By A.D. 300-500, speakers of Penutian stock were firmly ensconced in the San Francisco Bay region.

The Coast Miwok exploited the nearby bay and coastline for food and vegetal resources, including shellfish, fish, reeds, water birds and small game. Willow, hazel and sedge were available along Corte Madera Creek; these materials were used in basket making. Bone tools were used for basketry, and to scrape animal hides. Acorns and buckeye which could be ground into flour were plentiful, as were grasses, ferns, wood and tule, which had many applications (Goerke 1994).

Archaeological remains of Coast Miwok habitation sites appear as midden soil deposits; these are mounds or areas that typically include charcoal, ash, dirt, shells, mammalian bones, acorn and buckeye processing implements, lithic tools, and other debris of daily life. Some such sites include human remains *in situ* (as they were buried), or in fragmentary condition due to prehistoric or modern disturbance.

A great many of the prehistoric midden sites in Marin were identified by Nels C. Nelson in 1907-8, then working as a graduate student at U.C. Berkeley. He hiked and traveled by horse around the shores of San Francisco Bay, which was then relatively undeveloped. At that point the above-ground aspects of some shellmounds were already damaged or destroyed, but Nelson identified more than 190 such sites in Marin County alone (Goerke 1994).

However, due to the Project site's location on a steep slope, and the documented erosion of the Project area within recent history, it is unlikely that indigenous resources are present within the Project area.

Spanish Control of San Francisco Bay, 1769-1821

During the sixteenth century, as Manila galleons passed along the California coast on their way to Asia, the English ship *Golden Hind* became the first ship to stop on the Marin coast and its crew—led by privateer Sir Francis Drake—became the first Europeans to set foot on Bay Area soil (Paddison 1999:159). However, probably due to the thick fog that often covers the Golden Gate, Drake's crew did not spot the San Francisco Bay. The bay would remain hidden to non-natives until 1769, when an overland party led by Gaspar de Portolá overshot Monterey Bay and found themselves in a much more advantageous harbor (Paddison 1999:5).

Within a decade, Spain had established a military presidio at the southern shore of the Golden Gate, a mission on the eastern shore of the San Francisco peninsula (San Francisco de Asís), and a second mission (Santa Clara de Asís) and a pueblo (San José) at the southern tip of the bay.

Traffic on the bay was very limited—Spain prohibited its colonies in California from trading with non-Spanish ships—and was largely confined to the waters around the presidio and missions. However, as Spanish supply ships were often infrequent, the settlements at New Spain's northern frontier had to rely on under-the-table arrangements with foreign vessels. Few of these ships entered the Golden Gate, and those that did focused on trading with the settlements in the southern half of the Bay.

The Russian-American Company

One of New Spain's most prominent illicit trading partners was the Russian-American Company, a state-sponsored chartered merchant company that maintained a monopoly over trade in Russian-controlled America and was a major player in the marine-mammal fur trade. The Company established trading colonies in what is now Alaska and the Pacific Northwest in which Russian settlers and Alaska Aleut hunters/laborers lived. These far-north colonies were too cold to farm surrounding lands to support themselves, and relied on scarce supply ships from Russia for food.

The Russian-American Company determined that it needed a more local trading partner to provide food to its colonies. On April 8, 1806, the *Juno* became the first Russian ship to pass through the Golden Gate and discover a relative paradise of cultivated fields and herds of cattle (Paddison 1999:97). The crew determined that the North Bay was untouched by Spain, and ripe for colonization. Six years later, the Company established its southernmost colony at Fort Ross to provide food for its Alaskan colonies and trade with Spanish settlements at San Francisco Bay. In exchange for food and tallow, the craftsmen at Fort Ross provided the Bay's first non-native small watercraft and other finished goods.

Spanish settlers around the bay maintained a complicated relationship with Russian traders. While trade between the nations benefitted them both, Spain had considered the entire California coast to be part of its territory and challenged Russia's right to establish a colony in Alta California. Unofficially, merchants and the missions were happy to trade with the Russians, while tensions with Spanish officials ran high and incautious merchants—both Spanish and Russian—were liable to end up temporarily imprisoned (Simpson 1999:239; von Chamisso 1999:149).

Religious and cultural differences prevented Russians from being buried alongside the Catholic Spaniards or the Protestant British and Americans. Russian naturalist Adelbert von Chamisso included a story of a Russian prisoner-of-war who was ransomed from the Spanish prison at Monterey in 1816, but soon afterwards became mortally wounded:

On the eve of departure his powder horn exploded, and he was brought back mortally wounded. He wanted only to die among Russians. The captain kept him on board out of pity, and he died on the third day of the passage. He was quietly lowered into the sea. (von Chamisso 1999:149)

The Russian-American Company established outlying bases for hunting seals and sea otters, including at the Farallon Islands. However, overhunting devastated the populations of these animals by the end of the 1810s, and the Company turned its attention to beavers and other inland game more easily accessible from Fort Ross (Lightfoot et al. 1991:6).

Settlement of Marin County

The first structure in Marin County constructed with European methods was an adobe built in 1776 by the chief of the Coast Miwok tribe at Olómpali, well north of the Project site, under the instruction of a party of Spanish surveyors led by Lieutenant Bodega (State of California 2013a). Other than short visits to explore or cut wood for use at the Spanish settlements in San Francisco, European explorers and settlers initially saw little reason to visit the North Bay. It wasn't until the founding of Mission San Rafael in 1817—not as a full mission in its own right, but as an *asistencia* whose purpose was to secure supplies to send to Mission Dolores—that long-term European settlement of Marin County began (Munro-Fraser 1880:108).

Throughout the remainder of the Spanish period, European settlement in Marin County was limited to the mission and its outlying fields.

Mexican Control of San Francisco Bay, 1822-1848

Mexico declared independence from Spain in September 1821, although news of the changeover did not reach California for seven months (Paddison 1999:167). The transition was relatively seamless, with institutions and officials continuing to operate as usual under the name of a different authority.

However, one major change did occur with Mexican independence: trade between California and foreign ships became legal, albeit subject to heavy tariffs. San Francisco Bay's importance as a trading port boomed; Paddison notes that "In 1821, the last year of Spanish control, nine ships visited California; the following year the number rose to twenty, and to forty-four in 1826" (Paddison 1999:168).

With the opening of the port to foreign trade, American and British merchants who had previously been held back by the official prohibitions now rushed in. These merchants had access to better manufactured goods at cheaper prices than those produced at Fort Ross (Lightfoot et al. 1991:19), with the result that Russian maritime traffic in the bay declined while American and British traffic rose. Anglophone merchants were primarily engaged in the hide and tallow trade—California's chief export—and spent months traveling up the California coast, calling at each mission and rancho to purchase the season's proceeds (Dana 1999).

Maritime traffic on San Francisco Bay was not restricted to merchant vessels; whaling ships also called at the port to resupply. In general, merchant ships anchored at either the Presidio or the missions to trade, while whaling ships anchored at Sausalito—which was called Whalers' Harbor (Simpson 1999:224)—to cut wood and restock water supplies. Whaling ships in San Francisco Bay were primarily under American flag; during his visit in 1826, Beechey noted the presence of seven whalers anchored at Sausalito (Hittell 1878:94).

William A. Richardson, an Englishman who arrived in California on a British whaler in 1822 and had married into a prominent Californio family, observed that money could be made by purchasing hides and tallow from Bay Area missions and ranchos and stockpiling them at Yerba Buena Cove for easy sale and transfer to the merchant ships. He applied for and was granted permission to establish a commercial house on Yerba Buena Cove in 1835, thus founding the village of Yerba Buena. Hittell summarizes the maritime economy at the time:

At least one American trading vessel visited the harbor every year; four or five whalers put into Saucelito, and several vessels came in from Sitka to purchase wheat, maize, tallow and soap. The Russian trade then, or within a few years, amounted to about forty thousand dollars annually, and the purchases were paid for in drafts drawn by the Russian-American company, payable in St. Petersburg, which drafts were always taken at par by the American trading vessels. (Hittell 1878:82)

Rancho Sausalito

All of southern Marin County, including the Project area, was granted by the Mexican government to Nicolas Galindo in 1835 under the name Rancho Saucelito (Thompson 2003). However, Galindo quickly fell out of favor with Mexican officials so when William Richardson applied for ownership of Rancho Saucelito in 1838, the governor granted his request. Richardson, an industrious man, ranched

cattle on his land and bottled spring water from the Rancho for sale in Yerba Buena in addition to serving as captain of the Port of San Francisco.

A Cultural Landscape Report prepared by the National Park Service for Fort Baker describes the natural terrain as it appeared in the 1850s-1860s:

Alternating between rocky cliffs descending more than two hundred feet, and small crescent-shaped coves at the water's edge, the property had been the southernmost extent of Richardson's Rancho Sausalito. Inland from the rocky precipice, rolling hills, ravines, and small valleys characterized the landforms of the Lime Point Military Reservation (National Park Service 2005:7–8).

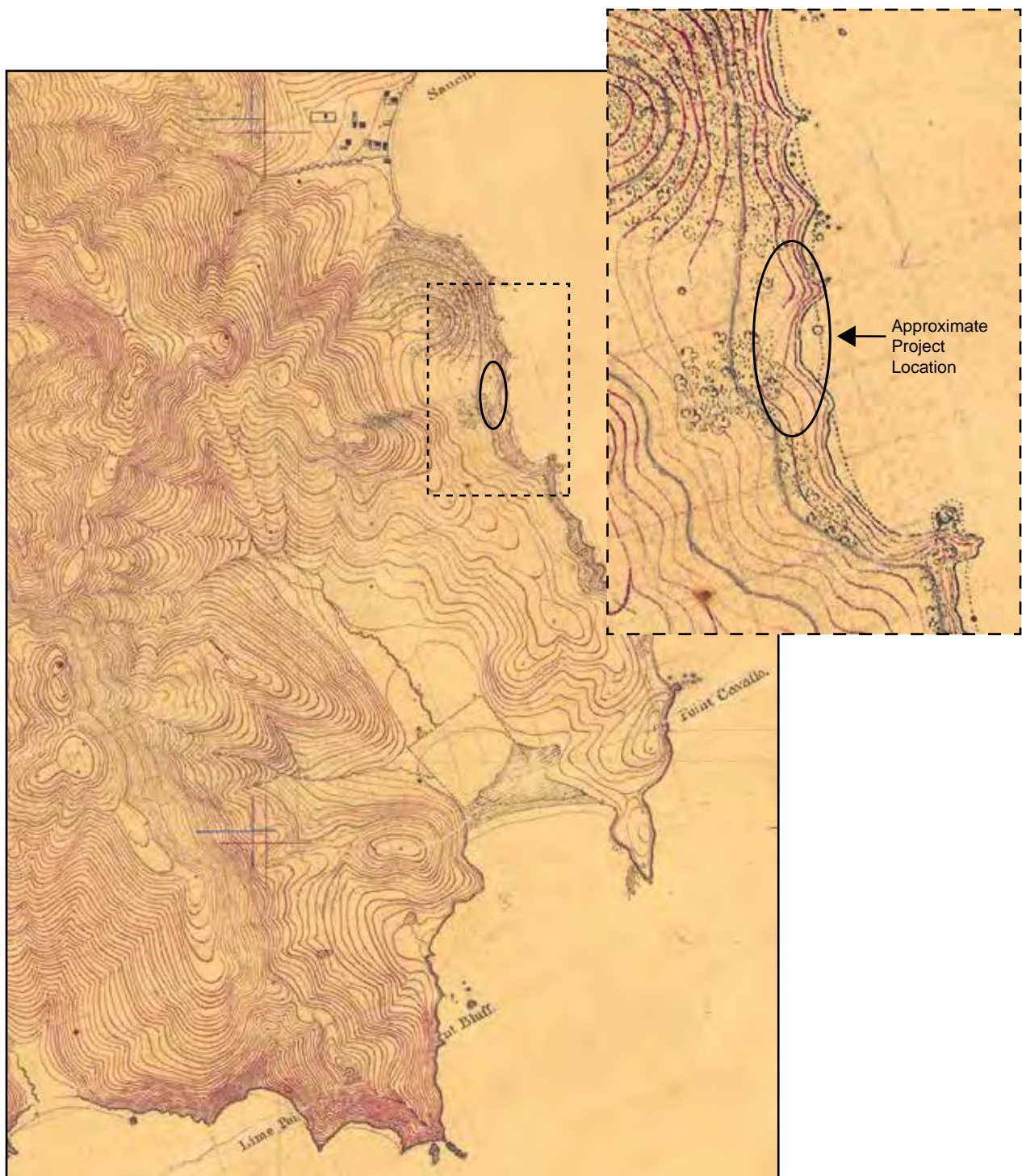
Figure 4 depicts the Project area and its surroundings in 1850, illustrating the cliffs and coves that characterized the southern portion of Rancho Sausalito. No development had occurred near the Project area. During the Rancho period, vegetation was kept low by grazing cattle, and the hillslopes were devoid of trees (National Park Service 2005:69). Visibility from the Project area to the Bay and the shorelines beyond would have been excellent.

Richardson's fortunes were dashed in 1855 when one of his ships sank with uninsured cargo (National Park Service 2005:7). He sold Rancho Sausalito to Samuel R. Throckmorton, who knew the federal government was interested in establishing a fort for coastal defense at the entrance to the Bay.

Lime Point/Fort Baker

The transition from Mexican government to American government in the late 1840s had resulted in competing claims to property. Although under Mexican law Rancho Sausalito extended all the way south to the Bay, in 1850 the American government had claimed a portion of that land to guard the entrance to the Bay. After purchasing Rancho Sausalito from Richardson, Throckmorton attempted to sell it to the American government. As the government believed it had already claimed this land, lawsuits ensued, and it was not until 1866 that an agreement was reached and the Lime Point Military Reservation was established (National Park Service 2005:7–8).

The Lime Point Military Reservation was renamed Fort Baker in 1897, in honor of Colonel Edward Dickinson Baker (National Park Service 2005:11). The Army expanded the fort facilities, primarily far south of the Project area near the Parade Ground, and introduced nonnative grasses and trees to control erosion and reduce wind.



North Side of the Entrance to San Francisco Bay. A.F. Rogers, U.S.C.S., San Francisco



Figure 4. 1850 U.S. Coast Survey Map Detail

Headworks and Facility Upgrade Project

Sailors Cemetery

According to historical documents, an informal cemetery was established somewhere in the vicinity of the Project site to receive the remains of sailors who died while serving on ships anchored in the Bay. The earliest record that has been found so far, in an 1880 history of Marin County, describes the cemetery and its location:

Some distance south of the site of old Saucelito, on the brow of a hill overlooking the bay, there is an enclosure about forty feet square containing, perhaps, a dozen graves of seamen (Munro-Fraser 1880:390).

The account transcribes the headstones of two sailors, Henry Mortimer and Maurice McGrath, who died in 1850 and 1855, respectively. The enclosure probably consisted of a wooden fence, although it is not described; it is additionally thought that the other graves may have been marked with wooden markers rather than stone markers. Munro-Fraser also states that many Russian sailors who had died on ship of a contagious disease had been buried not in the cemetery but “in shallow graves extending from the beach back some distance in a little gulch”, which were already being washed out by the tide (Munro-Fraser 1880:390). That Russian sailors would not be buried in the same cemetery as British and American sailors is unsurprising, in that the Russian sailors would have been overwhelmingly Russian Orthodox while the Anglophone sailors would have generally been Protestant.

Unfortunately for the eternal sleepers, the shoreline along the Bay is prone to erosion. As early as 1904, the *Sausalito News* reported that:

Last Monday Coroner Sawyer was called to Fort Baker to secure the remains of two bodies which had been buried near the shore years ago, and by the continual washing of the water the banks had given away exposing the skeletons. They were buried at the county farm (Anon 1904).

The “county farm” was the Marin County Poor Farm, which was established in 1880 to provide shelter and a useful vocation to the county’s elderly and poor residents (Geary 2011). The farm, located in present-day San Rafael, contained a cemetery in which indigent and unclaimed burials were interred.

Given that isolated burials outside of formal cemeteries were relatively common in the mid-nineteenth century in this area, it is not clear whether the two unidentified burials referenced in the news article above had been buried at the Sailors Cemetery or whether they were buried elsewhere. However, it is clear that burial along the bayshore was a temporary establishment—the erosion caused by the Bay constantly eats away at the land, creating the dramatic bluffs and steep slopes that characterize southern Marin County.

In 1916, the bodies of Mr. Mortimer and Mr. McGrath along with their grave markers were removed from an unspecified location within Fort Baker and reinterred at the cemetery on Mare Island (Sharpe

1916:6). The headstones, engraved exactly as transcribed in 1880, have been restored and mark some of the earliest remains at the historic cemetery at Mare Island. However, no mention is made of the removal of any other burials from Fort Baker, suggesting that the other graves were no longer visible in 1916—a particular probability if they were marked with crude wooden markers rather than stones.

Around the same time, according to an oral history given in the 1980s, two sailors aboard a pair of German merchant ships were interred either at the Sailors Cemetery or near to it:

During World War I, two German sailing ships anchored out off the Walhalla, and asked for refuge. There were two dead sailors aboard. They were buried side by side at a site below the present road to Fort Baker – between the Beach and the road – after you passed the guards [the Fort Baker entrance gate] and before coming to Fisherman’s Beach. Two head stones were set in place where the German sailors were buried. The Sausalito Sewage Disposal plant is located where Fisherman’s Beach once was (Nau 1984).

A search was made through the *Sausalito News* during the 1910s for details of this incident. Several articles were written about the German merchant ship *Ottawa*, which anchored in Richardson’s Bay in 1914 and was still present when war broke out. It was seized by the U.S. government and its crew was interned. The crew, which had been welcomed into Sausalito society, was eventually sent back to Germany in 1919 aboard the *U.S.S. Princess Matoika* (Anon 1919). However, no mention was found of any deaths associated with *Ottawa* or any other German ship.

Mr. Nau’s recollection provides evidence that the area in the vicinity of the Project site—that is, between the northern edge of Fort Baker and the treatment plant, and between the road and the beach, was used as a burial ground. Presumably the German sailors were buried at the Sailors Cemetery, if said cemetery was still visible at the time. However, considering that two stone-marked graves were removed from the Sailors Cemetery in 1916 and no other stone-marked graves have been recorded in the area, it is possible that Mr. Nau somehow confused the graves of the German sailors with those of Mr. Mortimer and Mr. McGrath.

Local memory of the cemetery persisted through the mid-twentieth century. A 1946 guide to sights in Marin County identified the Project location as sitting within “Dead Man’s Cove.” The guide attributed the name to “a graveyard, now moulded away, in which American and English merchant ships buried seamen who died in port” (Marin Conservation League 1946). The guide incorrectly claims that all markers, including that of Mr. Mortimer, had been wooden.

The cemetery seems to have disappeared from public consciousness by the late twentieth century. In the 1980s or early 1990s, a member of the Sausalito Historical Society came upon the description of the cemetery while reading the 1880 history of Marin County, and various members of the Society undertook the task of re-locating the cemetery. Phil Frank, then chairman of the Sausalito Historical Society, documented the search for the cemetery site in a letter to a historian at the Golden Gate National Rec-

reation Area (Frank 1994). As part of the search, Mr. Frank interviewed longtime Sausalito residents Pauline and Vivian Ratto. As transcribed by Mr. Frank, the Rattos recalled:

In the 1920's we'd go to swim at Tide Gauge Beach. To get to it we'd walk past the little Fort Baker guard house, we'd climb over the fence and we'd go down this very steep trail. About half way down you could see a level place with oak trees. This was the Old Sailors' Graveyard. It was quite abandoned at the time. There was a wooden bench and you could see the outlines of where the graves were – maybe a dozen graves. Antoinette Martola told us recently that her parents said that long ago picnickers going to Tide Gauge Beach would take the fences and crosses from the graves to use as firewood (Frank 1994).

In December 1994, following the Rattos' directions, Mr. Frank identified the top of a trail near the stop sign at Alexander Avenue and East Road and followed it down to the area now thought to be the cemetery site.

History of Land Use and Occupation of the Project Site

As the Project site is located along a generally unsettled stretch of coastland, until the mid-twentieth century human use was generally limited to transient activities and infrastructure designed to support activities at some distance from the Project site.

As mentioned above, the Project site was conveyed to William Richardson in 1838 as part of Rancho Sausalito; prior to that time it might have seen transient use by the Coast Miwok as part of coastal fishing or foraging activities. During the next thirty years, the Project site and the area around it was primarily used for grazing cattle, which destroyed native vegetation and increased site visibility. The erosion rate may have increased at this time.

If the Sailors Cemetery was located within the Project area, it would have been established sometime prior to 1850, which is the earlier of the dates on the two surviving headstones. The cemetery may have remained in use through the early twentieth century, or may have been abandoned when the land passed from private to restricted public control.

In 1867, when the Lime Point Military Reservation was established, a post-and-pole fence was constructed at the northern edge of the reservation, separating the military land from the rancho land immediately north of it. Additionally, granite posts were placed at the angles of the boundary line (National Park Service 2005:8). These markers were near, but outside, the Project area.

No further development took place near the Project area until almost 30 years later, when residents of Sausalito petitioned for construction of a road to join the town with the new fog station on Lime Point. Congress finally approved construction of the road in 1894, but left the funding of it to the town of Sausalito. The residents were unable to raise the necessary funds, but in 1901 the Army saw the use-

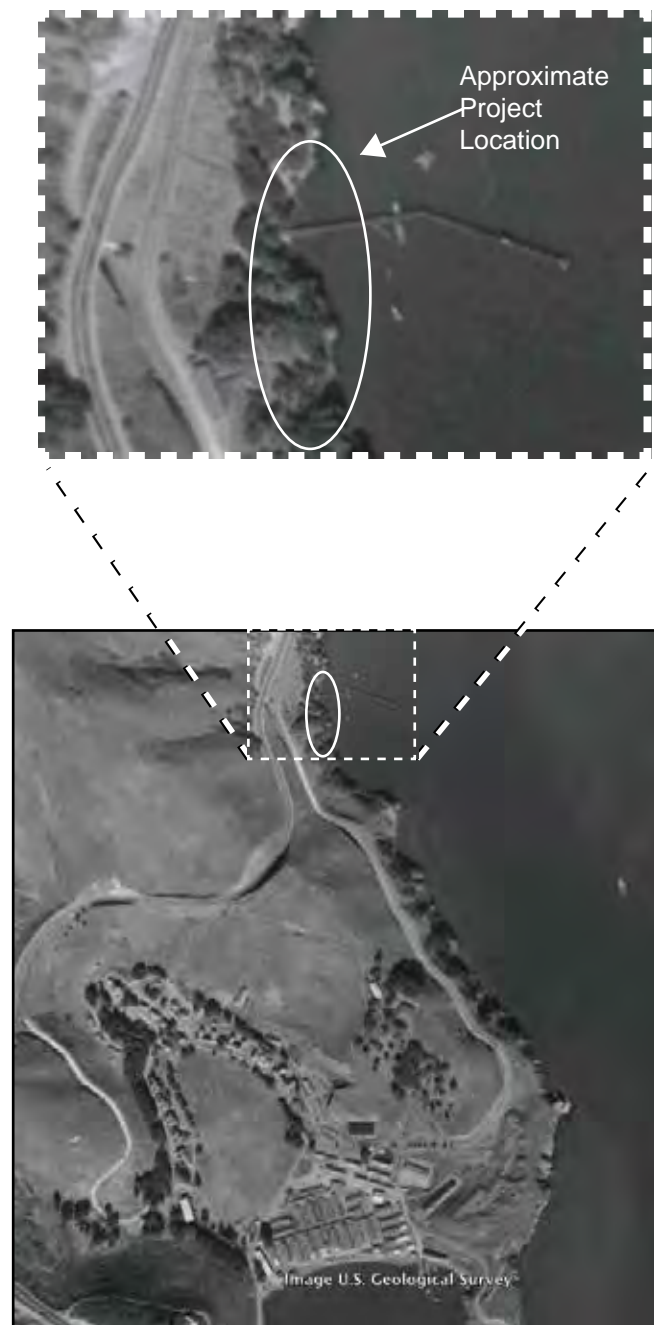
fulness of overland access to its fort and undertook its construction (National Park Service 2005:10). The road, now called East Road, was originally 18 feet wide but was expanded in 1945 (National Park Service 2005:10, 37). An entrance gate was built in 1901 at the boundary between the Reservation and the town, just north of the Project area, and a post-and-pole fence was built on the cliff side of the road from this entrance gate south to Battery Cavallo in 1905 (National Park Service 2005:10, 56), separating the Project area from the road.

The 1901 entrance gate was replaced in 1903 with a more substantial structure:

The Sausalito entrance gate...featured cast iron ornamental finials on brick pillars with cannons set in their centers. The Benicia Arsenal provided the cannons as well as two 10-inch cannonballs to adorn the gate, which was built circa 1903. This substantial structure replaced the wood gate that had been built in conjunction with the road to Sausalito (National Park Service 2005:18).

The cove in which the Project area is situated was known by several informal names by local residents. One of these names was Tide Gauge Beach, because of a tide gauge that the Coast Guard had reportedly mounted on the cliff face there (Frank 1994). Another source identifies the Coast Guard facility as a station, rather than simply a gauge mounted on a cliff face (Marin Conservation League 1946). In 1937, the Army replaced the tide gauge with a mine dispersion pier in the cove, at which mine-planting vessels were berthed in the 1930s and 1940s (National Park Service 2005:23, 35). The dispersion pier remained in place until the wastewater treatment plant was built, and is visible in Figure 5.

In 1953, a wastewater treatment plant was constructed near the Project area. In its original format, the plant consisted of an office, an access road, a main structure containing primary sedimentation tanks and a filter building, and a 20-inch-diameter outfall line that emptied 400 feet offshore (Rudo 1981). While the office was mid-slope near East Road, the main structure was located within tidal waters. The treatment plant was expanded in 1987 to include secondary treatment facilities adjacent to the primary facility along the beach, a sludge thickener, and a secondary digester (Sausalito-Marín City Sanitary District 2013). A third major upgrade was implemented in 1992, when four sand filters were installed. Other minor upgrades have occurred since then, largely without earth disturbance (Sausalito-Marín City Sanitary District 2013).



Source: Google Earth

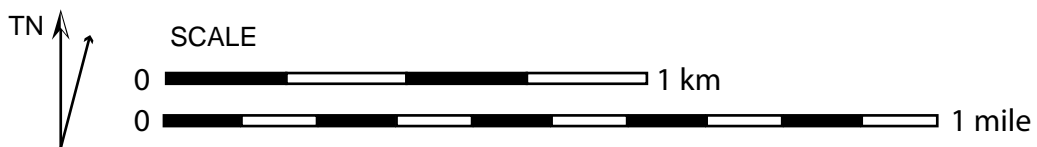


Figure 5. 1946 Aerial Photograph

Headworks and Facility Upgrade Project

Archaeological Background

Survey Results

On December 19, 2012, archaeologists Michelle Touton and Austen Wianecki performed a survey of all areas within the Project site that were currently undeveloped but would be affected by the Project, including the suspected cemetery area. They observed and recorded archaeological materials on the flat suspected cemetery area, the beach below, and the slope above. Two brick samples were collected, one from the beach and one from upslope of the suspected cemetery site.

Beach Area

On the beach area, five major sections of the brick structure as well as a dozen or more smaller sections and individual bricks were recorded scattered across an area 70' by 30'. The major sections appear to consist of the four walls of the brick structure identified within the suspected cemetery area in 1994, and appear to have a finished top edge rather than having been fully enclosed. Elsewhere within the brick scatter area on the beach, two items were noted but not collected: a relatively unweathered wooden board measuring 6" by 2" by about 20', and a length of rebar embedded in a piece of concrete.

Halfway up the cliff face separating the suspected cemetery site from the beach scatter, other parts of the brick structure were identified on top of a slough of earth. The slough clearly resulted from the landslide that brought the brick structure to the beach. The two features on the slough were a sheet of mortared bricks, only one course thick, that appeared to be either a floor or ceiling to the brick structure, and a short wooden ladder or set of steep steps. It was unclear whether the ladder was associated with the brick structure.

Suspected Cemetery Area

The flat suspected cemetery area had become overgrown again since the historical society members cleared it in 1994, although many of the Scotch broom and other shrubs had recently been trimmed or

removed by a survey team. The ground was thickly covered in needles and other vegetative debris, which the archaeologists partially cleared in order to view the ground surface directly. The soil was observed to be highly organic and contained large amounts of decomposing vegetable matter. It was generally described as a reddish/purplish medium brown moist friable silt with a slight clay content.

Two types of stakes were observed: the iron stakes noted in the newspaper articles of the discovery in 1994 and visible in a photo of the cleared suspected cemetery site taken at that time (Peterzell 1995), and recently placed wooden surveyors stakes marking an estimate of the APE and a later formal survey of the APE. The stakes were hollow iron pipes, about 1" in diameter, identical to those employed elsewhere along the steep slopes to hold shoring boards in place. Although the stakes were identical in form to those shoring posts, they were possibly different in function as the suspected cemetery site is level and should not have required shoring in its interior.

In addition to the stakes, one long board was observed parallel to the cliff face and mostly buried. The board measured 2" by 4" by 22.5', but was highly disintegrated in places and may have originally been longer. This board may have marked the cemetery edge, or might have been used for shoring.

In addition to these features, several pieces of debris were identified in the suspected cemetery site as having obviously fallen from farther upslope.

Upslope Area

Upslope of the suspected cemetery site, the archaeologists encountered the path described by the Rattos and followed it up to the road. They also walked transects immediately upslope of the suspected cemetery area and within ten feet of the path, where it was safe to do so despite the otherwise steep slope. The archaeologists found and collected a brick, possibly relating to the brick foundations described in the 2001 archeological survey and which was thought at the time to be the origin of the brick segments currently on the beach. Although the collected brick had the same dimensions as the sample collected from the beach, it was of a cruder paste, had larger inclusions, was more friable, and was more orange in color. The mortar attached to the upslope brick was similarly less uniform than the mortar attached to the beach brick. The upslope brick was consistent with an early twentieth-century construction, such as the entrance gate, while the beach brick appeared far more modern.

Other debris observed on the slopes above the suspected cemetery site and around the path included plastic reflectors, pieces of guard rail, chunks of concrete, relatively modern food cans, and alcohol bottles dating from the mid-twentieth century to the present.

Archaeological Resources in the Vicinity of the Project Area

Michelle Touton of Archeo-Tec searched the archaeological records on file at the Northwest Information Center (NWIC) of the California Historical Resources Inventory System on January 11, 2013 (File #12-0688). Ms. Touton reviewed all archaeological records within one half mile of the Project area.

Two archaeological sites are located within the search radius. The first, called East Fort Baker (CA-MRN-648H, Primary Number P-21-000682), consists of both archaeological and architectural elements and encompasses the Project site. The second, called Nelson No. 1 (CA-MRN-1, Primary Number P-21-000034), consists of an indigenous shellmound site and is located near the bayshore in south Sausalito.

The East Fort Baker site consists of approximately 260 acres of Fort Baker located to the east of Highway 101, including the Project area (Anthropological Studies Center 2001). The entirety of the East Fort Baker site was surveyed in 2001 by the Anthropological Studies Center (Stewart et al. 2001). The archaeologists examined the area where the cemetery was reported to be located, but found no evidence of it and theorized that perhaps it had been destroyed when the treatment plant was built in the early twentieth century. A brick feature, currently in pieces on the beach below the Project site, was identified as belonging to a series of in situ foundations further upslope from the Project area and thought to relate to an early twentieth century entry gate. This brick feature was intact within the suspected cemetery site in 1994 and is clearly not actually associated with the entry gate upslope. No evidence of indigenous resources were observed anywhere within the East Fort Baker site.

When he first recorded CA-MRN-1 in 1907, Nels C. Nelson noted that “the mound is practically all carted away...Nothing was found; but informants (two of them) affirm independently that several skeletons have been unearthed” (Hamilton 1983). Nelson described the site as being located in the mouth of a small canyon on a gentle slope near the water’s edge; geological evidence suggests that the canyon resulted from a now-disappeared stream that would have provided the site with fresh water. By the end of the twentieth century, the site had been entirely developed with an apartment complex and several private residences.

Other Historical Period Sailors’ Cemeteries

The most comparable nearby historical period cemetery, archaeological site CA-SMA-207, is located to the south of the Project area within Año Nuevo State Reserve in San Mateo County.

A series of fatal shipwrecks occurred at a rocky point off of the Pacific coast of San Mateo County in the 1860s: the clipper ship *Sir John Franklin* in 1865, which resulted in the deaths of twelve individuals;

Coya in 1866, which killed a total of 27 individuals; and *Hellespont* in 1868, which killed eleven people. Bodies that could be recovered were buried near the wreck site at what is now known as Franklin Point.

Archaeological site CA-SMA-207 was found 40 feet above sea level within a sand dune along the Pacific Ocean. In 1980, erosion along the shoreline began to expose burials within the cemetery. In 1982, four burials were excavated and removed by San Jose State University's Department of Anthropology. Later, in the late 1990s, additional human remains were exposed by erosion. Park archaeologists recovered two adult male skeletons, which were nearly complete and had been interred in adjacent redwood coffins; one was buried with a pocket knife near its femur and the other an iron ring near its cranium. Both appear to be victims of the same shipwreck; the wreck could not be identified (State of California 2013b).

Though CA-SMA-207 is the only archaeologically recorded informal coastal sailor's cemetery that was identified within the limited scope of this review, several other cemeteries and excavated sites within the San Francisco Bay region may provide useful comparative information.

During the first half of the nineteenth century, when the Russian-American Company was active within San Francisco Bay, Russian individuals who died in port were buried not in the Catholic cemetery attached to the Mission but rather in a separate cemetery on what became known as Russian Hill. The cemetery was said to have been unenclosed, contained 30-40 burials, and been marked with a cross that "was still standing in '49, or '50" (SF Genealogy 2013; Soulé et al. 1854:592). After the Russian presence in the Bay declined, the cemetery remained in casual use by Yerba Buenans through the early Gold Rush (Soulé et al. 1854:592).

Later remembrances of the cemetery written in the 1860s-1880s stated that the Russian Hill cemetery had been founded in 1848 when a Russian warship was "stricken with some malarian disease" and many of the crew died in port (SF Genealogy 2013). An account written in 1878 stated that in the early 1850s "it was abandoned and the remains of those placed there were afterwards removed to other localities" (SF Genealogy 2013). The Russian Hill cemetery has not been archaeologically mapped or investigated.

The cemetery at the Marine Hospital, which was constructed at the Presidio in 1874, provided facilities for the burials of American and foreign sailors from 1881 until 1912. Historical records indicate that many sailors who died in the hospital had shipmates or family who held funerals and burials for them in private cemeteries. Those who did not have anyone available to hold a funeral were buried in the Marine Hospital's cemetery. In the 1970s, the cemetery was rediscovered during subsurface testing for hazardous materials as part of base closure procedures. The presence of the cemetery was then further archaeologically confirmed by backhoe test trenching by Woodward-Clyde Consultants; burials with coffins were found 15 feet below the fill layer in 1990. Since that time, extensive archival research on

the individuals buried at the cemetery has been undertaken by the Presidio Archaeology Center (McCann 2006).

During the Gold Rush period, a sailor's cemetery was located between Sansome, Battery, Green, and Broadway, very close to San Francisco's original waterfront. It was also called the Telegraph Hill Cemetery. A naval cemetery was located on Yerba Buena Island from 1852 until the late 1930s (Blackett 1995).

Geologic Context

Approximately 200 million years ago, the floor of the Pacific Ocean was subducted beneath the western edge of the North American Plate, forming the distinctive rocks of the Franciscan Complex. This mélangé constitutes the basement for the Coast Ranges east of the present-day San Andreas Fault, including portions of Marin County. The Franciscan Complex consists primarily of greywacke, sandstone, and argillite but also contains smaller amounts of greenstone, radiolarian ribbon chert, limestone, serpentine, and a variety of other high-grade metamorphic rocks. Franciscan rocks in the Bay Area range in age from about 200 million to 30 million years (Stoffer 2002:9). Several episodes of uplift and faulting during the late Tertiary (ca. 25-2 million years ago) produced a series of northwest-trending valleys and mountain ranges, such as (heading east to west) the Berkeley Hills, the San Francisco Bay, and the San Francisco Peninsula.

Bedrock within the Project area consists primarily of greenstone, a type of basalt so named because it often appears dark green due to the presence of particular minerals. When weathered, the Marin greenstone decomposes into a zone of orange-brown clay.

Prevalence of Landslides and Erosion

A landslide refers to the downslope movement of materials such as rock, soil, or fill under the direct influence of gravity. Landslides are caused by an interaction of natural and man-made factors; these factors include, but are not limited to, slope angle, weathering, climate, water content, vegetation, overloading, erosion, and earthquakes. Where landslides are present on undeveloped land, movement can occur naturally during prolonged rainstorms when soils are saturated.

Erosion refers to the gradual removal of exposed rock or soils due to wind, wave, rain, or other natural processes. Erosional processes predominate over depositional processes along much of Marin County's coastline, resulting in net coastal bluff erosion. The rate of erosion depends both on the composition of the material (strong rock with no fractures will erode at a slower rate than weak rock with extensive fracturing) and upon the severity of the outside forces. Recorded erosion rates for the Bolinas Penin-

sula—the only portion of the Marin coastline that has good data on the subject—vary by specific location, and range from 0.4 to 36 inches per year (Hinds et al. 2005:52).

Landslides and erosion are well documented within Marin County, most notably in years of severe storms such as the El Niño years of 1982-83 and 1997-98. A landslide occurred within the Project area between 1994 and 2001, most likely during the winter of 1997-98, resulting in the brick feature, rocks, and soils on the beach below. Erosion along the coves within the vicinity of the Project area, resulting in the uncovering of previously buried human remains, has been documented historically.

Conditions within the Project Area

Although no geotechnical study has been completed within the Project area itself, a recent study investigated the geotechnical conditions surrounding the District Residence located within the treatment plant campus but significantly south of the flat suspected cemetery area (Herzog 2013). As part of the study, two test borings were drilled downslope of the residence, at a similar elevation and mid-slope position as the flat area. However, the borings were placed under an elevated deck attached to a structure whose foundation required excavation into bedrock on the upslope side and placement of fill on the downslope side, limiting comparison with soil conditions within the flat suspected cemetery area. The borings were placed at nearly identical elevations approximately 60 feet apart.

Boring 1 contained soft, moist, red-brown gravelly clay from 0-3 feet, at which point bedrock (brown greenstone) was encountered. Boring 2 contained soft, moist, orange-brown gravelly clay from 0-2 feet, red-brown sandy clay from 2-4 feet, and medium stiff orange-brown gravelly clay from 4-5.5 feet. The latter clay was identified as colluvium, while all other soils were identified as fill. Bedrock (orange-brown greenstone) was encountered at 5.5 feet. The report concluded that “the downslope portion of the residence is underlain by weak fills and native soils which are subject to differential settlement and downslope creep movement” (Herzog 2013:4).

Depth of bedrock within the flat cemetery area is unknown, as are the characteristics of the overlying soils, as it has never been subjected to subsurface investigations.

As part of the geotechnical study, engineers consulted regional maps to determine landslide patterns. A 1976 map indicated no known landslides had occurred previous to that time, and a 1984 map of slope failures resulting from severe 1982 storms did not indicate that sliding had been reported for the site. No information was available for potential events after 1982.

However, a geological report prepared for the Marin Countywide Plan noted the following:

The Franciscan mélange and semi-schist and related metamorphics typically develop soil profiles that have a high clay content, usually montmorillonite, which has a high shrink-swell potential.

These soils have little shear strength when they become wet and are susceptible to significant downslope creep. An accumulation of more than 2 to 3 feet of this type of soil increases the probability of soil debris and earth flows.

...Metamorphic volcanic rock (also known as Greenstone) has a high strength and is erosion resistant when it is not sheared. However, if it is sheared and greatly fractured it weathers to clay that is relatively weak and susceptible to rapid erosion and landsliding. (Hinds et al. 2005:36)

As the conditions described above correspond with the bedrock and soils observed on site, further natural earth movement is probable—particularly during storms. Such soils movement would damage or destroy the integrity of any cultural resources contained within it.

Research Design

Introduction

Archival evidence is inconclusive as to whether the Sailors Cemetery ever existed within the Project area and, if so, whether it is still present. Historical evidence is unequivocal that the Sailors Cemetery was within Fort Baker near Sausalito, and suggests that it was located within one of the coves near the present site of the treatment plant. Oral histories given in the late twentieth century, describing events and places from the 1910s-1920s, further specify that the cemetery was within the particular cove in which the Project area lies.

However, the only known contemporary description of the cemetery described it as “an enclosure about forty feet square” (Munro-Fraser 1880:390). The existing portion of land tentatively identified as the Sailors Cemetery location is 50-60 feet long but extends only about 20 feet from the hillside before ending in a cliff above the rocky beach. It is therefore likely that if the Sailors Cemetery had been situated in the vicinity of the Project area, at least half of the cemetery—and perhaps all of it—has been lost due to erosion and landslides.

As discussed above, an archaeological surface survey was completed in January but found no clear evidence of the existence of a cemetery within the Project area. Most identified features were either more recent than the projected period of use of the cemetery or had clearly been redeposited from upslope. Three features—two upright iron stakes and a long, mostly buried, decomposing piece of wood lying parallel to the cliff face—are probably pieces of the shoring system but might be associated with an earlier land use such as demarcation of the cemetery.

The cemetery is the only known land use expected to have resulted in the presence of archaeological resources within the Project area. The goal of this testing plan is to identify and characterize the cemetery, if it is present, and only incidentally to locate other currently unexpected archaeological resources.

Burials in a formal cemetery would be expected at a depth of approximately 5-7 feet, but in an informal cemetery burials may be found at shallower depths. Additionally, although the current elevation of

the flat area is probably comparable to its historic elevation, it has been subject both to erosion and to deposition of eroded soils from further upslope. Accordingly, if human remains are present within the Project area, they may be located anywhere within the uppermost 8 feet.

Proposed Impacts

Current construction plans call for up to 30 feet of excavation within the southernmost portion of the flat suspected cemetery area (Figure 2). Additionally, the central portion of the flat area will be subject to excavation of up to 4 feet for road sloping and tiebacks. The northernmost portion of the flat area is outside of the APE and will not be impacted by the Project.

Therefore, as any resources are expected to be found within the upper 6-8 feet of soil, proposed impacts are complete removal of any resources within the southern portion of the flat area and possible removal or partial removal of resources within the central section.

Objectives

The principal objectives of the testing plan outlined in this document are to identify whether portions of the historic cemetery are present within the portion of the Project footprint nearest to and overlapping with the suspected cemetery site. If archaeological remains associated with the cemetery are encountered, the testing plan further aims to establish the boundaries—both horizontal and vertical—of the overlap between the Project area and the cemetery and to create a preliminary evaluation of the cemetery's significance.

Full evaluation, mitigation, or removal of the cemetery or other archaeological resources are outside the scope of this testing plan. If a portion of the cemetery is found within the Project area, the archaeological consultant, the Project sponsor, and the National Park Service (NPS) should meet to discuss possible strategies that could avoid, minimize, or mitigate adverse effects of the Project upon the resource.

Significance Evaluation

Due to its location within the Golden Gate National Recreation Area, administered by NPS, the Project is subject to Section 106 of the National Historic Preservation Act and to the National Environmental Protection Act. As discussed above, the lead agency must consider the effects of an undertaking on historic properties, including archaeological resources. Under Section 106, properties deemed eligible for inclusion on the National Register of Historic Resources are deemed significant resources worthy of preservation treatment.

Archaeological sites are typically eligible under Criterion D of the National Register. To be considered a historical resource and be thus significant under Section 106, a resource must only show *potential* to yield important information to our understanding of history or prehistory. Resources can show this potential by demonstrating an ability to contribute significantly to topics of scientific or historical importance.

As cemeteries and burying places often have very personal significance to descendants that can impede objective evaluation, additional Criteria Considerations assist evaluators in determining whether a burial place may be eligible for inclusion on the National Register. A burying place deemed significant under Criterion D does not need to meet any Criteria Considerations (Potter and Boland 1992:1). Based on the research conducted thus far, the Sailors Cemetery (if present) might be evaluated under one or both of:

- Criterion A, Criteria Consideration D: A cemetery is eligible if it derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events (Potter and Boland 1992:33); or
- Criterion D.

In assessing the integrity of an isolated, small burying ground such as the Sailors Cemetery, National Register guidelines state that “the standards of integrity require that the gravesite be verifiable by archaeological testing or by visual traces” (Potter and Boland 1992:19).

Human burials have the potential to address numerous research issues related to health and patterns of daily life as they relate to skeletal pathologies of various kinds, and typically must be fully excavated and analyzed in order to realize their full data potential. Human burials, whether prehistoric or historic in nature, are further significant due to their importance to their descendants. If a determination can be made as to a likely descendant or descendant group, said descendant(s) should be involved in decisions about treatment and disposition of their ancestor(s).

Testing Strategy

As the expected resource contains human remains, an archaeologist with experience in human osteology should be present during testing to ensure that any encountered fragments of human bone are quickly and accurately identified.

No testing will occur in the northern portion of the flat area, as the Project will have no impacts upon resources in that area. Instead, testing will concentrate on the southern portion—which will be removed as part of the Project—and the central portion.

Overview of Potential Testing Methods

Archaeological testing methods can generally be divided into two categories: invasive and non-invasive. As the resource being tested for is a cemetery, and it is usually preferable to avoid disturbance to human remains if at all possible, non-invasive techniques are preferred.

These techniques include surface survey, which has already been performed and was inconclusive, and remote sensing/geophysical survey. Several remote sensing techniques are available, including ground-penetrating radar (GPR), magnetometry, electromagnetic (EM) conductivity, and electrical resistance. Unfortunately, after consulting with several geophysical surveying companies, Archeo-Tec has determined that none of these techniques is likely to be successful at the Project site. This is due to several factors: the high clay content of the soil, prevalence of surficial vegetation and subsurface root systems, instability of the cliff face, and depth of expected features.

Therefore, invasive testing procedures will be employed. These techniques are not as undesirable at this site as they would be at other historic cemeteries due to the imminent danger posed to the site from continual erosion—if a portion of the cemetery is present, it may well be destroyed by natural processes within the coming decades anyway, so removal of any human remains to a more stable burial place is a preferred treatment option.

Due to the potential depth of resources, and the difficulties of reaching such depths by hand excavation, use of mechanized excavation equipment was considered. However, use of mechanical excavators is impractical due to the minor difficulty of getting equipment from the access road to the flat area and to the significant danger of operating heavy equipment on a narrow shelf of land known to be unstable. Therefore, hand excavation will be employed.

Optimal Testing Methods

As discussed in more detail below, testing will consist of the placement of hand augers, shovel test pits (STPs) and/or formal excavation units. These techniques vary in testing area/volume, ease of completion, and likelihood of successfully identifying any resources that may be present, as summarized in Table 1 below.

Augers will be bored by hand with a 4"-diameter bucket. Excavation will proceed in arbitrary 6-inch levels until human remains or bedrock have been encountered, or 8 feet, whichever is shallowest.

The diameter of the STPs will vary slightly, but will be approximately 14" in diameter. Excavation will proceed in arbitrary 6-inch levels until human remains or bedrock have been encountered, or three feet, whichever is shallowest.

Table 1. Comparison of Hand Excavation Methods.				
Method	Approximate Accessible Depth	Exposed Area	Likelihood of Success	Approximate Person-Hours
Auger	15 feet	4" diameter	Medium	1
STP	3 feet	14" diameter	Medium/High	4-6
Unit	6 feet (shoring or benching required below 4 feet)	3 feet by 3 feet	High	8-16

Formal excavation units will measure 3 feet by 3 feet in horizontal area. Excavation will proceed in stratigraphic levels or, if such levels are difficult to distinguish, in arbitrary 4-inch levels. Per federal safety regulations, if excavation exceeds four feet the unit will have to either be shored or benched. In consideration of the potential instability of the landform, it is recommended that excavation units not be continued below this depth. However, if the unit is benched, excavated soils from the benched area will be screened and recorded, but any cultural materials will be kept separate from those recovered from the unit proper.

Formal units and STPs will be excavated by hand by mattock, shovel, patiche, or trowel, as appropriate.

Excavated soils from all methods will be screened through ¼" mesh to ensure that any bone fragments, buttons, or other small archaeological materials are recovered. All cultural materials will be collected, labeled, and bagged for subsequent analysis and interpretation. Any collected materials will be field-catalogued using an electronic template supplied by the NPS that is importable to the Interior Collections Management System. All collected materials and documentation will be returned to the NPS at the conclusion of the project.

Throughout this program of archaeological testing, detailed notes will be made on Excavation Records or Auger Records, as appropriate, indicating soil characteristics encountered at all depths within the excavated area so that idealized stratigraphic profiles can be compiled for the subject property. Photographs will be taken of all excavated areas, and plan and profile drawings will be completed for excavation units.

A datum will be established whose position in all three dimensions is known—possibly the top of one of the iron stakes recorded within the suspected cemetery area—and all measurements will be made in relation to that datum. As the expected resource dates from the historic era, measurements will be made in Imperial units (inches and feet).

At the conclusion of the testing program, all excavated areas will be backfilled by hand.

Testing Strategy

The optimal testing method depends upon type and depth of expected resources: for example, a deeply buried wooden feature or shell midden would be best tested for by augering, while a shallow subtle feature would be best tested for with an excavation unit or an STP. As the depth of bedrock (and therefore maximum depth of any resources) is currently unknown for the flat area, but may be as shallow as 3 feet, the ideal testing strategy cannot be fully determined in advance.

In order to characterize the depth of bedrock and therefore possible depth of resources, the testing strategy will begin with the placement of three augers, as depicted on Figures 6 and 7. While the primary purpose of these augers will be to determine depth of bedrock, they will also provide data points regarding presence or absence of resources at those locations. Following completion of these initial augers, the optimal testing option will be chosen from among two alternates; if depth of bedrock varies greatly—a relatively likely possibility, considering that the area appears artificially flattened but the underlying bedrock is probably sloped—a hybrid testing option may be employed.

Option A: Shallow Bedrock

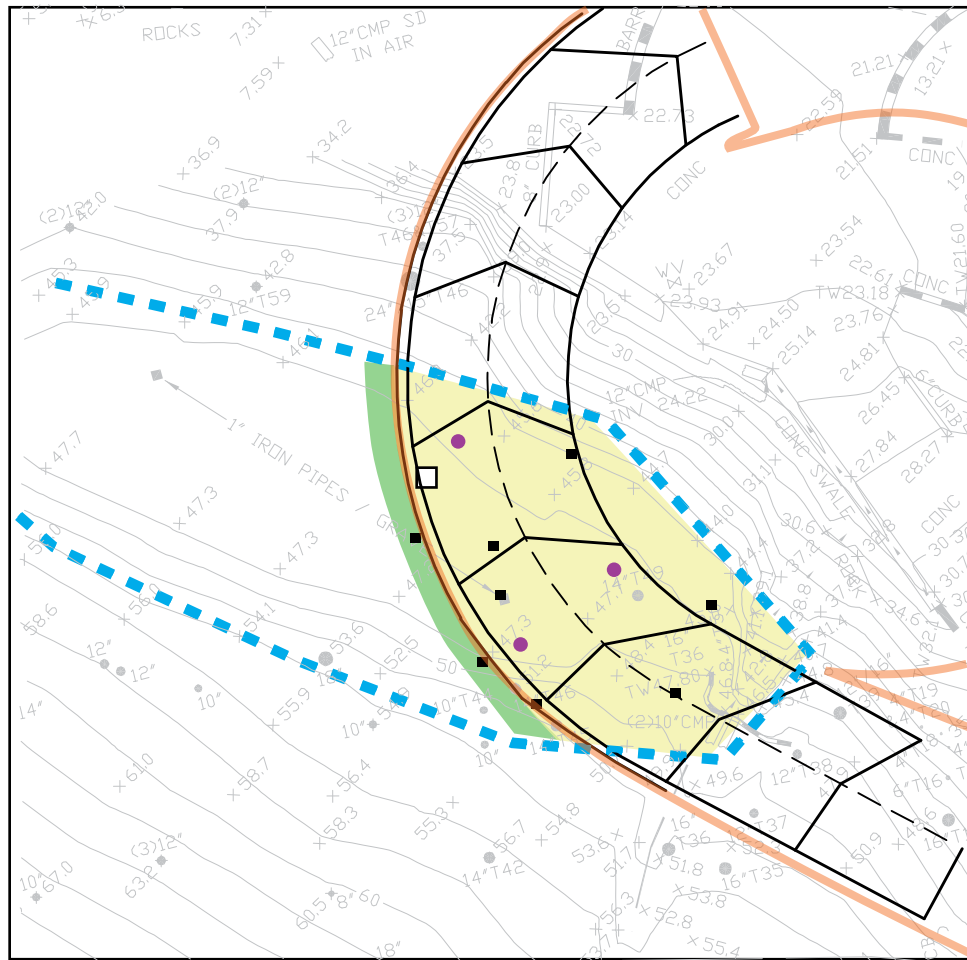
If bedrock is found to be less than 3 feet below the surface, STPs and formal excavation units may be employed. These testing methods are more likely than augering to successfully identify a resource—particularly a subtle resource such as a heavily decayed burial not contained within a coffin—and thus are preferred methods if testing depth allows their use.

In this instance, the testing strategy will consist of the initial placement of formal excavation units, which are stratigraphically well controlled and reveal a relatively large surface area, to attempt to identify human remains or the stratigraphical context in which they are most likely to be located. Once the stratigraphy of the area is understood, STPs will be placed throughout the area to investigate the extent of the identified context. The locations of units and STPs under this option are depicted on Figure 6, although their exact locations and number are subject to reasonable change at the discretion of the Field Director based on field conditions and location of trees or other vegetation.





Option B: Deep Bedrock




If bedrock is found to be more than 3 feet below the surface, STPs will be unable to test the full depth of expected resources and should not be used. Formal excavation units may be used, but are recommended to not extend below four feet. For deeper bedrock, therefore, a grid of auger holes is recommended.

In this instance, the augers should be placed in a regular sampling grid as shown in Figure 7. Exact locations are subject to reasonable change at the discretion of the Field Director based on field conditions and location of trees or other vegetation. The purpose of each auger will be dual: to identify the



Proposed Testing (symbols not to scale)

-  = Approximate area of excavation
-  = Area of suspected Historic cemetery
-  = Archaeologically Sensitive area within Area of mass excavation (30 feet)
-  = 4 feet of excavation for road sloping

-  = Proposed Initial Auger Locations
-  = Proposed Shovel Test Pit Locations
-  = Proposed Test Unit Location

 APPROXIMATE SCALE
0 10 ft


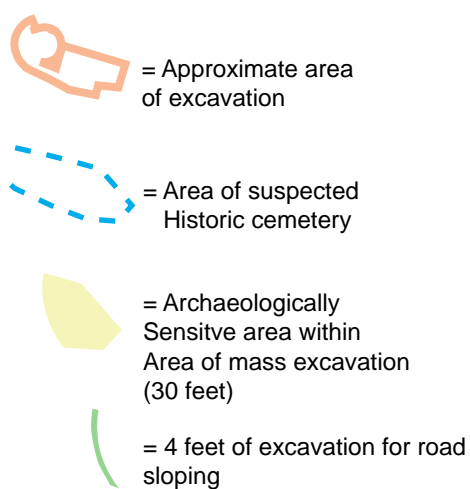
 NORTH

Figure 6. Archaeological Testing Plan: Option A

Headworks and Facility Upgrade Project



Proposed Testing (symbols not to scale)

● = Proposed Initial Auger Locations

○ = Proposed Grid of Secondary Auger Locations

0 10 ft APPROXIMATE SCALE

← NORTH

Figure 7. Archaeological Testing Plan: Option B

Headworks and Facility Upgrade Project

stratigraphic characteristics of that location, and to attempt to identify any resources that are present at that location.

Test Evaluation and Data Recovery

If cultural materials that may meet the standards of potentially significant archaeological resources are identified during the testing program, additional investigation in the form of test evaluation, data recovery, or monitoring may be required.

The purpose of test evaluation is to evaluate whether an encountered archaeological resource is potentially significant. Due to the sensitive nature of human remains, test evaluation will take place immediately if potential burials are identified during testing. If test evaluation confirms one or more burials, each will be excavated in its entirety, and will be incorporated into the preliminary evaluation process of this testing program.

The preliminary evaluation of the site's significance shall be based on completion of the test evaluation program and sufficient lab analyses and contextual research to make a clear and defensible statement of the preliminary eligibility of the resource for listing on the National Register of Historic Places.

If a resource is determined to be potentially significant, the archaeological consultant will confer with the Sponsor and the National Park Service (NPS) to determine appropriate next steps. These will likely consist of data recovery, in which the deposit is fully excavated and brought back to the lab for processing. If a determination of significance cannot be made in the field, then collected materials may be brought back to the lab for further analysis. If at any time a deposit is deemed ineligible, archaeological investigation of the deposit will be abandoned. The determination of eligibility will be made in consultation with NPS.

If the results of testing and test evaluation indicate the continued possibility of potentially significant archaeological resources in untested areas, monitoring of construction excavation may be required to ensure that any adverse effects are mitigated. If monitoring is required, the terms and duration of the monitoring program will be determined by the archaeological consultant in consultation with the Sponsor and NPS.

Site Preservation/Removal

If the Sailors Cemetery is present within the Project area, it is endangered due not only to the Project but also due to natural erosion. The severity of the latter danger is clear from historical mentions of human remains being found partially or fully uncovered in this area, and from the scale of the most recent

landslide, in which a structure originally within the flat suspected cemetery site fell to the beach below along with a significant amount of dirt, rocks, and vegetation.

Due to this unavoidable danger, site preservation is unlikely to be long-lasting. Therefore any portion of the cemetery that may be discovered within the Project area should be recorded and removed.

Discovery of Human Remains

Per California Health and Safety Code §7050.5 and California Public Resources Code §5097.98, the following procedures will be followed in the event that human remains and associated cemetery/grave items are encountered. Associated cemetery/grave items are any items (e.g. clothing, funerary gifts, etc.) that are buried with the individual, as well as any cemetery furniture, architecture, fencing, or other features associated with the cemetery itself. This definition applies to both prehistoric and historic period cemeteries. The term “grave” also extends to cremation pits containing (non-intact) human remains.

Upon discovery, the Coroner Division of the Marin County Sheriff’s Office will be contacted for identification of human remains. The Coroner has two working days to examine the remains after being notified.

If the remains are Native American, the Coroner must notify the Native American Heritage Commission (NAHC) of the discovery within 24 hours. The NAHC will then identify and contact a Most Likely Descendant (MLD). The MLD may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the remains and grave goods. In conjunction with the MLD, project sponsors, and NPS, the proper treatment and disposition of the remains will be negotiated and arranged. Once proper consultation has occurred, a procedure that may include the preservation, excavation, analysis, and curation of artifacts and/or reburial of those remains and associated artifacts will be formulated and implemented.

If the remains are not Native American, the Coroner will consult with the archaeological research team, NPS, and the project sponsors to develop a procedure for the proper study, documentation, and ultimate disposition of the remains. If a determination can be made as to the likely identity—either as an individual or as a member of a group—of the remains, an attempt should be made to identify and contact any living descendants or representatives of the descendant community. As interested parties, these descendants may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the remains and grave goods.

Reburial

While a specific plan for treatment and disposition of human remains would be formulated by the above-described procedure, the following guidelines may be useful in developing an agreement between interested parties in the event that human remains associated with the Sailors Cemetery are identified.

If non-native human remains are encountered, they should be subject to non-invasive archaeological recordation and analysis in an attempt to identify the individual, either specifically or as a member of a group. If a determination can be made, and a descendant identified, the descendant should be contacted and invited to participate in decisions regarding further analysis and eventual disposition of the remains. Additionally, if it appears likely that the individual was in the service of an agency or government at the time of his/her death—such as a Russian fur trader or a British naval seaman—the agency or government (or its successor) should be informed of the discovery and provided an opportunity to comment on preferred treatment and disposition of the remains.

If no identification can be made as to the likely identity or affiliation of the individual, it is recommended that the remains be reinterred along with any associated cemetery/grave items. The remains should be interred in a context similar to their original burial context, if possible, such as in the historic cemetery at Mare Island, which contains the graves of two men originally buried at the Sailors Cemetery. Other potentially suitable reinterment locations include the Presidio National Cemetery, to which the historic cemetery at Yerba Buena Island was moved in the early 20th century, or Golden Gate National Cemetery in San Bruno, to which the historic cemetery at Angel Island was moved in the 1940s.

Reporting

The results of the testing program will be reported in an Archaeological Testing Report (ATR). The ATR should describe and interpret the findings that have been made through the Archaeological Survey Report and testing program; evaluate their significance; and offer concise recommendations for any additional exploratory procedures deemed necessary to further investigate and/or adequately mitigate the adverse impacts of planned development to any historically significant cultural deposits existing within the borders of the project area.

Upon completion, the consultant will provide copies of this report to the Project sponsor and to NPS for review and comment. The consultant will also submit a copy of the final approved ATR to the California Historical Resources Information System for inclusion in its archives of California archaeological sites.

If the cemetery or any other significant archaeological resource is encountered, the consultant will record the discovery on DPR 523 archaeological site forms and submit copies of the record to the Northwest Information Center of the California Historical Resources Information Center and to NPS.

All collected materials will be returned to NPS at the conclusion of the project. Additionally, copies of all field records—including photographs, profiles, drawings, and other ephemeral documentation—as well as any artifact and/or bone catalogs and collections, will be provided to NPS upon project completion.

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United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
333 Bush Street, Suite 500
San Francisco, California 94104-2828



IN REPLY REFER TO:
A9015 (PWR-CR)

31 JUL 2013

Dr. Allen G. Pastron
Archeo-Tec, Inc.
5283 Broadway
Oakland, California 94618

Subject: ARPA Permit PWR-1979-13-CA-06, Golden Gate National Recreation Area

Dear Dr. Pastron:

The National Park Service is pleased to approve your "Application for Permit for Archeological Investigations" submitted for archaeological survey and test excavations at a possible historic-era burial ground within Golden Gate National Recreation Area at the site of a proposed facility upgrade by the Sausalito-Marín City Sanitary District. The application was reviewed by National Park Service archeologists who concur with your research design and methods. Your permit is enclosed and in effect until September 29, 2013.

Please review all of the permit's conditions, sign in the block provided for you on page 5 of the permit, and return a copy of the signed permit to the ARPA Permit Coordinator at the address given on page 5. Initiation of fieldwork constitutes your acceptance of the conditions. Please note "Standard Permit Condition q." that requires a brief preliminary report within six weeks of completion of field work. A draft final report may substitute for the preliminary report.

Be sure to coordinate your work schedule with Park Archaeologist Leo Barker, and to provide him with a brief progress report by e-mail or telephone at the conclusion of fieldwork, including what was accomplished and the condition of any archaeological sites you observed. He can be reached at 415-289-1891 or leo_barker@nps.gov. Contact Archaeologist Mark Rudo of my staff at 415-623-2361 or mark_rudo@nps.gov if you have any questions about the terms of the permit.

Sincerely,

Christine S. Lehnertz
Regional Director, Pacific West Region

Enclosure (Permit for Archeological Investigations)

cc: Frank Dean, Superintendent, GOGA
Abby Sue Fisher, Cultural Resources Chief, GOGA



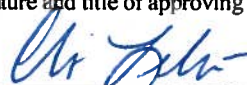
No.: PWR-1979-13-CA-06 (GOGA)

United States Department of the Interior

PERMIT FOR ARCHEOLOGICAL INVESTIGATIONS

To conduct archeological work on Department of the Interior lands and Indian lands under the authority of:

- ☒ The Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm) and its regulations (43 CFR 7).
☐ The Antiquities Act of 1906 (P.L. 59-209; 34 Stat. 225, 16 U.S.C. 431-433) and its regulations (43 CFR 3).
☐ Supplemental regulations (25 CFR 262) pertaining to Indian lands.
☐ Bureau-specific statutory and/or regulatory authority: _____

1. Permit issued to Allen G. Pastron, Ph.D.		2. Under application dated: May 15, 2013 (Received at PWR via e-mail on June 5, 2013) (Revisions received via e-mail on July 23, 2013)	
3. Address Archeo-Tec, Inc. 5283 Broadway Oakland, CA 94618		4. Telephone number(s) 510-601-6185	
		5. E-mail address(es) archeo-tec@archeo-tec.com	
6. Name of Permit Administrator see Block 1 Telephone number(s): see Block 4 Email address(es): see Block 5		7. Name of Principal Investigator(s) See Block 1 Telephone number(s): see Block 4 Email address(es): see Block 5	
8. Name of Field Director(s) authorized to carry out field projects Michelle Touton, M.A.		Telephone number(s): see Block 4 Email address(es): michelle@archeo-tec.com	
9. Activity authorized: Archaeological survey, test excavation, field osteology, and the collection and temporary removal from the park of cultural materials including non-Native American human remains, for purpose of identifying and providing a preliminary evaluation of a potential historic-era cemetery within a construction project area of the Sausalito-Marín City Sanitary District. Excavation methods may include trowel scrapes, shovel test pits, auger bores, and 3'x3' excavation units. Their number and placement will be determined in the field, in accordance with the applicant's archaeological testing plan, which must accompany this permit.			
10. On lands described as follows Within Fort Baker of Golden Gate National Recreation Area in the vicinity of the junction of Alexander Avenue and East Road on the property occupied by the Sausalito-Marín City Sanitary District's wastewater treatment facility. See the applicant's accompanying archaeological testing plan for details and mapped locations.			
11. During the duration of the project		From 07/29/2013	To 09/29/2013
12. Name and address of the curatorial facility in which collections, records, data, photographs, and other documents resulting from work under this permit shall be deposited for permanent preservation on behalf of the United States Government. All collected materials and associated field notes, photographs and catalog records will be delivered to Golden Gate National Recreation Area. Contact Park Archaeologist Leo Barker at 415-289-1891 or leo_barker@nps.gov for instructions on packaging and delivery.			
13. Permittee is required to observe the listed standard permit conditions and the special permit conditions attached to this permit.			
14. Signature and title of approving official  Christine S. Lehnertz, Regional Director, Pacific West Region, National Park Service		15. Date 7/29/13 July 29, 2013	

15. Standard Permit Conditions

- a. This permit is subject to all applicable provisions of 43 CFR Part 3, 43 CFR 7, and 25 CFR 262, and applicable departmental and bureau policies and procedures, which are made a part hereof.
- b. The permittee and this permit are subject to all other Federal, State, and local laws and regulations applicable to the public lands and resources.
- c. This permit shall not be exclusive in character, and shall not affect the ability of the land managing bureau to use, lease or permit the use of lands subject to this permit for any purpose.
- d. This permit may not be assigned.
- e. This permit may be suspended or terminated for breach of any condition or for management purposes at the discretion of the approving official, upon written notice.
- f. This permit is issued for the term specified in 11 above.
- g. Permits issued for a duration of more than one year must be reviewed annually by the agency official and the permittee.
- h. The permittee shall obtain all other required permit(s) to conduct the specified project.
- i. Archeological project design, literature review, development of the regional historic context framework, site evaluation, and recommendations for subsequent investigations must be developed with direct involvement of an archeologist who meets the Secretary of the Interior's Standards for Archeology and Historic Preservation; fieldwork must be generally overseen by an individual who meets the Secretary of the Interior's Standards for Archeology and Historic Preservation.
- j. Permittee shall immediately request that the approving official (14. above) make a modification to accommodate any change in an essential condition of the permit, including individuals named and the nature, location, purpose, and time of authorized work, and shall without delay notify the approving official of any other changes affecting the permit or regarding information submitted as part of the application for the permit. Failure to do so may result in permit suspension or revocation.
- k. Permittee may request permit extension, in writing, at any time prior to expiration of the term of the permit, specifying a limited, definite amount of time required to complete permitted work.
- l. Any correspondence about this permit or work conducted under its authority must cite the permit number. Any publication of results of work conducted under the authority of this permit must cite the approving bureau and the permit number.
- m. Permittee shall submit a copy of any published journal article and any published or unpublished report, paper, and manuscript resulting from the permitted work (apart from those required in items q. and s., below), to the approving official and the appropriate official of the approved curatorial facility (item 12 above).
- n. Prior to beginning any fieldwork under the authority of this permit, the permittee, following the affected bureau's policies and procedures, shall contact the field office manager responsible for administering the lands involved to obtain further instructions.
- o. Permittee may request a review, in writing to the official concerned, of any disputed decision regarding inclusion of specific terms and conditions or the modification, suspension, or revocation of this permit, setting out reasons for believing that the decision should be reconsidered.
- p. Permittee shall not be released from requirements of this permit until all outstanding obligations have been satisfied, whether or not the term of the permit has expired. Permittee may be subject to civil penalties for violation of any term or condition of this permit.

15. Standard Permit Conditions (continued)

- q. Permittee shall submit a preliminary report to the approving official within a timeframe established by the approving official, which shall be no later than 6 weeks after the completion of any episode of fieldwork, setting out what was done, how it was done, by whom, specifically where, and with what results, including maps, GPS data, an approved site form for each newly recorded archeological site, and the permittee's professional recommendations, as results require. If other than 6 weeks, the timeframe shall be specified in Special Permit Condition p. Depending on the scope, duration, and nature of the work, the approving official may require progress reports, during or after the fieldwork period or both, and as specified in Special Permit Condition r.
- r. Permittee shall submit a clean, edited draft final report to the agency official for review to insure conformance with standards, guidelines, regulations, and all stipulations of the permit. The schedule for submitting the draft shall be determined by the agency official.
- s. Permittee shall submit a final report to the approving official not later than 180 days after completion of fieldwork. Where a fieldwork episode involved only minor work and/or minor findings, a final report may be submitted in place of the preliminary report. If the size or nature of fieldwork merits, the approving official may authorize a longer timeframe for the submission of the final report as specified in Special Permit Condition q.
- t. Two copies of the final report, a completed NTIS Report Documentation Page (SF-298), available at <http://www.ntis.gov/pdf/rdpform.pdf>, and a completed NADB-Reports Citation Form, available at http://www.cr.nps.gov/aad/tools/nadbform_update.doc, will be submitted to the office issuing the permit.
- u. The permittee agrees to keep the specific location of sensitive resources confidential. Sensitive resources include threatened species, endangered species, and rare species, archeological sites, caves, fossil sites, minerals, commercially valuable resources, and sacred ceremonial sites.
- v. Permittee shall deposit all artifacts, samples and collections, as applicable, and original or clear copies of all records, data, photographs, and other documents, resulting from work conducted under this permit, with the curatorial facility named in item 12, above, not later than 90 days after the date the final report is submitted to the approving official. Not later than 180 days after the final report is submitted, permittee shall provide the approving official with a catalog and evaluation of all materials deposited with the curatorial facility, including the facility's accession and/or catalog numbers.
- w. Permittee shall provide the approving official with a confirmation that museum collections described in v. above were deposited with the approved curatorial facility, signed by an authorized curatorial facility official, stating the date materials were deposited, and the type, number and condition of the collected museum objects deposited at the facility.
- x. Permittee shall not publish, without the approving official's prior permission, any locational or other identifying archeological site information that could compromise the Government's protection and management of archeological sites.
- y. For excavations, permittee shall consult the OSHA excavation standards which are contained in 29 CFR §1926.650, §1926.651 and §1926.652. For questions regarding these standards contact the local area OSHA office, OSHA at 1-800-321-OSHA, or the OSHA website at <http://www.osha.gov>.
- z. Special permit conditions attached to this permit are made a part hereof.

16. Special Permit Conditions

- ☐ a. Permittee shall allow the approving official and bureau field officials, or their representatives, full access to the work area specified in this permit at any time the permittee is in the field, for purposes of examining the work area and any recovered materials and related records.
- ☐ b. Permittee shall cease work upon discovering any human remains and shall immediately notify the approving official or bureau field official. Work in the vicinity of the discovery may not resume until the authorized official has given permission.
- ☒ c. Permittee shall backfill all subsurface test exposures and excavation units as soon as possible after recording the results, and shall restore them as closely as reasonable to the original contour.
- ☐ d. Permittee shall not use mechanized equipment in designated, proposed, or potential wilderness areas unless authorized by the agency official or a designee in additional specific conditions associated with this permit.
- ☐ e. Permittee shall take precautions to protect livestock, wildlife, the public, or other users of the public lands from accidental injury in any excavation unit.
- ☐ f. Permittee shall not conduct any flint knapping or lithic replication experiments at any archeological site, aboriginal quarry source, or non-site location that might be mistaken for an archeological site as a result of such experiments.
- ☐ g. Permittee shall perform the fieldwork authorized in this permit in a way that does not impede or interfere with other legitimate uses of the public lands, except when the authorized officer specifically provides otherwise.
- ☐ h. Permittee shall restrict vehicular activity to existing roads and trails unless the authorized officer provides otherwise.
- ☐ i. Permittee shall keep disturbance to the minimum area consistent with the nature and purpose of the fieldwork.
- ☐ j. Permittee shall not cut or otherwise damage living trees unless the authorized officer gives permission.
- ☐ k. Permittee shall take precautions at all times to prevent wildfire. Permittee shall be held responsible for suppression costs for any fires on public lands caused by the permittee's negligence. Permittee may not burn debris without the authorized officer's specific permission.
- ☐ l. Permittee shall conduct all operations in such a manner as to prevent or minimize scarring and erosion of the land, pollution of the water resources, and damage to the watershed.
- ☐ m. Permittee shall not disturb resource management facilities within the permit area, such as fences, reservoirs, and other improvements, without the authorized officer's approval. Where disturbance is necessary, permittee shall return the facility to its prior condition, as determined by the authorized officer.
- ☒ n. Permittee shall remove temporary stakes and/or flagging, which the permittee has installed, upon completion of fieldwork.
- ☐ o. Permittee shall clean all camp and work areas before leaving the permit area. Permittee shall take precautions to prevent littering or pollution on public lands, waterways, and adjoining properties. Refuse shall be carried out and deposited in approved disposal areas.
- ☐ p. Permittee shall submit the preliminary report within ___ days/weeks of completion of any episode of fieldwork.
- ☐ q. Permittee shall submit the final report within 6 days/weeks/months after completion of fieldwork..
- ☐ r. Permittee shall submit progress reports every ___ months over the duration of the project.
- ☒ s. Additional special permit conditions are attached.

Special Permit Conditions Continuation Sheet

- t. One complete hard copy and one complete electronic copy in PDF format of the draft and final archaeological reports will be provided by the dates specified to both:

Leo Barker, Park Archaeologist
Cultural Resources Division
Golden Gate National Recreation Area
Fort Mason, Building 201
San Francisco, CA 94123-0022

...and...

Mark O. Rudo, Archaeologist/ARPA Permit Coordinator
National Park Service, Pacific West Region
333 Bush Street, Suite 500
San Francisco, CA 94104-2828

- u. The ARPA permit number shall appear on the cover and title pages of the draft and final reports.

By signing below, I, the Principal Investigator, acknowledge that I have read and understand the Permit for Archeological Investigations and agree to its terms and conditions as evidenced by my signature below and initiation of work or other activities under the authority of this permit.

Signature and title:

Date:

Paperwork Reduction Act and Estimated Burden Statement: This information is being collected pursuant to 16 U.S.C. 470cc and 470mm, to provide the necessary facts to enable the Federal land manager (1) to evaluate the applicant's professional qualifications and organizational capability to conduct the proposed archeological work; (2) to determine whether the proposed work would be in the public interest; (3) to verify the adequacy of arrangements for permanent curatorial preservation, as United States property, of specimens and records resulting from the proposed work; (4) to ensure that the proposed activities would not be inconsistent with any management plan applicable to the public lands involved; (5) to provide the necessary information needed to complete the Secretary's Report to Congress on Federal Archeology Programs; and (6) to allow the National Park Service to evaluate Federal archeological protection programs and assess compliance with the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470). Submission of the information is required before the applicant may enjoy the benefit of using publicly owned archeological resources. To conduct such activities without a permit is punishable by felony-level criminal penalties, civil penalties, and forfeiture of property. A federal agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. Public reporting for this collection of information is estimated to average three hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Departmental Consulting Archeologist, NPS; 1849 C Street, NW (2275); Washington, DC 20240-0001.

APPENDIX D

Department of Parks and Recreation (DPR) Forms and State Historic
Preservation Office (SHPO) Consultation

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____

Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 14

*Resource Name or # (Assigned by recorder) Sausalito-Marín City Sanitary District Treatment Plant

P1. Other Identifier: _____

*P2. Location: ☐ Not for Publication ☒ Unrestricted

*a. County Marin

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad San Francisco North Date 1984 T _____; R _____; ¼ of Sec _____; Diablo B.M.

c. Address 1 East Road City Sausalito Zip 94965

d. UTM: (give more than one for large and/or linear resources) Zone 9; 410996 mE/ 4365222 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) _____

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Sausalito-Marín City Sanitary District (SMCSD) Treatment Plant is located roughly 800 feet south of the Sausalito city limits. It is adjacent to the mouth of Richardson Bay in the eastern portion of Fort Baker. The treatment facilities occupy the eastern edge of the site, adjacent to the bay in the tidal zone. The original plant, which is at the northeast border of the site, was constructed in 1953. It is a circular, concrete, utility building (Photograph 1). A railing encircles the flat roof, which houses storage tanks, a profusion of pipes, tanks, burners, and other equipment. "Sausalito-Marín City Sanitary District" is inscribed in upper façade on the building's east side (Photograph 2). (See Continuation Sheet)

*P3b. Resource Attributes: (List attributes and codes) HP9: Public Utility Building

*P4. Resources Present: ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)



P5b. Description of Photo: (View, date, accession #) Photograph 1, camera facing south, March 13, 2013

*P6. Date Constructed/Age and Sources:

☒ Historic ☐ Prehistoric ☐ Both

1953

*P7. Owner and Address:

Sausalito-City Marin Sanitary District
1 East Road

Sausalito, CA 94965

*P8. Recorded by: (Name, affiliation, address)

Kara Brunzell & Julia Mates

Tetra Tech

1999 Harrison Street, Ste 500

Oakland, CA 94612

*P9. Date Recorded: March 13, 2013

*P10. Survey Type: (Describe) Intensive

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") none

*Attachments: NONE ☒ Location Map ☐

Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record

☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record

☐ Other (list) _____

Page 2 of 14

*NRHP Status Code 6Z

*Resource Name or # (Assigned by recorder) Sausalito-Marín City Sanitary District Treatment Plant

B1. Historic Name: Sausalito-Marín City Sanitary District Treatment Plant

B2. Common Name: Sausalito-Marín City Sanitary District Treatment Plant

B3. Original Use: Wastewater treatment plant B4. Present Use: same

*B5. Architectural Style: Vernacular

*B6. Construction History: (Construction date, alteration, and date of alterations) Constructed 1953, Additional building constructed 1986

*B7. Moved? ☒ No ☐ Yes ☐ Unknown Date: _____ Original Location: _____

*B8. Related Features: _____

B9. Architect: none b. Builder: V. Maggiora & Son, K.G. Walters Construction, Inc.

*B10. Significance: Theme History Area Fort Baker

Period of Significance 1953 Property Type utility Applicable Criteria 1/A, 2/B

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Sausalito-Marín City Sanitary District Treatment Plant does not appear to meet the criteria for listing in the National Register of Historic Places (NRHP). Furthermore, the building has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and does not appear to meet the significance criteria as outlined in these guidelines. Therefore, the building is not eligible for listing in the California Register of Historical Resources (CRHR). (See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

*B12. References:

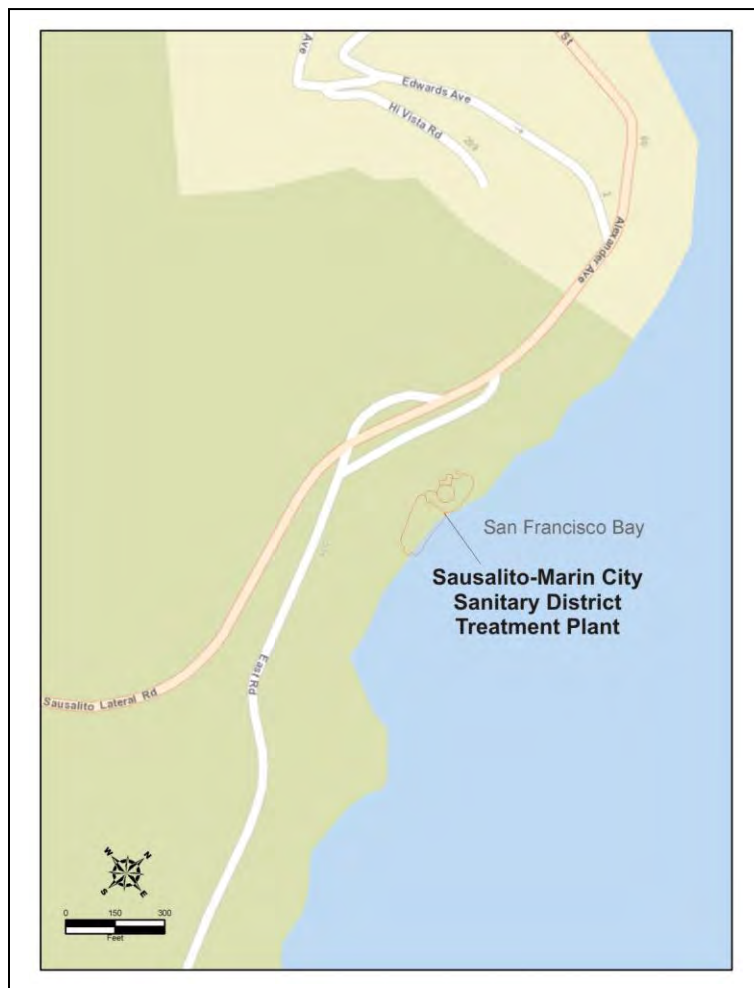
(See Footnotes)

B13. Remarks:

*B14. Evaluator: Kara Brunzell

*Date of Evaluation: March 2013

(This space reserved for official comments.)



Page 3 of 14 *Resource Name or # (Assigned by recorder) Sausalito-Marin City Sanitary District Treatment Plant
*Recorded by Kara Brunzell, Julia Mates *Date March 13, 2013 ☒ Continuation ☐ Update

P3a. Description (continued)

Fenestration consists of vinyl clad replacement windows, and entryways are at the southeast and northeast of the building. A concrete causeway wraps around the building. An additional treatment facility, constructed in 1986, is located to the south of the original plant, also in the tidal zone. It is a utility building with an irregular plan constructed of concrete (Photograph 3). A causeway was constructed to access the main facility and additional facility, sometime in the 1980s. The causeway travels from uphill and to the west of the main facility, downhill, wraps around three sides of the original facility, and ends at the additional treatment facility that was constructed in 1986. Original windows of the original facility were replaced with modern vinyl clad windows circa the 1990s.

The grounds also house large tanks, equipment storage buildings, and office buildings, both immediately behind the main treatment facilities and up the hill to the west. These vernacular buildings do not express any particular architectural style. They were constructed to meet changing needs at the plant between 1960 and the 1990s.

B10. Significance (continued)

Historic Context

Marin County and Sausalito

British explorer Sir Francis Drake was the first European to visit Marin County in 1579. Drake's stay was brief, and the Miwok people who had inhabited the area for thousands of years remained its only permanent residents until the nineteenth century.¹ Spanish missionaries founded San Rafael Arcangel as a hospital for the mission at San Francisco in 1817.² One of the earliest non-native settlers in the Sausalito area was Captain William Richardson, who arrived in San Francisco from England in 1822 and married the daughter of the San Francisco Presidio's Commandante. Richardson settled in southern Marin County in 1836, and in 1838 received the Saucelito Rancho as a land grant from the Mexican government.³ The body of water to the east of southern Marin was named Richardson Bay after William Richardson, and he is considered the founder of Sausalito, although he was unable to hold onto most of his 19,571 acre rancho.⁴

A handful of wooden and adobe dwellings, stores, and hotels were constructed in Saucelito, (as it was then known), in the 1850s.⁵ The town began to grow, however, after the creation of the Saucelito Land and Ferry Company in 1868. The enterprise purchased 1,200 acres adjacent to Richardson's Bay, and began running a ferry service to San Francisco and selling house lots.⁶ When the railroad followed in 1875, Saucelito became not only a transportation hub but an attractive summer and weekend destination for San Franciscans.⁷ In the late nineteenth century the spelling shifted to "Sausalito", and the town was incorporated in 1893.

¹ Branwell Fanning, *Images of America: Marin County*, Arcadia Publishing, Charleston, South Carolina: 2007, p. 21.

² Marin History Museum, *Images of America: Early San Rafael*, Arcadia Publishing: Charleston, South Carolina: 2008, p. 13.

³ J.P. Munro-Fraser, *History of Marin County, California*, Alley, Bowen, & Co., San Francisco: 1880, p. 111.

⁴ The Sausalito Historical Society, *Sausalito History*, 2010, website: <http://www.sausalitohistoricalsociety.com/sausalito-history/>

⁵ *History of Marin County, California*, p. 387.

⁶ *History of Marin County, California*, p. 391.

⁷ The Sausalito Historical Society, *Images of America: Sausalito*, Arcadia Publishing, Charleston, South Carolina: 2005, p. 24.

Page 4 of 14 *Resource Name or # (Assigned by recorder) Sausalito-Marin City Sanitary District Treatment Plant
*Recorded by Kara Brunzell, Julia Mates *Date March 13, 2013 ☒ Continuation ☐ Update

B10. Significance (continued)

After the Golden Gate Bridge was completed in 1937 the train and ferry lines were shut down, and Sausalito lost its role as a transportation hub. The Marinship World War II shipyard, however, which operated from 1941 - 1945, brought new population growth to Sausalito. After the war ended and the shipyard closed, Sausalito became a mecca for artists and bohemians attracted by its low cost of living. Passenger ferry service resumed in the 1970s, making Sausalito once again accessible to a broad range of Bay Area residents.⁸

During World War II, Sausalito was unable to absorb the entire influx of Marinship World War II shipyard workers to the area. In 1942, Marin City was constructed to the north of Sausalito to house 6,000 of those workers. A diverse community during World War II, by 1962 Marin City was 90% African American. Marin City began to attract new residents in the 1980s, and is currently the most culturally diverse community in Marin County.⁹

History of Sewage Treatment

The disposal of human waste has been a problem for people who live clustered around waterways since ancient times. The spread of cholera, typhoid, and numerous other water-borne diseases results when drinking water supplies are contaminated with human waste. Awareness of the problem began to become widespread in the middle of the nineteenth century, and by 1900 most major American cities had begun programs to filter drinking water.¹⁰ Turn of the century attempts to deal with urban sewage problems, however, were often primitive, sometimes amounting to nothing more than the construction of open ditches to discharge raw sewage into nearby waterways.¹¹ During the late nineteenth century a few American municipalities began to physically screen wastewater to separate solids. By 1909, ten percent of wastewater collected in American municipal sewers underwent some form of this process, which has become known as primary treatment. As the century progressed and American cities grew the early primary treatment sewage systems were overwhelmed by increasing volumes of sewage.¹²

Secondary treatment, the practice of harnessing decomposers to break down the organic matter in sewage, was also initially developed in the late nineteenth century. The trickling filter and the activated sludge methods are two of the most common forms of secondary treatment. Although U.S. cities were much slower to adopt secondary treatment, by the 1930s many states were encouraging municipalities to upgrade their facilities. By 1950 about one third of municipal treatment plants were employing secondary treatment.¹³ Secondary treatment received a huge boost in 1972 with the passage of the federal Clean Water Act. This watershed act of Congress not only mandated that the nation's waterways no longer be used as dumping grounds for untreated industrial and organic waste, it effectively transferred responsibility for water purity from the states to the federal government.¹⁴

⁸ The Sausalito Historical Society, "Sausalito History", 2010, website: <http://www.sausalitohistoricalsociety.com/sausalito-history/>

⁹ Marin City, California, "Marin City's Development", 2011, website: http://marincitygov.org/2.1_history.html

¹⁰ Thomas V. Cech, *Principles of Water Resources: History, Development, Management, and Policy*, John Wiley & Sons, Hoboken, N.J.: 2005, p. 336.

¹¹ Andrew Stoddard, Jon B. Harcum, Jonathon, T. Simpson, James R. Pagenkopf, and Robert K. Bastian, *Municipal Wastewater Treatment: Evaluating Improvements in National Water Quality*, John Wiley & Sons, Inc., New York: 2002, p.22.

¹² *Municipal Wastewater Treatment: Evaluating Improvements in National Water Quality*, p. 23.

¹³ *Municipal Wastewater Treatment: Evaluating Improvements in National Water Quality*, p. 26

¹⁴ *Municipal Wastewater Treatment: Evaluating Improvements in National Water Quality*, p. 34.

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*Recorded by Kara Brunzell, Julia Mates

*Date March 13, 2013 ☒ Continuation ☐ Update

B10. Significance (continued)

Harry N. Jenks

Harry Neville Jenks graduated from UC Berkeley with a degree in Sanitary Engineering in 1916. After graduation, Jenks was hired by a British mining company, Burma Mines Limited, to work on sanitary engineering in its Burmese mining camps. By 1919, Jenks was publishing articles on his work in Burma and India in public health and engineering journals.¹⁵ In the mid-1920s, Jenks went to work for fellow Berkeley alumnus Clyde C. Kennedy.

Kennedy's firm soon began planning and designing California's early municipal sewage systems.¹⁶ In the late 1920s, Jenks left Kennedy's firm to become a college professor, teaching first at Iowa State and then at the University of North Carolina. During his teaching career, Jenks developed several new processes for water and wastewater treatment, most notably biofiltration, which became a worldwide standard for high-rate secondary wastewater treatment.¹⁷ Harry Jenks continued to work on treatment plant design while teaching, assisting with the design of a Mason City, Iowa wastewater facility in 1928, while teaching at Iowa State.¹⁸

In 1933, Harry Jenks left the academic world in order to promote his inventions, and returned to California to start his own engineering firm.¹⁹ Jenks, who located his company in Palo Alto, continued to specialize in the design of sewage treatment plants. By 1939, Jenks' firm had completed sewage plants in San Mateo, San Leandro, and Burlingame, and was negotiating with Berkeley to provide a treatment plant for that city.²⁰ Jenks went on to design at least eleven other sewage plants in the Bay Area and a dozen or more in other parts of California and in Nevada.²¹ In 1948 Harry's son John joined the firm, which became Jenks & Jenks. Harry Jenks eventually received 10 patents for his inventions. He continued to work on wastewater plants until his death in 1964. After his father's death John Jenks continued to design wastewater treatment plants. In 1980, John Jenks joined with Clyde Kennedy's grandson to form Kennedy/Jenks Engineering.²²

Sewage Treatment in Sausalito

Although Sausalito is not a large city, it is one of California's older settlements, and it was also one of the first to construct a sewer system. The first Sausalito sewers were constructed in 1893, the same year the town was incorporated. The initial sewage system, which was in place for 60 years, involved the discharge of raw sewage into the bay at several points along the waterfront.²³ In 1946, the California State Board of Public Health passed a

¹⁵ American Journal of Public Health, "The Caste System and the Sanitary Problem", November, 1919, p. 838 – 843.

¹⁶ Kennedy/Jenks Consultants, *Spotlights, Volume 29, Number 1*, April, 2009, p. 2 – 3.

¹⁷ John Jenks, Personal communication with Kara Brunzell, March 21, 2012.

¹⁸ The Iowa Recorder, "Sewage Plant Built by Decker at Mason City", October 31, 1928, p.1 col. 5.

¹⁹ John Jenks, Personal communication with Kara Brunzell, March 21, 2012.

²⁰ The Oakland Tribune, "Sewage Survey Tour Planned by Berkeley City Council", November 9, 1939, p. B15 col. 6 – 7.

²¹ John Jenks, Personal communication with Kara Brunzell, March 21, 2012.

²² Kennedy/Jenks Consultants, *Spotlights, Volume 29, Number 1*, April, 2009, p. 3.

²³ Marin County, California "Sewerage Study, County of Marin", prepared by Brown and Caldwell, Consulting Engineers, 1967, p. 25.

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B10. Significance (continued)

resolution prohibiting this practice. Sausalito, along with other municipalities in Marin County, was faced with the responsibility of treating sewage before dumping it into the bay.²⁴

In addition to the new state regulations, population growth in Marin County was putting increased strain on traditional sewage treatment solutions. Wartime workers, San Francisco commuters, and people drawn to Marin by its climate and landscape resulted in a 61% increase in population between 1940 and 1950.²⁵ Residents of several towns in southern Marin County formed the Southern Marin Sanitation District to attempt to address the wastewater problem regionally. The District retained Harry N. Jenks as consulting engineer, and he authored two studies recommending common facilities for southern Marin sewage treatment at the old Marinship World War II shipyard location. Voters rejected a bond measure in November, 1946, however.²⁶ In response, the Southern Marin Sanitation District created a plan to pipe all of southern Marin's sewage through Tennessee Valley into deep ocean water. The mayor of Mill Valley and other well-connected locals, however, opposed the plan and it was scuttled.²⁷ The Southern Marin Sanitation District dissolved, leaving each community to solve its own sewage disposal problems.²⁸

After the collapse of regional efforts, Sausalito and Marin City residents voted to create the Sausalito-Marin City Sanitary District (SMCSD). Harry N. Jenks, working with City Engineer John Oglesby, had completed plans for the plant by October, 1951.²⁹ On April 8, 1952, the electorate approved a \$775,000 bond for construction of the plant.³⁰ The Fort Baker site, which is roughly 800 feet south of Sausalito city limits, had several advantages, including its low land cost, existing water and power lines, and swift off-shore currents. In addition, the location was not visible from existing dwellings.³¹ The brisk currents and the proximity of deep water provided another benefit: the plant could save money by providing only primary treatment to the raw sewage.³² The steep terrain and limited space at the site, however, were serious obstacles to its location. Harry N. Jenks responded by designing a unique plant in order to fit what he called "a pocket handkerchief site."³³ In contrast to the common practice of dispersing treatment functions in separate buildings, Jenks stacked the clarifier and control house on top of the sludge digester (Photograph 4).³⁴

²⁴ Southern Marin Subregional Sewer Agency, "Southern Marin Subregional Wastewater Management Plan", Prepared by J. Warren Nute, Inc./Jenks and Adamson, Yoder – Trotter – Orlob & Associates, 1973, p. 4-2.

²⁵ The Daily Independent Journal, "State Chamber Survey Shows Growth of Marin Population, Wealth", February 15, 1951, p. 1 col. 2 – 5.

²⁶ "Southern Marin Subregional Wastewater Management Plan", p. 4-2

²⁷ Carla Ehat, "Interview with Vera Schultz", Oral History Project of the Marin County Free Library, March 28, 1983, website: www.co.marin.ca.us/depts/lb/main/crm/oralhistories/vschultzft.html.

²⁸ "Southern Marin Subregional Wastewater Management Plan", p. 4-3.

²⁹ The Daily Independent Journal, "Go-Ahead Given on Sewer Plans", October 13, 1951, p.1 col. 8.

³⁰ "Southern Marin Subregional Wastewater Management Plan", p. 4-10.

³¹ The Daily Independent Journal, "Sausalitans Learn Reason, Plans for Sewage Plant", March 11, 1952, p. 7 col.1 – 3.

³² Southern Marin Subregional Wastewater Management Plan", p. 4-12.

³³ The Daily Independent Journal, "Unique Sausalito Sewage Plant", March 8, 1952, p. 1 col 1-2.

³⁴ "Southern Marin Subregional Wastewater Management Plan", p. 4-11.

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B10. Significance (continued)

The SMCSD Board adopted an easement agreement with the army for use of the Fort Baker site on April 8, 1953.³⁵ The SMCSD provided sewage treatment for Fort Baker as well as Marin City and Sausalito. Sewers and pressure mains ranging in size from 10 – 24 inches were installed to intercept the raw sewage and redirect it to the treatment plant. After its completion in 1953, sewage pollution was eliminated from a four-mile stretch of shoreline from Fort Baker to Richardson Bay Highway Bridge.³⁶ Plant design capacity was 2.4 mgd, though peak flows during wet weather could be up to 8.3 mgd.³⁷ Seawater infiltration, however, was a problem for the plant. In its first years of operation the volume of water would overwhelm the system during heavy storms, forcing managers to open a bypass valve that discharged raw sewage into Richardson Bay. By 1967, the SMCSD had identified the sources of the problem and planned steps to solve it.³⁸

After passage of the Clean Water Act in 1972, Marin County's wastewater treatment facilities were faced with a federal mandate requiring an upgrade to secondary treatment. The Southern Marin Subregional Sewerage Agency, which included the SMCSD as well as nine other local wastewater districts, sponsored a study in 1973 to coordinate a regional plan to implement improved wastewater treatment.³⁹ Two regional wastewater studies from the 1960s had recommended a consolidated system with a regional plant near the coast serving all of southern Marin.⁴⁰ Though the 1973 study reached a similar conclusion, Marin County's wastewater continued to flow to various small, local agencies.⁴¹

The SMCSD treatment plant has been modified and expanded several times since its initial construction. Jenks and Jenks designed digester tank modifications in 1960.⁴² In 1974, sludge dewatering equipment was added and the chlorination system was improved.⁴³ A major effort to upgrade the plant by adding secondary treatment was undertaken in the mid-1980s. Kennedy/Jenks Consulting engineers had prepared plans and elevations for the plant additions by 1981. John Jenks, who was by this time a principal in Kennedy/Jenks/Chilton Consulting Engineers, was the project manager for the ambitious upgrade. The secondary units consisted of two biological towers mounted above sedimentation tanks, installed adjacent to the existing plant. A new primary sludge digestion tank was also installed. The digester in the original building was converted to a secondary sludge processor. The site once again provided major logistical challenges, requiring the contractor to build a cofferdam to temporarily dewater the tidal area.⁴⁴ Completed in 1986, the project both expanded capacity and improved the quality of discharged water to meet the new, stricter standards (Photographs 5 and 6).⁴⁵ Figure 1 shows the facilities in the present day.

³⁵ Sausalito-Marin City Sanitary District, "Resolution No. 47", April 11, 1953.

³⁶ "Southern Marin Subregional Wastewater Management Plan", p. 4-10.

³⁷ "Southern Marin Subregional Wastewater Management Plan", p. 4-11.

³⁸ "Sewerage Study, County of Marin", p. 25.

³⁹ "Southern Marin Subregional Wastewater Management Plan", p. 4-3.

⁴⁰ "Southern Marin Subregional Wastewater Management Plan", p. 1-2.

⁴¹ "Southern Marin Subregional Wastewater Management Plan", p. 4-12.

⁴² Harry N. Jenks – John Jenks, Consulting Engineers, "Digester Tank Modifications", 1960.

⁴³ Craig Justice, General Manager, Sausalito-Marin City Sanitary District, "General History", unpublished manuscript, 2013, p. 2.

⁴⁴ Engineering News-Record, "Sausalito wastewater Squeeze; Sewage Treatment Plant Tucked into Tight Site by the Bay", by Margaret Ralston, April 17, 1986 p. 1 – 2.

⁴⁵ Sausalito-Marin City Sanitary District, "About Us: History", 2013, Website: www.sausalitomarincitysanitarydistrict.com/aboutus/.

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B10. Significance (continued)

SMCSD was able to further lower the parts per million count in its discharged water after installing four sand filters in 1992.⁴⁶ By 2008 SMCSD served roughly 16,500 people in Sausalito, Marin City, Fort Baker, and the Tamalpais Community Services District.⁴⁷

Evaluation

SMCSD's original treatment plant building appears to meet this criteria for listing in the NHRP/CRHR because it is associated with events significant to national, state, and local history (Criterion A/1). It was the first wastewater treatment plant in Sausalito and one of the earliest in southern Marin County. Its construction was associated with World War II era population growth in the region as well as stricter standards for sewage discharge that were instituted by the state of California in the years immediately following the war. It is also associated with the history of Fort Baker, headquarters of U.S. Army Air Defense Command, Sixth Region, from the 1950s to the 1970s. In the 1970s, the U.S. Army 91st Division (Training Support) was transferred to Fort Baker, and in 1995, Fort Baker became part of the Golden Gate National Recreation Area.

Historical research did indicate that the facility is associated with important individuals significant to our past, Harry N. Jenks (Criterion B/2). Harry N. Jenks was a significant figure in the history of improvements to wastewater treatment technology in the twentieth century. Jenks held ten patents for wastewater treatment processes and designed dozens of wastewater treatment plants in the Bay Area, California, and beyond. Because Jenks was the consulting engineer for the project, his significant contributions are best evaluated under Criterion C/3. No other important individual significant to local, state, or national history is associated with the treatment plant.

The building represents the work of important creative individual (Criterion C/3). The wastewater plant is a utilitarian building. However, its unusual "stacked" design of was a unique solution Jenks employed in order to utilize the limited space of the site. Jenks's positioning of the clarifier above the digester was unique from an engineering perspective. The plant's original circular design, window treatments, and location at the water's edge give the structure an unusual "nautical" appearance when viewed from the bay. The building meets the NHRP and CRHR historic significance eligibility requirement for its architecture.

In rare instances, buildings themselves can serve as sources of important information, however this building is not a principal source of important information in this regard (Criterion D/4).

Eligibility for listing on either the NRHP rests on significance and integrity. A property must have both factors to be considered eligible. Loss of integrity, if sufficiently great, would offset the historical significance of a resource and render it ineligible. Despite the original wastewater treatment plant's historical significance for the period of SMCSD's initial formation, the building's integrity has suffered due to the alterations performed in 1985 – 1986 when the additional treatment facility was constructed. Though its location and association have remained

⁴⁶ Sausalito-Marin City Sanitary District, "About Us: History", 2013, Website: www.sausalitomarinacitysanitarydistrict.com/aboutus/.

⁴⁷ Environmental Protection Agency, "U.S. EPA orders Marin County Sewage Collection Systems to Address Chronic Sewage Spills" Press Release Statement, April 10, 2008, p.1.

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B10. Significance (continued)

unchanged over the years, its integrity of setting, design, materials, workmanship, and feeling were severely compromised by the alterations. The original circular design of the plant has been almost completely obscured by the construction of the causeway that wraps around three sides of the building, obscuring the lower half of the original facade (Photographs 4, 5, and 6). The causeway and additional buildings have also altered the original rural setting, and a profusion of pipes, tanks, burners, and storage facilities added over the years have obscured the clean lines of the original design (Photographs 4, 5, and 6). In addition, original equipment in the building was removed when the treatment processes were upgraded and the building's use was changed for administrative purposes in 1986. Original windows were also replaced with modern vinyl clad windows circa the 1990s. The Sausalito-Marin City Sanitary District Treatment Plant does not appear to be eligible for listing on the NRHP or the CRHR due to its loss of integrity.

P5b. Photographs (continued)



Photograph 2: Original treatment building façade (facing San Francisco Bay)
Camera facing west, note new vinyl sashes

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P5b. Photographs (continued)



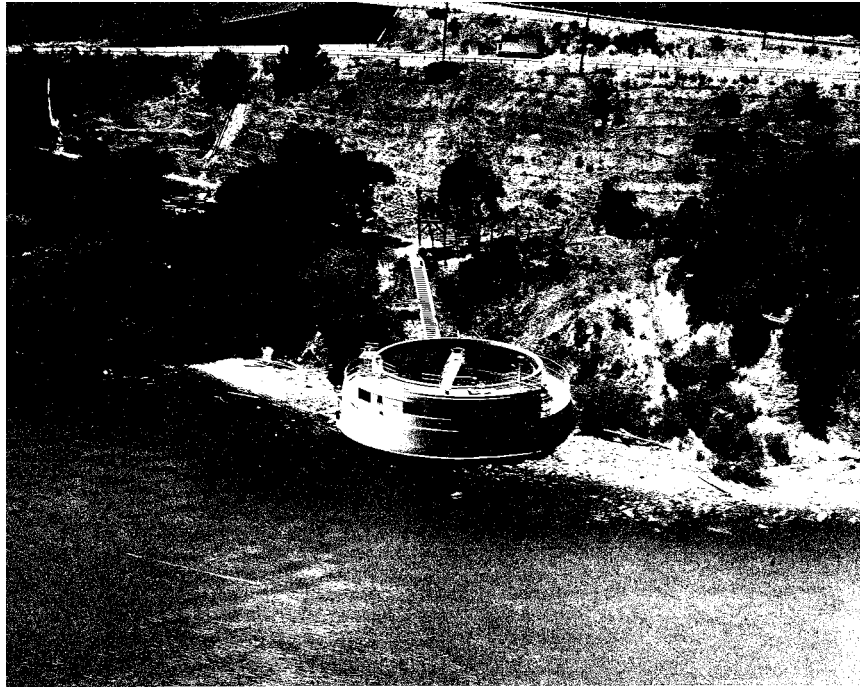
Photograph 3: Additional treatment building, constructed in 1986,
camera facing south

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P5b. Photographs (continued)



SAUSALITO-MARIN CITY SANITARY DISTRICT, MARIN COUNTY, CALIFORNIA

This unique primary treatment plant has a capacity of 2.0 million gallons per day and occupies an area within an 85 ft. diameter circle. Special problems of plant location resulted in this unusual integrated design with the clarifier above the digester. This plant, completed in 1953, cost only \$165,000 to construct.

Photograph 4: 1953 aerial photograph, camera facing west

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P5b. Photographs (continued)



Photograph 5: Original treatment building, camera facing north;
Note modern causeway in foreground

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P5b. Photographs (continued)



Photograph 6: Original treatment building, camera facing south
Note additional treatment facility (constructed 1986) in background

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Current Aerial View

- Original treatment building constructed 1953
- Secondary treatment facility, constructed 1986
- Causeway
- Storage sheds, water tanks, additional equipment

Sausalito-Marín City Sanitary District Treatment Plant
Sausalito, California



Figure 1



United States Department of the Interior

NATIONAL PARK SERVICE

Golden Gate National Recreation Area

Fort Mason # 201

San Francisco, California 94123

IN REPLY REFER TO:

H4217 (GOGA-CRMM)

APR 17 2013

Carol Rowland-Nawi, PhD
State Historic Preservation Officer
Attention: Mark Beason
Office of Historic Preservation
California Department of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001

Dear Dr. Roland-Nawi:

The National Park Service (NPS), Golden Gate National Recreation Area (GGNRA), in accordance with the regulations at 36 CFR 800, is initiating National Historic Preservation Act Section 106 consultation with the State Historic Preservation Officer (SHPO) regarding the upgrade of the Sausalito-Marín City Sanitary District (SMCSD) wastewater treatment facility located at 1 East Road, near Alexander Avenue, just south of the city limit of Sausalito in a cove along San Francisco Bay, in the Fort Baker area of the GGNRA. Fort Baker is a nationally significant historic site listed on the National Register of Historic Places as part of the Forts Baker, Barry, and Cronkhite Historic District (1973). The facility contains SMCSD storage and administrative buildings and treats wastewater through primary, secondary, and tertiary filters and processes before discharging the treated wastewater into San Francisco Bay. The SMCSD facility supports NPS and its park partners' sanitary waste treatment requirements at Fort Baker and the Marin Headlands pursuant to the terms of the Department of Army (DOA) and successor agencies right of way easements.

It is our understanding that this proposed upgrade activity constitutes an undertaking for Section 106 purposes, as the SMCSD will need to obtain a permit from the NPS for this construction on NPS land, and because the project involves construction of facility upgrades for treatment of wastewater and the conversion of an existing residence for administrative office uses.

The purpose of this project is to upgrade the SMCSD wastewater treatment plant installing primary, secondary, and tertiary improvements to address wet-weather flows, increase the quality of water discharging into San Francisco Bay, and respond to state and federal regulatory compliance directives. Additional facility improvements would provide administrative office and meeting space for SMCSD personnel by conversion of an existing site residence, precluding the need for construction of new buildings or building additions.

This project is needed, in part, because the US Environmental Protection Agency (EPA) issued administrative orders in recent years directing the SMCSD to upgrade the facility in response to several discharge events exceeding federal Clean Water Act Section 402 requirements. These discharge events

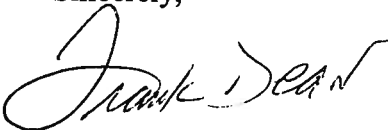
were caused by a lack of capacity during peak wet weather flows. During these events, effluent from the facility was discharged into the Bay without complete secondary treatment. The EPA directed the SMCSD to install primary system improvements to eliminate debris entering the primary clarifier. The improvements proposed at this time include the primary system improvements, as directed by the EPA as well as other secondary and tertiary improvements.

Environmental review for work on the SMCSD facility will occur through the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) processes. The SMCSD's cultural resources consultant, Tetra Tech, Inc. is preparing a determination of eligibility to evaluate the SMCSD facility as a historical architectural property and an archaeological survey has been conducted for the presence of archaeological properties in the project area. The Marin County Wastewater Treatment Facility Upgrades Project has the potential to affect the Forts Baker, Barry and Cronkhite National Register District, within whose boundaries it lies near the northeast corner of Fort Baker. Because the adjacent boundary is isolated from view of the rest of the historic district, the area of potential impacts on cultural resources under CEQA to be analyzed is proposed to be the Wastewater Treatment Facility footprint and boundaries of the Proposed Action and alternatives, and suspected adjacent Sailors' Cemetery.

A records search has been conducted at the Northwest Information Center. According to historical documents, an informal cemetery was established somewhere in the vicinity of the Project area to receive the remains of sailors who died while serving on ships anchored in the Bay. Tetra Tech is working with the GGNRA and SMCSD to conduct archaeological testing to determine if there are any human remains within the project area. Tetra Tech will prepare the Environmental Assessment and Initial Study to which will ensure the project's NEPA and CEQA compliance as it pertains to historical architectural and archaeological resources. Formal consultation was established with the Native American Heritage Commission (NAHC) in Sacramento to determine whether any portion of the present project area may encroach upon sites or associated cultural resources that may be deemed sacred by members of the local Native American Community. No response has been received to date. In addition, the Federated Indians of Graton Rancheria are being copied on this initiation of Section 106 consultation letter.

We look forward to continuing this Section 106 consultation with your office, as well as with the SMCSD and Tetra Tech. If you have any questions, please contact Bob Holloway of the park staff at (415) 561-4963 or Bob_Holloway@nps.gov.

Sincerely,



Frank Dean
General Superintendent

Enclosures (2)

Cultural Resources Area of Potential Effect (Direct) Aerial Photo

Cultural Landscape Report Forts Baker, Barry, and Cronkhite, Fort Baker 1972-Present Period
Plan

cc: Katry Harris, Advisory Council on Historic Preservation, w/ enc.
Greg Sarris, Federated Indians of Graton Rancheria, Chairman w/ enc.
Craig Justice, Sausalito-Marín City Sanitary District, General Manager w/ enc.

APPENDIX E

Scoping Materials

Sausalito-Marin City Sanitary District
1 East Road
Sausalito, CA 94965

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

Decision Process

It is anticipated that the EA/IS will be available for public review in the spring of 2013. This document will describe the project, analysis of alternatives, and potential environmental impacts from project construction and operation. Availability of the document will be formally announced through local news media, on the SMCSD and NPS websites, and also by email.

The official responsible for the final CEQA decision is the Board of Directors of the SMCSD, upon the recommendation of the SMCSD General Manager, and the NPS Regional Director for NEPA.

December 2012

Milestones
December 2012-January 2013 Public and agency scoping
Winter 2013 Development of alternatives and analysis of impacts
Spring 2013 NEPA/CEQA documents available for public and agency comment
Summer 2013 Issuance of Finding of No Significant Impact and Mitigated Negative Declaration

Sausalito-Marin City Sanitary District

National Park Service, Golden Gate National Recreation Area



Sausalito-Marin City Sanitary District Treatment Plant Upgrade Environmental Assessment/Initial Study

The Sausalito-Marin City Sanitary District (SMCSD), in coordination with the National Park Service (NPS), is starting the planning process to upgrade the SMCSD’s wastewater treatment facility at Fort Baker. This project would upgrade the wastewater treatment facility, thereby improving the quality of water discharges and improving the SMCSD’s ability to prevent sanitary sewage spills into the San Francisco Bay. This would be accomplished by constructing a headworks primary treatment upgrade, increased secondary treatment capacity and upgraded tertiary treatment system. The headworks component would be added to the existing primary treatment system to remove grit and other debris before the effluent is treated by downstream processes. The secondary treatment upgrades would reduce possible wet-weather related by-passes by refurbishing the treatment towers/pumps which would regulate flow storage to minimize peak flow rates. The tertiary upgrades would replace and increase capacity of the effluent sand filters, thereby ensuring improved water quality discharging into the Bay. In addition, the project would add needed Americans with Disabilities Act (ADA) compliant administrative office space by converting an existing on-site residence for SMCSD personnel. All of the proposed improvements would occur within an existing 4.8-acre easement with NPS and most would be constructed within the existing 2.0-acre facility footprint, with the exception of a 0.1-acre addition for relocation of an existing access road.



Kurt Rogers / The Chronicle

Background

The SMCSD operates a wastewater treatment facility on a 4.8-acre easement on lands owned by the NPS as part of GGNRA. This facility serves the communities of Sausalito and Marin City as well as the Fort Baker and Marin Headlands areas of GGNRA. The facility dates from 1953, and has been upgraded over the years to address regulatory and service needs.

Recently, the US Environmental Protection Agency and the State Regional Water Quality Control Board instructed the SMCSD to upgrade its facility in response to state and federal water quality requirements. These upgrades include the facility’s treatment and conveyance systems to improve the quality of water discharging into San Francisco Bay and minimize wet-weather in-plant bypasses. In addition, an opportunity exists to vacate an existing residence on the site and use it for administrative offices; this would address current ADA compliance deficiencies and provide administrative space without requiring new construction.

Project Purpose and Need

This project has been developed to improve regulatory compliance, ADA accessibility, reliability, performance, and to reduce wet weather blending events. To achieve these goals, the existing wastewater facility would be upgraded with the addition of a new headworks primary treatment facility, increased secondary treatment capacity, and upgraded tertiary treatment. The need for the project is driven by the following current conditions:

- The current primary, secondary, and tertiary wastewater treatment facilities need to be upgraded to achieve regulatory compliance with both federal and state agencies.
- The facilities need to be upgraded to improve the quality of the water discharging into San Francisco Bay and prevent bypass events.
- The current facility lacks sufficient administrative and meeting space for SMCSD personnel.

Project Objectives

The objectives for this project include the following:

- Eliminate possible sanitary sewer overflows.
- Comply with US Environmental Protection Agency and Regional Water Quality Control Board requirements.
- Improve primary, secondary, and tertiary treatment of wastewater.
- Improve the quality of wastewater that is discharged into the San Francisco Bay.
- Provide upgraded treatment facilities with minimal disruption of existing site and impacts to natural environment.
- Address environmental concerns by siting new and upgraded treatment facilities in a manner that minimizes impacts to natural communities.
- Provide additional administrative office space on-site to address ADA compliance issues without requiring new construction.



Public Scoping Activities

Prior to construction, the project must undergo environmental review to satisfy both federal and state requirements. An Environmental Assessment/Initial Study (EA/IS), per the requirements of the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA) will be prepared. Final decision and approval of this joint document will occur separately by the NPS as the lead agency for NEPA and by the SMCSD as the lead agency for CEQA.

The purpose of scoping activities is to obtain comments on the proposed project. Members of the public, interested organizations, and agencies are encouraged to provide comments on the full spectrum of issues and concerns that should be addressed in the EA/IS; to assist with defining a suitable range of alternatives, to advise on the nature and extent of potential environmental impacts and related topics, and to suggest possible mitigation measures and strategies that could reduce project impacts.

Project Location



Key topics expected to be addressed in the EA/IS include visual resources, coastal resources, water resources, cultural resources, wildlife and vegetation, and geology and soils.

Comments should be submitted no later than January 31, 2013. You can submit comments online at the project website printed below. Comments can also be mailed to the following address:

Mr. Craig Justice
SMCSD
1 East Road
Sausalito, CA 94965
SMCSD – Treatment Plant Upgrade Project

It is our practice to make all comments, including names and addresses of respondents, available for public review. If you would like us to withhold this from disclosure, please state this prominently at the beginning of your comment. If you use the website, check the box “*keep my contact information private.*” We will honor your request, but please be aware that we may still be required to disclose names and addresses under federal law.

Submit Comments at the Project Website: http://parkplanning.nps.gov/SMCSD_Upgrade

Join the Park Email List: <http://www.nps.gov/goga>; and click “*Join Our Email List*”

PUBLIC SCOPING LIST OF RECIPIENTS

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Sausalito, CA 94966

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Bay Area Discovery Museum
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Sausalito, CA 94965

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Sausalito, CA 94965

President
Braun Court Homeowners Association
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Executive Director
California Department of Fish & Game
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Sacramento, CA 95814

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California Department of Water Resources
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City Manager
City of Sausalito
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Herb Weiner, Mayor
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Karen Armes
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Executive Director
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Marin City Library
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Marin City, CA 94965

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Sausalito, CA 94965

Presidio Yacht & Sailing Club
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PUBLIC SCOPING LIST OF RECIPIENTS

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Sausalito Public Library
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Mary Perkins
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Bob Batha
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Commission
50 California Street, Suite 2600
San Francisco, CA 94111

Cavallo Point Lodge
601 Murray Circle
Sausalito, CA 94965

Marine Mammal Center
2000 Bunker Rd
Sausalito, CA 94965

Project Home [GOGA > Sausalito-Marín City Sanitary District Treatment Plant Upgrade, Fort Baker, Marin Headlands \(40411\) > Public Documents > Public Scoping Notice > Correspondence](#)

1 Project Setup **Correspondence (1)** [Enter More](#) [Edit](#) [Print](#) [Back To List](#)

2 Funding

3 Internal Scoping / IDT Tasks **Author Information**

Keep Private:	No
Name:	David Schonbrunn
Organization:	
Organization Type:	I - Unaffiliated Individual
Address:	P.O. Box 151439 San Rafael, CA 94915 USA
E-mail:	David@Schonbrunn.org

7 Public Documents & Comment Analysis **Correspondence Information**

Public Documents	Status:	New	Park Correspondence Log:	
Document 51025:	Date Sent:	12/18/2012	Date Received:	12/18/2012 6:00 PM
Document Details View Edit	Number of Signatures:	1	Form Letter:	No
Correspondences	Contains Request(s):	No	Type:	Web Form
Comments	Notes:			

Correspondence Text

Please investigate the following alternatives for reducing impacts on the Bay by reducing effluent flows to the Bay:

*Use of tertiary-treated wastewater for irrigation purposes at Fort Baker and the Conference Center.

*Create economic incentives for water conservation/reduced household sewage generation by tying the sewer bill to the wet-weather water consumption. This sends a strong price signal to households that conservation pays.

Please investigate the following alternatives for reducing sewage flow to the treatment plant:

*Create economic incentives for water conservation/reduced household sewage generation by tying the sewer bill to the wet-weather water consumption.

*Implement a comprehensive program of sewer lateral and sewer main repair to reduce inflows into the system.

Please investigate the following alternatives for reducing greenhouse gas emissions, especially those of methane:

*Bio-gas capture and use in electric power generation.

*Create economic incentives for water conservation/reduced household sewage generation by tying the sewer bill to the wet-weather water consumption.

8 Close Project

Add Comment

Comment Text:
2,500 char. max.

[Add Comment](#)

characters left

[Add Comment](#) Characters left

Comments

View	ID	Comment	Status	Assigned Code(s)	Code	Delete
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Request Type:

Request Text:

Save Request

Public Requests

ID	First 30 Characters	Type	Status	Edit
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PROOF OF PUBLICATION (2015.5 C.C.P.)

STATE OF CALIFORNIA County of Marin


FILE NO. 0004717254

I am a citizen of the United States and a resident of the County aforesaid: I am over the age of eighteen years, and not a party to or interested in the above matter. I am the principal clerk of the printer of the MARIN INDEPENDENT JOURNAL, a newspaper of general circulation, printed and published daily in the County of Marin, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Marin, State of California, under date of FEBRUARY 7, 1955, CASE NUMBER 25566; that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

12/18/2012

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Dated this 18th day of December, 2012.



Signature

PROOF OF PUBLICATION

Legal No.

0004717254

**Public Notice
Treatment Plant Upgrade Project
Sausalito-Marín City Sanitary District
(SMCSD)**

The SMCSD is inviting the public to provide comments regarding the District's Treatment Plant Upgrade Project Environmental Assessment and Initial Study (EA/IS). This project would address Federal and State water quality regulatory requirements by constructing upgrades to the primary, secondary, and tertiary treatment systems. In addition, the project would remodel the interior of an existing building to ADA compliant office space. The site is located at the existing SMCSD wastewater treatment plant along San Francisco Bay near Fort Baker, within the Golden Gate National Recreation Area (GGNRA). The EA/IS will address the project's compliance per both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The EA/IS will evaluate potential environmental impacts as well as alternatives for the project. The public is invited to comment on the scope of the project, the range of alternatives, and the issues that should be examined in the EA/IS. Comments will be accepted through January 31, 2013.

Interested individuals, organizations and agencies may submit comments online at http://parkplanning.nps.gov/SMCSD_Upgrade, or by mail to:

Mr. Craig Justice, Superintendent
Sausalito-Marín City Sanitary District
1 East Road
Sausalito, CA 94965
Attn: SMCSD Treatment Plant Upgrade
Project EA/IS

SMCSD is the lead agency for this project and is conducting both CEQA and NEPA compliance. GGNRA, as the land owner, is serving as a co-lead and is assisting with the NEPA process.

For more information visit the park website at http://parkplanning.nps.gov/SMCSD_Upgrade.

no. 1824 December 18, 2012