



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846



In Reply Refer To:
08ESMF00-2012-F-0229

MAR 06 2013

Leslie T. Rodgers
Regional Administrator
U.S. Department of Transportation
Federal Transit Administration
201 Mission Street, Suite 1650
San Francisco, California 94105-1839

Subject: Biological Opinion for the San Francisco Bay Area Water Emergency
Transportation Authority Central Bay Operations and Maintenance Facility
Project, Alameda, Alameda County, California

Dear Ms. Rogers,

This letter is in response to a January 30, 2012, letter from the U.S. Department of Transportation, Federal Transit Administration (FTA) to the U.S. Fish and Wildlife Service (Service), received by this office on February 1, 2012, requesting informal consultation on the proposed Water Emergency Transportation Authority Central Bay Operations and Maintenance Facility Project (Project) in the City of Alameda, Alameda County, California. The San Francisco Water Emergency Transportation Authority (WETA), with financial assistance from FTA, has proposed to construct a central San Francisco Bay operations and maintenance facility to serve as a base for WETA's ferry fleet, Operations and Control Center, and Emergency Operations Center. The facility location is on City of Alameda property within the historic boundaries of the Alameda Naval Air Station (NAS). The Federal lead for the project is FTA. During discussions between the Service and WETA it was determined that this Project warranted formal consultation.

At issue are the potential effects of the Project on the endangered California least tern (*Sterna antillarum browni*) (see Status of the Species). Critical habitat has not been designated for this species. This biological opinion is issued under the authority of the Endangered Species Act of 1973 as amended (16 U.S.C. 1531 *et seq.*) (Act).

This document was prepared based on: (1) information provided in your January 30, 2012, letter to the Service; (2) the January 2012 *Biological Assessment and Essential Fish Habitat Assessment San Francisco Bay Area Water Emergency Transportation Authority Central Bay Operations and Maintenance Facility Project* prepared by ICF International (2012 BA); (3) the March 2011 *Initial Study/Mitigated Negative Declaration for the San Francisco Bay*

Area Water Emergency Transportation Authority Central Bay Operations and Maintenance Facility prepared by ICF International; (4) a June 5, 2012, *Assessment of Least Tern Sheltered Open Water Forage Impacts and Mitigation for the Water Emergency Transportation Authority (WETA) Central Bay Maintenance and Operations Facility at Alameda Point* from ICF International and WETA to the Service; (5) several conference calls between WETA, ICF International, and the Service; (6) electronic mail correspondence and telephone communications between WETA, ICF International, and the Service; and (7) other information available to the Service.

Consultation History

- January 30, 2012 The Service received a letter, from the FTA, requesting informal consultation on the effects of the Project. The request included a Biological Assessment.
- July 12, 2012 The Service participated in a telephone conference with WETA and ICF International to discuss the potential effects of the project on California least tern foraging within the harbor.
- August 14, 2012 The Service participated in a second telephone conference with WETA and ICF International to discuss Project conservation measures and the necessity for formal consultation.
- November 14, 2012 The Service received correspondence from FTA containing sufficient information to initiate formal consultation.

BIOLOGICAL OPINION

Description of the Proposed Action

The proposed action is the construction of an operations and maintenance facility to serve as a base for WETA's ferry fleet in the central San Francisco Bay. The facility will be a berthing and maintenance location for 11 ferries and it will function as the Operations and Control Center and Emergency Operations Center for WETA's central San Francisco Bay ferry fleet. The Project includes dredging, construction of a 4-story, approximately 25,000 square-foot structure on land; construction of an approximately 20,000 square-foot marine facility over the water; and installation of associated infrastructure. The facilities would provide berthing, maintenance/repair, refueling, and re-supply for the ferry fleet. Additionally the Project will include an extension of the Bay Trail through funding for either signage/striping, overlook area, sidewalk widening, or a combination thereof.

The dredging component of the Project includes the removal of approximately 47,100 cubic yards of material during initial construction. Maintenance dredging is expected to be completed in one 10-12 hour day and will not occur more frequently than every 5 years. All dredging will occur between July 31 and November 30. Dredge material will be disposed of depending on the results of sampling for hazardous materials. If the dredge spoil samples are negative for hazardous materials, they would be available for reuse at wetland restoration sites within San Francisco Bay. Another disposal option is the San Francisco Deep-Ocean

Disposal Site (SF-DODS) site located 50 miles offshore. If dredge spoils do not meet standards for reuse or disposal at the SF-DODS, they will be trucked to a Class 3 landfill.

The proposed approximately 20,000 square-foot (0.46 acre) over-water marine facility will be a floating structure accessed via metal gangways and will include a concrete pier, berthing slips for 11 vessels, service cranes, a davit, and connections to utilities for fresh water, wash water, sanitary sewer, electricity, diesel fuel, maintenance fluids, waste pump-out, and fire suppression. During emergency situations, passenger loading and unloading will be accommodated. The facility will also include steel piles with donut fenders as guides to each ferry slip. Construction activities will include marine pile installation, marine float installation, fixed pier construction, and utilities installation. Marine float construction will require boats, support barges, and cranes (barge mounted and wheeled). Approximately 85 new piles will be installed.

The landside component of the Project includes an approximately 25,000 square-foot structure that will provide maintenance functions, storage, offices, crew facilities, and concession support. On-site storage facilities will include up to 48,000 gallons of fuel, over 2,000 gallons of maintenance fluids such as oil, 5,000 gallons of urea, waste oil, and maintenance/repair parts. Fuel deliveries are expected to be required every 2 - 3 weeks. Lube oil deliveries are expected to be on a monthly basis as is waste oil collection.

Construction of the landside facility will require the demolition of current facilities, excavation, ground improvements, installation of utilities, and bulkhead construction. The existing seawall is structurally unsound and will be demolished and replaced by a concrete secant-pile wall. Site preparation will necessitate the excavation of approximately 2,500 - 7,500 cubic yards of material. The removal of the existing seawall will generate 60 - 90 cubic yards of concrete rubble.

As a requirement of the San Francisco Bay Conservation and Development Commission, WETA will be contributing to public access improvements of the Bay Trail through one or a combination of three options. The purpose of this portion of the Project is to improve public access and recreational opportunities in and around Alameda Point through one or a combination of the following measures:

1. Contribute funding to provide signage, striping, and plastic bollards to connect the extension Bay Trail to an interim trail around the secure U.S Department of Transportation Maritime Administration facilities.
2. Establish a new Bay Trail overlook area that would include benches, a decorative fence, and landscaping at the southeast portion of the existing park that is east of the action area.
3. Widen sidewalks on West Hornet Avenue (with landscaping) and provide an additional bike lane leading towards the current location of the USS Hornet.

Parking for construction personnel will be on the adjacent parking lot northeast of the site and owned by the City of Alameda.

Operations and Maintenance

Electricity to the Project facility will be provided by Alameda Municipal Power. The estimated connection load is 600 - 900 kilowatts. Potable water will be transferred through the facility to the fleet at a rate of 100,000 - 200,000 gallons per day. Waste-water will be transferred from the fleet through the facility at a rate of 75,000 - 150,000 gallons per day.

Operational and maintenance activities will be occurring daily with all ferry boats visiting the facilities at least twice daily for a total of four transits each through the harbor. Each transit is expected to take 5 minutes.

Project Schedule

Implementation of the Project is scheduled to begin as early as July 2014. All dredging and in-water pile driving activities will occur between July 31 and November 30 each year. Total construction time is expected to be 16 months. The design life of the Project is 50 years.

Conservation Measures

WETA will ensure the following avoidance and minimization measures for covered activities, as detailed in the 2012 BA, the January 30, 2012 letter requesting informal consultation, agreed to measures, and this document, are adhered to for the protection of the California least tern and other federally-listed species:

1. Prior to initiation of construction activities, a Service-approved biologist will conduct a training session with construction personnel who will be working during the period that California least terns are nesting and roosting at the Alameda Point colony. At a minimum, the training shall include: a description of the California least tern, its habitat requirements and life history; the importance of the species and their habitat, the general measures that are being implemented to conserve the species as they relate to the Project, and the boundaries within which the Project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a Service-approved person is on hand to answer any questions. Personnel completing training will sign a form stating that they attended and understand all the conservation and protection measures. During Project implementation, new personnel will receive this training before performing their duties on the site.
2. At least 15 days prior to the onset of any construction-related activities, WETA will submit to the Service, for approval, the name(s) and credentials of biologists it requests to conduct activities specified for this Project. Information included in a request for authorization must include, at a minimum: (1) relevant education; (2) relevant training on species identification, survey techniques, handling individuals of different age classes, and handling of different life stages by a permitted biologist or recognized species expert authorized for such activities by the Service; (3) a summary of field experience conducting requested activities (to include project/research information and actual experience with the species); (4) a summary of biological opinions under which they were authorized to work with the listed species and at what level (such as construction monitoring versus handling), this

should also include the names and qualifications of persons under which the work was supervised as well as the amount of work experience on the actual project, including detail on whether the species was encountered or not; and (5) a list of Federal Recovery Permits [10(a)1(A)] held or under which individuals are authorized to work with the species (to include permit number, authorized activities, and name of permit holder).

3. All construction activities will be limited to daylight hours.
4. Pre-construction surveys for night roosts of California least tern will be conducted between mid-April and early May by a Service-approved biologist. If a California least tern night roost is located, construction shall stop until the colony has left the area.

If birds are observed roosting within the Project area, prior to the daily initiation of construction activities, workers shall cease and withhold construction activities within 250 feet of any roosting birds and contact the Service-approved biologist. The Service-approved biologist will then identify the birds to species. Construction will resume if the birds are not California least terns. If roosting California least terns are confirmed to be within the Project area, construction activities may only continue over 250 feet from the birds until the Service-approved biologist observes the birds have left the area.

5. WETA will contribute to the enhancement of California least tern nesting habitat at Alameda Point by providing for the procurement and delivery of sand to be spread over half of the tern colony nesting area (approximately 5 acres) to a 3-inch depth. Sand material will be Angel Island coarse sand sourced through Hanson Aggregates. WETA will coordinate directly with Hanson Aggregates to have sand delivered at an appointed time acceptable to the Service prior to the seasonal arrival of California least terns at the colony site. Coordination with the Service will be required to ensure that sections of the colony for the sand delivery are marked off and to ensure that fences and other facilities do not get damaged in the sand transport.
6. In-water construction will be limited to the period between July 31 and November 30.
7. WETA will ensure that the construction contractor prepares and implements a Storm Water Pollution Prevention Plan (SWPPP) to protect water quality during construction. The San Francisco Bay Regional Water Quality Control Board (RWQCB), the primary agency responsible for protecting water quality within the Project area, is responsible for reviewing and ensuring compliance with the SWPPP. The SWPPP will include a description of Best Management Practices (BMPs) to be applied to minimize the discharge of pollutants from the site during construction. These construction BMPs will include, but will not be limited to, the following:
 - Train construction personnel in proper material delivery, handling, storage, cleanup, and disposal procedures.
 - Develop spill response and containment procedures for construction.
 - Identify all storm drains and catch basins near the construction site and

ensure all workers are aware of their locations to prevent pollutants from entering.

- Protect all storm drains and catch basin inlets.
 - Develop an erosion control and sediment control plan for wind and rain.
 - Refuel vehicles and equipment away from San Francisco Bay to prevent runoff and to contain spills.
 - Minimize the potential for contamination of San Francisco Bay by maintaining spill containment and cleanup equipment onsite, and by properly labeling and disposing of hazardous waste.
 - Inspect site regularly to ensure that all BMPs are intact and maintained as needed.
 - Conduct daily site cleanings as needed.
 - Maintain written records of inspections, spills, BMP-related maintenance activities, corrective actions, and visual observations of offsite discharge of sediment or other pollutants, as required by the RWQCB.
8. The following avoidance and minimization measure addresses turbidity monitoring during dredging activities.
- Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.
 - Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.
 - Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.
 - Where natural turbidity is greater than 100 NTUs, increases shall not exceed 1 percent.
 - The specific monitoring schedule including any additional timing information and quality assurance shall be determined by WETA in collaboration with the RWQCB.
9. All construction and maintenance vessels and all construction vessels and ferry boats will utilize access corridors and a 5 mile per hour speed limit as detailed in the Draft Comprehensive Conservation Plan Alameda National Wildlife Refuge (Service 1998).
10. The following measures will be implemented to reduce the potential for noise related effects to federally protected fish and marine mammals during in-water work.
- In-water work activities will be between July 31 and November 30. This is outside of the peak juvenile outmigration period for federally

listed fish species.

- Bubble curtains will be used to attenuate impact pile driving sounds.
- A vibratory pile driver will be used when feasible. Use of bubble curtains is not required with a vibratory pile driver.
- Sound levels will be monitored. Real-time sound data will be used to adjust bubble curtains if necessary to minimize underwater noise from impact pile driving. Pile driving would be discontinued on any given day when monitoring data indicates that the cumulative sound level (195 decibels) is exceeded.
- As a performance standard, the selected measures will represent the best available technology that is economically achievable, and will achieve maximum feasible reduction in underwater sound pressure levels and/or related impacts on listed fish species.

11. Per RWQCB C.3, WETA will develop a compliance plan to ensure runoff is adequately collected and treated prior to discharge, and that peak flows and flow durations match pre-project conditions. BMPs included in the compliance plan may require operational maintenance such as cleaning and sweeping to ensure that the fuel storage vaults and fueling areas are kept clean and stormwater runoff does not collect contaminants such as urea and diesel stored at the site. The final compliance plan shall be approved by the RWQCB.

12. A copy of this biological opinion will be available on-site during all project activities.

Action Area

The Service defines the action area as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 Code of Federal Regulations [CFR] § 402.02). For the purposes of assessing the effects of the Project, the action area includes the entire footprint of the land-side facility (e.g., storage and maintenance building), the footprint of the over-water facilities (e.g., berthing slips, gang planks, and service equipment), the area to be used for construction, and the 100-foot wide ferry transit route through the harbor.

Analytical Framework for the Jeopardy Analysis

In accordance with policy and regulation, the jeopardy analysis in this biological opinion relies on four components: (1) the *Status of the Species*, which evaluates the range-wide condition of the California least tern, the factors responsible for that condition, and their survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the federally-listed species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the listed species; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the listed species; and

(4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the listed species.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the listed species' current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of the survival and recovery of this species in the wild.

The jeopardy analysis in this biological opinion places an emphasis on consideration of the range-wide survival and recovery needs of the listed species and the role of the action area in the survival and recovery of this species as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Status of the Species

Refer to *California least tern (Sternula antillarum browni) 5-Year Review: Summary and Evaluation* (Service 2006) for the current Status of the Species. The California least tern was listed under the name *Sterna albifrons browni* in 1970. Within the 2006 5-Year Review for this species, the Service recognized a name change to *Sterna antillarum browni*. The final rule documenting this change has yet to be published.

Environmental Baseline

The action area can be located on the Oakland West, U.S. Geological Survey (USGS) 7.5-minute quadrangle map. The action area is within the City of Alameda and within an area which was leased to the Navy during the period of operation as NAS Alameda. The action area was historically a combination of submerged, tidal, and dry lands. The first documented filling of the tidal and submerged lands began sometime in the 1850s. By the 1940s, most of the submerged and tidal lands, what later became NAS Alameda, had been filled, primarily with dredge materials from harbors throughout the East Bay. The Navy began constructing NAS Alameda in 1938. Naval Air Station Alameda included an airport with seven aircraft maintenance hangars, one of the largest deepwater naval ports in California, one of the two largest complexes of aircraft maintenance buildings on the West Coast, a seaplane lagoon, warehouse space, administrative offices, military residences, community support facilities, and open space. Until NAS Alameda closed in 1997, the Navy managed the action area as an active port with support facilities, and the open waters as secure transit areas for the passage of ships and other watercraft. Prior to base closure, all land and open water areas were closed to the public for military security purposes.

Currently the action area consists of a degraded seawall, concrete and/or asphalt land-side property, and partially developed open water with a degrading pier structure and pilings. The action area lies within the historic NAS Alameda harbor which was created with a breakwater to the south of the land-side portion of the NAS facility.

California least terns have nested between two of the runways at NAS Alameda since at least 1976. In 1981, the Navy built an electric fence around the 6-acre California least tern colony and enhanced the nesting substrate within the fenced area with gravel, soil, sand, and oyster

shells. The fence around the colony was later replaced and enhanced to prevent California least tern chicks from wandering onto the active runways. As part of managing the active runways, the Navy repaired the runways, which resulted in limited vegetation surrounding the California least tern colony. Since 1979, the Navy has conducted management activities for the benefit of the California least tern, including site preparation, nest monitoring, and vegetation management. In the 1980s, the Navy began a predator control program. In 1997, NAS Alameda was closed, a fence was installed along the eastern boundary of the Proposed Refuge to restrict public access to the area, and the Navy began the property conversion process. In 2004, the colony site was expanded to 9.7 acres, and a new non-electric fence was installed and substrate enhancements were implemented.

Currently, the Navy and the Service manage the California least tern colony through the provisions outlined in a 1999 biological opinion issued for the Navy's disposal and reuse of NAS Alameda (1999 BO). These general provisions are also reflected in a 2012 biological opinion (2012 BO) issued for the proposed NAS Alameda disposal and reuse project in the City of Alameda (2012 Project). This 2012 BO includes significant differences between the description of the proposed action outlined in the 1999 BO and the description of the proposed action outlined in this biological opinion, and thus the environmental baseline, are: (1) the inclusion of a Veterans Affairs (VA) hospital and cemetery; (2) the removal of a golf course and associated 120-unit lodging facility and parking lot for 200 vehicles totaling 6 acres in the northwestern portion of the former NAS Alameda; (3) the removal of the 58-acre light industrial area from the northwestern portion of the former NAS Alameda; and (4) the proposed refuge will no longer be conveyed by the Navy to the Service. One result of the 2012 Project is a 35 percent reduction in buffer zone habitat adjacent to the California least tern colony (Service 2012). This reduction will have the effect of increasing predation, perceived predation and human disturbance, and reduce the ability to conduct effective predator management at the site. In addition, the 2012 Project will decrease access to and reduce the quality and quantity of the documented foraging areas surrounding NAS Alameda.

The California least tern colony at NAS Alameda is the largest and most stable breeding colony in the San Francisco Bay Area and is considered the source population for the region. Because this colony consistently produces large numbers of fledglings each year, it is considered to be one of the most important source populations in California, serving to balance out losses at many sink locations throughout the state (Caffrey 2005). From 1977 to 2010, the number of breeding pairs at NAS Alameda has steadily increased from 10 to 302, respectively, with an all-time high of 424 pairs in 2005. Since 2005, the number of breeding pairs at NAS Alameda has declined, but now appears stable or increasing. Although the number of breeding pairs has recently declined, the timing and size of the decline directly correlates with the establishment of colonies at Hayward Regional Shoreline (53 pairs in 2010), Napa-Sonoma Marshes Wildlife Area (47 pairs in 2010), and Montezuma Wetlands (23 pairs in 2010), the only other active breeding colonies in the San Francisco Bay Area in 2010 (Marschalek 2011). From 2001 to 2010, the fledgling to pair ratio at NAS Alameda averaged 0.80, lower than the 1.00 fledgling to pair ratio recommended for recovery (Service 1985). However, a 0.80 fledgling to pair ratio is greater than the 0.70 fledgling to pair ratio determined by Francker (1992) to be the ratio required to maintain a stable California least tern breeding colony. According to Caffrey (1995), the California least tern breeding site at NAS Alameda has played a significant role in increasing the number of California least terns

throughout California. Since 1990, the size of the California least tern colony at NAS Alameda has been among the 10 highest in California, and fledgling success has exceeded that of almost all other colonies. For instance, in 1999, NAS Alameda produced over 50 percent of the statewide fledglings; in 2002, the site produced approximately 24 percent; and in 2011, it was again the most successful California least tern breeding colony, producing 17 percent of the fledglings. If not for the management of the NAS Alameda California least tern colony by the Navy early on, California least terns may not have survived the range and degree of disturbance and disruption of breeding sites that occurred in the San Francisco Bay Area over the last three decades.

The most significant threats to the California least tern within the action area include: (1) predation by native, non-native, and human-associated predators; (2) perceived predation and human disturbance; (3) degradation of foraging areas through the development of a marina in Seaplane Lagoon and increased boat traffic that will reduce foraging success, (4) obstruction of access to foraging areas as a result of development between the California least tern colony and documented foraging areas; and (5) sea level rise associated with global climate change. The habitat attributes at NAS Alameda that have allowed it to be one of the most successful California least tern breeding colonies in the world over the last 20 years are primarily attributed the large buffer zone surrounding the 9.7-acre nesting area (Caffrey 2005). This buffer zone is comprised of runway tarmac, except for sparse, low-growing vegetation, and a few small anthropogenic structures to the north, south, and west. As a result of a lack of vegetation and human structures, the large buffer zone provides little habitat for potential California least tern predators, allows California least terns to detect and react naturally to potential predators, and allows for a more effective predator control program. Because of these attributes, predation pressure at NAS Alameda has been documented to be less intense than at other sites with season-long predator-control programs (Caffrey 2005). Since the Navy no longer maintains the runways for aircraft use, the tarmac is cracking, corroding, and collapsing in some areas, increasing its suitability for weedy vegetation capable of establishing at the site. The establishment of weedy vegetation, if not adequately controlled, will provide habitat for potential predators.

The relative lack of human structures in three of the cardinal directions also provides California least terns with unobstructed access to documented foraging areas in those directions. During the breeding season, California least terns forage for fish in the open waters offshore of the western end of the island, which contains extensive and productive foraging areas (Caffrey 2005). Because of its northern location, NAS Alameda is relatively unaffected during El Niño years, when many southern California sites experience pronounced breeding failure resulting from limited food availability (Caffrey 1995). As global climate change increases ocean surface temperatures, the frequency of El Niño-like conditions in southern California may increase, increasing the importance of the colony at NAS Alameda to the species as a whole (Caffrey 2005). California least tern foraging activities have been documented to the west and south of the island both in and outside of the harbor.

The removal of contaminated sediments from Seaplane Lagoon, a documented California least tern foraging area, occurred in 2011 and 2012 and during the California least tern breeding season, under the authority of the Navy and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. This action temporarily reduced the

amount and quality of foraging habitat within Seaplane Lagoon. In addition to the temporary loss of foraging habitat, these activities disturbed sediments known to be contaminated with numerous chemicals, including heavy metals, solvents, paints, detergents, acids, caustics, mercury, oil and grease, PCBs, DDT, and Radium 226, hazardous substances known to be chemical stressors to wildlife. Once these sediments were suspended in the water, they may have caused fish to leave the area and/or disrupted the reproductive success of fish species the California least terns prey on, thereby reducing forage availability. In addition, the release of these hazardous substances may have affected California least tern reproductive abilities, as many of these chemicals are known to bioaccumulate as they move up the food chain. The Navy did not provide the Service with a biological assessment and did not initiate section 7 consultation with the Service; therefore, the effects of this Federal action to the California least tern have not been analyzed and are not fully known.

Routine dredging of the Oakland Inner and Outer Harbors by the U.S. Army Corps of Engineers occurs during the California least tern breeding season. Dredging these documented foraging areas during the California least tern breeding season temporarily adversely affects the California least tern by reducing the quality of approximately 452 acres of open water foraging habitat, reducing California least tern foraging success, and the quality of habitat for several species of fish California least terns prey on. To compensate for these effects, the U.S. Army Corps of Engineers annually funds predator management at the NAS Alameda California least tern colony.

As part of the 2012 Project, Seaplane Lagoon (Marina Area) will be developed as a marina. The Marina Area is contiguous with the main harbor, and vessels will pass through the harbor to access it. The Marina Area has been consistently documented as being used by California least terns for foraging. According to Susan Euing (National Wildlife Refuge Biologist at NAS Alameda, pers. comm. 2011), due to the presence of Breakwater Island, the waters of the Marina Area are calmer than San Francisco Bay, and California least terns tend to forage in the Marina Area on windier days due to relative calmness of the water. The development of the Marina Area will result in the direct loss of a portion of this foraging habitat as a result of constructing the marina and berthing boats at the site, and it will reduce the quality of remaining foraging habitat as a result of increased boat traffic. In addition, the development of the VA facilities on the northwestern portion of the island will obstruct access to documented foraging areas in the Oakland Inner Harbor. It is not clear if California least terns will choose to fly around the VA facilities rather than fly over them. Flying around the VA facilities increases the round-trip flight distance to the Oakland Inner Harbor by approximately 2 miles. Both the development of the Marina Area and VA facilities may force California least terns to travel farther to forage and spend less time with chicks. Increased travel time to forage and spending less time with chicks would result in increased chick mortality due to malnutrition, exposure to predators, and temperature related stress. The development of the Marina Area would also decrease the quality of foraging habitat throughout the Marina Area and other waters within the action area due to increased boat traffic and potential oil and gas leaks from the boats. A conservation easement and other enforceable property interest, the implementation of a "No Wake Zone", and a "Water Craft Exclusion Zone" on other waters with documented California least tern foraging to be transferred to the City of Alameda are components of the 2012 Project and are included in the 2012 BO.

Effects of the Action

This Project will result in the loss of 0.46 acre of documented California least tern foraging habitat from the construction of the over-water facility. Additionally foraging habitat along the ferry transit route through the harbor will result in the loss of 14.6 acres of California least tern foraging habitat. The establishment of this facility will also increase ferry traffic within many of the documented foraging areas surrounding NAS Alameda, further reducing the quality and quantity of foraging habitat and resulting in the perpetual harassment of California least terns foraging within the areas subject to ferry traffic to and from the facility. This effect may be amplified during windier days when California least terns concentrate foraging activities within the calmer waters of the harbor.

The procurement and delivery of sand to be spread over half of the California least tern colony nesting area (approximately 5 acres) will contribute to the enhancement of nesting habitat and is expected to benefit the colony through increased nesting success for multiple seasons.

Construction Related Effects

In addition to the effects of the completed project to the California least tern, construction related activities would primarily consist of increased noise and vibration, construction traffic, and the operation of construction equipment, which could increase stress, harassment, and perceived predation that would result in decreased breeding success. In addition, increased human activities associated with the construction of the Project may increase habitat for predators of California least terns. However, the effects of construction related activities will be avoided and minimized by not conducting activities that will increase ambient noise levels and vibration at the California least tern colony nesting site during their breeding season, properly disposing of garbage, and the installation and maintenance of a construction barrier fence to ensure construction activities are limited to the construction area footprint.

Summary

While WETA has proposed measures to minimize the short and long term effects of the Project on the California least tern, the Service expects the effects of implementation of the proposed project to permanently decrease, by a small but measureable extent, the future reproductive potential and long term average size of the California least tern colony at NAS Alameda. We base this conclusion on the loss of buffer zone habitat and these associated additive effects: (1) an incremental increase in actual and perceived predation and increased human disturbance from increased human presence; (2) a reduction in the quality and quantity of foraging habitat within the harbor; and (3) the potential increase in foraging time due to the increase in ferry traffic in the immediate vicinity of the breeding colony.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Activities

At the southwestern corner of NAS Alameda is Installation Restoration Site 2 (IR-2), an approximately 100-acre site that includes an approximately 60-acre former landfill, approximately 2,200 feet west of the California least tern colony. IR-2 was used by the Navy to dispose of waste, including chemical drums (contents unknown), solvents, oily waste and sludge, paint, plating waste, industrial strippers and cleaners, acids, mercury, PCB-containing liquids, batteries, low-level radioactive waste, inert ordinance, asbestos, pesticides, tear gas agent, biological waste from the Oak Knoll Naval Hospital, creosote, dredge spoils, and waste medicines and reagents. The Navy plans to continue remediation activities at IR-2 (initiated in 2012) over the next several years. Because the remediation activities at IR-2 are being performed under CERCLA, no permits are specifically required for the on-site elements of the project, including, based on the Navy's interpretation of CERCLA, section 7 consultation with the Service. Therefore, this activity is being included in the cumulative effects section of this biological opinion. The specific effects of this action to the California least tern are unclear, because the Navy has not provided the Service with a biological assessment describing the action in sufficient detail to discern the potential effects to the species. However, based on the information the Navy has provided the Service, remediation activities at IR-2 include establishing large staging areas within the proposed refuge, conducting activities during the California least tern breeding season, removing contaminated materials from the landfill, and covering the landfill. From this, it is clear that remediation activities at IR-2 will temporarily and significantly increase human disturbance to the west of the California least tern colony. The long-term, but temporary, loss of buffer zone habitat to the west of the California least tern colony as a result of the remediation of IR-2, combined with the loss of buffer zone habitat to the north from the construction and development of the 2012 Project and the City of Alameda's redevelopment activities, will temporarily reduce unobstructed access to foraging habitat by more than 60 percent and increase anthropogenic disturbance within the buffer zone, which will harm the California least tern by stressing it to such an extent that breeding success will be reduced.

Climate Change and Sea Level Rise

Sea level rise associated with global climate change is a significant threat to the long-term persistence of the California least tern colony within the action area. According to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC 2007), the global sea level rose by about 400 feet during the several millennia that followed the end of the last ice age (approximately 21,000 years ago), and stabilized between 3,000 and 2,000 years ago. Sea level indicators suggest that global sea level did not change significantly from then until the late 19th century. The instrumental record of modern sea level change provides evidence of the onset of sea level rise again during the 19th century. Estimates show that during the 20th century global average sea level rose at a rate of about 0.07 inch per year.

Satellite observations available since the early 1990s provide more accurate sea level data with nearly global coverage. This satellite altimetry data set shows that since 1993, sea level has been rising at a rate of approximately 0.12 inch per year, significantly higher than the average during the previous half century (IPCC 2007). It has been suggested that the climate system, particularly sea levels, may be responding to climate changes more quickly than the

models predict (Heberger *et al.* 2009). Additionally, most climate models fail to include ice-melt contributions from the Greenland and Antarctic ice sheets and may underestimate the change in volume of the world's oceans.

According to a 2009 study conducted by Pacific Institute, under medium to medium-high emissions scenarios, mean sea level along the California coast will rise from 3.3 to 4.6 feet by the year 2100 (Heberger *et al.* 2009). Other key findings of the study report that a 4.6-foot sea level rise would flood approximately 150 square miles of land and would result in accelerated erosion, resulting in a loss of an additional 41 square miles of California's coast by 2100. The Service has chosen to adopt this medium to medium-high emissions scenario for planning purposes, as have most other government regulatory and land and resource management entities. Based on the model of sea level rise by Heberger *et al.* (2009), without constructing levees or implementing other preventative measures, the majority of the action area will be inundated by 2100 under the medium-high emissions scenario, except for a small island of land that includes a small portion of the California least tern nesting area.

Conclusion

After reviewing the current status of the California least tern, the environmental baseline for the species in the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the San Francisco Bay Area Water Emergency Transportation Authority Central Bay Operations and Maintenance Facility Project, is not likely to jeopardize the continued existence of the California least tern. While we expect that the incremental effects of the Project will reduce the ability of the California least tern colony to achieve the past high numbers of breeding pairs and fledglings, we expect it to continue to remain a productive breeding colony. We base our determination on the following: (1) WETA will provide sand for enhancing nesting habitat at the California least tern breeding colony on Alameda; (2) the Project will not affect the breeding colony or lands surrounding it on Alameda; and (3) the Project includes design features and standards that have been specifically included to minimize the effects of the proposed Project to the species.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harass is defined by the Service as actions that create the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), take that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the applicant so that they become binding conditions of any grant or permit issued to the

applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The applicant has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the FTA: (1) fails to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document; and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The proposed project will reduce the quantity and quality of foraging habitat, adversely affecting all life stages of the California least tern at NAS Alameda; thereby resulting in take of the California least tern in the form of harm, through habitat modification and disruptions in breeding success, and harassment. It will be difficult to quantify incremental increases in take to the California least tern due to natural population fluctuations. However, these effects will ultimately result in decreased breeding success and an overall decline in the number of breeding pairs at NAS Alameda. Despite these effects, we anticipate that the breeding success of the California least tern colony at NAS Alameda will not drop below an average annual fledgling per pair ratio of 0.79, over any consecutive 5- year period; and the overall number of breeding pairs will not drop below 300 in any given year.

Effect of the Take

The Service has determined that the level of anticipated take is not likely to result in jeopardy to the California least tern.

Reasonable and Prudent Measures

The Service believes the following Reasonable and Prudent Measure is necessary and appropriate to minimize the effects of the Project on the California least tern:

The FTA and WETA will minimize the effect of take on the California least tern.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the FTA must comply with the following terms and conditions, which implement the Reasonable and Prudent Measure described above. These terms and conditions are non-discretionary.

1. The following terms and conditions implement the Reasonable and Prudent Measures:
 - a. The FTA shall require WETA to fully implement measures to minimize the potential for incidental take of federally listed species through implementation of conservation measures as described in the Description of the Proposed Action section of this biological opinion for the duration of the Water Emergency Transportation Authority Central Bay Operations and Maintenance Facility Project.

- b. The FTA shall ensure that WETA complies with the Reporting Requirements of this biological opinion and the written reports described.
- c. If requested, the FTA shall ensure the Service or their authorized agents can examine the action area for compliance with the Description of the Proposed Action and Terms and Conditions of this biological opinion before, during, and after Project completion.

Reporting Requirements

The applicant shall submit, annually, a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within sixty (60) calendar days of the date of the completion of construction activity. This report shall detail: (1) dates that construction occurred; (2) pertinent information concerning the success of the Project in meeting the avoidance and minimization measures; (3) an explanation of failure to meet such measures, if any; (4) known Project effects on the federally listed species, if any; (5) occurrences of incidental take of listed species, if any; (6) documentation of employee environmental education; and (7) other pertinent information.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and databases. Our conservation recommendations are as follows:

1. The FTA should assist the Service with implementation of recovery actions identified by the Service in the Recovery Plan for the California least tern.
2. The FTA should incorporate “environmentally friendly” erosion and stabilization techniques whenever possible in their projects.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the Water Emergency Transportation Authority Central Bay Operations and Maintenance Facility Project in Alameda County, California. As provided in 50 CFR §402.16 reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat

that was not considered in this biological opinion; and/or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion on the Water Emergency Transportation Authority Central Bay Operations and Maintenance Facility Project, please contact Dan Cordova, Fish and Wildlife Biologist (Dan_Cordova@fws.gov) or Ryan Olah, Coast Bay/Forest Foothills Division Chief (Ryan_Olah@fws.gov) at the letterhead address or at telephone (916) 414-6600.

Sincerely,



 Jan C. Knight
Acting Field Supervisor

cc:

Joy Albertson and Susan Ewing, San Francisco Bay National Wildlife Refuge Complex,
Newark, California

Robert Doyle, East Bay Regional Parks District, Oakland, California

Larry Janes, Department of Veterans Affairs, Mare Island, California

Anthony Megliola and Sarah Ann Moore, Department of the Navy, San Diego, California

Jennifer Ott, City of Alameda, Alameda, California

Literature Cited

- Caffrey, C. 1995. California least tern breeding survey, 1994 season. California Department of Fish and Game, Nongame Bird and Mammal Section Report. 47 pp.
- Caffrey, C. 2005. The California least tern source population at the proposed Alameda National Wildlife Refuge. Submitted to the U.S. Fish and Wildlife Service. Funded by the Golden Gate Audubon Society. 36 pp.
- Francher, J.M. 1992. Population status and trends of the California least tern. Transactions of the Western Section of the Wildlife Society 28:59-66.
- Heberger, M., H. Cooley, P. Herrera, P.H. Gleick, and E. Moore. 2009. The impacts of sea-level rise on the California coast. A Draft Paper from the California Climate Change Center. Pacific Institute. CEC-500-2009-024-D. 115 pp.
- Intergovernmental Panel on Climate Change (IPCC). 2007. Climate change 2007: Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P. R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, New York, USA. Found at <http://www.ipcc.ch/ipccreports/ar4-wg3.htm>.
- Marschalek, D.A. 2011. California least tern breeding survey, 2010 season. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report, 2011-06. Sacramento, California. 28 pp. + app.
- U.S. Fish and Wildlife Service (Service). 1985. Revised California least tern recovery plan. Region 1, Portland, Oregon. 108 pp.
- _____. 1998. Draft Comprehensive Conservation Plan Alameda National Wildlife Refuge. Portland, Oregon. 56 pp.
- _____. 2007. California least tern (*Sternula antillarum browni*) 5-Year Review: Summary and Evaluation. Federal Register 72:7064-7084. February 2007.
- _____. 2012. Biological Opinion on the Proposed Naval Air Station Alameda Disposal and Reuse Project in the City of Alameda, Alameda County, California. August 29, 2012. 50 pp.

Personnel Communication

- Susan Euing. 2011. Fish and Wildlife Biologist, Antioch Dunes National Wildlife Refuge and Alameda Point, U.S. Fish and Wildlife Service.