

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

San Andreas and Staten Island Salinity Stations Refurbishments

EA-12-027



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Bureau of Reclamation

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Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Section 1 Introduction

1.1 Background

In February 1961, the State Water Resources Control Board adopted Water Right Decision 990, which approved water rights for the Central Valley Project (CVP). This led to the development of water quality standards for the Sacramento-San Joaquin Delta (Delta) with the adoption of agricultural salinity standards as terms and conditions of Water Right Decision 1275 in May 1967. Ultimately, these and other Decisions (including Water Rights Decision 1641), led to the development of a series of 24 Compliance Monitoring Sites in the Delta which are jointly operated and maintained by the Bureau of Reclamation (Reclamation) and the California Department of Water Resources (Figure 1).

Water Rights Decision 1641, issued by the State Water Resources Control Board on December 29, 1999, and amended March 15, 2000, amended Reclamation's water rights permits to add items and conditions that are intended to protect municipal and industrial, agricultural, and fish and wildlife beneficial uses of the Delta. The CVP and the State Water Project (SWP), operated by the State of California Department of Water Resources, are operated in coordination to meet the terms in Water Rights Decision 1641 relevant to each project.

Operating these projects to meet specific numerical criteria at specific locations in the Delta is complicated as the Delta is a dynamic environment affected by natural forces such as tides, wind, and floods (California Department of Water Resources 2006). Reservoir releases in the Sacramento River basin to support Delta water quality take one to five days to reach the Delta. Water Rights Decision 1641 contains flow and water quality objectives that must be measured at various compliance monitoring stations located throughout the Delta (Figure 1). Continual monitoring of Delta conditions at these stations and forecasting of future conditions are essential for assuring the daily decisions regarding reservoir releases and amounts pumped from the Delta will meet the water quality objectives of the Delta (California Department of Water Resources 2006).

There are two monitoring stations within the Delta interior that measure salinity, one is San Andreas Salinity Station, originally built in the 1960s, and is located along the San Joaquin River in Sacramento County (Figure 2). The other is Staten Island Salinity Station, originally built in 1985, and is located along the Mokelumne River in San Joaquin County (Figure 2). Both stations are in need of refurbishment.

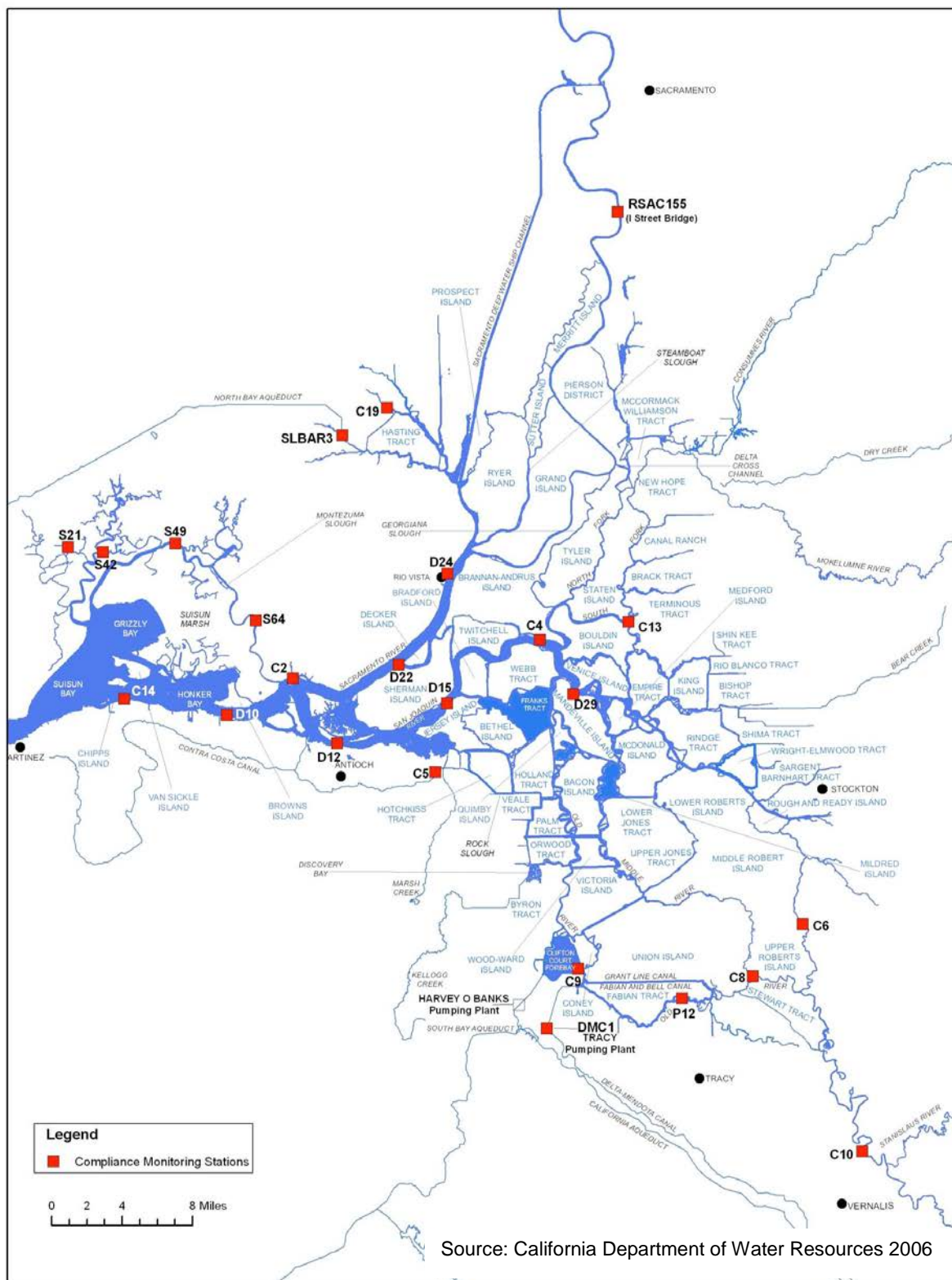


Figure 1 Water Rights Decision 1641 Compliance Monitoring Stations. C4 is San Andreas and C 13 Staten Island Salinity Stations.

1.2 Need for the Proposed Action

San Andreas and Staten Island Salinity Stations need to be replaced due to unsafe and dangerous conditions to employees who service and maintain the stations and risk of losing the stations and the monitoring equipment.

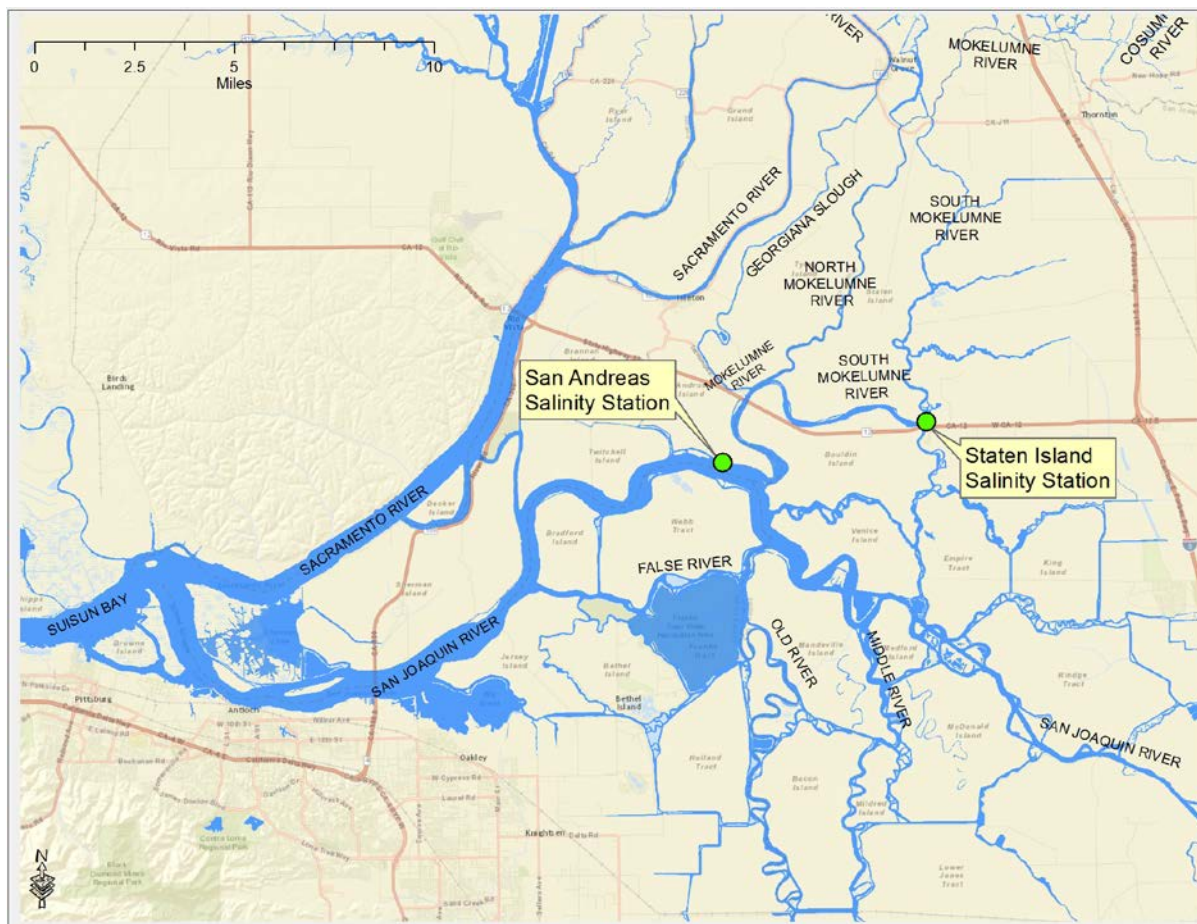


Figure 2 San Andreas and Staten Island Salinity Stations Locations.

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Section 2 Alternatives Including the Proposed Action

This Environmental Assessment considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not replace the aging Salinity Stations which could potentially lead to injury to employees, loss of monitoring equipment and or Reclamation's inability to gather real-time water quality data from the Delta.

2.2 Proposed Action

Reclamation proposes to replace the San Andreas and Staten Island Salinity Stations with better quality materials to withstand deterioration. A private construction team hired by Reclamation would be brought in to demolish the current stations and rebuild new stations within the same location. Principal components of the work would include:

- Demolition and disposal of the two existing water quality monitoring stations, including, but not limited to, the following:
 - Existing wood bridges, including bridge decks and all structural components.
 - Existing piles (5 for San Andreas and 8 for Staten Island).
 - Existing monitoring station buildings.
 - Portions of existing conduit.
 - Existing equipment and appurtenances inside of the existing buildings.
- Installation of new water quality monitoring stations, including the following:
 - New weathering steel (Cor-Ten™ steel or equal) bridges, including new bridge decks and all necessary structural components.
 - Connections and structural components required to secure the bridges to the piles.
 - New bridge abutments necessary to support the bridges.
 - New stainless steel pipe guardrails or cable safety rails for the bridges.
 - New (12" diameter) piles with pile caps and bracing (4 for San Andreas and 6 for Staten Island).
 - New monitoring station buildings, including all hardware and structural components.
 - Marine gate installed on bridge for security and restricted access to the building.
 - Connections and structural components required to secure the monitoring station buildings to the piles.

- New building equipment and appurtenances, including doors, door locks, screens, hooded vents, baffles, and associated hardware.
- New electrical components including conduit, conductors, pull boxes, panelboards, power outlets, luminaires, thermostats, fans, switches, breaker switches, marine warning lights, and all hardware required to complete the electrical systems.

Piles for each station would be driven a minimum penetration of 20 feet into the subgrade and until bearing resistance reaches 15 tons. There would be no excavation or other disturbance to the bottom of the channel.

Construction materials that would be required to complete the reconstruction of the stations include steel piles, aluminum walkways, metal salinity building and concrete. Equipment required for each station replacement would include a barge, barge crane, vibratory pile driver, truck crane, haul truck and pick-up trucks. Backfill in excavated areas located outside the waterways would be used to restore the ground elevation to its original grade.

The Proposed Action is anticipated to require up to two weeks for each Salinity Station. All construction in the water courses would take place between August and November.

2.2.1 Permitting for the Proposed Action

Reclamation and or its Contractor would acquire, to the extent necessary, all appropriate permits for working within a Delta waterway. These may include, but are not limited to, a Nationwide Permit from the U.S. Army Corps of Engineers and an Encroachment Permit from the Central Valley Flood Protection Board.

2.2.2 Environmental Commitments

Reclamation or its contractor(s) would implement the following environmental protection measures to reduce environmental consequences associated with the Proposed Action (Table 1). Environmental consequences for resource areas assume the measures specified would be fully implemented. Copies of all reports indicating compliance with these measures would be submitted to Reclamation.

Table 1 Environmental Protection Measures and Commitments.

Resource	Protection Measure
Air Quality	Dust control and abatement measures to reduce fugitive dust generation.
	Prevent, control, and otherwise minimize atmospheric emissions or discharge of air contaminants.
Biological Resources	Limiting in-water work activities to a period between August 1st and November 30 th for the protection of special-status fish species.
	Minimize effects of sound on listed fish by using a vibratory driver to install piles. Pile driving activities will adhere to thresholds established by National Marine Fisheries Service's (NMFS 2012).
	Remove the pile slowly to allow sediment to slough off at, or near, the mudline.
Noise	No explosives of any kind would be used on the jobsite.
	Construction times would be generally Monday through Friday from 7:00am until 4:00pm. Construction activities between 6pm and 7am would be limited.
	Use noise barriers and mufflers
	No high-impact noise activities, such as pile driving, drilling, or jack-hammering shall occur at night

Resource	Protection Measure
Water Resources	Acquire coverage under a Stormwater General Permit to control stormwater discharges from the construction site
	Prepare a Stormwater Pollution Prevention Plan in accordance with the stormwater general permit
	Prepare a Spill Prevention, Control and Countermeasure Plan, if applicable in accordance with 40 CFR Part 112
	Employ erosion control methods to control sediment and erosion such as silt fencing and straw wattles

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Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 2.

Table 2 Resources Eliminated from Further Analysis.

Resource	Reason Eliminated
Cultural Resources	There would be no impacts to cultural resources under the No Action alternative as conditions would remain the same as existing conditions. Reclamation has determined that completely replacing the San Andreas and Staten Island Salinity Monitoring stations with upgraded materials has no potential to cause effects to historic properties pursuant to the Section 106 implementing regulations at 36 CFR Part 800.3(a)(1). See Appendix A for Reclamation's determination.
Environmental Justice	The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations.
Indian Sacred Sites	The Proposed Action would not limit access to ceremonial use of Indian Sacred Sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites. Therefore, there would be no impacts to Indian Sacred Sites as a result of the Proposed Action.
Indian Trust Assets	No impact to Indian Trust Assets would occur under the No Action alternative as conditions would remain the same as existing conditions. The Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area. The nearest Indian Trust Assets is Jackson Rancheria approximately 45 miles northeast of the Proposed Action area.
Land Use	No impact to land use would occur under the No Action alternative as conditions would remain the same as existing conditions. There would be no impact to land use as a result of the Proposed Action as replacement of the salinity stations would not change land use designations or land use within the Proposed Action area and work would only occur within the footprint of the existing stations. In addition, work on the stations would be limited to the levee road, the water-side portion of the levee, and the waterway itself.

3.2 Water Resources

3.2.1 Affected Environment

The Delta is located at the confluence of the Sacramento and San Joaquin Rivers and covers approximately 750,000 acres through a series of islands interlocked with hundreds of miles of

waterway. The Delta and its waterways are within the boundaries of Solano, Contra Costa, Sacramento, San Joaquin, Alameda and Yolo Counties and eventually converge and flow west into the San Francisco Bay and out to the Pacific Ocean (Figure 1). The Delta's waterways eventually converge and flow west into the San Francisco Bay and out to the Pacific Ocean. Many of the waterways follow natural courses while others have been constructed for specific purposes such as navigation, circulation, or to obtain materials for levee construction (California Department of Water Resources 2006). The Delta is the hub of the State's water distribution system. About two-thirds of all Californians and millions of acres of irrigated farmland rely on the Delta for water from the CVP and SWP.

As a water distribution system, the Delta not only serves the State and federal projects but also many agricultural and municipal water diverters surrounding and within the Delta itself. Delta water serves both urban and agricultural areas in the Bay area, the Silicon Valley, the San Joaquin Valley, the Central Coast, and Southern California.

The Proposed Action Area includes San Andreas and Staten Island Salinity Stations. The San Andreas Salinity Station is located along the San Joaquin River in Sacramento County, while the Staten Island Salinity Station is located along the Mokelumne River in San Joaquin County (Figure 2). Current data collected from both salinity stations includes temperature and electrical conductivity, and are transmitted on a real-time basis and posted on the CDEC website (<http://cdec.water.ca.gov>).

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not reconstruct Staten Island and San Andreas Salinity Stations. Reclamation could lose a vital source of information for Delta decision making and compliance determination. Lack of data could lead to violations of Water Rights Decision 1641 water quality standards in the south Delta. A need to make otherwise unnecessary releases from New Melones to the detriment of CVP water contractor's supplies or requirements for more salt loading reductions by upstream dischargers. These potential effects are costly both in terms of dollars and in terms of water use.

Proposed Action

Under the Proposed Action, Reclamation proposes to reconstruct the Salinity Stations. The majority of construction associated with the Proposed Action would be over water, and would include removing wooden piles and driving in new steel piles into the sediment. Erosion and debris associated with demolition and construction may enter the water. Sediment and debris entering the rivers systems could temporarily increase the turbidity of the water.

The Proposed Action would not result in substantial impacts to water resources because Reclamation and the contractor would conduct the work in a manner to best avoid disturbances to soils or sediment by implementing best management practices (Table 2). All construction activities would be short in duration, occurring between the months of August through September to avoid impacts to fish. No obstructions for navigation would occur because the construction activities allow room for vessels to pass.

Cumulative Impacts

This action has no potential to adversely affect surface water resources, therefore there are no cumulative effects associated with this project.

3.3 Biological Resources

3.3.1 Affected Environment

Special-status wildlife species with the potential to occur in the study area were identified through review of existing information, including queries of the California Department of Fish and Wildlife's California Natural Diversity Database (CNDDDB) and U.S. Fish and Wildlife Service (USFWS) databases (CNDDDB 2015, USFWS 2015). This information was compiled, in addition to information within Reclamation's files, to determine the likelihood for the occurrence of protected species within the study area (Table 3).

Table 3 Special-status species considered within or near the Proposed Action Area.

Species	Status ^a	Effects ^b	Occurrence in the Study Area ^c
Fish			
Central Valley spring-run chinook salmon (<i>Oncorhynchus tshawytscha</i>)	T, X (NMFS)	NLAA	Present. Species migrates up the river systems of the Sacramento-San Joaquin Delta from March through July to upper reaches of the river to spawn in Aug-Oct. Seaward migration Nov-May. Critical habitat outside the study area.
Central Valley steelhead Distinct Population Segment (<i>Oncorhynchus mykiss</i>)	T, X (NMFS)	NLAA	Present. Begins upstream migration from Aug-Nov to spawn in small streams and tributaries directly downstream from dams in Dec-April. Migratory corridors include the Delta, Sacramento River, and San Joaquin River. Seaward migration is from spring through early summer. Critical habitat present in the study area. Environmental Protective Measures would be incorporated to protect species.
Delta smelt (<i>Hypomesus transpacificus</i>)	T, X	NLAA	Present. Species migrates from San Francisco estuary to spawn in shallow freshwater from April-June. Critical habitat present in the study area. Environmental Protective Measures would be incorporated to protect species.
Green sturgeon, Southern Distinct Population Segment of North American (<i>Acipenser medirostris</i>)	T, X (NMFS)	NLAA	Present. Migrates up Delta to freshwater river systems in March-July to spawn. The study area may provide rearing habitat for juveniles and some adults. Critical habitat present in the study area. Environmental Protective Measures would be incorporated to protect species.
Winter-run chinook salmon, Sacramento River (<i>Oncorhynchus tshawytscha</i>)	E, X (NMFS)	NLAA	Present. Occurs in mainstem Sacramento River. Migrates through the river system Dec-July. Seaward migration Nov-April. Critical habitat in the study area.
Mammals			
Riparian brush rabbit (<i>Sylvilagus bachmani riparius</i>)	E	NE	Absent. No individuals or habitat in area of effect.
Plants			

Species	Status ^a	Effects ^b	Occurrence in the Study Area ^c
Antioch Dunes evening-primrose (<i>Oenothera deltoides</i> ssp. <i>howellii</i>)	E	NE	Absent. No individuals or habitat in area of effect.
Reptiles			
Giant garter snake (<i>Thamnophis</i> <i>gigas</i>)	T	NE	Unlikely. There are records within 5-miles of both Salinity Stations. However, no construction would occur within suitable habitat.
^a Status= Listing of Federally special status species E: Listed as Endangered T: Listed as Threatened X: Critical Habitat designated for this species NMFS: species under the jurisdiction of the National Marine Fisheries Service ^b Effects = Effect determination NE: No Effect NLAA: May affect, not likely to adversely affect ^c Definition Of Occurrence Indicators Present: Species recorded in area and suitable habitat present Unlikely: Species recorded in vicinity of project area but suitable habitat lacking Absent: Species not recorded in study area and/or habitat requirements not met			

Federally listed fish species and their critical habitat, under NMFS' jurisdiction, are known or have potential to occur in the Proposed Project area and includes Central Valley spring-run Chinook salmon, Central Valley steelhead, green sturgeon, and winter-run Chinook salmon. However, because of their migratory nature, these anadromous fish may only spend a portion of their lives in the project area.

Delta smelt spends a large part of their annual life span associated with the freshwater edge of the mixing zone (zone of mixing or entrapment at the saltwater-freshwater interface) (Bennett 2005). Adult delta smelt migrate from brackish-water habitat associated with the mixing zone, to spawn in freshwater from April to June (Swanson et al. 2000, Bennett 2005). They spawn in shallow, fresh, or slightly brackish water upstream of the mixing zone, mostly in tidally influenced backwater sloughs and channel edgewaters, typically in the upper Delta (USFWS 1995).

Aquatic habitat conditions vary spatially and temporally in the Delta. Environmental conditions such as water temperature, flow, salinity, and the presence of food, can affect fish species movements, and in turn, their distribution (Stevens and Miller 1983, Kjelson and Brandes 1989, Brown and Bauer 2010). Threats to the species are from water diversions, entrainment losses, reduction of freshwater outflow, changes in abundance and composition of food organisms, environmental contaminants, and competition and predation from exotic invasive aquatic species. In addition, dams have limited supplies of instream gravel, habitat suitability, and spawning habitat.

The giant garter snake are endemic to the Sacramento valley wetland habitats; and include freshwater marshes, low-gradient streams, as well as man-made waterways, slough habitats, and adjacent uplands (USFWS 1993). These waterways typically contain cattails and other aquatic vegetation for cover or foraging. However, giant garter snakes are typically absent from larger rivers because of lack of suitable habitat. Also, large rivers, like the interior Delta (including the San Joaquin and Mokelumne Rivers) support populations of large, predatory fish. Their active

season is between May 1st to October 1st, so during this period is the best time to modify their habitat and will cause the least impact to them.

Habitat along the riverside levee is largely devoid of vegetation. There is no overhanging vegetation and submerged vegetation is largely absent. The riverbank has riprap and vegetation is actively managed.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act require Federal agencies to consult with NMFS on any activity that they fund, permit, or carry out, that may adversely affect any essential fish habitat (EFH). The waterways where the Salinity Stations are located both currently support fall-run and late-fall-run Chinook salmon (*Oncorhynchus tshawytscha*) and therefore a portion of the action area is identified as EFH.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not replace San Andreas Salinity Station and Staten Island Salinity Station. The two Salinity Stations would continue to deteriorate and may confound data collection, as required by State Water Resources Control Board. This could potentially impact daily decision making regarding reservoir releases and pumping in the Delta designed to protect fish and wildlife.

Proposed Action

Under the Proposed Action, Reclamation would replace the Salinity Stations with higher quality material to withstand deterioration longer. Project construction would occur primarily in or over the waterway, with limited work occurring on land. Consequently, listed aquatic species, and particularly listed fish species, have the greatest potential to occur in the Proposed Action area. However, the in-water work window of August through November is designed to allow a reasonable construction period while avoiding and or minimizing impacts to peak migrations of listed anadromous fish and access to their designated critical habitat.

No construction activities would occur within suitable giant garter snake habitat, and therefore there would be no potential effect to this species.

Pile Removing The primary effects from removing piles is the increased turbidity from temporary suspension of sediments, which may result in the temporary loss of suitable refugia for the species in the area and potentially expose individuals temporarily to higher temperatures. Vibratory pile removal tends to cause the sediments to slough off at the mudline, resulting in relatively low levels of suspended sediments. However, Reclamation would remove the piles slowly to allow sediment to slough off at, or near, the mudline. Also, because 12" diameter piles occupy a small area of substrate that is often rearranged by river currents, any increase in turbidity would be small and short-term. Reclamation has determined that sediment suspension are likely low enough in concentration and short enough in duration to avoid effects on fish health, foraging, or migration. Therefore, the Proposed Action is not likely to adversely affect the Central Valley spring-run Chinook salmon, Central Valley steelhead, green sturgeon, winter-run Chinook salmon, Delta smelt, and their designated habitat since pile removal impacts are

expected to be discountable.

Pile Driving Each Station would require installation of no more than six steel piles. Installation of the steel piles would require in-water pile driving that could produce high-intensity sound and has the potential to harm or harass fish and the ecological functioning of EFH. Fish detect and respond to sound as cues to hunt for prey, avoid predators, and for social interaction. At high-intensity sound levels, the hearing capabilities of fish can become damaged or even cause death (Caltrans 2001), but further studies are needed (reviewed in Hastings and Popper 2005).

Environmental protective measures have been incorporated into the Proposed Action to avoid and or minimize potential impacts to special-status fish species (See Table 1). In-water work is scheduled during daylight hours to avoid nocturnal migratory behavior of salmonids. Installation of steel piles would take less than an hour at each station and would occur during the dry and warmer months, when most species have already migrated up to their spawning grounds. Also, the piles would be installed using a vibratory pile diver which reduces generated underwater noise levels. Predicted noise levels (would follow NMFS's established thresholds 2012) from vibratory pile driving so as not to directly injure fish, but may temporarily disruption behavior (i.e. avoidance). For the reasons listed above, pile driving activities are not likely to adversely affect Central Valley spring-run Chinook salmon, Central Valley steelhead, green sturgeon, winter-run Chinook salmon, Delta smelt, and their designated habitat based on discountable sound disturbances.

Essential Fish Habitat

Effects of the proposed action on EFH for Pacific salmon would be similar to those discussed above for special-status fish species. Potential impacts would likely be those associated with temporary increased turbidity and underwater sound effects during installation of piles. Therefore, adverse effects on EFH may result from actions occurring within EFH from the Proposed Action.

Cumulative Impacts

Numerous activities continue to impact habitat for listed and proposed threatened and endangered species in the Delta. Habitat loss and degradation affecting both animals and plants continue as a result of urbanization, road and utility right-of-way management, flood control projects, climate change, grazing by livestock, and agricultural practices. Listed and proposed animal species are also affected by poisoning, increased predation associated with human development, and reduction of food sources. All of these nonfederal activities are expected to continue to adversely affect listed and proposed species in Delta. The Proposed Action would temporarily disturb essential fish habitat during construction activities. This habitat would be returned to their preexisting condition once construction is complete. Conservation measures would be implemented to minimize potential cumulative impacts.

3.4 Air Quality

Section 176 (C) of the Clean Air Act (42 U.S.C. 7506 (C)) requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State

Implementation Plan required under Section 110 (a) of the Federal Clean Air Act (42 U.S.C. 7401 [a]) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with State Implementation Plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact conform to the applicable State Implementation Plan before the action is taken.

On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain *de minimis* amounts thus requiring the federal agency to make a determination of general conformity.

3.4.1 Affected Environment

The Proposed Action area lies within the Sacramento Valley Air Basin and the San Joaquin Valley Air Basin under the jurisdiction of the Sacramento Metropolitan Air Quality Management District and the San Joaquin Valley Air Pollution Control District, respectively. The pollutants of greatest concern in both air basins are carbon monoxide, ozone, ozone precursors such as reactive organic gases (ROG) or volatile organic compounds (VOC), inhalable particulate matter between 2.5 and 10 microns in diameter (PM₁₀) and particulate matter less than 2.5 microns in diameter (PM_{2.5}).

The Sacramento Valley Air Basin and the San Joaquin Valley Air Basin have both reached Federal and State attainment status for carbon monoxide, nitrogen dioxide, and sulfur dioxide, and neither are in attainment for ozone or PM_{2.5}, as shown in Table 4. Also, both air basins have reached Federal attainment status for PM₁₀ but not for the State standards. There are no established standards for nitrogen oxides (NO_x); however, they do contribute to nitrogen dioxide standards and ozone precursors (San Joaquin Valley Air Pollution Control District 2015a). For a list of current established air pollution thresholds for the Sacramento Valley Air Basin and the San Joaquin Valley Air Basin, please see Table 5.

Table 4 Proposed Action Area Air Quality Attainment Status.

Pollutant	SMAQMD ¹		SJVAPCD ²	
	California Attainment Status	National Attainment Status	California Attainment Status	National Attainment Status
Ozone	Nonattainment	Nonattainment	Nonattainment	Nonattainment
carbon monoxide	Attainment	Attainment	Attainment	Attainment
nitrogen dioxide	Attainment	Attainment	Attainment	Attainment
sulfur dioxide	Attainment	Attainment	Attainment	Attainment
PM ₁₀	Nonattainment	Attainment	Nonattainment	Attainment
PM _{2.5}	Nonattainment	Nonattainment	Nonattainment	Nonattainment
Source: San Joaquin Valley Air Pollution Control District 2015a, Sacramento Metropolitan Air Quality Management District 2015a, EPA 2015.				
1 SMAQMD = Sacramento Metropolitan Air Quality Management District				
2 SJVAPCD = San Joaquin Valley Air Pollution Control District				

Table 5 Criteria Air Pollutants Significance Thresholds.

Constituent	Construction Thresholds	
	SMAQMD ¹	SJVAPCD ²
Reactive Organic Gases (ROG)	none	10 tons/year
Nitrogen Oxide (NO _x)	15.5 tons/year	10 tons/year
Particulate Matter - 10 microns (PM ₁₀)	14.6 tons/year	15 tons/year
PM _{2.5}	15 tons/year	15 tons/year
Source: San Joaquin Valley Air Pollution Control District 2015b, Sacramento Metropolitan Air Quality Management District 2015b 1 SMAQMD = Sacramento Metropolitan Air Quality Management District 2 SJVAPCD = San Joaquin Valley Air Pollution Control District		

3.4.2 Environmental Consequences

No Action

There would be no impact to air quality as conditions would remain the same as existing conditions and no construction would occur.

Proposed Action

The Proposed Action involves temporary earthmoving and minor appurtenance improvements in the Sacramento Valley and San Joaquin Valley area. The air quality impacts of the Proposed Action would be primarily construction-related emissions that are temporary and short-term in nature.

The Sacramento Valley Air Basin and the San Joaquin Valley Air Basin have established screening thresholds to determine whether a proposed project has a potential to exceed their air quality standards (Tables 5). Emissions due to construction activities were estimated using average off-road mobile source emission factors (SCAQMD 2008) and are included in Table 6 below. Calculations were based on an 8 hour work day for 5 days per week over the 3 month construction window. Construction under the Proposed Action would result in the temporary generation of ROG, NO_x, PM_{10/2.5}, and carbon monoxide emissions. Estimated construction emissions would be below established thresholds of significance (Table 6).

The Proposed Action would not impact the air district's plans to achieve or maintain attainment for various air quality pollutants. As such, there would be no adverse air quality impacts associated with this Proposed Action and a conformity analysis pursuant to the Clean Air Act is not required.

Table 6 Potential Criteria Air Pollutant Emissions Associated with Construction Activities.

Equipment Type	Pollutant lb/hr ¹				
	ROG	CO	NO _x	PM	CO ₂
1 Pile driver	0.128	0.455	1.107	0.047	128.635

1 Barge with crane	0.128	0.455	1.107	0.047	128.635
1 Truck with crane	0.128	0.455	1.107	0.047	128.635
2 Haul truck	0.407	1.230	3.336	0.116	520.127
4 Pick-up truck	0.813	2.459	6.672	0.232	1040.255
Maximum pounds per hour	1.603	5.055	13.327	0.487	1946.288
Maximum pounds per day	12.823	40.438	106.620	3.897	15570.302
Maximum pounds per year	1025.822	3235.037	8529.590	311.789	1245624.172
Maximum tons/year	0.513	1.618	4.265	0.156	623.000
SJVAPCD <i>de minimis</i> threshold (tons/year)	10	None	10	15	None
Source: SCAQMD 2008. 1 Pollutant: lb/hr = pounds per hour ROG = reactive organic gases CO = carbon monoxide NOx = nitrogen oxide PM10/2.5 = particulate matter between 2.5 and 10 microns in diameter/ particulate matter less than 2.5 microns. CO ² = carbon dioxide					

Cumulative Impacts

The Proposed Action would not contribute to an exceedance of applicable air quality standards and thresholds via emissions. The emissions would be temporary and would not substantially contribute to a cumulative impact within the Sacramento Valley Air Basin and the San Joaquin Valley Air Basin.

3.5 Global Climate Change

3.5.1 Affected Environment

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change [changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.] (EPA 2014a).

Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases, such as carbon dioxide (CO₂), occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are: CO₂, methane (CH₄), nitrous oxide, and fluorinated gasses (EPA 2014a).

During the past century humans have substantially added to the amount of greenhouse gases in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO₂ and CH₄, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. At present, there are uncertainties associated with the science of climate change (EPA 2014b).

Climate change has only recently been widely recognized as an imminent threat to the global climate, economy, and population. As a result, the national, state, and local climate change regulatory setting is complex and evolving.

In 2006, the State of California issued the California Global Warming Solutions Act of 2006, widely known as Assembly Bill 32, which requires California Air Resources Board (CARB) to develop and enforce regulations for the reporting and verification of statewide greenhouse gases emissions. CARB is further directed to set a greenhouse gases emission limit, based on 1990 levels, to be achieved by 2020.

In addition, the EPA has issued regulatory actions under the Clean Air Act as well as other statutory authorities to address climate change issues (EPA 2014c). In 2009, the EPA issued a rule (40 CFR Part 98) for mandatory reporting of greenhouse gases by large source emitters and suppliers that emit 25,000 metric tons or more of greenhouse gases [as CO₂ equivalents (CO_{2e}) per year] (EPA 2009). The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change and has undergone and is still undergoing revisions (EPA 2014c).

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, greenhouse gases emission trends would be unaffected.

Proposed Action

Greenhouse gas emissions would be temporary and occur during construction. As shown in Table 6, annual construction and operational emissions of CO_{2e} are estimated to be 623 metric tons per year. Emissions would be temporary and occur during construction. There are no reporting requirements for GHG emissions during construction.

Cumulative Impacts

Greenhouse gases emissions generated by the Proposed Action are expected to be extremely small. While any increase in greenhouse gases emissions would add to the global inventory of gases that would contribute to global climate change, the Proposed Action would result in potentially minimal to no increases in greenhouse gases emissions and a net increase in greenhouse gases emissions among the pool of greenhouse gases would not be detectable.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to provide the public with an opportunity to comment on the Draft Finding of No Significant Impact and Draft Environmental Assessment during a 30-day public review period.

4.2 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation will initiate consultation with Fish and Wildlife Service and National Marine Fisheries Service on effects from the Proposed Action to species. All construction activities at San Andreas and Staten Island Salinity Stations will be in compliance with the Endangered Species Act. The Project would not commence until consultation is complete.

4.3 Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)

The Magnuson-Stevens Fishery Conservation and Management Act is designed for taking immediate action to conserve and manage the fishery resources found off the coasts of the United States, and the anadromous species and continental shelf fishery resources of the United States. Consultation with National Marine Fisheries Service is required when any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, may adversely affect any EFH. Within the study area, EFH is found in the San Joaquin and Mokelumne Rivers. Reclamation would initiate consultation with National Marine Fisheries Service on effects to EFH from the Proposed Action to species. The Project would not commence until consultation is complete.

4.4 Clean Water Act (33 U.S.C. § 1251 et seq.)

Section 401 of the Clean Water Act (33 U.S.C. § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the Clean Water Act (33 U.S.C. § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the Clean

Water Act would be required for the project applicant(s). Section 401 requires any applicant for an individual Army Corps of Engineers (Corps) dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling. Section 404 of the Clean Water Act authorizes the Corps to issue permits to regulate the discharge of “dredged or fill materials into waters of the United States” (33 U.S.C. § 1344)

Reclamation or its Contractor would apply for a Section 404 permit from the Corps for activities associated with the Proposed Action. No pollutants would be discharged into any waters of the U.S. under the Proposed Action, so no water quality certifications under Section 401 of the Clean Water Act are required.

Section 5 Preparers and Reviewers

Jennifer L. Lewis, Natural Resources Specialist, SCCAO

Scott Phillips, Archaeologist, MP-153

Arien M. Chavez, Hydrologic Technician, TO – reviewer

Rain L. Emerson, M.S., Supervisory Natural Res. Specialist, SCCAO – reviewer

David E. Hyatt, Resources Management Division Chief, SCCAO – reviewer

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Appendix A

Cultural Resources Determination

Healer, Rain L

From: Williams, Scott A
Sent: Wednesday, July 18, 2012 9:22 AM
To: Healer, Rain L
Subject: EA-San Andreas and Staten Island Salinity Station Refurbishments (12-SCAO-027)

Project No. 12-SCAO-054
EA-12-027

Rain:

The proposed undertaking for Reclamation to completely replace the two salinity stations (San Andreas and Staten Island Salinity Monitoring stations) with upgraded materials has no potential to cause effects to historic properties pursuant to the Section 106 implementing regulations at 36 CFR Part 800.3(a)(1).

Reclamation proposes to replace the Station with better quality materials to withstand deterioration. A private construction team hired by Reclamation would be brought in to demolish the current station and rebuild a new station. The San Andreas Salinity Monitoring Station is located along the San Joaquin River in Sacramento County and the Staten Island Salinity Monitoring Station is located along the Mokelumne River in San Joaquin County.

The existing San Andreas Salinity Station consists of seven 12-inch diameter wooden piles, a 50' long x 3' wide wooden walkway, and a 6'W x 6'L x 8'H wooden building. The existing Staten Island Salinity Station consists of eight 12-inch diameter wooden piles, a 140' long x 3' wide wooden walkway, and a 6'W x 6'L x 8'H wooden building. All supports and guard railing related to both structures would be removed. The contractor would then reconstruct the stations with the centerline of the new facility following the existing facilities centerline and elevation, although the newly constructed Staten Island Salinity Station would be elevated 7.5' above the level of the current station.

The new San Andreas Salinity Station would consist of the following: seven 12" diameter steel pilings, a new 8'W x 10'L x 8'H prefabricated cargo container for the building (approximately 2,500 pounds), and a new 40'L x 3'W aluminum walkway with guardrails (approximately 1,600 pounds). The new Staten Island Salinity Station would consist of the following: eight 12" diameter steel pilings, a new 8'W x 10'L x 8'H prefabricated cargo container for the building (approximately 2,500 pounds), and two new parallel 40'L x 3'W aluminum walkways with guardrails (approximately 1,600 pounds). Piles for each station would be driven to a minimum penetration of 10 feet into the bottom of the channel with varying depths depending on where the pile received proper pressure resistance for stability. There would be no excavation or disturbance to the bottom of the channel. Construction materials that would be required to complete the reconstruction of the stations include steel piles, aluminum walkways, metal salinity building and concrete. Equipment required for each station replacement would include a barge, barge crane, pile driver, truck crane, haul truck and pick-up trucks. No explosives of any kind would be used on the jobsite.

In February 1961, the SWRCB adopted Water Right Decision 990, which approved water rights for the CVP. This led to the development of water quality standards for the Delta with the adoption of agricultural salinity standards as terms and conditions of Water Right Decision 1275 in May 1967. Ultimately, these and other decisions, led to the development of a series of 23 Salinity Monitoring Sites in the Delta which are operated and maintained by Reclamation. The actual construction date for this structure is unclear; however, it can be assumed the San Andreas Salinity Monitoring Station was built post 1967 and less than 50 years old. The Staten Island Salinity Monitoring Station, originally built in 1985 and is also less than 50 years old.

This email memo is intended to convey the conclusion of the Section 106 process for this undertaking. Please retain a copy of this memo with the administrative file. Thank you for providing the opportunity to comment on this action.

Sincerely,

Scott A. Williams, M.A. Archaeologist
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