

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

RD 773 Fabian Tract Spoils Reuse License

EA 11-051



**U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South-Central California Area Office
Fresno, California**

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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to 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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List of Acronyms and Abbreviations

APE	Area of Potential Effect
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO ₂	Carbon dioxide
CWA	Clean Water Act
CVP	Central Valley Project
EA	Environmental Assessment
EPA	Environmental Protection Agency
FWCA	Fish and Wildlife Coordination Act
ESA	Endangered Species Act
GHG	greenhouse gases
ITA	Indian Trust Asset
MBTA	Migratory Bird Treaty Act
MP	Mile Post
mg/m ³	Milligram per cubic meter
M&I	Municipal and Irrigation
National Register	National Register of Historic Places
NHPA	National Historic Preservation Act
PM _{2.5}	Particulate matter less than 2.5 microns in diameter
PM ₁₀	Particulate matter between 2.5 and 10 microns in diameter
PPM	Parts per million
Reclamation	Bureau of Reclamation
SIP	State Implementation Plan
SWP	State Water Project
µg/m ³	Microgram per cubic meter

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Section 1 Introduction

1.1 Background

The Bureau of Reclamation (Reclamation) and State Department of Water Resources are involved in a program to increase south Delta agricultural diversions for agricultural purposes. This program includes the dredging of the Grant Line and Fabian-Bell canals, Middle River, Old River, North Canal, and Victoria Canal. Spoils (i.e. dredged material that has been allowed to dry and settle on land) are placed on the western end of the Fabian Tract located approximately 8 miles northwest of the City of Tracy (Figure 1). To date, the spoils have not accumulated to an amount that needs removal however the spoils will eventually need removal to an offsite location to prevent the excessive build-up of spoils materials. Reclamation District 773 – Fabian Tract (District) has requested a license to remove/reuse spoils from the Reclamation’s placement site to stabilize their levee along the Fabian Bell Canal (Figure 2).

1.2 Purpose and Need

The District has determined the need for reinforcement of its existing levee system on the Fabian Bell Canal. Problems observed during Reclamation’s inspections include erosion, seepage boils, and drainage on the landside of the levee system. The District’s financial analysis determined that purchase of commercial fill material would be costly and would require transportation to the construction site. Reclamation’s placement site is adjacent to most of the construction area and would provide an ideal fill source. The purpose of the Proposed Action is to provide the District fill for its needs while freeing up an equal amount of area at the placement site for future drying and storage. In accordance with section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 *et seq.*), this Environmental Assessment (EA) has been prepared to analyze the potential direct, indirect, and cumulative impacts resulting from the Proposed Action. This EA has also been prepared to analyze the effects of the No Action Alternative.

The scope of analysis in this EA includes the effects on the environment as a result of the issuance of a license to the District for the use of dredged spoils stored on the Fabian Tract. The license would be in effect for 10-years from date of approval.

1.3 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment of the Proposed Action and No Action Alternative and has determined that there is no potential for direct, indirect, or cumulative effects to the following resources:

- Land Use: The Proposed Action would occur in an agricultural area. The Proposed Action is limited to the District right of way and would not impact prime farmland, unique farmland, or farmland of statewide importance nor would it conflict with existing agricultural zoning or Williamson Act contracts.

- **Indian Trusts Assets:** Indian trust assets (ITA) are legal interests in assets that are held in trust by the United States Government for federally recognized Indian tribes or individuals. On June 6, 2012 Reclamation's ITA Branch issued the determination that there are no ITA within the Proposed Action area and therefore the proposed action does not have a potential to affect Indian Trust Assets.
- **Indian Sacred Sites:** Executive Order 13007 requires Federal land managing agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. There would be no adverse impacts to Indian Sacred Sites or changes to access to Indian Sacred Sites resulting from the Proposed Action.
- **Environmental Justice:** The February 11, 1994, Executive Order 12898 requiring Federal agencies to ensure that their actions do not disproportionately impact minority and disadvantaged populations went into effect. There is not a residential population within the Proposed Action area. There would not be any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations as there are no populations within the Proposed Action area.
- **Socioeconomic Resources:** The Proposed Action could prevent economic loss to the District caused by the costs associated with obtaining and transporting off-site fill material. As such, the Proposed Action would have no adverse impacts on socioeconomic resources.

As there would be no impact to the resources listed above as a result of the Proposed Action or the No Action alternative, they will not be considered further.

1.4 Potential Issues

This EA will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential direct, indirect, and cumulative effects to the following resources:

- Water Resources
- Cultural Resources
- Biological Resources
- Air Quality
- Global Climate

Figure 1 Vicinity Map



Figure 2 Levee Fill Application Area



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Section 2 Alternatives Including the Proposed Action

This EA 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 approve the issuance of a license for the use of dredged spoils stored on the Fabian Tract. The No Action Alternative would result in increased costs both to the District and Reclamation as well as an increase in air pollution and transportation impacts resulting from the delivery and removal of dredged spoils.

2.2 Proposed Action

Reclamation proposes to issue a license to the District for the use of dredged spoils on the Fabian Bell Canal located on the Fabian Tract. Once the license is issued, the District could remove the spoils from the storage/drying location with an excavator and transfer them to diesel trucks for transport to levee maintenance areas. The spoils removed would not exceed 15,000 cubic yards (cy) of material annually to a maximum of approximately 30,000 cy over the period the license is in effect. Once onsite, the spoils would be spread and compacted by heavy equipment to reinforce existing levee sections. The reinforcement would widen the backside of the levee and reinforce the levee by compensating for fill material that is lost via waterside erosion. Hauling and staging would occur in a 60 foot-wide strip of land connecting the existing dredge spoils area with the base of the District levee.

Equipment used during construction activities would include: Excavators, side dump tractors (for loading spoils materials), wheel loaders, wheel tractor-scrapers, motor graders, track-type tractor/bulldozers and similar equipment for loading, transporting, and compacting spoil/fill materials. Activities would occur beginning on March 1 through November 1 each year (40 working days total estimated), for a duration of no longer than 10 years (2022).

Environmental Commitments

Reclamation shall implement the following environmental protection measures:

Table 2-1 Environmental Protection Measures

Resource	Protection Measure
Biological Resources Migratory Bird Treaty Act-1	<ul style="list-style-type: none"> • If construction would commence during the breeding season of February 1 through August 31, a qualified biologist or ornithologist would conduct pre-construction surveys for ground and tree-nesting raptors (including burrowing owls) at the Project site, in accordance with accepted survey protocols. • If raptors are identified onsite or in the vicinity of the Project site during the preconstruction surveys, then an appropriate construction buffer area would be determined by the biologist/ornithologist, and the buffer area would be demarcated and avoided during construction. If it is not practicable to avoid said buffer areas during construction, then CDFG would be consulted for appropriate action prior to disturbance within the buffer areas. • If no raptors are identified during the pre-construction surveys, then construction may commence without further mitigation for nesting raptors.
Biological Resources Migratory Bird Treaty Act-2	<p>If construction would commence during the non-breeding season of September 1 through January 31, a qualified biologist or ornithologist would conduct pre-construction surveys for burrowing owls at the Project site, in accordance with accepted survey protocols.</p> <ul style="list-style-type: none"> • If burrowing owls are not detected onsite or in the vicinity of the site, then construction may commence without additional mitigation for burrowing owls. • If burrowing owls are detected during the preconstruction surveys the Reclamation biologist would be notified. If identified they may be passively relocated by placing one-way doors in the burrows and leaving them in place for a minimum of three days. Once the project biologist/ornithologist has determined that all burrowing owls have vacated the site, then construction may proceed.
Biological Resources Valley Elderberry Long-horned beetle	<ul style="list-style-type: none"> • A 100-foot buffer from the shrubs dripline shall be established around each eligible elderberry shrub (stems >1" diameter) located near treatment sites. The elderberry shrubs and buffers shall be clearly flagged and marked as an Environmentally Sensitive Area. • No equipment (i.e. excavators, tractors, and wheel loaders) shall be used within the 100-foot buffer from the dripline of elderberry shrubs.
Cultural Resources	<p>In the event that cultural resources or human remains are identified during the implementation of this project there may be additional considerations pursuant to Section 106 of the NHPA. If inadvertent discoveries of cultural resources or human remains occur during project implementation, work shall temporarily stop and Reclamation cultural resources staff shall be contacted immediately.</p>

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 Water Resources

The Initial Study/Mitigated Negative Declaration (IS/MND) completed by the California Department of Water Resources for the dredging project stated that “The project will result in dredging small quantities of materials at different locations without generating significant free liquids, therefore a settlement pond is not likely to be built.” The IS/MND included eight environmental commitments developed to avoid/minimize any impacts involving absorption rates, drainage patterns, surface runoff, toxic substances or flow patterns.

3.1.1 Affected Environment

Based on the IS/MND’s determination that the dredging would not result in a significant amount of free liquids and the fact that the dredged spoils would be subject to drying before transport to the levee reinforcement sites, the affected environment is limited to the immediate vicinity of the sites to be reinforced.

3.1.2 Environmental Consequences

No Action

The No Action alternative would have similar impacts to water resources as the Proposed Action since dredged spoils would continue to be stored in the general vicinity. Any dissimilarity would be the result of differences from exposure to rain and erosion. In addition, it is anticipated that the No Action alternative would at some point be similar to the Proposed Action in that the levee reinforcement would occur in the future but with a different source for materials.

Proposed Action

The release of contaminants from dredged spoils may result in oxidation and acidification. During the oxidation process, metals, trace elements, and other constituents associated with the oxidized fractions may be released. Oxidation of the dredged material may result in acidification of the sediment and lower sediment pH. Acidification may result in increased solubility of sediment metals which may increase their mobility and make them subject to leaching.

While the mobility of sediment may increase, the limited amount of dredge spoils applied over a relatively large linear project area would not result in high concentration levels. The IS/MND completed for the dredging project indicated that the potential for leaching contaminants from the sediments appears to be low based on the levels of the various constituents measured and the properties of the sediments.

Cumulative Impacts

Levee reinforcement projects have occurred and will continue to occur involving the Grant Line and Fabian-Bell canals, Middle River, Old River, North Canal, and Victoria Canal.

Dredging projects related to the operation and maintenance of the existing temporary barriers occurred in 2000 (approximately 70,000 cy), in 2004 (approximately 31,000 cy), and again in 2005 (approximately 7,000 cy). The temporary barriers include the Head of Old River barrier and the Old River, Middle River and Grantline Canal agricultural barriers. The sediment dredged is typically sand bar material that has accumulated at the site since the last removal of the barriers.

Cumulative impacts to water resources are primarily limited to the release of contaminants from materials used in levee reinforcement. The direct impacts from the release of contaminants are expected to be minimal and as such so are the cumulative impacts.

3.2 Biological Resources

3.2.1 Affected Environment

On August 25, 2011, Reclamation surveyed the Fabian Tract and levee roads (West Grimes Road and Fink Road) by driving along existing paved and dirt roadways. More focused field surveys for sensitive species were conducted by walking along the levee road and Fabian Tract property. The following observations were made:

- Agriculture was the dominant land use and varied from irrigated pastures to row crops to orchards.
- Pockets of elderberry shrubs were observed near the eastern portion of the levee.
- The property had been baited for rodents.
- A few small mammal burrows were present.
- The waterside levee banks were steep and heavily vegetated with shrubby vegetation dominated by thickets of blackberries (*Rubus* spp.), wild rose (*Rosa californica*), willows (*Salix* spp.), alders (*Alnus* spp.), and buttonbush (*Cephalanthus occidentalis*).
- There were also narrow bands of large trees with understories of smaller trees including cottonwood (*Populus* spp.), valley oak (*Quercus lobata*), boxelder (*Acer negundo*), willow, and alder.

3.2.2 Environmental Consequences

No Action

There would be no immediate impacts to biological resources with the No Action Alternative however it is anticipated that that the No Action alternative would at some point be similar to the Proposed Action in that the levee reinforcement would occur in the future but with a different source for materials.

Proposed Action

Reclamation requested an official species list from the USFWS via the Sacramento Field Office's website, http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-form.cfm on June 1, 2012 (document number: 120601114212). The list is for the following USGS 7½ minute quadrangles (Quads): Vernalis, Tracy, Midway, Holt, Union Island, Lathrop, Woodward Island, Byron Hot Springs, and Clifton Court Forebay. Reclamation further queried the California Department of Fish and Game's (CDFG) California Natural Diversity Database for records of protected species within 10 miles of the Proposed Action location (CNDDDB 2012). The two lists, in addition to other information within Reclamation's files, were reviewed to determine which species may be impacted by the proposed project, and includes; federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*; SJKF), the federally threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*; VELB), and protected under the Federal Migratory Bird Treaty Act; burrowing owl (*Athene cunicularia*) and Swainson's hawk (*Buteo swainsoni*).

- San Joaquin kit fox (SJKF): This species primarily inhabits grassland and scrubland communities but will also inhabit oak woodland, alkali sink scrubland, and vernal pool and alkali meadow communities. Contra Costa County is considered the northern most range for SJKF (USFWS 2010). They use ground squirrel burrows for their dens yet SJKF are reputedly poor diggers (Jensen, 1972; Morrell, 1972). The high clay content of most soils in this region may preclude kit fox from digging their own dens.

There are sightings of SJKF (with the most recent from 12 years ago: CNDDDB 2012) approximately 2-3 miles west of Fabian Tract. The proposed action area contains only marginal foraging habitat. SJKF are not likely to be present in the action area because of a lack of suitable habitat and absence of prey due to general canal operations and maintenance activities and frequent ground disturbances from agricultural activities. Therefore, Reclamation has determined there would be no effect to SJKF from the proposed action.

- Valley elderberry longhorn beetle (VELB): This species is nearly always found on or close to its host plant, elderberry (*Sambucus* species). There are records for VELB within 3 miles of the levee. The proposed action area contains marginal foraging habitat, but any elderberry shrubs within the project area may be occupied by this species.

Provisions for avoidance of effects to valley elderberry longhorn beetle and its host plant are incorporated into the Proposed Action (Table 2-1 Environmental Protection Measures). By incorporating these avoidance measures for VELB, Reclamation has determined there would be no effect to this species.

- Burrowing owl: This small ground-dwelling owl is a yearlong-resident that exhibits high site fidelity to breeding areas and nesting burrows (Rich 1984, Lutz and Plumpton 1999, Ronen 2002). They live in ground squirrel and other mammal burrows, which it appropriates and enlarges for its own purposes (Martin 1973). Habitat for burrowing owls consists of open, well-drained soil; short, sparse vegetation; and underground burrows (Klute et al. 2003). They are typically found in short-grass grasslands, open scrub habitats, and a variety of open, human-altered environments, such as golf courses, airport runways and agricultural fields. They are active day and night and are opportunistic feeders. Their diet includes insects,

amphibians, reptiles, small mammals, and grass material. The nesting season for burrowing owls occurs from February 1 - August 31(CDFG 1995).

There are CNDDDB-recorded occurrences for burrowing owls in the vicinity of the project; with the closest report approximately 0.5 miles to the south of Fabian Tract. These owls will nest in small colonies along earthen canal banks and other sparsely vegetated disturbed sites. Burrows are the essential component of burrowing owl habitat and would most likely be rare in the project area due to rodent population control measures and the general operations and maintenance activities along the levee road.

Avoidance measures for burrowing owl have been incorporated into the Proposed Action (Table 2-1 Environmental Protection Measures). By following these measures, Reclamation has determined there would be no take of this species.

- Swainson's hawk: This species is a federal species of concern and protected under the federal Migratory Bird Treaty Act (MBTA). Swainson's hawks can be found in the grasslands and agricultural lands of California's Central Valley during spring and summer months. Their nesting season is from March 1 through September 15. They exhibit a high degree of nest site fidelity and nests are constructed in trees, including, but not limited to, Fremont cottonwood (*Populus fremontia*), willow (*Salix* spp.), Valley Oak (*Quercus lobata*), and eucalyptus (*Eucalyptus* spp) (Bloom 1980). Swainson's hawks have adapted to the use of some croplands, predominantly alfalfa, but also other row crops for foraging (Estep 1989). Swainson's hawks prey on small mammals, insects, and birds. Swainson's hawks are abundant in the south Delta and nest sites occur within one-half mile of the proposed project site.

Swainson's hawks are not typically disturbed by machinery, even in very close proximity to nests, and are attracted to farm machinery as it promotes foraging opportunity (uncovers prey). No nesting trees would be impacted and no foraging habitat would be lost. Swainson's hawks are unlikely to be impacted by the project.

Avoidance measures are incorporated into the Proposed Action to prevent any potential impacts to Swainson's hawk (Table 2-1 Environmental Protection Measures). Therefore, Reclamation has determined there would be no take of this species.

There would be no effect to listed species under the Endangered Species Act (16 U.S.C. §1531 et. seq.) and no take of species protected by the Migratory Bird Treaty Act with the incorporation of the environmental protection measures. This determination is largely reliant on lack of potential habitat associated with levee roads, ongoing operations and maintenance activities and agricultural practices, and the implementation of all environmental protection measures. In addition, the District would coordinate closely with the Reclamation Biologist to ensure there are no impacts to endangered or sensitive species.

Cumulative Impacts

Cumulative impacts would be minimal with the Proposed Action as the levee reinforcement does not have a significant adverse impact on habitat and impacts to listed species are avoided with incorporation of the Environmental Protection Measures. Cumulative impacts associated with the No Action alternative are unknown since the No Action alternative may involve levee reinforcement in the future using a different project description.

3.3 Cultural Resources

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 Code of Federal Regulations (CFR) Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

3.3.1 Affected Environment

An intensive pedestrian cultural resources survey was conducted, by Reclamation archaeologists, of the Fabian Tract Spoils storage area and the Fabian and Bell Canal Levee (proposed location of spoils placement) on August 25, 2011 and August 24, 2012. A records search with the Central California Information Center indicated that numerous previously documented built-environment (historic) cultural resources were located within or adjacent to the project area of potential effects (APE). These sites included the Fabian and Bell Canal and Grant Line Canal, the Delta Mendota Canal, levees along the Old River and the Fabian and Bell Canal, a bridge (constructed 1959) on Tracy Boulevard across the Fabian and Bell Canal and Grant Line Canal, and a cluster of buildings on the islands between the Fabian and Bell Canal and the Grant Line Canal.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, existing conditions would persist. Reclamation would not have an undertaking as defined by Section 106 of the NHPA and thus there would be no Federal nexus on Reclamation's part to initiate Section 106 review. As a result, implementation of the No Action alternative would result in no effects to cultural resources by Reclamation.

Proposed Action

Under the Proposed Action, existing conditions would change. Reclamation has determined that only the Fabian and Bell Canal levee will be affected by the undertaking as proposed and is proceeding toward the completion of a cultural resources survey report and consultation package for submittal to the SHPO. Results of the consultation with SHPO will be included in the Final EA/FONSI.

Cumulative Impacts

Cumulative impacts would be the same under both the No Action Alternative and the Proposed Action since the levees would require reinforcement in either case; only the source of material would change.

3.4 Air Quality

Section 176 (C) of the Clean Air Act [CAA] (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 (SIP) required under Section 110 (a) of the Federal CAA (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 SIP'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 SIP before the action is taken.

On November 30, 1993, the 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 Bay Area Air Quality Management District which is the public agency entrusted with regulating stationary sources of air pollution in the nine counties that surround San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties.

The Air District is not in attainment for ozone (8-hour averaging time) or particulate matter (PM 2.5 (24-hour averaging time) under National Ambient Air Quality Standards. The Air District is in attainment or unclassified status for all other air pollutants.

3.4.2 Environmental Consequences

No Action

Emission estimates for future projects are beyond the scope of this document however it is anticipated that emissions from future projects resulting from trucking in fill material from offsite would exceed emissions from the Proposed Action.

Proposed Action

Air quality impacts from the Proposed Action would be limited to those resulting from construction emissions. The primary pollutant-generating activities associated with these activities include:

- exhaust emissions from construction vehicles and equipment;
- exhaust emissions from vehicles used to deliver supplies to the project site or to haul materials from the site;
- exhaust emissions from worker commute trips;
- fugitive dust from equipment operating on exposed earth and from the handling of construction materials.

Approximately 10,000-15,000 cy of dredge spoils per year with a maximum of 30,000 cy over the license period would be moved from the dredge spoils site to the levee reinforcement site. Construction activities would occur beginning on March 1 through November 1 each year (30-45 working days total estimated), for a duration of no longer than 10 years (2022).

Table 3-1 displays the de minimis daily thresholds or the amount of emissions determined to cause less than significant impacts to air quality.

Table 3-1 General Conformity de minimis Thresholds

Pollutant	Construction-Related
Criteria Air Pollutants and Precursors (Regional)	Average Daily Emissions (lb/day)
ROG (reactive organic gas)	54
NOX (oxides of nitrogen)	54
PM 10 (particulate matter 10 microns in diameter or smaller)	82
PM 2.5 (particulate matter 2.5 microns in diameter or smaller)	54
Local CO (carbon monoxide)	100

Bay Area Air Quality Management District CEQA Air Quality Guidelines (May 2011).

Table 3-2 displays the estimated operational hours for each type of construction equipment that would be utilized with the Proposed Alternative.

Table 3-2 Estimated Operational Emissions

Equipment	ROG lb/hr	NOX lb/hr	PM 10/2.5 lb/hr	CO lb/hr	Total Daily Hours	Estimated Total Hours ¹
Excavator (CAT 375, 174,000 lbs)	1.1483	1.1502	0.0368	0.5581	5	185
Side dump trucks (25 ton loaded)	0.0108	0.0645	0.0036	0.0336	5	185
Wheel Loaders (47,000 lbs)	0.1440	1.1537	0.0651	0.5078	5	185
Wheel tractor-scrappers (129,000 lbs)	0.3202	2.9078	0.1256	1.2424	5	185
Motor graders (32,460 lbs)	0.1723	1.4338	0.0753	0.6314	5	185
Tractor/Dozer (Track-type 36,400 lbs)	0.1440	1.1537	0.0651	0.5078	5	185
Total	1.9396	7.8637	0.3715	3.4811		
Total multiplied by 5 hours operational time	9.698	39.3185	1.8575	17.4055		

¹ 5-hours multiplied by 37 days (averaged for 30-45 day working period)

All pollutants resulting from construction fall below the de minimis thresholds set by the District.

Cumulative Impacts

The Proposed Action would result in a temporary increase in emissions during the construction phase. While these emissions would be an adverse impact, they would be temporary and at a de minimis level and therefore are not considered a significant adverse cumulative impact. For any project that does not individually have significant operational air quality impacts, the

determination of significant cumulative impact should be based on an evaluation of the consistency of the project with the local general plan *and* of the general plan with the regional air quality plan. (The appropriate regional air quality plan for the Bay Area is the most recently adopted Clean Air Plan.) The Proposed Action is consistent with the general plan and the general plan is consistent with the regional air quality plan in that there is no increase in vehicle miles traveled over baseline, emissions do not exceed state or national standards, and there would be no toxic pollutant or odor emissions. As such there are no significant cumulative impacts.

3.5 Global Climate

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 2011a)

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG, such as carbon dioxide (CO₂), occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO₂, methane (CH₄), nitrous oxide, and fluorinated gasses (EPA 2011a).

During the past century humans have substantially added to the amount of GHG 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 2011b).

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 GHG emissions. CARB is further directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020.

In addition, the EPA has issued regulatory actions under the CAA as well as other statutory authorities to address climate change issues (EPA 2011c). In 2009, the EPA issued a rule (40 CFR Part 98) for mandatory reporting of GHG by large source emitters and suppliers that emit 25,000 metric tons or more of GHG [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 2011c).

3.5.1 Affected Environment

Global mean surface temperatures have increased nearly 1.8°F from 1890 to 2006 (Intergovernmental Panel on Climate Change 2007). Models indicate that average temperature changes are likely to be greater in the northern hemisphere. Northern latitudes (above 24°North) have exhibited temperature increases of nearly 2.1°F since 1900, with nearly a 1.8°F increase since 1970 alone (Intergovernmental Panel on Climate Change 2007). Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHG are likely to accelerate the rate of climate change.

More than 20 million Californians rely on the SWP and CVP. Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to California's water resources and project operations.

While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent (Anderson et al. 2008).

3.5.2 Environmental Consequences

No Action

The No Action Alternative could result in greenhouse gas emissions since fill material to reinforce the levees could be trucked in from offsite as a result of future projects

Proposed Action

The construction phase of the Proposed Action would result in the direct emissions of GHGs through the use of petroleum fuels.

Table 3-3 Estimated Greenhouse Gas Emissions

Equipment	CO ₂ lbs/hr	CO ₂ e ¹ Total lbs	CH ₄ lbs/hr	CH ₄ ¹ Total lbs	Total Annual Hours
Excavator (CAT 375, 174,000 lbs)	0.5581	103.2485	0.0134	2.479	185
Side dump trucks (25 ton loaded)	0.0336	6.216	0.0010	0.185	185
Wheel Loaders (47,000 lbs)	0.5078	93.943	0.0130	2.405	185
Wheel tractor-scrappers (129,000 lbs)	1.2424	229.844	0.0289	5.3465	185
Motor graders (32,460 lbs)	0.6314	116.809	0.0155	2.8675	185
Tractor/Dozer (Track-type 36,400 lbs)	0.5078	93.943	0.0092	1.702	185
Total	3.4811	644.0035	0.081	14.985	

¹ 5-hours multiplied by 37 days (averaged for 30-45 day working period)

These emissions would not continue past the Proposed Action completion date. The total CO₂e is far below the 75,000 tons per year threshold for significant GHG emissions. As such, this would not result in a substantial change in GHG emissions, and there would be no significant adverse effect.

Cumulative Impacts

GHG generated by the Proposed Action is expected to be extremely small as GHG emissions are de minimis and temporary from construction. While any increase in GHG emissions would add to the global inventory of gases that would contribute to global climate change, the Proposed

Action would result in minor increases in GHG emissions and a net increase in GHG emissions among the pool of GHG 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 EA/FONSI between October 4, 2012 and November 4, 2012.

4.2 Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. Federal agencies are required to consult whenever a body of water is proposed to be impounded, diverted, controlled or otherwise modified, either by the agency or under a permit or license issued to another entity. The Proposed Action would only replace existing infrastructure and so the FWCA would not apply.

4.3 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 has determined there would be no effect to listed species under the Endangered Species Act (16 U.S.C. §1531 et. seq.) and no take of species protected by the Migratory Bird Treaty Act with the incorporation of Avoidance and Minimization Measures, as listed in Table 2-1 Environmental Protection Measures. This determination is largely reliant on lack of potential habitat associated with levee roads, ongoing O&M activities and agricultural practices, and the implementation of all measures. In addition, the District would coordinate closely with the Reclamation Biologist to ensure there are no impacts to endangered or sensitive species.

4.4 National Historic Preservation Act (16 U.S.C. § 470 et seq.)

The NHPA of 1966, as amended (16 U.S.C. 470 et seq.), requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties, properties that are eligible for inclusion in the National Register. The 36 CFR Part 800 regulations implement Section 106 of the NHPA.

Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties, properties determined eligible for inclusion in the National Register. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the APE, conduct cultural resource inventories, determine if historic properties are present within the APE, and assess effects on any identified historic properties.

Reclamation has completed a cultural resources survey and records search for inclusion into a request for concurrence package to be submitted to SHPO. The Final EA/FONSI will not be approved without SHPO concurrence or the expiration of the SHPO concurrence period.

4.5 Indian Trust Assets

ITA are legal interests in property held in trust by the United States for federally-recognized Indian tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITA can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the United States is the trustee. By definition, ITA cannot be sold, leased, or otherwise encumbered without approval of the United States. The characterization and application of the United States trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

The Proposed Action would not affect ITA because there are none located in the Proposed Action area. The nearest ITA is the Santa Rosa Rancheria approximately 26 miles ENE of the Proposed Action location.

4.6 Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.)

The MBTA implements various treaties and conventions between the United States and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

No western burrowing owls were found in the area during the July 11, 2011 surveys. A preconstruction survey for kit foxes would also detect any burrowing owls and allow avoidance of take.

4.7 Executive Order 11988 – Floodplain Management and Executive Order 11990 – Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The Proposed Action would not affect either concern.

4.8 Clean Air Act (42 U.S.C. § 7506 (C))

Section 176 of the CAA requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP required under Section 110 (a) of the CAA (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 a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS 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 will, in fact conform to the applicable SIP before the action is taken. The Proposed Action would not affect the California SIP.

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

Section 401

Section 401 of the Clean Water Act (CWA) (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 CWA (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 CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual U. S. Army Corps of Engineers 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. The hydraulic dredging project conducted in 2000 was under Nationwide Permit No. 35 and the 2004 and 2005 clamshell dredging projects were conducted under Nationwide Permit No. 3. The Proposed Action would not discharge any pollutants into navigable waters.

Section 404

Section 404 of the CWA authorizes the U. S. Army Corps of Engineers to issue permits to regulate the discharge of "dredged or fill materials into waters of the United States" (33 U.S.C. § 1344). The Proposed Action would not discharge any materials into waters of the United States.

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Section 5 List of Preparers and Reviewers

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Section 6 References

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