

RECLAMATION

Managing Water in the West

North Grasslands Water Conservation/ Water Quality Control and Level 2 Refuge Water Exchange Project

Final Environmental Assessment

16-23-MP



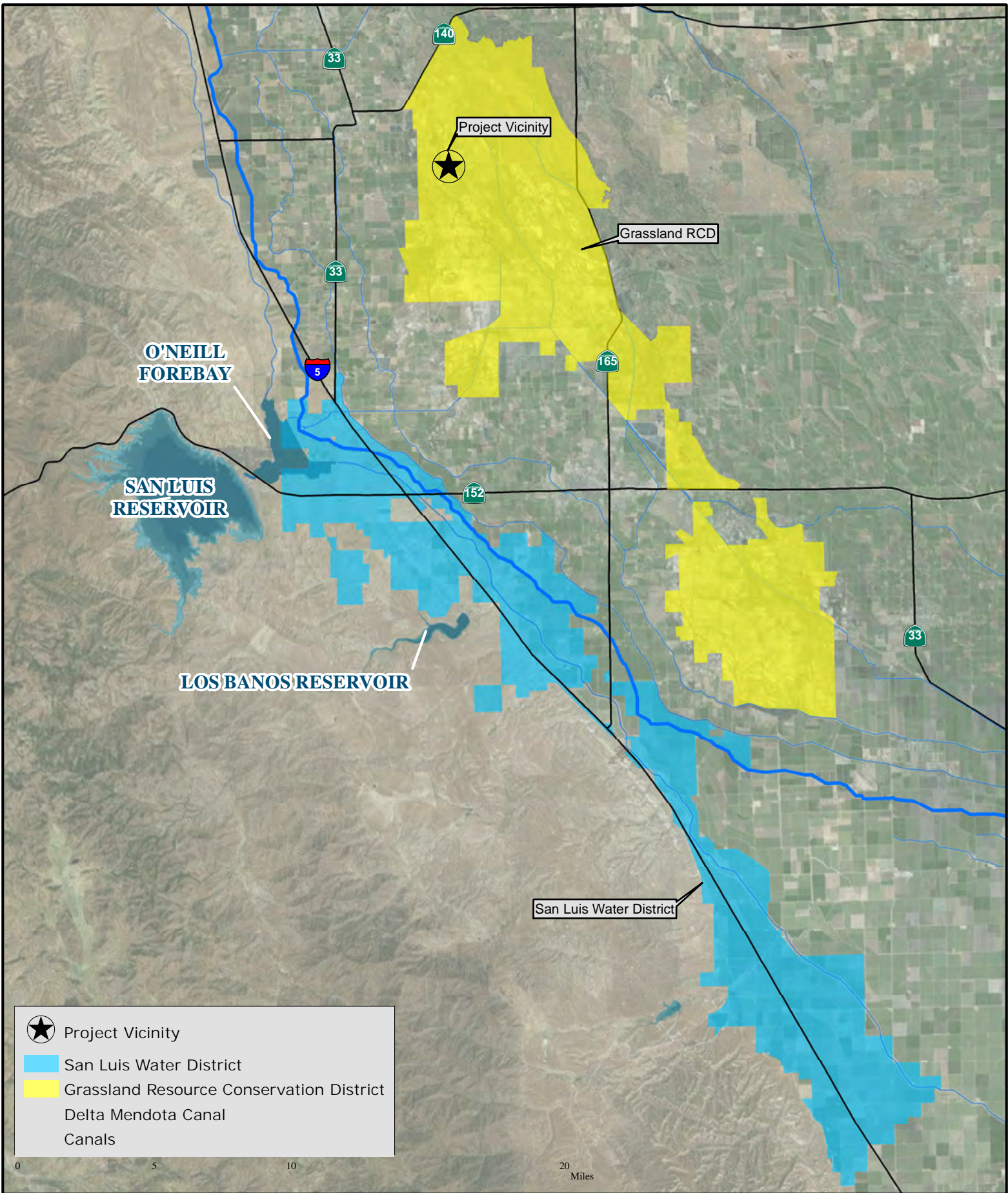
U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

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Mission Statements

The Department of the Interior and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors 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.



North Grasslands Water Conservation/Water Quality Control and Level 2 Refuge Water Exchange Project

FIGURE 1

Section 1 Introduction

1.1 Background

In conformance with the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), and Department of the Interior (DOI) Regulations (43 CFR Part 46), the Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with the Grassland Water District's (GWD) and San Luis Water District's (SLWD) proposed North Grasslands Water Conservation/Water Quality Control and Level 2 (L2) Refuge Water Exchange Project (Proposed Action). The Proposed Action is located in Merced and Fresno counties, California (see **Figure 1**).

Reclamation proposes to enter into an agreement with SLWD to exchange federal L2 refuge water for water made available via GWD's North Grasslands Water Conservation and Water Quality Control Project (NGWCWQC Project). The Proposed Action would further the goals and objectives of the Refuge Water Supply Program (RWSP) by improving refuge water availability South of the Delta. The term of the Agreement will be fifteen years and is expected to start Water Year 2019 and proceed through Water Year 2034.

1.2 Previous Environmental Analysis

The Proposed Action was previously analyzed in the GWD's September 2015 Initial Study/Mitigated Negative Declaration (GWD 2015 IS/MND) for the North Grasslands Water Conservation and Water Quality Control Project (NGWCWQC Project). The Draft IS was released to the public for a 30-day public review period in August 2015. The Final IS/MND was released in September 2015. The document analyzed improving and constructing conveyance facilities to recover available water from GWD's water conveyance system as well as maintenance flows from the privately managed wetlands along Gun Club Road (Recovered Water). The Recovered Water would be returned via open channel and pipeline to the Santa Fe Canal upstream of the Cherokee Weir for delivery by GWD to a portion of the northern Grassland Resource Conservation District (GRCD). The major features of the NGWCWQC Project include improvement to two GWD ditches and the construction of two pipelines (Gun Club Road (GCR) Pipeline and Santa Fe Canal (SFC) Pipeline), three pump stations (Hollow Tree (HT), Mud Slough (MS) and Gun Club (GC)), and associated water control structures to recover water and return it to the GWD conveyance system to meet demands. These documents and the environmental analysis they contain are incorporated by reference into this document.

1.3 Need for the Proposed Action

The need for the Proposed Action is to provide Incremental Level 4 (IL4) refuge water supplies to the GRCD in accordance with requirements under Section 3406(d) of the Central Valley Improvement Act (CVPIA).

2.1 No Action Alternative

The No Action Alternative would consist of Reclamation not entering into an agreement with SLWD to fund the exchange of refuge L2 water for Recovered Water to help meet refuge demands. The delivery of Recovered Water to the GRCD lands derived from the conservation actions for purposes defined in this EA would not occur. SLWD would not be able to utilize exchanged refuge L2 water, and the IL4 portion of this exchange would not provide water to the RWSP.

2.2 Proposed Action

Reclamation proposes to enter into an agreement with SLWD and GWD to exchange refuge L2 water for water made available via the NGWCWQC Project. The Proposed Action would further the goals and objectives of the RWSP by improving refuge water availability South of the Delta. Another benefit of the Proposed Action is that it would enable delivery of water to SLWD for agricultural use.

The NGWCWQC Project's Recovered Water (up to 16,500 acre-feet annually) would be utilized by the RWSP for south-of-Delta L4 refuge water purposes for the GRCD. The SLWD intends to provide capital funds to construct the NGWCWQC Project in exchange for refuge L2 water. In exchange for the Recaptured Water delivered to the GRCD, Reclamation would deliver to SLWD, within its Contractor's Service Area, Refuge L2 Water based on the Project Yield developed during the current Water Year until Project construction and O&M Costs paid by SLWD have been repaid. Exchanged L2 Water will be provided to SLWD after Reclamation receives verified meter readings from GWD confirming the previous month or month(s) Project Yield. The Parties signatory to the exchange agreement may mutually agree in writing to adjust the volume of Exchanged L2 Water on a monthly or seasonal basis, provided that the Exchanged L2 Water shall not exceed 50% of the Recaptured Water produced and delivered by the Project over a 24-month period. The 15-year exchange period is anticipated to start Water Year 2019 and proceed through Water Year 2034, but capital repayment is expected to be completed within five years after NGWCWQC Project start-up.

The NGWCWQC Project would recover available water from GWD's water conveyance system (see maps in **Appendix A**). The Recovered Water would be returned via open channel and pipeline to the Santa Fe Canal upstream of the Cherokee Weir for delivery by GWD to a portion of the northern GRCD. The major features of the NGWCWQC Project include improvement to

two GWD ditches and the construction of two pipelines (GCR Pipeline and SFC Pipeline), three pump stations (HT, MS and GC), and associated water control structures to recover water and return it to the GWD conveyance system to meet refuge demands. The NGWCWQC Project would typically begin operating in mid-September once impoundments begin to spill after flood-up and continue operating until mid-February as water quality and demand conditions can accommodate.

CONVEYANCE SYSTEM IMPROVEMENTS

The plates in **Appendix A** show the locations of the specific NGWCWQC Project elements as well as the area of disturbance anticipated for each section of work. The NGWCWQC Project begins by recovering water from a replacement turnout and spill structure that will be located adjacent to the existing five-box weir spill structure in Los Banos Creek. The Recovered Water would flow over the new sharp-crested spill structure into the Walter Ditch. The spill structure would be a fixed width with an adjustable crest elevation designed to convey the first water arriving at the five-box weir up to a specified flow in Los Banos Creek with higher flows diverted to Walter Ditch. A new turnout would be constructed as part of the replacement spill structure to improve service to the Gustine Gun Club (GGC) land between the Walter Ditch and Los Banos Creek. c

Recovered Water would be used to meet refuge demands on the Walter and GCR Ditches, and would flow through the Walter Ditch and the GCR Ditch to the point where the GCR Ditch crosses Gun Club Road near Santa Fe Grade. At this water control point the Gun Club Pump Station (GCPS) would be constructed. The pump station would be designed to control the upstream water surface elevation to make deliveries by gravity upstream of the structure and regulate the flow downstream. Upstream of this point the flow would be a combination of both regulated water delivered via the Walter and Gun Club Road Ditches and water that overtops the sharp-crested spill structure on Los Banos Creek.

The proposed GCR Pipeline starts at the GCPS. Management of excess flow in the system upstream of the GCPS will be accomplished through a proposed return structure on the Walter Ditch (Los Banos Creek Return) south of Gun Club Road, designed to spill excess water back into Los Banos Creek. This return structure will prevent overtopping of the Walter Ditch or GCR Ditch. This return system is crucial to managing excess flow in the system, such as during emergency power outages. Water from the HT Drain would be diverted to the HT Pump Station, where it would combine with the flow in the GCR Pipeline. The combined waters from the GCR Ditch and the HT Drain would be pumped through the GCR and SFC Pipelines to a concrete distribution structure located upstream of the Cherokee Weir and the Eagle Ditch head works adjacent to or on the Santa Fe Canal, where the water could be conveyed to the Santa Fe Canal.

The other source of water supply for the NGWCWQC Project is GWD operational spill and wetland maintenance flows in Mud Slough and the Fremont Ditch at Gun Club Road. At this location, a third pump station (MS Pump Station) would be constructed. The pump station would lift Recovered Water through the east reach of the GCR Pipeline to the SFC Pipeline where the waters in the two reaches of the GCR Pipeline would combine and be delivered through the SFC Pipeline to the concrete distribution structure upstream of the Cherokee Weir and Eagle Ditch head works.

Each pump station would be fitted with two to four pumps with discharges manifolded into the pipelines to provide efficient pumping over a range of flows. Submersible pumps would be used to minimize noise impacts. Check valves, service valves, and other special valving would be installed to control the flow and operating pressures. Flow, water level, and electrical conductivity (EC) metering equipment would be installed. The pumps would be installed in reinforced concrete pump stations fitted with trash racks. Electric energy would be utilized for motors and controls. The pumps would be operated on upstream level control configured to pump at a constant rate over a wide range of upstream flow levels so that the water delivered into the Santa Fe Canal would be maintained at a constant rate unless the upstream water level dropped below a selected set point. When levels are below this set point, the pumping would be paced with the water level.

CONSTRUCTION

The period of time available for construction of facilities in the construction area is very limited because the properties in the area are managed as seasonal wetlands, inundating impoundments a substantial portion of the year. Construction requiring excavation would be limited to approximately four months (May-August) in any year. Typically, flood-up starts in early September, and water is held on the wetland areas until early spring the following year. Drawdown (draining) of the ponds usually starts in January and can last through May. This construction timing issue was discussed with Hollister Land and Cattle Company (HLCC) representatives, and they stated that the areas on the HLCC impacted by the proposed construction are not typically used as brood ponds and are therefore not maintained with year-round water. However, some of the areas are irrigated in the spring and early summer to germinate and maintain growth of certain moist soil vegetation. The HLCC representatives requested that the construction of the pipeline on the HLCC property start at the south end near the Cherokee Weir and move north to facilitate their irrigation practices in the area.

The crossing of the Santa Fe Canal with the GCR Pipeline will include replacement of the Santa Fe Canal crossing of Gun Club Road. The construction of the water control and return structure at Los Banos Creek and the pump stations would also need to be constructed in the summer period when the channels are dry. It is anticipated that construction of the proposed facilities would take place over approximately a 4-6 month period (March – August) in two consecutive years. A detailed schedule would be prepared as part of the design phase of the NGWCWQC Project.

CONSTRUCTION SPOIL AND RESTORATION

The construction of the pipeline and related structures would generate excess excavated soils (spoil). The exact quantity of spoil is unknown at this time and would be dependent on the pipeline alignment chosen, final pipe and structure sizes and bedding requirements that would be determined during the design phase of the NGWCWQC Project. Based on discussions with the HLCC, several areas in the vicinity of the proposed construction have been identified where the spoil could be beneficially used on levees, roads and parking areas and to modify access points from Gun Club Road to improve traffic safety. If spoil cannot be placed on HLCC property or an additional reuse area is needed, adjacent landowners would be contacted in an effort to reuse spoil locally or the spoil would be hauled to the nearest suitable site. Another potential use for

the spoil would be to widen and improve the road shoulders on GCR. In addition, restoration activities to minimize the impacts of construction and operation of the NGWCWQC Project on the private lands affected by construction will be developed. A detailed construction spoil and restoration plan will be developed as part of the final design.

Construction is anticipated to begin in spring 2017. The NGWCWQC Project construction should be completed by the fall of 2018. Construction will occur during normal working hours and weekdays, typically between 7 a.m. and 6 p.m. The NGWCWQC Project IS provides a further description of planned construction details, including a discussion of construction spoil and restoration measures. It also describes any temporary construction dewatering of the ditches/canals, operations, and/or maintenance.

Environmental Protection Measures

The NGWCWQC Project IS (Evaluation of Environmental Impact section, Pages 3-3 through 3-84) provides an integrated discussion of the environmental settings, potential environmental impacts and the appropriate mitigation measures to reduce the construction effects. GWD adopted all mitigation measures identified in the final NGWCWQC Project IS.

Section 3 Affected Environment & Environmental Consequences

3.1 Resources Analyzed

The following resources were analyzed in the NGWCWQC Project Final IS:

- Aesthetics
- Agricultural and Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

Department of the Interior Regulations, Executive Orders, and Reclamation guidelines require a discussion of the following items when preparing environmental documentation:

3.1.2 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets that are held in trust by the United States for federally recognized Indian tribes or individuals. There are no Indian reservations, rancherias or allotments in the construction area. The nearest ITA is the Native American land allocation 50H about 43 miles south/southwest of the construction site. The Proposed Action does not have a potential to affect ITAs and is not analyzed further.

3.1.3 Indian Sacred Sites

Sacred sites are defined in Executive Order 13007 (May 24, 1996) as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion

has informed the agency of the existence of such a site." No Indian sacred sites have been identified within the Proposed Action/Proposed Project area, and is not an environmental issue that was further analyzed.

3.1.4 Environmental Justice

Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. Reclamation has not identified adverse human health or environmental effects on any population as a result of implementing the Proposed Action. Therefore, implementing the Proposed Action would not have a significant or disproportionately negative impact on low-income or minority individuals within the Proposed Action area, and will not be analyzed further.

3.2 Aesthetics

The Proposed Action is not located in or near any designated scenic vista or scenic highway. Therefore there should be no impact to these resources. The Proposed Action involves ground disturbing construction, but there are no anticipated impacts to outcroppings and historic buildings. There are a few trees that may be removed and replaced during construction.

During construction there would be a temporary negative impact to general aesthetics, with open trenches and construction equipment/activities. This would be resolved with completion of construction. The pump stations would be constructed with low profiles and would not substantially change the visual character or quality of the managed wetland area. The water control structures would be similar in size and form to existing water control structures visible from Gun Club Road. The proposed pipelines would be underground and would not detract from aesthetics.

3.3 Agricultural and Forest Resources

The NGWCWQC Project would be constructed mostly within easements of existing roadways and not on agricultural lands. There would be no conversion of agricultural land to non-agricultural as a direct result of implementation of the Proposed Action. Implementation of the Proposed Action would help to provide a more reliable source of water for irrigation, creating a positive impact on agricultural resources.

3.4 Air Quality

The construction site is located in the San Joaquin Valley Air Basin and is subject to the San Joaquin Valley Area Air Pollution Control District (SJVAPCD). This air basin is currently in non-attainment for the PM₁₀ and PM_{2.5} state standards, and the state 1-hour and 8-hour ozone standards. The NGWCWQC Project would be in compliance with SJVAPCD regional air

quality plans and emissions do not exceed daily and/or annual significance thresholds. The GWD 2015 IS/MND analyzed the impacts of constructing and operating the NGWCWQC Project on local air quality resources. This air quality impact analysis is included on pages 3-13 through 3-18 of the GWD 2015 IS/MND for the *North Grasslands Water Conservation and Water Quality Control Project*, (GWD 2015). This analysis on pages 3-13 through 3-18 of the GWD 2015 IS/MND is incorporated by reference. The Sacramento Metropolitan Air Quality Management District Model was used in the GWD 2015 IS/MND to assess construction emissions of the Proposed Action (Pages 3-14, through 3-16). An evaluation shows that there are no new circumstances or changes in the action or its impacts that would result in significantly different environmental effects. For a more in depth discussion of potential impacts to air quality see Air Quality section of the GWD 2015 IS/MND.

The following mitigation measures would be implemented to control dust during all phases of construction:

- All disturbed areas, including storage piles, which are not being actively used for construction purposes, shall be effectively stabilized of dust emissions using water, applying a chemical stabilizer/suppressant, and covering with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or a chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions by applying water or presoaking.
- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)*
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions by applying sufficient water or a chemical stabilizer/suppressant.
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Once construction is complete, emission sources would be minimal, and limited to maintenance and inspection activities.

3.5 Biological Resources

There are 7 federally listed (federally listed as endangered, or federally listed as threatened) species that have potential to occur within the vicinity (within five miles) of the Proposed Action (GWD 2015, pages 3-23 & 3-24). Giant garter snake (*Thamnophis gigas*) have potential to occur within the boundaries of the Proposed Action, which have resulted in finding of Not Likely to Adversely Affect. In a memorandum dated June 16, 2016, U.S. Fish and Wildlife Service concluded informal consultation by concurring with Reclamation's finding.

The NGWCWQC Project includes measures to minimize the impacts to the giant garter snake:

- If plowing, trenching, or other construction activities are proposed within 200 feet of giant garter snake aquatic habitat, the project area shall be surveyed by a qualified biologist no more than 24 hours prior to construction. The survey shall be repeated if a lapse in construction activity of 2 weeks or greater has occurred since the last survey. If giant garter snakes are encountered during construction, activities shall cease until appropriate corrective measures have been completed and it has been determined that resumption of construction would not result in harm to the snake. Any sightings of giant garter snakes and any incidental take shall be reported to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately.
- Construction activities within 200 feet of giant garter snake aquatic habitat shall occur only during the snake's active season (between May 1 and August 31), so that snakes can move and avoid danger.
- Between April 15 and September 30, all irrigation ditches, canals, or other aquatic habitat within the construction area shall be completely dewatered, with no ponded water remaining for at least 15 consecutive days prior to initiating any construction activity in dewatered habitat. The purpose of dewatering the aquatic habitat prior to initiating construction activity is to encourage giant garter snakes to leave the area on their own prior to ground disturbance.

A more thorough description of surveys, species, and avoidance measures can be found in the GWD 2015 IS/MND.

3.6 Cultural Resources

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Title 54 USC § 306108, commonly known as Section 106 of the NHPA, and its implementing regulations found at 36 Code of Federal Regulations (CFR) Part 800, is the primary Federal legislation that outlines the Federal Government's responsibility to historic properties. The CEQA process is the primary State process for considering effects to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on historic properties, which are those cultural

resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP). CEQA requires the State and local governments to identify Historic Resources, which are those cultural resources that could be eligible for inclusion on the California Register of Historic Resources (CRHR). For Federal Proposed Projects, cultural resource significance can be evaluated in terms of eligibility for listing in the NRHP.

The Section 106 process, as outlined in the Federal regulations at 36 CFR § 800, describes the steps that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking would 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 would have on historic properties, and consult with the State Historic Preservation Officer (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.

Reclamation proposes to execute a water exchange agreement between Reclamation and the San Luis Water District. Executing the water exchange agreement constitutes an undertaking as defined in 36 CFR § 800.16(y). The agreement is contingent upon improvements to the GWD water conveyance infrastructure, which is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a). As a result of this determination, Reclamation implemented the steps in the Section 106 process as outlined at §800.3 to §800.6.

In an effort to identify historic properties, GWD contracted AECOM to conduct a cultural resources inventory covering the APE. Five cultural resources were identified within the APE: Santa Fe Canal segment (P-24-001893), Eagle Ditch segment (P-24-001960), Hollow Tree Drain segment (P-24-001959), Gun Club Road Ditch segment (P-24-001961), Walter Ditch segment, and a segment of the Santa Fe Railroad Grade (P-24-000083). No prehistoric cultural resources were identified.

The Santa Fe Canal (P-24-001893) was previously recorded in 2001 and recommended as eligible for listing on the National Register of Historic Places (National Register) for its association with Miller-Lux conveyance systems of the early 1900s (AECOM 2016:26-27). The Eagle Ditch (P-24-001960) constructed by 1918 as a primary lateral canal to divert water from the Santa Fe Canal (AECOM 2016:29-30). The Hollow Tree Drain (P-24-001959) was constructed by 1918, likely as part of the Miller-Lux conveyance systems. The Gun Club Road Ditch (P-24-001961) was constructed at the request of the GWD in the 1950s to allow Los Banos Creek and Garzas Creek waters to be moved into the Eagle Ditch to assist in providing water service to the gun clubs (AECOM 2016:30). The Santa Fe Railroad Grade (P-24-000083) was constructed circa 1890 by sugar magnate Claus Spreckels for the San Joaquin Railroad in anticipation of a new rail line, though no track was ever laid (AECOM 2016:31-32). The Santa Fe Railroad Grade has been converted to a contemporary county road (Santa Fe Grade Road).

AECOM only recorded and evaluated the segments of the Hollow Tree Drain (P-24-001959), Eagle Ditch (P-24-001960), Gun Club Road Ditch (P-24-001961), and Santa Fe Railroad Grade (P-24-000083) within and adjacent to the APE and recommended those segments ineligible for listing on the National Register of Historic Places (National Register) individually or as contributing elements of the Miller-Lux conveyance system, which is now a part of the GWD conveyance system. AECOM updated the site record for the Santa Fe Canal (P-24-001893) and recommended it eligible for inclusion on the National Register as one of the primary facilities associated with the Miller-Lux conveyance system. The entire length of each ditch/canal and the entire GWD conveyance system were not recorded or evaluated, but were described in detail by AECOM (2016) within the historic context. Recording the entire ditch/canal or the GWD system was outside the scope of this project. For the purposes of this project, Reclamation is treating the GWD conveyance system as eligible for inclusion in the National Register. We consider it eligible under Criterion A for local contributions to the history of early settlement, reclamation, and agriculture near the city of Gustine and in Merced County. See Enclosure 6 for further discussion.

Reclamation agrees with the recommendation that the Santa Fe Canal segment within and adjacent to the APE is eligible for inclusion on the National Register under Criterion A as a contributing feature of the entire Santa Fe Canal, which is a contributing feature of the original Miller-Lux conveyance system that was incorporated into the GWD conveyance system. The Hollow Tree Drain segment (P-24-001959), Gun Club Road Ditch segment (P-24-001961), and Santa Fe Railroad Grade segment (P-24-000083) within and adjacent to the APE are not eligible for inclusion on the National Register on an individual basis, as contributing elements the whole of their respective ditch/canal/grade, and as contributing elements to the GWD water conveyance system.

AECOM recommended that the Eagle Ditch was ineligible for inclusion on the National Register. However, Reclamation believes that the information in the report supports a determination that the segment of the Eagle Ditch within the APE is not eligible as a contributing element to the larger GWD conveyance system under Criterion A, given that this ditch segment was originally constructed as a primary lateral of the Santa Fe Canal and has retained integrity of location, association, and setting (AECOM 2016:29-30).

The Walter Ditch, constructed in 2006, was identified by AECOM within the APE, but was not recorded. Reclamation determined that the ditch has not achieved significance under criteria of consideration G. The Walter Ditch and does not meet the criteria considerations as it does not possess exceptional significance in its association to events or people that are important in the history of water conveyance and wetland habitat development in the GWD system, nor does it possess exceptional significance for its design and construction as an earthen structure.

All proposed activities for this undertaking will be conducted entirely within the limits of the built environment, which consists of pavement or engineered gravel/earth fill (canal berms, roads). Therefore, there is no potential for buried archaeological resources in the APE, and no sites of religious and cultural significance are expected to be present. As such, Reclamation determined that consultation with Indian tribes was not necessary for this undertaking.

Reclamation applied the criteria of adverse effects pursuant to 36 CFR § 800.5(b) and determined that the proposed project will result in no adverse effects to historic properties pursuant to 36 CFR § 800.5(b). The proposed improvements on the GWD water conveyance facilities will not alter the purpose and function for which the Santa Fe Canal or Eagle Ditch segments were built, or the characteristics that would make them eligible for listing on the National Register. Since there will be no alterations to the Santa Fe Canal or Eagle Ditch segments, the GWD water conveyance system will also be unaffected.

Utilizing these identification efforts, Reclamation entered into consultation with the SHPO, seeking their concurrence on a finding of “no adverse effect to historic properties pursuant to 36 CFR § 800.5(b).” Reclamation received a response from SHPO on March 14, 2017 concurring with Reclamation’s findings.

3.7 Geology / Soils

Construction would involve ground disturbing work with potential to create erosion and/or loss of topsoil. An erosion control plan and Storm Water Pollution Prevention Plan (SWPPP) will minimize these impacts to less than significant levels.

While the NGWCWQC Project does not cross a known fault line, the construction site is located approximately 7 miles east of the San Joaquin fault. Both design and construction must adhere to earthquake building and engineering standards. The construction area may be located on Dos Palos alluvium. The soils may be susceptible to liquefaction during an earthquake. Lateral spreading, subsidence, liquefaction and collapse were all potential hazards considered during design. A geotechnical investigations report was prepared that identified measures to address soil liquefaction and seismic settlement (Moore Twining Associates, 2013).

The following measure would be implemented to address seismic concerns:

- GWD will incorporate the recommendations of the Moore Twining Associates 2013 Geotechnical Engineering Investigation report into the project.

For a more thorough description of potential impacts to geology and soils see the Geology and Soils Section of the GWD Final 2015 IS on pages 3-38 through 3-41.

3.8 Greenhouse Gas Emissions

Construction and operation of the proposed NGWCWQC Project would result in direct and indirect GHG emissions that would occur on- or off-site. Construction workers, vendors, and maintenance workers associated with construction and operation would operate vehicles that generate direct, on-site and off-site GHG emissions. Electricity consumed on-site by pumps would indirectly cause GHGs to be emitted at a utility provider off-site. A substantial majority of GHG emissions associated with the NGWCWQC Project would be construction-related emissions which are small and of limited duration; the operational emissions are miniscule relative to established reporting limits for stationary sources and operational thresholds for land use projects.

Total construction GHG emissions were estimated using the methodology discussed previously in the “Air Quality” section. Total construction-related emissions would be approximately 514 metric tons (MT) of CO₂e.

The GWD 2015 IS/MND analyzed the impacts of constructing and operating the NGWCWQC Project on GHG emissions. This GHG emissions impact analysis is included on pages 3-42 through 3-47 of GWD 2015 IS/MND for the NGWCWQC Project, (GWD 2015). The specific analysis on pages 3-45 through 3-47 of the GWD 2015 IS/MND is incorporated by reference. An evaluation shows that there are no new circumstances or changes in the action or its impacts that would result in significantly different environmental effects.

3.9 Hazards/Hazardous Materials

The only hazardous material that would be transported to the NGWCWQC Project is fuel in vehicles for construction purposes. For a more thorough description of hazards and hazardous materials associated with the NGWCWQC Project, please refer to the GWD 2015 IS/MND.

3.10 Hydrology and Water Quality

The 2011 Project Feasibility Report prepared by GWD and AECOM (2011 Feasibility Report) (AECOM, 2011), and the GWD 2015 IS/MND analyzed the impacts of constructing and operating the project on hydrology and water quality. These hydrology and water quality impact analyses are included on pages 5-16 of the 2011 Feasibility Report and on pages 3-51 through 3-60 of the GWD 2015 IS/MND for the NGWCWQC Project, (AECOM, 2011) (GWD 2015). The specific analyses on pages 5-16 of the 2011 Feasibility Report and the specific analyses on pages 3-53 through 3-60 of the GWD 2015 IS/MND are incorporated by reference. An evaluation shows that there are no new circumstances or changes in the action or its impacts that would result in significantly different environmental effects.

GWD adopted mitigation measures to address impacts associated with water quality, water quality standards and waste discharge requirements. The following mitigation measures would be implemented:

GWD shall prepare and implement a SWPPP with associated BMPs designed to protect water quality, by minimizing sediment transport and controlling pollutant discharge from the site and staging area, and pursuant to the requirements of the NPDES stormwater permit for construction activity. The SWPPP will identify and specify:

- the use of erosion and sediment-control BMPs, including construction techniques that would reduce the potential for runoff as well as other measures to be implemented during construction;
- the means of waste disposal;

- the implementation of approved local plans, non-stormwater-management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;
- the pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges, and other types of materials used for equipment operation;
- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- personnel training requirements and procedures that would be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and
- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP will be in place throughout all site work and construction and will be used in all subsequent site-development activities. BMPs will include such measures as the following:

- Implementing temporary erosion-control measures in disturbed areas to minimize discharge of sediment into nearby drainage conveyances. These measures may include silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation.
- Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration.
- Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land, intercepting and diverting runoff to a watercourse or channel, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood damage along roadways and facility infrastructure.
- Developing and implementing a Dewatering Plan for pipeline and pump station construction that would require dewatering of areas before and possibly during construction. GWD shall obtain if necessary a Central Valley Regional Water Quality Control Board (CVRWQCB) general NPDES permit for construction dewatering activity (Order 5-00-175), which authorizes direct discharges to surface waters up to 250,000 gallons per day for no more than a 4-month time period each year, or a Limited Threat Discharge Permit (Order R5-2008-0082) for greater volumes and/or time periods.

For a more thorough description of potential impacts to hydrology associated with the Proposed Action, please refer to pages 3-51 through 3-60 of the GWD 2015 IS/MND.

3.11 Land Use and Planning

The GWD 2015 IS/MND indicates that the NGWCWQC Project would be consistent with both the General Plan, Zoning Code and terms of the USFWS easements. Reclamation concurs with the assessment and findings in the GWD 2015 IS/MND related to Land Use and Planning.

3.12 Mineral Resources

No mineral resources impacts were identified in the GWD 2015 IS/MND. Reclamation concurs with the assessment and findings in the GWD 2015 IS/MND related to Mineral Resources.

3.13 Noise

Typical construction noise would be associated with implementation of the NGWCWQC Project. This would be temporary and intermittent, occurring during the construction phase only when equipment is in operation. Once the conveyance improvement construction is complete, there should be no permanent noise impacts. The following mitigation measures will be implemented to minimize noise impacts:

When construction activities occur during daytime hours (7 a.m. to 6 p.m.) and within 1,500 feet of a sensitive receptor (permanent residence), GWD shall implement the following measures to reduce noise generated by construction activities:

- Require construction contractors to ensure that, to the extent feasible, construction equipment is properly maintained and equipped with noise controls, such as mufflers, in accordance with manufacturers' specifications.
- All motorized construction equipment shall be turned off when not in use to prevent excessive idling noise.
- All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses.

For a more thorough description of potential noise impacts associated with the NGWCWQC Project, please refer to the GWD 2015 IS/MND.

3.14 Population and Housing

No impacts were identified in the GWD 2015 IS/MND. Reclamation concurs with the assessment and findings in the GWD 2015 IS/MND related to Population and Housing.

3.15 Public Services

Minimal temporary impacts to fire protection and police protection were identified in the GWD 2015 IS/MND. Reclamation concurs with the assessment and findings in the GWD 2015 IS/MND related to Public Services.

3.16 Recreation

Beneficial impacts to hunting and other recreational opportunities were identified in the GWD 2015 IS/MND. Reclamation concurs with the assessment and findings in the GWD 2015 IS/MND related to Recreation.

3.17 Transportation/Traffic

The proposed NGWCWQC Project would not result in any new or changed land uses or population increases, and thus changes in permanent traffic conditions related to these mechanisms would not occur. In addition, operation of the NGWCWQC Project would not cause a significant increase in vehicle trips beyond those already required for management of private wetlands and the GWD conveyance system. The trucks and other equipment used to bring materials to construct the construction site, such as pipe sections for the pipeline, would require a minimal number of haul trips per day during the construction period. Because the roadway network in the construction area and the surrounding area is lightly traveled, the addition of these construction trips would not change current levels of service. However, construction activities may require a temporary lane closure. As a result, a temporary lane closure could increase traffic at times when cars attempt to travel in opposite directions along Gun Club Road and Santa Fe Grade through the construction area. This would cause temporary traffic increases above existing conditions, resulting in a potentially significant impact.

GWD adopted mitigation measures to address impacts associated with transportation and traffic. The following mitigation measures would be implemented:

Develop and Implement a Traffic Safety and Control Plan:

Prior to construction, the construction contractor shall develop and implement a traffic safety and control plan for the local roadways that would be affected by construction traffic describing the phasing of construction activities and the use of multiple routes to and from off-site locations to minimize the daily amount of traffic on individual roadways. GWD shall ensure that the construction contractor enforces the traffic safety and control plan throughout the construction periods.

The plan shall require the construction contractor to:

- post warnings about the potential presence of slow-moving vehicles;

- use traffic control personnel when appropriate; and
- place and maintain barriers and install traffic control devices necessary for safety, as specified in Caltrans's Manual of Traffic Controls for Construction and Maintenance Works Zones and in accordance with County requirements.

Before the start of construction, GWD shall obtain the necessary encroachment permits and coordinate the construction schedule with Merced County regarding temporary closures of Gun Club Road and Santa Fe Grade and associated detours if required.

For a more thorough description of potential impacts to transportation and traffic associated with the NGWCWQC Project, please refer to pages 3-78 through 3-80 of the GWD 2015 IS/MND.

3.18 Utilities and Service Systems

No impacts were identified in the GWD 2015 IS/MND. Reclamation concurs with the assessment and findings in the GWD 2015 IS/MND related to Utilities and Services Systems.

Section 4 Consultation and Coordination

4.1 Public Involvement

The public review period for the draft NGWCWQC Project IS was held from August 10, 2015, through September 8, 2015. GWD received eight comment letters on the draft IS. The Final IS/MND dated September 29, 2015 provided detailed responses to all comments received. Detailed information on the comments received and the responses to these comments can be found in Appendix I of the GWD 2015 IS/MND.

4.2 Title 54 U.S.C. § 306108, Commonly Known as Section 106 of the National Historic Preservation Act

Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (formerly 16 U.S.C. 470 et seq.), requires Federal agencies to consider the effects of their undertakings on historic properties, properties determined eligible for inclusion in the National Register, and to afford the Advisory Council on Historic Preservation an opportunity to comment. Compliance with Section 106 follows a series of steps, identified in its implementing regulations found at 36 CFR Part 800, that include identifying consulting and interested parties, identifying historic properties within the area of potential effect, and assessing effects on any identified historic properties, through consultations with the California SHPO, Indian tribes and other consulting parties. Reclamation initiated Section 106 consultation with the SHPO, and made a finding of “no adverse effect to historic properties,” pursuant to 36 CFR §800.5(b), for the proposed undertaking. Reclamation completed the Section 106 compliance process on March 20, 2017 after receiving a letter from SHPO dated March 14, 2017.

Section 5 References

Grassland Water District, (GWD 2015), Initial Study/Mitigated Negative Declaration North Grasslands Water Conservation and Water Quality Control Project, September 29, 2015.

AECOM. 2011 (AECOM, 2011). *North Grasslands Water Conservation and Water Quality Control Project – Project Feasibility Assessment Report*. Prepared for Grassland Water District (GWD). Fresno, CA.

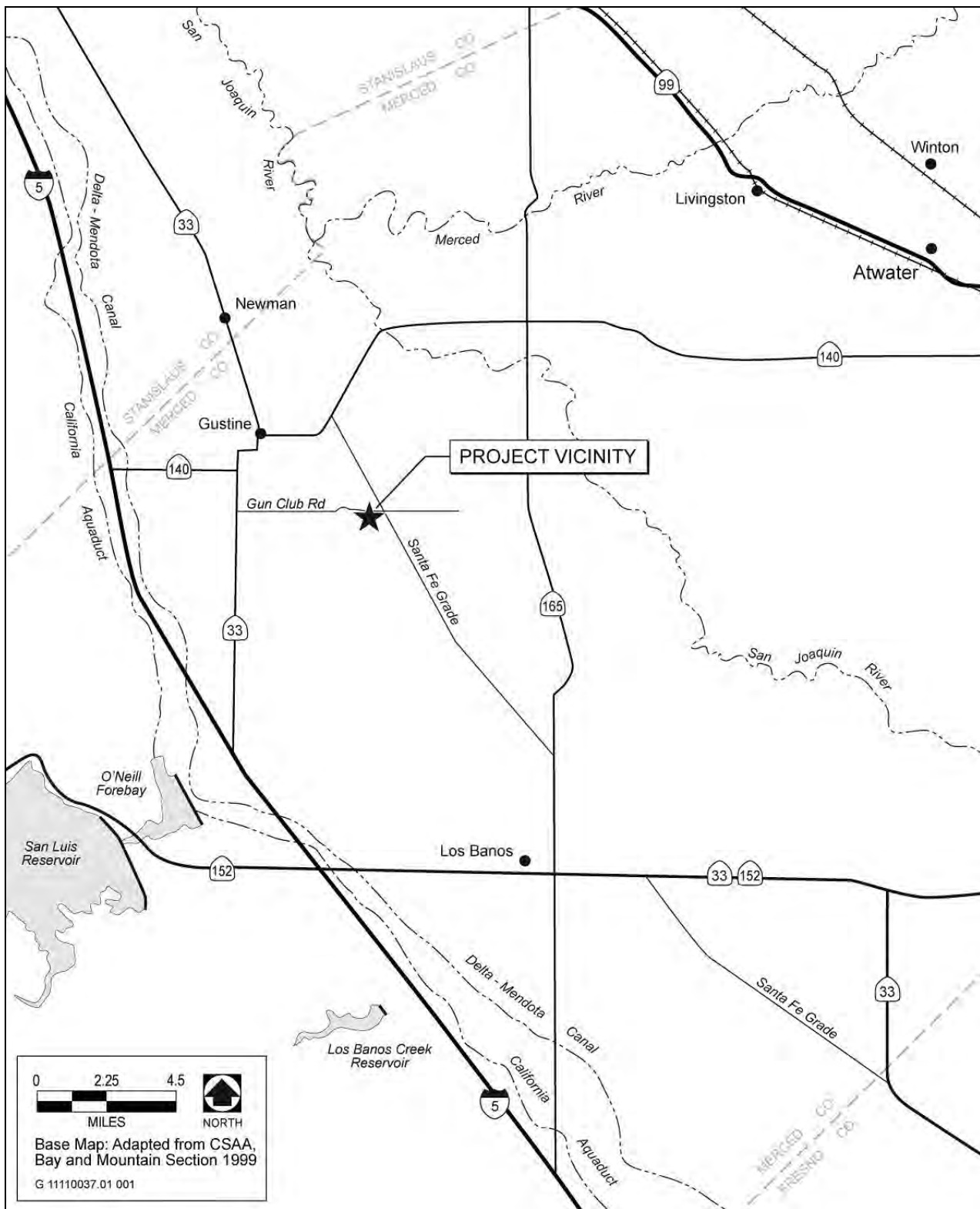
AECOM. 2016 (AECOM 2016). *North Grasslands Water Conservation and Water Quality Control Project Cultural Resources Assessment*. Prepared by AECOM for the Grassland Water District and U.S. Bureau of Reclamation. August 2016.

Appendix A – Project Maps (3)

1 - NGWCWQC Project Vicinity Map

2- NGWCWQC Project Plate 2

3- NGWCWQC Project Plate 8



Source: AECOM 2011

Exhibit 1-1

Project Vicinity



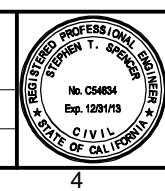
LEGEND
 PROPOSED PIPELINE ALIGNMENT ———

SCALE 1"=500'+/-
 90% PLANS
 PRELIMINARY
 03/11/16

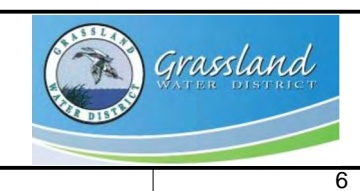
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 DATE: Mar 11, 2016 11:22am
 USER: deandab
 XREFS: G-BD
 AECOM-logofr
 GWD-logofr

REV	DATE	DESCRIPTION	APPR

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DESIGNED BY	PROJECT ENGINEER
	DRAWN BY	REG. NUMBER
	CHECKED BY	PROJECT NUMBER
	DATE	CADD STANDARDS
	March 16	AECOM



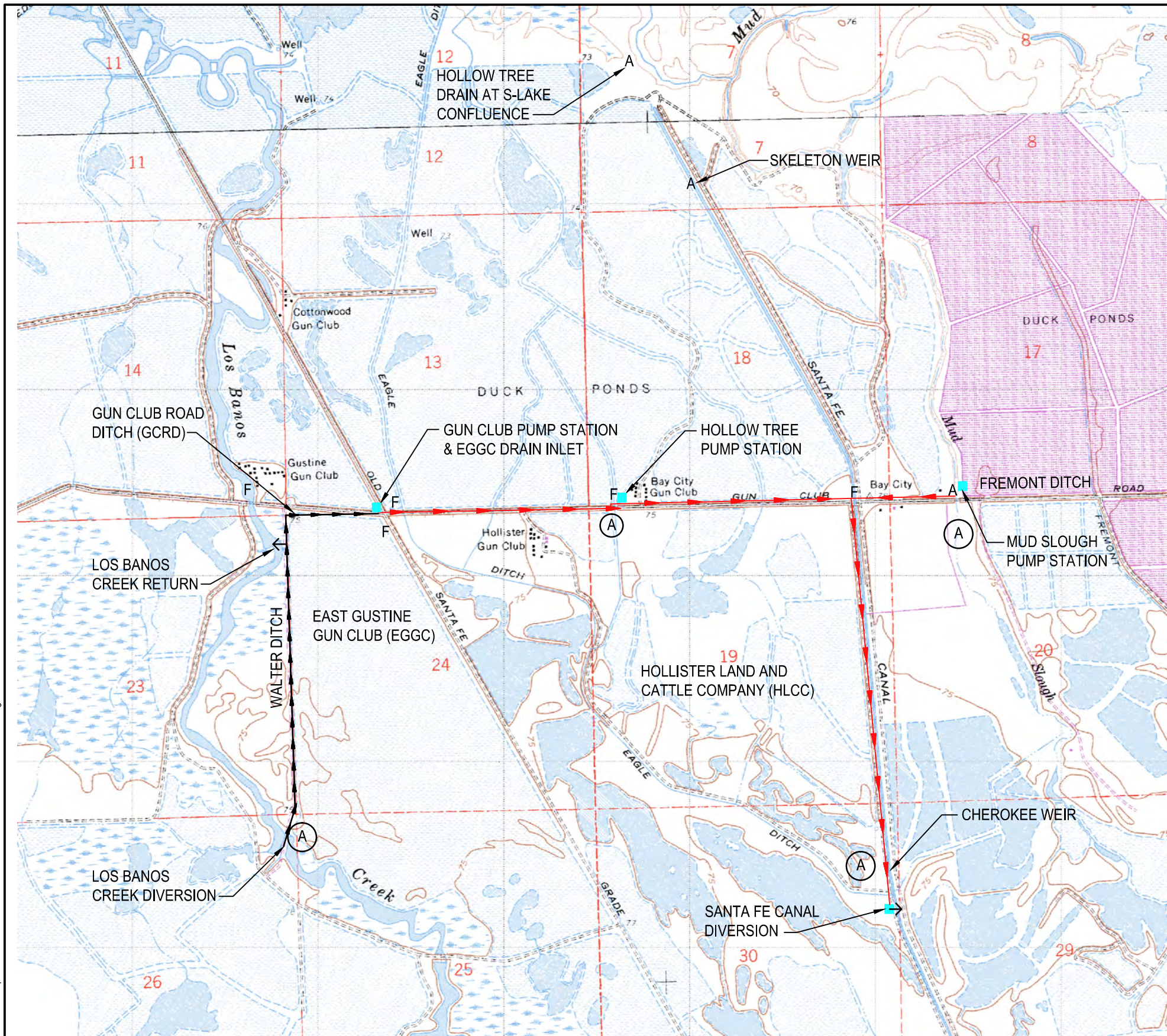
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 www.aecom.com



GRASSLAND WATER DISTRICT
NORTH GRASSLANDS WATER CONSERVATION & WATER QUALITY CONTROL PROJECT AREA AND PROPOSED FACILITIES

PLATE	PLATE-2
SHEET	1
OF 74 SHEETS	

DWG: K:\Projects\Grassland-WD\North Grasslands Water Conserv 12-2010\CAD\FIGURES\PLATE-8.dwg
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 USER: deandab



MONITORING LOCATIONS


- A** EXISTING AUTOMATED STATION
 (CONTINUOUS FLOW RATE AND EC READINGS)
 - MUD SLOUGH & FREMONT DITCH @ GUN CLUB ROAD
 - SANTA FE CANAL AND KESTERSON NWR DELIVERY @ SKELETON WEIR
 - LOS BANOS CREEK @ HIGHWAY 140 (NOT SHOWN)

- (A)** PROPOSED AUTOMATED STATION
 (CONTINUOUS FLOW RATE AND EC READINGS)
 - PROPOSED HOLLOW TREE PUMP STATION
 - PROPOSED MUD SLOUGH PUMP STATION
 - PROPOSED LOS BANOS CREEK DIVERSION TO WALTER DITCH
 - PROPOSED PIPELINE OUTLETS TO SANTA FE CANAL AND EAGLE DITCH

- F** EXISTING FIELD MONITORING LOCATION
 (WEEKLY FLOW RATE AND EC READINGS)
 - LOS BANOS CREEK @ GUN CLUB ROAD
 - EGGC @ GUN CLUB ROAD
 - GUN CLUB ROAD DITCH @ SANTA FE GRADE
 - HOLLOW TREE DRAIN @ GUN CLUB ROAD
 - HOLLOW TREE DRAIN @ S-LAKE CONFLUENCE
 - SANTA FE CANAL @ GUN CLUB ROAD
 - ALL AUTOMATED STATION LOCATIONS (PROPOSED AUTOMATED STATIONS WILL ALSO BE MONITORED WEEKLY TO ENSURE PROPER EQUIPMENT CALIBRATION)

NOTE:

ALTERNATIVE 1 ALIGNMENT SHOWN ONLY FOR PURPOSES OF SHOWING GENERAL LOCATION OF PROPOSED MONITORING STATIONS.

 AECOM 1360 E. Spruce Avenue, Suite 101 Fresno, California 93720 T 559.448.8222 F 559.448.8233 www.aecom.com	AECOM PROJECT NO. 60197052 .00002.02	GRASSLAND WATER DISTRICT NORTH GRASSLANDS WATER CONSERVATION AND WATER QUALITY CONTROL PROJECT MONITORING LOCATIONS	PLATE PLATE-8 SHEET 11 OF 11 SHEETS