RECLAMATION
Managing Water in the West

Environmental Assessment

Southwest Groundwater Banking Project for Fresno Irrigation District

U.S. Bureau of Reclamation
Mid-Pacific Region
Sacramento, California

April 2017

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 commitment 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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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) prepared this Environmental Assessment (EA) to evaluate and disclose any potential environmental effects associated with Fresno Irrigation District's (FID) proposed groundwater banking facility and effort to increase conveyance capacity along the downstream portion of the Dry Creek Canal (Proposed Action). The Proposed Action is located 7 miles west of Raisin City in Fresno County, California (Figure 1).

Reclamation proposes to provide federal funding through a WaterSMART Grant to help fund the Proposed Action. The Proposed Action would further the goals and objectives of the WaterSMART Grant program through water conservation and efficiency.

1.2 Previous Environmental Documents

The Proposed Action was previously analyzed in FID's Initial Study/Mitigated Negative Declaration (IS/MND) for the Southwest Groundwater Banking Project. The Draft IS/ MND was released to the public in March 2016 and a Notice of Determination was signed May 31, 2016. The State Clearing House number is 2016031046. Reclamation performed an independent review of the 2016 IS/MND and found it adequate. The 2016 IS/MND environmental analyses and findings are incorporated by reference into this document to the extent practicable.

The 2016 IS/MND found effects to the following resources less than significant or less than significant with mitigation: Aesthetics, Agriculture Resources, Air Quality, Biological Resources, Cultural Resources, Geology/Soils, Hydrology and Water Quality, Noise, Traffic, and Mandatory Findings of Significance. This EA will provide additional discussion of potential effects on cultural resources, air quality, Indian Trust Assets, Indian Sacred Sites, and Environmental Justice that were not analyzed pursuant to CEQA but are required by Department of the Interior Regulations, Executive Orders, and Reclamation guidelines when preparing environmental documentation.

1.3 Need for the Proposed Action

The Proposed Action is located in an area that does not have access to surface water supplies and relies exclusively on groundwater to meet agriculture demands. The project would help to reduce groundwater overdraft in the area west of Raisin City by utilizing excess regional flood waters to recharge the groundwater basin.

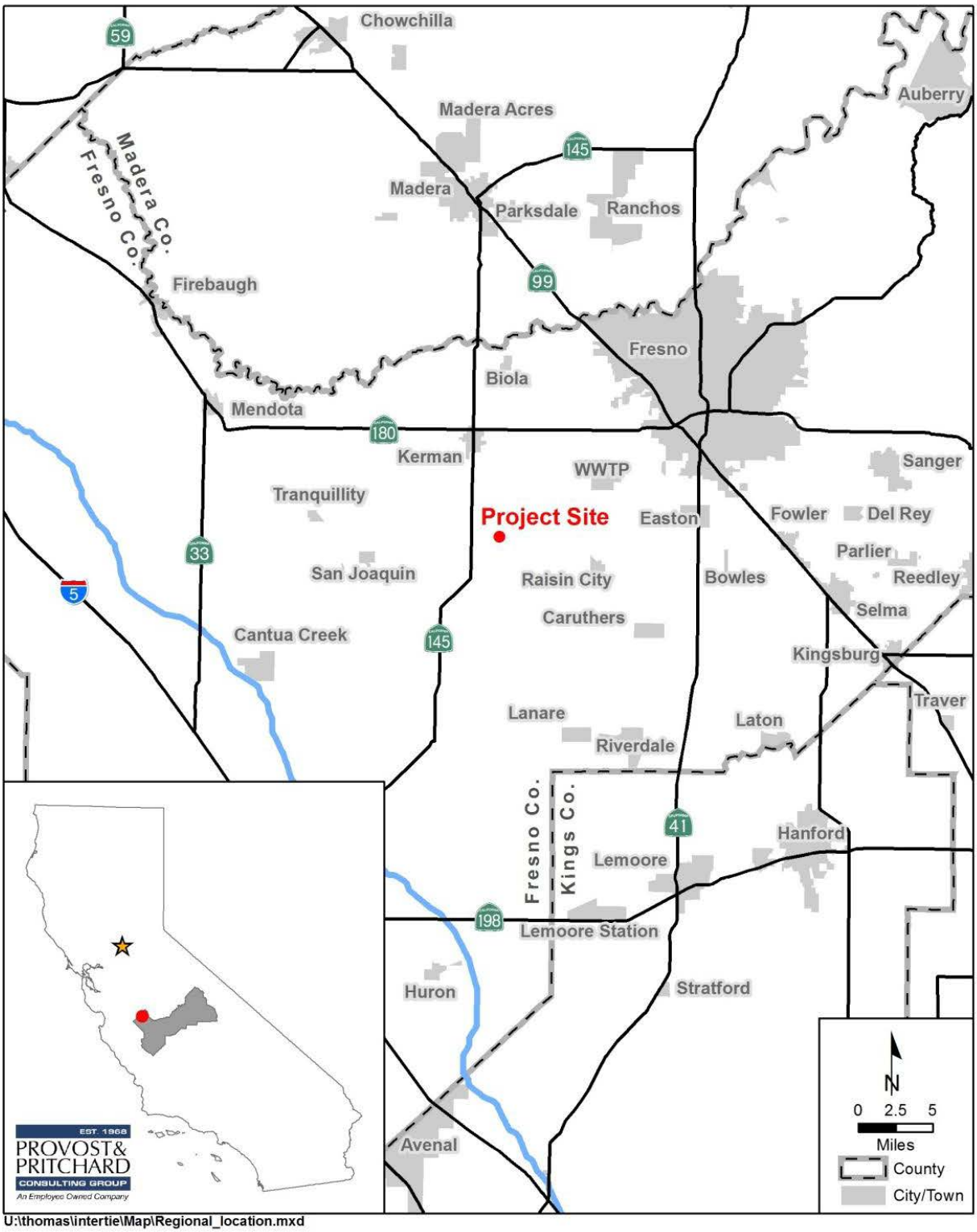

Figure 1. Project Location

Section 2 Alternatives

2.1 No Action Alternative

Under the No-Action Alternative, Reclamation would not award WaterSMART Grant funding to FID to construct a groundwater banking facility or to increase conveyance capacity along the Dry Creek Canal. FID would need to raise additional money from other public or private sources to continue with the project as described. However, if funding cannot be secured, the proposed project would not be constructed and the continued level of groundwater overdraft would remain.

2.2 Proposed Action

Under the Proposed Action, Reclamation would provide a WaterSMART Grant in the amount of one million dollars to FID towards the construction of a groundwater banking facility, and to increase conveyance capacity along the downstream portion of Dry Creek Canal. FID would provide the remaining funds to complete the project.

FID currently routes stormwater and floodwater to a 60 acre groundwater recharge basin. This project includes improvements to the existing 60 acre groundwater recharge basin, and construction of a new 60 acre groundwater recharge basin. Additionally, improvements would be made on the Lower Dry Creek canal system include: the replacement of a culvert crossing at Lincoln Avenue, installation of two culvert crossings downstream of the new recharge basin, and widen or deepen the canal, if needed. The new water recharge basin is anticipated to have a regulation structure and up to four distribution structures so that water can be moved between potential cells in the basin.

The project would utilize existing wells to provide an annual average water supply of 5,500 acre feet (AF) to FID or James Irrigation District (JID) users, and provide approximately 270 AF of flood water surface storage in the recharge basins. If necessary, three shallow monitoring wells would be constructed to help monitor and manage the facility. Floodwater and other available surface waters would be delivered to the new basin and recharged into the aquifer. The banked water would later be pumped out using existing wells and delivered to FID or JID.

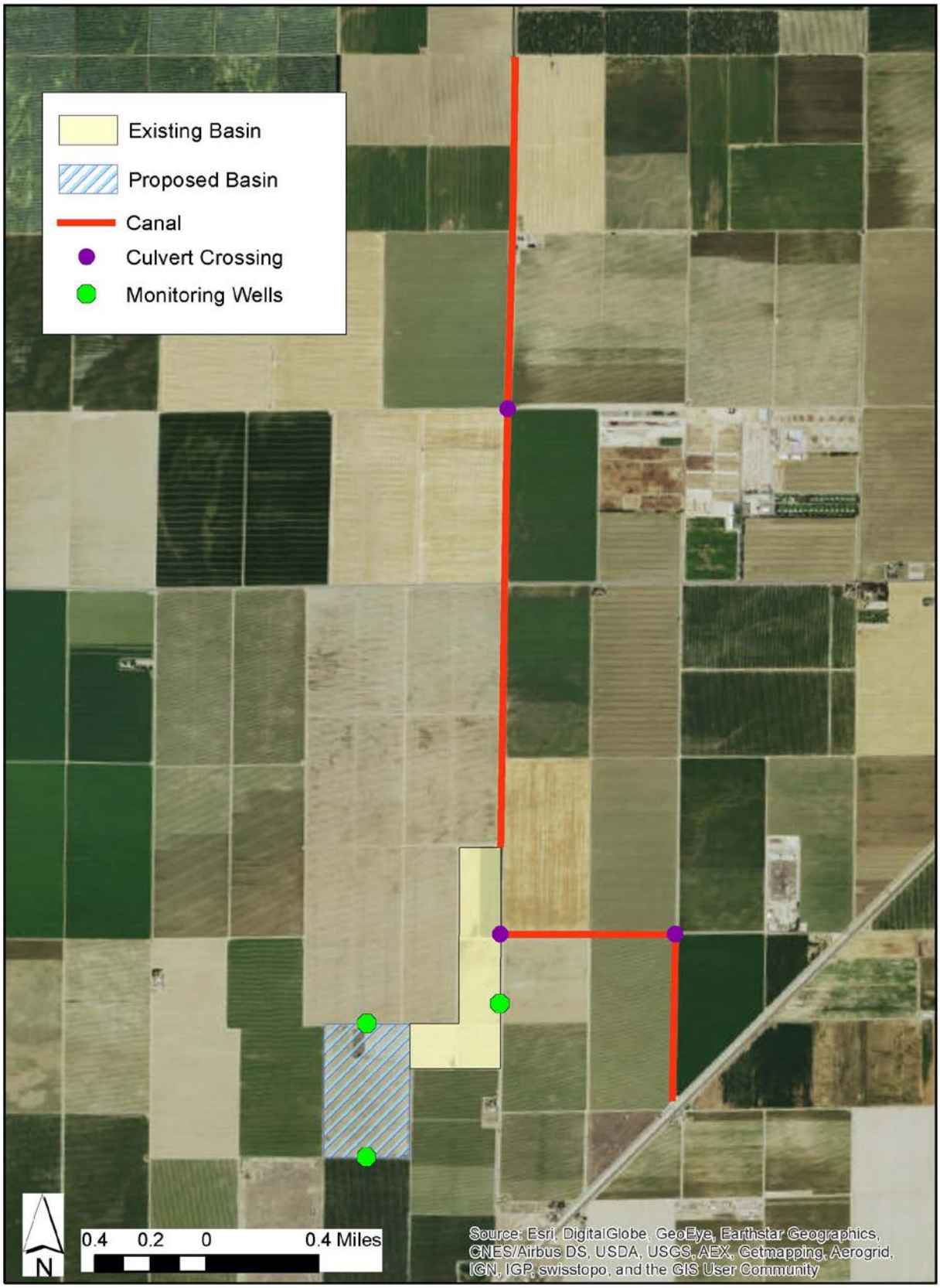

Figure 2. Project Features

Groundwater Recharge Basin and Levee Construction. Activities to enhance and existing 6 acre recharge basin and construct the 60 acre recharge basin include clearing and grubbing of the fallow fields, demolition and removal of existing structures, excavation and construction of internal levees, and an external berm. Resulting debris would be reused to the extent possible. Materials that could not be reused would be exported offsite to an appropriate waste collection or landfill location. A fence around the perimeter of the project site would be installed and crushed rock would be placed on roadways to maintain vehicle access. Three 300 foot monitoring wells could be installed to monitor the recharge basins.

Lower Dry Creek Canal Earthwork and Structures Replacement. Improvements to the Lower Dry Creek channel consist of excavating the sides of the channels. The excavated material would be reused to construct the recharge basin internal levees, external berm, or raising of the canal banks. Two private road culvert crossings and a county road culvert crossing at Lincoln Avenue would be replaced to increase flow capacity. To facilitate water delivery to the recharge basins, a new concrete canal turnout structure, a canal regulation structure, a sedimentation weir structure, and interbasin structures would be constructed. Water control gates, water level measurement devices would also be installed.

Construction Schedule. Work hours would be limited daylight hours between 6 a.m. and 7 p.m. on weekdays and 7 a.m. and 5 p.m. on weekends.

Maintenance and Operation. An Operations and Maintenance Manual would be prepared to establish the procedures for operating and maintaining the facility's performance and groundwater conditions. A Monitoring Plan would be developed to monitoring the project's influence on groundwater conditions. There would be regular monitoring of water deliveries, well extraction, groundwater levels, and groundwater quality.

2.2.2 Environmental Protection Measures

The 2016 IS/MND (Section 3.0, Environmental Analysis) provides an integrated discussion of the environmental settings, potential environmental impacts and the appropriate mitigation measures to reduce the significant effects of the Proposed Action. All mitigation measures identified in the 2016 IS/MND would be adopted.

Section 3 Affected Environment

The Proposed Action is located in a rural area in an unincorporated part of Fresno County. The region currently does not have surface water supplies and relies exclusively on groundwater to meet agricultural demand. This has resulted in a large pumping depression in and around the Raisin City Water District (2016 IS/MND, p. 3-51). In the general vicinity of the project area are row crops, vineyards, orchards, a turkey farm, and scattered rural residences. The project area lies within a 100-year flood hazard zone.

The average daytime noise levels near the project area range between low-to-mid 50s dBA and the peak agricultural community noise levels in western Fresno County range between high 60s to 70 dBA (2016 IS/MND, p. 3-62:3-63).

The Proposed Action is located in the San Joaquin Valley Air Basin and is subject to the San Joaquin Valley Air Pollution Control District (SJVAPCD). This air basin is currently in extreme non-attainment for O_3 and in non-attainment for $PM_{2.5}$ under both the Federal and State standards, and in non-attainment for PM_{10} under the State standard.

The groundwater banking facility would be constructed on a lot north of South McMullin Grade and south of West Lincoln Avenue, west of Bishop Road. The project area is designated as agricultural land use by the Fresno Countywide General Plan Land Use Diagram and is zoned AE-20 Exclusive Agriculture. However, the majority project area has been fallow for four years and not being used for agricultural activities (2016 IS/MND, p. 3-3).

Three culverts would be replaced as part of the Proposed Action. One culvert is located at the crossing of Lower Dry Creek Canal and Lincoln Ave, and the two culverts are located just north of South McMullin Grade. Both streets are paved with two lanes, and do not experience a great amount of traffic.

Section 4 Environmental Consequences

4.2 No Action Alternative

Under the no action alternative, Reclamation would not award the WaterSMART Grant to FID for the development of a groundwater banking facility. As a result, there would be no changes to the project area. Air quality would continue to be influenced by climate and geographic conditions, local and regional emissions from vehicles, and local land uses. Water quality would continue to be influenced by urban, agriculture, and stormwater runoff. The rate of groundwater withdrawal would continue to exceed the rate of replenishment.

4.3 Proposed Action

4.3.1 Summary of Impacts from the Initial Study

Aesthetics

The groundwater banking facility would not stand out from the surrounding agricultural setting and the culverts would not change the visual character of the canal. The project site would be surrounded by a fence, further reducing the visual impact by limited visibility of the facility. There would not be substantial changes to the visual character or quality of the area (2016 IS/MND, p. 3-2).

Agricultural Resources

The project area is located on Farmland of Local Importance, Unique Farmland, and Prime Farmland and is in an area under Williamson Act Contracts. The Proposed Action would be compatible with the goal of protected agricultural resources through the beneficial use of percolation basins and would reduce the potential for agricultural lands to be converted to residential, commercial, or other non-agricultural uses including fallowing. Groundwater recharge facilities are permitted uses in agricultural zoning districts and agricultural preserves. As a result of the project, more groundwater would be available to support agricultural resources in the region (2016 IS/MND, p. 3-8).

Air Quality

The California Emissions Estimator Model (CalEEMod) (version 2013.2.2) software was used in the 2016 IS/MND to estimate construction and operation emissions of the Proposed Action (Table 1). Emissions would not exceed SJVAPCD thresholds for non-attainment pollutants. No sensitive receptors are within five miles of the project site. A Fugitive Dust Control Plan would be submitted to the SJVAPCD to comply with Regulation VIII prior to the initiation of construction (2016 IS/MND, p. 3-15:3-18).

Table 1. Estimated Project Emissions

	VOC/ROG	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Construction (tons/year)	0.39	2.56	3.43	0.93	0.38
Operation (tons/year)	4.06	0.09	0.03	0.007	0.002
SJVAPCD standards (tons/year)	10	100	10	15	15
Federal standards (tons/year)	10	100	10	100	100

ROG = reactive organic gases
NOx = nitrogen oxides
PM_{10} = particulate matter
CO = carbon monoxide
Note: Estimates rounded.
CO_2 = carbon dioxide

Greenhouse Gas Emissions

The Proposed Action would generate GHG emissions through construction activities, and operation activities. Construction activities would be short-term, approximately five months. GHG emissions would be generated from off-road heavy-duty equipment needed to construct the recharge basins and on-road motor vehicles needed to mobilize crew, equipment, and materials.

CalEEMod was used in the 2016 IS/MND to estimate GHG emissions. The estimated GHG emissions from construction activities is 307.3 metric tons of carbon dioxide equivalents. The estimated GHG emissions due to on-going operational activities are 10.4 metric tons of carbon dioxide equivalents (2016 IS/MND, p. 3-44).

The SJVAPCD has guidance for addressing GHG emission impacts and recommends implementing Best Performance Standards to have a less than significant individual and cumulative impact on global climate change. The contractor would be required to implement the following measures:

- Use alternative-fueled (e.g. biodiesel, electric) construction vehicles/equipment for at least 15 percent of the fleet.
- Recycle at least 50 percent of construction waste.
- Use at least 10 percent local building materials (from within 100 miles of the project area).

Biological Resources

A listing of federally listed endangered, threatened, proposed, and candidate species (listed species) and critical habitat was obtained for the Kerman and Helm 7.5-minute USGS quadrangles via the USFWS website. In addition, a search of the California Natural Diversity Database (CNDDB) indicated no state or federal listed species were reported within the project boundaries (2016 IS/MND, p. 3-23).

A reconnaissance-level field survey of the project area was conducted on November 13, and December 7 and 14, 2015 by Halstead & Associates. Suitable habitat for San Joaquin kit fox (*Vulpes macrotis mutica*) and the Fresno kangaroo rat (*Dipodomys nitratoides exilis*). Burrows and evidence of kangaroo rats from the visual surveys were found at several locales along irrigation canals, however, the species was not identified. No kit foxes or evidence of kit foxes were observed on the project site during reconnaissance surveys but they could potentially inhabit California ground squirrel burrows along irrigation canals, pond levees, and fields, and could also forage and travel through the Project site. Short term effects, such as disturbance from noise and vibrations from heavy equipment could occur if the species are present. Mitigation measures would be implemented to minimize effects to the San Joaquin kit fox (2016 IS/MND, p. 3-24:3-26).

Burrowing owls and their burrows were observed along an existing irrigation canal on the Project site during the reconnaissance surveys. The burrows are not located in areas planned for construction and would be avoided by implementing the measures. Construction activities could potentially result in direct and indirect effects to the burrowing owl, raptors and passerine birds protected under the Migratory Bird Treaty Act (MBTA) if they begin nesting in the project site and adjacent areas. Mitigation measures would be implemented to avoid disturbance of migratory nesting birds and raptors (2016 IS/MND, p. 3-26:3-27).

Geology and Soils

Construction activities would involve ground disturbance work including: clearing, grubbing, excavation and grading. Excavation and grading of soil during construction activities, and plowing of agricultural fields could result in erosion and a loss of top soil. The construction contractors shall be required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) and comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) general stormwater permit construction activity. Potential erosion during construction would be addressed through the implementation of BMPs (2016 IS/MND, p. 3-38).

Hydrology and Water Quality

Implementation of the Proposed Action would involve ground disturbing activities which creates the potential for erosion to occur. The contractor would be required to develop and implement a SWPPP prior to initiating construction activities, and to implement standard BMPs. Dust control

measures would be implemented to avoid dust and soil from entering creeks or other drainages as a result of construction activities.

The recharge basins would alter the drainage pattern of the project area. However, runoff would be kept within the recharge basins until it percolates into the ground. Sediments could be carried into the recharge basins from the canals, however the sediments would remain within the recharge basin. Sediments would need to periodically be removed during operation and maintenance activities and standard BMPs would be implemented. The construction of the culvert replacements would not alter drainage patterns or the course of any streams or rivers (2016 IS/MND, p.3-55).

The purpose of the project is to counteract local reduction of the groundwater table level, increase water supply reliability, enhance operational flexibility, reduce system constraints, and improve and protect water quality. The construction of the groundwater recharge facility would increase groundwater availability for the surrounding area. The project would also include groundwater quality monitoring within the vicinity of the project area to ensure the Proposed Action does not negatively affect the groundwater quality (2016 IS/MND, p. 3-54).

Noise

Construction of the Proposed Action would require the use of heavy equipment that would temporarily increase noise and groundborne vibration levels. Construction activities would take place during daylight hours between 6 a.m. and 7 p.m. on weekdays and 7 a.m. and 5 p.m. on weekends and would comply with the Noise Standards of the Fresno County General Plan The noise levels from construction activities would vary during the different activity periods, depending on the types of equipment being used. There are no residences or receptors located within one mile of the project area (2016 IS/MND, p. 3-63:3-64), and the project would not expose people to excessive noise levels.

Project operations would create minimal noise generating activity. Operational noise includes vehicular trips for facility operation and maintenance activities. Maintenance would involve activities such as clearing debris and dredging recharge basins and vegetation management activities. Maintenance would occur infrequently and would not increase ambient noise levels (2016 IS/MND, p. 3-66).

Traffic

The Proposed Action would have temporary effects on traffic, due to the additional truck traffic during construction. Construction workers would commute to the project site daily via state highways and county roads and the construction equipment would be stored in the project area. The increase in traffic would be short term and limited to the construction. The increase in vehicles would not exceed the existing level of service standards on Lincoln Ave. and S. McMullin Grade or cause delays for emergency vehicles. The Proposed Action will have no effect on air traffic pattern or conflict with a transportation management plan (2016 IS/MND, p. 3-75:3-76).

Mandatory Findings of Significance

The implementation of mitigation measures for biological resources, and compliance with applicable codes, ordinances, laws and other required regulations will reduce the magnitude of

impacts associated with construction activities. Maintenance activities will be scheduled to service the facility on an as needed basis. Minimal additional vehicle trips would occur as a result of maintenance activities. The water conveyance facilities will be almost entirely passive and not contribute significant emissions to the air basin. The Proposed Action will not result in impacts that are individually limited or cumulatively considerable. The Proposed Action would not result in substantial adverse effects on human beings, either directly or indirectly (2016 IS/MND, p. 3-81:3-82).

4.3.2 Air Quality Conformity

This section supplements the air quality analysis in the IS. The Federal CAA requires Federal agencies to ensure that their actions conform to applicable implementation plans for the achievement and maintenance of the National Ambient Air Quality Status (NAAQS) for criteria pollutants. To achieve conformity, a Federal action must not contribute to new violations of NAAQS, increase the frequency or severity of existing violations, or delay timely attainment of standards in the area of concern (for example, a state or a smaller air quality region). The proposed action would not produce emissions that are greater than the GCR *de minimus* values for criteria pollutants (Table 1). Therefore, the proposed action is consistent with the EPA-approved State Implementation Plan and a written Conformity Determination is not required.

4.3.3 Special Status Species

This section supplements the biological resource analysis in the IS. Protocol level trapping surveys for Fresno kangaroo rats was conducted from August 21to 26, 2016 by Live Oak Associates, Inc. Trapping survey results captured Heermann's kangaroo rat (*Dipodomys heermanni*), house mouse, and Pacific gopher snakes but did not detect the presence of the Fresno Kangaroo rat. The nearest California Natural Diversity Database (CNDDB) occurrence of the Fresno kangaroo rat was located over five miles from the project area and impeded by State Route 145. As a result, Fresno kangaroo rats are not considered present in the project area.

4.3.4 Cultural Resources

The term "cultural resources" broadly applies to prehistoric, historic-era, and architectural resources, as well as to traditional cultural properties. Cultural resources can include archaeological sites, which contain evidence of past human lifeways; the built environment, which consists of structures such as buildings, roadways, bridges, dams, and canals; and locations importantly associated with the history or cultural identity of living communities. Reclamation determined that providing federal funding for the proposed groundwater banking project constitutes an undertaking that has the potential to cause effects on historic properties, i.e., cultural resources that are included in, or eligible for inclusion in, the National Register of Historic Places (National Register). Such undertakings require compliance with 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA). This is accomplished through the Section 106 process as outlined at 36 CFR Part 800.

Historic properties identification efforts, required as part of the Section 106 process, were conducted by Johnston and Associates on behalf of FID. These efforts included background research, a records search at the Southern San Joaquin Information Center (RS# 15-496), and archaeological and built-environment surveys covering the entirety of the proposed project area of potential effects (APE). Johnston and Associates also sent letters to Indian tribes and Native American organizations and individuals identified by the California Native American Heritage

Commission (NAHC) as having knowledge of and interest in cultural resources in the project area, requesting comments or concerns about the project. Pursuant to the requirements of 36 CFR Part 800, Reclamation sent letters to the Indian tribes and Native American organizations and individuals on the NAHC contacts list as well, requesting assistance in identifying historic properties of concern in the APE. No responses to these requests for information were received.

The only cultural resource identified in the APE through these efforts is the Lower Dry Creek canal. Using the historic context developed through archival research and information provided by FID, Johnston and Associates evaluated this resource for National Register eligibility and determined that it does not meet the requirements for National Register inclusion under Criteria A, B, or C. Johnston and Associates did not evaluate the canal under Criterion D; however, based on the resource type and information already known about the canal, Reclamation determined this resource is unlikely to yield additional information important in history and is, therefore, not eligible for the National Register under Criterion D.

No historic properties were identified in the APE for the proposed undertaking. Through correspondence dated July 22, 2016, Reclamation initiated consultation with the California State Historic Preservation Officer (SHPO), notifying the SHPO of a Section 106 finding of no historic properties affected pursuant to 36 CFR § 800.4(d)(1). Through correspondence dated September 8, 2016, the SHPO responded with no objection to Reclamation's finding (Appendix B). Given the finding of no historic properties affected, Reclamation has determined the proposed action will result in no significant impacts on cultural resources.

4.3.5 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 project area. The nearest ITA is the Mooretown Rancheria of the Maidu Indians approximately 11 miles north of the project site. The proposed action will have no effect on ITAs. (Appendix C).

4.3.6 Indian Sacred Sites

Executive Order 13007 (May 24, 1996) requires that federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and avoids adversely affecting the physical integrity of such sacred sites. The Proposed Action would not be located on Federal lands and therefore would not affect access to or use of Indian sacred sites.

4.3.7 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.

4.3.8 Cumulative Effects

According to Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as *the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time* (40 CFR 1508.7).

The Proposed Action is exempt from General Conformity Regulations and will have no effect on cultural resources, ITAs, Indian sacred sites, or environmental justice. Therefore, there are no additional cumulative effects to consider beyond those evaluated in the IS.

Section 5 Consultation and Coordination

Reclamation has consulted with the following regarding the Proposed Action:

- Fresno Irrigation District
- Provost & Pritchard Consulting Group
- U.S. Fish and Wildlife Service
- California Office of Historic Preservation

5.1 Public Involvement

The 30-day public review period for the draft 2016 IS/MND was held from March 15, 2016 through April 13, 2016. Two comment letters were received. One letter from the State of California, Department of Conservation, and one letter from Fresno County, Department for Public Works and Planning. While these comments resulted in minor changes to the draft IS/MND, none of the comments identified a new unavoidable significant effect, nor did they result in a finding that the proposed mitigation measures in the IS/MND will not reduce potential effects to less than significant. Instead, the minor changes serve merely to clarify, amplify and make insignificant modifications to the IS/MND. The Final IS was distributed May 20016 and a Negative Declaration was signed on May 31, 2016. The State Clearing House number is 2016031046.

5.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies 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. In a memo dated October 6, 2016, Reclamation requested written concurrence from the Service that the Proposed Action may affect, but is not likely to adversely affect, the San Joaquin kit fox (Appendix A).

Section 6 References

San Joaquin Valley Air Pollution Control District. Land Use and CEQA. http://www.valleyair.org/transportation/ceqa_idx.htm. Accessed May 9, 2016.

California Natural Diversity Database. http://www.dfg.ca.gov/biogeodata/cnddb. Accessed September 12, 2016.

Fresno County General Plan. *October 2000*.

Fresno Irrigation District Southwest Groundwater Banking Project. Initial Study/Mitigated Negative Declaration May 2016.

Federal Emergency Management Agency 100-Year Flood Zone Maps. 2014

U. S. Fish and Wildlife Service Endangered Species List. http://ecos.fws.gov/ipac Accessed September 12, 2016.

U.S Environmental Protection Agency. *De minimis* levels https://www3.epa.gov/airquality/genconform/deminimis.html. Accessed May 9, 2016

Appendix A

USFWS Consultation

United States Department of the Interior

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

In Reply Refer to:
08ESMF00-
2017-I-0117

FEB 2 8 2017

Memorandum

To: Anastasia T. Leigh, Regional Environmental Officer, Mid-Pacific Regional Office Bureau of Reclamation, Sacramento, California

From: Patricia Cole, Chief, San Joaquin Valley Division, Sacramento Fish and Wildlife Office, Sacramento, California Patricia Cole

Subject: Informal Consultation for the Fresno Irrigation District Southwest Groundwater Banking Project, Fresno County, California

Dear Ms. Leigh:

This memorandum is in response to the Bureau of Reclamation's (Reclamation) October 6, 2016, memo requesting informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Fresno Irrigation District (FID) Southwest Groundwater Banking Project (proposed project). The proposed project is located seven miles northwest of Raisin City in Fresno County, California. Your request was received by the Service on October 6, 2016. The federal action on which you have requested consultation is Reclamation's proposed issuance of funding through a WaterSMART Grant to the FID for construction of a groundwater banking facility and canal improvements. The proposed project will help reduce groundwater overdraft by banking unused floodwater during wet periods.

Reclamation has determined that the proposed project may affect, but is not likely to adversely affect the federally listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*) (kit fox) and Fresno kangaroo rat (*Dipodomys nitratoides exilis*) and is seeking concurrence from the Service on this determination.

This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act) and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402). The findings and recommendations presented in this document are based on: (1) Reclamation's October 6, 2016, initiation package, (2) the September 12, 2016, *Southwest Groundwater Banking Project San Joaquin Kangaroo Rat Trapping Survey 90-day Report* prepared by Live Oak Associates, Inc. (Live Oak), (3) the January 2016, *Biological Reconnaissance Survey for Sensitive Species and Habitats for the James and Fresno Irrigation District's Lower Dry Creek Recharge Project* prepared by Halstead and Associates, (4) Reclamation's February 1, 2017, memorandum responding to the Service's December 20, 2016 memorandum, (5) the February 9, 2017, meeting attended by Service and Reclamation staff, and (6) email and telephone correspondence between the Service and Reclamation.

Project Description

The proposed project will expand FID's existing 60-acre water recharge facility through the construction of an additional, adjacent 60-acre recharge basin. During the wet season, 5,500 acre feet of water per year (AFY) will be diverted from the Lower Dry Creek Canal, which ultimately drains to the Kings River. Recharged water would later be pumped out of the recharge basin using existing wells and delivered to James Irrigation District (JID) to meet existing irrigation demands. Typically, annual water lost down the canal is estimated to be 184,252 AFY; therefore, with the 5,500 AFY diversion, it is estimated that there would be a three percent loss of water from this input into the Kings River.

Activities to construct and improve the recharge basin will include clearing and grubbing of the existing fields, demolition and removal of existing structures, and excavation and construction of internal levees and an external berm. In addition, a "kit fox permeable" fence will be constructed around the perimeter of the proposed project site. The berms and levees will be constructed using onsite material excavated from the recharge basin and the inside face will be armored with rip rap. Resulting debris will be exported offsite to an appropriate waste collection or landfill location. Construction equipment will include scrapers, graders, compactors, trenchers, backhoes, forklifts, front end loaders, water trucks, and equipment hauling trucks.

Improvements will also be made to the Lower Dry Creek Canal to allow an increase in floodwater conveyance to the proposed recharge basin and to other recharge/banking facilities within JID. The existing Lower Dry Creek Canal has capacity limitations that would impact its ability to route storm and flood water flows that are periodic in nature. Improvements to the Lower Dry Creek Canal will include the replacement of a culvert crossing at Lincoln Avenue, installation of two culvert crossings downstream of the proposed basin, and potential widening or deepening of the canal, if needed. The existing culvert will be removed using a backhoe or dozer. Following the installation of the new culverts, soil will be compacted along all sides and rock may be placed below the outlets to prevent erosion.

The proposed project also includes the construction of three wells to monitor the effectiveness of the groundwater recharge basin. The wells will be located at the following locations: (1) at the eastern edge of the recharge pond along South Howard Road, (2) at the southern boundary of the recharge pond along a dirt farm road, and (3) on the northwestern boundary of the recharge pond along a dirt farm road. The wells will be drilled to a depth of 300 feet using a rotary drilling rig.

Construction of the proposed project is anticipated to begin in May 2017 and last approximately seven months. Staging for the proposed project will occur within the recharge basin footprint and the proposed project site will be accessed via South McMullin Grade, South Howard Avenue, and existing dirt farm roads.

Based on the presence of potential kangaroo rat burrows throughout the proposed project site, Live Oak conducted a full protocol trapping survey from August 21-26, 2016, to determine the presence of Fresno kangaroo rat. One hundred and fifty-two traps were set and baited over a five-night trapping period. While trapping efforts resulted in the capture of 38 unlisted Hermann's kangaroo rats (*Dipodomys heermanni*), no Fresno kangaroo rats were captured. No additional surveying or monitoring for Fresno kangaroo rat is proposed or warranted.

No sign of kit fox was observed in the proposed project area during the November and December 2015 reconnaissance level surveys conducted by Halstead and Associates.

Conservation Measures

The FID will implement the following avoidance and minimization measures, adapted from the Service's 2011 *Standard Recommendations for the Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (2011 Recommendations), during construction of all components of the proposed project; including within staging areas:

1. Pre-construction surveys shall be conducted by a qualified biologist no less than 14 days and no more than 30 days prior to the start of construction. These surveys will be conducted in accordance with the Service's 2011 Recommendations. When surveys identify potential dens (defined as burrows at least four inches in diameter which open up within two feet), potential den entrances shall be dusted for four consecutive calendar days to register and track activity of any kit fox present. If an active kit fox den is detected in, or within 200 feet of the area of work, the Service and the California Department of Fish and Wildlife (CDFW) shall be contacted immediately.

2. The surveyor shall thoroughly check the project site for kit fox dens and, if found, exclusion zones shall be placed, in consultation with the Service and CDFW, at the following radii: 50-feet for a potential den, 100-feet for a known den, and 50-feet for an atypical den. If a natal/pupping den is found, the Service will be contacted for guidance. Known kit fox dens, even if they are inactive, may not be destroyed.

3. Prior to the start of construction, the applicant will retain a qualified biologist to conduct an employee education program. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program should include the following: a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

4. Project-related vehicles shall observe a 10-mph speed limit in all project areas during construction, except on county roads and State and federal highways. Off-road traffic outside of designated project areas will be prohibited during construction.

5. Project activities will occur only during daylight hours (one half hour following sunrise and one half hour prior to sunset).

6. The fence that will enclose the perimeter of the proposed project site will be permeable to kit fox, allowing their movement into, out of, and through the area. The fence will either be chain link, installed such that the bottom of the fence is suspended 4 to 5 inches from the ground, or standard barbed wire fencing.

7. All excavated steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Areas that are covered will be inspected daily, for as long as they are covered, to ensure that no kit fox have become trapped despite the

presence of covers. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under numbers 11, 12 and 13 must be followed.

8. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

9. All food-related trash items shall be disposed of in closed containers and removed at least once a week from a construction or project site.

10. No firearms shall be allowed on the project site.

11. To prevent harassment, mortality of kit foxes, or destruction of dens by dogs or cats, no pets shall be permitted on project sites during construction.

12. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the Service shall be contacted for advice.

13. During project construction, a representative shall be appointed by FID who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service. Any contractor, employee, or agency personnel who inadvertently kills or injures a kit fox shall immediately report the incident to their representative.

14. In the case of an accidental death of or injury to a kit fox during project-related construction activities, the Sacramento Fish and Wildlife Office and CDFW shall be notified immediately by telephone or email, and project activities will cease until the agencies provide guidance. In addition, Reclamation would need to reinitiate consultation. Notification must include the date, time and location of the incident or of the finding of a dead or injured animal and any other pertinent information.

15. Use of rodenticides in project areas will be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. If it is later determined that the use of rodenticides is needed, Reclamation would need to reinitiate consultation.

16. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be revegetated to promote restoration and reduce erosion potential of the area to pre-project conditions.

Determination

The proposed project will occur within the historical range of the Fresno kangaroo rat. According to the California Natural Diversity Database (CNDDB), there are two recorded observations of Fresno

kangaroo rat within 5 miles of the proposed project site; however, both occurrences are considered extirpated due to habitat conversion. Due to the location and isolated nature of the habitat where the potential kangaroo rat burrows were found, taken into consideration with the negative trapping results, the Service believes that the Fresno kangaroo rat is unlikely to occur within the action area of the proposed project and therefore, is unlikely to be adversely affected.

Despite being surrounded by active agriculture, the action area itself is comprised of fallowed fields, canals, and existing recharge basins which all provide suitable foraging and dispersal habitat for kit fox. In addition, the capture of 38 Heermann's kangaroo rats within the action area indicates the presence of a preferred prey species. According to the CNDDB, there is a presumed extant record of kit fox located approximately 5.5 miles southeast of the proposed project site. In addition to this record, surveys conducted in 2008 by Halstead and Associates documented kit fox approximately 5.3 miles southwest of the proposed project site. These surveys documented a family of kit fox 0.25 miles to the north and south of West Manning Avenue, within the James Irrigation District Bypass, on multiple survey nights. Studies have shown that kit fox disperse readily, traveling 4.8 miles on average but with the documented ability to disperse 25 to 50 miles during particularly long-distance dispersal events (Service 2010)[1]. Therefore, the proposed project site is within dispersal distance of the kit fox occurrences in the area and may be utilized by kit fox for foraging and dispersal.

The proposed project calls for the installation of a permeable fence around the perimeter of the project site. As proposed, this fence would allow kit fox movement into, out of, and through the proposed project area, thereby allowing kit fox to forage and travel through the site when the basin is dry. While the Service was initially concerned about the potential risk of drowning to kit fox denning within the recharge basin, after further review and discussion, we have determined that this scenario is unlikely to occur. The saturated soils within the recharge basin, which are subjected to period flooding, are likely unsuitable for kit fox denning (Service 2010)[1]. Furthermore, any kit fox that may be inside of the recharge basin at the onset of flooding would be able to escape through the permeable fence, avoiding the potential for drowning. Due to the applicant's commitment to installing a permeable fence, in addition to other Conservation Measures including pre-construction surveys, den monitoring, and timing construction to avoid periods when kit fox are likely to be active, it is the Service's opinion that the effects of the action on the kit fox will be of a discountable nature.

Based on the information you have provided, The Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect San Joaquin kit fox and Fresno kangaroo rat. This concludes the Service's review of the proposed project. No further coordination with the Service under the Act is necessary at this time. Please note, however, this letter does not authorize take of listed species. As provided in 50 CFR §402.14, initiation of formal consultation is required where there is discretionary Federal involvement or control over the action (or is authorized by law) and if: 1) new information reveals the effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this review; 2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this review; or 3) a new species is listed or critical habitat designated that may be affected by the action.

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[1] U.S. Fish and Wildlife Service. 2010. San Joaquin kit fox (Vulpes macrotis mutica) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Sacramento, California.

If you have any questions regarding this biological opinion, please contact Dana Herman, Fish and Wildlife Biologist, or Patricia Cole, San Joaquin Division Chief, at the letterhead address or at (916) 414-6683, and (916) 414-6544, respectively.

cc:
Julie Vance, Regional Manager, California Department of Fish and Wildlife

Appendix B

Cultural Resources Compliance

CULTURAL RESOURCES COMPLIANCE
Mid-Pacific Region
Division of Environmental Affairs
Cultural Resources Branch

MP-153 Tracking Number: 14-MPRO-236

Project Name: Fresno Irrigation District (FID) Southwest Groundwater Banking Project, Fresno County, California

NEPA Document: EA

NEPA Contact: Alexandra Woodward, Natural Resources Specialist

MP-153 Cultural Resources Reviewer: Joanne Goodsell, Archaeologist

Date: September 8, 2016 JOANNE GOODSELL Digitally signed by JOANNE GOODSELL Date: 2016.09.08 11:30:47 -07'00'

Reclamation proposes to partially fund the proposed Southwest Groundwater Banking Project through a WaterSMART grant awarded to FID. The proposed project involves improvements to approximately 3.25 miles of the existing Lower Dry Creek Canal and Extension, construction of a new .25 mile long canal segment, improvements within an approximately 60-acre existing groundwater recharge basin, construction of a new approximately 60-acre recharge adjacent to the existing basin, and installing three monitoring wells adjacent to the new recharge basin. Reclamation determined that the use of Federal funds for this project constitutes an undertaking subject to review under Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA), and its implementing regulations found at 36 CFR Part 800 and that the undertaking involves the type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a).

Section 106 historic properties identification efforts were conducted by Johnston and Associates on behalf of FID. Reclamation also invited the participation of Indian tribes and other Native American organizations and individuals in the Section 106 process. No historic properties were identified in the area of potential effects for this undertaking. Through correspondence dated July 22, 2016, Reclamation initiated consultation with the State Historic Preservation Officer (SHPO) on a finding of no historic properties affected. Through correspondence dated September 8, 2016, the SHPO responded with no objection to Reclamation's finding, pursuant to 36 CFR § 800.4(d)(1). With receipt of SHPO concurrence, Reclamation's responsibilities under Section 106 are fulfilled.

This document conveys the completion of the Section 106 process and NEPA review for this undertaking. The proposed action will result in no significant impacts on known cultural resources. Please retain a copy of this document with the administrative record for this action. Should the proposed action change, additional review under Section 106, including further consultation with the SHPO, may be required.

Appendix C

Indian Trust Assets Compliance

Indian Trust Assets
Request Form

**Please send your request to: Kevin Clancy

Date:

Requested by	Jamie LeFevre, x 5035
Fund	14XR0680A1
WBS	RY30180006FIDCA4E
Cost Center	2015200
Region # (if other than MP)	(NA)
Project Name	Fresno Irrigation District Southwest Groundwater Banking Project
CEC or EA Number	
Project Description	Fresno Irrigation District will construct a new 120 acre groundwater banking facility and increase conveyance capacity along the downstream portion of Lower Dry Creek Canal. Improvements on the Lower Dry Creek Canal System, including the replacement of a culvert crossing at Lincoln Avenue, two culvert crossings downstream of the proposed basin, and potential widening and/or deepening of the canal, if needed.
***Project Location (Township, Range, Section, e.g., T12 R5E S10, or XY cords)**	The site is located in the upper northwest corner of Fresno County, in a rural area between San Joaquin and Raisin City. The site is within Township 15S, Range 18E, Sections 8, 17, and 16. Lat: 36° 37' 40.0"N, Long: -120° 1' 44.0"W

*Please include map with request, if available.

N:\SpecialProjects\DistancetoIndianLands\Indian Trust Assets Request Form.docx

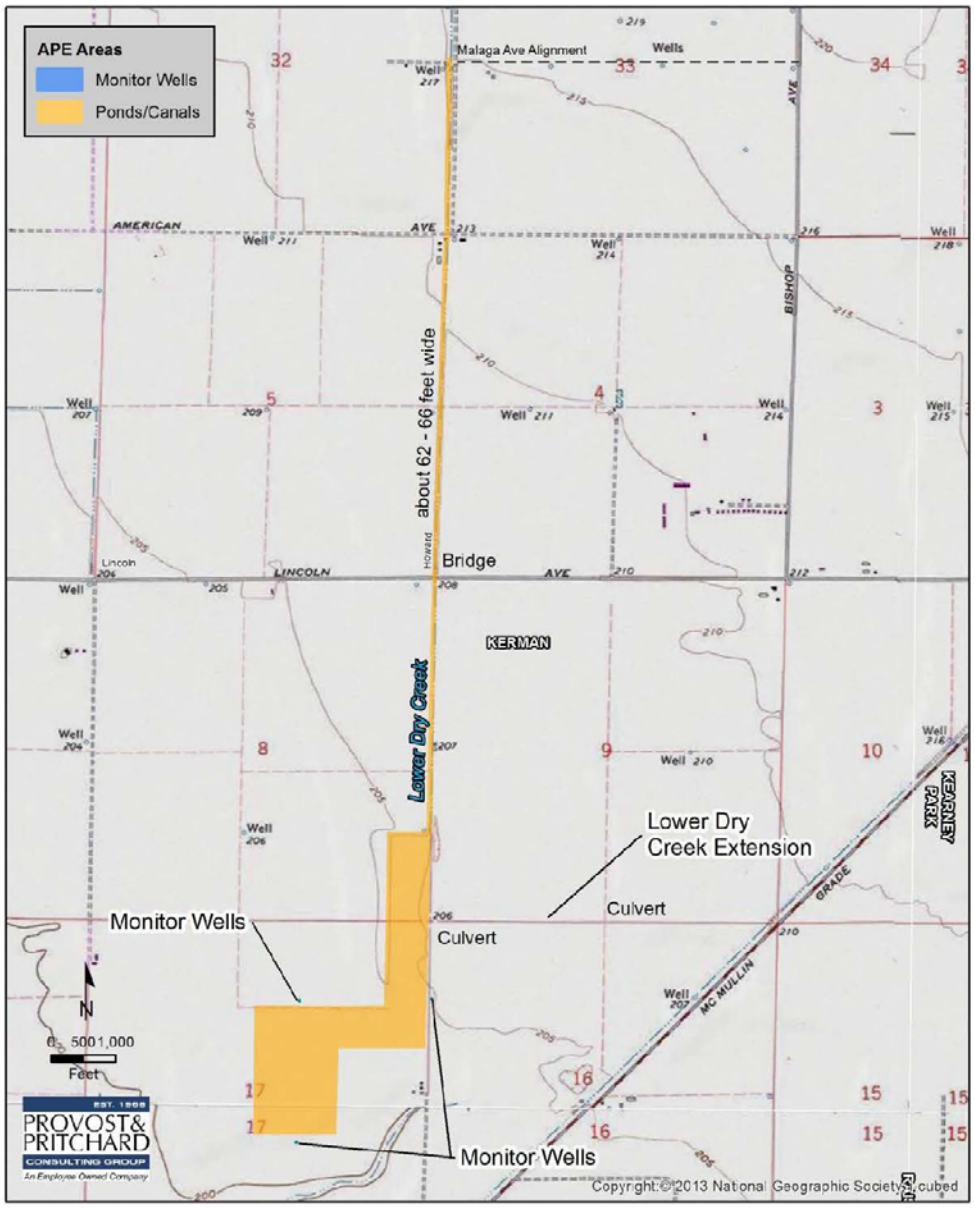

Figure 1. Project Location

ITA Determination:

The closest ITA to the proposed **Fresno Irrigation District Southwest Groundwater Banking Project** is **Mooretown Rancheria of the Maidu Indians** which is approximately **11** miles **north** of the project area. (see attached image).

Based on the nature of the planned work it **does not** appear to be in an area that will impact Indian hunting or fishing resources or water rights nor is the proposed activity on actual Indian lands. It is reasonable to assume that the proposed action **will not** have any impacts on ITAs.

K. Clancy	Kevin Clancy	April 29, 2016
Signature	Printed name of approver	Date

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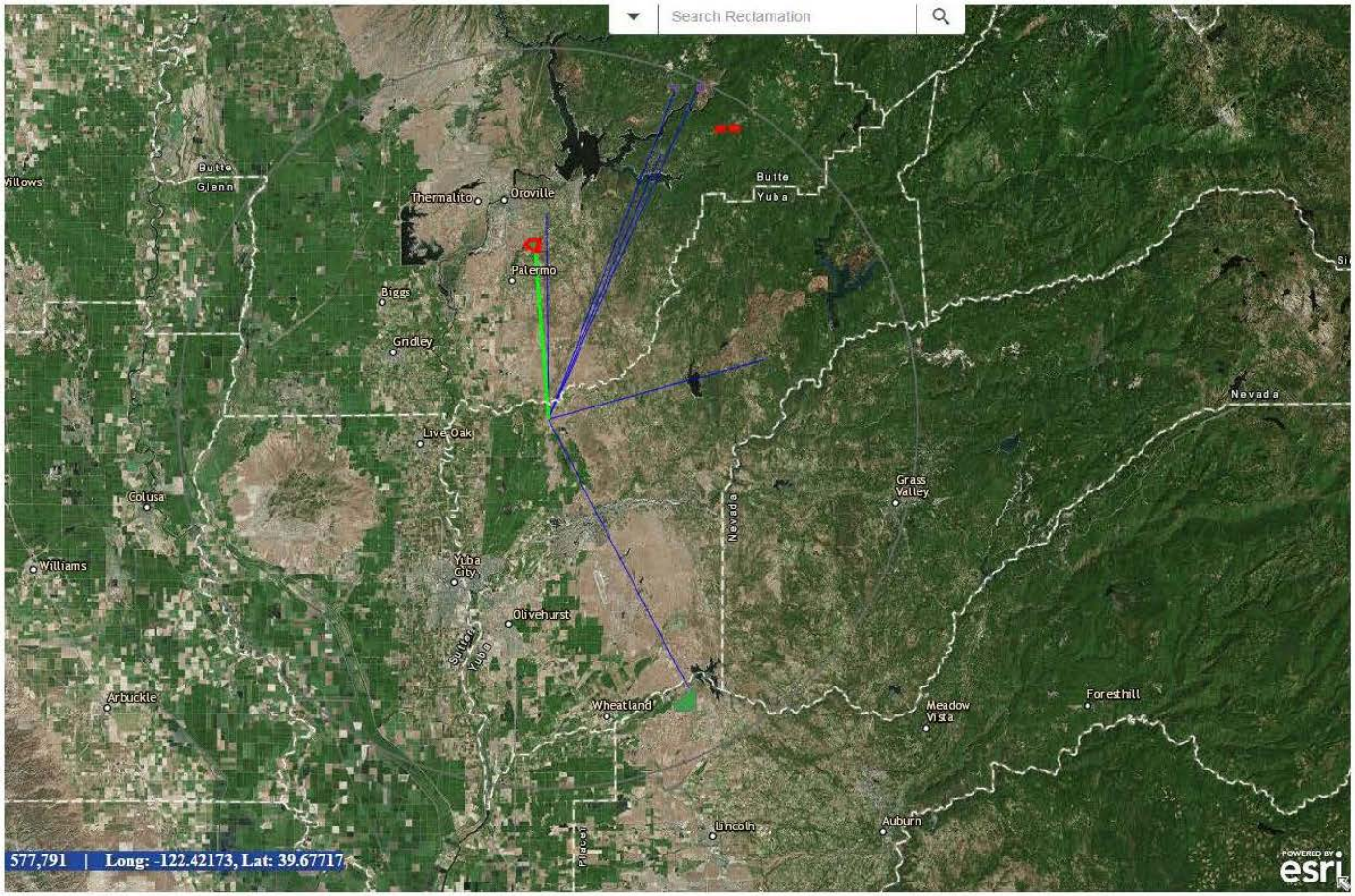

Native American Lands

Close App

Step 1. Search radius in miles

25

Step 2. Longitude and latitude

If you CLICK on the map, the lat/longs are inserted below!
Or you can type them in.

Longitude:
-121.5

Latitude:
39.3

Step 3.

Find closest Native American Lands

Distance to closest native american land: 11.32 miles
Name: Mooretown
Tribe: Mooretown Rancheria of Maidu Indians

Help!