FRIANT-KERN CANAL
SECTION 1600 NOTIFICATION
MAINTENANCE AND RESTORATION PROJECT
INITIAL STUDY CHECKLIST AND
ENVIRONMENTAL ANALYSIS

October 2016

1.0 PROJECT TITLE

Programmatic Section 1600 Notification Memorandum of Understanding (MOU) for the Friant-Kern Canal maintenance and restoration, No. 1600-2012-0233-R4 for 2014-2026.

2.0 LEAD AGENCY NAME AND ADDRESS

Friant Water Authority
854 N. Harvard Avenue
Lindsay, CA 93247-1715

3.0 CONTACT PERSON AND PHONE NUMBER

Bill Luce, Interim General Manager
(559) 562-6305; Fax (599) 562-3496

4.0 PROJECT LOCATION

The Friant-Kern Canal lies from Millerton Lake, Fresno County through Tulare County, to the Kern River, Bakersfield, Kern County, California. Assessor's Parcel Numbers (APN) are not applicable since the canal is located on federal land. The canal crosses numerous townships and ranges, as well as named and un-named drainages. A list of township and ranges (Appendix A), as well as a location map are included with the data sheets (Appendix B) in the attached Section 1600 Notification binder.

5.0 PROJECT SPONSOR'S NAME AND ADDRESS

Friant Water Authority, 854 North Harvard Ave., Lindsay, CA 93247

6.0 GENERAL PLAN DESIGNATION

N/A - Federal property

7.0 ZONING

NA – Federal Property

8.0 REQUEST/ PROJECT DESCRIPTION

Friant Water Authority (FWA) seeks the necessary permit to maintain and restore the canal banks and rights-of-way (ROW) along the Friant-Kern Canal. The maintenance and restoration activities consist of: debris or obstruction removal; silt, sand, or sediment removal; maintenance of channel capacity; vegetation control; mechanical vegetation control; aquatic vegetation control; chemical vegetation control; repair of existing erosion control work; and minor erosion control work. These maintenance and restoration activities will occur on the improved channels, unimproved channels, leveed channels, drain ditches, toe drains, the equalizing reservoirs or lakes, wasteways, parshall flumes and other work areas specified annually.

The maintenance activities shall be in accordance with the procedures described below, and shall not require further notice to, or agreement with the California Department of Fish and Wildlife (CDFW).

Debris or Obstruction Removal

Debris or obstruction removal may include the removal of fallen trees, substantial amounts of debris, rubbish, and other obstructions from areas (not to exceed the length of legal channel right-of-way) of man-made facilities, and the removal of those materials only in the necessary vicinity (not to exceed the length of legal channel right-of-way) of a bridge, culvert, toe-drain, diversion, or flow control structure when said materials cause obstruction(s) to flow. Unauthorized human generated debris, such as lawn and farm cuttings, garbage, and trash may be removed from any section.

Silt, Sand, or Sediment Removal

Removal/Displacement of silt, sand, or sediment, debris, rubbish and other obstructions will be conducted when said materials cause obstruction(s) to flow.

Maintenance of Channel Capacity

Maintenance may include removal/displacement of accumulated sand, silt, sediment, debris, rubbish, and other obstructions to maintain channel capacity. The bottom half of channel banks are to be cleared in strips in alternating years, if possible, to retain habitat for wildlife, or in accordance with the recommendations of a qualified biologist following a field evaluation of habitat conditions.

Vegetation Control

Mechanical Vegetation Control

Mechanical control of aquatic vegetation and woody growth of less than four inches diameter at breast height (DBH) will be conducted, for removal of obstructions to flow in the channel bottom from toe-to-toe. Where appropriate,

removal of non-native vegetation (bamboo, tamarix, tree tobacco, castor bean, pampas grass, eucalyptus, acacia, etc.), regardless of DBH, including stump and root removal from top of bank. Control of aquatic vegetation and woody growth of less than six inches DBH which restrict flow, will be accomplished by use of mechanical devices, chemicals, controlled burning, or hand labor in reaches of the channels. Flow restricting branches hanging into channels from trees or shrubs rooted in the upper half or tops of banks may be removed. Some drainages may support trees in the channel floor which exceed the above dimensions, as a result of the channels having not been cleared in many years. A variance for these locations will be negotiated on a case-by-case basis.

Removal of vegetation from the total bank profile may be allowed if a CDFW representative agrees to the removal after an on-site inspection, and limits of the removal are specifically defined in writing.

Aquatic Vegetation Control

To minimize adverse impacts and accelerated sedimentation, chemical control of vegetation in water will be accomplished with the use of an herbicide approved for in-channel or aquatic use, as applicable. Application shall be done in accordance with the label. Heavy thick growth may require removal by mechanical means.

Chemical Vegetation Control

An herbicide will be used for spot control of bamboo and/or other noxious or exotic vegetation to maintain control following mechanical removal. Such treatment is anticipated on alternate years, or as necessary. Applications shall be made in accordance with the chemical label.

Repair of Existing Erosion Control Work

Repairs may include, but not be limited to failed rock, sacked concrete, gabion section, or concrete linings or associated structures, as appropriate. Maintenance and restoration activities shall be confined to the failed section and immediately adjacent areas affected by the failure. Surface water, if any, shall be diverted from the work area when using equipment in the channel. Sediment control measures shall be implemented as appropriate.

Minor Erosion Control Work

Sloping, installation of rock, gabions, or other erosion control measures may occur from toe of slope in the channel to a maximum of the 100 year storm event evaluations, measured vertically, above the channel invert to stabilize the eroded areas. Project work shall be limited to periods of low stream flow if possible. Should stream flow exist, the stream flow shall be diverted around the work area in a temporary culvert/pipe, by

pumping, or alternate manner that minimizes stream turbidity, unless agreed otherwise. Removal of vegetation shall be minimized to that necessary to safely ensure that the toe-to-toe channel shall remain, unless absolutely necessary to obtain access. To the extent possible, the stream channel shall be returned to its natural state without creating a condition causing possible future bank erosion.

Upon project completion, the stream channel bottom shall be scarified from the work site to the equipment entrance, where activities have caused compaction of the streambed soil material. Unless agreed otherwise, disturbed areas outside of the channel and access road, and areas left barren of vegetation as a result of the maintenance and restoration activities shall be restored to its natural state by seeding, re-planting, or other agreed upon means with native species of trees, shrubs, and grasses, within 30 days or an agreed upon date immediately prior to the next season of precipitation.

Schedules

Maintenance and restoration activities shall be performed at a time and manner so that the proposed maintenance and restoration activities minimize adverse impacts to the environment and provide for the protection and continuance of the fish and wildlife.

Manner

In consideration of minimizing impacts to fish and wildlife resources, including but not limited to reptiles, amphibians, birds, mammals, and fish, maintenance and restoration activities will be conducted whenever possible when channels are dry; however, that may not always be possible. In that event, other measures as necessary will be taken to minimize adverse impacts to wildlife and water quality. This may include the use of a biological monitor while work is ongoing in the water to help avoid fish and wildlife impacts, the construction of a temporary diversion, or other means as agreed upon with the CDFW.

In consideration of threatened and endangered fish and wildlife resources, environmental pre-activity surveys shall be conducted as necessary in advance of construction work, in accordance with the Friant Division Long-term Contract Renewal Biological Opinions (1991; 2001), and the recently completed Section 7 Consultation for the Friant Division Operations and Maintenance Guidelines (USFWS 2005).

Equipment shall not be parked or staged within the channel. Staging and/or parking shall occur on the uplands outside of the primary flood plain whenever possible. The FWA will follow its "Field Construction and Spill Contingency Plan", described in the attached Section 1600 Notification Binder. If water is present, any equipment in the channel will be cleaned of petroleum residues prior to entering the water.

Revegetation will be used as appropriate for slope protection and potential site restoration and enhancement, in agreement with the California Department of Fish and Wildlife.

9.0 ENVIRONMENTAL SETTING

The project site is located in the eastern portion of Fresno, Tulare and Kern Counties in the San Joaquin Valley. The climate is Mediterranean and characterized by hot, dry summers and wet, cool winters. Precipitation usually commences in November, peaks during winter months, and ends in March in dry-average years and in April or May in wet years. A tule fog may extend for days at a time following brief winter rains. The average annual precipitation ranges from a low of 5.5 inches at the south end of the Friant-Kern Canal in Bakersfield, Kern County to a high of 15 inches near its start at Millerton Lake, Fresno, County, CA. The Friant-Kern Canal has been in operations for over 50 years and this evaluation addresses the operations, maintenance and restoration of the existing facilities on the original right-of-way.

The Friant-Kern Canal travels from Lake Millerton through rangeland, agricultural development and urban lands to the Kern River. Detailed site descriptions from biological field inspections, including photographs, maps and the dominant plant species at each crossing are in the attached Section 1600 Notification Binder (Also on CD).

Since the grading of the canal bank itself occurs often, wildlife and vegetation presence is minimal on the inside banks above either the liner or the water level. The vegetation is mainly ruderal species. The wildlife that are known to occur on the canal banks include the western burrowing owl (*Athene cunicularia)*, the San Joaquin kit fox (*Vulpes macrotis mutica*), and California ground squirrel (*Spermophilus beechyii*). The Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*) is rare on the canal right-of-way, but has been documented in several areas. The Friant-Kern Canal crosses potential blunt-nosed leopard lizard habitat in some areas, but surveys have never identified it to occur on the canal right-of-way.

The possibility of nesting bird species of concern and bats exists both on and adjacent to the canal right-of-way (ROW), as well as on facilities and structures.

10.0 OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED (E.G., PERMITS, FINANCING APPROVAL, OR PARTICIPATION AGREEMENT)

USFWS Biological Opinions (BO) for the Friant Water Users Authority (FWUA) long term contract (USFWS, 2005; 2001), and consultations on the Central Valley Project Operations and Maintenance Plan established a Manual and Guidelines for Operations and Maintenance on the Friant-Kern Canal (2003).

A previous Mitigated Negative Declaration for a National Pollution Discharge Elimination System Permit (NPDES) was completed in 2013.

11.0 POTENTIALLY SIGNIFICANT EFFECTS CHECKLIST

The following analysis addresses specific impacts that could result from the proposed maintenance and restoration work and presents mitigation measures proposed by the Friant Water Authority to minimize these impacts.

The following checklist indicates the potential level of impact and is abbreviated as follows:

Poten. Signif. Impact.: Project has the ability to cause a potential significant impact.

Less than Signif. With Mitig. Incorp.: Project will have less than significant impacts with the mitigation incorporated.

Less than Signif. Impact: Project will cause less than a significant impact.

No Impact: Project will cause no impact.

Reviewed Under Previous Document: The analysis contained in a previously adopted/ certified environmental document addresses this issue adequately for use in the current case.

11.1 AESTHETICS/ VISUAL RESOURCES

Would the project:	**Poten. Signif. Impact**	**Less than Signif. With Mitig. Incorp.**	**Less than Signif. Impact**	**No Impact**	**Reviewed Under Previous Document**
a. Have a substantial adverse effect on a scenic vista?			X		
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X		
c. Substantially degrade the existing visual character or quality of the site and its surroundings?			X		
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X		

Impact Discussion:

The operations, maintenance and restoration projects would not obstruct any scenic vistas or change the visual character of the area. No night work is proposed, except for emergencies and during irregularly scheduled draw-downs. Any needed night lighting shall be directed, to the extent possible, away from homes and/or habitat. Therefore,

glare from the night lighting is anticipated to be minimal and short term. Additionally, no new permanent structures with night lighting are proposed. The ongoing operations, maintenance and restoration of the Friant-Kern Canal occur on an existing facility and its related project area, which has been operating since 1949. No new permanent lighting is part of this work.

Mitigation and Residual Impact:

If night lighting is necessary, it will be shielded, directed downward, and away from homes and habitat when possible. Project impacts to aesthetics and visual resources are considered insignificant. No additional mitigation is proposed.

11.2 AGRICULTURAL RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an operational model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project: and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. – Would the project:	**Poten. Signif. Impact**	**Less than Signif. With Mitig. Incorp**	**Less than Signif. Impact**	**No Impact**	**Reviewed Under Previous Document**
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X	
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X	
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X	
d. Result in the loss of forest land or conversion of forest land to non-forest use?				X	
e. Involve other changes in the existing					

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an operational model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project: and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. – Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X	

Impact Discussion:

The project will not result in the conversion of agricultural land to non-agricultural use, nor will it impair agricultural land productivity. The work on this project occurs on the canal, its toe drain and related facilities and drainages. Since the project site is located on federal property, it does not occur on farmlands or in forests.

Mitigation and Residual Impact:

The project will result in no adverse impacts or changes to agricultural land or land uses. No mitigation is necessary.

11.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Conflict with or obstruct implementation of the applicable air quality plan?				X	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				X	
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?				X	
d. Expose sensitive receptors to substantial pollutant concentrations?				X	
e. Create objectionable odors affecting a substantial number of people?				X	

Environmental Setting:

Fresno, Tulare, and Kern Counties are located in the San Joaquin Valley Air Basin. Currently, these counties are considered to be in non-attainment of the state one-hour ozone standard, and in non-attainment of both the federal and state eight-hour zone standard. These counties are in attainment for PM-10, particulate matter less than ten microns in diameter; however, they are in non-attainment for PM 2.5 (SJVU APCD, 2010). Reactive organic compounds (ROC) and nitrogen oxides (No_x) are considered precursors to ozone and are therefore treated as non-attainment pollutants.

The counties in which the project occurs have adopted a long-term threshold of 24 tons per year of oxides of nitrogen or reactive organic compounds if the district provides California Air Resources Board (CARB) with an emission inventory of sources emitting greater than ten tons per year of nitrogen oxides or ROC based on the use of emission factors acceptable to the CARB.

Regulation 8 for dust control would pertain to this work. Quantitative thresholds of significance are not currently in place for short-term construction or maintenance emissions. However, CEQA requires that short-term impacts be addressed in environmental documents under the same criteria as long-term projects.

Impact Discussion:

The project grading could result in temporary and short-term minor amounts of airborne particulates that will be mitigated by the implementation of dust control measures.

The project would not create objectionable smoke, ash, or odors. Dust control mitigation will be incorporated into the field work as described below. With mitigation, the project impacts will be less than significant.

Mitigation and Residual Impact:

The following measures are expected to further reduce potential air quality impacts.

AQ-1) Project-related dust will be kept to a minimum with a goal of retaining dust on-site following the dust control measures below:
During grading, earth moving, excavation, or transportation, water trucks will be used as necessary to prevent and minimize dust.

AQ-2) The canal maintenance supervisor or contractor will designate a person to monitor the dust control program and to order increased watering as necessary, to prevent transport of dust off-site.

AQ-3) The contractor will use, whenever feasible:

- Heavy-duty diesel powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines);
- Catalytic converters on gasoline-powered equipment or diesel catalytic converters if available;
- Electric or natural gas powered equipment instead of diesel powered equipment when possible;
- Minimum practical engine size of construction equipment;
- Smallest practical number of simultaneously operating pieces of construction equipment.

AQ-4) Construction equipment will be maintained consistently with the manufacturer's specifications. All equipment will be checked and mechanically tuned to ensure safe and efficient operation.

Residual impacts would be less than significant with mitigation as described.

11.4 BIOLOGICAL RESOURCES

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X			
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X			
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or to, other means?			X		
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X		
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X	
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X	

Existing Plant and Animal Communities/Conditions:

The Friant-Kern Canal spans approximately 152 miles from Millerton Lake, near Fresno, to the Kern River in Bakersfield, Kern County, CA. The canal has been operated and maintained first by the United States Bureau of Reclamation (USBR) and since 1986, by the FWA. It passes through numerous habitat types, but mostly California or non-native grasslands, developed agriculture and rural/urban environments.

Since maintenance grading of the inside canal banks occurs often, wildlife and vegetation are minimally present on the inside banks of the canal. However, the western burrowing owl (*Athene cunicularia hypugae),* a species of concern, the endangered Tipton kangaroo rat and the federally endangered and state-threatened San Joaquin kit fox (*Vulpes macrotis mutica*) are listed species of concern known to occur on the canal banks. The canal banks, toe ditches, wasteways, reservoirs and drainages may also inhabited by the California ground squirrel (*Spermophilus beechyii*), muskrat, raccoon, beaver, grey fox, pocket gophers, badgers and other species that are not species of special concern. Preconstruction surveys are conducted for areas of ground or habitat disturbance.

Vernal pool species may be present in areas of the northern part of the canal. In addition, portions of the northern canal habitats are known habitat of the California tiger salamander, a threatened species. The western spadefoot is a wide spread species of concern that may occur anywhere along the canal. The canal passes over one hundred named natural river and stream channels and other natural and man made channels and lakes.

The vegetation along the canal right-of-way mainly consists of ruderal species. However, small pockets of habitat, species of concern, trees and riparian habitat occur, particularly adjacent to the river drainages. Threatened or endangered wildlife and plants will require specific mitigation measures if believed to occur on the project site to ensure no significant impact would occur, in accordance with the Operations and Maintenance (O&M) Guidelines, and the Biological Opinions.

Because of the presence of trees and shrubs, and also as many of our regional bird species nest on the ground, the potential to impact eggs and nests which are protected under the federal Migratory Bird Treaty Act is possible. To the extent possible, O&M work which may disturb nesting habitat will be conducted outside the nesting season. If that is not possible, preconstruction surveys for nests with eggs or young will be implemented. Buffer zones will be established surrounding active nests of protected bird species.

Impact Discussion:

a. The canal operations, maintenance and restoration are conducted in accordance with Biological Opinions (Friant 2005 and 2001) from the US Fish and Wildlife Service (USFWS). Biological surveys are conducted prior to construction, maintenance or restoration work in areas of habitat or when ground excavation is required. The

survey reports identify take avoidance and mitigation measures that may need to be employed if the western burrowing owl and/or San Joaquin kit fox or their dens and/or other threatened or endangered species are believed to occur on the canal banks or other areas to be worked.

b. Riparian habitat is sparse in most areas along the canal. Impacts to trees may occur in accordance with the MOU in the areas affected, with loss of native species being replaced at 3:1 ratio.

c. No new significant disturbances will be made to wetland areas. All temporary habitat disturbances will be restored.

d. No new permanent impacts to wildlife movement will be created. Wildlife may temporarily be disturbed by maintenance activities, but may return following completion of the work.

e. No conflict with any existing local policies is expected.

f. The project is consistent with the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) in Kern County. No other regional or local Habitat Conservation Plans exist within the project area. Although a Kern County HCP has been under development, it has yet to be completed.

Mitigation and Residual Impact:

General environmental protection measures will be implemented for the protection of vegetation and wildlife, air and water quality. As implemented with mitigation and take avoidance measures, the impacts of O&M on biological features are anticipated to be less than significant; however, to ensure that they are insignificant, and would remain insignificant under unusual or unexpected weather conditions resulting in high water flow, take avoidance and minimization and general mitigation measures will be implemented. General environment protection measures that benefit all species include the following:

B-1) To ensure the implementation of the mitigation and take avoidance measures, prior to the initiation of the projects, an employee environmental awareness and mitigation monitoring plan will be developed. This plan will be used to train employees and contractors relative to the site specific environmental protection measures of the projects. The Friant project team will ensure that the plan is followed during field work and will have the authority to stop work if appropriate measures are not being implemented. A final report will also be prepared detailing the implementation and efficacy of the mitigation and take avoidance measures. This report will be submitted to all interested agencies involved in the projects.

B-2) Preconstruction surveys will be conducted by a qualified biologist(s) prior to implementation of special projects in accordance with the 2005 Biological Opinion, O&M Guidelines and other standard agency protocols as applicable. During this time, areas to be protected and cordoned off will be flagged to alert equipment operators of areas to be protected. This would include any plant habitat or locations of plant and wildlife species of concern. All personnel and equipment shall be directed to remain within the surveyed project areas. All equipment and vehicles will remain on existing roadways or trails.

B-3) An annual preconstruction environmental training meeting will be conducted prior to the initiation of each special project to ensure all contractors are aware of and know how to implement the environmental protection measures, as is required by the O&M Guidelines (2003).

B-4) Although not anticipated given the environmental protective measures, if an incidental take of a protected species should occur, a qualified biologist will be called to conduct an evaluation of the incident, impacts to the species and the environment, and any necessary changes in project plans to avoid a repeat of the incident. A report describing the incident, results and additional measures implemented will be prepared and submitted to the US Fish and Wildlife Service and the California Department of Fish and Wildlife within one week of the incident.

B-5) All waste, garbage, and trash created during the projects will be maintained in covered containers and will be removed from the project sites and disposed of in accordance with local and state regulations.

B-6) Feeding or harassment of wildlife will not be allowed. Pets will not be allowed on-site.

B-7) Smoking will be prohibited in areas of habitat. Vehicles will be required to carry fire extinguishing equipment (shovels, water, etc.).

B-8) Where soil excavation is necessary, or the soil has been disturbed or plants have to be removed, mulching and/or restoration will be implemented to prevent wind or water erosion and the invasion of exotic species.

B-9) Loss of native riparian trees or shrubs with diameters of three inches or greater will be replaced with liners or seedlings at a ratio to ensure the survival of 3 individuals for every shrub or tree removed. Larger trees also will be replaced, but with five gallon size nursery stock.

Additional specific mitigation measures for the operation and maintenance work are included in the project description, the USFWS Biological Opinion (2005), the O&M Guidelines for Endangered Species (2003), and the attached California Department of Fish and Wildlife Section 1600 Memorandum of Understanding (MOU).

11.5 CULTURAL RESOURCES

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?			X		
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?				X	
c. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?				X	
d. Disturb any human remains, including those interred outside of formal cemeteries?				X	

Impact Discussion:

No cultural resources are known to occur in the Friant-Kern Canal right-of-way. However, the canal itself has been determined to be eligible for the National Register of Historic Places, though no application has been filed yet. As no new construction is covered by this MOU, no impact on cultural resources is expected to occur.

Mitigation and Residual Impact:

If cultural resources of any type are encountered, activity would cease and a cultural resource specialist would be contacted to evaluate the findings and recommend any special actions prior to proceeding in the area of the finding. Any changes to the canal involving new construction are not covered by this Memorandum of Understanding (MOU).

11.6 GEOLOGY AND SOILS

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42				X	
ii. Strong seismic ground shaking?				X	
iii. Seismic-related ground failure, including liquefaction?				X	
iv. Landslides?		X			
b. Result in substantial soil erosion or the loss of topsoil?		X			
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X		
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.			X		

Impact Discussion:

No known exposure to or production of unstable earth conditions such as landslides, earthquakes, liquefaction, soil creep, mudslides or ground failure are anticipated to result from the proposed operations, maintenance or restoration work. The O&M will not involve any new or significant permanent changes in topography, nor will it cause destruction, covering or modification of any unique geologic, paleontologic or physical features.

The project will not involve the placement of septic disposal systems or extraction of mineral or ore. There will be no vibrations from the construction work that would

adversely affect adjoining areas and no excessive spoils, tailings, or over-burden. During maintenance and restoration activities, temporary periods of light vibration from heavy equipment usage, i.e. bulldozers, road graders, etc., could occur.

Mitigation and Residual Impact:

Measures for revegetation and erosion control are provided in the project description as well as the Section 1600 MOU, and the 2005, 2001 and 1991 Biological Opinions (USFWS). With these implemented mitigation measures, soils impacts will be minimal and mitigated to less than significant.

The light vibrations from the temporary operation of heavy equipment are anticipated to be less than significant. Prior to working below the waterline, visual inspections will be conducted to determine if there is any potential impending canal failure that could result in a slope failure. With the implementation of appropriate mitigation measures for soil erosion, the impacts will be mitigated to less than significant and no residual impacts are expected to occur.

11.7 GREENHOUSE GAS EMISSIONS

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X		
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?		X			

Impact Discussion:

The Friant-Kern Canal O&M work has been ongoing over 65 years. No increase in greenhouse gas emissions will occur with the continuation of the periodic operation, maintenance and restoration work. In fact, in recent years, to comply with new air quality regulations, all equipment has been replaced, retrofitted and/or upgraded specifically to accomplish emissions reductions. As a result, the current greenhouse gas emissions for any work on the canal, underdrains, toe drains, wasteways, reservoirs or lakes, are now less than the original baseline, and are consequently less than significant.

Mitigation and Residual Impact:

No single project is large enough to be significant relative to greenhouse gasses. Greenhouse gasses are cumulatively significant, but the Friant-Kern Canal work now actually has less impact to greenhouse gasses than the past baseline conditions.

11.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X		
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X		
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?		X			
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X	
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X	
g. Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X	
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residents are intermixed with wildlands?				X	

Impact Discussion:

Herbicides and pesticides, already under the control of California Department of Pesticide Regulation will be transported to and from and used on the Friant-Kern Canal right-of-way. However, these items are transported only in the context of other legal requirements. Impacts of hazardous emissions or hazardous materials within one-quarter

mile of an existing or proposed school will be at a minimum with the mitigation measures incorporated.

Mitigation and Residual Impact:

The Field Construction and Spill Contingency Plan is devised to prevent and/or minimize environmental impacts that could occur in the event of a hydrocarbon spill. Sometimes during fieldwork, heavy equipment and/or other vehicles require the addition of petroleum-based fluids such as oils and hydraulic fluids. This basic approach of the plan is first to avoid spills in the field, to preclude them from happening whenever possible and to minimize environmental impacts in the event one should occur.

Regular scheduled preventive equipment maintenance work is not to be conducted in the field. This policy reduces the risk of significant spills by avoiding activities which could result in large spills. No construction equipment or field vehicles will be staged on natural ground in flood plain areas or in stream channels. This will avoid having groundwater or surface water contaminated by potential equipment leaks.

If stationary equipment, such as compressors, motor pumps, generators or welders are necessary for a project, drip protection will be provided. Any equipment or vehicles which may be necessary to conduct work in water or stream channels will be checked daily to ensure they do not leak into the water or floodplain.

Necessary repairs, oiling or fluid changes will be conducted outside of the stream channel to minimize potential for spills in a channel. Drip protection will be provided for emergency repair work which may be required to be conducted in the stream channel or flood plain area.

Refueling will be conducted outside any stream channel or floodplain. When work in water is unavoidable, heavy equipment first will be serviced and cleaned to prevent the introduction of hydrocarbons into the water.

In the event a spill occurs in water or where it may get into water, containment and cleanup will be initiated immediately. Priority actions will be given to the protection of human health and safety. Every feasible action will be taken to reduce environmental impacts. Containment will be installed with the use of booms, sorbent pads, berms and diversions, or other means as necessary to contain and minimize the spill and prevent the spill from entering a waterway. Spills on natural soil will be cleaned up with sorbent materials, or otherwise excavated and disposed of in accordance with applicable laws and regulations.

If petroleum based products or other chemicals are spilled in natural vegetation, the area will be revegetated if so required by the California Department of Fish and Wildlife.

The Friant Water Authority has a consulting biologist available to assist with emergency spill cleanup who is also certified in bird cleanup following oil spills.

The California Department of Fish and Wildlife will be notified regarding spills in accordance with applicable laws, regulations, and permits.

11.9 HYDROLOGY AND WATER QUALITY

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Violate any water quality standards or waste discharge requirements?					X
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				X	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				X	
e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				X	
f. Otherwise substantially degrade water quality?				X	
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X	
h. Place housing within a 100-year flood hazard area structures which would impede or redirect flood flows?				X	
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?			X		
j. Inundation by seiche, tsunami, or mudflow?				X	

Impact Discussion:

The potential impacts of the use of herbicides and pesticides have been addressed in the Mitigated Negative Declaration for the Friant National Pollution Discharge Elimination System permit (FWA 2013).

The proposed project will not affect the amount of surface water in any natural water body. It will not result in a discharge into surface waters or alter the course or flow of floodwaters.

The proposed project will not impact groundwater. Any water needed for dust suppression will be trucked to the project site.

It is possible that during some work, total suspended solids could be temporarily increased in drainages. These impacts will be minimal with the incorporated mitigation measures.

The O& M and restoration activities will not result in any new alteration to existing streams or drainages, nor will they increase surface runoff in a manner that could add an increased risk of flooding.

Mitigation and Residual Impact:

In reference to the temporary increased total suspended solids, work will be conducted when the channels are dry whenever possible. If that is not an option, temporary diversions, sediment fencing and/or hay bales and other means will be incorporated as appropriate to minimize or eliminate possible excess sedimentation.

Revegetation and erosion control measures will be used where appropriate to manage any possible accelerated erosion and/or siltation that may occur as the result of the O&M work.

With these implemented mitigation measures, impacts to water quality are anticipated to be less than significant.

11.10 LAND USE AND PLANNING

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Physically divide an established community?				X	
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X	

Existing Conditions:

The Friant-Kern Canal is located on a federal right-of-way that starts at Millerton Lake in Fresno County and ends at the Kern River in Kern County.

Impact Discussion:

No Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) is in place for any part of the project plan area, except for Bakersfield, CA. Although the canal and O&M are excepted from the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP), the work will not conflict with the MBHCP.

The maintenance operations and restoration activities would not result in the creation of any new structures and, hence, would not result in any growth inducing impacts. No short or long-term adverse impacts to land uses would result from the proposed project that is to occur on existing facilities.

Mitigation and Residual Impact:

No mitigation is necessary and no residual impacts would result from this project.

11.11 MINERAL RESOURCES

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X	
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X	

Impact Discussion:

No impact is expected to occur to mineral resources from the operations, maintenance and restoration activities of this project

Mitigation and Residual Impact:

No mitigation is necessary and no residual impacts would occur.

11.12 NOISE

Will the proposal:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X	
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X	
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X	
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X		
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X	
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X	

Existing Conditions:

There are several land uses that are considered to be sensitive noise receptors. These receptors include schools, residential development, commercial lodging facilities, hospitals, or care facilities, libraries, and churches. The maximum threshold for exterior noise exposure compatible with these noise-sensitive uses is 65 dB Day-Night Average Sounds Level (L_{dn}). Without mitigation, exterior daytime and nighttime noise levels associated with grading and construction activities within 1,600 ft of sensitive receptors could result in a potentially significant impact.

Impact Discussion:

The only sensitive receptor directly adjacent to the Friant-Kern Canal is the presence of a few residences within the 1600 foot receptor radius. If heavy equipment is being used, local temporary increases in ambient noise levels may occur if people are present directly adjacent to the Friant-Kern Canal. With proper mufflers in place, these few homes are not anticipated to be exposed to noise in excess of 65dB. The noise is temporary,

generally does not occur at night, and will end when the maintenance work is completed. No long-term noise sources would be created by the proposed project.

Mitigation and Residual Impact:

Equipment will comply with all noise regulations. Any potential noise impacts would generally occur during daytime hours, and would be temporary and mitigated to less than significant with the use of equipment mufflers. No residual impacts would result.

11.13 POPULATION AND HOUSING

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X	
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X	
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X	

Impact Discussion:

This project will have no impact on population or housing issues as it already has been ongoing for so many years; no increase in the level of activities, employees or contractors will occur as the result of the O&M work.

Mitigation and Residual Impact:

No impacts to either population or housing levels will result from the continuing O&M work. No mitigation is required for population or housing issues.

11.14 PUBLIC SERVICES

	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				X	
i. Fire protection?				X	
ii. Police protection?				X	
iii. Schools?				X	
iv. Parks?				X	
v. Other public facilities?				X	

Impact Discussion:

No new structures, uses or population increases will occur as the result of the project. Therefore, no new public services would be required.

Mitigation and Residual Impact:

Project impacts to public services are none. No mitigation is proposed.

11.15 RECREATION

	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X	
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X	

Impact Discussion:

The proposed project activities would not interfere with any public recreational uses. Public recreation is prohibited on the Friant-Kern Canal and associated facilities with the exception of Lake Woollomes. Recreation at Lake Woollomes is managed by the Kern County Parks and Recreation Department and no changes in these activities are anticipated to occur as the result of the project O&M work. In addition, recreational impacts will not result from the operations and maintenance or restoration activities on the canal.

Mitigation and Residual Impact:

No impacts to recreation are anticipated because of this maintenance and restoration work; consequently, no mitigation is proposed.

11.16 TRANSPORTATION/ TRAFFIC

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X	
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				X	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X	
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X	
e. Result in inadequate emergency access?				X	
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X	

Impact Discussion:

Transportation/traffic would not cause an impact since the project site is located on federal property and will not affect public roads or highways. Overall, the O&M work will not generate a new or substantial increase in traffic, as it has been ongoing for over 65 years. Existing roadways have more than adequate capacity to handle the temporary and seasonal O&M traffic. In addition, the project occurs on a facility which has been maintained for over 65 years. No new amount of traffic is anticipated to be generated by the project compared to previous years. Any local traffic increases would be temporary and related to short-term maintenance and restoration activities.

Mitigation and Residual Impact:

Project impacts to traffic anticipate no change in the level of temporary and local traffic increases and are not considered to be significant. No mitigation is proposed.

11.17 UTILITIES AND SERVICE SYSTEM

Would the project:	Poten. Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X	
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X	
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X	
d. Have sufficient water supplies available to serve the project form existing entitlements and resources, or are new or expanded entitlements needed?				X	
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X	
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X	
g. Comply with federal, state, and local statutes and regulations related to solid waste?				X	

Impact Discussion:

These issues are not relevant to this operation, maintenance and restoration project as they occur on an existing structure that does not require such services.

Mitigation and Residual Impact:

No mitigation is necessary and no residual impacts would result.

11.18 MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potential Signif. Impact	Less than Signif. With Mitig. Incorp	Less than Signif. Impact	No Impact	Reviewed Under Previous Document
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X			
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X			
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X		

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- ☒ Biological Resources
- ☒ Hazards & Hazardous Materials
- ☐ Mineral Resources
- ☐ Public Services
- ☐ Utilities / Service Systems
- ☐ Agriculture Resources
- ☒ Cultural Resources
- ☒ Hydrology / Water Quality
- ☒ Noise
- ☐ Recreation
- ☐ Mandatory Findings of Significance
- ☒ Air Quality
- ☒ Geology / Soils
- ☐ Land Use / Planning
- ☐ Population / Housing
- ☐ Transportation / Traffic

DETERMINATION (*To be completed by the Lead Agency)*

On the basis of this initial evaluation:

☐ *I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.*

☒ *I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.*

☐ *I find that the proposed project MAY have a significant effect on the environment, and an ENVIORNMENTAL IMPACT REPORT is required.*

☐ *I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.*

☐ *I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.*

Signature	**Date**
Signature	**Date**