

Appendix A

Comment Letter and Reclamation's Response to Comments



ARVIN-EDISON WATER STORAGE DISTRICT

June 15, 2016

Via Electronic Mail (kmbaker@usbr.gov) & Fax (559) 487-5927

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Kelly Baker
United States Department of the Interior
BUREAU OF RECLAMATION
1243 N. Street
Fresno CA, 93721

**Re: Fresno Irrigation District Gould Canal to Friant-Kern Canal
Intertie Project Draft FONSI and EA Comments (15-062)**

STAFF

Steven C. Collup
Engineer-Manager
David A. Nixon
Deputy General Manager
Jeevan S. Muhar
Assistant Manager
Christ P. Krauter
General Superintendent

Dear Ms. Baker:

Following are Arvin-Edison Water Storage District's (AEWSD) comments on the subject EA/FONSI-15-062 (Project).

The proposed intertie project is a creative water management action and should generate many benefits, and to many parties, including AEWSD. AEWSD is supportive of these types of projects. Subsequently, AEWSD's primary concerns about the Project relate to the proposed discharge of non-project water into the Friant-Kern Canal (FKC) and potentially significant water quality impacts to AEWSD's surface and groundwater irrigation supplies, water banking programs, and associated negative impacts on crops in the District among other things. AEWSD's comments fall into the following two categories and are focused on; 1) the proposed changes to water quality requirements involving the introduction of Kings River/Non-Project water supplies into the FKC, and 2) a lack of direct and cumulative impacts analysis.

Water Quality Guidelines

A significant observation is there appears to be no water quality data whatsoever made available in the EA and FONSI. In particular, all water users have recently become more sensitive to salt and nitrate loading as regulated in the Irrigated Lands Regulatory Program and CVSalts Program, but no information on these constituents is provided either. In lieu of data, the Project references compliance with the Bureau of Reclamation (Reclamation) Water Quality (WQ) Guidelines. AEWSD has extensively commented on the referenced WQ Guidelines in the past, and which comments are hereby incorporated. As you may be aware, Reclamation has stated in previous responses to AEWSD that the WQ Guidelines will be "...updated...along a separate track." AEWSD looks forward to working with Reclamation in the near future on revisions to the archaic and deficient Water Quality Guidelines. Over the last 30 days, two (2) significant projects proposing to introduce water in the FKC have been noticed (released for comment) and it seems prudent for Reclamation to engage in such WQ Guideline revisions NOW and therefore provide project proponents, and those impacted by degraded water supplies, with the most probable outcome of such revisions.

AEWSD's primary concerns with the March 2008 WQ Guidelines remain as follows:

- Guidelines address only "non-project water" but should include all sources of introduced water supplies that are NOT chemically the same as water from Millerton Lake; and
- Title 22 standards generally are not protective of the water quality for irrigation uses; and

- AEWSD-2
cont.
- Guidelines do not adequately protect downstream users from significant water quality impacts as there are no in-canal standards; and
 - Type B water has to “generally” comply with Title 22, but may exceed Title 22 for certain constituents of concern as determined by Reclamation and Friant Water Authority on a case-by-case basis; and
 - Type C water is not required to meet any water quality requirements as it is erroneously stated to be “physically the same as Project water.” However, this is a misstatement because State Water Project that is conveyed from the Delta and introduced into the CVC and ultimately into the FKC does not originate from Millerton Lake and is not chemically the same as FKC water. The same is true of the groundwater introduced into the CVC from various banking programs that use the CVC for conveyance. Subsequently, the provisions of the Policy are woefully deficient.

Limits of Degradation

AEWSD understands a portion of the proposed action is to introduce Non-Project water into the FKC and merely a *reference* to the WQ Guidelines was cited. No water quality information regarding the Kings River supply was provided, no analysis between Kings River water to baseline FKC water was made, and there is no analysis of the downstream water quality or associated adverse impacts from the Project.

AEWSD-3

By allowing the degradation, if any, Reclamation is purposely allowing a few districts to benefit by the high quality of their FKC supply, while denying the same benefit to AEWSD and other downstream long term contractors.

Finally, AEWSD's request to avoid degradation of its water supplies isn't new, unique or unreasonable. Reclamation has imposed anti-degradation conditions on other CVP facilities including, for example, the Delta-Mendota Canal and associated selenium and Total Dissolved Solids (“TDS”) requirements. While Reclamation's requirements for protection of CVP water quality should be even-handed, that does not appear to be the case for the FKC.

Reference to AEWSD's Contract

While the United States does not warrant the quality of water delivered to a contractor, the United States is obligated to operate and maintain project facilities in the most practical manner to maintain the quality of the water at the highest level possible.

AEWSD-4

Furthermore, the water supplied to AEWSD pursuant to its repayment contract is Central Valley Project Water stored or flowing through Millerton Lake. Indeed, the definition of Class 1 water is defined as *“that supply of water stored in or flowing through Millerton Lake...”*

Water that is stored in or flowing through Millerton Lake is pristine Sierra Nevada snowmelt and, as such, relied upon by AEWSD to maintain its water quality. No information about the Project's water quality or anticipated degradation, if any, was made available. The Project as proposed may degrade AEWSD's contractual water supply. AEWSD wishes to continue to utilize its Friant Division supplies, un-degraded, to benefit AEWSD landowners and its water management programs.

Cumulative Impacts Analysis

Regarding cumulative impacts, the EA states "...the incremental impact 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." (EA, p. 3-55.) The cumulative impact evaluation of the draft EA does not comply with NEPA. In fact, there is no study of cumulative water quality impacts.

AEWSD is aware of the following *past and present* projects that discharge non-project water into the FKC that need to be mentioned, considered and analyzed accordingly with respect to cumulative impacts:

- 1) 5-year FKC Groundwater Pump-In Program
- 2) San Joaquin River Restoration Program Recapture and Recirculation EIR
- 3) Kaweah River Pump-in Program
- 4) Tule River Pump-in Program
- 5) Storage and Conveyance of Non-Project Water for Kern Tulare Water District and Lindsay-Strathmore Irrigation District
- 6) Delta Lands 770 Warren Act
- 7) Kern Tulare Water District and West Kern Water District Groundwater Banking Project
- 8) Madera Irrigation District long term banking and return in North Kern Water Storage District and Semitropic Water Storage District
- 9) Poso Creek Regional Water Management Group 25-year Program
- 10) Cawelo Water District Warren Act
- 11) Rosedale Rio-Bravo and Delano Earlimart Irrigation District Banking Program
- 12) Kern Tulare Water District Return of Banked Water
- 13) North Kern Water Storage District Recovery and Transportation of Banked Water
- 14) Pixley Water Bank

Thank you, and again we appreciate the opportunity to provide input into your Project. If and when Reclamation chooses to divulge the quality of the water proposed to be introduced into the FKC as a result of this project AEWSD reserves the right to comment further at that time.

If you have questions or comments, please don't hesitate to call or email.

Sincerely,



David A. Nixon
Deputy General Manager

cc: Board of Directors
Steve Collup, Engineer-Manager
Jeevan Muhar, Staff Engineer
Gary Serrato, Fresno Irrigation District
Michael Jackson, Chris Eacock and Scott Taylor, USBR

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Response to Arvin-Edison Water Storage District Comment Letter, June 15, 2016

- AEWSD-1** Comment noted. Specific responses to the general concerns expressed in this comment are addressed below.
- AEWSD-2** The Final Environmental Assessment (EA) has been updated to include specific water quality data for the Kings River water proposed for introduction under this project (see page 34 in Section 3.1.8 of Final EA-15-062). As shown in Tables 6 and 7 of EA-15-062, primary and secondary constituents under Title 22 (California Domestic Water Standards), including salts and nitrates, were either non-detect or well below maximum contaminant levels (MCLs). Reclamation expects that any future introduction of Kings River water under the Proposed Action would be similar. In addition, Reclamation requires annual sampling of non-Project water prior to introduction into its facilities to be sure it meets Reclamation's then-current water quality requirements prior to introduction. This is required for all projects that introduce non-Project water into our facilities and has thus far been shown to prevent the possibility substantial degradation of water quality in the canal.
- Reclamation is in receipt of Arvin-Edison Water Storage District's (Arvin-Edison's) past comments on our Water Quality Monitoring Policy. The Arvin-Edison's concern about poor quality water supplies being introduced in the Friant-Kern Canal is noted. Reclamation also looks forward to continuing discussions with the Friant Water Authority and the Friant Division Contractors, including Arvin-Edison, on future updates to Reclamation's water quality guidelines for the Friant Division facilities.
- AEWSD-3** See Response to AEWSD-2.
- AEWSD-4** See Response to AEWSD-2.
- AEWSD-5** Reclamation's cumulative impacts analysis in Final EA-15-062 has been updated (see page 35-36 in Section 3.1.8). See also Response to AEWSD-2.
- AEWSD-6** See Response to AEWSD-2.

Appendix B

Air Quality CAIEMod Output Files

Gould Canal to Friant Kern Canal Intertie Project

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.50	Acre	1.50	65,340.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Project is a pipeline and a pump station, with additional room for staging.

Construction Phase - Project construction will take place over approximately four months.

Trips and VMT - Approx. 30 worker trips per day, and 4 vendor trips per day during construction.

Consumer Products - The project is a pump station and canal and operation will not involve cleaning supplies, kitchen aerosols, cosmetics or toiletries.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	55.00
tblConstructionPhase	NumDays	4.00	21.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	PhaseEndDate	12/30/2016	12/31/2016
tblConstructionPhase	PhaseEndDate	10/14/2016	10/15/2016
tblConsumerProducts	ROG_EF	2.14E-05	1E-07
tblGrading	AcresOfGrading	7.88	1.50
tblGrading	AcresOfGrading	5.50	1.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	VendorTripNumber	11.00	4.00
tblTripsAndVMT	WorkerTripNumber	8.00	30.00
tblTripsAndVMT	WorkerTripNumber	8.00	30.00
tblTripsAndVMT	WorkerTripNumber	27.00	30.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1483	0.9449	0.7160	9.9000e-004	0.0889	0.0575	0.1464	0.0451	0.0546	0.0997	0.0000	85.3151	85.3151	0.0186	0.0000	85.7060
Total	0.1483	0.9449	0.7160	9.9000e-004	0.0889	0.0575	0.1464	0.0451	0.0546	0.0997	0.0000	85.3151	85.3151	0.0186	0.0000	85.7060

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1481	0.9438	0.7152	9.9000e-004	0.0889	0.0574	0.1463	0.0451	0.0545	0.0996	0.0000	85.2272	85.2272	0.0186	0.0000	85.6177
Total	0.1481	0.9438	0.7152	9.9000e-004	0.0889	0.0574	0.1463	0.0451	0.0545	0.0996	0.0000	85.2272	85.2272	0.0186	0.0000	85.6177

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.1012	0.1164	0.1061	0.0000	0.0000	0.1218	0.0478	0.0000	0.1100	0.0602	0.0000	0.1030	0.1030	0.1611	0.0000	0.1031

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0466	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0466	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0466	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0466	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2016	9/15/2016	5	11	
2	Grading	Grading	9/16/2016	10/15/2016	5	21	
3	Building Construction	Building Construction	10/16/2016	12/31/2016	5	55	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	30.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2016**Unmitigated Construction On-Site****Acres of Grading: 1**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0295	0.0000	0.0295	0.0160	0.0000	0.0160	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0134	0.1418	0.0908	9.0000e-005		7.6900e-003	7.6900e-003		7.0800e-003	7.0800e-003	0.0000	8.8868	8.8868	2.6800e-003	0.0000	8.9431
Total	0.0134	0.1418	0.0908	9.0000e-005	0.0295	7.6900e-003	0.0372	0.0160	7.0800e-003	0.0231	0.0000	8.8868	8.8868	2.6800e-003	0.0000	8.9431

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6200e-003	7.9000e-004	7.7200e-003	2.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.1446	1.1446	6.0000e-005	0.0000	1.1459
Total	2.6200e-003	7.9000e-004	7.7200e-003	2.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.1446	1.1446	6.0000e-005	0.0000	1.1459

3.2 Site Preparation - 2016**Mitigated Construction On-Site****Acres of Grading: 1**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0295	0.0000	0.0295	0.0160	0.0000	0.0160	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0134	0.1416	0.0907	9.0000e-005		7.6800e-003	7.6800e-003		7.0700e-003	7.0700e-003	0.0000	8.8762	8.8762	2.6800e-003	0.0000	8.9324
Total	0.0134	0.1416	0.0907	9.0000e-005	0.0295	7.6800e-003	0.0372	0.0160	7.0700e-003	0.0231	0.0000	8.8762	8.8762	2.6800e-003	0.0000	8.9324

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6200e-003	7.9000e-004	7.7200e-003	2.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.1446	1.1446	6.0000e-005	0.0000	1.1459
Total	2.6200e-003	7.9000e-004	7.7200e-003	2.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.1446	1.1446	6.0000e-005	0.0000	1.1459

3.3 Grading - 2016**Unmitigated Construction On-Site****Acres of Grading: 1.5**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0482	0.0000	0.0482	0.0262	0.0000	0.0262	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0209	0.2209	0.1435	1.5000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	13.9343	13.9343	4.2000e-003	0.0000	14.0225
Total	0.0209	0.2209	0.1435	1.5000e-004	0.0482	0.0120	0.0602	0.0262	0.0110	0.0372	0.0000	13.9343	13.9343	4.2000e-003	0.0000	14.0225

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9900e-003	1.5000e-003	0.0148	3.0000e-005	2.5200e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.1852	2.1852	1.2000e-004	0.0000	2.1877
Total	4.9900e-003	1.5000e-003	0.0148	3.0000e-005	2.5200e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.1852	2.1852	1.2000e-004	0.0000	2.1877

3.3 Grading - 2016

Mitigated Construction On-Site

Acres of Grading: 1.5

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0482	0.0000	0.0482	0.0262	0.0000	0.0262	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0209	0.2206	0.1434	1.5000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	13.9177	13.9177	4.2000e-003	0.0000	14.0058
Total	0.0209	0.2206	0.1434	1.5000e-004	0.0482	0.0120	0.0602	0.0262	0.0110	0.0372	0.0000	13.9177	13.9177	4.2000e-003	0.0000	14.0058

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9900e-003	1.5000e-003	0.0148	3.0000e-005	2.5200e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.1852	2.1852	1.2000e-004	0.0000	2.1877
Total	4.9900e-003	1.5000e-003	0.0148	3.0000e-005	2.5200e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.1852	2.1852	1.2000e-004	0.0000	2.1877

3.4 Building Construction - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0905	0.5650	0.4045	6.0000e-004		0.0376	0.0376		0.0362	0.0362	0.0000	51.0663	51.0663	0.0112	0.0000	51.3020
Total	0.0905	0.5650	0.4045	6.0000e-004		0.0376	0.0376		0.0362	0.0362	0.0000	51.0663	51.0663	0.0112	0.0000	51.3020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7400e-003	0.0110	0.0161	3.0000e-005	7.2000e-004	1.9000e-004	9.1000e-004	2.0000e-004	1.8000e-004	3.8000e-004	0.0000	2.3749	2.3749	2.0000e-005	0.0000	2.3753
Worker	0.0131	3.9300e-003	0.0386	8.0000e-005	6.6000e-003	5.0000e-005	6.6400e-003	1.7500e-003	4.0000e-005	1.8000e-003	0.0000	5.7231	5.7231	3.1000e-004	0.0000	5.7296
Total	0.0158	0.0149	0.0547	1.1000e-004	7.3200e-003	2.4000e-004	7.5500e-003	1.9500e-003	2.2000e-004	2.1800e-003	0.0000	8.0980	8.0980	3.3000e-004	0.0000	8.1049

3.4 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0904	0.5643	0.4040	6.0000e-004		0.0375	0.0375		0.0362	0.0362	0.0000	51.0055	51.0055	0.0112	0.0000	51.2410
Total	0.0904	0.5643	0.4040	6.0000e-004		0.0375	0.0375		0.0362	0.0362	0.0000	51.0055	51.0055	0.0112	0.0000	51.2410

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7400e-003	0.0110	0.0161	3.0000e-005	7.2000e-004	1.9000e-004	9.1000e-004	2.0000e-004	1.8000e-004	3.8000e-004	0.0000	2.3749	2.3749	2.0000e-005	0.0000	2.3753
Worker	0.0131	3.9300e-003	0.0386	8.0000e-005	6.6000e-003	5.0000e-005	6.6400e-003	1.7500e-003	4.0000e-005	1.8000e-003	0.0000	5.7231	5.7231	3.1000e-004	0.0000	5.7296
Total	0.0158	0.0149	0.0547	1.1000e-004	7.3200e-003	2.4000e-004	7.5500e-003	1.9500e-003	2.2000e-004	2.1800e-003	0.0000	8.0980	8.0980	3.3000e-004	0.0000	8.1049

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.440734	0.064177	0.163340	0.171044	0.043309	0.007147	0.018445	0.078827	0.002062	0.001765	0.006503	0.000787	0.001863

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

[illegible]

5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0466	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0466	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0454					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0466	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0454					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0466	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Appendix C

Reclamation's Cultural Resources Determination

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

MP-153 Tracking Number: 16-SCAO-077

Project Name: Fresno Irrigation District's Gould Canal/Friant-Kern Canal Intertie Project

NEPA Document: 15-062

MP 153 Cultural Resources Reviewer: Lex Palmer

Date: July 5, 2016

This proposed undertaking by the Fresno Irrigation District (FID) is for the FID's proposed construction of a pump station to convey water from the District's Gould Canal to the Reclamation-owned Friant-Kern Canal in Fresno County, California. Reclamation determined that the authorization of this work is an undertaking as defined in 36 CFR § 800.16(y) and involves the type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a).

Based on historic properties identification efforts conducted by FID, Reclamation consulted with, and received concurrence from, the State Historic Preservation Officer (SHPO) on a finding of no adverse effect to historic properties, pursuant to 36 CFR § 800.5(b). Consultation correspondence between Reclamation and the SHPO has been provided with this cultural resources compliance document for inclusion in the administrative record for this action.

This document serves as notification that Section 106 compliance has been completed for this undertaking. Please note that if project activities subsequently change, additional NHPA Section 106 review, including further consultation with the SHPO, may be required. Thank you for providing the opportunity to comment.

Attachment:

Letter: SHPO to Reclamation dated July 5, 2016

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov



July 05, 2016

Reply in Reference To: BUR_2016_0606_001

Anastasia T. Leigh, Regional Environmental Officer
United States Department of the Interior
Bureau of Reclamation, Mid-Pacific Regional Office
2800 Cottage Way, Sacramento, CA 95825-1898

Re: National Historic Preservation Act (NHPA) Section 106 Compliance for the Fresno Irrigation District's (FID) Gould Canal Friant-Kern Canal (FKC) Intertie Project, Fresno County, California (Project #16-SCAO-077)

Dear Ms. Leigh:

The Office of Historic Preservation (OHP) received your letter on June 06, 2016 initiating consultation for the above-referenced undertaking. The Bureau of Reclamation (Reclamation) is consulting pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations found at 36CFR Part 800 (as amended). The following documentation was included in the submittal:

- *Draft: Cultural Resources Inventory and Evaluation for the Fresno Irrigation District's Gould Canal-Friant-Kern Canal Intertie Project (15-CCAO-077[sic]), Fresno County, California (for Provost & Pritchard Consulting Group, Visalia, CA; by J. Lloyd, R. Baloian, K. Asselin, & J. Tibbet-Applied Earthworks Inc. Fresno, CA, April 2016).*
- *Figure 1: Project Location Map; Figure 2: Area of Potential Effects; Figure 3: Project plans; Supplemental Finding of Effect and National Register of Historic Places (National Register) eligibility for the Fresno Irrigation District's (FID) Gould Canal Friant-Kern Canal (FKC) Intertie Project, Fresno County, CA (Project #16-SCAO-077) (K. Palmer - Reclamation, June 1, 2016) - 2 pp.*

The proposed project is designed to improve local area water services via water transfer between the Kings River and FKC systems by constructing a pump station in the Gould Canal with a steel pipeline and a concrete discharge structure into the FKC. The pump station will be about 16 feet below existing grade and about 8 feet above existing grade and be 52 feet by 55 feet in size with pumps discharging into an underground pipe manifold. Electrical equipment and controls will be housed in an adjacent 300 square foot concrete or masonry building and the new buildings will be accessed by realigning 165 feet of the existing dirt road. The proposed concrete discharge structure in the FKC will be approximately 25 feet tall and 12 feet wide and include a stop log and slide gate but two-thirds of the height of this structure (ca. 16 feet) will be built below current ground surface, significantly lowering its visual profile.

The area of potential effects (APE) is about 245 feet long and ranges from 14 to 57 feet wide, for a total of 7.03 acres. The vertical depth will be 4½ to 24 feet deep. The APE is surrounded by agricultural roads, orange groves, agricultural fields, and is bounded on the east by the Gould Canal and to the south by the FKC (Figure 2).

On behalf of FID, Applied Earthworks, Inc. (AE) conducted a cultural resources inventory (Lloyd et. al. 2016). Three resources were identified within the APE: the Gould Canal, FKC, and AE-3398-IH, an unnamed regulating reservoir and canal, all of which Reclamation has evaluated in the included Supplemental Finding (Palmer, 2016). The FKC has previously been determined as eligible for listing in the National Register under Criterion A in a 1997 consensus determination. For the purposes of this undertaking only, Reclamation will treat the Gould Canal as individually eligible for inclusion in the National Register under Criterion A for association with the theme of early Fresno County irrigation and agriculture and continued operation for nearly 150 years (the later Friant-Kern Canal crossing was carefully engineered so that the Gould Canal could continue operation) and will treat Site AE-3398-IH

as individually eligible for inclusion in the National Register under Criterion A for the theme of the role of twentieth century Fresno County irrigation in the development of local citrus agriculture.

An analysis of buried site sensitivity indicates that, given the depositional characteristics of the landform and soils in the APE, this setting has a low potential for intact subsurface archaeological sites. Construction of the Gould Canal, the unnamed canal and reservoir (Site AE-3398-IH), and the FKC, and the plowing of fields within and adjacent to the APE has disturbed between 6 feet to 50 feet or more of the vertical context further reducing the potential for any intact subsurface cultural resources.

Reclamation has identified and sent letters to Indian Tribes and Native American organizations in the area who might have special knowledge or concerns and requested their assistance in identifying sites of religious and cultural significance within the APE. To date, no responses have been received. Should any concerns be subsequently raised, Reclamation will work to address them and make notifications as required.

Reclamation applied the criteria of adverse effect [36 CFR § 800.5(a)] for the current undertaking and found that the proposed activities would result in no significant alterations to the historic characteristics that make the Gould Canal, FKC, and Site AE-3398-IH segments eligible for listing in the National Register. The proposed action of installing the pumping station at the Gould Canal and Friant-Kern Canal crossing is consistent with other similar existing facilities along these canals that divert water for agricultural purposes and the simple materials and plain design of the new facility will not unduly detract from the visual and physical characteristics of the adjacent linear canals.

OHP reviewed the documentation and Reclamation's requests and offers the following comments:

- Pursuant to 36 CFR 800.4(a)(1), there are no objections to the APE as defined and documented.
- Pursuant to 36 CFR 800.4(b), it is considered that Reclamation has made a reasonable and good faith effort to identify historic properties within the area of potential effects.
- Pursuant to 36 CFR 800.4(c)(2), **I do not object** that, for the purposes of this undertaking only, Reclamation will treat the Gould Canal as individually eligible for inclusion in the National Register under Criterion A for association with the theme of early Fresno County irrigation and agriculture and continued operation for nearly 150 years and will treat Site AE-3398-IH as individually eligible for inclusion in the National Register under Criterion A for the theme of the role of twentieth century Fresno County irrigation in the development of local citrus agriculture.
- Reclamation has determined that the proposed undertaking will result in no adverse effect to historic properties. Pursuant to 36 CFR 800.5(b), **I concur**.

Please be advised that under certain circumstances, such as unanticipated discovery or a change in project description, Reclamation may have additional future responsibilities for this undertaking under 36 CFR Part 800 (as amended). Should you require further information, please contact Jeanette Schulz at Jeanette.Schulz@parks.ca.gov or (916) 445-7031.

Respectfully,



Julianne Polanco
State Historic Preservation Officer