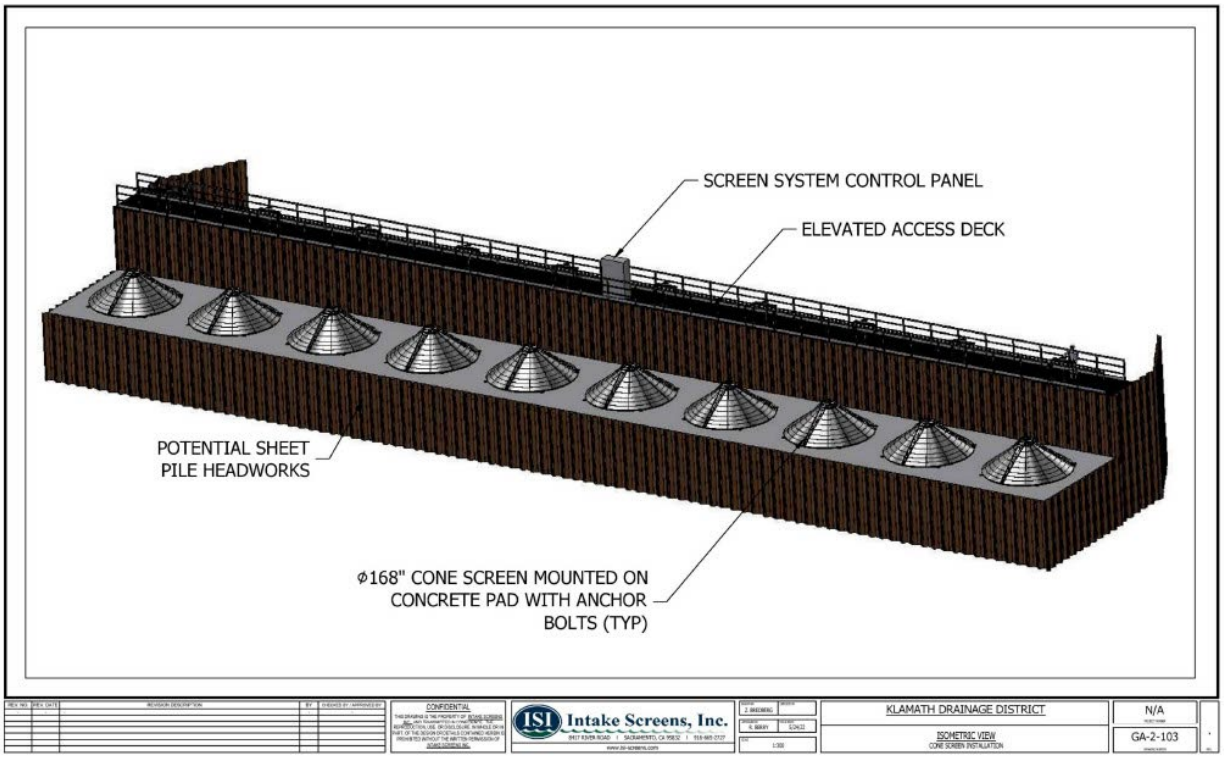
SCREEN SYSTEM CONTROL PANEL
ELEVATED ACCESS DECK
POTENTIAL SHEET PILE HEADWORKS
Φ168" CONE SCREEN MOUNTED ON CONCRETE PAD WITH ANCHOR BOLTS (TYP)
CONFIDENTIAL
Intake Screens, Inc.
KLAMATH DRAINAGE DISTRICT
ISOMETRIC VIEW
CONE SCREEN INSTALLATION
N/A
GA-2-103

Appendix L Cone Screen Application in Red Bluff

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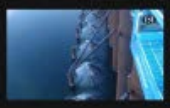
Intake Screens, Inc.

RED BLUFF DIVERSION DAM

Back To All Projects



Red Bluff Diversion Dam

Background:

The Tehama-Colusa Canal Authority required a 500 cfs (323 MGD; 50,970 m^3/h) emergency pumping plant to supply water to its irrigators after use of a major diversion dam was restricted due to permitting issues involving state and federally protected Chinook and Coho Salmon, Steelhead, and Sturgeon. The emergency pumping plant required 1,500 ft^2 (139 m^2) of screens screen surface area to meet the 0.33 fps (10 cm/s) approach velocity requirement with only 3 feet (0.9 m) of water depth available. The diversion also needed to be designed, fabricated, and installed in less than four months.

The final project used a piled structure to support 10 shallow intake plenums, the pump columns, and the cone screens. The cone screens system included 10 C168-48HA screens, each measuring 14 feet (4.3m) in diameter and 4-feet (1.2 m) high and equipped with a hydraulic drive brush cleaning system to meet the project needs.

Benefit of ISI System

ISI worked with the client's engineering firm, the pump manufacturer, and the fisheries agencies to develop a design-build solution that went from design to installation in less than 3 months and without interruption to operations. ISI's conical shaped screen enabled this shallow water diversion to meet fish protection criteria by placing a large screen surface area in a relatively small project footprint.

Owner:

Tehama-Colusa Canal Authority

Engineer(s):

CH2M Hill

General Contractor:

Galindo Construction Corporation and Rain for Rent

Location:

Sacramento River, Red Bluff, CA

Year Installed:

2009

Water Body:

Stream/River

Slot Size:

1.75 mm

Flow Rate:

500 cfs (323 MGD; 50,970 m^3/h)

Appendix M Cone Screen Application in Melhase

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Intake Screens, Inc.

MELHASE IRRIGATION DIVERSION

Back To All Projects






Melhase Irrigation Diversion 1

Melhase Irrigation Diversion

Background:

This remote irrigation diversion was retrofitted with a 14-ft (4.3-m) diameter, 41-inch (1.0 m) high cone screen to reduce potential impacts to fish at the point of diversion from the Wood River. This solar power brush-cleaned screen includes 1.75-mm slot openings and has a capacity of 70 cfs (45.2 MGD; 7,136 m^3/h) at a 0.4 fps (cm/s) approach velocity. The screen was equipped with a 6-ft x 20-ft (1.8-m x 0.6-m) rectangular outlet plenum and wetwell with manual gate to control flow into the diversion. The 500 Watt solar powered system includes 6 deep cell batteries, cabinet, and charging system.

Benefit of ISI System

ISI's conical shaped screen enables this shallow water diversion to meet fish protection criteria by placing a large screen surface area in a relatively small project footprint. The brush-cleaning system maintains a clean screen surface and therefore maintains the regulatory required approach velocity during water diversion. The solar power system allowed the project to be completed without the need to run power to the site and the low profile plenum minimized excavation requirements during installation. The wet well and manual gate allow the operator to control flow through the system including turning off flow outside of the irrigation season.

Owner:
Oregon Department of Fish and Wildlife

Engineer(s):
Trout Unlimited

General Contractor:
Oregon Department of Fish and Wildlife

Location:
Wood River, Klamath County, OR

Year Installed:
2017

Water Body:
Stream/River

Slot Size:
1.75 mm

Flow Rate:
70 cfs (45.2 MGD; 7,136 m^3/h)

Screen Model:
C168-48HA

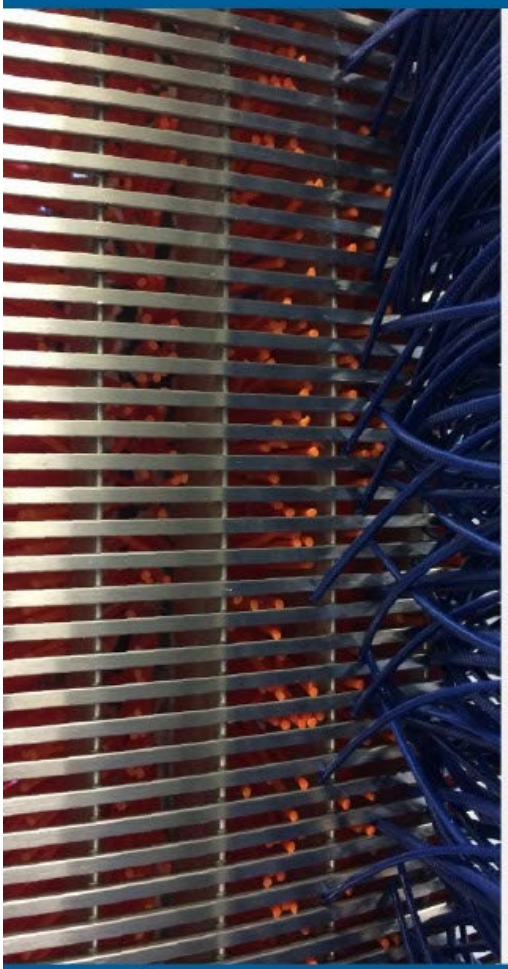
Screen Type:
Cone Screens (conical)

Appendix N ISI Cylinder Brochure


SELF-CLEANING
CYLINDER SCREENS
Customizable Submerged Screen Solutions
ISI
INTAKE SCREENS, INC.

ISI cylinder screens are a rugged and reliable self-cleaning screen solution for challenging intake conditions. Designed to provide maximum screen surface area for a given project footprint, cylinder screens are highly customizable to suit the needs of your site. Customizations include cylinder size, slot size, configuration (T screen and drum screen), orientation (vertical and horizontal), drive type, and fixed and retrievable options.

The mechanical brushing action prevents debris buildup, sedimentation, biofouling, and increased head loss at the screen. ISI cylinder screens are a proven technology for irrigation, municipal, and industrial water supplies.



HOW IT WORKS

The screen unit consists of cylindrical-shaped wedgewire screen, an external and internal brush cleaning system, flow baffle, and brush drive assembly with controls. Gravity, siphon, or pumping is used to convey water through the screen.

Brush-cleaning is achieved by rotating the screen cylinder between the internal and external brushes. Frequency and duration of cleaning is programmed to meet site conditions using the provided control panel (excluding turbine drive screens).

The screen is sized to achieve low approach and through-screen velocities to meet head loss and fish protection requirements and minimize debris accumulation.

Screen configurations can be customized to include flange mounts, steel manifolds, and retrieval track systems. Retrieval track systems can be designed to include an electric hoist system, trash racks, isolation gates, and potentially other features.

ISI INTAKE SCREENS, INC.

www.isi-screens.com

FEATURES

Flow rates ranging from 2 cfs (898 gpm; 1.3 MGD; 204 m_3/h) for a single drum screen up to more than 200 cfs (89,766 gpm; 129.3 MGD; 20,388 m^3/h) from a single T screen with the opportunity to have multiple screens at a site.

Screen slot sizes ranging from 0.5 to 9-mm.

Brush-cleaning drive types to best suit site conditions: electric, hydraulic, and turbine.

Screen materials including Type 304 and 316 stainless steel with custom materials available (e.g., 2507 super duplex stainless steel).

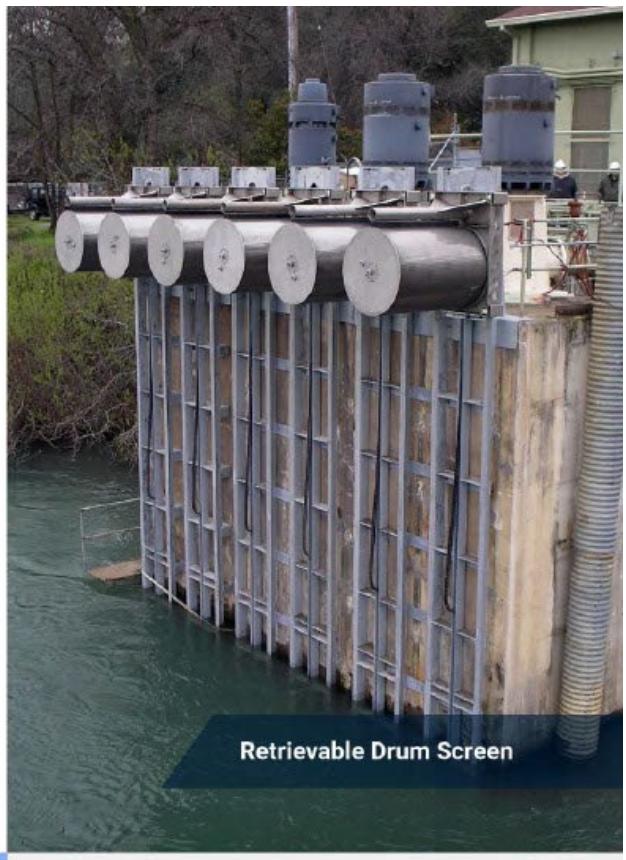
Sized to be compliant with state, federal, and international fish protection requirements.

Internal flow baffle distributes flow evenly across the screen surface.

Optional retrieval track systems to support inspection and maintenance or to raise the screens when not in service.

Control panel to match customer equipment and remote monitoring and control needs.

Bar racks, isolation gates, antifouling coatings, and debris jetting systems provided as optional equipment.


Retrievable Drum Screen

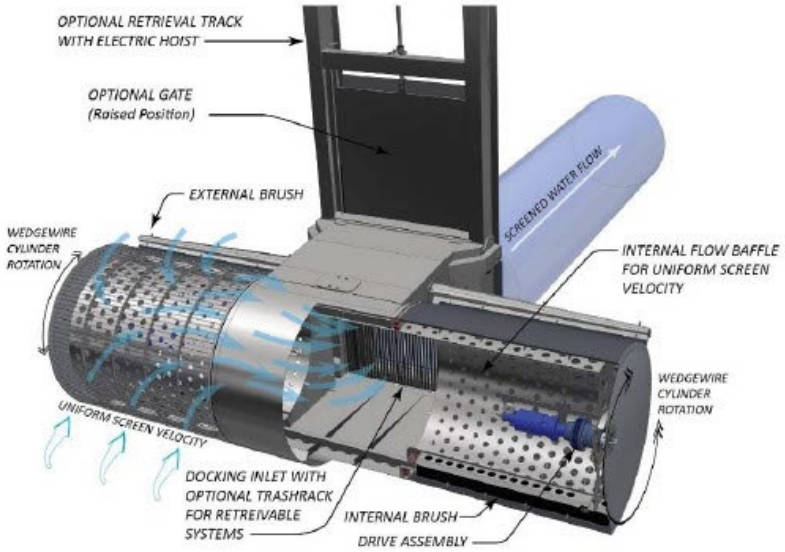

Retrievable T Screen

BENEFITS

- **Ideal solution for** rivers and streams, lakes, estuaries, and marine waters including areas with high biofouling, silty conditions, and heavy debris loads.
- **Designed to exceed** fish and marine mammal protection requirements
- **Protects pump** and other downstream equipment from clogging debris
- **Low head loss**, low maintenance, and minimal power input
- **Highly customizable** to site conditions

8417 River Road | Sacramento, California 95832 | (916) 665-2727 | info@isi-screens.com

SCREEN DESIGN & OPERATION




Fixed Vertical Drum Screens


Retrievable Drum Screens on Vertical Track


Retrievable T Screens on Incline Track


Fixed Horizontal Drum Screen


Retrievable T Screens on Vertical Track

DESIGN AND OPERATION SUPPORT

Working with ISI means access to over 25 years of experience in intake screen design and fabrication including design-build project delivery. Detailed documentation on operation and maintenance provided with all ISI screens. On-site installation guidance and operator training available.

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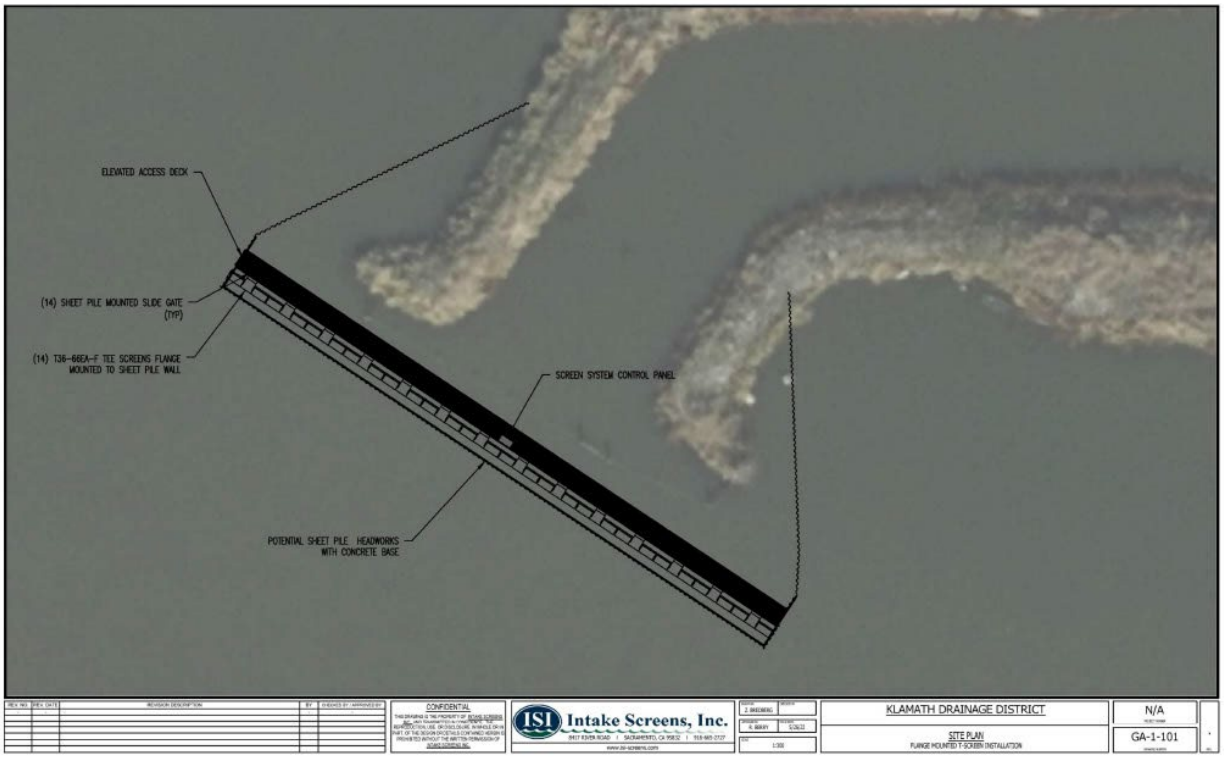
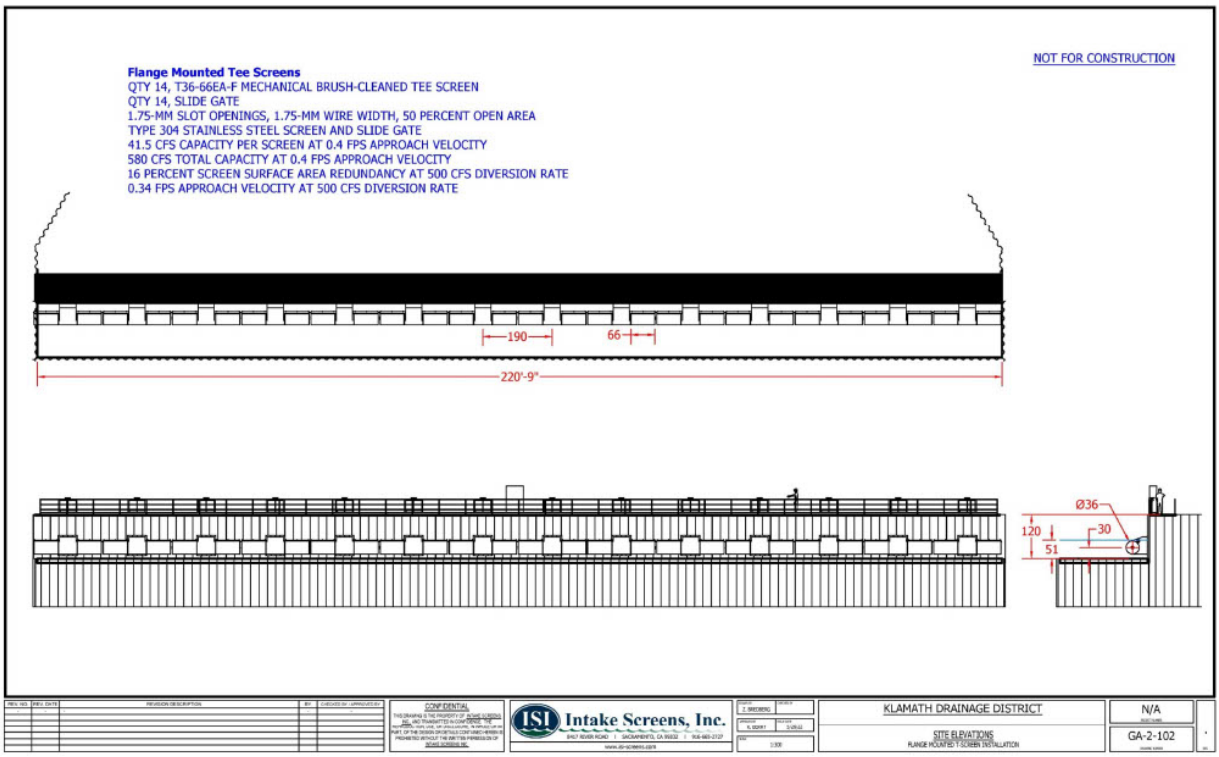
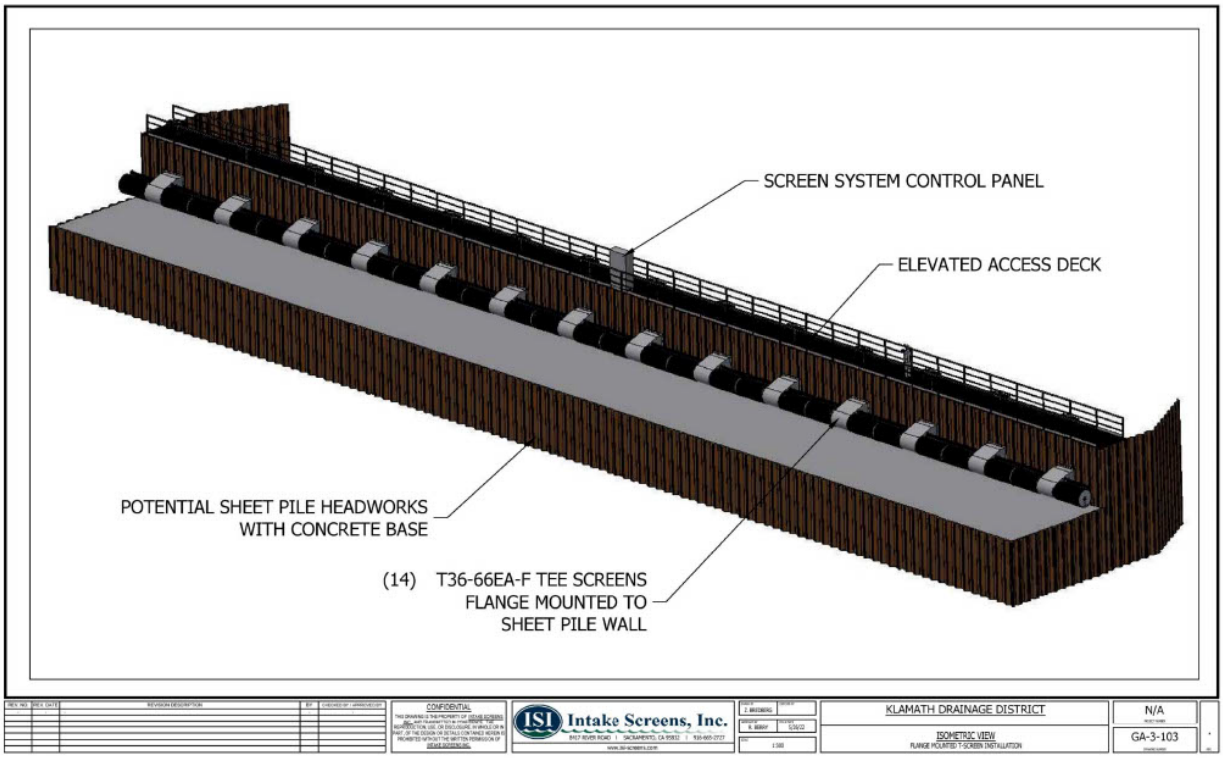
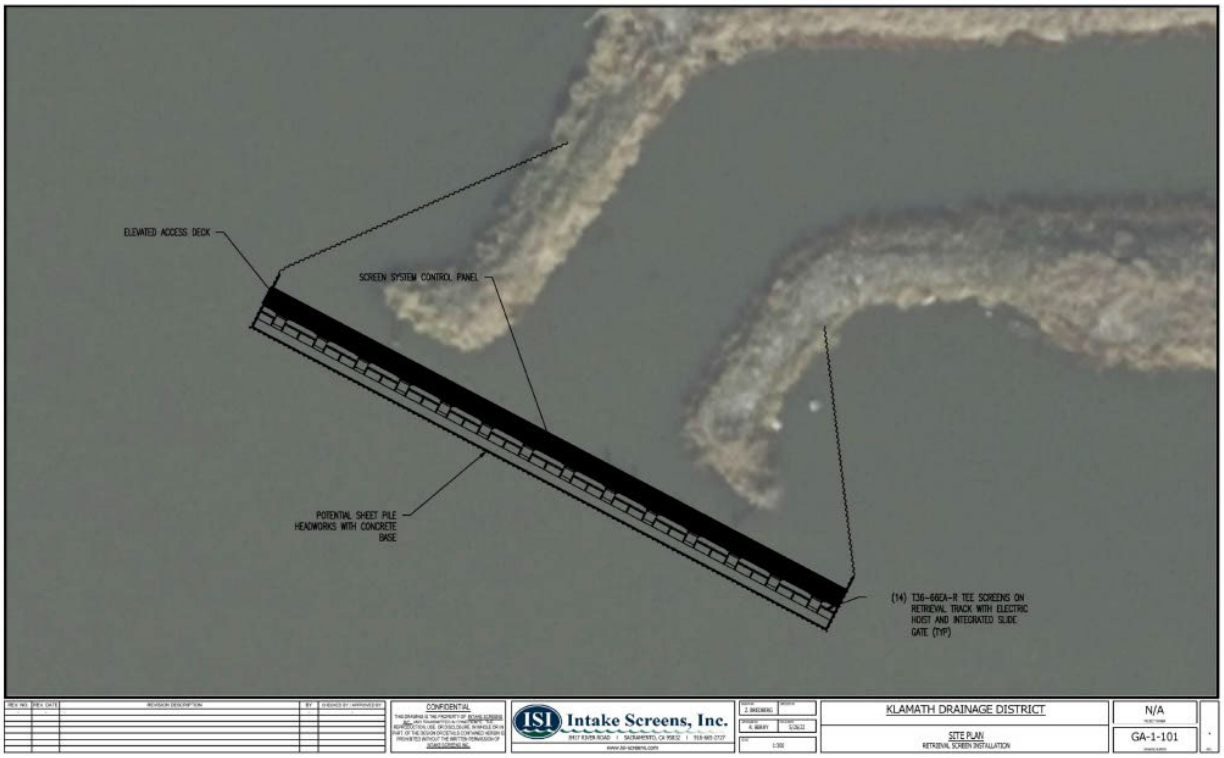
Appendix O Cylinder Screen Mounted Shop Drawings

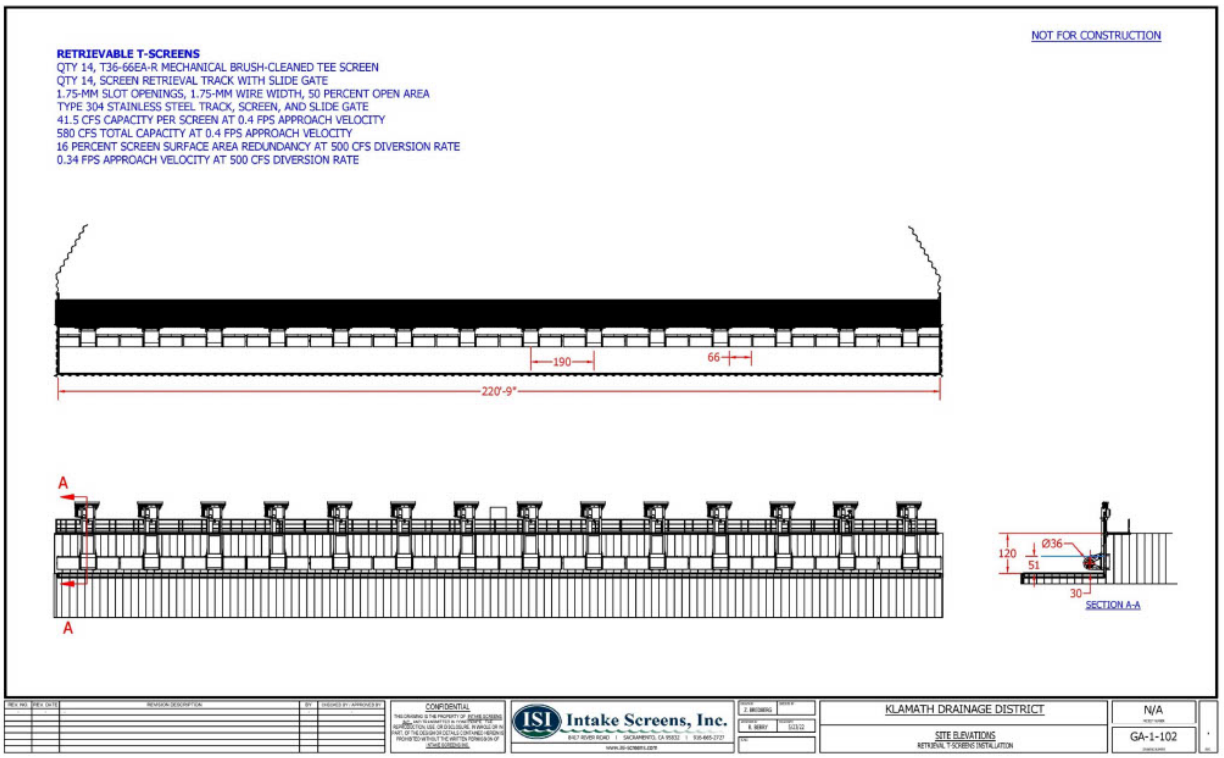

ELEVATED ACCESS DECK
(14) SHEET PILE MOUNTED SLIDE GATE (TYP)
(14) T36-66EA-F TEE SCREENS FLANGE MOUNTED TO SHEET PILE WALL
SCREEN SYSTEM CONTROL PANEL
POTENTIAL SHEET PILE HEADWORKS WITH CONCRETE BASE
CONFIDENTIAL
Intake Screens, Inc.
KLAMATH DRAINAGE DISTRICT
SITE PLAN
FLANGE MOUNTED T-SCREEN INSTALLATION
N/A
GA-1-101

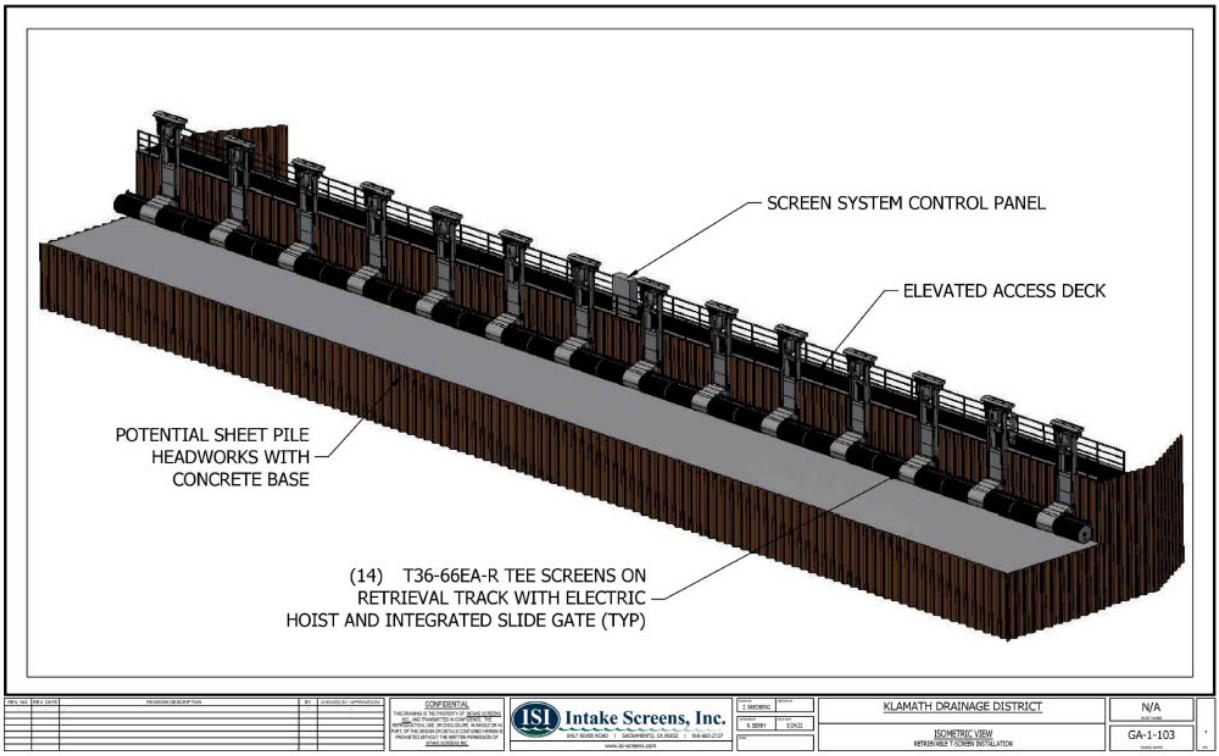

NOT FOR CONSTRUCTION
Flange Mounted Tee Screens
QTY 14, T36-66EA-F MECHANICAL BRUSH-CLEANED TEE SCREEN
QTY 14, SLIDE GATE
1.75-MM SLOT OPENINGS, 1.75-MM WIRE WIDTH, 50 PERCENT OPEN AREA
TYPE 304 STAINLESS STEEL SCREEN AND SLIDE GATE
41.5 CFS CAPACITY PER SCREEN AT 0.4 FPS APPROACH VELOCITY
580 CFS TOTAL CAPACITY AT 0.4 FPS APPROACH VELOCITY
16 PERCENT SCREEN SURFACE AREA REDUNDANCY AT 500 CFS DIVERSION RATE
0.34 FPS APPROACH VELOCITY AT 500 CFS DIVERSION RATE
190
66
220'-9"
Ø36
120
30
51
CONFIDENTIAL
Intake Screens, Inc.
KLAMATH DRAINAGE DISTRICT
SITE ELEVATIONS
FLANGE MOUNTED T-SCREEN INSTALLATION
N/A
GA-2-102


SCREEN SYSTEM CONTROL PANEL
ELEVATED ACCESS DECK
POTENTIAL SHEET PILE HEADWORKS
WITH CONCRETE BASE
(14) T36-66EA-F TEE SCREENS
FLANGE MOUNTED TO
SHEET PILE WALL
CONFIDENTIAL
Intake Screens, Inc.
KLAMATH DRAINAGE DISTRICT
ISOMETRIC VIEW
FLANGE MOUNTED T-SCREEN INSTALLATION
N/A
GA-3-103

Appendix P Cylinder Screen Retrievable Shop Drawing


ELEVATED ACCESS DECK
SCREEN SYSTEM CONTROL PANEL
POTENTIAL SHEET PILE HEADWORKS WITH CONCRETE BASE
(14) T36-66EA-R TEE SCREENS ON RETRIEVAL TRACK WITH ELECTRIC HOIST AND INTEGRATED SLIDE GATE (TYP)
CONFIDENTIAL
Intake Screens, Inc.
KLAMATH DRAINAGE DISTRICT
SITE PLAN
RETRIEVAL SCREEN INSTALLATION
N/A
GA-1-101


NOT FOR CONSTRUCTION
RETRIEVABLE T-SCREENS
QTY 14, T36-66EA-R MECHANICAL BRUSH-CLEANED TEE SCREEN
QTY 14, SCREEN RETRIEVAL TRACK WITH SLIDE GATE
1.75-MM SLOT OPENINGS, 1.75-MM WIRE WIDTH, 50 PERCENT OPEN AREA
TYPE 304 STAINLESS STEEL TRACK, SCREEN, AND SLIDE GATE
41.5 CFS CAPACITY PER SCREEN AT 0.4 FPS APPROACH VELOCITY
580 CFS TOTAL CAPACITY AT 0.4 FPS APPROACH VELOCITY
16 PERCENT SCREEN SURFACE AREA REDUNDANCY AT 500 CFS DIVERSION RATE
0.34 FPS APPROACH VELOCITY AT 500 CFS DIVERSION RATE
190
66
220'-9"
A
A
120
Ø36
51
30
SECTION A-A
CONFIDENTIAL
Intake Screens, Inc.
KLAMATH DRAINAGE DISTRICT
SITE ELEVATIONS
RETRIEVAL T-SCREENS INSTALLATION
N/A
GA-1-102


SCREEN SYSTEM CONTROL PANEL
ELEVATED ACCESS DECK
POTENTIAL SHEET PILE HEADWORKS WITH CONCRETE BASE
(14) T36-66EA-R TEE SCREENS ON RETRIEVAL TRACK WITH ELECTRIC HOIST AND INTEGRATED SLIDE GATE (TYP)
CONFIDENTIAL
Intake Screens, Inc.
KLAMATH DRAINAGE DISTRICT
ISOMETRIC VIEW
N/A
GA-1-103

Appendix Q Cylinder Screen Application in Yellowstone

Call Today: (916) 665-2727

ISI Intake Screens, Inc.

INTAKE DIVERSION DAM

‹ Back To All Projects






Intake Diversion Dam

Background:

This 1,450 cfs (937.2 MGD, 147,814 m^3/h) irrigation diversion facility located just upstream from Intake Dam diverts a significant portion of the Yellowstone River flows. The facility was required to install 1.75-mm slot size wedgewire screens with an approach velocity of 0.4 fps (12.2 cm/s) to minimize potential incidental take of federally endangered Pallid Sturgeon as well as protect many other native fish species. This project was part of a larger Yellowstone fisheries restoration effort that continues to this day.

To meet stringent fish protection requirements at the site, ISI designed and fabricated a total of 12, T78-100HA-R screen units. Each wedgewire T screen has two cylinders, each measuring 78 inches (1,981 mm) in diameter and 100-inches (2,540-mm) long. With 1.75-mm slot openings and a 50 percent open area, each screen unit is capable of providing 136 cfs (87.9 MGD; 13,864 m^3/h) at a slot velocity of 0.4 fps (12.2 cm/s) and therefore provide just over 10 percent screen surface area overbuild relative to the facility capacity. The screen system includes steel retrieval tracks that are embedded within the concrete headworks to minimize potential to snag and retain debris that passes the facility in the river flow. Knife gates integrated within each retrieval track allow the facility to close off flow at individual screens prior raising them to deck level.

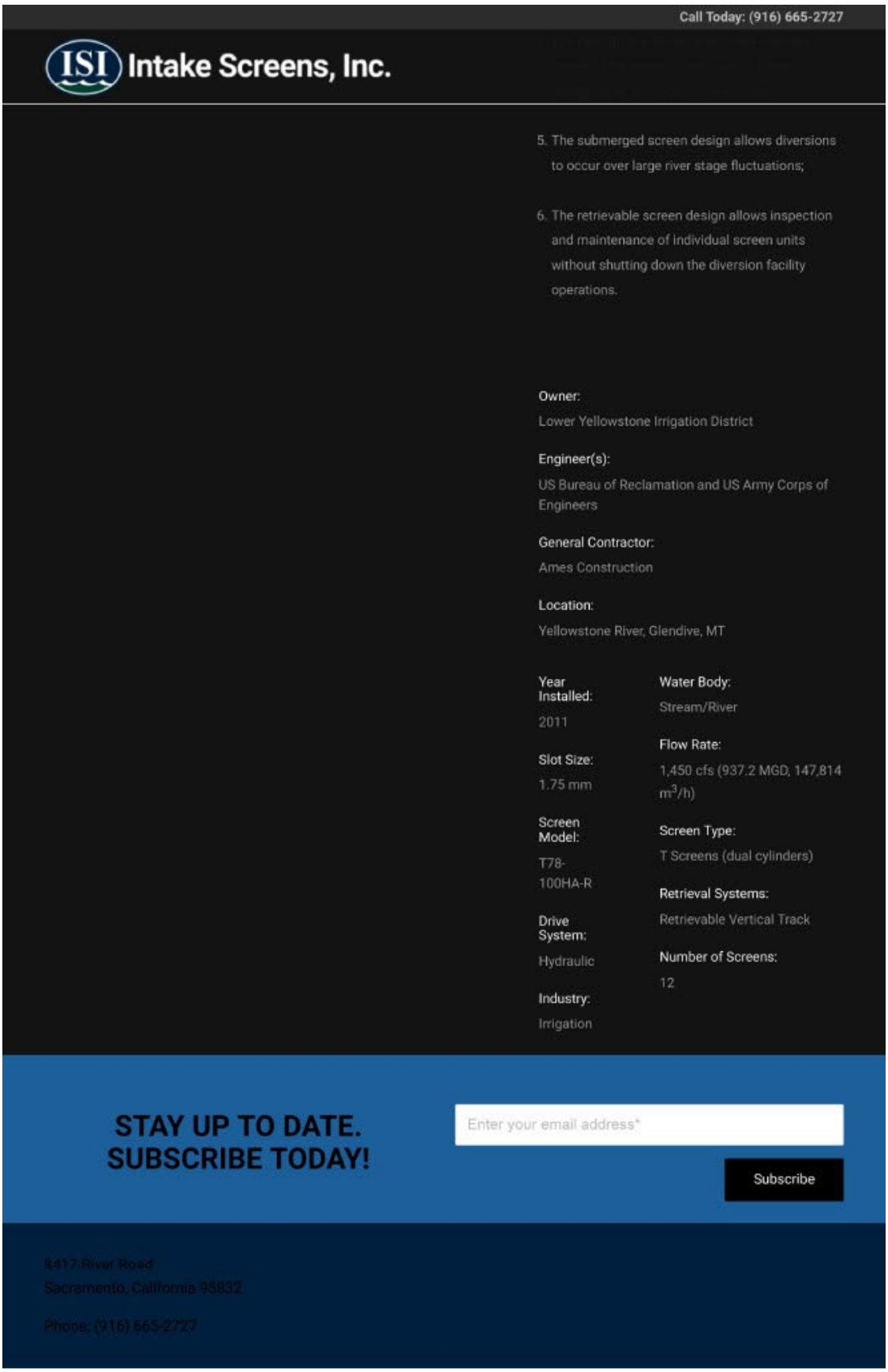
Benefit of ISI System

ISI's retrievable brush-cleaned cylindrical screen system was selected as the project's preferred alternative as it provided the following key advantages:

1. The on-river design keeps fish in the river rather than subject them to a fish bypass system or any type of collection or conveyance;

2. The cylindrical screen design provided the necessary screen surface area with a reduced facility footprint compared to other concepts;

3. The retrievable design allows the screens to be safely raised above the dam during the non-irrigation season when ice flows and damage potential are significant;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ISI Intake Screens, Inc.
5. The submerged screen design allows diversions to occur over large river stage fluctuations;
6. The retrievable screen design allows inspection and maintenance of individual screen units without shutting down the diversion facility operations.
Owner:
Lower Yellowstone Irrigation District
Engineer(s):
US Bureau of Reclamation and US Army Corps of Engineers
General Contractor:
Ames Construction
Location:
Yellowstone River, Glendive, MT
Year Installed:
2011
Slot Size:
1.75 mm
Screen Model:
T78-100HA-R
Drive System:
Hydraulic
Industry:
Irrigation
Water Body:
Stream/River
Flow Rate:
1,450 cfs (937.2 MGD, 147,814 m3/h)
Screen Type:
T Screens (dual cylinders)
Retrieval Systems:
Retrievable Vertical Track
Number of Screens:
12
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Sacramento, California 95832
Phone: (916) 665-2727

D.4 Capital Costs

D.4.1 Modernization Alternative/Preferred Alternative Costs

This section presents capital costs for the Modernization Alternative, which is identified as the Preferred Alternative. Costs shown differ from elsewhere in the Plan-EA because they do not include project administration, technical assistance, and permitting costs.

North Canal Fish Screen

In 2022, Adkins Engineering developed a Fish Screen Feasibility Analysis and 10 percent designs of the District's preferred screen, the cone screen. Costs associated with this project are detailed below in Figure D-2.

FISH SCREEN ALTERNATIVE
FOR
KLAMATH DRAINAGE DISTRICT
PRELIMINARY COST ESTIMATE - CONE SCREEN
(YEAR 2022 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	8% MOBILIZATION	LS	$480,500	All Req'd	$480,500
2	10 SCREENS, 10 SLIDE GATES, 10 INTAKE, CONTROLS INCLUDES DESIGN & FABRICATION, TESTING, TRAINING, 2-YEAR WARRANTY	LS	$2,000,000	All Req'd	$2,000,000
3	SITE PREPARATION	LS	$140,000	All Req'd	$140,000
4	20' PILE FOOTINGS	EA/FT	$160	40	$128,000
5	CONCRETE FOUNDATION	CUYD	$1,228	2,000	$2,456,600
6	SHEET PILE COFFER DAM	LS	$130,000	All Req'd	$130,000
7	DEWATERING	LS	$100,000	All Req'd	$100,000
8	ACCESS ROAD IMPROVEMENT (14FT GRAVEL ROAD)	FT	$17	6,900	$117,300
9	METAL WORK (CATWALK + RAILING)	LS	$69,448	All Req'd	$69,448
10	POWER EXTENSION	FT	$60	4,600	$276,000
11	SHEET PILE FOR SOUTH LEVEE	LS	$110,000	All Req'd	$110,000
12	DEBRIS BOOM	LS	$200,000	All Req'd	$200,000
13	JET SPRAY SYSTEM	EA	$15,000	10	$150,000
14	AIR BUBBLER SYSTEM	LS	$24,000	All Req'd	$24,000
15	EARTHWORK CUT (2649) & FILL (2153)	CUYD	$70	4,802	$336,139
				Sum of Estimated Construction Cost	**$6,717,987**
				Contingency (20%)	$1,343,597
				Engineering (10%)	$671,799
				Permitting and Environmental Compliance	$100,000
				Construction Admin (10%)	$671,799
				TOTAL ESTIMATED PROJECT COST (2022 DOLLARS)	**$9,505,181**

PRELIMINARY COST ESTIMATE
CONE SCREEN
FISH SCREEN ALTERNATIVE
FOR
KLAMATH DRAINAGE DISTRICT

FIGURE 6-h

Figure D-2. Cone Screen Preliminary Cost Estimate.

North Canal Improvements

The North Canal Improvement Project was initially developed in 2009. In 2022, Adkins Engineering updated the costs based on changes to the original designs and to adjust for increased construction costs and inflation. Figure D-3 demonstrates the preliminary costs for these improvements.

Estimate of Probable Construction Costs

PROJECT: **North Canal Extention Project**

DRAFT

Prepared by: T. Lundsten
Reviewed by: D. Scalas
Date: August 24, 2022

ADKINS ENGINEERING & SURVEYING

BID ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	Mobilization (5% of construction cost)	LS	1	$25,000	$25,000
2	Temporary Work Zone Traffic Control, Complete-In-Place	LS	1	$15,000	$15,000
3	Temporary Water Management Practices	LS	1	$10,000	$10,000
4	Earthworks	CY	8838	$10	$88,378
5	Crossing 12 Improvements	LS	1	$38,734	$38,734
6	Crossing 13 Improvements	LS	1	$57,887	$57,887
7	Crossing 14 Improvements	LS	1	$37,183	$37,183
8	Fugate Road Crossing	LS	1	$78,456	$78,456
9	Highway 161 Crossing	LS	1	$154,093	$154,093
10	Outlet Headwall Structure	LS	1	$53,120	$53,120
11	Water Flow Meter Weir	LS	1	$19,750	$19,750
	SUM OF ESTIMATED CONSTRUCTION COST				**$577,602**
	CONSTRUCTION CONTINGENCY (15%)				**$86,640**
	SUBTOTAL OF ESTIMATED CONSTRUCTION COSTS				**$664,243**
	ENGINEERING/SURVEYING (10%)				**$66,424**
	CONSTRUCTION ADMINISTRATION (10%)				**$66,424**
	ENVIRONMENTAL/PERMITTING				**$30,000**
	TOTAL ESTIMATED PROJECT COST (YEAR 2022 PRICES)				**$827,091**

Figure D-3. North Canal Improvement preliminary costs.

F and FF and E and EE Pump Station Upgrade

In 2023, Adkins Engineering developed an E/EE and F/FF Pumping Plant Evaluation and 10 percent design. Costs associated with this upgrade are detailed below in Figure D-4.

FARMER'S CONSESRVATION ALLIANCE
PUMPING PLANT EVALUATION E/EE & F/FF
PLANNING LEVEL COST ESTIMATE
(YEAR 2023 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$112,700	All Req'd	$112,700
New Pump Installation					
2	Install Cascade 36AF axial flow, sinlge-stage pump with 250 HP motor	EA	$308,313	4	$1,233,300
3	Install Cascade 36AF pump with DeRan Model M20A gear head	EA	$281,455	2	$563,000
Electrical & Controls Upgrades (Fluent Engineering)					
5	Utility Service Line Extensions	EA	$43,000	2	$86,000
6	Pads, Fencing, Vaults	LS	$26,000	All Req'd	$26,000
7	Power Distribution MDP	EA	$48,000	2	$96,000
8	VFD's	EA	$26,000	4	$104,000
9	Utility Disconnects	EA	$12,000	4	$48,000
10	Electrical Feeders & Motor VFD Cable	LS	$51,000	All Req'd	$51,000
11	SCADA Controls	EA	$46,000	1	$46,000

Sum of Estimated Construction Cost	**$ 2,366,000**
Contingencies (20%)	$ 474,000
Engineering, Design, and Construction Administration (25%)	$ 592,000
Environmental, Permitting, Legal	$ 20,000
TOTAL ESTIMATED PROJECT COST (2023 DOLLARS)	**$ 3,452,000**

FCA
E/EE F/FF EVALUATION, COMBINED
PLANNING COST ESTIMATE

Figure D-4. E/EE and F/FF Pumping Plant Upgrades Preliminary Costs.

Installation of Recirculation Pipeline at the E Pumping Station

In 2023, Adkins Engineering developed a Recirculation Pipeline at the E Pumping Plant Evaluation and 10 percent design. A wide variety of materials are available for piping; availability of piping materials, prices, and new products change over time. Piping materials that could be used for recirculation pipeline include, but are not limited to, polyvinyl chloride, steel, high-density polyethylene (HDPE), bar-wrapped concrete cylinder, steel, fiberglass, and ductile iron. The

Modernization Alternative was priced using steel pipe, which at the time of this analysis was considered to be the District's preference.

At the time of project implementation, the specific piping material would be selected based on several considerations: the cost of the project would meet NED requirements; meet construction requirements; be appropriate based on local conditions and risk factors; and result in minor or no changes to project effects described in Section 6 of the Plan-EA, as determined through the tiered decision framework approach outlined in Section 1.4. The NRCS State Conservationist and the Sponsoring Local Organization would possess the final discretion to select the appropriate piping material.

Costs associated with this recirculation pipeline are detailed below in Figure D-5.

FARMER'S CONSERVATION ALLIANCE
KDD E-PLANT RECIRCULATION IMPROVEMENTS
PLANNING LEVEL COST ESTIMATE
(YEAR 2023 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$19,000	All Req'd	$19,000
2	Construction Surveying (1% of Total Bid Price)	LS	$4,000	All Req'd	$4,000
3	Erosion and Sediment Control	LS	$10,000	All Req'd	$10,000
Recirculation Pipeline Improvements					
4	Install 48-inch fabricated manifold and T-fitting to attach to existing drainage pipe	LS	$5,000	All Req'd	$5,000
5	Install 48-inch corrugated steel pipe, includes fittings, vents, valves, trenching, and backfilling	LF	$490	217	$107,000
6	Install welded steel access manhole/cleanout	EA	$7,000	1	$7,000
7	Install 48-inchx48-inch cast iron sluice gate with thimble	EA	$90,000	2	$180,000
8	Modify existing catwalk and install new catwalk	LS	$60,000	All Req'd	$60,000
9	Install energy dissipation structure at outfall into Center Canal	LS	$2,000	All Req'd	$2,000

Sum of Estimated Construction Cost	$	**394,000**
Contingency (20%)	$	79,000
Engineering, Design, and Construction Administration (25%)	$	99,000
Environmental, Permitting, Legal	$	15,000
TOTAL ESTIMATED PROJECT COST (2023 DOLLARS)	$	**587,000**

FCA
KDD E-PLANT RECIRCULATION
PLANNING COST ESTIMATE

Attachment B

Figure D-5. E Pumping Station Recirculation Preliminary Costs.

Installation of SCADA and Automated Gates

A wide variety of SCADA hardware and software are available; availability of SCADA components, prices, and new products change over time. Costs associated with the SCADA and Automated Gates presented in this Draft Plan-EA are derived from similar irrigation district projects. At the time of project implementation, the specific SCADA components would be selected based on several considerations: project cost would meet NED requirements; meet construction requirements; be appropriate based on local conditions and risk factors; and result in minor or no changes to project effects described in Section 6 of the Plan-EA, as determined through the tiered decision framework approach outlined in Section 1.4. The NRCS State Conservationist and the Sponsoring Local Organization would possess the final discretion to select the appropriate SCADA components.

PG 2 SCADA System	Quantity	Quantity Units[2]	Materials and Construction Cost (2023$)[1,3]
Water Measurement Devices	9	EA	$55,000
Automated Gates	11	EA	$124,000
VFDs	2	EA	$22,000
Flow Meters	11	EA	$72,000
Solar Panel	4	EA	$14,000
Construction Contingency, CM, Survey Costs	N/A	N/A	**$94,000**
Engineering	N/A	N/A	**$13,000**
Project Admin[4]	N/A	N/A	**$54,000**
Permitting	N/A	N/A	**$3,000**
PG 2 SCADA System Subtotal	N/A	N/A	**$451,000**

Notes: Prepared July 2024

1. Engineering, Construction Management, and Survey, Construction Management/General Contractor, and Contingency costs range depending on the project components. See above in Figure D-4 for cost distribution for each project.
2. LS=Lump Sum; EA=Each; FT=Foot; CY=Cubic Yard
3. Totals rounded to nearest $1,000 and may not sum.
4. Includes technical assistance and project administration costs.

D.5 Preferred Alternative Memo Regarding Project Groups 3 and 6

Per DM 9500-013, the PR&G is meant to provide "a process to establish new guidance to incorporate a more balanced consideration of economic, social, and environmental objectives." The adoption of the PR&G also instituted the new possibility for projects without a quantified Benefit Cost Ratio greater than one to be part of the preferred alternative. Inclusion in the preferred alternative is based on the projects' beneficial effects to ecosystem services and public benefits, allowing for a more comprehensive view of benefits beyond what is quantified and monetized to be included in the federal investment decision. Per DM 9500-013, "It is recognized that most of the activities pursued will require an assessment of tradeoffs by decision makers and in many cases the final decision will require judgment that considers the extent of both monetized and non-monetized effects."

In the Plan-EA four of six proposed project groups have quantified benefits and benefit/cost ratios greater than 1 (please see Table D-21). Two projects (PG3 Fish Screen and PG 6 Upgraded Turnouts) have public benefits that were not quantifiable or monetized but are expected to be in excess of the cost and worth federal investment. In alignment with DM 9500-013, during the development of the NED "environmental effects disclosed are monetized and quantified to the extent possible." Provided below is the justification and descriptions of the non-monetized benefits that were considered when deciding to include PG 3 and PG 6 as part of the Preferred Alternative.

Table D-21. Project Group Benefits.

Works of Improvement[1]	Agriculture-related Reduced OMR	Nonagri-cultural Carbon Value	Nonagri-cultural Habitat Value	Average Annual Benefits	Average Annual Cost[2]	Benefit Cost Ratio
PG1 North Canal Improvements[3]	$10,000	$0	$150,000	$160,000	$160,000	1.0
PG2 SCADA System[3]	$40,000	$0	$0	$40,000	$25,000	1.6
PG4 E and F Pumping Plants[3]	$29,000	$0	$0	$29,000	$15,000	1.9
PG5 E Pump Recirculation[3]	$77,000	$1,000	$0	$78,000	$43,000	1.8
Subtotal	**$260,000**	**$1,000**	**$150,000**	**$307,000**	**$243,000**	**1.3**
PG3 Fish Screen[4]	$0	$0	$0	Fish abundance values[2] (See text)	$308,000	Not Quantifiable
PG6 Upgraded Turnouts[4]	$0	$0	$0	Operational benefits[2] (See text)	$1,000	Not Quantifiable
Subtotal	**$0**	**$0**	**$0**	**Unquantifiable fish abundance benefits, operational benefits**	**$309,000**	**Not Quantifiable**
Total	**$260,000**	**$1,000**	**$150,000**	**>$307,000**	**$552,000**	**Not Quantifiable**

Note: Prepared July 2024

[1] PG=Project Group

[2] Additional ecosystem services benefits of the Project are described in the NED and Plan-EA. Please refer to these resources for further detail and a description of these benefits.

[3]Projects with quantified benefits.

[4]Projects with unquantified benefits.

Project Group 3 – Fish Screen

Within the Klamath Basin, four dams are being removed as part of the largest dam removal project in U.S. history. The dam removal is intended to help restore the natural flow of the Klamath River (which has been disrupted for over 100 years), benefit fish by opening access to previously blocked spawning and rearing habitat, as well as improve water quality and restore natural river processes. The Modernization Alternative includes PG 3 Fish Screen because it will provide ecological and cultural benefits and is an important component of restoring the 420-mile reach of the Klamath River, where the dam removal is taking place. A Klamath River restoration plan developed by NOAA in 2022 included a prioritization of unscreened diversions on the Klamath River and associated tributaries. The North Canal diversion was ranked the second highest of the 91 diversions and, as a result, would be most likely to benefit salmonid repopulation and recovery. The proposed fish screen would help direct juveniles toward the inundated Keno wetlands to the south which provide important refugia to those fish.

Restoring the Klamath River Basin and its fisheries requires many activities; first and foremost, the removal of four hydroelectric dams that have blocked fish passage to the upper basin for over 100 years. Restoration is aimed at reversing long-term declines in Klamath Basin fisheries. There are several fish species in the basin that are protected by the Federal Endangered Species Act such as coho salmon, Lost River suckers, and shortnose suckers. These fish species are culturally important to Indian Tribes (there are six federally recognized tribes in the Basin) and are also economically and socially important to commercial and recreational fishing communities and others. Water scarcity in the basin has also contributed to the declining fish populations, and irrigation water withdrawals have been severely curtailed in some years to protect fish populations, with effects on the agricultural and ranching community as well.

After several decades of regulatory, planning, and legal processes, dam removal was completed in 2024. Although there is uncertainty regarding the effects on fish populations, modeling suggests that removal of the dams would increase median Chinook adult production over the next 30 years by 50 percent to 189 percent. Other species are also expected to benefit, although effects on other species are less certain or are more modest (National Marine Fisheries Service, U.S. Department of the Interior, March 2013). To realize the full benefits of dam removal, numerous other actions are necessary to restore the Basin, including installation of fish screens.

The Project Group 3 Fish Screen is expected to prevent fish from the Klamath River from entering the North Canal Diversion and becoming entrained in KDD's water conveyance system. The Oregon Department of Fish and Wildlife has found that "more than 98 percent of young salmon and steelhead survive an encounter with a properly designed fish screen." (Oregon Department of Fish and Wildlife, 2013) Entrained fish are likely to perish in KDD's conveyance system. Consequently, the project would protect fish populations in the Klamath River, including the shortnose sucker and Lost River sucker, which are federally listed endangered species (U.S. Fish and Wildlife Service, 2023c). The Upper Klamath River is designated Critical Habitat for these species.

The importance of the fish screen would increase in the near future as salmon (which are protected at both state and federal levels) are reintroduced to the Upper Klamath River. Reintroduction is planned after the four dams that once blocked salmon passage on the Klamath River are removed, a process that is expected to be completed in 2024 (California Trout, 2023). Once salmon repopulate the Upper Klamath River, the Project Group 3 Fish Screen would help ensure that KDD's North Canal diversion does not negatively impact their recovery.

Reestablishing fish habitat in the Klamath River is a national priority due to the ecological and cultural values supported by this habitat. Prior to the dams' construction, the Klamath River was the third-largest salmon-producing river on the West Coast, and it served as an important food source for native tribes in the area (National Oceanic and Atmospheric Administration, 2022). The River was once home to Chinook salmon, coho salmon, steelhead, Pacific lamprey, bull trout, and Redband trout, among other species; all of which have experienced declines in population due to various sources of habitat degradation, including the erection of dams (O'Keefe, Pagluico, Scott, Cianciolo, & Holycross, 2022). This has changed the lives of native tribes that have relied on the fish as a major source of food, cultural practices, and way of life. Removing the dams will reopen access to more than 400 miles of habitat for these fish species, including the stretch of river where the PG3 Fish Screen would be located (National Oceanic and Atmospheric Administration, 2022).

The PG3 Fish Screen has been designated as an important component in the federal planning process to restore the Upper Klamath River. To prioritize the projects most important to reestablishing salmon species in the Klamath River, a team of experts comprised of staff at the NOAA, the Pacific State Marine Fisheries Commission (PSMFC), and TU ranked the importance of potential Klamath habitat restoration and fish screening projects. Among the projects evaluated in their 2022 report was the PG3 Fish Screen at the North Canal Diversion. The team assessed projects based on their size, the number of fish species affected, and the impact on fish. Out of 91 diversions that were evaluated for fish screening projects, 26 projects received the highest priority ranking. The PG3 Fish Screen was one of these 26 projects receiving the highest priority ranking. Only one fish screen received a higher overall priority score than the PG3 Fish Screen (O'Keefe, Pagluico, Scott, Cianciolo, & Holycross, 2022).

The 2022 study prioritizing projects did not directly estimate the number of fish deaths that would be avoided by each fish screen, nor were there other sources available for quantifying the ecological benefit of the PG 3 Fish Screen. For this reason, we do not attempt to quantify the benefits of the PG 3 Fish Screen. However, for context, we note that the people in the Pacific Northwest highly value salmon species, even if they do not consume them for food or enjoy them recreationally. One recent economic study found that, on average, households in the Pacific Northwest value a one-year increase of 1,000 salmon between $0.09 and $0.22 (Lewis, Kling, Dundas, & Lew, 2022).[23] Applying the average of $0.16 per household to 9.4 million households in the Pacific Northwest (as the original study did) results in total value of roughly $1,500 per fish. At this rate, PG 3 Fish Screen would have to save approximately 200 salmon per year in order to outweigh its total annual costs of $308,000. In addition to the value to the general Pacific Northwest population, enhancing salmon restoration provides cultural value of the fish to the tribes, whose traditional way of life depends on the species.

Project Group 6 – Upgraded Turnouts

The Modernization Alternative includes PG 6 Upgraded Turnouts because it will provide water management benefits in the Klamath Basin where transparency in water-use is regionally important.

PG 6 Upgraded Turnouts would install new monitoring equipment at 76 patron turnouts that would allow KDD to measure the amount of water going to each patron. This would provide the District and its patrons with a variety of benefits. First, KDD would be able to ensure that the correct allocation of water goes to each patron, ensuring fairness and compliance with water right quantity

[23] We adjusted the original values of $0.08 and $0.19 from 2017 dollars to 2023 dollars using the GDPIPD.

and seniority. The upgraded turnouts would also help avoid and resolve conflicts over water, since accurate measurements would enhance accountability and help ensure use of water in accordance with allotment. This would help to foster cooperation and trust within the District. It would also provide patrons with the ability to monitor their own water use, which may help them better manage their allotted water and optimize their crop yields. The likelihood of any change in on-farm production and the magnitude of any change is not known, nor are there known case studies to draw from to make an educated estimate, so this potential benefit is not quantified. While the social benefits of monitoring and measuring water use are also not quantifiable, they are expected to be valuable to the community. In sum, while PG 6 Upgraded Turnouts does not have any quantified benefits in this analysis, it is included in the Modernization Alternative because the qualitative benefits are believed to outweigh its small, annualized cost ($1,000).

D.6 Structural Table 3b – Channel Work

Table D-22. Structural Data – Channel Work (Klamath Basin) (OR).

Channel name (reach)	Station	Drain area (mi^2)[1]	( ) Year freq design dischg.[2]	Water surfac elev.	Hydraulic gradient	Channel gradient	Channel bottom width	Channel elev.	Channel side slope	*n* Value: Aged	*n* Value: As built	Velocities: Aged	Velocities: As built	Excavation volume	Type of work[2]	Existing channel[3]	Present flow condition[4]
North Canal - from Fugate Road to 1,200 feet downstream (Station 0+00 to 12+00)	12+00	N/A	100 ft^3/s	4,084.08 ft msl	0.00097 ft/ft	0.0008 ft/ft	20.00 ft	4082 ft msl	2 to 1	0.030	0.025	2.28 ft/s	2.74 ft/s	4,804 yd^3	II	M	N/A
North Canal - 1,200 feet downstream of Fugate Road to California State Highway 161 (Station 12+00 to 24+00)	24+00	N/A	100 ft^3/s	4,083.00 ft msl	0.00090 ft/ft	0.0008 ft/ft	15.00 ft	4081 ft msl	2 to 1	0.030	0.025	2.21 ft/s	2.65 ft/s	4,034 yd^3	II	M	N/A

Notes:
[1]Drain area is not applicable, North Canal only receives controlled flows from an irrigation diversion.
[2]Design discharge corresponds to the maximum design flow that will be diverted into the North Canal, the channel will not receive drainage flows.
[3]Excavation Volumes were estimated by Adkins (2022) in the *KDD North Canal Extension Technical Memo.*
[4]None of the flow categories listed in footnote 4 of Figure 506-B7 in the National Watershed Program Manual are applicable. The flows are controlled from an irrigation diversion.

Appendix E

Other Supporting Information

E.1 Intensity Threshold Table

This section presents the intensity threshold table used to quantify effects to resources of concern because of the proposed action.

Table E-1. Intensity Threshold Table for the KDD Infrastructure Modernization Project.[1]

Negligible	Changes in the resource or resource related values would be below or at the level of detection. If detected, the effects on the resource or environment would be considered slight with no perceptible impacts.
Minor	Changes in resource or resource related values would be measurable but small. The effects on the resource or the environment would be localized.
Moderate	Changes in the resource or resource related values would be measurable and apparent. The effects on the resource or the environment would be relatively local.
Major	Changes in resource or resource related values would be measurable and substantial. The effects on the resource or the environment would be regional.

[1]Impact duration definitions:
Temporary: Transitory effects, which only occur over a period of days or months.
Short-term effect: Resource or resource related values recover in fewer than 5 years
Long-term effect: Resource or resource related values take greater than 5 years to recover

E.2 Supporting Information for Cultural Resources

An excerpt of the Cultural Resources Assessment for the Klamath Drainage District, Klamath County, Oregon is included below.

Cultural Resources Assessment for the Klamath Drainage District, Klamath County, Oregon

Prepared for

Farmers Conservation Alliance

Prepared by

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Bureau of Reclamation ARPA Permit #22-KBAO-102

Bureau of Land Management Permit #OR-51125

Parametrix Project Number: 273-876-7001

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APPENDICES

1. INTRODUCTION

The Klamath Drainage District (the applicant) is proposing an irrigation infrastructure modernization project (the project) through the Natural Resources Conservation Service's (NRCS) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). NRCS is serving as the lead federal agency for the project under PL 83-566. As the lead federal agency, NRCS is responsible for compliance with the requirements of Section 106 of the National Historic Preservation Act (NHPA).

The Farmers Conservation Alliance (FCA) retained Parametrix on behalf of the applicant to prepare a cultural resources assessment of the project area to satisfy the requirements of Section 106 of the NHPA. This assessment includes the identification of archaeological and built environment resources located in the project area, evaluation of these resources for listing in the National Register of Historic Places (NRHP), and an assessment of effects to these resources from the proposed project.

Parametrix conducted archaeological and built environment survey of the project area to identify and document cultural resources present within the project area. Archaeological survey identified two archaeological sites – Temporary Site # KL-1 and KL-2 – and one precontact isolate – Temporary # KL-ISO-1. None of the archaeological sites or isolates are located in areas where project-related ground disturbance is proposed. The applicant commits to avoiding the resources, and a 30-foot buffer will be flagged around each site prior to construction to ensure that they are avoided. Built environment survey identified 22 components of the Klamath Drainage District, including nine specific linear resources, five specific structures, and eight feature categories.[1] The 22 components of the Klamath Drainage District irrigation infrastructure were evaluated collectively as a potential sub-historic district, the Klamath Drainage District Irrigation System Historic District, within the Klamath Project, an NRHP-eligible historic district. The Klamath Drainage District Irrigation System Historic District is recommended eligible for listing in the NRHP as contributor to the Klamath Project. Fifteen of the Klamath Drainage District's components are recommended NRHP eligible as contributing resources to the Klamath Drainage District Irrigation System Historic District and the Klamath Project and 7 are recommended as non-contributing resources to the Klamath Drainage District Irrigation System Historic District or the Klamath Project (Section 7.2.1). The project area additionally overlaps with the boundaries of the Lower Klamath National Wildlife Refuge, which is designated as a National Historic Landmark (NHL) and listed in the NRHP (Section 6.3.1). The project is recommended as not resulting in an adverse effect to either the Klamath Drainage District Irrigation System Historic District or Lower Klamath National Wildlife Refuge NHL (Section 8.2.2 and 8.2.3).

1.1 Project Description

The purpose of the proposed project is Watershed Protection, an Authorized Purpose defined in 290-National Watershed Program Manual, Part 500, Subpart A, Section 500.3B. District infrastructure will be improved to reduce operational inefficiencies, prevent the entrainment of fish in District canals and laterals, and improve the ability of the Klamath Drainage District to deliver water to patrons (U.S. Department of Agriculture, NRCS 2022:3). Project activities will include the following:

[1] Feature categories include collections of individually indistinctive and small-scale irrigation-related features that are prevalent throughout the Klamath Drainage District and support the function of the irrigation system, and individually indistinctive transportation access features within the irrigation system.

- Extension of the North Canal by 2,500 feet (0.47 miles) from Fugate Road across California State Highway 161 to connect to the P-1 Lateral, which would deliver water to the Lower Klamath National Wildlife Refuge (LKNWR);
- The replacement of six culverts and installation of five new culverts at five locations along the North Canal's southern alignment to allow increased flow and efficient delivery of water to the LKNWR;
- Installation of fish screens at the Klamath Drainage District's diversions on the Klamath River;
- Installation of a recirculation pipeline going from the outlet of the western-most pump of Pumping Plant E to the Center Canal;
- Replacement of all 12 pumping units of Pumping Plants E, EE, F, and FF with units of a more common voltage and that have variable frequency drives to operate more efficiently and reduce pollutants to the Klamath River that currently exceed Total Maximum Daily Load standards;
- Installation of flow monitoring and control structures (referred to as supervisory control and data acquisition [SCADA]) at five headgate locations on the North Canal, at two headgate locations on the Ady Canal, at the Central Canal headgates and southern terminus, at three locations in the Klamath Straits Drain in the vicinity of Pumping Plants E and EE, and at two locations in the Klamath Straits Drain in the vicinity of Pumping Plants F and FF to improve performance of irrigation water management;
- Installation of flow monitoring equipment at 76 turnouts throughout the Klamath Drainage District.

1.2 Project Location

The project is located within the Klamath Drainage District, a water district of the U.S. Bureau of Reclamation's (Reclamation) Klamath Project. The Klamath Drainage District is located adjacent to the Oregon-California border, south of Klamath Falls, Oregon, as indicated in Figure 1.

1.3 Area of Potential Effects

A project's Area of Potential Effects (APE) is defined in Section 106 of the NHPA as "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties" (36 CFR 800.16.c). Effects may be direct or indirect, with the former including any type of effect (i.e., physical, visual, auditory, etc.) resulting from an "undertaking at the same time and place with no intervening cause," and the latter including any type of effect "caused by the undertaking that is later in time or farther in distance but are still reasonably foreseeable" (Advisory Council on Historic Preservation 2019).

As delineated, the project's APE considers direct effects that are long-term or permanent, including physical and visual effects, as well as effects from construction that are anticipated to be minor and temporary, such as vibration, noise, and fugitive dust. The horizonal extent of the project's APE includes the footprint of the areas and/or structures where the proposed project activities will occur. These limits of construction include areas at or within the Klamath Drainage District's point of diversion on the Klamath River, the North Canal Diversion, the North Canal, the Klamath Straits Drain, and Pumping Plants E, EE, F, and FF, and at SCADA sites in the North Canal, Ady Canal, Central Canal, and Klamath Straits Drain, as well as staging and lay down areas adjacent to where project activities will occur, which

will be accessed via existing access roads within the Klamath Drainage District. The project's APE also includes a 100-foot radial buffer around the limits of construction to account for potential visual effects to significant viewsheds of historic properties resulting from alterations to components of the Klamath Drainage District. The vertical extent of the APE is defined as the maximum depth of project-related ground-disturbing activities as well as the height of project features located in the areas where project-related ground disturbance is proposed. Ground disturbance is not anticipated to extend deeper than eight feet below the ground surface. Reasonably foreseeable effects from the undertaking with potential to occur at a later time or farther distance are not anticipated to occur outside the limits of construction or 100-foot radial buffer. As such, the APE as delineated also considers the potential for indirect effects. In total, the APE is 268 acres and is depicted in Figures 1 and Figure 2.

Portions of the project occur on Reclamation-owned lands. These areas require an Archaeological Resources Protection Act (ARPA) permit in order to perform subsurface archaeological investigations. Parametrix obtained an ARPA permit from Reclamation, Permit #22-KBAO-102, and the permit areas are presented in Figure 3. Portions of the project also occur on Bureau of Land Management (BLM) owned lands. Accessing these areas for archaeological survey requires a fieldwork authorization. Parametrix obtained a fieldwork authorization from BLM, Permit #OR-51125, and the permit areas are presented in Figure 4.

1.4 Personnel

This report was prepared by Corey Lentz, MHP, a Secretary of Interior (SOI) Qualified Architectural Historian; J. Tait Elder, MA, RPA, a SOI Qualified Archaeologist and Principal Investigator, and January Tavel, MHP, a SOI Qualified Architectural Historian. Built environment field survey was conducted by Corey Lentz. Archaeological field survey was conducted by Kainoa Little, MA, RPA, Mathew Sisneros, and Ryan Edwards, BA. Cortney Messer, MGIS, and Kyle Bretherton, BA, contributed figures for the report.

5. RESEARCH AND SURVEY METHODS

The chapter outlines background research sources and the methodology of the archaeological and built environment resource surveys conducted as part of this report.

5.1 Background Research

Parametrix personnel conducted background research through review of online resources and Oregon Heritage (Oregon State Historic Preservation Office [SHPO]) and NPS cultural resource databases. The following databases and online archival collections were reviewed:

- Oregon Archaeological Records Remote Access (OARRA) – OARRA is a GIS-based database of previously recorded archaeological resources and archaeological survey reports.
- Oregon Historic Database – OHSD contains the Oregon Statewide Inventory, the public database of previously recorded built environment properties for which Oregon SHPO has collected physical and/or historical information.
- NPS NRHP NPGallery Database – The NPGallery Database contains digital records for historic properties listed in the NRHP, held on file by the National Archives and Records Administration.
- Nationwide Environmental Title Research (NETR) Historic Aerials – A digital mapping tool for historic aerial photographs. The mapping tool is available at https://www.historicaerials.com/.
- U.S. Geological Survey (USGS) Topographic Map Database – A digital collection of USGS topographic maps. The database is available at https://ngmdb.usgs.gov/topoview/viewer.
- Oregon Institute of Technology (OIT) Klamath Project Annual Project Histories Collection – OIT Klamath Project Annual Project Histories Collection contains digital copies of Reclamation Annual Project History and Operation and Maintenance Reports for the years 1912-1921, 1926-1932, 1934-1943, 1945-1951, 1954-1955, 1957-1958, 1962, and 1964.

5.2 Survey Methods

5.2.1 Archaeological Survey

The purpose of archaeological field investigations for this project was to identify and delineate known and as-yet undocumented archaeological resources in the APE. No artifacts were collected for analysis and curation during the archaeological field investigations. Based on the nature of the proposed project-related ground disturbing activities, the fact that the APE contains sediments with sensitivity for buried archaeological resources, and the presence of precontact and historical archaeological resources outside of the APE but on landforms with comparable depositional context, Parametrix proposed to use two archaeological field methods – pedestrian survey and shovel probes. All archaeological field methods were implemented in accordance with Reclamation, Mid-Pacific Region, General Scope of work for Cultural Resources Investigations in Oregon (Reclamation 2012) and the Oregon SHPO Guidelines for Conducting Field Archaeology in Oregon (Oregon SHPO 2013, 2023).

The APE crosses privately-owned land, Reclamation-owned lands and facilities, and BLM-owned lands. Based on the locations and types of proposed project-related ground disturbing activities within Reclamation and BLM-owned lands, Parametrix obtained permits from these agencies to perform

archaeological survey. These permits include an ARPA permit for subsurface archaeological investigations on Reclamation land (Permit #22-KBAO-102) and a fieldwork authorization to perform pedestrian survey on BLM lands (Permit #OR-51125). The field methods described below are consistent with those presented in the project's ARPA and Fieldwork Authorization permit applications. Permit applications are provided in Appendix A.

5.2.1.1 Pedestrian Survey

Parametrix performed pedestrian survey across the entirety of the APE. Pedestrian survey consisted of archaeologists walking side-by-side, approximately 15 meters apart, across the entire APE in a systematic fashion while carefully inspecting the ground surface. The ground surface was inspected for indicators of human activity – such as midden soil, lithic artifacts, or concentrations of historic-era artifacts. Whenever possible, locations where the subsurface has been exposed by rodent burrows, road cuts, or vegetation disturbances were examined for artifacts or archaeological features. All pedestrian survey transects were mapped via Global Positioning System (GPS).

In instances where surface-exposed archaeological deposits were encountered, Parametrix archaeologists reduced their transect intervals to 5-meters spacing and delineated the margins of the archaeological deposits. Archaeological deposits were considered delineated if no additional artifacts or features were encountered within 30 meters of the next-closest artifact or feature.

Parametrix archaeologists documented field conditions, ground surface visibility, topography and visible geologic features, indicators of ground disturbance, and archaeological deposits in field notes and photographs; and mapped key landmarks and archaeological resources via GPS.

5.2.1.2 Shovel Probes

Parametrix archaeologists excavated shovel probes at locations where project-related ground disturbance is anticipated to result in subsurface ground disturbance greater than 10 centimeters in depth. Shovel probes were excavated at intervals of 20 meters either in a grid pattern or in linear transects depending on the shape and extent of the proposed ground disturbance. Shovel probes were approximately 45 centimeters in diameter and excavated to the maximum anticipated depth of ground disturbance, until Pleistocene-aged or older deposits were encountered, or until impassible conditions were encountered.

All excavated sediments were screened through 0.25-inch mesh. If artifacts were encountered in a shovel probe, all of the remaining sediment from the probe were screened through 0.125-inch mesh. Additionally, four shovel probes were excavated 5 meters away from the discovery in cardinal directions to determine whether the discovery was an archaeological site or an isolate. Upon completion, information relating to each shovel probe's sediments and stratigraphy, contents, and any other relevant observations were collected in field notes. Each shovel probe was photographed and mapped using a GPS unit, and backfilled and any recovered artifacts reburied. The specific depth of reburied artifacts were also recorded in field notes.

5.2.2 Built Environment Survey

Built environment survey was designed and conducted in accordance Oregon SHPO's *Guidance for Historic Resource Surveys in Oregon* and *Guidance for Recording* and *Evaluating Linear Cultural Resources*, including specific guidance for the documentation of irrigation systems (Oregon SHPO 2011, 2013b). A Reconnaissance-Level Historic Property Survey, consisting of photography and field notes, was

conducted October 30-November 1, 2023, to identify and document historic built environment components of the Klamath Drainage District. Documented historic built environment components of the Klamath Drainage District are summarized in *7.2 Built Environment Survey*.

The Klamath Drainage District Irrigation System Historic District was evaluated for listing in the NRHP based on Oregon SHPO's *Guidance for Recording and Evaluating Linear Cultural Resources* (OR SHPO 2013b), which identifies irrigation systems as a type of linear resource. Secondarily, the registration requirements established for individual components of irrigation systems in *Carey and Reclamation Acts Irrigation Projects in Oregon, 1901-1978 Multiple Property Documentation Form* (Hetzel 2016) informed the evaluation of Klamath Drainage District components as contributing resources to Klamath Drainage District Irrigation System Historic District, including the identification of component types and assessment of historic integrity.

Oregon SHPO guidance indicates that irrigation systems can be considered significant under Criterion A if they demonstrate that agricultural land use in a discreet area was made possible by the development of the irrigation system or that the system's development improved agricultural land use to a degree that would not otherwise have occurred. Additionally, this increase in agricultural land use should be demonstrated to have influenced historic patterns of settlement, social organization, and/or the appearance of the landscape in the vicinity of the irrigation system (Oregon SHPO 2013b:9).

Irrigation systems may be considered significant under Criterion B if their development substantially involved individuals significant for activities related to irrigation advocacy, land development, commercial irrigation development, or politics. However, the significance of this individual must be demonstrated to have a direct association with the development of a particular irrigation system and should consider whether other properties may demonstrate this association better. Importantly, if an individual's significance is associated primarily with the design or construction of an irrigation system, this association should be evaluated under Criterion C (Oregon SHPO 2013b:9)

Irrigation systems may be considered significant under Criterion C as an intact collection of engineered components constructed within a defined period that represent either a design approach to overcoming an extraordinary environmental challenge or that consist of unusual or innovative design elements or aesthetic features. Large-scale, federal projects may also be considered significant due to the sheer size of the project and the scale of mobilization required for its construction (Oregon SHPO 2013b:9-10).

Irrigation systems may be considered significant under Criterion D in cases where the system itself "serves as its own primary source of information," is considered to be an "artifact of primary importance," and this information is not otherwise available from documentary sources. As such, the application of this criteria is uncommon and must substantially rely on the physical elements of the system and its integrity (Oregon SHPO 2013b:10).

10. CONCUSION AND RECOMMENDATIONS

10.1 Conclusion

Archaeological survey identified two archaeological sites (Temporary Sites #KL-1 and KL-2) and one archaeological isolate (KL-ISO-1) in the APE. Project-related ground disturbance is not anticipated in or near any of the sites or isolates. As a result, they were documented but not formally evaluated for listing in the NRHP.

Built environment survey identified 22 components of the Klamath Drainage District, including nine specific linear resources, five specific structures, and eight feature categories. These 22 components Klamath Drainage District were evaluated collectively as a potential historic district, the Klamath Drainage District Irrigation System Historic District. Additionally, the APE overlaps with the boundaries of the Lower Klamath National Wildlife Refuge, which is designated as an NHL and listed in the NRHP.

10.2 Recommendations

Based on the information presented in this document, Parametrix recommends a finding of No Adverse Effect to historic properties in the APE, including the Klamath Project historic district, Klamath Drainage District Irrigation System Historic District, and Lower Klamath National Wildlife Refuge NHL.

None of the archaeological sites or isolates identified during the survey were formally evaluated for their NRHP eligibility, because they will not be physically impacted by project-related activities. A 30-foot buffer will be flagged around each site prior to construction to ensure they will be avoided.

Parametrix recommends the Klamath Drainage District Irrigation System Historic District as eligible for listing in the NRHP as a contributing sub-historic district of the NRHP-eligible Klamath Project historic district. Fifteen Klamath Drainage District components are recommended eligible for listing in the NRHP as contributors to the Klamath Project historic district and the Klamath Drainage District Irrigation System Historic District: Ady Intake Channel; North Canal Diversion; Southern Railroad Levee segment; Ady Headworks; Ady Canal; North Canal; Central Canal; West Canal; Laterals; Class I Drains; Klamath Straits Drain; Pumping Plant E; Pumping Plant EE; Pumping Plant F; and Pumping Plant FF. Seven Klamath Drainage District components are recommended as non-contributors to the Klamath Drainage District Irrigation System Historic District: Sublaterals; Class II/Class III Drains; Headgates/Turnouts; Small Scale Pumps; Access roads; Culverts; and Bridges. Parametrix recommends a finding of No Adverse Effect to historic built environment resources in the APE, including the Klamath Drainage District Irrigation System Historic District and Lower Klamath National Wildlife Refuge NHL.

E.2.1 Cultural Resources Consultation Letters

United States Department of Agriculture

Natural Resources Conservation Service

1945 Main St.
Suite 200
Klamath Falls, OR

July 24, 2024
California Office of Historic Preservation
1725 23rd St., Suite 100
Sacramento, CA 95816

Re: Invitation to Participate in Section 106 Consultation for the Klamath Drainage District Modernization Project, Klamath County, Oregon

Dear Michael McGuirt,
I am following up on a letter sent to you by Michael Petrozza, NRCS Oregon State Archaeologist, on January 29, 2024. NRCS invites your participation in Section 106 Consultation, unless you would rather defer to the Oregon SHPO. Nearly all of the APE lies within Klamath County, Oregon, with a 100 ft portion crossing into Siskiyou County, California onto the Lower Klamath NWR.

The Natural Resources Conservation Service (NRCS), Klamath Drainage District (KDD) as the Sponsoring Organization are proposing the Klamath Drainage District Modernization Project (the project) in Klamath County, Oregon. The project is being performed through the NRCS' Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). As a result, the project is considered a federal undertaking and is subject to Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations 36 CFR Part 800. NRCS is serving as the lead federal agency for the project. Other consulting parties include the Oregon SHPO, US Bureau of Reclamation and the US Fish and Wildlife Service as well as the Klamath Tribes and the Modoc Nation. In this letter, NRCS is following up on Section 106 consultation and requests feedback on the project's Area of Potential Effects and whether California SHPO would like to continue as a consulting party. Most of this project lies within the state of Oregon, and the project APE crosses into California approximately 100 feet.

Project Description
The project will make the following improvements to the Klamath Drainage District (KDD): •Screen the North Canal Diversion on the Klamath River and improve access to the potential fish screen site. •Improve the North Canal by extending it 0.47 miles (~2,500 feet) from Fugate Road to California State Highway 161, connecting the North Canal to the P-1 Lateral, adding a point of delivery to the LKNWR. This project action would also include the modification of five road crossings along the North Canal to accommodate an additional flow of 100 cubic feet per second (cfs). •Upgrade the Reclamation F&FF and E&EE pump stations along the KSD to a more common voltage and with variable frequency drives (VFD). •Install a recirculation pipeline going from the outlet of the western-most pump in the E Pump Station to the Center Canal. •Install 14 SCADA12 systems, four of which include automated gates, at 12 locations distributed across the District.

Area of Potential Effects
A project's APE is defined as the geographic area(s) in which an undertaking may directly or indirectly effect the character or use of historic properties (36 CFR 800.16.c). Effects may be direct or indirect, with the former including any type of effect (i.e., physical, visual, auditory, etc.) resulting from an undertaking and the latter including any type of reasonably foreseeable effect caused by the undertaking after its completion or farther in distance. In determining the Project's APE, the APE for direct effects was delineated primarily to account for physical and visual effects, as well as construction-related effects such as vibration, noise, and fugitive dust. The Project's physical APE will be limited to the vertical and horizonal footprint of the areas and/or structures where the proposed project activities

will occur. The project's visual APE includes a 100-foot radial buffer around the physical APE to account for effects on the viewsheds of historic properties resulting from alterations to select components of the Klamath Drainage District. The APE for indirect effects is the same as the APE for direct effects as reasonably foreseeable indirect effects are not anticipated to occur outside of the APE established for direct effects. The APE is shown in the enclosed figure.
Cultural resources studies of the APE have now been performed and the final report is due to us by the end of July. The report will be shared with consulting parties at that time.
If you have any questions or concerns about the project, please contact Rachel Gebauer, NRCS Archaeologist at: rachel.gebauer@usda.gov or 541-887-3511 or Gary Diridoni, NRCS Assistant State Conservationist Water Resources at gary.diridoni@usda.gov or .541-414-3092.

Sincerely,

Rachel LS Gebauer

Rachel Smith Gebauer, M.A., RPA, NRCS Acting State Cultural Resources Specialist
Gary Diridoni, State Watershed Planner
Amy Hendershot, State Resource Conservationist

An Equal Opportunity Provider and Employer

State of California • Natural Resources Agency — Gavin Newsom, *Governor*
DEPARTMENT OF PARKS AND RECREATION — Armando Quintero, *Director*
OFFICE OF HISTORIC PRESERVATION
Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

August 23, 2024

VIA EMAIL — In reply refer to: NRCS_2024_0725_001

Rachel Smith Gebauer, M.A., RPA
Acting State Cultural Resources Specialist
Natural Resources Conservation Service
1945 Main Street, Suite 200
Klamath Falls, OR 97601

Subject: Section 106 Consultation for the Klamath Drainage District Modernization Project, Klamath County, Oregon

Dear Ms. Gebauer:

The State Historic Preservation Officer (SHPO) is in receipt of a consultation letter dated July 24, 2024, from the Natural Resources Conservation Service (NRCS), Klamath Drainage District (KDD) for the above referenced undertaking. The NRCS is initiating consultation with the SHPO to comply with Section 106 of the National Historic Preservation Act of 1966 (as amended) and its implementing regulation at 36 CFR 800. The NRCS is seeking SHPO review on the undertaking's Area of Potential Effects (APE) and whether California SHPO would like to continue as a consulting party given that the majority of the project lies within the state of Oregon, and the project APE crosses into California for approximately 100 feet.

The NRCS KDD is the Sponsoring Organization and is proposing the Klamath Drainage District Modernization Project (undertaking) in Klamath County, Oregon. The project is being performed through the NRCS' Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). As a result, the project is considered a federal undertaking and is subject to Section 106. NRCS is serving as the lead federal agency for the project. Other consulting parties include the Oregon SHPO, US Bureau of Reclamation and the US Fish and Wildlife Service, as well as the Klamath Tribes and the Modoc Nation. Nearly all of the APE lies within Klamath County, Oregon, with a 100 ft portion crossing into Siskiyou County, California onto the Lower Klamath National Wildlife Refuge.

The project will make the following improvements to the Klamath Drainage District (KDD):

- Screen the North Canal Diversion on the Klamath River and improve access to the potential fish screen site.

- Improve the North Canal by extending it 0.47 miles (~2,500 feet) from Fugate Road to California State Highway 161, connecting the North Canal to the P-1 Lateral, adding a point of delivery to the LKNWR. This project action would also include the modification of five road crossings along the North Canal to accommodate an additional flow of 100 cubic feet per second (cfs).
- Upgrade the Reclamation F&FF and E&EE pump stations along the KSD to a more common voltage and with variable frequency drives (VFD).
- Install a recirculation pipeline going from the outlet of the western-most pump in the E Pump Station to the Center Canal.
- Install 14 SCADA12 systems, four of which include automated gates, at 12 locations distributed across the District.

In determining the Project's APE, the APE for direct effects was delineated primarily to account for physical and visual effects, as well as construction-related effects such as vibration, noise, and fugitive dust. The Project's physical APE will be limited to the vertical and horizonal footprint of the areas and/or structures where the proposed project activities will occur. The project's visual APE includes a 100-foot radial buffer around the physical APE to account for effects on the viewsheds of historic properties resulting from alterations to select components of the Klamath Drainage District. The APE for indirect effects is the same as the APE for direct effects as reasonably foreseeable indirect effects are not anticipated to occur outside of the APE established for direct effects.

Cultural resources studies of the APE have been performed and the final report is expected by the end of July. The NRCS will share the report with consulting parties at that time.

Following review of the submittal, I do not object to the APE as defined, and I look forward to continuing consultation with the NRCS on this undertaking.

If you require further information, please contact Robert Fitzgerald, Associate State Archaeologist, at Robert.Fitzgerald@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Oregon State Office
1201 NE Lloyd Blvd. Suite 900
Portland, OR 97232

21 September 2023
Ken Sandusky, Resource and Development Director
Modoc Nation
22 N. Eight Tribes Trail
Miami, OK 74354

Re: Invitation to Participate in Section 106 Consultation for the Klamath Drainage District Modernization Project, Klamath County, Oregon

Dear Mr. Sandusky,

The Farmers Conservation Alliance (FCA) is proposing the Klamath Drainage District Modernization Project (the project) in Klamath County, Oregon. The project is being performed through the Natural Resources Conservation Service's (NRCS) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). As a result, the project is considered a federal undertaking and is subject to Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations 36 CFR Part 800. NRCS is serving as the lead federal agency for the project. In this letter, NRCS initiates Section 106 consultation and requests feedback on the project's Area of Potential Effects.

Project Description

The project will make the following improvements to the Klamath Drainage District (KDD):

- Screen the North Canal Diversion on the Klamath River and improve access to the potential fish screen site.
- Improve the North Canal by extending it 0.47 miles (~2,500 feet) from Fugate Road to California State Highway 161, connecting the North Canal to the P-1 Lateral, adding a point of delivery to the LKNWR. This project action would also include the modification of five road crossings along the North Canal to accommodate an additional flow of 100 cubic feet per second (cfs).
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- Install 14 SCADA12 systems, four of which include automated gates, at 12 locations distributed across the District.

Area of Potential Effects

A project's APE is defined as the geographic area(s) in which an undertaking may directly or indirectly effect the character or use of historic properties (36 CFR 800.16.c). Effects may be direct or indirect, with the former including any type of effect (i.e., physical, visual, auditory, etc.) resulting from an undertaking and the latter including any type of reasonably foreseeable effect caused by the undertaking after its completion or farther in distance. In determining the Project's APE, the APE for direct effects was delineated primarily to account for physical and visual effects, as well as construction-related effects such as vibration, noise, and fugitive dust. The Project's physical APE will be limited to the vertical and horizonal footprint of the areas and/or structures where the proposed project activities will occur. The project's visual APE includes a 100-foot radial buffer around the physical APE to account for effects on the viewsheds of historic properties resulting from alterations to select components of the Klamath Drainage District. The APE for indirect effects is the same as the APE for direct effects as reasonably foreseeable indirect effects are not

anticipated to occur outside of the APE established for direct effects. The APE is shown in the enclosed figure.
Cultural resources studies of the APE will be performed and shared with consulting parties. If the Modoc Nation is interested in becoming a consulting party for the project, please provide a response within 30-days of receipt of this letter with confirmation of your interest and any key contacts to be included in future correspondence. NRCS is also interested in input regarding the identification of any historic properties that may exist within the project's APE that may have religious and cultural significance to the Modoc Nation. If you have any questions or concerns about the project, please contact Michael Petrozza, NRCS Oregon State Archaeologist at Michael.Petrozza@usda.gov or 503.414.3212.

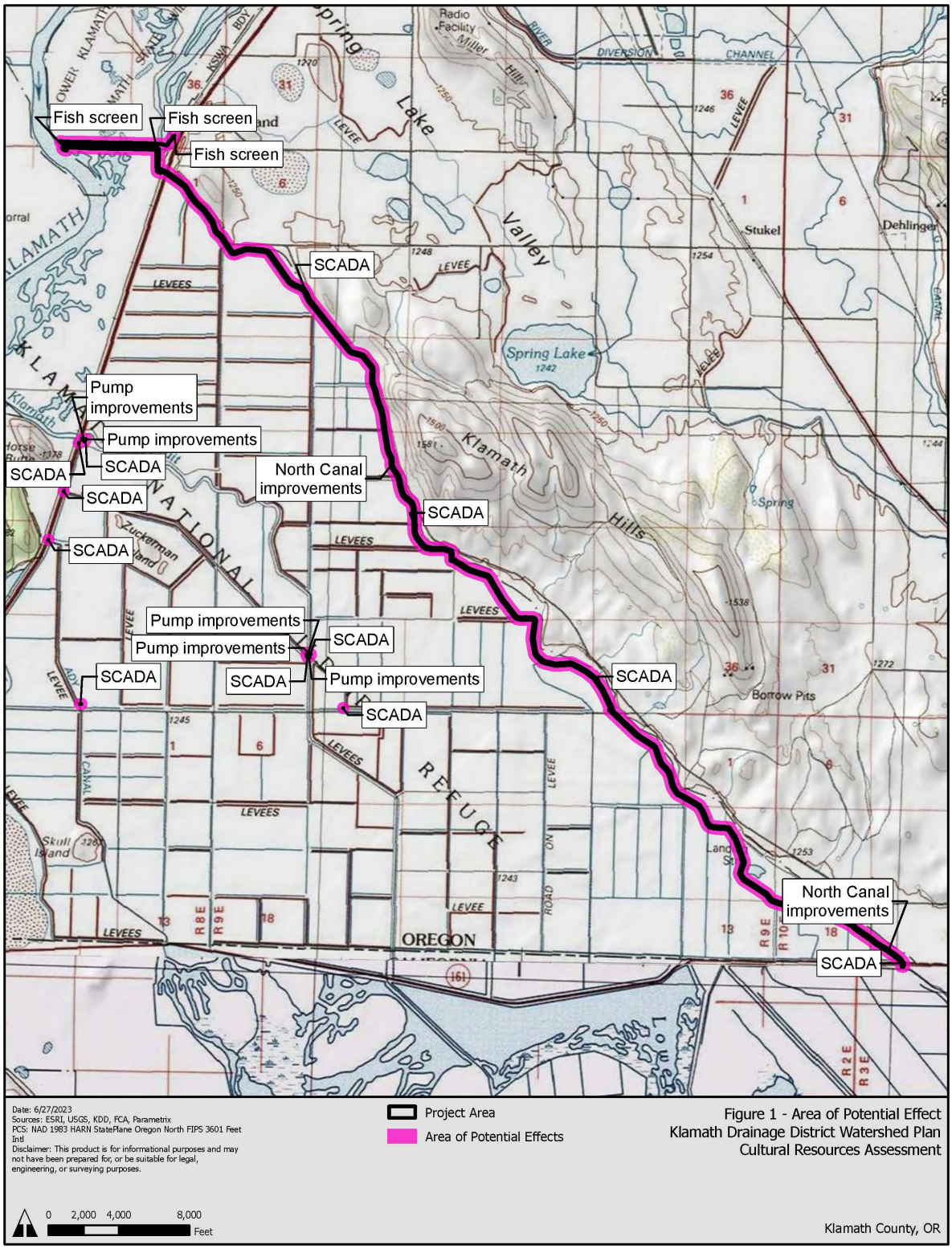
Sincerely,

Michael Petrozza

Michael Petrozza
State Cultural Resources Specialist
USDA NRCS
503.414.3212
Michael.Petrozza@usda.gov

cc:
Gary Diridoni, State Watershed Planner
Amy Hendershot, State Resource Conservationist
Ken Sandusky, Resource and Development Director Modoc Nation
Troy L. LittleAxe, Asst. Tribal Adminstrator Modoc Nation

Enclosure: Area of Potential Effect Figure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LEVEES
Project Area
Area of Potential Effects
Date: 6/27/2023
Sources: ESRI, USGS, KDD, FCA, Parametrix
PCS: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Disclaimer: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes.
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Figure 1 - Area of Potential Effect
Klamath Drainage District Watershed Plan
Cultural Resources Assessment
Klamath County, OR

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Oregon State Office
1201 NE Lloyd Blvd. Suite 900
Portland, OR 97232

21 September 2023
Les Anderson, Culture and Heritage Director
Klamath Tribes Culture & Heritage Department
P.O. Box 436
501 Chiloquin Blvd.
Chiloquin, OR 97624

Re: Invitation to Participate in Section 106 Consultation for the Klamath Drainage District Modernization Project, Klamath County, Oregon

Dear Mr. Anderson,

The Farmers Conservation Alliance (FCA) is proposing the Klamath Drainage District Modernization Project (the project) in Klamath County, Oregon. The project is being performed through the Natural Resources Conservation Service's (NRCS) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). As a result, the project is considered a federal undertaking and is subject to Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations 36 CFR Part 800. NRCS is serving as the lead federal agency for the project. In this letter, NRCS initiates Section 106 consultation and requests feedback on the project's Area of Potential Effects.

Project Description

The project will make the following improvements to the Klamath Drainage District (KDD):

- Screen the North Canal Diversion on the Klamath River and improve access to the potential fish screen site.
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anticipated to occur outside of the APE established for direct effects. The APE is shown in the enclosed figure.
Cultural resources studies of the APE will be performed and shared with consulting parties. If the Klamath Tribes are interested in becoming a consulting party for the project, please provide a response within 30-days of receipt of this letter with confirmation of your interest and any key contacts to be included in future correspondence. NRCS is also interested in input regarding the identification of any historic properties that may exist within the project's APE that may have religious and cultural significance to the Klamath Tribes. If you have any questions or concerns about the project, please contact Michael Petrozza, NRCS Oregon State Archaeologist at Michael.Petrozza@usda.gov or 503.414.3212.

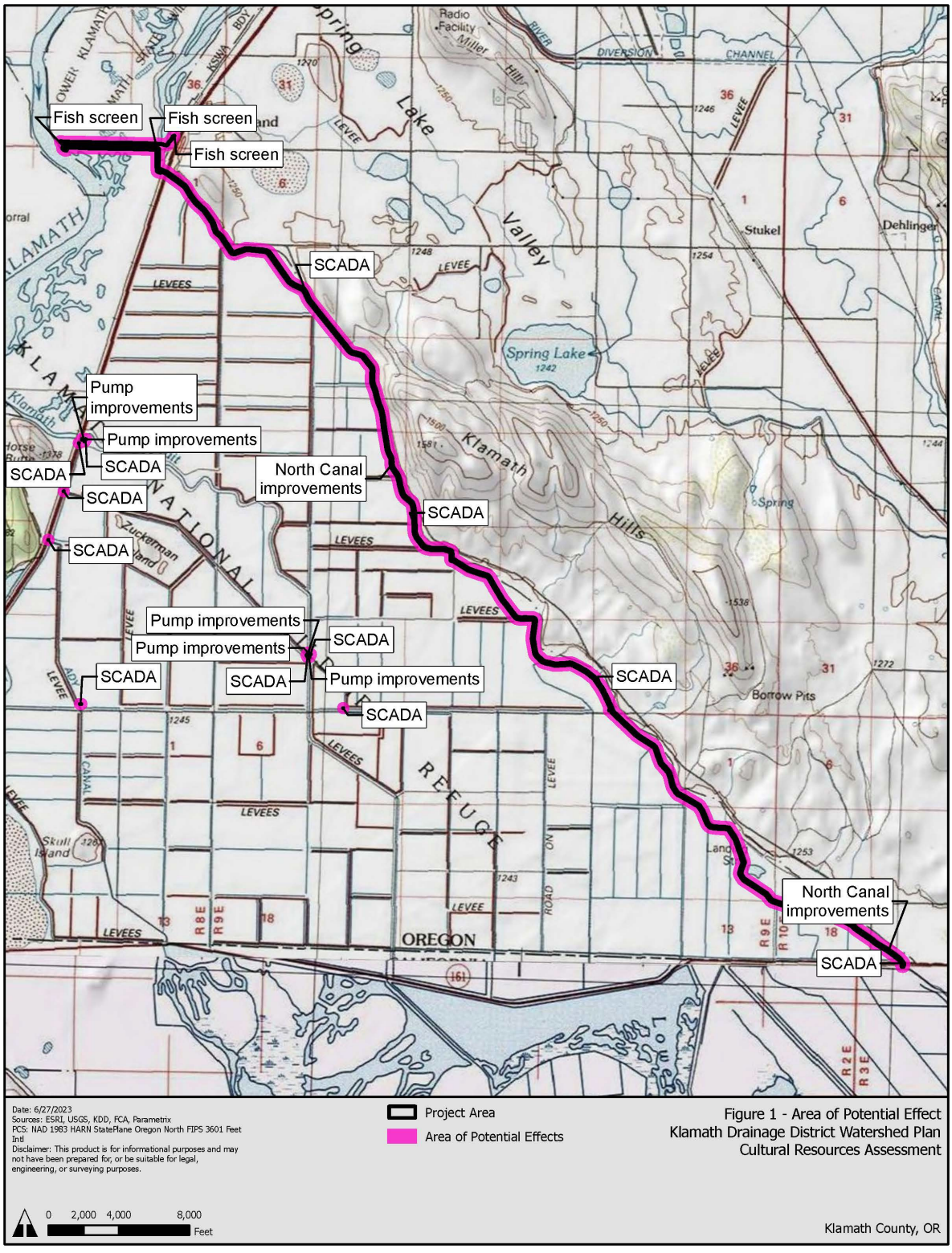
Sincerely,

Michael Petrozza

Michael Petrozza
State Cultural Resources Specialist
USDA NRCS
503.414.3212
Michael.Petrozza@usda.gov

cc:
Gary Diridoni, State Watershed Planner
Amy Hendershot, State Resource Conservationist
Les Anderson, Cultural Resources Coordinator Klamath Tribes

Enclosure: Area of Potential Effect Figure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Cultural Resources Assessment
Klamath County, OR

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Oregon State Office
1201 NE Lloyd Blvd. Suite 900
Portland, OR 97232

9 September 2024
Tracy Kennedy, Chair
100 Pasigo Street
Burns, OR 97720

Re: Invitation to Participate in Section 106 Consultation for the Klamath Drainage District Modernization Project, Klamath County, Oregon

Dear Tracy Kennedy,

The Farmers Conservation Alliance (FCA) is proposing the Klamath Drainage District Modernization Project (the project) in Klamath County, Oregon. The project is being performed through the Natural Resources Conservation Service's (NRCS) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). As a result, the project is considered a federal undertaking and is subject to Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations 36 CFR Part 800. NRCS is serving as the lead federal agency for the project. In this letter, NRCS initiates Section 106 consultation and requests feedback on the project's Area of Potential Effects.

Project Description

The project will make the following improvements to the Klamath Drainage District (KDD):

- Screen the North Canal Diversion on the Klamath River and improve access to the potential fish screen site.
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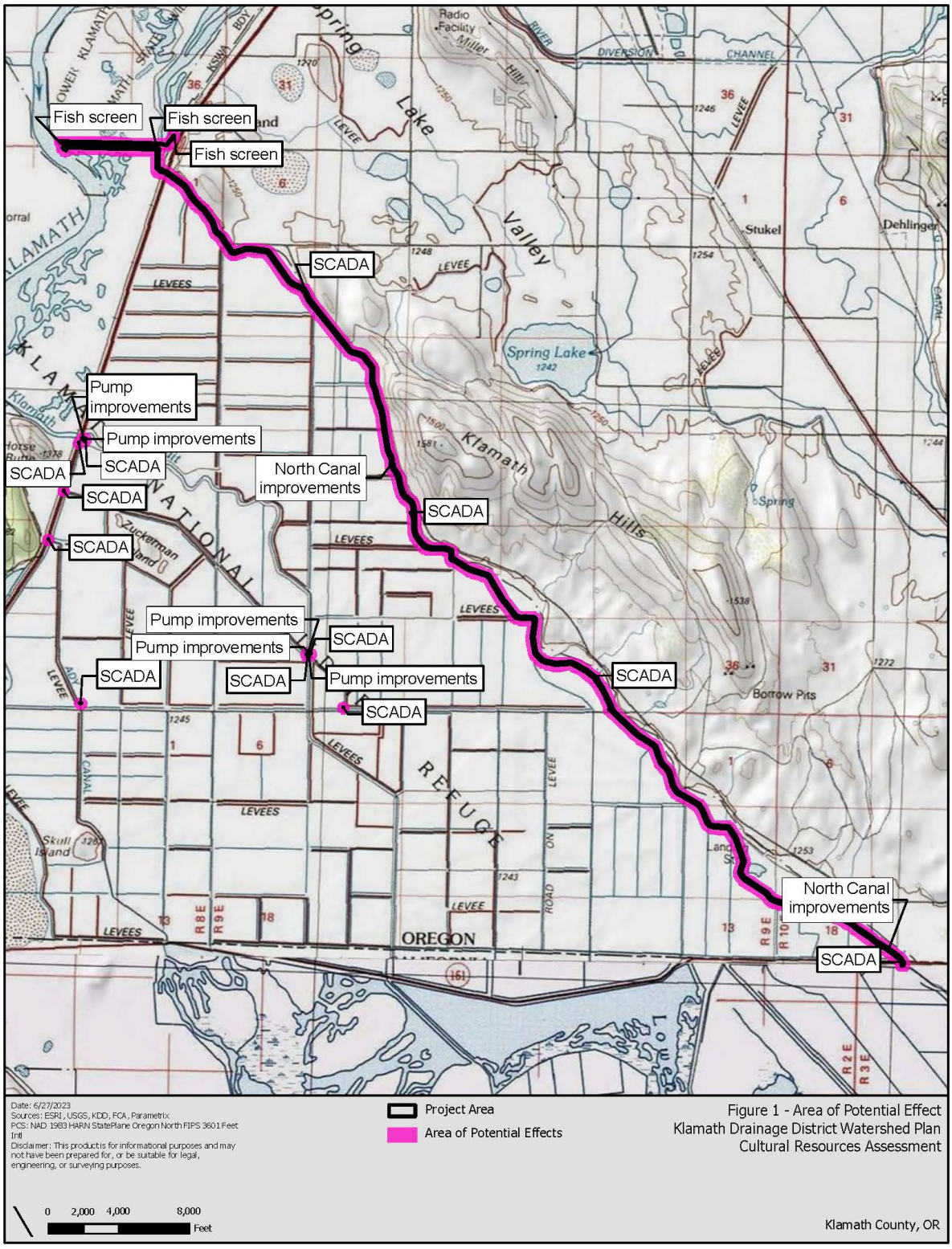
anticipated to occur outside of the APE established for direct effects. The APE is shown in the enclosed figure.
Cultural resources studies of the APE will be performed and shared with consulting parties. If the Burns Paiute Tribe is interested in becoming a consulting party for the project, please provide a response within 30-days of receipt of this letter with confirmation of your interest and any key contacts to be included in future correspondence. NRCS is also interested in input regarding the identification of any historic properties that may exist within the project's APE that may have religious and cultural significance to the Burns Paiute Tribe. If you have any questions or concerns about the project, please contact Rachel Gebauer, NRCS Oregon Acting State Archaeologist at rachel.gebauer@usda.gov or 541.887.3511.

Sincerely,

Rachel LS Gebauer

Rachel Gebauer
Acting State Cultural Resources Specialist
USDA NRCS
541.887.3511
rachel.gebauer@usda.gov

cc:
Gary Diridoni, State Watershed Planner
Amy Hendershot, State Resource Conservationist
Enclosure: Area of Potential Effect Figure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Klamath County, OR

United States Department of Agriculture

Natural Resources Conservation Service

1201 NE Lloyd Blvd.
Suite 900
Portland, OR 97232
503-414-3200

October 11, 2024

Jason Fenton
Burns Paiute Tribe
EPA Office
71210B Foley Drive
Burns, OR 97720

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Jason Fenton,

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), in cooperation with Klamath Drainage District (KDD or District) as the project sponsor and U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service as cooperating agencies is proposing to partially fund the Klamath Drainage District Infrastructure Modernization Project (Project) through the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566). The Project is in Klamath County, Oregon, and Siskiyou County, California.

The purpose of the proposed Project is to reduce District operational efficiencies affecting water quality and water quantity and improve the ability of the District to deliver the amount of water patrons need at the time they need it. Water shortages due to drought and operational inefficiencies have resulted in farmers being forced to fallow thousands of acres of high-value farmland. The unscreened diversions from the Klamath River risk entraining anadromous fish species which will be present in these reaches with the removal of the four Klamath River dams. The Klamath Straits Drain, the main discharge from the U.S. Bureau of Reclamation Klamath Project to the Klamath River, has been identified as a non-point source of pollution. Modernizing strategic sections of the KDD system would reduce potential entrainment of fish, improve water quality, address water shortages by recirculating irrigation water, and address delivery and operational efficiencies by more efficiently managing resources throughout the District.

A Draft Watershed Plan-Environmental Assessment (Draft Plan-EA) has been prepared for the Project and is now available for public review and comment. The Draft Plan-EA was prepared under the authority of PL 83-566 and in accordance with section 102(2)(c) of the National Environmental Policy Act of 1989 (PL 91-190).

We are requesting your review of the Draft Plan-EA and invite you to attend an **in-person public meeting**. Please visit watershedplans.org/Klamath-dd for the date, time, and location of the meeting and to review and download the Plan-EA.

Comments on the Draft Plan-EA may be submitted any time during the public comment period starting **October 11, 2024** and ending on **November 15, 2024**. Comments may be emailed to klamathdd.comments@gmail.com; submitted online at watershedplans.org/Klamath-dd; left as a voice message at the Farmers Conservation

Alliance office at (541) 716-6085; or mailed to: Farmers Conservation Alliance, Attn: KDD Plan, 102 State Street, Hood River, OR, 97031.

For additional information regarding the proposed Project, please contact Gary Diridoni, Assistant State Conservationist for Water Resources at USDA, NRCS, 1201 NE Lloyd Blvd, Suite 900, Portland, Oregon, 97232; by phone at (503) 414-3092; or email at gary.diridoni@usda.gov.

Sincerely,

Greg Becker
State Conservationist

Enclosure:

Notice of Availability of Draft Watershed Plan-Environmental Assessment and Public Meeting for Klamath Drainage District Infrastructure Modernization Project.

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Rachel Gebauer, State Archaeologist
1945 Main St., Suite 200
Klamath Falls, Oregon 97601

Diane Teeman, Cultural and Heritage Director
Burns Paiute
100 Pasigo Street
Burns, Oregon 97720

January 27, 2025

Subject: Cultural Resources Assessment for the Klamath Drainage District, Klamath County, Oregon

Dear Diane Teeman,

NRCS Oregon proposes to provide federal funding to the Klamath Drainage District in Klamath County, Oregon, for infrastructure modernization to increase operational and water delivery efficiency. The project is being performed through the NRCS' Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). This undertaking is subject to the Section 106 of the National Historic Preservation Act (NHPA), as amended, and its implementing regulations (36CFR Part 800) and also subject to Section 110(f) of the NHPA (36 CFR 800.10). NRCS is serving as the lead federal agency for the project. This letter is a follow up to our Initial Consultation request on September 9, 2024 and provides documentation of a survey for cultural resources within the Area of Potential Effect.

Proposed Undertaking

The project proposes to make the following improvements to the Klamath Drainage District (KDD): •Screen the North Canal Diversion on the Klamath River and improve access to the potential fish screen site. •Improve the North Canal by extending it 0.47 miles (~2,500 feet) from Fugate Road to California State Highway 161, connecting the North Canal to the P-1 Lateral, adding a point of delivery to the Lower Klamath NWR. This project action would also include the modification of five road crossings along the North Canal to accommodate an additional flow of 100 cubic feet per second (cfs). •Upgrade the Reclamation F&FF and E&EE pump stations along the KSD to a more common voltage and with variable frequency drives (VFD). •Install a recirculation pipeline going from the outlet of the western-most pump in the E Pump Station to the Center Canal. •Install 14 SCADA12 systems, four of which include automated gates, at 12 locations distributed across the District.

The enclosed report includes the identification of archaeological and built environment resources located in the project area, evaluation of these resources for listing in the National Register of Historic Places

(NRHP), and an assessment of effects to these resources from the proposed project. Parametrix conducted archaeological and built environment survey of the project area to identify and document cultural resources present within the project area. Archaeological survey identified two archaeological sites – Temporary Site # KL-1 and KL-2 – and one precontact isolate – Temporary # KLISO-1. None of the archaeological sites or isolates are located in areas where project-related ground disturbance is proposed. Built environment survey identified 22 components of the Klamath Drainage District, including nine specific linear resources, five specific structures, and eight feature categories.1 The 22 components of the Klamath Drainage District irrigation infrastructure were evaluated collectively as a potential sub-historic district, the Klamath Drainage District Irrigation System Historic District, within the Klamath Project, an NRHP-eligible historic
district.

Determinations of Eligibility and Effects

The Klamath Drainage District Irrigation System Historic District is **recommended eligible for listing in the NRHP as contributor to the Klamath Project**. Fifteen of the Klamath Drainage District's **components are recommended NRHP eligible as contributing resources** to the Klamath Drainage District Irrigation System Historic District and the Klamath Project and seven are recommended as non-contributing resources to the Klamath Drainage District Irrigation System Historic District or the Klamath Project. The project area additionally overlaps with the boundaries of the Lower Klamath National Wildlife Refuge, which is designated as a National Historic Landmark (NHL) and listed in the NRHP. The project is recommended as **not resulting in an adverse effect** to either the Klamath Drainage District Irrigation System Historic District or Lower Klamath National Wildlife Refuge NHL.

Attached you will find materials to support our present consultation effort, including:

- A full archaeological report (Cultural Resources Assessment for the Klamath Drainage District, Klamath County, Oregon)

If you have any questions, please let me know and I will be happy to address them.

Sincerely,

Rachel LS Gebauer

Rachel Smith Gebauer, M.A., RPA,
NRCS Oregon State Cultural Resources Specialist

cc. Gary Diridoni, NRCS Oregon State Watersheds Planner

Natural Resources Conservation Service
USDA is an equal opportunity provider, employer, and lender.

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Oregon State Office
1201 NE Lloyd Blvd. Suite 900
Portland, OR 97232

9 September 2024
Carla Keene, Chair
Cow Creek Band of Umpqua Indians
2371 NE Stephens St., Suite 100
Roseburg, OR 97470

Re: Invitation to Participate in Section 106 Consultation for the Klamath Drainage District Modernization Project, Klamath County, Oregon

Dear Ms. Keene,

The Farmers Conservation Alliance (FCA) is proposing the Klamath Drainage District Modernization Project (the project) in Klamath County, Oregon. The project is being performed through the Natural Resources Conservation Service's (NRCS) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). As a result, the project is considered a federal undertaking and is subject to Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations 36 CFR Part 800. NRCS is serving as the lead federal agency for the project. In this letter, NRCS initiates Section 106 consultation and requests feedback on the project's Area of Potential Effects.

Project Description

The project will make the following improvements to the Klamath Drainage District (KDD):

- Screen the North Canal Diversion on the Klamath River and improve access to the potential fish screen site.
- Improve the North Canal by extending it 0.47 miles (~2,500 feet) from Fugate Road to California State Highway 161, connecting the North Canal to the P-1 Lateral, adding a point of delivery to the LKNWR. This project action would also include the modification of five road crossings along the North Canal to accommodate an additional flow of 100 cubic feet per second (cfs).
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- Install a recirculation pipeline going from the outlet of the western-most pump in the E Pump Station to the Center Canal.
- Install 14 SCADA12 systems, four of which include automated gates, at 12 locations distributed across the District.

Area of Potential Effects

A project's APE is defined as the geographic area(s) in which an undertaking may directly or indirectly effect the character or use of historic properties (36 CFR 800.16.c). Effects may be direct or indirect, with the former including any type of effect (i.e., physical, visual, auditory, etc.) resulting from an undertaking and the latter including any type of reasonably foreseeable effect caused by the undertaking after its completion or farther in distance. In determining the Project's APE, the APE for direct effects was delineated primarily to account for physical and visual effects, as well as construction-related effects such as vibration, noise, and fugitive dust. The Project's physical APE will be limited to the vertical and horizonal footprint of the areas and/or structures where the proposed project activities will occur. The project's visual APE includes a 100-foot radial buffer around the physical APE to account for effects on the viewsheds of historic properties resulting from alterations to select components of the Klamath Drainage District. The APE for indirect effects is the same as the APE for direct effects as reasonably foreseeable indirect effects are not

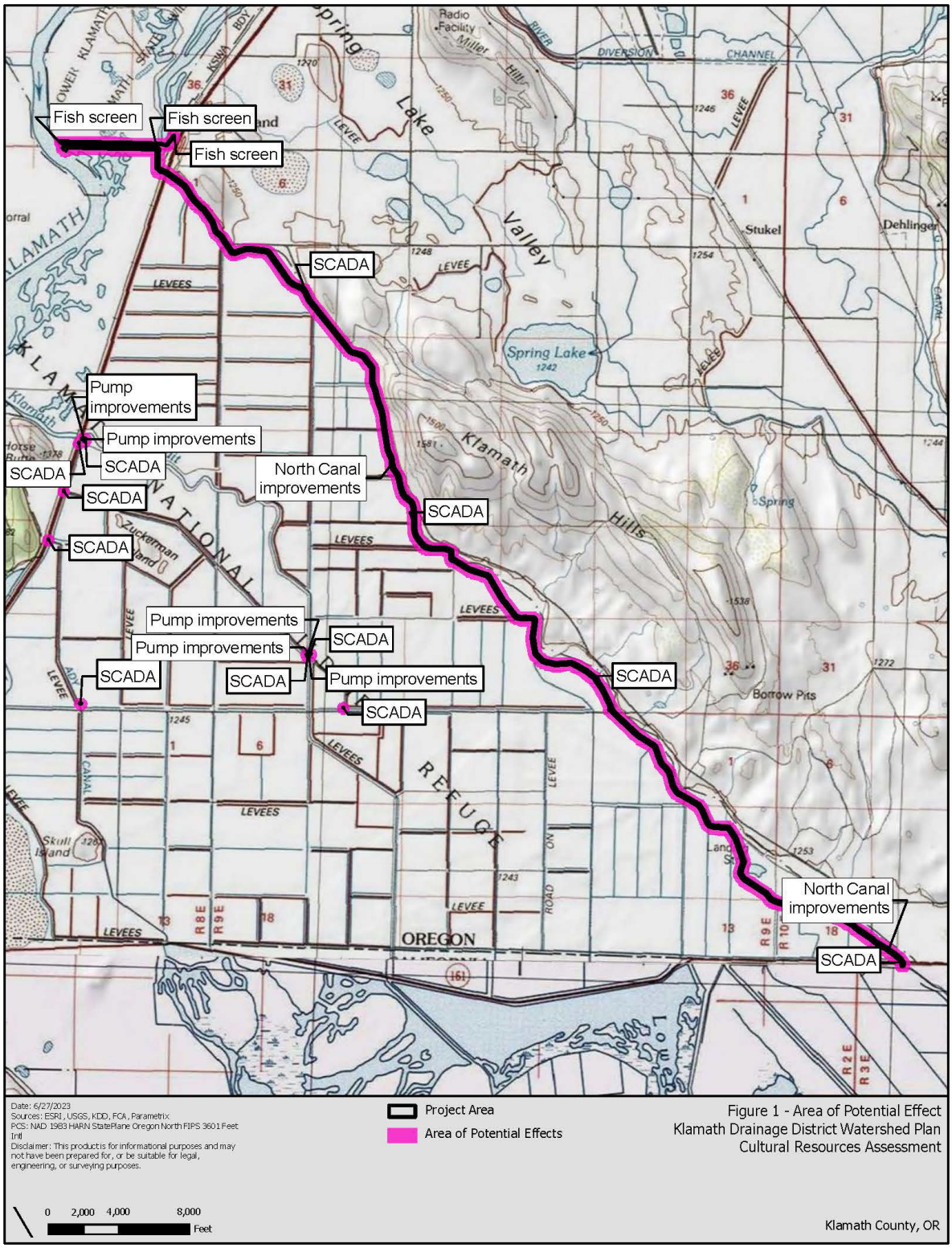
anticipated to occur outside of the APE established for direct effects. The APE is shown in the enclosed figure.
Cultural resources studies of the APE will be performed and shared with consulting parties. If the Cow Creek Band of Umpqua Indians is interested in becoming a consulting party for the project, please provide a response within 30-days of receipt of this letter with confirmation of your interest and any key contacts to be included in future correspondence. NRCS is also interested in input regarding the identification of any historic properties that may exist within the project's APE that may have religious and cultural significance to the Cow Creek Band of the Umpqua Indians. If you have any questions or concerns about the project, please contact Rachel Gebauer, NRCS Oregon Acting State Archaeologist at rachel.gebauer@usda.gov or 541.887.3511.

Sincerely,

Rachel LS Gebauer

Rachel Gebauer
Acting State Cultural Resources Specialist
USDA NRCS
541.887.3511
rachel.gebauer@usda.gov

cc:
Gary Diridoni, State Watershed Planner
Amy Hendershot, State Resource Conservationist
Enclosure: Area of Potential Effect Figure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USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Oregon State Office
1201 NE Lloyd Blvd. Suite 900
Portland, OR 97232

9 September 2024
Jonathan W. Smith Sr., Chair
Confederated Tribes of the Warm Springs Reservation of Oregon
1233 Veterans Way
P.O.Box C
Warm Springs, OR 97761

Re: Invitation to Participate in Section 106 Consultation for the Klamath Drainage District Modernization Project, Klamath County, Oregon

Dear Chairman Smith,

The Farmers Conservation Alliance (FCA) is proposing the Klamath Drainage District Modernization Project (the project) in Klamath County, Oregon. The project is being performed through the Natural Resources Conservation Service's (NRCS) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). As a result, the project is considered a federal undertaking and is subject to Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations 36 CFR Part 800. NRCS is serving as the lead federal agency for the project. In this letter, NRCS initiates Section 106 consultation and requests feedback on the project's Area of Potential Effects.

Project Description

The project will make the following improvements to the Klamath Drainage District (KDD):

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anticipated to occur outside of the APE established for direct effects. The APE is shown in the enclosed figure.
Cultural resources studies of the APE will be performed and shared with consulting parties. If the Confederated Tribes of the Warm Springs Reservation is interested in becoming a consulting party for the project, please provide a response within 30-days of receipt of this letter with confirmation of your interest and any key contacts to be included in future correspondence. NRCS is also interested in input regarding the identification of any historic properties that may exist within the project's APE that may have religious and cultural significance to the Confederated Tribes of the Warm Springs Reservation. If you have any questions or concerns about the project, please contact Rachel Gebauer, NRCS Oregon Acting State Archaeologist at rachel.gebauer@usda.gov or 541.887.3511.

Sincerely,

Rachel LS Gebauer

Rachel Gebauer
Acting State Cultural Resources Specialist
USDA NRCS
541.887.3511
rachel.gebauer@usda.gov

cc:
Gary Diridoni, State Watershed Planner
Amy Hendershot, State Resource Conservationist
Enclosure: Area of Potential Effect Figure

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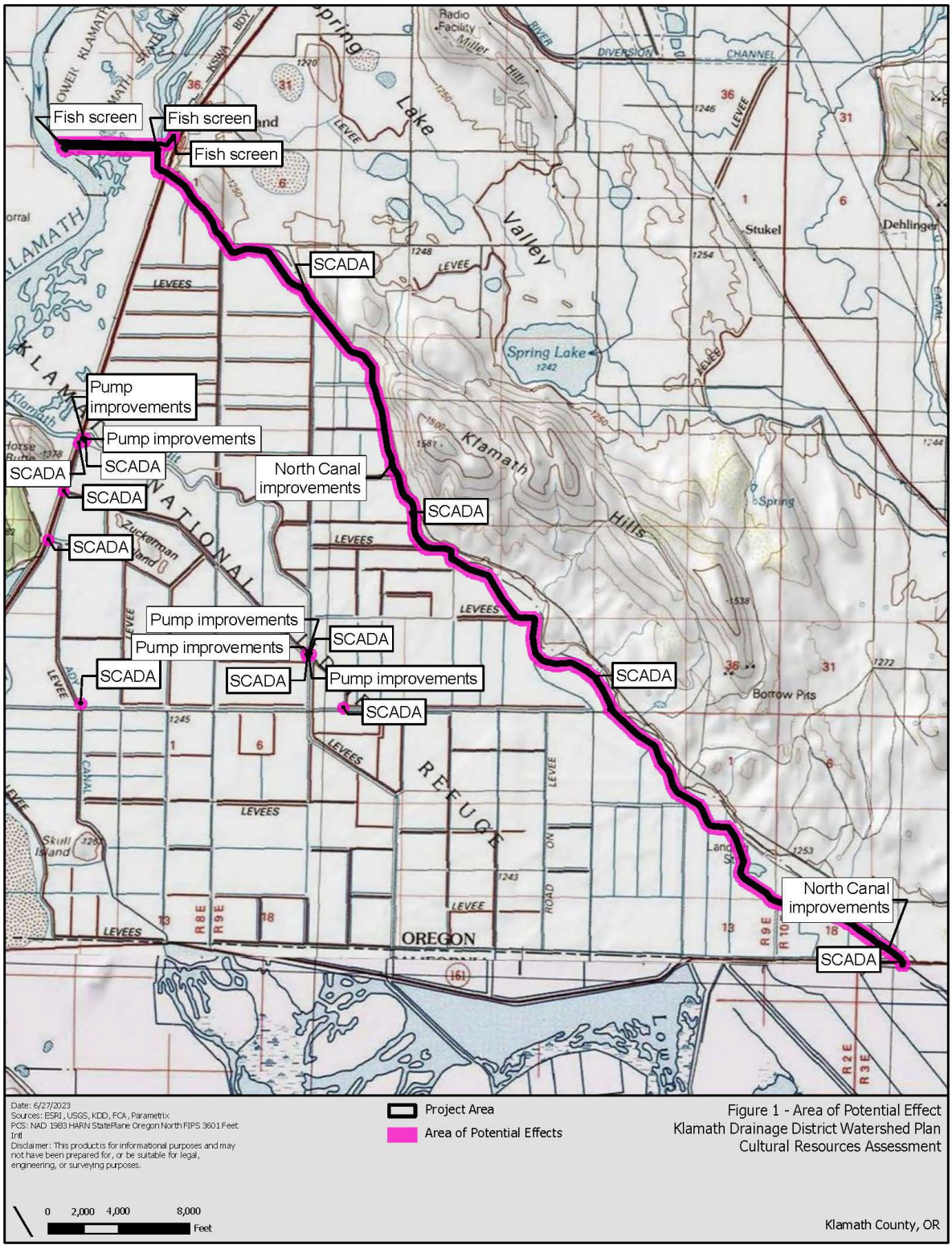
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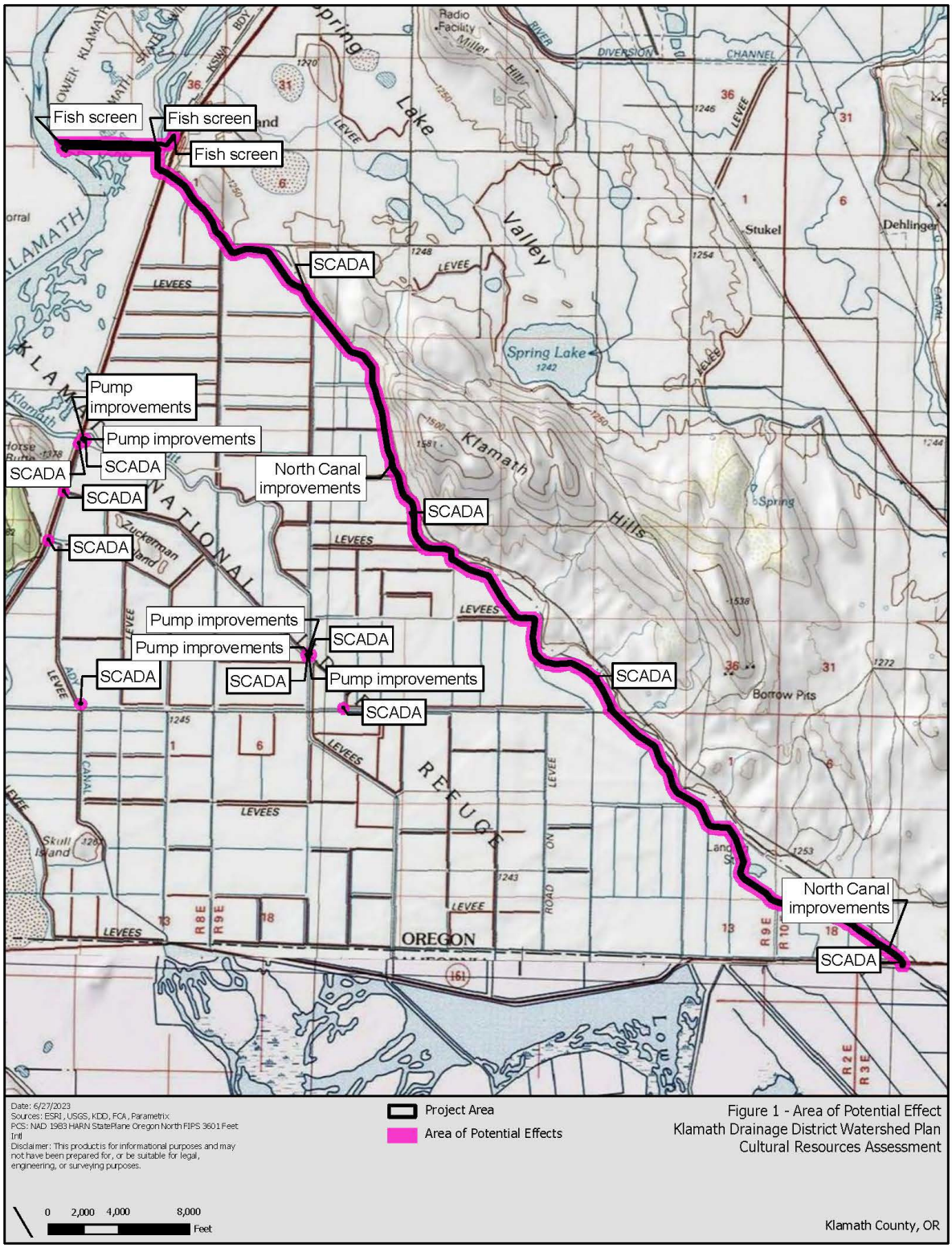
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USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Oregon State Office
1201 NE Lloyd Blvd. Suite 900
Portland, OR 97232

9 September 2024
Kevin Townsend, Chair
P.O. Box 129
130 Me Thee UH Road
Fort Bidwell, CA 96112

Re: Invitation to Participate in Section 106 Consultation for the Klamath Drainage District Modernization Project, Klamath County, Oregon

Dear Chairman Townsend,

The Farmers Conservation Alliance (FCA) is proposing the Klamath Drainage District Modernization Project (the project) in Klamath County, Oregon. The project is being performed through the Natural Resources Conservation Service's (NRCS) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). As a result, the project is considered a federal undertaking and is subject to Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations 36 CFR Part 800. NRCS is serving as the lead federal agency for the project. In this letter, NRCS initiates Section 106 consultation and requests feedback on the project's Area of Potential Effects.

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anticipated to occur outside of the APE established for direct effects. The APE is shown in the enclosed figure.
Cultural resources studies of the APE will be performed and shared with consulting parties. If the Fort Bidwell Indian Community is interested in becoming a consulting party for the project, please provide a response within 30-days of receipt of this letter with confirmation of your interest and any key contacts to be included in future correspondence. NRCS is also interested in input regarding the identification of any historic properties that may exist within the project's APE that may have religious and cultural significance to Fort Bidwell Indian Community. If you have any questions or concerns about the project, please contact Rachel Gebauer, NRCS Oregon Acting State Archaeologist at rachel.gebauer@usda.gov or 541.887.3511.

Sincerely,

Rachel LS Gebauer

Rachel Gebauer
Acting State Cultural Resources Specialist
USDA NRCS
541.887.3511
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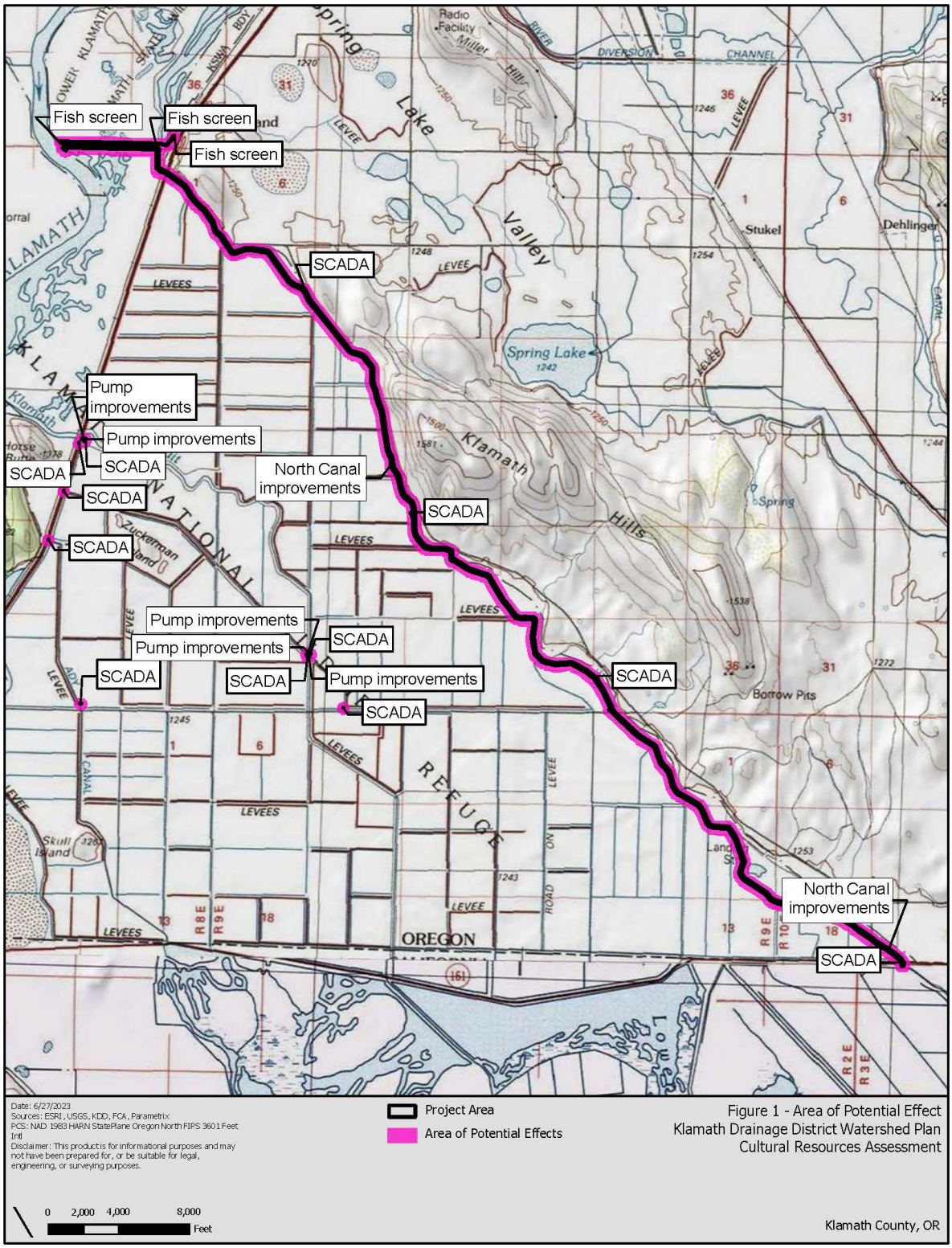
Gary Diridoni, State Watershed Planner
Amy Hendershot, State Resource Conservationist
Enclosure: Area of Potential Effect Figure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Cultural Resources Assessment
Klamath County, OR

United States Department of Agriculture

Natural Resources Conservation Service

1201 NE Lloyd Blvd.
Suite 900
Portland, OR 97232
503-414-3200

October 11, 2024

Chairman Joe Davis
Hoopa Valley Tribe
11860 State Hwy 96
PO Box 1348
Hoopa, CA 95546

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Chairman Davis,

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), in cooperation with Klamath Drainage District (KDD or District) as the project sponsor and U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service as cooperating agencies is proposing to partially fund the Klamath Drainage District Infrastructure Modernization Project (Project) through the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566). The Project is in Klamath County, Oregon, and Siskiyou County, California.

The purpose of the proposed Project is to reduce District operational efficiencies affecting water quality and water quantity and improve the ability of the District to deliver the amount of water patrons need at the time they need it. Water shortages due to drought and operational inefficiencies have resulted in farmers being forced to fallow thousands of acres of high-value farmland. The unscreened diversions from the Klamath River risk entraining anadromous fish species which will be present in these reaches with the removal of the four Klamath River dams. The Klamath Straits Drain, the main discharge from the U.S. Bureau of Reclamation Klamath Project to the Klamath River, has been identified as a non-point source of pollution. Modernizing strategic sections of the KDD system would reduce potential entrainment of fish, improve water quality, address water shortages by recirculating irrigation water, and address delivery and operational efficiencies by more efficiently managing resources throughout the District.

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We are requesting your review of the Draft Plan-EA and invite you to attend an **in-person public meeting**. Please visit watershedplans.org/Klamath-dd for the date, time, and location of the meeting and to review and download the Plan-EA.

Comments on the Draft Plan-EA may be submitted any time during the public comment period starting **October 11, 2024** and ending on **November 15, 2024**. Comments may be emailed to klamathdd.comments@gmail.com; submitted online at watershedplans.org/Klamath-dd; left as a voice message at the Farmers Conservation

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Alliance office at (541) 716-6085; or mailed to: Farmers Conservation Alliance, Attn: KDD Plan, 102 State Street, Hood River, OR, 97031.

For additional information regarding the proposed Project, please contact Gary Diridoni, Assistant State Conservationist for Water Resources at USDA, NRCS, 1201 NE Lloyd Blvd, Suite 900, Portland, Oregon, 97232; by phone at (503) 414-3092; or email at gary.diridoni@usda.gov.

Sincerely,

Greg Becker
State Conservationist

Enclosure:

Notice of Availability of Draft Watershed Plan-Environmental Assessment and Public Meeting for Klamath Drainage District Infrastructure Modernization Project.

United States Department of Agriculture

Natural Resources Conservation Service

1201 NE Lloyd Blvd.
Suite 900
Portland, OR 97232
503-414-3200

October 11, 2024

Chairperson Carla Keene
Cow Creek Band of Umpqua Tribe of Indians
2371 NE Stephens Street
Suite 100
Roseburg, OR. 97470

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Chairperson Keene,

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), in cooperation with Klamath Drainage District (KDD or District) as the project sponsor and U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service as cooperating agencies is proposing to partially fund the Klamath Drainage District Infrastructure Modernization Project (Project) through the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566). The Project is in Klamath County, Oregon, and Siskiyou County, California.

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State Conservationist

Enclosure:

Notice of Availability of Draft Watershed Plan-Environmental Assessment and Public Meeting for Klamath Drainage District Infrastructure Modernization Project.

United States Department of Agriculture

Natural Resources Conservation Service

1201 NE Lloyd Blvd.
Suite 900
Portland, OR 97232
503-414-3200

October 11, 2024

Chairperson Maryann McGovran
Fort Bidwell Indian Community
3053 Freeport Blvd., Suite 154
Sacramento, CA 95818

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Chairperson McGovran,

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), in cooperation with Klamath Drainage District (KDD or District) as the project sponsor and U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service as cooperating agencies is proposing to partially fund the Klamath Drainage District Infrastructure Modernization Project (Project) through the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566). The Project is in Klamath County, Oregon, and Siskiyou County, California.

The purpose of the proposed Project is to reduce District operational efficiencies affecting water quality and water quantity and improve the ability of the District to deliver the amount of water patrons need at the time they need it. Water shortages due to drought and operational inefficiencies have resulted in farmers being forced to fallow thousands of acres of high-value farmland. The unscreened diversions from the Klamath River risk entraining anadromous fish species which will be present in these reaches with the removal of the four Klamath River dams. The Klamath Straits Drain, the main discharge from the U.S. Bureau of Reclamation Klamath Project to the Klamath River, has been identified as a non-point source of pollution. Modernizing strategic sections of the KDD system would reduce potential entrainment of fish, improve water quality, address water shortages by recirculating irrigation water, and address delivery and operational efficiencies by more efficiently managing resources throughout the District.

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We are requesting your review of the Draft Plan-EA and invite you to attend an **in-person public meeting**. Please visit watershedplans.org/Klamath-dd for the date, time, and location of the meeting and to review and download the Plan-EA.

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Alliance office at (541) 716-6085; or mailed to: Farmers Conservation Alliance, Attn: KDD Plan, 102 State Street, Hood River, OR, 97031.

For additional information regarding the proposed Project, please contact Gary Diridoni, Assistant State Conservationist for Water Resources at USDA, NRCS, 1201 NE Lloyd Blvd, Suite 900, Portland, Oregon, 97232; by phone at (503) 414-3092; or email at gary.diridoni@usda.gov.

Sincerely,

Greg Becker
State Conservationist

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October 11, 2024

Wasco Chief Jefferson Greene
Confederated Tribes of Warm Springs
1233 Veterans Street
PO Box C
Warm Springs, OR 97761

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Chief Greene,

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), in cooperation with Klamath Drainage District (KDD or District) as the project sponsor and U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service as cooperating agencies is proposing to partially fund the Klamath Drainage District Infrastructure Modernization Project (Project) through the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566). The Project is in Klamath County, Oregon, and Siskiyou County, California.

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October 11, 2024

Warm Springs Chief Delvis Heath
Confederated Tribes of Warm Springs
1233 Veterans Street
PO Box C
Warm Springs, OR 97761

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Chief Heath,

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An Equal Opportunity Provider and Employer

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October 11, 2024

Paiute Chief Joe Moses
Confederated Tribes of Warm Springs
1233 Veterans Street
PO Box C
Warm Springs, OR 97761

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Chief Moses,

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1201 NE Lloyd Blvd.
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Portland, OR 97232
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October 11, 2024

Chief Robert Burkybile
Modoc Nation
22 N. Eight Tribes Trail
Miami, OK 74354

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Chief Burkybile,

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), in cooperation with Klamath Drainage District (KDD or District) as the project sponsor and U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service as cooperating agencies is proposing to partially fund the Klamath Drainage District Infrastructure Modernization Project (Project) through the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566). The Project is in Klamath County, Oregon, and Siskiyou County, California.

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1201 NE Lloyd Blvd.
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October 11, 2024

Ken Sandusky
Modoc Nation
22 N. Eight Tribes Trail
Miami, OK 74354

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Ken Sandusky,

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USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Rachel Gebauer, State Archaeologist
1945 Main St., Suite 200
Klamath Falls, Oregon 97601

Ben Steward, Tribal Heritage Manager
2371 NE Stephens St., Suite 100
Roseburg, OR 97470

January 27, 2025

Subject: Cultural Resources Assessment for the Klamath Drainage District, Klamath County, Oregon

Dear Ben Steward,

NRCS Oregon proposes to provide federal funding to the Klamath Drainage District in Klamath County, Oregon, for infrastructure modernization to increase operational and water delivery efficiency. The project is being performed through the NRCS' Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). This undertaking is subject to the Section 106 of the National Historic Preservation Act (NHPA), as amended, and its implementing regulations (36CFR Part 800) and also subject to Section 110(f) of the NHPA (36 CFR 800.10). NRCS is serving as the lead federal agency for the project. This letter is a follow up to our Initial Consultation request on September 9, 2024 and provides documentation of a survey for cultural resources within the Area of Potential Effect.

Proposed Undertaking

The project proposes to make the following improvements to the Klamath Drainage District (KDD): •Screen the North Canal Diversion on the Klamath River and improve access to the potential fish screen site. •Improve the North Canal by extending it 0.47 miles (~2,500 feet) from Fugate Road to California State Highway 161, connecting the North Canal to the P-1 Lateral, adding a point of delivery to the Lower Klamath NWR. This project action would also include the modification of five road crossings along the North Canal to accommodate an additional flow of 100 cubic feet per second (cfs). •Upgrade the Reclamation F&FF and E&EE pump stations along the KSD to a more common voltage and with variable frequency drives (VFD). •Install a recirculation pipeline going from the outlet of the western-most pump in the E Pump Station to the Center Canal. •Install 14 SCADA12 systems, four of which include automated gates, at 12 locations distributed across the District.

The enclosed report includes the identification of archaeological and built environment resources located in the project area, evaluation of these resources for listing in the National Register of Historic Places (NRHP), and an assessment of effects to these resources from the proposed project. Parametrix conducted

archaeological and built environment survey of the project area to identify and document cultural resources present within the project area. Archaeological survey identified two archaeological sites – Temporary Site # KL-1 and KL-2 – and one precontact isolate – Temporary # KLISO-1. None of the archaeological sites or isolates are located in areas where project-related ground disturbance is proposed. Built environment survey identified 22 components of the Klamath Drainage District, including nine specific linear resources, five specific structures, and eight feature categories.1 The 22 components of the Klamath Drainage District irrigation infrastructure were evaluated collectively as a potential sub-historic district, the Klamath Drainage District Irrigation System Historic District, within the Klamath Project, an NRHP-eligible historic
district.

Determinations of Eligibility and Effects

The Klamath Drainage District Irrigation System Historic District is **recommended eligible for listing in the NRHP as contributor to the Klamath Project**. Fifteen of the Klamath Drainage District's **components are recommended NRHP eligible as contributing resources** to the Klamath Drainage District Irrigation System Historic District and the Klamath Project and seven are recommended as non-contributing resources to the Klamath Drainage District Irrigation System Historic District or the Klamath Project. The project area additionally overlaps with the boundaries of the Lower Klamath National Wildlife Refuge, which is designated as a National Historic Landmark (NHL) and listed in the NRHP. The project is recommended as **not resulting in an adverse effect** to either the Klamath Drainage District Irrigation System Historic District or Lower Klamath National Wildlife Refuge NHL.

Attached you will find materials to support our present consultation effort, including:

- A full archaeological report (Cultural Resources Assessment for the Klamath Drainage District, Klamath County, Oregon)

If you have any questions, please let me know and I will be happy to address them.

Sincerely,

Rachel LS Gebauer

Rachel Smith Gebauer, M.A., RPA,
NRCS Oregon State Cultural Resources Specialist

cc. Gary Diridoni, NRCS Oregon State Watersheds Planner

United States Department of Agriculture

Natural Resources Conservation Service

1201 NE Lloyd Blvd.
Suite 900
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503-414-3200

October 11, 2024

Susan Fricke
Karuk Tribe
PO Box 1016
Happy Camp, CA 96039

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Susan Fricke,

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), in cooperation with Klamath Drainage District (KDD or District) as the project sponsor and U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service as cooperating agencies is proposing to partially fund the Klamath Drainage District Infrastructure Modernization Project (Project) through the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566). The Project is in Klamath County, Oregon, and Siskiyou County, California.

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October 11, 2024

Craig Tucker
Karuk Tribe
PO Box 1016
Happy Camp, CA 96039

Subject: Klamath Drainage District Infrastructure Modernization Project Draft Watershed Plan-Environmental Assessment Notice of Availability

Dear Spokesperson Tucker,

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), in cooperation with Klamath Drainage District (KDD or District) as the project sponsor and U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service as cooperating agencies is proposing to partially fund the Klamath Drainage District Infrastructure Modernization Project (Project) through the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566). The Project is in Klamath County, Oregon, and Siskiyou County, California.

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Greg Becker
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USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Oregon State Office
1201 NE Lloyd Blvd. Suite 900
Portland, OR 97232

6 January 2025

Chairman Russell Attebery
Karuk Tribe
P.O. Box 1016
Happy Camp, CA 96039

Re: Invitation to Participate in Section 106 Consultation for the Klamath Drainage District Modernization Project, Klamath County, Oregon

Dear Chairman Attebery,

The Farmers Conservation Alliance (FCA) is proposing the Klamath Drainage District Modernization Project (the project) in Klamath County, Oregon. The project is being performed through the Natural Resources Conservation Service's (NRCS) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). As a result, the project is considered a federal undertaking and is subject to Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations 36 CFR Part 800. NRCS is serving as the lead federal agency for the project. In this letter, NRCS initiates Section 106 consultation and requests feedback on the project's Area of Potential Effects.

Project Description

The project will make the following improvements to the Klamath Drainage District (KDD):

- Screen the North Canal Diversion on the Klamath River and improve access to the potential fish screen site.
- Improve the North Canal by extending it 0.47 miles (~2,500 feet) from Fugate Road to California State Highway 161, connecting the North Canal to the P-1 Lateral, adding a point of delivery to the LKNWR. This project action would also include the modification of five road crossings along the North Canal to accommodate an additional flow of 100 cubic feet per second (cfs).
- Upgrade the Reclamation F&FF and E&EE pump stations along the KSD to a more common voltage and with variable frequency drives (VFD).
- Install a recirculation pipeline going from the outlet of the western-most pump in the E Pump Station to the Center Canal.
- Install 14 SCADA12 systems, four of which include automated gates, at 12 locations distributed across the District.

Area of Potential Effects

A project's APE is defined as the geographic area(s) in which an undertaking may directly or indirectly effect the character or use of historic properties (36 CFR 800.16.c). Effects may be direct or indirect, with the former including any type of effect (i.e., physical, visual, auditory, etc.) resulting from an undertaking and the latter including any type of reasonably foreseeable effect caused by the undertaking after its completion or farther in distance. In determining the Project's APE, the APE for direct effects was delineated primarily to account for physical and visual effects, as well as construction-related effects such as vibration, noise, and fugitive dust. The Project's physical APE will be limited to the vertical and horizonal footprint of the areas and/or structures where the proposed project activities will occur. The project's visual APE includes a 100-foot radial buffer around the physical APE to account for effects on the viewsheds of historic properties resulting from alterations to select components of the Klamath Drainage District. The APE for indirect effects is the same as the APE for direct effects as reasonably foreseeable indirect effects are not