

# RECLAMATION

*Managing Water in the West*

**Environmental Assessment**

## **Horsefly Irrigation District WaterSMART Grant: Horsely and Somers Canals Piping Project**

**Klamath County, Oregon**

**2017-EA-010**



**U.S. Department of the Interior  
Bureau of Reclamation  
Mid-Pacific Region  
Klamath Basin Area Office**

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## **Mission Statements**

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water related resources in an environmentally and economically sound manner in the interest of the American public.

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# **Section 1: Introduction and Background Information**

## **1.1 Introduction**

This Environmental Assessment (EA) has been prepared to examine the potential direct, indirect, and cumulative impacts to the affected environment as a result of the Bureau of Reclamation's Klamath Basin Area Office (KBAO) WaterSMART provision of grant funding for Horsefly Irrigation District's (HID) Horsely and Somers Canals Piping Project.

The EA has been prepared in accordance with the National Environmental Policy Act (NEPA) (42 U.S.C. §4321 et seq.), the Council on Environmental Quality Regulations for implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations (CFR) Parts 1500-1508), and the Department of the Interior regulations for the Implementation of the NEPA (43 CFR Part 46). If there are no significant environmental impacts identified as a result of the analyses, a Finding of No Significant Impacts (FONSI) can be developed and signed to complete the NEPA compliance process.

### **Background**

This proposed project includes the conversion of 8,900 feet of open canal to subterranean piping in an effort to conserve water by eliminating seepage and evaporation. Pipe materials to be used include polyvinyl chloride (PVC) and high density polyethylene (HDPE). HID has discovered, after piping approximately five miles of their open canal system in previous projects, that the District has conserved approximately 30 percent of the water that is delivered through the previously open canal systems. Based on that knowledge, the District anticipates an estimated water savings of 720 acre-feet per year, as a result of the proposed project.

HID canals are privately owned and the District receives its water supply from several different sources. With a priority right of 1903, HID collects water from the Lost River originating from Clear Lake Reservoir and also holds a water right from the Big Springs that originates from the Lost River in Bonanza, Oregon. HID is also in contract with Reclamation for 4,200 acre-feet of storage from Clear Lake Reservoir as well as 3,800 acre-feet of natural flow from the Lost River. There are approximately 90 landowners served within HID over an area of roughly 10,000 acres; the major crops produced include alfalfa, grain, potatoes, and irrigated pasture.

In recent years, particularly 2012 through 2015, the Klamath Basin has experienced severe droughts resulting in limited water supplies to Reclamation's Klamath Project (Project). With limited water supplies available to Project contractors, conservation measures, at both the district and the individual level, are becoming increasingly important.

## **1.2 Need for the Proposal**

The need of this proposed undertaking is to address the seepage and evaporation losses that are occurring along HID's irrigation canals. Through its existing open-unlined canals, HID is experiencing a net loss of available water which reduces the availability of limited surface water supplies and the amount of irrigated acres within HID and the Klamath Project as a whole. By implementing this project, which includes the installation of roughly 8,900 feet (1.68 miles) of subterranean pipe, HID anticipates an annual water savings of 720 acre-feet. The purpose of this proposed project is to achieve the goals of the WaterSMART Program by conserving water and improving water quality within the District, which, in turn, provides benefits to other Klamath Project irrigators as well as fish and wildlife present in the Lost River system.

## **Section 2: Proposed Action and Alternatives**

This EA considers two possible actions including the No Action Alternative and the Proposed Action. The No Action Alternative reflects conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment as a result of implementing the Proposed Action.

### **2.1 No Action Alternative**

Under the No Action Alternative, Reclamation would not provide \$236,360.00 under the WaterSMART Grant program to HID to complete the proposed project as designed. Irrigation water would continue to seep through the canal bottoms, evaporation from open canals would continue, and overall net loss of Project water would continue. Due to this fact, the No Action Alternative does not meet the purpose and need of the project; however, it will continue to be evaluated throughout this EA.

### **2.2 Proposed Action**

Under the Proposed Action Alternative, Reclamation would provide \$236,360.00 to HID for the installation of pipe along sections of two canals and across a cultivated field (see map in Figure 1 and photographs in Appendix A). The sites are located in Sections 11 and 12 of Township 39S, Range 11E of the Willamette Meridian in Klamath County, Oregon. Pipe would be installed along approximately 7,100 feet (1.34 miles) of both the Horsely and the Somers Canals and approximately 1,800 feet (0.34 miles) across the cultivated field adjacent to Horsely Canal. The Horsely Canal segment would include the installation of 6,000 feet (1.13 miles) of 30" HDPE pipe beginning at 42° 11' 42.6" N, 121° 21' 22.7" W and ending at 42° 12' 19.3" N, 121° 22' 10.7" W. The cultivated field adjacent to Horsely Canal includes the installation of 1,800 feet (0.34 miles) of 30" PVC pipe beginning at 42° 12' 19.3" N, 121° 22' 10.7" W and ending at 42° 12' 19.6" N, 121° 22' 31.8" W. The Somers Canal section includes the installation of 1,100 feet (0.21 miles) of 30" HDPE pipe that begins at 42° 11' 47.2" N, 121° 21' 25.7" W and ends at 42° 11' 53.8" N, 121° 21' 14.8" W.

The proposed project activities would be performed by HID staff and would occur during the non-irrigation season between the months of October and March. The Proposed Action Alternative will be further evaluated throughout the EA.

## 2.3 Proposed Tasks

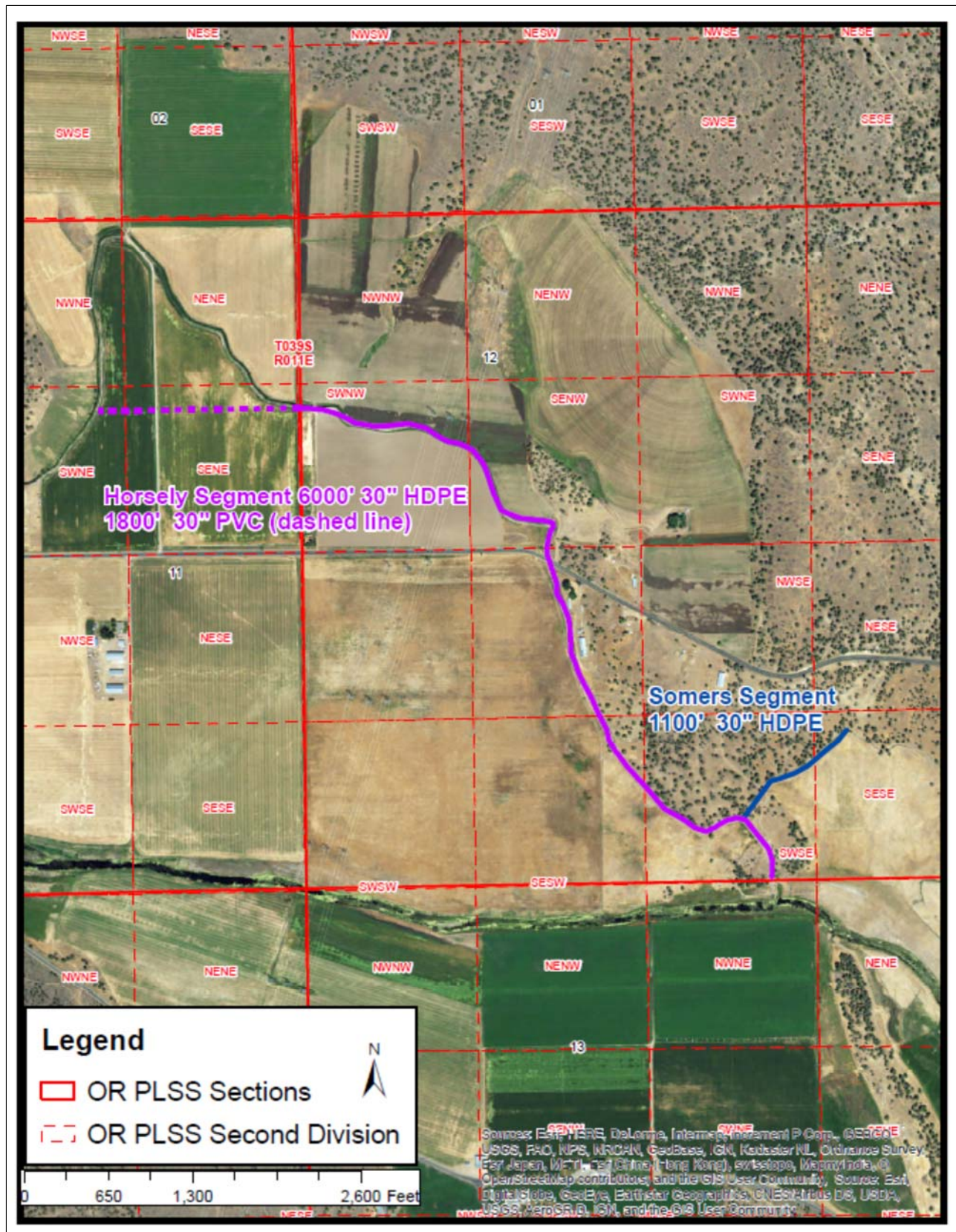
Under the Proposed Action, HID would procure the necessary supplies and materials and would also provide labor and equipment to complete the construction. The District would competitively bid and purchase the pipe and associated supplies. Construction activities would occur during the non-irrigation season between the months of October and March. No additional excavation to widen or deepen the open ditch segments of the Horsely and Somers Canals is expected; however, excavation of new trench, roughly 1,800 feet in length (from 42° 12' 19.3" N, 121° 22' 10.7" W to 42° 12' 19.6" N, 121° 22' 31.8" W), across a cultivated field would be necessary at the northern end of the Horsely Canal. The steps listed below describe the activities that HID would perform for the pipe installation.

1. Hauling and staging of materials and equipment to the project sites from the initial storage area located at the HID Headquarters yard. Materials and equipment include a D4 laser loaded Caterpillar dozer, backhoe, excavator, dump truck, pipe, and fabricated HDPE and concrete box cleanouts. Staging areas for materials and equipment will be located along HID owned canal access roads at the areas of immediate construction. Staging areas in the cultivated field near the Horsely Canal would be located adjacent to and along the proposed line of entrenchment as permitted by the property owner.
2. Removal of existing check/drop structures that would impede the placement of the pipe in the canals.
3. Removal of current fencing in the area that would prohibit construction access and/or activities. HID will coordinate with affected property owners to avoid trespassing.
4. Grading of the existing open canal beds with heavy equipment, including a D4 Caterpillar fitted with a laser level, would occur to properly level the canal beds to an average depth of roughly four feet. The canal beds would be leveled to ensure that the pipe lay properly at grade to allow for gravity flow through the piping system. Fill, using surplus material resulting from the leveling procedure, would be placed at the bottom of the canal beds as necessary to provide suitable pipe support. Excess material would be hauled away to an appropriate disposal site or stored at HID Headquarters or nearby construction sites for later use as fill material.
5. Using heavy equipment, excavation of a trench measuring approximately three feet wide, six feet deep, and 1,800 feet long across the existing agricultural field adjacent to the Horsely Canal northern segment would be performed. HID would coordinate with the affected property owners beforehand in order to obtain access to the field. Excess material would be hauled away to an appropriate disposal site or stored at HID Headquarters or nearby construction sites for later use as fill material.
6. Once the canal beds and newly excavated trench are leveled, installation of the pipe into the empty canals and trench would commence.
7. Cleanouts, a type of pipe fitting that allows access for inspection, maintenance, and flow measurement of the pipeline, would be constructed (of HDPE or concrete) and fitted around the installed pipe at roughly 1,000 foot length increments.

8. After installation of the pipe and cleanout structures, HID would backfill the installed pipe using existing native soils from the prior canal banks. The newly installed 30" HDPE and 30" PVC would receive a cover of approximately two or three feet. In order to not distort the underlying pipe, compaction of the covering soil would be minimal.
9. The disturbed areas on and neighboring buried pipe would be revegetated with drought tolerant pasture grasses.



**Figure 1: Horsely and Somers Canals Piping Project Locations**



## Section 3: Affected Environment and Environmental Consequences

This section identifies the potentially affected environmental resources and the environmental consequences that could result from the Proposed Action and the No Action Alternatives.

### 3.1 Resources Not Analyzed in Detail

Impacts to the following resources were considered and found to be minor or absent. Brief explanations for their elimination from further consideration are provided below:

#### 3.1.1 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets that are held in trust by the United States for federally recognized Indian tribes or individuals. As indicated in Appendix B, there are no Indian reservations, Rancherias or allotments in the project area, the nearest ITA is the Klamath Tribal Designated Statistical Area approximately 16.5 miles west of the project site. On June 8, 2017, Reclamation's KBAO Indian Trust Asset Coordinator, Kristen Hiatt, stated that "based on the nature of the planned work it does not appear to be in an area that will impact Indian hunting or fishing resources or water rights nor is the proposed activity on actual Indian lands, [and] it is reasonable to assume that the proposed action will not have any impacts on ITAs."

#### 3.1.2 Indian Sacred Sites

Sacred sites are defined in Executive Order 13007 (May 24, 1996) as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site." The Proposed Action would not affect and/or prohibit access to and ceremonial use of Indian sacred sites.

#### 3.1.3 Environmental Justice

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

#### 3.1.4 Climate Change and Greenhouse Gases

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change (e.g., changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels) (EPA 2017). Climate change implies a significant change having important economic, environmental, and social effects in a climatic condition such as temperature or precipitation. Climate change is generally attributed directly or indirectly to human activity that

alters the composition of the global atmosphere, additive to natural climate variability observed over comparable time periods.

There would be no impacts contributing to climate change or greenhouse gases (GHG) under the No Action Alternative. Under the Proposed Action Alternative, Reclamation would provide \$236,360.00 to HID in order to execute its Horsely and Somers Canals Piping Project that would conserve water by eliminating seepage and evaporation in the modified canal sections. Potentially minor and temporary impacts to climate change or GHG could result from the use of backhoes, excavators, dump trucks, and other motorized equipment for intermediate periods over the course of construction. Any impacts to climate change or increases in GHG would be expected to be insignificant due to the size and scope of the project, small change from current conditions, duration of use that is limited to the project construction, and compliance with pollution related laws and regulations. Furthermore, HID would comply with applicable Federal, state, or local air pollution laws and regulations.

### **3.1.5 Noise**

The proposed project area is typically impacted by the noise of farming machinery and nearby highway traffic, thus the additional temporary noise associated with construction is not expected to be a significant impact. HID would coordinate with neighboring property owners as appropriate during construction to notify them of the temporary noise escalations. Noise impacts would be minimized by reducing construction activities from 7:00 a.m. to 7:00 p.m., Monday through Sunday. If work hours outside of this period are required HID would need approval in advance by Reclamation. Upon approval, HID would be required to contact adjacent landowners prior to commencement of the adjusted work schedule to inform them of the potential change in work hours. There would be no long-term increases to the ambient noise levels from the implementation of the Proposed Action.

### **3.1.6 Socioeconomics**

The Proposed Action would create a short term demand for construction related products and services that would support local vendors and may create short term employment opportunities. In general, the project would have an insignificant impact on socioeconomic conditions in the project region.

## **3.2 Resources Analyzed in Detail**

This EA will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential impacts and cumulative effects to the following environmental resources:

### **3.2.1 Water Resources**

#### ***3.2.1.1 Affected Environment***

The water resources potentially affected would be surface water originating from the Lost River and Clear Lake Reservoir system which is subsequently conveyed through HID-owned canals and laterals for irrigation purposes within the boundaries of HID.

### **3.2.1.2 Environmental Consequences**

#### **No Action**

Under the No Action Alternative, Reclamation would not provide \$236,360.00 under the WaterSMART Grant program to HID for completion of the proposed project as designed. Project water would continue to seep through the canal bottoms, evaporation from open canals would continue, and overall net loss of Project water would continue. Under this Alternative, water resources within the existing open unlined canals would continue to be delivered for irrigation purposes and no improvements for reducing or eliminating seepage or evaporation would occur. HID would continue to experience a net loss of approximately 720 acre-feet throughout the season. Additionally, water resources present in the open unlined canals would continue to take in sediment and nutrients from adjacent agricultural activities.

#### **Proposed Action**

Under the Proposed Action, Reclamation would provide funding to implement HID's WaterSMART piping project on the Horsely and Somers Canals to improve water delivery efficiency. Upon project completion, HID could achieve a reduction in water loss of roughly 720 acre-feet per year and thus result in more water resources for the greater Klamath Project.

Construction activities associated with the Proposed Action do include minimal disturbances to the ground surface. Materials used during construction could contain chemicals that are potentially harmful to water resources; additionally, oil and other petroleum products used to maintain and operate construction equipment could pose potential threats to water quality. Impacts to water quality are expected to be minor and temporary in nature as the project activities would occur during the non-irrigation season when no water is present within the ditch system. A small amount of turbidity within the ditches may occur during periods of rain in which minimal amounts of rainwater would accumulate and pass through the ditch system. Standard management practices would be included in the proposed project to avoid or minimize the release of sediments, pollutants, and chemicals into the environment during construction.

Overall, potential water quality impacts including temporary increases in turbidity and contribution of sediment would be negligible, localized, and temporary in nature and only persist during construction activities. Furthermore, standard management practices would be implemented during the project to reduce turbidity and sediment transport by working in as dry as possible conditions. The activities associated with the proposed project are expected to have a beneficial effect on the quantity of the surface water resource due to the anticipated 720 acre feet water savings. Therefore, no significant impacts to surface water resources would occur as a result of the Proposed Action.

### **3.2.1.3 Cumulative Impacts**

As the Proposed Action activities are proposed to take place during the non-irrigation season while no water, with the exception of runoff from normal precipitation, is present in the canals, the Proposed Action would have a minor temporary and localized impact to water resources. After completion of the Proposed Action, benefits to water quality may be present, though unquantified, as nutrient loading would be reduced through piping. Overall water quantities would likely increase due to a reduction in evaporation and seepage losses. Similarly future proposed projects within HID, and from neighboring irrigation districts, would augment the beneficial results of the Proposed Action.

### **3.2.2 Biological Resources**

#### **3.2.2.1 Affected Environment:**

A list of federally registered endangered, threatened, proposed, and candidate species potentially occurring within the project area is shown in the table in Appendix C. The listing was generated by accessing and querying the U.S. Fish and Wildlife Service database at: <http://www.fws.gov/klamathfallsfwo/es/es.html>.

#### **3.2.2.2 Environmental Consequences**

##### **No Action:**

Under the No Action Alternative, Reclamation would not provide funding to implement HID's Horsely and Somers Canals Piping Project. As a result, HID would not install pipe within their open canal system and both evaporation and seepage losses would continue. No conserved water would be made available to the Klamath Project and the Lost River. Current conditions would remain the same as the existing condition if no action were taken, and there would be no impact to wildlife, including threatened and endangered species, or their critical habitat.

##### **Proposed Action:**

The potential impacts to all species listed in Appendix C as a result of the construction activities of the Proposed Action Alternative have been considered, and it has been determined that the Proposed Action Alternative would have no effect on these species or their habitats as construction would occur in the previously disturbed context of HID's irrigation delivery system during the non-irrigation system when the ditches are dry. Benefits to wildlife, particularly aquatic species, may be realized, though unquantified, upon project completion as conserved water is anticipated to remain within the Lost River and could improve aquatic habitat. This decision is based on analysis of current information on the potential effects of the action, known existing populations, and habitat requirements for the species.

#### **3.2.2.3 Cumulative Impacts**

Construction activities associated with the Proposed Action would be temporary and localized and, therefore, would not contribute to cumulative impacts to the resource. Long term impacts resulting from the Proposed Action would include the potential for improved wildlife habitat within the Lost River and adjacent riparian environments. Furthermore, similar proposed activities from nearby irrigation districts, and within HID, would supplement the goals of this Proposed Action for this resource.

### **3.2.3 Cultural Resources**

"Cultural Resources" is a broad term that applies to prehistoric, historic, and architectural resources, as well as to traditional cultural properties. Cultural resources can include both archaeological sites, which contain evidence of past human use, and the built environment, which consists of structures such as buildings, roadways, dams, and canals. The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary Federal legislation that outlines the Federal government's responsibilities related to cultural resources. Section 106 of the NHPA requires the Federal government to take into consideration the effects of its undertakings on historic properties. Historic properties are, by definition, cultural resources that are included in, or eligible for inclusion in, the National Register of Historic Places (National Register). The evaluation criteria for National Register eligibility are outlined at 36 CFR Part 60.4.



Compliance with Section 106 of the NHPA follows a process outlined at 36 CFR Part 800. This process includes determining the area of potential effects (APE) for an undertaking, consulting with Indian tribes and other interested parties, identifying if historic properties are present within the APE, assessing the effects the undertaking will have on historic properties, and resolving any adverse effects to historic properties before an undertaking is implemented. The Section 106 process also requires consultation with the State Historic Preservation Officer (SHPO), or Tribal Historic Preservation Officer (THPO) where applicable, to seek concurrence with the finding of effect for the undertaking.

### **3.2.3.1 Affected Environment**

The proposed project is located within HID's jurisdiction in areas that have been previously disturbed by the original construction of HID's privately owned water conveyances and appurtenant facilities. The project involves the installation of approximately 7,100 feet (1.34 miles) of pipe within two distinct open canal segments and across roughly 1,800 feet (0.34 miles) of a cultivated field for a cumulative total of approximately 8,900 feet (1.68 miles) of new pipeline (see map in Figure 1). No additional excavation to widen or deepen the existing open ditch segments of the Horsely and Somers Canals is expected; however, excavation of new trench, measuring roughly 1,800 feet in length, three feet in width, and six feet in depth, across a cultivated field will be necessary at the northern end of the Horsely Canal.

In an effort to identify historic properties in the APE, Reclamation reviewed in-house files and previous projects in the vicinity of the current undertaking. A recent project in the area, another grant project to pipe portions of the HID system, generated two cultural resources reports: a Native-X, Inc. Archaeological Services (Native-X) report titled *Horsefly Irrigation District: Dairy and Yonna Canal Piping Project Klamath County, Oregon* and a supplemental report to the Jones 2016 report by Reclamation, titled *Supplemental Cultural Resource Inventory Report for Horsefly Irrigation District Dairy and Yonna Canals Piping Project*. The Native-X report (Jones 2016) provided background information on the project and recommendations for eligibility that Reclamation disagreed with. Accordingly, Reclamation prepared the supplemental report (Bruce 2016) and evaluated the HID Irrigation System as not eligible for inclusion in the National Register of Historic Places (National Register). On November 1, 2016, the SHPO office concurred with Reclamation's findings.

For this undertaking, Reclamation cultural resources staff conducted a records search and coordinated with HID to conduct a field survey of the project APE. The results of these identification efforts are presented in the cultural resources report titled, *Cultural Resources Inventory Report for WaterSMART Grant for the Horsefly Irrigation District Horsely and Somers Canals Piping Project, Klamath County, Oregon* (Bruce and Fogerty 2017). These efforts indicated that four cultural resource investigations (OSHPO No. 547, 653, 21126, and 27551) have been conducted within one mile of the APE, with two of these linear survey efforts (547 and 653) bisecting portions of the APE. None of these investigations identified any cultural resources within or adjacent to the APE. An archaeological survey was conducted along the new pipeline corridor, and no archaeological resources were identified. The only cultural resources identified were the Horsely and Somers canals, components of the HID Irrigation System. As the HID Irrigation System has a recent consensus determination that it is not eligible for the National Register, Reclamation evaluated the Horsely and Somers canals as individual properties, determining both of them as ineligible for the National Register under any National Register Criteria. The lack of historic properties within the APE results in a finding of no historic properties affected pursuant to

36 CFR §800.4(d)(1).

### **3.2.3.2 Environmental Consequences**

#### **No Action**

Under the No Action Alternative, Reclamation would not provide funding to implement HID's Horsely and Somers Canals Piping Project through the WaterSMART program. HID would not convert any of the proposed sections of open canal to subterranean piping. There would be no change to the existing facilities, and, consequently, there would be no change in impacts to cultural resources from current conditions under the No Action Alternative.

#### **Proposed Action**

Under the Proposed Action Alternative, Reclamation would release grant funding to HID to implement the Horsely and Somers Canals Piping Project through the WaterSMART program to convert identified sections of open canal to subterranean piping and to construct a short segment of new pipeline near the northern end of Horsely Canal. The use of federal funds would constitute an undertaking as defined by 36 CFR §800.16(y), and the Proposed Action is a type of activity that has the potential to cause effects on historic properties under 36 CFR §800.3(a). Reclamation consulted with the SHPO on a finding of no historic properties affected pursuant to 36 CFR §800.4(d)(1). Reclamation received concurrence from the SHPO on September 1, 2017, concurring with all findings (Appendix D).

Should cultural resources be identified during construction, the project shall be halted, and Reclamation shall be contacted to discuss any such discovery and determine how to proceed.

### **3.2.3.3 Cumulative Impacts**

As there are no historic properties identified within the project area, the Proposed Action would not contribute to cumulative impacts to historic properties.

### **3.2.4 Air Quality**

Section 176 (c) of the Clean Air Act (CAA) (42 U.S.C. 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with an SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact, conform to the applicable SIP before the action is taken.

On November 30, 1993, the U.S. Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all Federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed Federal action in a non-attainment or maintenance area if the total direct and indirect emissions of the relevant criteria pollutant(s) and precursor pollutant(s) caused by the Proposed Action equal or exceed certain threshold amounts, thus requiring the Federal agency to make a determination of general conformity.

#### **3.2.4.1 Affected Environment**

Air quality in the State of Oregon is regulated by the EPA and administered by the Oregon Department of Environmental Quality (ODEQ). The NAAQS, established by the EPA under the CAA, specifies limits of air pollutants levels for seven criteria pollutants: carbon monoxide (CO), ozone (O<sub>3</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen (N), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and lead (Pb). The proposed project vicinity is outside the Klamath Falls non-attainment area for PM<sub>2.5</sub>.

#### **3.2.4.2 Environmental Consequences**

##### **No Action**

Under the No Action Alternative, Reclamation would not provide funding to implement HID's Dairy and Yonna Canals Piping Project through the WaterSMART program. HID would, therefore, not install piping in place of identified segments of its open canal system. Though no new construction, and associated emissions as a result of construction, would occur, regular operation and maintenance activities of HID's water conveyance system, which would require the use of vehicles and other powered equipment, would continue to occur as in the past and perhaps increase as the facilities continue to age. As a result, a potential for increased air quality impacts over the long term could materialize.

##### **Proposed Action**

Under the Proposed Action Alternative, Reclamation would provide funding to implement HID's Horsely and Somers Canals Piping Project through the WaterSMART program, which would allow for the installation of approximately 1.68 miles of subterranean pipe within the HID water conveyance system. Impacts from the use of heavy equipment during construction activities, such as pollution and fugitive dust, may have minor negative impacts on air quality, but these impacts would be localized and temporary and would cease once construction is completed. Emissions resulting from construction activities would be minimized as reasonable precautions, such as the application of dust suppressant at project sites, are incorporated in the Proposed Action Alternative. These mitigation measures are consistent with the ODEQ Visible Emissions and Nuisance Requirements, Division 208 and the Oregon SIP which identifies how the State will attain and/or maintain the primary and secondary NAAQS set forth in section 109 of the CAA and 40 CFR 50.4 through 50.12 and which includes federally-enforceable requirements (EPA 2017).

#### **3.2.4.3 Cumulative Impacts**

Emissions associated with the construction of the Proposed Action would have temporary minor effects on air quality. Considering long-term operation, air quality impacts would be reduced as the need for canal maintenance actions on new/improved facilities would be decreased. HID anticipates piping more of its open canal infrastructure in the future; this action, as well as similar actions in neighboring irrigation districts, would yield the same benefit to air quality.



## Section 4: Environmental Commitments

The following environmental commitments would be implemented before, during, and after construction to prevent or reduce the impacts of the Proposed Action.

- **Environmental Permitting** – HID would be responsible for complying with all environmental requirements identified in this EA and any other applicable Federal, State, and local permits.
- **Water Resources** – HID would perform all work when the irrigation facilities are dewatered to avoid contributing to surface water quality impacts. Standard management practices would be included in the proposed project to avoid or minimize the release of sediments, pollutants, and chemicals into the environment during construction.
- **Cultural Resources** – If subsurface deposits believed to be cultural or human in origin are discovered during construction, then all work must halt within a 50-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The qualified archaeologist will make an assessment of the resource and conduct additional consultations as required. Work will not resume at that location until notified by Reclamation to proceed.
- **Native American Burial Sites** – Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony associated with Oregon tribes are protected under state law, which include criminal penalties (ORS 97.740-.994 and 358.905-.961). These laws recognize and codify the rights of tribes in decision-making processes regarding ancestral remains and associated objects, and require that such remains and objects be treated in a sensitive and respectful matter by all parties involved. In Oregon, Native American burial sites on both public and private land are considered sacred. Oregon State law, ORS 97.745(4), establishes that all inadvertently discovered human remains are suspected to be Native American and requires the immediate notification of the State Police, State Historic Preservation Office, Commission on Indian Services (CIS), and all appropriate Native American Tribes as identified by the CIS, when such remains are encountered.
- **Air Quality** – Reasonable precautions for air quality would be implemented by HID to control emissions during construction activities. HID would follow Federal and State requirements to control methods for aggregate storage pile emissions to minimize dust generation, including the watering of staging areas and unimproved access roads as necessary. All loads that have the potential of leaving the bed of the truck during transportation would be covered or watered to prevent the generation of fugitive dust.
- **Access** – Construction access and staging of materials and equipment would utilize existing improved and unimproved roads whenever possible. HID will coordinate with local property owners as needed if such property must be traversed to access the construction sites.

- **Disturbed Areas** – Areas disturbed during construction would be graded and reseeded to as near their pre-project condition as practicable. In an effort to reduce soil erosion, seeding and planting would occur at appropriate times with weed-free seed mixes of pasture grasses and distributed where appropriate.
- **Noise Impacts** – HID would coordinate with adjacent property owners as appropriate during construction to notify them of the temporary noise disturbances. Construction activities would be conducted from 7:00 a.m. to 7:00 p.m., Monday through Sunday. Should work hours outside of this period be necessary, HID would require prior approval by Reclamation. Upon approval, HID would contact landowners prior to commencement of the adjusted work schedule to inform them of the potential change in work hours.
- **Monitoring** – Reclamation would monitor the Proposed Action activities (before, during, and after construction) to ensure compliance with the criteria noted within this EA.
- **Additional Analysis** – If the proposed action were to change significantly from the alternative described in this EA, additional environmental analyses would be undertaken as necessary.

## Section 5: Consultation and Coordination

As public involvement and agency coordination are required as part of the NEPA process, per 40 CFR §1506.6, Reclamation provided the public with an opportunity to comment on the Draft EA during a 15-day review period from August 18, 2017 to September 1, 2017. Physical copies of the Draft EA were available at the locations listed below, and an electronic version was posted on the Reclamation website at: [https://www.usbr.gov/mp/nepa/nepa\\_projdetails.cfm?Project\\_ID=29761](https://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=29761). No comments were received during the review period.

- Bureau of Reclamation, Klamath Basin Area Office  
6600 Washburn Way  
Klamath Falls, Oregon 97603
- Horsefly Irrigation District Headquarters  
2797 Market Street  
Bonanza, Oregon 97623
- Klamath County Library Service District, Bonanza Branch  
31703 Highway 70  
Bonanza, Oregon 97623

### 5.1 Persons or Agencies Consulted During EA Development

Reclamation has consulted with the following entities regarding the Proposed Action.

- Oregon State Historic Preservation Officer
- HID
- Klamath Tribes

## Section 6: References

Environmental Protection Agency. Climate Change – Basic Information. 2017. Website: [https://19january2017snapshot.epa.gov/climatechange\\_.html](https://19january2017snapshot.epa.gov/climatechange_.html)

U.S. Fish and Wildlife Service. Request A Species List: Listed, Proposed, and Candidate Species Lists (Klamath County, Oregon). 2017. Website: <http://www.fws.gov/klamathfallsfwo/es/es.html>

## **Section 7: Appendices**

## **Appendix A: Photographs of the Proposed Project Sites.**

**Photo 1: Southern end of Horsely Canal facing south**



**Photo 2: Somers Canal facing east**



**Photo 3: Cultivated field adjacent to Horsely Canal facing west**



## Appendix B: Reclamation Indian Trust Assets Coordination and Consultation.

### Indian Trust Assets Request Form (MP Region)

Submit your request to your office's ITA designee or to MP-400, attention Deputy Regional Resources Manager.

**Date:** 4/10/2017

<b>Requested by</b> (office/program)	Kirk Young, Natural Resource Specialist, KBAO
<b>Fund</b>	17XR0680A1
<b>WBS</b>	RY.30180006.HIDOR0E
<b>Fund Cost Center</b>	25320000
<b>Region #</b> (if other than MP)	
<b>Project Name</b>	Horsefly Irrigation District FY 16 WaterSMART Grant: Horsley and Somers Canals Piping Project
<b>CEC or EA Number</b>	KBAO-EA-2017-010
<b>Project Description</b> (attach additional sheets if needed and include photos if appropriate)	<p>The purpose of the project is to address the seepage and evaporation losses that are occurring along HID's irrigation canals. Through its existing open-unlined canals, HID is experiencing a net loss of available water which reduces the limited surface water supply and the amount of irrigated acres within HID and the Klamath Project. By implementing this project, HID anticipates an annual water savings of 720 acre-feet. This effort achieves the goals of the WaterSMART Program by conserving water within the District, which, in turn, provides benefits to other Klamath Project irrigators and fish and wildlife in the Lost River system.</p> <p>This project includes the conversion of approximately 8,900 feet of open canal to subterranean piping at distinct canal segments. The first location, Horsley Canal, would include 6,000 feet of 30" HDPE and 1,800 feet of 30" PVC. On the second location, Somers Canal, would include 1,100 feet of 30" of HDPE. The Horsley Canal segment to be piped begins at 42° 11' 42.6" N, 121° 21' 22.7" W and ends at 42° 12' 19.6" N, 121° 22' 31.8" W. The Somers Canal segment to be piped begins at 42° 11' 47.2" N, 121° 21' 25.7" W and ends at 42° 11' 53.8" N, 121° 21' 14.8" W.</p> <p>HID will be procuring the necessary supplies and materials and will also provide labor and equipment to complete the construction. After NEPA and NHPA compliance is complete, the District will competitively bid and purchase the pipe and associated supplies. Construction activities will occur during the non-irrigation season between the months of October and March. The steps listed below describe the activities that HID would perform for the pipe installation. No additional excavation to widen or deepen the open ditch segments of the Horsley and Somers Canals is expected; however, excavation of new trench, roughly 1,800 feet in length (from 42° 12' 19.3" N, 121° 22' 10.7" W to 42° 12' 19.6" N, 121° 22' 31.8" W), across a cultivated field would be necessary at the northern end of the Horsley Canal.</p>



<p><b>Project Description (continued)</b></p>	<ol style="list-style-type: none"> <li>1. Hauling and staging of materials and equipment to the project sites from the initial storage area located at the HID Headquarters yard. Materials and equipment include a D4 laser loaded Caterpillar dozer, backhoe, excavator, dump truck (as necessary), pipe, and fabricated HDPE and concrete box cleanouts. Staging areas for materials and equipment will be located along HID owned canal access roads at the area of immediate construction. Staging areas in the cultivated field at the Horsley Canal northern segment site would be located adjacent to and along the proposed line of entrenchment as permitted by the property owner.</li> <li>2. Removal of existing check/drop structures that would impede the placement of the pipe in the canals.</li> <li>3. Removal of current fencing in the area that would prohibit construction access and/or activities. HID will coordinate with affected property owners to avoid trespassing.</li> <li>4. Grading of the existing open canal beds with heavy equipment, including a D4 Caterpillar fitted with a laser level, would occur to properly level the canal beds to an average depth of roughly four feet. The canal beds would be leveled to ensure that the pipe lay properly at grade to allow for gravity flow through the piping system. Fill, using surplus material resulting from the leveling procedure, would be placed at the bottom of the canal beds as necessary to provide suitable pipe support. Excess material would be hauled away to an appropriate disposal site or stored at HID Headquarters or nearby construction sites for later use as fill material.</li> <li>5. Using heavy equipment, excavation of a trench measuring approximately three feet wide, six feet deep, and 1,800 feet long across the existing agricultural field adjacent to the Horsley Canal northern segment would be performed. HID would coordinate with the affected property owners beforehand in order to obtain access to the field. Excess material would be hauled away to an appropriate disposal site or stored at HID Headquarters or nearby construction sites for later use as fill material.</li> <li>6. Once the canal beds and newly excavated trench are leveled, installation of the pipe into the empty canals and trench would commence.</li> <li>7. Cleanouts, a type of pipe fitting that allows access for inspection, maintenance, and flow measurement of the pipeline, would be constructed (of HDPE or concrete) and fitted around the installed pipe at roughly 1000 foot length increments.</li> <li>8. After installation of the pipe and cleanout structures, HID would backfill the installed pipe using existing native soils from the prior canal banks. The newly installed 30" HDPE and PVC would receive a cover of approximately two or three feet. In order to not distort the underlying pipe, compaction of the covering soil would be minimal.</li> <li>9. The disturbed areas on and neighboring the buried pipe would be revegetated with drought tolerant pasture grasses.</li> </ol>
<p><b>*Project Location (Township, Range, Section, e.g., T12 R5E S10, or Lat/Long cords, DD-MM-SS or decimal degrees). Include map(s)</b></p>	<p><b>GENERAL:</b> The proposed project site is located in Klamath County, Oregon, approximately 2.5 miles east of the town of Bonanza. All facilities involved in the project are owned by HID.</p> <p><b>LAT/LONG:</b> The Horsley Canal segment to be piped begins at 42° 11' 42.6" N, 121° 21' 22.7" W and ends at 42° 12' 19.6" N, 121° 22' 31.8" W. The Somers Canal segment to be piped begins at 42° 11' 47.2" N, 121° 21' 25.7" W and ends at 42° 11' 53.8" N, 121° 21' 14.8" W.</p> <p><b>PLSS LOCATION:</b> Sections 11 and 12, Township 39S, Range 11E of the Willamette Meridian.</p>

Kirk Young  
Signature

Kirk Young  
Printed name of preparer

4/10/2017  
Date



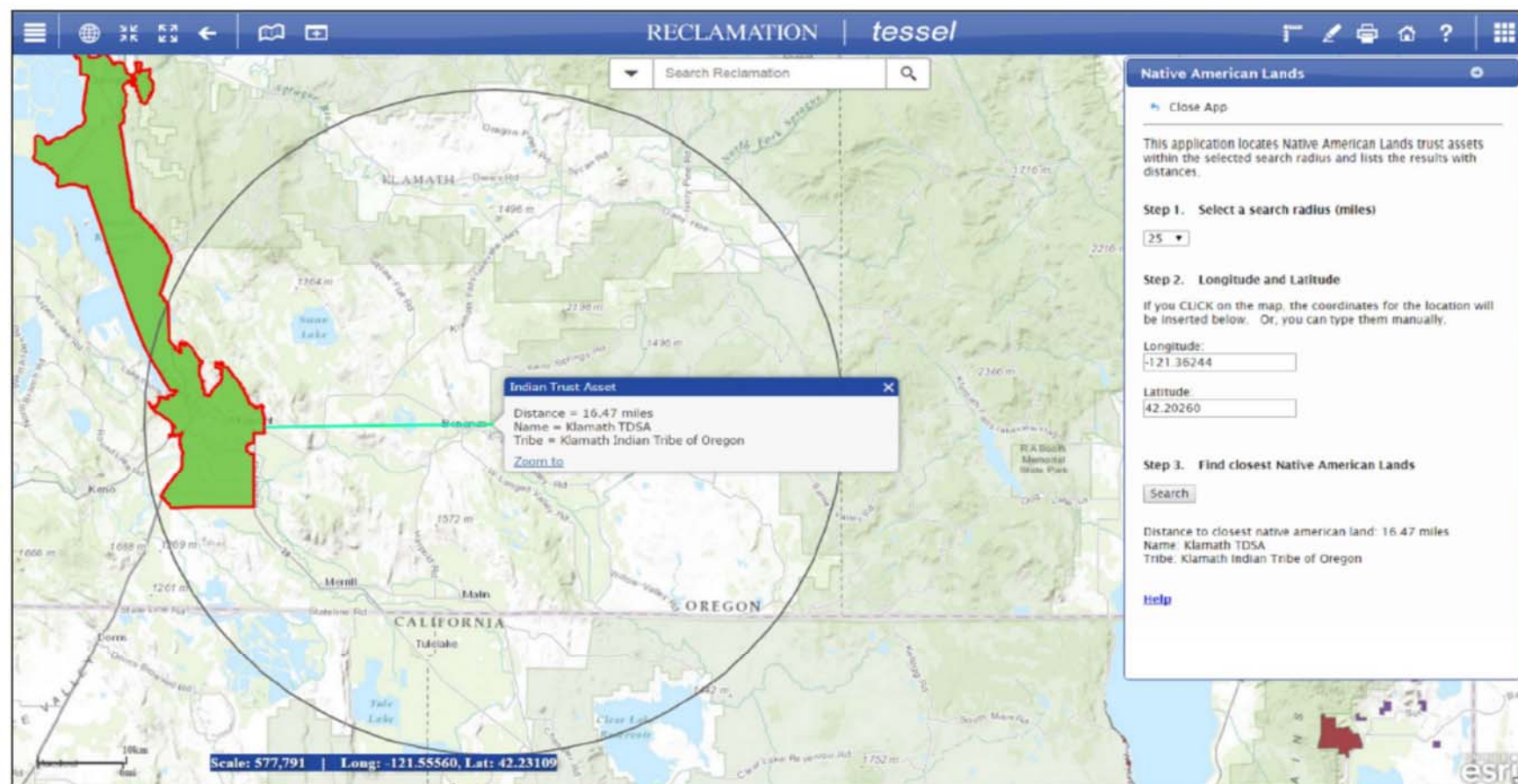
**ITA Determination:**

The closest ITA to the proposed Horsefly Irrigation District Horsley and Somers Canals Piping Project activity is the Klamath Tribal Designated Statistical Area about 16.5 miles to the west of the project site (see attached image in Exhibit A).

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

<u>Kristen L. Hiatt</u>	<u>Kristen L. Hiatt</u>	<u>6/8/17</u>
Signature	Printed name of approver	Date

## Exhibit A: Map of Nearest ITA to Proposed Project.



## Appendix C: Endangered, Threatened, Proposed, and Candidate Species that May Occur in Klamath County, Oregon.



### United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Klamath Falls Fish and Wildlife Office  
1936 California Avenue, Klamath Falls, Oregon 97601  
(541) 885-8481 FAX (541) 885-7837  
[kfalls@fwz.gov](mailto:kfalls@fwz.gov)



#### LISTED, PROPOSED, AND CANDIDATE SPECIES THAT MAY OCCUR IN KLAMATH COUNTY, OREGON

##### Status: Endangered

Phylum	Common Name	Scientific Name	Critical Habitat
Fish	Lost River sucker	<i>Deltistes luxatus</i>	Designated
Fish	Shortnose sucker	<i>Chasmistes brevirostris</i>	Designated
Mammal	Gray wolf	<i>Canis lupus</i>	
Plant	Applegate's milk-vetch	<i>Astragalus applegatei</i>	
Plant	Green's tuctoria	<i>Tuctoria greenei</i>	Designated

##### Status: Threatened

Phylum	Common Name	Scientific Name	Critical Habitat
Bird	Northern spotted owl	<i>Strix occidentalis caurina</i>	Designated
Bird	Yellow-billed cuckoo (Western DPS)	<i>Coccyzus americanus occidentalis</i>	Proposed
Fish	Bull trout	<i>Salvelinus confluentus</i>	Designated
Amphibian	Oregon spotted frog	<i>Rana pretiosa</i>	Designated
Plant	Slender Orcutt grass	<i>Orcuttia tenuis</i>	Designated

##### Status: Proposed

Phylum	Common Name	Scientific Name	Critical Habitat
Mammal	Wolverine	<i>Gulo gulo luscus</i>	

##### Status: Candidate

Phylum	Common Name	Scientific Name
Plant	Whitebark Pine	<i>Pinus albicaulis</i>

Updated April 19, 2017

## Appendix D: Reclamation Cultural Resource Coordination and Consultation.


### CULTURAL RESOURCES COMPLIANCE Division of Environmental Affairs Cultural Resources Branch (MP-153)

**MP-153 Tracking Number:** 16-KBAO-177.001

**Project Name:** Horsely Irrigation District (HID) WaterSMART Grant for the Horsely and Somers Canals Piping Project

**NEPA Contact:** Kirk Young, Natural Resource Specialist

**MP 153 Cultural Resources Reviewer:** BranDee Bruce, Architectural Historian

  
Lauren Perry,  
Regional Archaeologist

**Date:** September 1, 2017

The Bureau of Reclamation proposes to partially fund a WaterSMART Grant to HID for a proposed piping project on the Horsely and Somers canals in Klamath County, Oregon. Reclamation is initiating consultation under Title 54 USC § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA), and its implementing regulations found at 36 CFR Part 800, for Reclamation's action to fund the proposed project, which constitutes an undertaking as defined in 36 CFR § 800.16(y) and is a type of activity that has the potential to cause effects to historic properties under 36 CFR § 800.3(a).

Reclamation's proposed action will partially fund the installation of pipe within the HID irrigation system, including: 6,000 feet of 30 inch diameter high-density polyethylene (HDPE) pipe on the Horsely Canal; 1,100 feet of 30 inch diameter HDPE pipe on the Somers Canal; and 1,800 feet of 30 inch diameter polyvinyl chloride pipe to be installed as a new pipeline within an agricultural field. This new pipeline will bypass a section of the existing Horsely Canal, which will be abandoned in place.

In an effort to identify historic properties, Reclamation completed a cultural resources report, which included a records search, cultural resources survey, and evaluation of resources found within the area of potential effect (APE). Reclamation also conducted identification consultation in July, 2017 with Native American tribes. No responses have been received. Two built environment cultural resources identified within the APE, the Horsely and Somers canals, are associated with the HID Irrigation System that was previously evaluated as ineligible for the National Register of Historic Places (National Register). Reclamation confirmed the ineligibility of the HID Irrigation System and its two components. The Horsely and Somers canals were also evaluated as not eligible for inclusion in the National Register as individual resources.

As there were no historic properties located within the APE, Reclamation determined that a finding of no historic properties affected pursuant to 36 CFR § 800.4(d)(1) was appropriate. Reclamation emailed the consultation package to the Oregon State Historic Preservation Officer (SHPO) on August 4, 2017. On September 1, 2017, SHPO responded with concurrence on Reclamation's finding of effect for both archaeological and built environment resources.

With receipt of the SHPO response, Reclamation has concluded the NHPA Section 106 process for this undertaking. The proposed action will have no significant impacts on cultural

**CULTURAL RESOURCES COMPLIANCE**  
**Division of Environmental Affairs**  
**Cultural Resources Branch (MP-153)**

resources. Please retain a copy of this document with the administrative record for this action. Should the proposed action change, additional NHPA Section 106 review, possibly including further consultation with the SHPO, may be required.