Finding of No Significant Impact

Final Environmental Assessment

Oxbow Incentivized Managed Aquifer Recharge Project

Bingham County, Idaho

U.S. Department of the Interior
Bureau of Reclamation
Columbia-Pacific Northwest Region
Snake River Area Office

CPN FONSI # 20-5

Introduction

The Bureau of Reclamation (Reclamation) has prepared this Finding of No Significant Impact (FONSI) to comply with the Council on Environmental Quality (CEQ) regulations for implementing procedural provisions of the National Environmental Policy Act (NEPA). This document briefly describes the Preferred Alternative, other alternatives considered, the scoping process, Reclamation's consultation and coordination activities, and Reclamation's finding. The Final Environmental Assessment (EA) fully documents the analyses of the potential environmental effects of implementing the changes proposed.

Location and Background

Drought resiliency is important for the residents and economy of eastern Idaho. In their description of the purpose of aquifer recharge, the Idaho Department of Water Resources (IDWR) states, "Restoring ground-water levels in the central part of the Plain and spring discharges in the Thousand Springs and American Falls reaches of the Snake River are two key hydrologic objectives of large-scale managed recharge in the Eastern Snake River Plain" (IDWR 1999). Aquifer recharge can allow for water storage to improve water reliability in the Eastern Snake River Plain (ESPA) and associated springs during future drought years.

Snake River Valley Irrigation District (SRVID) was established in 1906 and incorporates approximately 21,000 irrigated acres of land in southeast Idaho's Bingham County. To improve drought resiliency, SRVID applied for a Reclamation WaterSMART (Sustain and Manage America's Resources for Tomorrow) grant to repurpose existing ponds as recharge ponds. The project is located in the city of Shelley, in eastern Idaho, adjacent to the Snake River at an elevation of 4,633

feet. The Blackfoot Mountains rise to the southeast of the project area. The city of Idaho Falls is located 10 miles to the northeast.

Purpose and Need

Reclamation's purpose for the proposed action is to fulfill the WaterSMART grant, which would improve drought resiliency throughout the Eastern Snake River Plain by increasing recharge to the aquifer. This project would create the opportunity for recharge of up to 20 cubic feet per second (cfs) of Snake River water. Up to an additional 3 cfs of treated wastewater could also be recharged in the ponds. In order to meet their permitting requirements for total phosphorus at the adjacent wastewater treatment plant, the Eastern Idaho Regional Wastewater Treatment Authority (EIRWWA) has to either perform expensive chemical treatment before releasing effluent into the Snake River or recharge their effluent into the aquifer. A connection already exists between the treatment plant and the ponds; however, an additional water source, such as the source that could be provided by the new pipeline, is needed to dilute the effluent before it can be recharged. Recharging the wastewater would not only reduce wastewater treatment costs, it would improve the water quality in the Snake River. Currently, the ponds have a higher infiltration capacity for water to enter the aquifer than could be supplied by the existing supply pipeline. The proposed pipeline would increase the ability for SRVID to recharge water to the aquifer.

Alternatives Considered and Recommended Action

The alternatives were developed based on the purpose and need for the project and the issues raised during internal, external, and tribal scoping. The alternatives analyzed in this document include the No Action alternative, i.e., not funding the grant, (Alternative A) and the Proposed Action alternative, i.e., funding the grant (Alternative B). A no action alternative is evaluated because it provides an appropriate basis to which the other alternative is compared.

Alternative B would allow for three main actions: replacement of a small capacity pipeline with a larger capacity pipeline, scraping out existing sewage treatment ponds to repurpose them for aquifer recharge, and long-term operation and maintenance of these facilities. The path of the Snake River water to be recharged includes the existing SRVID Cedar Point Canal from the Snake River to West Fir Street, 3,150 feet of new pipeline between West Fir Street and the Snake River, and the existing ponds. The pipeline is adjacent to a paved recreation pathway that runs along the south shore of the Snake River. Long-term operations could include additional recharge of treated wastewater from the EIRWWA Wastewater Treatment Plant.

Summary of Environmental Effects

The following sections summarize the effects that Alternative B would have on each resource category analyzed in the EA. Chapter 3 of the EA provides a full analysis and explanation of how each resource was evaluated.

Hydrology

Under Alternative B, infrastructure would be improved by replacing the pipe from the Cedar Point Canal to the ponds and by revitalizing the ponds themselves. ESPA recovery would be aided by this recharge project because the project would improve aquifer levels, improve water retention time in the aquifer, and increase reach gains into the Snake River in southern and eastern Idaho. Any reductions to Snake River flows would occur during higher flow volumes with minimal impacts on overall flow in the Snake River. Water would not be recharged under drought conditions; however, drought resiliency will be improved through this project for the Snake River area from Idaho Falls in eastern Idaho to Thousand Springs in southwestern Idaho. Basin hydrology would be improved under Alternative B.

Water Quality

Construction Effects

Minor effects could occur due to blowing dust from the active construction site and from the staging area for the pipeline and ponds, due to the proximity of these locations to the Snake River. These effects would be short term (a few weeks), occurring during dry, windy days, and could result in minor inputs of sedimentation and associated small increases in turbidity and/or total suspended solids in the Snake River. Due to the volume of water moving through the Snake River compared to the small input of dust, and to the use of best management practices during construction (such as wetting down the construction area) to control dust levels, state water quality standards would be met.

Post-Construction Effects

The mixing of Class A effluent with Snake River water in the ponds to allow water to infiltrate into the aquifer would allow EIRWWA to recharge a portion of the ESPA and discharge a portion of their wastewater effluent without more costly treatment (but while still meeting Class A wastewater standards). Mixing the wastewater effluent with Snake River water would dilute pollutants, and the infiltration process would remove a portion of the diluted pollutants. It is estimated that up to 1,800 acre-feet of wastewater effluent (diluted with 7,000 to 12,000 acre feet of Snake River water) could be recharged into the aquifer each year. Not all of the wastewater could be placed into the ponds due climatic conditions that would inhibit infiltration, such as freezing temperatures. However, a large portion of wastewater could be used for aquifer recharge.

By not discharging a portion of the wastewater effluent into the Snake River, that portion of pollutants would decrease. This would be an overall benefit to Snake River water quality, but those

decreases in pollutant concentrations may not be enough to affect the overall water quality in the Snake River.

Biological Resources

Some vegetation would be disturbed for the replacement and rerouting of the pipeline and for removal of settled material in the recharge pond. Ground disturbance would be limited to areas that are already highly developed, such as the paved pedestrian pathway and adjacent landscaped vegetation (domestic sod grasses) and previously-disturbed areas in the recharge pond site. In areas where landscaped vegetation would be disturbed, replanting/landscaping would occur at the conclusion of the project. No new disturbance would occur in the riparian fringe habitat adjacent to the action area. Replanting of sod grasses after pipeline construction would return vegetation to its current state.

Although expected to be only minimally present, any wildlife utilizing the action areas where the pipeline installation and recharge ponds establishment would occur could be disturbed due to the increased activity and noise of construction during that installation. Wildlife present in these areas would likely engage in avoidant behavior until construction concluded and human activity returned to normal levels. This direct disturbance would be limited to the brief period of construction (approximately 2 weeks) which would take place in the late fall/early winter, outside of the breeding and nesting season of any birds utilizing the riparian fringe for nesting.

Due to the recontouring actions described in Alternative B, the habitat in the recharge pond site would undergo a change from its current state (a relatively dry site containing previously-deposited material from historic settling pond usage, which shows signs of having been historically plowed/mowed and is now sparsely vegetated) to periodically-watered ponds.

Increased water diversions would take place from the existing canal and would not alter the currently present means of connection between the pipeline and the river. Mean daily flows in this reach of the Snake River are too great to be appreciably affected by a withdrawal of up to 20 cfs as would occur under Alternative B.

The Snake River is not directly hydrologically connected to the ponds, so repurposing the former settling ponds site as recharge ponds would have no direct effect on aquatic biota in terms of discharged water. Because increased recharge water would have the potential to increase spring discharges into the Snake River near Thousand Springs and American Falls, the project could have minor positive effects to biota in those areas that are dependent on spring discharges; this effect would not be large enough to be measured.

Recreation

Work on the pipeline under Alternative B is expected to take place in the fall when there are fewer tourists at the campground and county parks. The potential of students not returning to the physical classrooms in the fall due to the COVID-19 pandemic could also reduce traffic on the path in general during construction. Pathway users would be displaced and routed around the project a short distance for a duration of approximately 2 weeks. The pathway and accessibility would be restored where needed and use would return to normal.

Unaffected Resources

Alternative B would not cause any short- or long-term direct, indirect, or cumulative effects to the following resource categories:

- Threatened & Endangered Species;
- Indian sacred sites;
- Cultural resources;
- Tribal Interests, including -
  - Indian trust assets, and
  - Treaty Rights; and
- Environmental Justice.

Consultation, Coordination, and Public Involvement

In compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended in 1992), Reclamation consulted with the Idaho State Historic Preservation Office to identify cultural and historic properties in the area of potential effect. Consultation was initiated on April 2, 2020, and the State Historic Preservation Office concurred with the finding of no adverse effect to historic properties on May 7, 2020 (Final EA, Appendix C).

Reclamation mailed tribal and public recipients scoping letters with a project information package enclosed on May 27 and June 3, 2020, respectively. Reclamation received three comments during the scoping period. The mailing list, scoping letters, and comments received are presented in Appendix E of the Final EA.

Finding

Based on the analysis of the environmental effects presented in the Final EA and consultation with potentially-affected agencies, tribes, organizations, and the general public, Reclamation concludes that implementation of Alternative B will not have a significant impact on the quality of the human environment or natural and cultural resources. The effects of Alternative B will be minor, temporary, and localized. Therefore, preparation of an Environmental Impact Statement (EIS) is not required.

Decision

Based on the analysis in the EA, it is my decision to select for implementation Alternative B (Preferred Alternative). Alternative B will best meet the Purpose and Need identified in the EA.

Recommended:

ANTHONY PRISCIANDARO

Digitally signed by ANTHONY PRISCIANDARO
Date: 2020.09.21 11:02:27 -06'00'

Anthony Prisciandaro
Fisheries Biologist
Snake River Area Office, Boise, Idaho

Date

Approved:

MELANIE PAQUIN

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Melanie Paquin
Snake River Area Manager
Columbia-Pacific Northwest Region, Boise, Idaho

Date

BUREAU OF RECLAMATION

Final Environmental Assessment

Oxbow Incentivized Managed Aquifer Recharge Project

Bingham County, Idaho

Columbia-Pacific Northwest Region

U.S. Department of the Interior

September 2020

Mission Statements

The Department of the Interior conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

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

Cover photograph: aerial view showing the general area of the proposed Oxbow Incentivized Managed Aquifer Recharge Project in southern Idaho.

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Acronyms and Abbreviations

Acronym or Abbreviation	Definition
APE	Area of Potential Effect
BP	Before Present
cfs	Cubic Feet per Second
CAMP	Comprehensive Aquifer Management Plan
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DOI	Department of the Interior
EA	Environmental Assessment
ECHO	Enforcement and Compliance History Online
EIRWWA	Eastern Idaho Regional Wastewater Treatment Authority
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESPA	Eastern Snake Plain Aquifer
FONSI	Finding of No Significant Impact
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
IPaC	Information for Planning and Conservation
ITAs	Indian Trust Assets
m	Meters
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
Reclamation	Bureau of Reclamation
SHPO	State Historic Preservation Office
SRVID	Snake River Valley Irrigation District
T&E	Threatened and Endangered

Acronym or Abbreviation	Definition
TMDL	Total Maximum Daily Load
TP	Total Phosphorus
USCB	United States Census Bureau
USFWS	United States Fish and Wildlife Service
WaterSMART	Sustain and Manage America's Resources for Tomorrow
WD01	Water District 01
WWS	Winter Water Savings

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Chapter 1 Purpose and Need

1.1 Introduction

The Bureau of Reclamation (Reclamation) prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA). This EA analyzes the potential environmental effects that could result from the funding of the WaterSMART (Sustain and Manage America's Resources for Tomorrow) Grant for the Oxbow Incentivized Managed Aquifer Recharge Project.

This EA serves as a tool to aid the authorized official in making an informed decision that is in conformance with applicable federal laws and regulations. The proposed action involves funding the replacement of a water supply pipeline and removal of settled material from existing ponds to allow for Snake River water to be recharged to the regional aquifer. The proposed action and alternatives are described in detail in Chapter 2 of this document, and the effects of each alternative (direct, indirect, and cumulative environmental effects) are evaluated for each of the affected resource areas in Chapter 3 of this document.

The NEPA process requires analysis of any federal action that may have an impact on the human environment. This EA is being prepared to assist Reclamation in finalizing a decision on the proposed action, and to determine whether to issue a Finding of No Significant Impact (FONSI) or a notice of intent to prepare an Environmental Impact Statement (EIS).

1.2 Location, Background, and Action Area

1.2.1 Location

The project is located in southeastern Idaho just west of the city of Shelley, Idaho (Figure 1). Shelley is located approximately 12 river miles downstream from Idaho Falls along the Snake River.

1.2.2 Background

Snake River Valley Irrigation District (SRVID) was established in 1906 and incorporates approximately 21,000 irrigated acres of land in southeast Idaho's Bingham County. The city of Shelley owns sewage treatment ponds that have not been used since 2000. These ponds would be converted to recharge ponds under the proposed action. The ponds were frequented by waterfowl in the past.

Drought resiliency is important for the residents and economy of eastern Idaho. In their description of the purpose of aquifer recharge, the Idaho Department of Water Resources (IDWR) states "Restoring ground-water levels in the central part of the Plain and spring discharges in the Thousand Springs and American Falls reaches of the Snake River are two key

hydrologic objectives of large-scale managed recharge in the Eastern Snake River Plain" (IDWR 1999). Aquifer recharge can allow for water storage to improve water reliability in the Eastern Snake River Plain and associated springs during future drought years. No recharge is currently occurring at the site. An existing pipeline, currently used for irrigation deliveries, has a capacity of up to 2 cubic feet per second (cfs) while the existing ponds have been estimated to have the ability to recharge up to 50 cfs.

Additional benefits of the project include those for the adjacent Eastern Idaho Regional Wastewater Treatment Authority (EIRWWA) water treatment facilities. The EIRWWA's Oxbow Wastewater Treatment Plant was upgraded in 2009 and serves residents of the cities of Shelley and Ammon as well as unincorporated areas of Bingham and Bonneville Counties. A National Pollutant Discharge Elimination System (NPDES) permit from the Environmental Protection Agency (EPA) requires the Oxbow Wastewater Treatment Plant to reduce their total phosphorus (TP) loading to the Snake River by May 1, 2021. The existing pond site that would be converted to recharge ponds as part of this WaterSMART project would provide EIRWWA with a less expensive alternative for disposing a portion of Class A effluent via recharge.

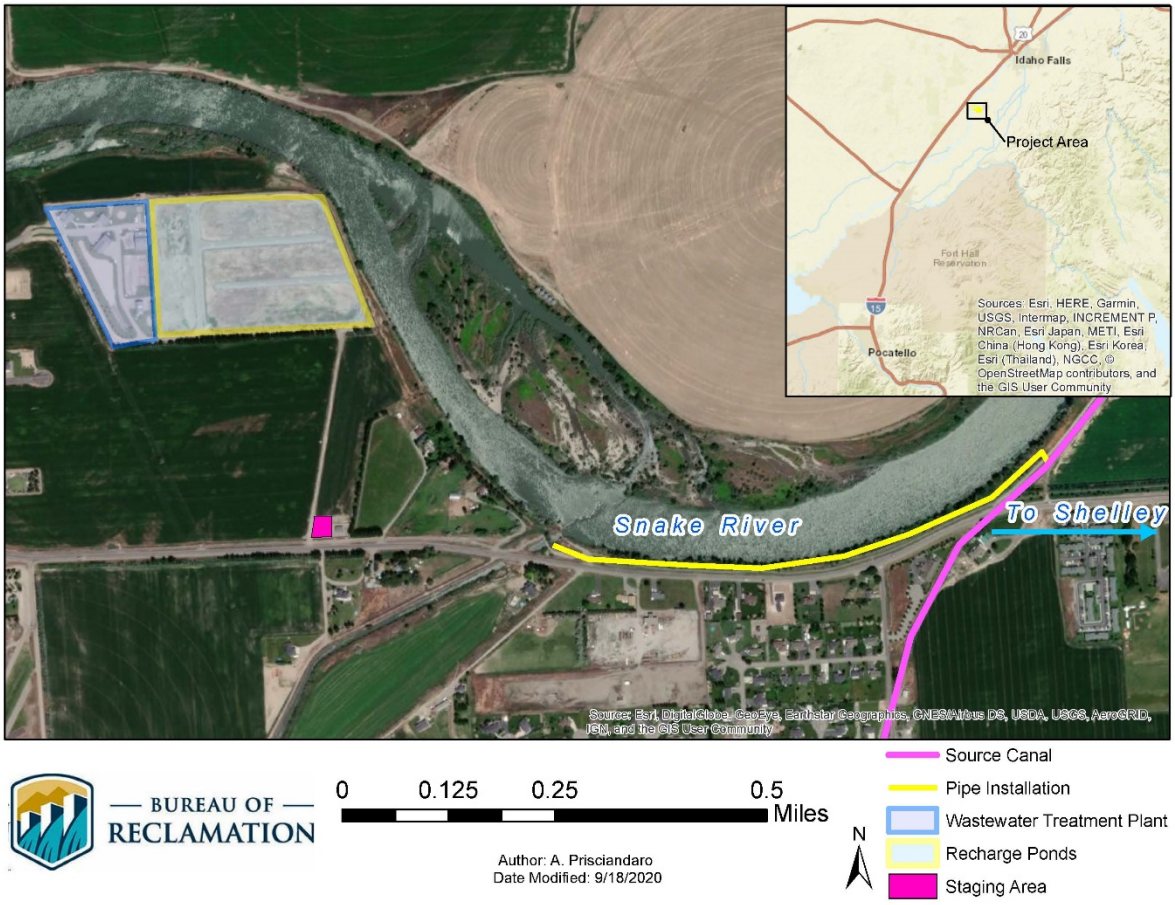

Figure 1. Location map

1.2.3 Action Area

The project is in eastern Idaho, adjacent to the Snake River at an elevation of 4,633feet. The Blackfoot Mountains rise to the southeast of the project area. The city of Idaho Falls is located 10 miles to the northeast. The action area would include the existing Cedar Point Canal from the Snake River to West Fir Street, 3,150 feet of new pipeline between West Fir Street and the Snake River, a small staging area, and the existing ponds that are already connected to the EIRWWA's Oxbow Wastewater Treatment Plant. The pipeline is adjacent to a paved recreation pathway that runs along the south shore of the Snake River. South of the pipeline is a residential area including an assisted living facility. The recharge ponds and treatment plant are surrounded by the Snake River and farmland.

1.3 Purpose and Need

Reclamation's purpose for the proposed action is to fulfill the WaterSMART grant, which would improve drought resiliency throughout the Eastern Snake River Plain by increasing recharge to the aquifer. This project would create the opportunity for recharge of up to 20 cfs of Snake River water. Up to an additional 3 cfs of treated wastewater could also be recharged in the ponds. In order to meet their TP permitting requirements at the adjacent wastewater treatment plant, EIRWWA has to either perform expensive chemical treatment before releasing effluent into the Snake River or recharge their effluent into the aquifer. A connection already exists between the treatment plant and the ponds; however, an additional water source, such as the source that could be provided by the new pipeline, is needed to dilute the effluent before it can be recharged. Recharging the wastewater would not only reduce wastewater treatment costs, it would improve the water quality in the Snake River. Currently, the ponds have a higher infiltration capacity for water to enter the aquifer than could be supplied by the existing supply pipeline. The proposed pipeline would increase the ability for SRVID to recharge water to the aquifer.

1.4 Regulatory Compliance

The following major laws, executive orders, and secretarial orders apply to the proposed action, and compliance with their requirements is documented in this EA:

- NEPA;
- Endangered Species Act (ESA);
- National Historic Preservation Act (NHPA);
- Clean Water Act (CWA);
- NNPDES;
- Executive Order (EO) 13007 Indian Sacred Sites;
- EO 12898 Environmental Justice;

- EO 13175 Consultation and Coordination with Tribal Governments;
- Secretarial Order 3175 Department Responsibilities for Indian Trust Assets (ITAs); and
- Secretarial Order 3355 Streamlining National Environmental Policy Act Reviews and Implementation of Executive Order 13807, "Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects."

1.5 Scoping Summary

The scoping process provides an opportunity for the public, governmental agencies, and tribes to identify their concerns or other issues and aids in developing a full range of potential alternatives that address meeting the project's purpose and need as stated in this document. To accomplish this, Reclamation: (1) provided information to the public through a mailed/emailed preliminary information package, contacts with local media, etc.; and (2) solicited comments from the public, governmental agencies, and potentially affected tribes. Details regarding the public and agency scoping are presented in Chapter 4.

Chapter 2 Description of Alternatives

2.1 Introduction

This chapter defines and describes the two alternatives analyzed in this EA: Alternative A, the No Action alternative; and Alternative B, the Proposed Action alternative.

2.2 Alternative Development

The alternatives presented in this chapter were developed based on the purpose and need for the project, as described in Chapter 1, and the issues raised during internal, external, and tribal scoping. The alternatives analyzed in this document include the No Action alternative and the Proposed Action alternative. A no action alternative is evaluated because it provides an appropriate basis to which the other alternative is compared. No new alternatives were identified during the scoping process.

2.3 Alternative A – No Action

Under the No Action alternative, Reclamation would not provide WaterSMART funding. Without the Reclamation grant, SRVID and its associated organizations and agencies would likely continue with their proposed project using alternative funding sources, which would cause a delay in the implementation of the project. For purposes of this analysis, the assumption is that the project would not go forward, so that the environmental effects associated with taking no action can be compared to the Proposed Action as required under NEPA.

Under the No Action alternative, no water would be recharged to the aquifer. The EIRWWA's Oxbow Wastewater Treatment Plant requires a water source to dilute its treated water in order to recharge it to the aquifer. When Snake River water is not flowing to the ponds to dilute the wastewater effluent, enhanced treatment would be necessary. Operating the equipment for this enhanced treatment is expensive.

2.4 Alternative B – Oxbow Incentivized Managed Aquifer Recharge Project (Proposed Action)

Reclamation would provide funding, via a WaterSMART grant, to SRVID to increase recharge (conversion of surface water to ground water) to the Eastern Snake Plain Aquifer, near the City of Shelley in Bingham County, Idaho. The funding would allow SRVID and its partners to install a higher-capacity pipeline, scrape settled material out of the existing ponds, and recharge both Snake River water and water from the wastewater treatment plant.

2.4.1 Pipeline

A 36-inch pipe, with a capacity of approximately 20 cfs, would replace the existing 2 cfs pipeline for 3,150 feet near river mile 784 to allow more Snake River water to be delivered to the ponds for recharge. The pipeline would be used to deliver irrigation water for adjacent lands as well as delivering water to the recharge site. Snake River water would also serve as dilution of the wastewater effluent. The construction work for the pipeline would occur in the fall of 2020 after irrigation season has ended and is expected to take less than 2 weeks to complete.

2.4.2 Paved Recreation Path

A paved recreation path parallels the proposed pipeline for the entire 3,150 feet (Figure 2). Pedestrian and bicycle traffic on the paved pathway adjacent to the pipeline would be rerouted through the lawn around active construction activities. The route of the existing pipeline is not known in detail. A survey of the existing pipeline would occur prior to construction. At least two access points connecting the residential area south of the project to the paved path would have to be crossed. The total length of the recreation path effected will be unknown prior to construction. Any sections of the paved pathway that are removed or damaged during construction would be temporarily filled in with dirt during construction and repaved by the city of Shelley after the pipeline construction is completed.

Figure 2. Representative example of the estimated location of the existing pipeline (in yellow) between Fir Street and the paved pathway

2.4.3 Recharge Ponds

The existing ponds that would be converted to recharge ponds are located near river mile 783. The ponds cover an area of 22 acres. To improve recharge rates, approximately 20,000 cubic yards of material that has settled out in the ponds over the years would be scraped out of the bottom and used to increase the size of the existing berms prior to inundation. The ponds are hydrologically connected to the regional aquifer and not locally connected to the Snake River.

Water recharged into the aquifer flows under the Snake River in a northwesterly direction. The recharge water increases groundwater levels in the Eastern Snake River Plain as well as increasing spring discharges into the Snake River near Thousand Springs and American Falls. The construction work for the ponds would occur in the fall of 2020 and is expected to take less than 2 weeks to complete.

2.4.4 Water Sources

The project has identified multiple water supply sources for the recharge site, as summarized in the following list.

- Natural Flow -SRVID holds a recharge permit for up 585 cfs. Under this permit, up to 20 cfs from the Cedar Point Canal would be delivered when available the Oxbow site via the new pipeline.
- Water District 1 (WD01) Storage Rentals - Recharge of storage can occur via the established channels of state-managed recharge and the WD01 rental pool rules.
- EIRWWA Treated Effluent – Up to 3 cfs of Class A effluent is estimated to be available for recharge at the Oxbow Site. A pipeline already exists connecting the treatment plant to the ponds; however, an additional water source is needed to dilute the effluent before it can be recharged.

2.4.5 Staging Area

Construction equipment would be stored at the staging area (Figure 1) when not in use on nights and weekends. The pipe itself would also be stored at the staging area for the period between delivery and installation.

2.4.6 Operation and Maintenance

Long-term operations and maintenance associated with the project would be conducted by SRVID or their managing partners. These actions include alterations to flows in the source canal, monitoring of water levels in the aquifer via existing wells, and periodic removal of material that settles out in the ponds. The amount of water and the timing of its diversion to the ponds will vary each year depending on that year's climatic conditions and the previous year's carryover. The pipeline could provide water to the ponds for as many as 300 days per year (primarily March through November) or as few as zero days per year in a drought year. The current legal understanding and the treatment capabilities at the wastewater treatment plant suggest that effluent could only be recharged when Snake River water is available to dilute the effluent prior to recharge. With the new pipeline installed, up to 20 cfs diverted from the Snake River plus up to 3 cfs of effluent from the EIRWWA treatment plant would likely be recharged as often as Snake River water supplies are available.

2.5 Alternatives Considered but Eliminated from Further Study

NEPA requires Reclamation to consider alternatives developed through public scoping. However, only those alternatives that are reasonable and meet the purpose and need of the proposed action must be analyzed. There were no alternatives presented through the public scoping process.

2.6 Actions Considered for Cumulative Effects

Cumulative Effects are defined in 40 CFR 1508.7 as the effect on the environment that results from the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions. The Council on Environmental Quality interprets this regulation as referring only to the cumulative effect of the direct and indirect effects of the proposed action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. Past, present, and reasonably foreseeable actions identified in the area (public or private) that could adversely affect the same resource areas evaluated in this EA would be additive effects to the proposed project.

As described in more detail in the hydrology section below, irrigation for farming has had major effects on the regional aquifer. Infiltration from the use of surface water for irrigation initially raised the level of the aquifer. As farming expanded, groundwater sources were soon needed to meet demand and aquifer levels have been greatly reduced.

As local populations and environmental regulations have increased over the years, the local sewage treatment system has been upgraded and expanded. To meet environmental regulations, technological advances in sewage treatment over the years have allowed for water quality of the sewage treatment plant effluent into the Snake River to improve, even with an expanding population.

Results of the past and present actions form the affected environments of the various resources are described in Chapter 3. Other recharge projects are expected for the Eastern Snake Plain Aquifer. However, there are currently no planned projects that would be close enough to the Oxbow recharge ponds to interact. There are no reasonably foreseeable actions considered for cumulative effects.

Chapter 3 Affected Environment and Environmental Consequences

3.1 Introduction

The Affected Environment chapter evaluates the environmental consequences of implementing each of the alternatives described in Chapter 2. The level and depth of the environmental analysis corresponds to the context and intensity of the effects anticipated for each environmental component (resource). The affected environment (Proposed Action area) addressed in this EA is defined in varied contexts depending on the affected resource being analyzed.

Resources evaluated in this document and analyzed in this chapter were selected based on: Reclamation requirements; compliance with laws, statutes, and executive orders; public and internal scoping; and the potential for resources to be affected by the Proposed Action.

3.2 Hydrology

3.2.1 Affected Environment

Eastern Snake Plain Aquifer Management

The Eastern Snake Plain Aquifer (ESPA) is a large aquifer that underlies approximately 10,000 square miles, 13 percent of the State of Idaho. The aquifer is a vital water source for southern and eastern Idaho. Figure 3 provides a map of the delineation of the ESPA. The aquifer primarily influences Snake River gains surrounding American Falls Reservoir, near Pocatello, Idaho, and downstream of Twin Falls, Idaho, near Thousand Springs. Until modern irrigation practices began in southern and eastern Idaho, the aquifer was maintained by natural infiltration of direct precipitation. From the time modern irrigation practices began on lands overlying the aquifer and up until the 1950s, the aquifer gained storage quickly due to the farming practices that greatly increased infiltration into the aquifer. From the early 1950s, however, when groundwater pumping for farming purposes became more widespread, the aquifer level peaked and began to decline. From the 1950s up until approximately 2015, the aquifer has seen significant reductions in supplies relative to demands on the aquifer.

The 2009 ESPA Comprehensive Aquifer Management Plan (CAMP) contains a long-term, multi-faceted approach to manage the aquifer levels in the ESPA. The goal of the 2009 plan is to "Sustain the economic viability and social and environmental health of the Eastern Snake Plain Aquifer by adaptively managing a balance between water use and supplies." One of the primary methods to manage the aquifer, as outlined in the 2009 plan, is aquifer recharge.

Overview of Snake River Valley Irrigation District

Snake River water has been diverted by the SRVID since 1889. The SRVID holds several natural flow rights and storage rights to support their irrigation use, including relatively senior natural flow rights in southern and eastern Idaho. The priority dates, diversion rates, and period of use of the SRVID's natural flow rights are listed in Table 2.

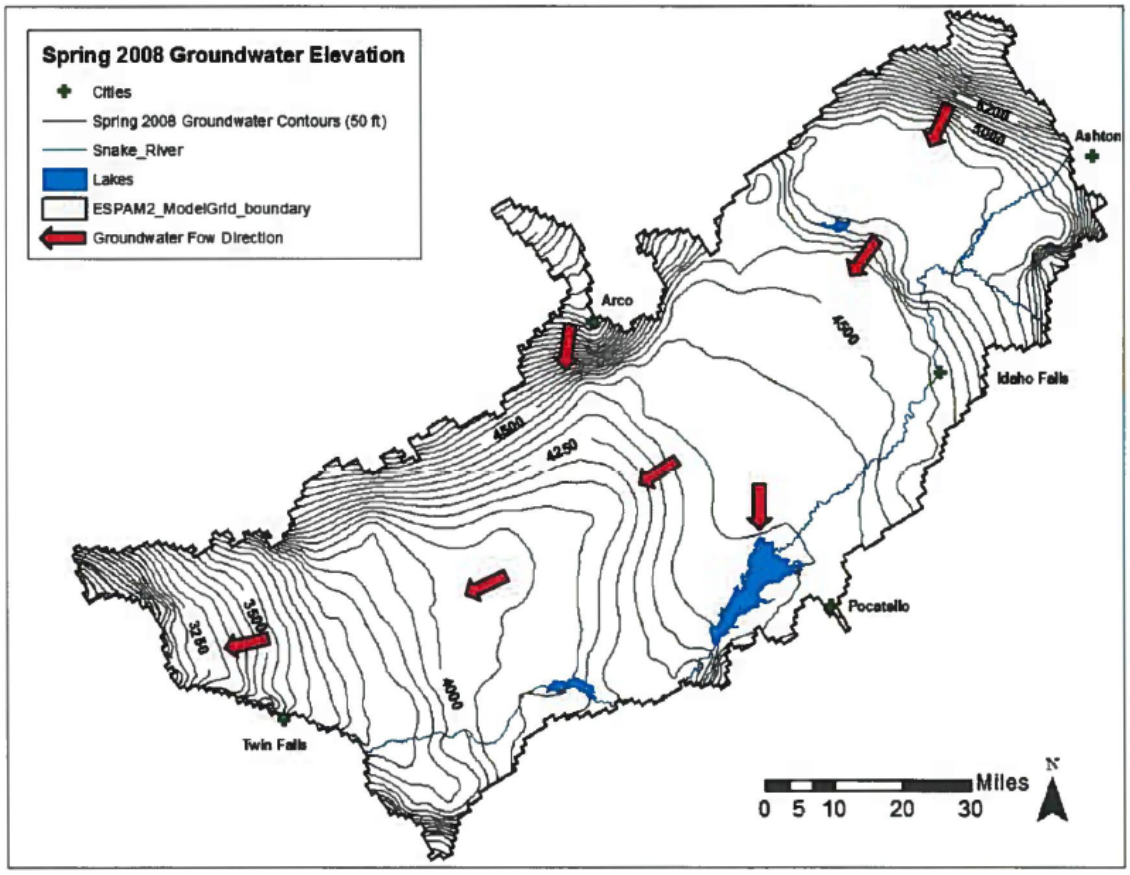

Figure 3. Eastern Snake Plain Aquifer delineation and water flow directions in spring 2008, from the Idaho Department of Water Resources. Note that the project area is just to the southwest of the city of Idaho Falls (source: Oxbow Grant Application).

Table 1. Natural flow rights held by the Snake River Valley Irrigation District

Priority Date	Diversion Rate (cfs)	Period of Use
April 6, 1889	200	04/01 – 10/31
July 9, 1896	400	04/01 – 10/31
September 1, 1903	110	04/01 – 10/31
January 22, 1916	68	04/01 – 10/31
April 1, 1939	100	04/01 – 10/31
June 19, 2013	585	01/01 – 12/31

The natural flow rights held by SRVID total 1,463 cfs. As natural flow priority dates in the Upper Snake system reduce as spring and summer runoff slow, SRVID utilizes their available supplemental storage water. SRVID holds a total storage right of 91,467 acre-feet in various Upper Snake reservoirs and SRVID currently provides water to approximately 22,940 acres of irrigated lands in the area south of Idaho Falls.

SRVID's diversion from the Snake River is located just upstream of the Gem State Hydroelectric Facility south of Idaho Falls. From there, water is carried through several other major canals throughout the district's network to individual district patron's headgates. Water is diverted to the Cedar Point Canal portion of SRVID's system less than a mile downstream in the canal system of the district's main headgate on the Snake River. The Cedar Point Canal travels southwest from the main SRVID canal down through the eastern edge of the town of Shelley towards Basalt, Idaho, and any return flow is eventually returned to the Snake River further down the canal system. Figure 4 shows daily diversion data for the 30-year period of 1981 to 2010 and demonstrates the general seasonal flow patterns of water diverted by the irrigation district. Lines for the minimum, the maximum, and the 10th, 50th, and 90th percentiles are included. It is typical for SRVID to begin irrigation diversions for each irrigation season in mid-April and to end irrigation diversions in late October.

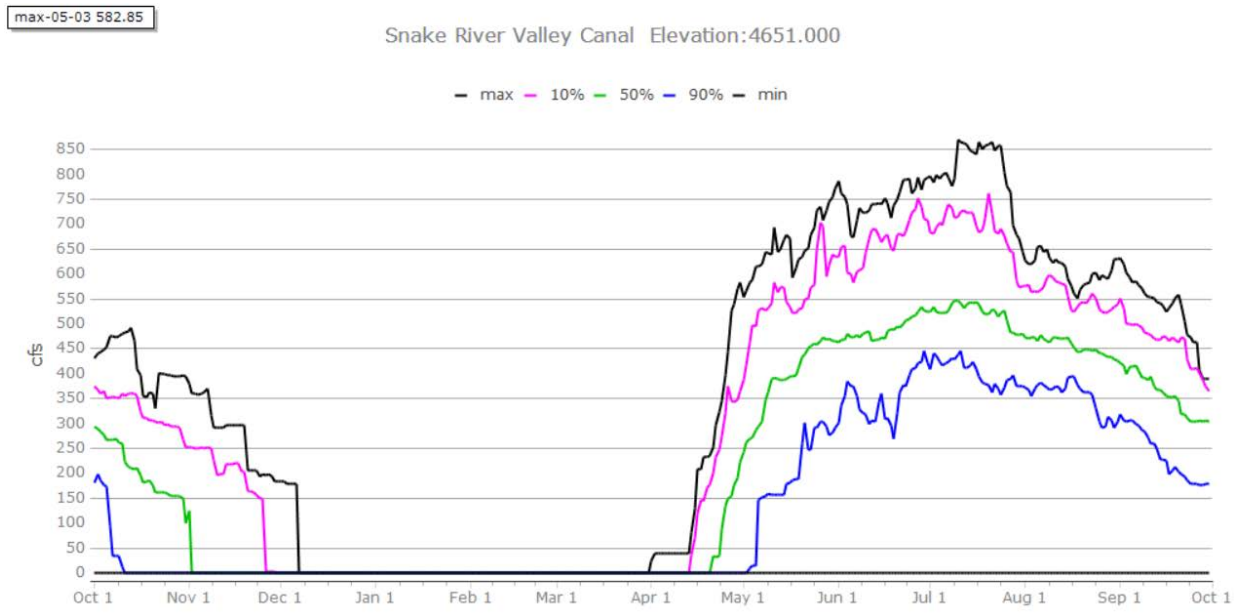

Figure 4. Daily diversion data for the Snake River Valley Canal for the 30-year period from 1981 to 2010

A headgate is in place on the Cedar Point Canal where the new pipeline would connect; water would be gravity-fed through the pipeline to the ponds.

Sources of Water

This project has identified three sources of water supply to enable recharge at the Oxbow site: natural flow, reservoir storage through the WD01 rental pool, and water discharged from the adjacent Wastewater Treatment Plant.

Natural flow is the main source of water for this project. The SRVID's groundwater recharge beneficial use right No. 1-10626 has a priority date of June 19, 2013 and a rate of diversion of 585 cfs. As of the writing of this EA, the water right was in the permit stage and the IDWR was in the process of licensing this permit. Other groundwater recharge beneficial use rights in southern and eastern Idaho in IDWR– WD01 that were at a minimum of permit stage as of the writing of this EA are identified in Table 2.

Table 2. Groundwater recharge beneficial use rights in Water District 01

Owner	Priority Date	Diversion Rate (cfs)
State of Idaho	various (1980-1998)	7,769
Southwest Irrigation District	12/16/2009	50
Peoples Canal & Irrigation Company	6/19/2013	350
Snake River Valley Irrigation District	6/19/2013	585
Aberdeen Springfield Canal Company	4/14/2014	1,200
Raft River Recharge Group LLC	1/25/2017	70

During the non-irrigation season, there are several upper Snake River basin flow rights that have earlier priority dates than those mentioned in Table 2, both upstream and downstream of the point of diversion for SRVID. Of these earlier priority date rights, those upstream of SRVID are predominantly in the Henrys Fork drainage (including Henrys Lake, Island Park Reservoir, and Grassy Lake), with a few on the mainstem of the Snake River (including Jackson Lake, Palisades Reservoir, and Ririe Reservoir). The water rights earlier in priority date that must be met prior to diversions by SRVID for recharge include Minidoka Dam/Lake Walcott and American Falls Reservoir (Table 1). During the non-irrigation season, natural flow accrues to the reservoir refill rights in the upper Snake River system. This allows the storage reservoirs to fill while a small portion of the natural flow is being diverted by a few diversions, in priority in the system. Typically, American Falls Reservoir doesn't refill until late winter or early spring, so the recharge rights listed in Table 2 aren't generally in priority during the non-irrigation season. According to upper Snake River basin water rights, for the groundwater recharge beneficial use rights in Table 2 to be in priority above Minidoka Dam, there needs to be at least 2,700 cfs of flow from Minidoka Dam during the non-irrigation season. It is operationally significant for operations of the upper Snake River reservoir system when 2,700 cfs or more of water is flowing past Minidoka Dam because it indicates that there is excess water available above that which the reservoir system will be able to capture for the coming irrigation season. The minimum flow at Minidoka Dam is 525 cfs (typically the wintertime flow from Minidoka Dam) in order to store water in Lake Walcott and American Falls Reservoir for the upcoming irrigation season. During the non-irrigation season, it may be determined that there is a likely excess in the upper Snake

River reservoir system; this may result from pre-irrigation flood control operations and/or assessments that American Falls Reservoir will fill before irrigation begins. As a result, more than 525 cfs may be released from Minidoka Dam before irrigation season begins. Figure 5 illustrates how often 2,700 cfs or more has been released from Minidoka Dam; this would allow for the groundwater recharge beneficial use rights upstream of Minidoka Dam to be in priority, including recharge at the point of diversion for SRVID. When the SRVID groundwater recharge right isn't in priority, yet the State of Idaho groundwater recharge right is in priority above Minidoka Dam, SRVID will partner with the State of Idaho under the State's recharge right to recharge the ESPA using their conveyance and recharge site facilities.

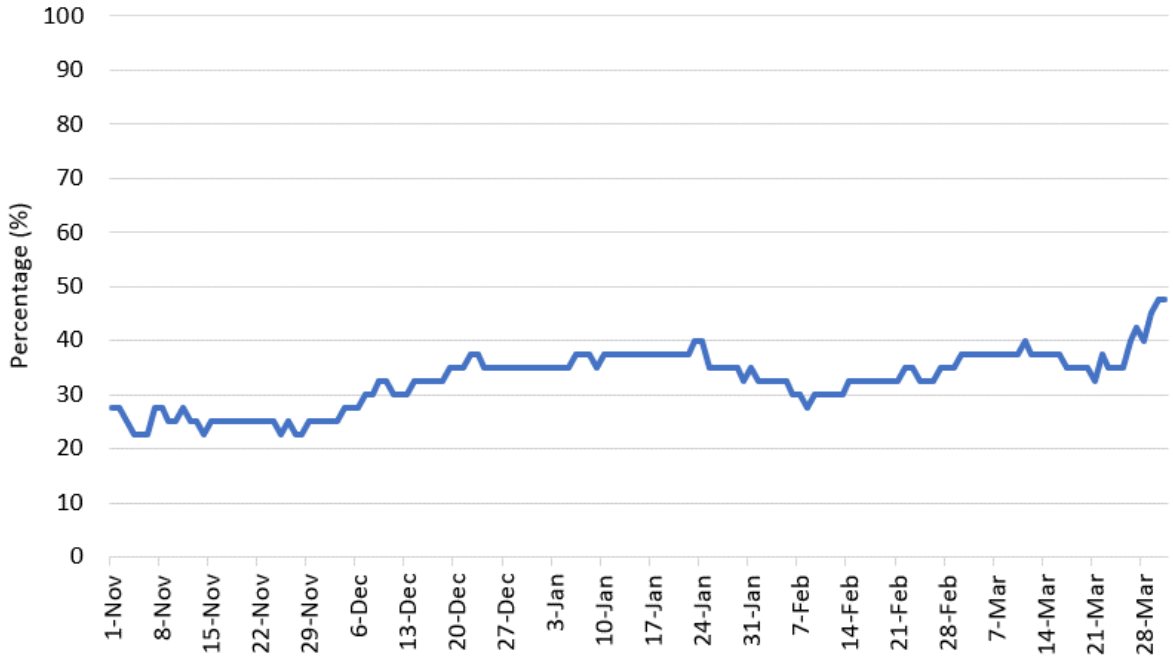

Figure 5. Percentage of years when 2,700 cfs or more is released from Minidoka Dam in the non-irrigation season; these conditions would allow the potential for Water Right 1-10626 to be in priority for the Snake River Valley Irrigation District. Data are for the 40-year period from 1981 to 2020.

Climactic conditions also affect recharge efforts in southern and eastern Idaho. Figure 6 illustrates the historical range of temperatures observed at American Falls Dam. When the mean daily temperature is below freezing, there can be difficulties in maintaining conveyance of flow in an open channel, thus affecting the conveyance of water for recharge. As illustrated in Figure 6, the mean daily temperature would create unfavorable conditions for recharge above American Falls Dam from late November to late February each year.

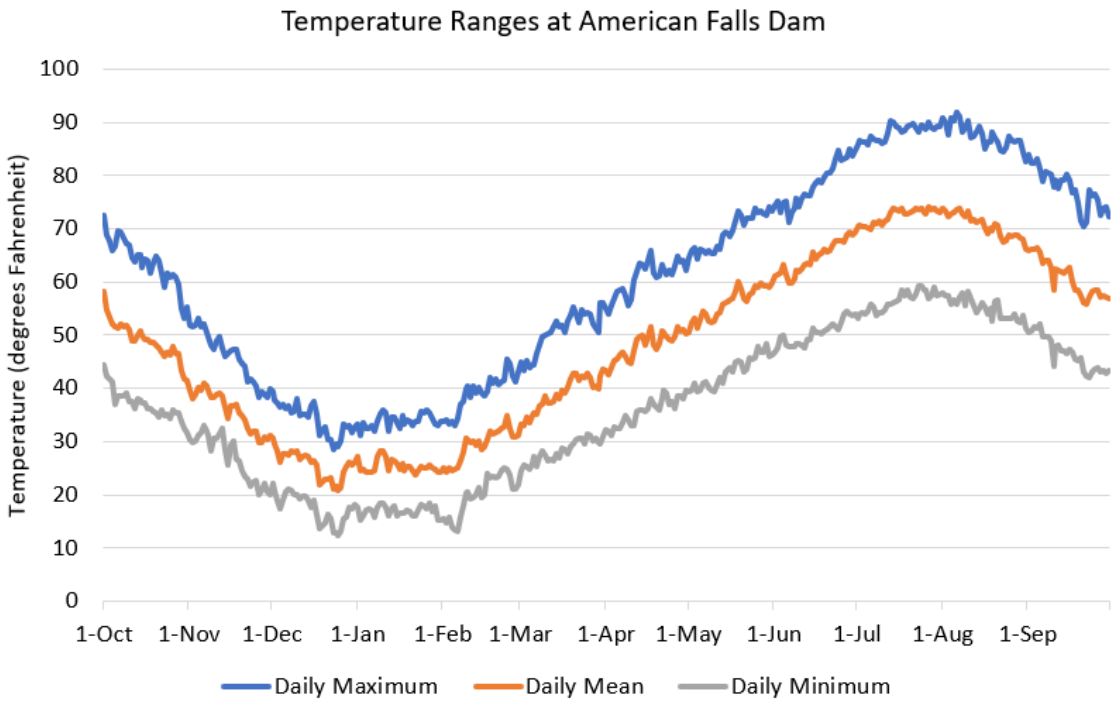

Figure 6. Daily temperature ranges at American Falls Dam for the 30-year period from 1981 to 2010

SRVID also holds a contract with Reclamation for stored water accrued to the Palisades Reservoir storage right. In connection with this storage right, there is a Winter Water Savings (WWS) limitation which entails that the canal which can divert the storage right will not convey water for 150 consecutive days annually. If it is estimated that American Falls Reservoir will fill before irrigation season begins, Reclamation coordinates with IDWR to identify and allow for the waiving of the WWS limitations, which thereby waives the requirement for 150 consecutive days of maintaining no conveyance of water.

The second source of recharge water for this project is storage water from the upper Snake River reservoir system through the WD01 rental pool. The availability of water in the WD01 rental pool is variable from year to year, depending on the low and high runoff and the storage content in the reservoirs. The 2009 ESPA CAMP and the 2015 settlement agreement between surface water users and groundwater users both describe the intent and framework of managed aquifer recharge. Storage water from the reservoir system is often rented from storage right holders by various entities in the upper Snake River system to recharge the aquifer as outlined in the 2015 settlement agreement. When water is rented for recharge, water is diverted for the specific purpose of recharge and is conveyed to the recharge site where it is delivered for infiltration into the aquifer. For this project, SRVID would lease storage water or rent water from WD01 for recharge purposes. Other groups, including the Idaho Ground Water Appropriators, also rent water from the rental pool and plan accordingly with the State of Idaho and irrigation districts, including SRVID, to convey and recharge the rented storage water.

The third source of water for this project is to recharge water discharged from the adjacent Wastewater Treatment Plant. IDWR identifies the capture and reuse of wastewater, if the water is still capable of being identified, as acceptable for recharge. As identified in the purpose and need for this project, when wetted by Snake River water, up to 3 cfs of treated water from the Oxbow Wastewater Treatment Plant would be added to increase the volume of water to be recharged. This would help add water to improve the aquifer, reduce costs of wastewater treatment, and improve water quality in the Snake River.

3.2.2 Environmental Consequences

Alternative A – No Action

Under the No Action alternative, no Snake River water would be recharged adjacent to the Oxbow Wastewater Treatment Plant. The aquifer would not receive the additional benefit this site offers to increase water storage in the aquifer, and dry years would continue to cause water shortages. The effluent from the Oxbow Wastewater Treatment Plant would not be able to be diluted and recharged, resulting in both higher costs to manage the effluent and lower water quality in the Snake River. Elements of basin hydrology, including aquifer levels, water retention time in the aquifer, reach gains into the Snake River throughout southern and eastern Idaho (including Thousand Springs), would see no benefits in the No Action alternative. The wastewater treatment plant will have additional treatment available by March 2021 to meet total phosphorus standards; however, even with these improvements, water quality in the Snake River would continue to be reduced without the ability to recharge wastewater effluent from the Oxbow Wastewater Treatment Plant.

Alternative B – Oxbow Incentivized Managed Aquifer Recharge Project (Proposed Action)

Under the Proposed Action alternative, infrastructure would be improved by the replacement of the pipe from the Cedar Point Canal over to the ponds and the ponds themselves would be revitalized. Water could be recharged for up to 300 days, which would allow for an estimated 7,000 to 12,000 acre-feet that could be recharged into the aquifer each year at the Oxbow recharge site. ESPA recovery would be aided by this recharge project because the project would improve aquifer levels, improve water retention time in the aquifer, and increase reach gains into the Snake River in southern and eastern Idaho. Any reductions to Snake River flows would occur during higher flow volumes with minimal impacts on overall flow in the Snake River. The Cedar Point Canal has the capacity to provide the additional 20 cfs to the pipeline without impacting any other irrigation deliveries from the canal. Water would not be recharged under drought conditions; however, drought resiliency will be improved through this project for the Snake River area from Idaho Falls in eastern Idaho to Thousand Springs in southwestern Idaho. Water quality in the Snake River would be improved by allowing effluent from the Oxbow Wastewater Treatment Plant to be recharged into the aquifer, which would provide additional benefits to the ESPA. Basin hydrology would be improved under the Proposed Action.

3.3 Water Quality

3.3.1 Affected Environment

The proposed project is within the Idaho Department of Environmental Quality's (IDEQ's) American Falls subbasin, which covers approximately 2,869 square miles and includes the towns of American Falls, Aberdeen, Blackfoot, Firth, and Shelley, as well as the Fort Hall Reservation (IDEQ 2012). Major land uses in the subbasin include dryland and irrigated agriculture and livestock grazing. Located in the American Falls subbasin, American Falls Reservoir is the largest reservoir in Reclamation's Minidoka Project and supplies irrigation water to over 1,150,000 acres (Reclamation 1995).

Water Quality Standards

For the area of the proposed project, IDEQ has designated the associated segment of the Snake River for cold water aquatic life, primary and secondary contact recreation, aesthetics, agricultural and domestic water supply, industrial water supply, spawning, and wildlife habitat (IDAPA 2020; 58.01.02). This segment of the Snake River is not meeting cold water aquatic life criteria and secondary contact recreation beneficial uses due to exceedance in mercury (IDEQ 2016). Dissolved oxygen and sediment are also listed as pollutants. There are total maximum daily loads (TMDLs) developed by IDEQ for TP and sediment on this segment of the Snake River (IDEQ 2012). Pollutant load allocations are: 0.05 mg/L for TP (previously 0.07 mg/L); and the suspended sediment load average concentration is not to exceed 60 mg/L over a 14-day period for tributaries and point sources to American Falls Reservoir.

Within this subbasin, IDEQ identified a variety of pollutant sources in the American Falls Subbasin Assessment and TMDL report (IDEQ 2012). Agriculture, stormwater runoff, wastewater treatment plants, livestock practices, stream channels and banks, roads, recreation, and failed septic systems contribute to nutrient and/or sediment loading. For this specific segment of the Snake River, IDEQ identified eroding streambanks, City of Blackfoot stormwater runoff, and agriculture as known sediment sources, with possible contributions from livestock grazing and instream channel sources (IDEQ 2012). Nutrient sources include Blackfoot, Firth, and Shelley wastewater treatment plants and City of Blackfoot stormwater runoff. Other possible nutrient sources include agriculture and livestock.

National Pollutant Elimination System Permitting

The Oxbow Wastewater Treatment Plant, operated by EIRWWA, treats domestic sewage for approximately 21,000 people living in Shelley and the satellite communities of Ammon, North Bingham County, and South Bonneville County (EPA 2013). The facility has an NPDES Permit ID#0020133 from the EPA to discharge the treated wastewater to the Snake River in the City of Shelley. As of July 1, 2018, the EPA transferred administration and enforcement of this NPDES permit to IDEQ (EPA 2020a). The Enforcement and Compliance History Online (ECHO) data base for NPDES violations identifies that this facility has only one minor violation (that has since been resolved) in the past five years (EPA 2020b).

To meet final TP limits in the current NPDES Permit, the Oxbow Wastewater Treatment Plant has a planned upgrade to its wastewater treatment system identified in the Facility Planning study dated May 2018; this upgrade has been approved by IDEQ (Appendix A). After treatment, the wastewater is expected to continue to meet and exceed Class A wastewater standards and potentially could be used for aquifer recharge without the need to mix with fresh water from the Snake River. Table 3 identifies expected wastewater quality after plant upgrades in relation to Class A wastewater standards.

Table 3. Wastewater quality of Oxbow Wastewater Treatment Plant after facilities upgrade compared to Class A wastewater standards

Parameter	Oxbow Treatment Wastewater	Class A Standards
Biological Oxygen Demand	< 5 mg/L[1]	5 mg/L (for aquifer recharge use) 10 mg/L (for irrigation use)
Total Suspended Solids	< 5 mg/L	N/A
Nitrogen	< 10 mg/L	10 mg/L (for aquifer recharge use) 30 mg/L (for irrigation use)
Total Phosphorus	< 0.03 mg/L	NA
Total Coliform	< 2.2 cfu/100 mL[2]	2.2 cfu/100 mL
Turbidity	< 0.05 NTU[3]	0.2 NTU (for aquifer recharge use) 0.5 NTU (for irrigation use)

Note: table adapted from presentation by Forsgren on Oxbow Wastewater Treatment Plant Capacity and Reuse

[1] milligrams per liter

[2] colony forming units per 100 milliliters

[3] Nephelometric Turbidity Units

Water Quality Data

Water quality data for the Snake River for the reach from the City of Shelley down to American Falls Reservoir are available to the public at https://www.waterqualitydata.us/portal/. This database is a cooperative service sponsored by the United States Geological Survey, the EPA, and the National Water Quality Monitoring Council. Water quality data stored in this database are collected by variety of sources.

Reclamation collects and analyzes water quality data from the Snake River near the City of Shelley. Specific water quality data from site 1119USBR_WQX-AFE121 are presented in Table 4 and consist of one to up to four samples per year (70 to 73 total samples, depending on the constituent) collected from 2011 through 2019.

Table 4. Total nitrogen (nitrate + nitrite), Kjeldahl nitrogen, orthophosphate, and phosphate concentrations (average, median, minimum, and maximum) from site 1119USBR_WQX-AFE121 on the Snake River; data collected from 2011 to 2019

Category of Value	Total Nitrogen (Nitrate + Nitrite; mg/L)	Kjeldahl Nitrogen (mg/L)	Orthophosphate (mg/L)	Phosphate (mg/L)
Average	0.14	0.22	0.01	0.03
Median	0.11	0.19	0.01	0.03
Minimum	0.44	0.84	0.03	0.15
Maximum	0.02	0.09	<0.0002	<0.01

Ammonia was also collected at this site from 2011 through 2018 and ranged from less than 0.01 mg/L to 0.1mg/L.

3.3.2 Environmental Consequences

For purposes of analysis, the project area consists of the Snake River from the City of Shelley to American Falls Reservoir and the ESPA.

Alternative A- No Action

Direct and Indirect Effects

In the short-term, the Oxbow Wastewater Treatment Plant would continue to operate and discharge Class A effluent into the Snake River as per their NPDES permit. Although the Oxbow Wastewater Treatment Plant is contributing nutrients and sediment to the Snake River (Appendix B), it appears the plant is having minimal effect on water quality or on beneficial uses as assessed by Snake River water quality at the four bridge sites. The American Falls Subbasin Assessment and TMDL report (IDEQ 2012) states that nutrients do not appear to be impairing beneficial uses in this segment of the Snake River. After the Oxbow Wastewater Treatment Plant upgrade, the portion of pollutants that the treatment plant contributes to the Snake River would decrease. This would be an overall benefit to water quality in the Snake River; however, because of the other contributing pollutant sources in the subbasin (identified in the Water Quality Standards section above), those decreases in pollutant concentrations may not be enough to affect the overall water quality in the Snake River. The Oxbow Wastewater Treatment Plant upgrade would allow EIRWWA to continue to operate and to meet the TP TMDLs and the other requirements in their NPDES permit.

In the long term, as TMDLs and state water quality regulations continue to be enforced in the subbasin, the Snake River water quality would slowly improve. The direct and indirect effects to Snake River water quality would be the slow, incremental decreases in TP and sediment from implementation of best management practices, decreasing discharges of pollutants via NPDES

permits, and adherence to TMDLs by all entities (point and non-point pollutant sources) in the subbasin.

Alternative B - (Proposed Action)

Construction Effects

Minor effects could occur due to blowing dust from the active construction site and from the staging area for the pipeline and ponds, due to the proximity of these locations to the Snake River. These effects would be short term (a few weeks), occurring during dry, windy days, and could result in minor inputs of sedimentation and associated small increases in turbidity and/or total suspended solids in the Snake River. Due to the volume of water moving through the Snake River compared to the small input of dust, and to the use of best management practices during construction (such as wetting down the construction area) to control dust levels, state water quality standards would be met.

Post-Construction Effects

Mixing of Class A effluent with Snake River water in the ponds to allow water to infiltrate into the aquifer would allow EIRWWA to recharge a portion of the ESPA and discharge a portion of their wastewater effluent without more costly treatment (but while still meeting Class A wastewater standards). Mixing the wastewater effluent with Snake River water would dilute pollutants and the infiltration process would remove a portion of the diluted pollutants. This process would be monitored to ensure compliance with aquifer recharge water standards. Also, this process is limited by the capacity of the infiltration pond, the amount of Snake River water available to dilute effluent, and seasonal variations in temperature (i.e., water does not infiltrate if it is frozen). It is estimated that up to 7,000 to 12,000 acre-feet of diluted effluent (up to 1,800 acre-feet of wastewater effluent) could be recharged into the aquifer each year. If the diluted effluent could not meet aquifer recharge standards for any reason, that effluent would be discharged into the Snake River as per the NPDES permit or would be diluted with more water to meet aquifer recharge standards.

Effects from the wastewater treatment plant upgrade would be the same as identified above for Alternative A. However, if the proposed upgrades improve effluent quality (as identified in Table 3), the effluent may exceed Class A wastewater standards and may not need as much, or any, Snake River water to dilute and discharge into the ponds prior to infiltration into the aquifer. Not all of the wastewater could be placed into the ponds due climatic conditions that would inhibit infiltration, such as freezing temperatures. However, a large portion of wastewater (up to 1,800 acre-feet per year) could be used for aquifer recharge.

In either case – diluting wastewater effluent and recharging the aquifer or recharging the aquifer directly with wastewater effluent – a portion of the wastewater effluent would not be discharged into the Snake River. By not discharging a portion of the wastewater effluent into the Snake River, that portion of pollutants would decrease. As explained for Alternative A above, this would be an overall benefit to Snake River water quality, but those decreases in pollutant concentrations may not be enough to affect the overall water quality in the Snake River.

In the long term, Snake River water quality would slowly improve due to the continual enforcement of TMDLs and state water quality regulations. The direct and indirect effects to Snake River water quality would be the slow, incremental decrease in TP and sediment from implementation of best management practices, decreasing discharges of pollutants per NPDES permits, and adherence to TMDLs by all entities (point and non-point pollutant sources) in the subbasin. Additionally, the ability to use a portion of the Class A wastewater to recharge the aquifer would remove pollutants from the effluent (either diluted with Snake River water or not) through the infiltration process and would provide a ground water resource.

3.4 Biological Resources

3.4.1 Affected Environment

Vegetation

The action area is in an area of high historic and current disturbance and includes little to no undisturbed native vegetation. Along the current and proposed pipeline relocation route, ground cover consists of the borders of the paved recreation pathway which includes irrigated and mowed landscaping such as domestic sod grass and planted landscape trees and shrubs. The pipeline replacement area is adjacent to a narrow (often only one tree-width) strip of riparian fringe that exists along the edge of the Snake River. The riparian fringe includes native and nonnative trees including cottonwood (*Populus* sp.) and Russian olive (*Elaeagnus angustifolia*), with a mixed understory of willows (*Salix* spp.) and both native and non-native forbs, grasses, sedges, and reeds. The location of the existing ponds has historically been completely cleared for agricultural and municipal use and currently is dominated by areas of bare soil with small areas that have been sparsely revegetated by annual native and non-native ruderal ground cover species typical of frequently disturbed areas. The areas immediately adjacent to the Proposed Action area include paved surfaces and structures which are surrounded by areas of irrigated landscaping (domestic sod grass and planted landscaping trees and shrubs) to the west, and an unpaved roadway that currently separates the action area from the Snake River to the east. Actively cultivated agricultural fields bound the proposed recharge ponds site to the north and south.

Wildlife

Due to the disturbed and developed nature of the action area and the frequency of human usage, little to no suitable habitat exists for most wildlife that would be expected to occur in the vicinity of the action area. Smaller mammals, reptiles, and amphibians, as well as perching and songbirds (passerines), waterfowl such as ducks, herons, and egrets (*Anatidae* and *Ardeidae* spp.), and other migratory birds such as raptors, including bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*), likely occasionally are present while using the riparian fringe as a travel corridor and for seasonal nesting. However, larger terrestrial wildlife would not be expected to be encountered in or adjacent to the action area, and much of the action area currently supports no habitat where wildlife would be expected to regularly be present.

Although little standing water (outside of seasonal temporary ponding due to rainfall) currently exists in the action area, species of ducks and other waterfowl were known to previously utilize the existing ponds when they were historically watered.

Any wildlife present in the action area is likely already somewhat accustomed to human presence, as the entire action area is semi-developed and used frequently by pedestrians and is adjacent to paved roadways that receive regular traffic.

Fish and Aquatic Biota

Biota present in the Snake River in this reach and immediately downstream include the nation's largest population of native cutthroat trout, as well as healthy populations of rainbow and brown trout, portions of which seasonally migrate within the river upstream of American Falls Reservoir (a fluvial life history) and between the river and the reservoir (an adfluvial life history). Also present are common carp, dace and sculpin species, redside shiner, Utah chub, and sucker species.

Mean daily flows in this reach of the Snake River, measured at USGS Gage 13062500 (Snake River at Blackfoot, Idaho) range from low wintertime flows of around 800 cfs to springtime peaks of nearly 24,000 cfs for the period of record from August 2015 to August 2020 (USGS 2020). Flows are largely controlled by upstream releases from Palisades Dam.

3.4.2 Environmental Consequences

Alternative A- No Action

Under the No Action alternative, the existing pipeline would not be updated and the former wastewater treatment ponds would not be repurposed as aquifer recharge settling ponds. There would be no removal of vegetation due to ground disturbance for rerouting and installation of a new pipeline, or for recontouring on the ponds site, and no new surface water retention would be established at the proposed recharge pond site. Vegetation, wildlife, and aquatic biota would continue to exist in the action area, as described in the Affected Environment section above, with no effects.

Alternative B – Oxbow Incentivized Managed Aquifer Recharge Project (Proposed Action)

Under Alternative B, some vegetation would be disturbed for the replacement and rerouting of the pipeline and for removal of settled material in the recharge pond site. Ground disturbance would be limited to areas that are already highly developed, such as the paved pedestrian pathway and the adjacent landscaped vegetation (domestic sod grasses), and previously-disturbed areas in the recharge pond site. In areas where landscaped vegetation would be disturbed, replanting/landscaping would occur at the conclusion of the project. No new disturbance would occur in the riparian fringe habitat adjacent to the Proposed Action area. Replanting of sod grasses after pipeline construction would return vegetation to its current state. Effects to vegetation would therefore be temporary.

Although expected to be only minimally present, any wildlife utilizing the action areas where the pipeline installation and recharge ponds establishment would occur could be disturbed due to the increased activity and noise of construction during that installation. Wildlife present in these areas would likely engage in avoidant behavior until construction concluded and human activity returned to normal levels. This direct disturbance would be limited to the brief period of construction (approximately 2 weeks) which would take place in the late fall/early winter, outside of the breeding and nesting season of any birds utilizing the riparian fringe for nesting. Effects to wildlife of the pipeline installation and construction activities associated with establishment of the recharge ponds would be temporary.

Due to the recontouring actions described in the Proposed Action, the habitat in the proposed recharge pond site would undergo a state change from its current state (a relatively dry site containing previously-deposited material from historic settling pond usage, which shows signs of having been historically plowed/mowed and is now sparsely vegetated) to periodically-watered ponds. Over time, the berms and pond fringes would likely become naturally vegetated by both native and non-native riparian assemblages of species already present along the Snake River adjacent to the action area. Depending on how regularly the ponds are watered, this would slightly increase the overall amount of riparian habitat in the greater geographic region. Once established, the recharge ponds and associated riparian habitat would be expected to attract wildlife such as waterfowl and amphibians which would begin to utilize the new habitat for foraging, nesting, and breeding.

Increased water diversions would take place from the existing canal and would not alter the currently present means of connection between the pipeline and the river. Mean daily flows in this reach of the Snake River are too great to be appreciably affected by a withdrawal of up to 20 cfs as would occur under the proposed project. There would therefore be no measurable effect to aquatic biota in the Snake River due to the minor alteration of flows attributable to the proposed project.

The Snake River is not directly hydrologically connected to the ponds, so repurposing the former settling ponds site as recharge ponds would have no direct effect on aquatic biota in terms of discharged water. Because increased recharge water would have the potential to increase spring discharges into the Snake River near Thousand Springs and American Falls, the project could have minor positive effects to biota in those areas that are dependent on spring discharges; this effect would not be large enough to be measured. Overall effects to aquatic biota would be minimal and immeasurable.

3.5 Cultural Resources

3.5.1 Affected Environment

Evidence of American Indian occupation in southeastern Idaho dates as early as 14,500 years before present (BP). Archaeologists have defined three prehistoric cultural periods in southeast Idaho. These are the Paleo-Indian Period (14,500 to 7,000 BP), the Archaic Period (7,000 to 300 BP), and the Protohistoric Period (300 BP to European contact). Clovis and Folsom projectile

points representing the Paleo-Indian Period have been recovered from areas around the American Falls Reservoir and from the Lake Channel area located to the south and west of the reservoir. A wide variety of temporally diagnostic projectile points, ceramic fragments, and other items recovered along the Snake River indicate extensive use through the Archaic and Protohistoric Periods.

The Shoshonean occupation of southern Idaho is thought to start between 650 and 550 BP (1300-1400 A.D.), although one researcher hypothesizes Shoshone occupation as early as 3,300 BP. The Bannock are linguistically related to the Northern Paiute and may have been in southern Idaho since 450 BP (1500 A.D.). Shoshone and Bannock territory consisted primarily of southern Idaho, and bands congregated along the Weiser, Payette, Boise, and Snake Rivers. With the horse, they ranged north into southern Alberta and east to the Black Hills to hunt bison and to trade. The Fort Hall Reservation was established in 1867.

Explorers and fur trappers first entered the area in the early nineteenth century. Lewis and Clark passed through the area in 1805. Fort Hall, an important fur post and later a major stop on the Oregon Trail, operated from 1834 until 1856. From Fort Hall, the Oregon Trail continued west along the Snake River.

Settlement in southeastern Idaho began in 1860. During the 1870s, gold discoveries brought miners to southeast Idaho; Bonanza Bar was one of the most famous flour gold mining areas in the territory. Euro-American settlers began digging canals in the 1880s and the area remains largely agricultural. Shelley, Idaho was established in 1904, named after John F. Shelley who moved to the area in 1892.

A record search was completed on March 11, 2020 with the Idaho State Historic Society (File Search 20161). This search indicated that five cultural resources have been recorded within a half a mile of the project area. They include two canals, a highway, a transmission line, and a railroad line (Table 5). Of these, only one – the Cedar Point Canal – is located within the area of potential effect (APE), as the replacement pipeline would connect into this canal. Another resource, the Reservation Canal, is located adjacent to the APE on the west end of the pipe section.

Table 5. Previously-recorded resources recorded within one-half mile of the area of potential effect (APE)

Site No.	Site Name	Age	Eligibility	In APE
11-7851	Cedar Point Canal	Historic	Eligible	Yes
11-17817	Reservation Canal	Historic	Eligible	No
11-17818	Yellowstone Highway	Historic	Eligible	No
11-17869	Idaho Power Company Anaconda-Grace Transmission Line 601	Historic	Eligible	No
11-17822	Union Pacific Railroad	Historic	Eligible	No

Cedar Point Canal (11-7851)[1]

The Cedar Point Canal starts approximately 3 miles downstream from Idaho Falls, branching off the Snake River Valley Canal, and runs south-southwest for approximately 10 miles with a final outflow into the Reservoir Canal. It is approximately 25 feet wide and 10 feet deep. The primary construction of the Cedar Point Canal occurred between 1884 and 1886. Changes to the system were nearly immediate and continuous and driven by water needs, technological advances, and market opportunity. Early settlers enlarged the mouth of the canal, which tripled the amount of output and constructed additional branches. These settlers formed the Cedar Point and Snake River Valley Canal Companies to maintain and improve water delivery. In 1906, four canal companies combined into the SRVID, which still manages the system. The system was determined eligible under National Register Criteria A and D in 2015.

Reservation Canal (11-17817)[2]

The Reservation Canal extends from a large bend in the Snake River just west of the town of Shelley, Idaho and flows south to the Blackfoot River. It is also known as the Government Canal and was constructed around 1890. The construction was a cooperative effort of both Euro-American settlers and members of the Shoshone-Bannock Tribes. The canal feeds water to settlers north of the Blackfoot River and allows the Fort Hall Reservation to access the Snake River water early in the season and later to use the Blackfoot water reserves. The Reservation Canal was determined eligible for the National Register in 2015.

3.5.2 Environmental Consequences

Methods and Criteria

The staging area and pipe alignment were surveyed on March 12, 2020 by Reclamation archaeologist Nikki Polson, MA, RPA. The entire area has been developed and or landscaped and the alignment has already been disturbed by the existing pipeline and buried utilities, including a deeply buried sewer line.

Alternative A- No Action

As No Action would result in no changes to the Cedar Point Canal, there would be no direct or indirect effects on historic properties resulting from Alternative A.

Alternative B – Oxbow Incentivized Managed Aquifer Recharge Project (Proposed Action)

No new cultural resources were identified as a result of this survey. Only the Cedar Point Canal is located within the APE. The canal has previously been determined eligible for listing in the National Register. A newer headgate exists at the connection point on the Cedar Point Canal,

[1] (Williams 2019)

[2] (Crockett and Vanum 2004)

installed by SRVID, which is where the new pipeline would connect. The diversion replaced a similar structure at the same location.

An evaluation of the potential effects to the Cedar Point Canal finds that because the project would connect into existing non-historic facilities already constructed on the canal, and no changes would occur to the alignment or structure of the canal, that the project would result in no adverse effects to historic properties. Reclamation initiated consultation with the Idaho State Historic Preservation Office (SHPO) and Shoshone-Bannock Tribes on April 2, 2020 (Appendix C). SHPO concurred with the finding of no adverse effect on May 7, 2020. No response was received from the Shoshone-Bannock Tribes.

As the project would maintain a connection to the Cedar Point Canal through a newly-installed headgate, the project would have no direct or indirect effects to historic properties. There would be no cumulative effects to historic properties as a result of this project. In the absence of adverse effects to historic properties, no mitigation is necessary.

3.6 Indian Sacred Sites

This section discusses the potential effects to Indian Sacred Sites. An archaeological survey of the proposed permit area was completed in 2020. Additionally, Reclamation initiated consultation with the Shoshone-Bannock Tribes in April 2020 to determine if there were areas important to the tribes were located within the APE. Copies of all letters are included in Appendix C.

3.6.1 Affected Environment

It is known that the area has been occupied American Indian Tribes since Paleoindian times, with the most recent occupants identified as the Shoshone and Bannock peoples who are thought to have moved into the area after about 1000 A.D. No Indian Sacred Sites have been identified to Reclamation that are within the vicinity of the project area.

3.6.2 Environmental Consequences

Alternative A- No Action

As Indian Sacred Sites have not been identified within the project area, there would be no direct or indirect effects on historic properties resulting from Alternative A.

Alternative B – Oxbow Incentivized Managed Aquifer Recharge Project (Proposed Action)

As Indian Sacred Sites have not been identified within the project area, there would be no direct or indirect effects on historic properties resulting from Alternative B. There would be no cumulative effects to Indian Sacred Sites as a result of this project. In the absence of Indian Sacred Sites, no mitigation would be necessary.

3.7 Tribal Interests

3.7.1 Indian Trust Assets

ITAs are legal interests in property held in trust by the United States for Indian tribes or individual Indian trust landowners. ITAs include trust lands, natural resources, trust funds, or other assets held by the federal government in trust. An ITA has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. Treaty-reserved rights, e.g., fishing, hunting, and gathering rights on- and off-reservation, are usufructuary rights that do not meet the Department of Interior (DOI) definition of an ITA. The United States does not own or otherwise hold these resources in trust. ITAs do not normally include usufructuary rights alone (i.e., rights to access for hunting or fishing). Rather, they require first a possessory interest; that is, the asset must be held or owned by the federal government as trustee.

DOI requires that all effects to trust assets, even those considered nonsignificant, must be discussed in a trust analysis in NEPA documents and that appropriate compensation and/or mitigation be implemented. Additionally, Reclamation's NEPA Handbook (Reclamation 2012) recommends a separate ITA section in all NEPA documents that include a FONSI. These sections should be prepared in consultation with potentially-affected tribal and other trust beneficiaries.

Affected Environment

No Indian trust land assets, such as those held in trust by the Bureau of Indian Affairs for the benefit of tribes or individual Indian trust landowners, were identified in the Proposed Action area during the scoping process. As part of the scoping process, Reclamation researched Tessel, a federal GIS land database that includes federal lands held in trust for tribes and individual Indian trust landowners. This research indicated there are no Indian trust land assets in the Proposed Action areas. Title to the land of the Proposed Action area is held in fee by private landowners and by the City of Shelley.

ITAs in the closest proximity to the Proposed Action area are the Shoshone-Bannock Tribes of the Fort Hall Reservation; the Reservation is situated approximately 30 miles south (down river) from the Proposed Action area. The Snake River and its tributaries flow along and through the Fort Hall Reservation and waters of the Snake River are stored in American Falls Reservoir, which is partially located on the Reservation.

The Shoshone-Bannock Tribes have a water right in that portion of the Snake River basin upstream from the Hells Canyon Dam, the lowest of the three dams authorized as FERC Project No. 1971 (Fort Hall Indian Water Rights Act of 1990; 104 Stat 3059 (1990)). The Shoshone-Bannock Tribes have water storage rights in Palisades Reservoir and American Falls Reservoir, which are reserved under the Michaud Flats Project for irrigation in the State of Idaho (68 Stat. 741 at 1027 (1954)).

Environmental Consequences

Alternative A - No Action

Under the No Action alternative, replacement of the existing pipeline would not occur and the wastewater treatment ponds would not be repurposed as aquifer recharge settling ponds. Any existing direct, indirect, or cumulative effects on downstream ITAs would remain unchanged.

Alternative B – Oxbow Incentivized Managed Aquifer Recharge Project (Proposed Action)

For Alternative B, there are no known or anticipated direct, indirect, or cumulative effects to ITAs by way of waters flowing from the Proposed Action area into the Fort Hall Reservation through either the Snake River or its tributaries. If the Proposed Action occurs, treated effluent wastewater will transfer to the settling pond sites for groundwater recharge, reducing the overall annual amount of treated effluent wastewater that enters the Snake River and flows downstream. The Proposed Action is expected to reduce TP levels entering the Snake River, with no adverse effect to the hydrology, water quality, or aquatic biota.

There are no known or anticipated direct, indirect, or cumulative effects to ITAs by way of groundwater recharge into the ESPA that may reach the Fort Hall Reservation. The ESPA levels would increase and water retention would increase over time, resulting in future minimal gains into the Snake River.

Reclamation requested information from the Shoshone-Bannock Tribes of the Fort Hall Reservation, who traditionally or currently use the area; however, no response was received. The lack of specific information about the area is not indicative of a lack of importance to Tribes. With no specific response, Reclamation assumes that there would be no adverse effects to ITAs such as adverse effects to water, water rights, or land held in trust for the Tribes.

Mitigation Summary

No mitigation is required since the Proposed Action would not adversely affect potential downstream ITAs.

3.7.2 Treaty Rights

Affected Environment

The United States has a fiduciary responsibility to protect and maintain rights reserved by Indian tribes or Indian individuals by treaties, statues, executive orders, and allotments. These rights are sometimes further interpreted through court decisions and regulations.

The Proposed Action area is in areas historically used by many tribes. Treaty Rights at issue here are access and effects to off-reservation hunting, fishing, gathering rights, livestock grazing rights, and cultural or ceremonial use rights. Although the Proposed Action area is owned in fee by private landowners and by the City of Shelley, Courts have ruled that members of federally recognized tribes with reserved Treaty Rights have the right to cross private or state lands in order to gain access to treaty areas (United States v. Winans, 198 U.S. 371 (1905)).

On July 3, 1868, the Fort Bridger Treaty was signed and agreed to by the Bannock (of the Fort Hall Reservation) and the Eastern Shoshone (of the Wind River Reservation). Article IV of the treaty states that members of the Shoshone-Bannock Tribes '…shall have the right to hunt on the unoccupied lands of the United States…' Courts interpreted this to mean "unoccupied federal lands."

In the case of *State of Idaho v. Tinno*, an off-reservation fishing case in Idaho, the Idaho Supreme Court interpreted the Fort Bridger Treaty of the Shoshone-Bannock Tribes. The Court determined that the Shoshone word for 'hunt' also included to 'fish.' Under Tinno, the Court affirmed the Tribal Members' right to take fish off-reservation pursuant to the Fort Bridger Treaty. The Court also recognizes, "that treaty Indians have subsistence and cultural interests in hunting and fishing…" and "The Fort Bridger Treaty … contains a unified hunting and fishing right, which…is unequivocal." The treaty did not grant a hunting, fishing, or gathering right; it reserved a right the Shoshone-Bannock Tribes have always exercised.

Environmental Consequences

United States Supreme Court has ruled that treaties with Indian tribes are to be construed liberally in favor of tribes, as the tribes would have understood the language of the treaty at the time the treaty was signed. It is highly likely that the ratified or unratified treaties listed above include the areas surrounding Shelley, Idaho and the Proposed Action area.

Alternative A - No Action

Under the No Action alternative, the existing pipeline would not be replaced and the existing ponds would not be repurposed as aquifer recharge settling ponds. There would be no direct or indirect effects to existing reserved Treaty Rights for tribal hunting, fishing, gathering, or livestock grazing in usual and accustomed places.

Alternative B – Oxbow Incentivized Managed Aquifer Recharge Project (Proposed Action)

Under Alternative B, there are no known or anticipated direct, indirect, or cumulative effects to reserved Treaty Rights such as access to or effects to the area for hunting, fishing, gathering, or livestock grazing in the area.

Alternative B would not adversely affect hydrology, water quality, or aquatic biota in terms of water discharged water into the Snake River at the Proposed Action area or downstream waters flowing into the Fort Hall Reservation by way of the Snake River or its tributaries.

There are no known or anticipated direct, indirect, or cumulative effects to reserved Treaty Rights by way of groundwater recharge into the ESPA that may reach the Fort Hall Reservation. The aquifer would experience minimal level increases and water retention would increase over time, with the potential for future minimal gains into the Snake River.

Reclamation requested information from the Shoshone-Bannock Tribes, who traditionally or currently use the area; however, no responses were received. The lack of specific information about the area is not indicative of a lack of importance to Tribes. With no specific response,

Reclamation assumes that there would be no adverse effects to reserved Treaty Rights such as access or effects to areas for hunting, fishing, gathering, or livestock grazing activities.

3.8 Recreation

3.8.1 Affected Environment

The recharge pond elements of the project are not used for recreation, nor are they adjacent to any recreational uses. The pipeline construction portion of the project site, however, is within the city-owned greenbelt along the Snake River. The grassy park-like area with a paved recreational pathway lies between the Snake River and West Fir Street in Shelley, Idaho. The adjacent area to the south and west is primarily occupied by Bingham County residential uses. Facilities and features connected in part by the pathway that runs through the project site and within 1 to 1.5 miles from the project site include North Bingham Park (camping and boat dock available) and North Bingham County Historic Park to the west; the Shelley Fire Department, Shelley High School, Curt Brinkman Park, Basic Foods Processing, other commercial entities, and some shopping are also located within 0.7 to 2 miles to the east. The paved pathway is used by fisherman to access various user-made fishing spots along the river. Residents also use the path to commute between residential areas to the west and south of the project area to the small city of Shelley. School athletic programs and the Fire Department use the path for running and other fitness activities. Pedestrians, bicyclists, and skateboarders from the residential area and the North Bingham Parks are among the users of the trail. The trail is very popular and heavily used three seasons of the year, excluding winter when it is not plowed.

As stated earlier in this document, a paved recreation path parallels the proposed pipeline for the entire 3,150 feet (Figure 2). The path ends at the city limits. Pedestrian and bicycle traffic on the paved pathway adjacent to the pipeline would be rerouted through the lawn around active construction activities for approximately two weeks. The route of the existing pipeline is not known in detail. A survey of the existing pipeline would occur prior to construction. At least two access points connecting the residential area south of the project to the paved path would have to be crossed. The total length of the recreation path effected will be unknown prior to construction. Any sections of the paved pathway that are removed or damaged during construction would be temporarily filled in with dirt during construction and repaved by the city of Shelley after the pipeline construction is completed. Temporary alternate paths could also include the road shoulder, which is already part of the route from the end of the pathway west to the Bingham Parks. The speed limit on West Fir Street is 25 miles per hour, with potential for slowing and/or stopping at the Fire Department and other pedestrian crossings.

3.8.2 Environmental Consequences

Methods and Criteria

Recreation evaluation is limited to the project construction site and the pathway. Effects of water quality on the river related to recreation were not considered within the scope of the direct effects of the project construction site and would not be measurable for a considerable time.

Alternative A- No Action

The No Action alternative would not affect recreation access or activities along the pathway. Routine operations and maintenance in the site would continue in the same manner as that described in the Affected Environment section.

Alternative B- Oxbow Incentivized Managed Aquifer Recharge Project (Proposed Action)

The project would take place in the fall when there are fewer tourists at the campground and county parks. The potential of students not returning to the physical classrooms in the fall due to the COVID-19 pandemic could also reduce traffic on the path in general during construction. Pathway users would be displaced and routed around the project a short distance for a short duration of approximately 2 weeks. The pathway and accessibility would be restored where needed and use would return to normal. No cumulative effects would be expected and no mitigation would be required for recreation in the area.

3.9 Threatened & Endangered Species

3.9.1 Affected Environment

Federal protection is afforded to those species listed or proposed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the ESA of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884). The USFWS website identifies all listed, proposed, and candidate species for each county, as well as links to recent updates in respective species listing status and, where relevant, designation of critical habitat. In Bingham County, yellow-billed cuckoo and Ute ladies'-tresses are listed as threatened and the North American Wolverine is proposed to be listed as threatened. None of these species is expected at this site. Additionally, Reclamation generated a report from the USFWS Information for Planning and Conservation (IPaC) Trust Resource website on June 10, 2020 that identified no endangered species or critical habitats for that specific project area (Appendix D).

Yellow-Billed Cuckoo (Coccyzus americanus occidentalis)

The yellow-billed cuckoo was designated threatened in 2014 (78 FR 61622). The yellow-billed cuckoo is a neo-tropical migrant bird that winters in South America and summers in North America, where breeding, nesting, and rearing occur. In the North American part of its range, the species is a riparian obligate, nesting exclusively in willow-cottonwood complexes greater than 50 acres (20 hectares) in extent that occur adjacent to water (Hughes 1999).

The yellow-billed cuckoo's breeding and nesting season occurs from mid-June to mid-August at this latitude. Suitable nesting habitat for the yellow-billed cuckoo includes very specific vegetation cover type and foliage density characteristics, as well as a minimum patch size, neither of which are present at or near the project area. Furthermore, the paved pathway and grassy park-like nature of the pipeline construction area prevent establishment and maintenance of the type and extent of cottonwood forest habitat required by the yellow-billed cuckoo; this precludes any likelihood of the future development of suitable nesting habitat at this site.

At this time, critical habitat has been proposed, but not yet designated for, the yellow-billed cuckoo. The nearest proposed critical habitat is nearly 20 river miles downstream from the project area, stretching from river mile 764 downstream to American Falls Reservoir at river mile 736.

North American Wolverine (Gulo gulo luscus)

The distinct population segment of the North American wolverine found in the United States was proposed for threatened status by the USFWS in 2013. Following multiple extensions of the review period for this proposed rule, the USFWS withdrew this proposed rule, citing a finding of substantial disagreement regarding the interpretation of wolverine habitat modeling in light of future climate change projections. However, under challenge this withdrawal was vacated by the 9th U.S. District Court and remanded back to USFWS for further review. Under the previous standing listing proposal, the wolverine is therefore currently classified as proposed threatened at the time of the writing of this document.

The North American wolverine is the largest member of the Mustelidae family. Wolverines occur in alpine, boreal, and arctic habitats including boreal forests, tundra, and western mountains. The wolverine has a relationship with persistent spring snow that is obligate at the den scale; that is, the wolverine requires deep (greater than 1.5 meters (m) deep), stable, and persistent spring snow for successful denning and reproduction (Aubry and Copeland 2007).

Due to this habitat requirement for conditions cold enough to support persistent snow, the southern portion of their range (California, Colorado, Idaho, Montana, Washington, and Wyoming) is limited to high-elevation alpine habitats. In Idaho, natal den sites are known to occur only in locations above 2,500 m (8,200 feet) (Copeland et al. 2010). The project area is at a much lower elevation than that of habitat utilized by the wolverine (the town of Shelley sits at an elevation of 1,411 m (4,630 feet). The highest peak in Bingham County, Taylor Mountain at 2,220 m (7,280 feet), is also lower than that needed for den sites.

The USFWS states that critical habitat for this species is not determinable at this time. No proposed or designated critical habitat currently exists for this species.

Ute Ladies'-Tresses (Spiranthes diluvialis)

The Ute ladies'-tresses (*Spiranthes diluvialis*) is a perennial forb that occurs at low elevations in the moist soils of wet or mesic riparian meadows near springs, lakes, or perennial streams. This plant is a shade intolerant orchid that primarily occurs where co-occurring vegetation is relatively open and is known to establish on seasonally-flooded gravel bars and other riparian edges. It is also known to establish in previously heavily disturbed sites (e.g., heavily grazed riparian edges or

revegetated gravel pits). This species requires rooting sites with sufficient seasonal connection to the water table but is not tolerant of prolonged inundation. The Ute ladies'-tresses is highly susceptible to effects from grazing and may also be negatively affected by upstream pesticide and herbicide applications for both agricultural and noxious weed control, both directly through exposure and indirectly through adverse effects to the bumblebee, its primary pollinator.

The closest known population to the project area occurs at the upper end of American Falls Reservoir. The manicured park-like habitat along the proposed pipeline construction site is not suitable habitat for Ute ladies'-tresses. The ponds have not been flooded for 20 years and, although close to the Snake River, they are not hydrologically connected. This dry habitat would not support Ute ladies'-tresses.

3.9.2 Environmental Consequences

Under both Alternatives A and B, there would be no direct or indirect effects to threatened and/or endangered (T&E) species because no T&E species have been found in the project area.

3.10 Environmental Justice

Environmental justice relates to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EO 12898 requires that federal actions address environmental justice in minority and low-income populations and take appropriate and necessary steps to identify and address disproportionately high and adverse effects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

3.10.1 Affected Environment

The project is located close to the middle of U.S. Census Tract 9501 (Figure 7). This tract is a good representation of not only the population that may be directly affected by construction activities, but a majority of residents in this tract are also patrons of the wastewater treatment plant. To the extent water quality in the Snake River may be affected by the project, downstream water users may see water quality changes. These downstream effects could include a large portion of Bingham County.

Tract 9501 has a similar racial and ethnic makeup to the rest of the state of Idaho (Table 6). Bingham County has a higher percentage of American Indian population than both the State of Idaho and Tract 9501. This is due to the Shoshone Bannock Tribe's Fort Hall Reservation. Some tracts in Bingham County that include the Reservation have greater than 50 percent minority population (Figure 8).

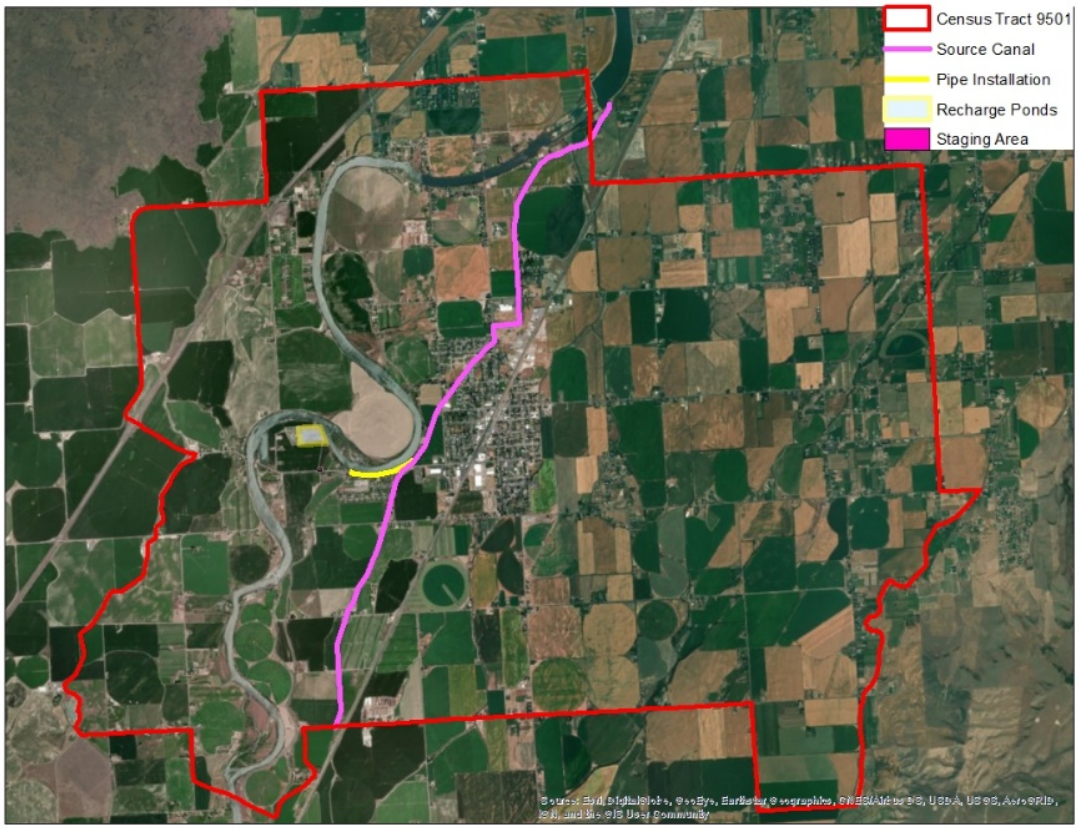

Figure 7. U.S. Census Tract 9501

Table 6. 2018 summary of racial and ethnic minority distribution in Idaho, Bingham County, and Tract 9501

Category	Idaho	Bingham County	Tract 9501
Total Population	1,754,208	45,551	7,883
White alone, percent (2018)	89.9%	82.7%	91.5%
Black or African American alone, percent	0.7%	0.3%	0%
American Indian and Alaska Native alone, percent	1.3%	6.5%	0.8%
Asian alone, percent	1.5%	0.8%	0%
Native Hawaiian and Other Pacific Islander alone, percent	0.2%	0.8%	0%
Some Other Race	3.4%	6.7%	3%
Two or More Races, percent	3.0%	3.1%	4.7%
Hispanic or Latino, percent	12.7%	18.0%	10.4%
White alone, not Hispanic or Latino, percent	81.8%	73.8%	85.7%

Sources: USCB 2018 American Community Survey 5-Year Demographic Estimates

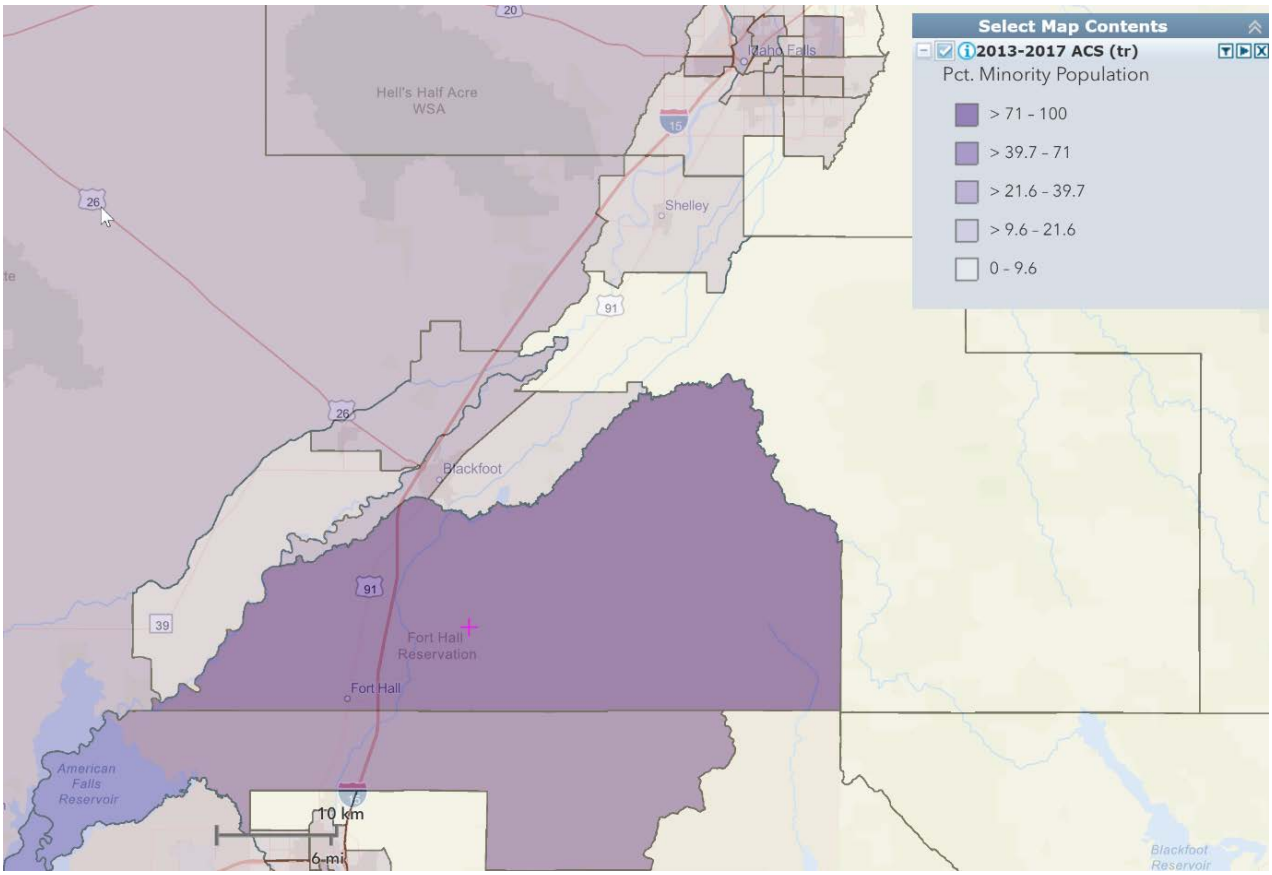

Figure 8. Data from 2013 to 2017 American Community Survey for minority population, by tract

3.10.2 Low-Income Populations

The Census Bureau's 2018 American Community Survey shows a 2018 median household income of $56,681 for Tract 9501, $51,288 for Bingham County, and $55,583 for Idaho (U.S. Census Bureau 2020). The Census Bureau reported that about 7.8 percent of the population of Tract 9501, 12.5 percent of the population of Bingham County, and 11.8 percent of the state's population were living in poverty in 2018 (USCB 2020).

3.10.3 Environmental Consequences

Methods and Criteria

In accordance with Council on Environmental Quality (CEQ), EPA, and Department of Housing and Urban Development guidelines, the first step undertaken in this environmental justice analysis was to determine if there was a minority and/or low-income population in the action area.

If a minority and/or low-income population were determined to exist in the action area, then the second step undertaken in this environmental justice analysis was to determine if a "high and adverse" effect would occur. The CEQ guidance indicates that, when determining whether the

effects are high and adverse, agencies are to consider whether the risks or rates of effect "are significant or above generally accepted norms." If no minority or low-income population exists in the action area, then the analysis is finished and the conclusion is no effect.

Alternative A- No Action

The No Action alternative would result in continued release of treated wastewater into the Snake River. This would continue to have minimal influence on downstream water quality for minority populations of the Fort Hall Reservation.

Alternative B – Oxbow Incentivized Managed Aquifer Recharge Project (Proposed Action)

Based on the review of census data and application of the EJSCREEN tool, no minority or low-income groups, as defined by EO 12898, would be disproportionately affected by health or environmental effects as a result of the construction activities associated with the project. Some positive benefit may be seen from improved water quality for the downstream water users along the Snake River, including the minority populations on the Fort Hall Reservation. Therefore, the Proposed Action would have no negative effect on environmental justice issues.

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Chapter 4 Consultation and Coordination

On June 3 2020, Reclamation mailed a scoping document, including a letter, project information, and a map, to agencies, Indian tribes, members of Congress, organizations, and individuals, soliciting their help in identifying any issues and concerns related to the Proposed Action. Reclamation received three comments during the scoping period. The mailing list, scoping letters, and comments received are presented in Appendix E.

4.1 Agency Consultation and Coordination

4.1.1 National Historic Preservation Act

Reclamation initiated consultation with the Idaho SHPO and Shoshone-Bannock Tribes on April 2, 2020. SHPO concurrence with Reclamation's finding of No Adverse Effect to Historic Properties for the project area was received on May 7, 2020. No response was received from the Tribes.

4.1.2 Endangered Species Act

In Bingham County, yellow-billed cuckoo and Ute ladies'-tresses are listed as threatened and the North American wolverine is proposed to be listed as threatened. The gray wolf is currently in recovery status after delisting. Under both Alternatives A and B, there would be no direct or indirect effects to T&E species because no T&E species have been found in the project area.

4.1.3 Clean Water Act

IDEQ water quality standards are discussed in Section 3.3 of this EA. Scoping documents were sent to IDEQ during the 30-day comment period. Necessary permits by IDEQ under the Clean Water Act are in place. No Section 404 or Section 401 permits, through the Army Corps of Engineers, are necessary for this project.

4.2 Tribal Consultation and Coordination

Reclamation mailed scoping letters to the Shoshone-Bannock Tribes on May 27, 2020 (Appendix E). No responses or concerns from the Tribes were brought forward during the scoping period.

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Chapter 5 References

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APPENDICES

Appendix A – IDEQ Letter

Appendix B – NPDES Permit

Appendix C – Tribal Consultation Letters

Appendix D – USFWS Information for Planning and Conservation (IPaC)

Appendix E – Public Scoping Mailing List, Letters, and Comments

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Appendix A – IDEQ Letter

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STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

444 Hospital Way, #300 • Pocatello, Idaho 83201 • (208) 236-6160
www.deq.idaho.gov

C.L. "Butch" Otter, Governor
John H. Tippets, Director

August 28, 2018

Eastern Idaho Regional Wastewater Authority
Roger Christensen – Chair
101 S. Emerson Ave
Shelley, ID 83274

Re: Eastern Idaho Regional Wastewater Authority (EIRWWA) – Facility Planning study May 2018 Review; DEQ #06-17-06 Record No. 2018AGD3194

Dear Chairman Christensen,

The Department of Environmental Quality received a response to DEQ comments to the reference FPS. The letter dated August 14, 2018 submitted by J-U-B appears to address DEQ concerns. Therefore, the above referenced FPS is **approved** with the following comment;

1) The preferred alternative that was selected in the 2018 FPS is chemical addition infrastructure to fully comply with the final phosphorus limits in the current NPDES permit for the design flows of the plant. If any other alternative is to be implemented, please be aware that the current FPS will need to be amended and submitted for approval by DEQ. This includes ALL potential alternatives that are discussed in the FPS, including but not limited to, class A Aquifer Recharge and Class B Rapid Infiltration.

The DEQ will need to review and approve the Environmental Information Document (EID) before the application for the state SRF loan is processed and funds disbursed for the proposed improvements.

You may contact me at (208) 236-6160 or via email at Andrew.Fellows@deq.idaho.gov.

Sincerely,

Andrew Fellows, E.I.T.
Water Quality Engineer
Pocatello Regional Office

cc: Tom Hepworth, DEQ – PRO (e-mail)
Scott MacDonald, P.E. DEQ – PRO
Alan Giesbrecht, P.E. J-U-B Engineers

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

444 Hospital Way, #300 • Pocatello, Idaho 83201 • (208) 236-6160
www.deq.idaho.gov

C.L. "Butch" Otter, Governor
John H. Tippets, Director

September 5, 2018

Mr. Scott Barry
EIRWWA
101 South Emerson Ave
Shelley, ID 83274

Subject: EIRWWA Sludge Disposal Plan Review – For Ongoing Sludge Management

Dear Mr. Barry:

On August 27, 2018, the Idaho Department of Environmental Quality (DEQ) received the revised Eastern Idaho Regional Wastewater Authority (EIRWWA) Sludge Management Plan submittal from JUB Engineers. The EIRWWA Sludge Management Plan is **approved**.

If sludge management practices change, due to plant upgrades or process changes, an updated plan must be submitted to DEQ for review and approval.

Thank you,

Scott MacDonald
Department of Environmental Quality

ec: Bruce Olenick, Regional Administrator, Pocatello Regional Office
Tom Hepworth, Engineering Manager, Pocatello Regional Office
Larry Waters, Reuse Program Manager, State Office
Adam Bussan, PE, State Wastewater Program, Wastewater Program Reuse Engineer
Tressa Nicholas, Wastewater Analyst, State Office
Jon Farrell, P.E., JUB Engineers.

EDMS Folder: 2018AFM134

Appendix B – NPDES Permit

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Fact Sheet

The U.S. Environmental Protection Agency (EPA)
Proposes to Reissue a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) to:

Eastern Idaho Regional Wastewater Treatment Authority
Oxbow Wastewater Treatment Plant
101 S. Emerson
Shelley, Idaho 83274

Public Comment Start Date: December 11, 2013
Public Comment Expiration Date: January 10, 2014

Technical Contact: - John Drabek, 206-553-8257, drabek.john@epa.gov
1-800-424-4372 ext. 3-8257 (within Region 10)
drabek.john@epa.gov

The EPA Proposes To Reissue NPDES Permit
The EPA proposes to reissue the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to waters of the United States. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility.

This Fact Sheet includes:
- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions for the facility
- a map and description of the discharge location
- technical material supporting the conditions in the permit

State Certification
The EPA is requesting that the Idaho Department of Environmental Quality (IDEQ) certify the NPDES permit for this facility, under Section 401 of the Clean Water Act. Comments regarding the certification should be directed to:

Idaho Department of Environmental Quality -
Pocatello Regional Office -
444 Hospital Way, No. 300 -
Pocatello, ID 83201 -

Public Comment
Persons wishing to comment on, or request a Public Hearing for the draft permit for this facility may do so in writing by the expiration date of the Public Comment period. A request for a Public Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be in writing and should be submitted to the EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, the EPA's regional Director for the Office of Water and Watersheds will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, the EPA will address the comments and issue the permit. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR 124.19.

Documents are Available for Review
The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting the EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday at the address below. The draft permits, fact sheet, and other information can also be found by visiting the Region 10 NPDES website at "http://EPA.gov/r10earth/waterpermits.htm."

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OWW-130
Seattle, Washington 98101
(206) 553-0523 or -
Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington) -

The fact sheet and draft permits are also available at:

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OWW-130
Seattle, Washington 98101
(206) 553-0523 or -
Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington) -

EPA Idaho Operations Office
1435 North Orchard Street
Boise, Idaho 83706
(208) 378-5746

Idaho Department of Environmental Quality -
Pocatello Regional Office -
444 Hospital Way, No. 300 -
Pocatello, ID 83201 -
ph: (208) 236-6160 -
fx: (208) 236-6168 -

Acronyms

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
30B3	Biologically-based design flow intended to ensure an excursion frequency of less than once every three years, for a 30-day average flow.
30Q10	30 day, 10 year low flow
ACR	Acute-to-Chronic Ratio
AML	Average Monthly Limit
ASR	Alternative State Requirement
AWL	Average Weekly Limit
BA	Biological Assessment
BAT	Best Available Technology economically achievable
BCT	Best Conventional pollutant control Technology
BOD_5	Biochemical oxygen demand, five-day
BOD_{5u}	Biochemical oxygen demand, ultimate
BMP	Best Management Practices
BPT	Best Practicable
°C	Degrees Celsius
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
COD	Chemical Oxygen Demand
CSO	Combined Sewer Overflow
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EA	Environmental Assessment
EFH	Essential Fish Habitat
The EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
gpd	Gallons per day

HUC Hydrologic Unit Code
IC - Inhibition Concentration
ICIS - Integrated Compliance Information System
IDEQ - Idaho Department of Environmental Quality
I/I Infiltration and Inflow
LA - Load Allocation
lbs/day - Pounds per day
LC - Lethal Concentration
LC_{50} - Concentration at which 50% of test organisms die in a specified time period
LD_{50} - Dose at which 50% of test organisms die in a specified time period
LOEC - Lowest Observed Effect Concentration
LTA - Long Term Average
LTCP - Long Term Control Plan
mg/L Milligrams per liter
ml - milliliters
ML - Minimum Level
µg/L - Micrograms per liter
mgd - Million gallons per day
MDL - Maximum Daily Limit or Method Detection Limit
MF - Membrane Filtration
MPN Most Probable Number
N - Nitrogen
The EPA - National Environmental Policy Act
NOAA - National Oceanic and Atmospheric Administration
NOEC - No Observable Effect Concentration
NOI - Notice of Intent
NPDES - National Pollutant Discharge Elimination System
NSPS - New Source Performance Standards
OWW - Office of Water and Watersheds
O&M - Operations and maintenance
POTW - Publicly owned treatment works
PSES - Pretreatment Standards for Existing Sources

QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration
SIC	Standard Industrial Classification
SPCC	Spill Prevention and Control and Countermeasure
SS	Suspended Solids
SSO	Sanitary Sewer Overflow
s.u.	Standard Units
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
TU_a	Toxic Units, Acute
TU_c	Toxic Units, Chronic
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
WET	Whole Effluent Toxicity
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
Water Quality Standards	Water Quality Standards
WWTP	Wastewater treatment plant

I. Applicant

A. General Information

This fact sheet provides information on the draft NPDES permit for the following entity:

Eastern Idaho Regional Wastewater Authority, Oxbow Wastewater Treatment Plant (Oxbow)
NPDES Permit # ID-0020133

Physical Address: -
101 S. Emerson Ave,
Shelley, Idaho 83274 -

Mailing Address: -
101 S. Emerson Avenue,
Shelley, Idaho 83274 -

Contact: -
Thomas L. Herbert, (208) 356-9201 -

B. Permit History

The most recent NPDES permit for the Oxbow Wastewater Treatment Facility (Oxbow), formerly permitted as the City of Shelly Wastewater Treatment Plant, was issued on June 8, 2004, became effective on August 1, 2004, and expired on July 31, 2009. An NPDES application for permit issuance was submitted by the permittee on March 31, 2008. The EPA determined that the application was timely and complete. Therefore, pursuant to 40 CFR 122.6, the permit has been administratively extended and remains fully effective and enforceable.

II. Facility Information

A. Treatment Plant Description

The Eastern Idaho Regional Wastewater Treatment Authority (Authority) owns, operates and has maintenance responsibility for a publicly owned treatment works (POTW) that treats domestic sewage. The facility treats wastewater that is primarily from local residents through a separate sanitary sewer system.

An upgrade to Oxbow (Oxbow), formerly called and permitted under the name of the City of Shelley Wastewater Treatment Plant, was completed and became operational in December 2009. In addition to Shelley, the Authority added the satellite communities of Ammon, North Bingham County and South Bonneville County requiring an increase in capacity (See Appendix A). The City of Ammon requires additional capacity to accommodate growth. South Bonneville County and North Bingham County discharge to Oxbow to eliminate centralized community septic systems and associated nitrate contamination of ground water and to provide capacity for growth. Initial treatment at the facility consists of screening. Flow is then sent to an anoxic basin followed by two aeration basins in series, then to a membrane

bio-reactor treatment system. The waste stream is then treated by ultraviolet disinfection prior to discharge through Outfall 001.

Settled solids are removed from the treatment system and transported to a landfill.

The current service population is estimated to be 21,000 people. The service population before the upgrade was 3,800. The upgraded facility has a design flow rate of 2.0 million gallons per day (mgd) up from the previous design flow of 0.47 mgd. The application estimated average inflow and infiltration for the collection system to be zero gallons per day.

B. Compliance History

A review of the discharge monitoring reports (DMRs) since December 2009, when the new facility was operational to July 2013 found the following violations:

Biochemical Oxygen Demand (BOD_5)

Violations of the average monthly concentration limit of 30 mg/L, with discharges of 48.2 mg/L in December 2009 and 58.5 mg/L in January 2010. Violations of the average weekly concentration limit of 45 mg/L, with discharges of 123 mg/L in December 2009 and 140 mg/L in January 2010. Violation of the average monthly mass limit of 115 lb/day, with a discharge of 171 lb day in December 2009. Violations of the average weekly mass limit of 172 lb/day, with discharges of 436 lb/day in December 2009, 271 lb/day in January 2010, and 201 lb/day in July 2010.

E. coli

Violations of the instantaneous *E. coli* limit of 406 #/100ml, with discharges of 816 #/100ml in December 2009, 2419 #/100ml in January 2010, and 727 #/100ml in February 2010.

Violations of the monthly geometric average *E. coli* limit of 126 #/100ml, with discharges of 182 #/100ml in December 2009, 1211 #/100ml in January 2010, and 243 #/100ml in February 2010.

Total Suspended Solids (TSS) Removal

A violation of the percent TSS removal requirement of 65%, with an 8% removal in February 2010.

No violations occurred since two months after start-up.

III. Receiving Water

This facility discharges to the Snake River in the City of Shelley, Idaho. Outfall 001 is located at latitude 43.38° N and longitude 112.2° W.

A. Low Flow Conditions

The low flow conditions of a water body are used to assess the need for and develop water quality based effluent limits (see Appendix B of this fact sheet for additional information on flows). The EPA used ambient flow data collected at the Station USGS station 13060000, Snake River near Shelley, Idaho, and the EPA's DFLOW 3.1b model to calculate the low flow conditions for the Snake River at river mile 787.8.

B. Water Quality Standards

Overview

Section 301(b)(1)(C) of the Clean Water Act (CWA) requires the development of limitations in permits necessary to meet water quality standards. Federal regulations at 40 CFR 122.4(d) require that the conditions in NPDES permits ensure compliance with the water quality standards of all affected States. A State's water quality standards are composed of use classifications, numeric and/or narrative water quality criteria and an anti-degradation policy.

The use classification system designates the beneficial uses that each water body is expected to achieve, such as drinking water supply, contact recreation, and aquatic life. The numeric and narrative water quality criteria are the criteria deemed necessary by the State to support the beneficial use classification of each water body. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses.

Designated Beneficial Uses

This facility discharges to the Snake River in the American Falls Subbasin, (HUC 17040206), Water Body Unit S-22. At the point of discharge, the Snake River is protected for the following designated uses (IDAPA 58.01.02.150.08).

- cold water aquatic life
- primary contact recreation
- domestic water supply
- salmonid spawning

In addition, Water Quality Standards state that all waters of the State of Idaho are protected for industrial and agricultural water supply, wildlife habitats and aesthetics (IDAPA 58.01.02.100.03.b and c, 100.04 and 100.05).

Surface Water Quality Criteria

The criteria are found in the following sections of the Idaho Water Quality Standards:

- The narrative criteria applicable to all surface waters of the State are found at IDAPA 58.01.02.200 (General Surface Water Quality Criteria).

- The numeric criteria for toxic substances for the protection of aquatic life and primary contact recreation are found at IDAPA 58.01.02.210 (Numeric Criteria for Toxic Substances for Waters Designated for Aquatic Life, Recreation, or Domestic Water Supply Use).

- Additional numeric criteria necessary for the protection of aquatic life can be found at IDAPA 58.01.02.250 (Surface Water Quality Criteria for Aquatic Life Use Designations).

- Numeric criteria necessary for the protection of recreation uses can be found at IDAPA 58.01.02.251 (Surface Water Quality Criteria for Recreation Use Designations).

- Water quality criteria for agricultural water supply can be found in the EPA's *Water Quality Criteria 1972*, also referred to as the "Blue Book" (EPA R3-73-033) (See IDAPA 58.01.02.252.02)

The numeric and narrative water quality criteria applicable to Snake River at the point of discharge are provided in Appendix B of this fact sheet.

Antidegradation

The IDEQ has completed an antidegradation review which is included in the draft 401 certification for this permit. See Appendix E for the State's draft 401 water quality certification. The EPA has reviewed this antidegradation review and finds that it is consistent with the State's 401 certification requirements and the State's antidegradation implementation procedures. Comments on the 401 certification including the antidegradation review can be submitted to the IDEQ as set forth above (see State Certification).

C. Water Quality Limited Waters

Any waterbody for which the water quality does not, and/or is not expected to meet, applicable water quality standards is defined as a "water quality limited segment."

Section 303(d) of the CWA requires states to develop a Total Maximum Daily Load (TMDL) management plan for water bodies determined to be water quality limited segments. A TMDL is a detailed analysis of the water body to determine its assimilative capacity. The assimilative capacity is the loading of a pollutant that a water body can assimilate without causing or contributing to a violation of water quality standards. Once the assimilative capacity of the water body has been determined, the TMDL will allocate that capacity among point and non-point pollutant sources, taking into account natural background levels and a margin of safety. Allocations for non-point sources are known as "load allocations" (LAs). The allocations for point sources, known as "waste load allocations" (WLAs), are implemented through effluent limitations in NPDES permits. Effluent limitations for point sources must be consistent with applicable TMDL allocations.

The State of Idaho's 2010 Integrated Report Section 5 (section 303(d)) lists the Snake River in the area of Oxbow's discharge because it did not attain the state water quality standards for mercury. The American Falls Reservoir downstream of Oxbow's discharges is listed on Idaho's 303(d) list as impaired for sediment, phosphorus, and dissolved oxygen. Although the wastewater treatment plant at Shelley is contributing nutrients and sediment to the Snake River (Appendix C), it appears they are having minimal effect on water quality or beneficial uses as assessed at four bridge sites.

The TMDL states "Should Blackfoot, Firth, or Shelley see increases in population to these levels, or other increased demands on the WWTP, consideration will be made to revise the TMDL to account for the required new capacity." However, the TMDL has not been revised to account for the new capacity of Oxbow. The TMDL stated nutrients do not appear to be impairing beneficial uses in the Snake River, but as the river discharges to American Falls Reservoir, a load allocation was established for phosphorus.

In August, 2012, the EPA approved the IDEQ's *American Falls Subbasin Total Maximum Daily Load (TMDL) Plan: Subbasin Assessment and Loading Analysis May, 2012 (TMDL)*.

The TMDL included wasteload allocations for total phosphorus and TSS for Shelley (i.e., Oxbow).

The WLAs for Shelley (i.e., Oxbow) provided in the TMDL are 1.26 tons/year for phosphorus and 21.0 tons/year for TSS.

IV. Effluent Limitations

A. Basis for Effluent Limitations

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits. The basis for the effluent limits proposed in the draft permit is provided in Appendix C.

Table 1: Effluent Limitations and Monitoring Requirements from the Existing Permit - Outfall 001

Parameter	Units	Monthly Avg.	Weekly Avg.	Instantaneous Maximum Limit	Sample Frequency	Sample Type
Flow	MGD	---	---	---	Continuous	Recording
Biochemical Oxygen Demand (BOD_5)	mg/l	30	45	---	monthly	8-Hour Composite
	lbs/day	115[1]	172[1]	---		
Total Suspended Solids (TSS)[2]	mg/l	45	65	---	monthly	8-Hour Composite
	lbs/day	172[1]	249[1]	---		
E. coli Bacteria[2]	colonies/100 ml	126	---	406	5/month	Grab
pH	su.	6.5 – 9.0			weekly	Grab
Dissolved Oxygen[3]	mg/l	---	---	---	weekly	Grab
Total Phosphorus as P[3]	mg/l	---	---	---	weekly	8-hour composite
Total Ammonia as N[3]	mg/l	---	---	---	monthly	8-hour composite

[1]Loading limits are calculated by multiplying the concentration in mg/L by the design flow of 2.0 mgd and a conversion factor of 8.34 lbs/gallon.
[2] The average monthly E. coli counts must not exceed a geometric mean of 126/100 ml based on a minimum of five samples taken every three to five days over a thirty day period.
[3]Monitoring shall be conducted once per month starting in January 2006 and lasting for one year.

Under the previous permit, percent removal for each of BOD_5 and TSS was required to be no less than 65%.

B. Proposed Effluent Limitations

The following summarizes the proposed effluent limits that are in the draft permit.

1. - The permittee must not discharge floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.

2. - Removal Requirements for BOD_5 and TSS: Removal Rates for BOD_5 and TSS must be at a minimum 85%. Percent removal of BOD_5 and TSS must be reported on the DMRs. For each parameter, the monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month. Influent and effluent samples must be taken over approximately the same time period.

3. - pH: pH must be within the range of 6.5 – 9.0 standard units.

Table 2 below presents the proposed effluent limits for BOD_5, TSS, *E. coli* and total - phosphorus.

Table 2: Proposed Effluent Limits

Parameter	Units	Effluent Limits		
		Average Monthly Limit	**Average Weekly Limit**	**Maximum Daily Limit**
Five-Day Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	---
	lb/day	500[2]	751[2]	---
BOD_5 Removal	percent	85 minimum[1]	---	---
TSS	mg/L	30	45	---
	lb/day	179	377	---
		Annual Average Limit 115		
TSS Removal	percent	85 minimum[1]	---	---
E. coli	#/100 ml	126 (geometric mean)[3]	---	406[4]
Total Phosphorus (Interim)	lb/day	52[5]	78[5]	---
Total Phosphorus as P	lb/day	10.7[6]	20.4[6]	---
		Annual Average Limit 6.90[6]		

1. -Percent removal is calculated using the following equation: ((influent - effluent) / influent) x 100, this limit applies to the average monthly values.
2. -Loading limits were calculated by multiplying the concentration in mg/L by the design flow of 2.0 mgd and a conversion factor of 8.34 lbs/gallon.
3. -The monthly average for *E. coli* is the geometric mean based on at least five samples taken every three to seven days during the month.
4. -This is an instantaneous limit, applicable to each grab sample without averaging.
5. -Interim limits lasting seven and one half years under Compliance Schedule Option 1 – Cessation of Discharge; or lasting four years and eleven months under Compliance Schedule Option 2 – Treatment and Continuing to Discharge.
6. Limit to be achieved seven and one half years with cessation or partial cessation of discharge and reuse option and four years and eleven months from the effective date of the permit with end of pipe treatment option.

C. Compliance Schedule

The Idaho Water Quality Standards at IDAPA 58.01.02.400.03 allow compliance schedules that allow a discharger to phase in, over time, compliance with water quality based effluent limitations when limitations are in the permit for the first time. Oxbow's water quality based effluent limits for total phosphorus are required for the first time.

The federal regulation at 40 CFR 122.47 requires that compliance schedules require compliance with effluent limitations as soon as possible and that, when the compliance schedule is longer than one year, the schedule shall set forth interim requirements and the dates for their achievement. The time between the interim dates shall generally not exceed one year and when the time necessary to complete any interim requirement is more than one year, the schedule shall require reports on progress toward completion of these interim requirements.

In order to grant a compliance schedule the permitting authority must make a reasonable finding that the discharger cannot immediately comply with the water quality based effluent limit upon the effective date of the permit and that a compliance schedule is appropriate (see 40 CFR 122.47 (a)). The draft permit proposes an average monthly effluent limit of 10.9 lbs/day, a weekly limit of 20.6 lbs/day and an annual average limit of 6.90 lbs/day. The EPA has found that the permittee needs a compliance schedule for total phosphorus. As stated above in the Water Quality Limited Waters section a WLA has not been provided to Oxbow which takes into account the increase in capacity, service population and design flow. Also, the Oxbow facility was not upgraded for phosphorus control. In order to achieve the phosphorus effluent limitations Oxbow must make physical modifications to its facility. Thus, Oxbow is unable to achieve the new total phosphorus effluent limitation and a compliance schedule is appropriate.

In a letter from Eric Christensen, Chairman of the Eastern Idaho Regional Wastewater Authority, received on August 6, 2012, Oxbow requested that EPA delay issuance of the NPDES permit to allow Oxbow time to evaluate, among other treatment options, wastewater reuse and the implications and costs associated with fully or partially removing Oxbow treated effluent from the Snake River. Partial removal would require Oxbow to locate a reuse (land application) location or alternatively a rapid infiltration location for part of the Oxbow discharge. The part of the discharge not eliminated would be required to meet the total phosphorus loading limits before being discharges to the Snake River.

Partial removal of Oxbow discharges will not only reduce phosphorus loadings to the Snake River but would also reduce the loadings of the other pollutants in Oxbow's discharge such as TSS, BOD_5, bacteria and ammonia. Full or partial removal of discharges from waters of the U.S. is the goal of the CWA and the National Pollutant Discharge Elimination System permits.

In response to Oxbow's letter, EPA is proposing a compliance schedule that allows for a final decision on wastewater reuse, partial reuse or rapid infiltration by January 1**,** 2016 pursuant to 40CFR 122.47(b)(3) and (4):

"(3) If the permittee is undecided whether to cease conducing regulated activities, the Director may issue or modify a permit to contain two schedules as follows:

(i) - Both schedules contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(ii) - One schedule lead to timely compliance with applicable requirements, no later than the statutory deadline;

(iii) - The second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements no later than the statutory deadline;

(iv) - Each permit containing two schedules shall include a requirement that after the permittee has made a final decision under paragraph (b)(3)(i) of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities."

(4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Director, such as a resolution of the board of directors of a corporation."

The permit meets the requirements of 40CFR122.47(b)(3) and (4) with the following compliance schedules:

(3) Oxbow's letter and follow-up conversations with Forsgren Associates stated Oxbow is undecided whether to follow the cessation of discharge option (Option 1) or treat and continue to discharge to the Snake River option (Option 2).

(i) -The permit establishes two compliance schedules with an identical interim deadline requiring a final decision on whether to cease conducting regulated activities by January 1, 2016. The regulated activity is discharge to the Snake River. The deadline to decide to treat and continue to discharge is identical, January 1, 2016.

(ii) The permit refers to a timely compliance schedule for the non-cessation option which is treatment for phosphorus. The compliance schedule implements a WLA from the TMDL. The four year eleven month deadline in Condition I.C.1. is a common period for installation of treatment systems under NPDES permits and is therefore timely.

(iii)The permit establishes a second schedule for cessation of the discharge to the Snake River by May 1, 2021 (seven and one half years) in Condition I.C.2. This option also includes cessation of discharge of a portion of the discharge and meeting the loading limit with the remaining flow discharged to the Snake River. This option ensures timely compliance with applicable CWA requirements. This is based on the following:

a. - Due to the time required to locate suitable property, negotiate and complete a purchase, and complete an environmental impact study for the new site, Oxbow would not be able to consider the reuse option with a four year eleven month compliance schedule.

b. - Consultation with IDEQ's Pocatello Regional Office,

c. IDEQ authorizing the compliance schedule pursuant to IDAPA 58.01.02.400.03. IDEQ's draft 401 Certification shown in Appendix E states "The compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limitations as specified in the permit, while at the same time, it ensures compliance with the final effluent limitations is accomplished as soon as possible."

d. - Estimates from Oxbow's Project Manager with Forsgren Associates,

e. - The seven and one half year compliance schedule for a similar reuse option established by the EPA in the City Weiser NPDES permit No. ID-002029-0. The 401 Certification for that permit also stated the compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limitations as specified in the permit, while at the same time, ensuring compliance with the final effluent limitations is accomplished as soon as possible. Further Mark Mason, the IDEQ Boise Regional Office reuse expert confirmed the similar Weiser compliance schedule ensured timely compliance.

(iv) If the decision is to cease the discharge to the Snake River with the land application option, the City must follow the schedule leading to cessation or partial cessation of discharge in Condition I.C.3.b. If the option is to continue with the discharge, Oxbow must follow the compliance schedule in Condition I.C.3.c.

(4) Each compliance schedule states, "The permittee must provide the EPA with written notice by a ranking elected official of the permittee's final selection of either Option 1 (cessation of discharge) or Option 2 (treatment and continuation of discharge)**."**

Pursuant to 40 CFR 122.47(a)(3), a permit with a compliance schedule must have interim requirements and dates for achievement. The EPA has included interim requirements and dates for their achievement. An interim effluent limitation is established to insure no increase in phosphorus loading to the Snake River during the compliance schedule.

V. Monitoring Requirements

A. Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) requires monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality.

The permit also requires the permittee to perform effluent monitoring required by the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit.

The permit also requires the permittee to perform effluent monitoring required by parts B.6 and D of the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit.

The permittee is responsible for conducting the monitoring and for reporting results on DMRs or on the application for renewal, as appropriate, to the EPA.

B. Effluent Monitoring

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples must be used for averaging if they are conducted using the EPA-approved test methods (generally found in 40 CFR 136) or as specified in the permit.

Table 3, below, presents the proposed effluent monitoring requirements for Oxbow. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. The samples must be representative of the volume and nature of the monitored discharge. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

Additional monitoring is required because Oxbow is now a major facility. Major facilities are those with a design capacity of 1.0 mgd or greater. Oxbow design capacity is 2.0 mgd up from 0.47 mgd. Major facilities are required to monitor for WET and for Form 2A Part D Expanded Effluent Testing. In addition 24 hour composite sampling is required consistent with other major facilities instead of only 8 hour composite sampling for TSS, BOD_5 and total ammonia. Composite 24 hour sampling for total phosphorus is required to insure compliance with the new total phosphorus limit. See Table 1.

Table 3: Effluent Monitoring Requirements

Parameter	Units	Sample Location	Sample Frequency	Sample Type
Flow	Mgd	Effluent	Continuous	recording
BOD_5	mg/L	Influent & Effluent	1//week	24-hour composite
	lb/day	Influent & Effluent	1//week	calculation[1]
	% Removal	--	--	calculation[2]
TSS	mg/L	Influent & Effluent	1//week	24-hour composite
	lb/day	Influent & Effluent	1//week	calculation[1]
	% Removal	--	--	calculation[2]
pH	standard units	Effluent	5/week	grab
E. Coli	#/100 ml	Effluent	4/week	grab
Total Ammonia as N	mg/L	Effluent	1/month	24-hour composite
	lb/day	Effluent		calculation[1]
Total Phosphorus	lb/day	Effluent	1/week	24-hour composite
NPDES Application Form 2A Part 2B.6., Form 2A Part D Expanded Effluent Testing and Form 2A Part E Whole Effluent Toxicity Testing	---	Effluent	1 each in 2nd, 3rd, & 4th years of the permit	---

Table 3: Effluent Monitoring Requirements				
Parameter	**Units**	**Sample Location**	**Sample Frequency**	**Sample Type**

Notes:
1. Loading is calculated by multiplying the concentration in mg/L by the flow in mgd and a conversion factor of 8.34.
2. The monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month, i.e.:.
   (average monthly influent – average monthly effluent) ÷ average monthly influent.
3. Influent and effluent samples must be taken over approximately the same time period.

C. Monitoring and Reporting

During the period from the effective date of the permit to six months from the effective date of the permit, the permittee must either submit monitoring data and other reports in paper form, or must report electronically using NetDMR, a web-based tool that allows permittees to electronically submit DMRs and other required reports via a secure internet connection. Within six months of the effective date of the permit, the permittee must submit monitoring data and other reports electronically using NetDMR.

Specific requirements regarding submittal of data and reports in paper form and submittal using NetDMR are described below.

Paper Copy Submissions.

Monitoring data must be submitted using the DMR form (EPA No. 3320-1) or equivalent and must be postmarked by the 20th day of the month following the completed reporting period. The permittee must sign and certify all DMRs, and all other reports, in accordance with the requirements of Part V.E. of this permit ("Signatory Requirements"). The permittee must submit the legible originals of these documents to the Director, Office of Compliance and Enforcement, with copies to IDEQ at the following addresses:

US EPA Region 10
Attn: ICIS Data Entry Team
1200 Sixth Avenue, Suite 900
OCE-133
Seattle, Washington 98101-3140

Idaho Department of Environmental Quality
DEQ Pocatello Regional Office
444 Hospital Way, #300
Pocatello, ID 83201

Electronic Copy Submissions

Monitoring data must be submitted electronically to EPA no later than the 20th of the month following the completed reporting period. All reports required under this permit must be submitted to EPA as a legible electronic attachment to the DMR. The permittee must sign and certify all DMRs, and all other reports, in accordance with the requirements of Part V.E. of the draft permit ("Signatory Requirements"). Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit paper copies of DMRs or other reports to EPA and IDEQ.

The permittee may use NetDMR after requesting and receiving permission from US EPA Region 10. NetDMR is accessed from http://www.epa.gov/netdmr.

VI. Sludge (Biosolids) Requirements

The EPA Region 10 separates wastewater and sludge permitting. The EPA has authority under the CWA to issue separate sludge-only permits for the purposes of regulating biosolids. The EPA may issue a sludge-only permit to each facility at a later date, as appropriate.

Until future issuance of a sludge-only permit, sludge management and disposal activities at each facility continue to be subject to the national sewage sludge standards at 40 CFR Part 503 and any requirements of the State's biosolids program. The Part 503 regulations are self-implementing, which means that facilities must comply with them whether or not a permit has been issued.

VII. Other Permit Conditions

A. Quality Assurance Plan

The federal regulation at 40 CFR 122.41(e) requires the permittee to develop procedures to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. Oxbow is required to update the Quality Assurance Plan for the wastewater treatment plant within 90 days of the effective date of the final permit. The Quality Assurance Plan must include standard operating procedures the permittee will follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan must be retained on site and be made available to the EPA and the IDEQ upon request.

B. Operation and Maintenance Plan

The permit requires the Oxbow to properly operate and maintain all facilities and systems of treatment and control. Proper operation and maintenance is essential to meeting discharge limits, monitoring requirements, and all other permit requirements at all times. The permittee is required to develop and implement an operation and maintenance plan for their facility within 180 days of the effective date of the final permit. The plan must be retained on site and made available to the EPA and the IDEQ upon request.

C. Sanitary Sewer Overflows and Proper Operation and Maintenance of the Collection System

Untreated or partially treated discharges from separate sanitary sewer systems are referred to as sanitary sewer overflows (SSOs). SSOs may present serious risks of human exposure when released to certain areas, such as streets, private property, basements, and receiving waters used for drinking water, fishing and shellfishing, or contact recreation. Untreated sewage contains pathogens and other pollutants, which are toxic. SSOs are not authorized under this permit. Pursuant to the NPDES regulations, discharges from separate sanitary sewer systems authorized by NPDES permits must meet effluent limitations that are based upon secondary treatment. Further, discharges must meet any more stringent effluent limitations that are established to meet the EPA-approved state water quality standards.

The permit contains language to address SSO reporting and public notice and operation and maintenance of the collection system. The permit requires that the permittee identify SSO occurrences and their causes. In addition, the permit establishes reporting, record keeping and third party notification of SSOs. Finally, the permit requires proper operation and maintenance of the collection system. The following specific permit conditions apply:

Immediate Reporting – The permittee is required to notify the EPA of an SSO within 24 hours of the time the permittee becomes aware of the overflow. (See 40 CFR 122.41(l)(6))

Written Reports – The permittee is required to provide the EPA a written report within five days of the time it became aware of any overflow that is subject to the immediate reporting provision. (See 40 CFR 122.41(l)(6)(i)).

Third Party Notice – The permit requires that the permittee establish a process to notify specified third parties of SSOs that may endanger health due to a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that may endanger health due to a likelihood of human exposure. The permittee is required to develop, in consultation with appropriate authorities at the local, county, tribal and/or state level, a plan that describes how, under various overflow (and unanticipated bypass and upset) scenarios, the public, as well as other entities, would be notified of overflows that may endanger health. The plan should identify all overflows that would be reported and to whom, and the specific information that would be reported. The plan should include a description of lines of communication and the identities of responsible officials. (See 40 CFR 122.41(l)(6)).

Record Keeping – The permittee is required to keep records of SSOs. The permittee must retain the reports submitted to the EPA and other appropriate reports that could include work orders associated with investigation of system problems related to a SSO, that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the SSO. (See 40 CFR 122.41(j)).

Proper Operation and Maintenance – The permit requires proper operation and maintenance of the collection system. (See 40 CFR 122.41(d) and (e)). SSOs may be indicative of improper operation and maintenance of the collection system. The permittee may consider the development and implementation of a capacity, management, operation and maintenance (CMOM) program.

D. Standard Permit Provisions

Sections **III, IV and V** of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because these requirements are based directly on NPDES regulations, they cannot be challenged in the context of an NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, and - reporting requirements, compliance responsibilities, and other general requirements. -

VIII. Other Legal Requirements

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or

endangered species. In an e-mail dated January 21, 2009, NOAA Fisheries stated that there are no threatened or endangered species under NOAA's jurisdiction in the Snake River drainage upstream of the Hells Canyon Dam, which is located at river mile 247.5. The Oxbow WWTP is located more than 400 miles upstream from the nearest ESA-listed threatened or endangered species under NOAA's jurisdiction. No USFWS species are in Bingham County, the location of the Oxbow WWTP discharge according to the *U.S. Fish and Wildlife Service - Idaho Fish and Wildlife Office Endangered, Threatened, Proposed, and Candidate Species, With Associated Proposed and Critical Habitats in Idaho* April 18, 2013.

A review of the threatened and endangered species located in Idaho finds that the reissuance of this permit will have no effect on any listed threatened or endangered species under NOAA's jurisdiction.

B. Essential Fish Habitat

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH). A review of the Essential Fish Habitat documents shows Bingham County does not contain essential fish habitat.

The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Due to the same reasons listed in VIII.A. EPA concludes that issuance of this permit has no affect on EFH.

C. State Certification

Section 401 of the CWA requires the EPA to seek State certification before issuing a final permit. As a result of the certification, the State may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards, or treatment standards established pursuant to any State law or regulation.

D. Permit Expiration

The permit will expire five years from the effective date.

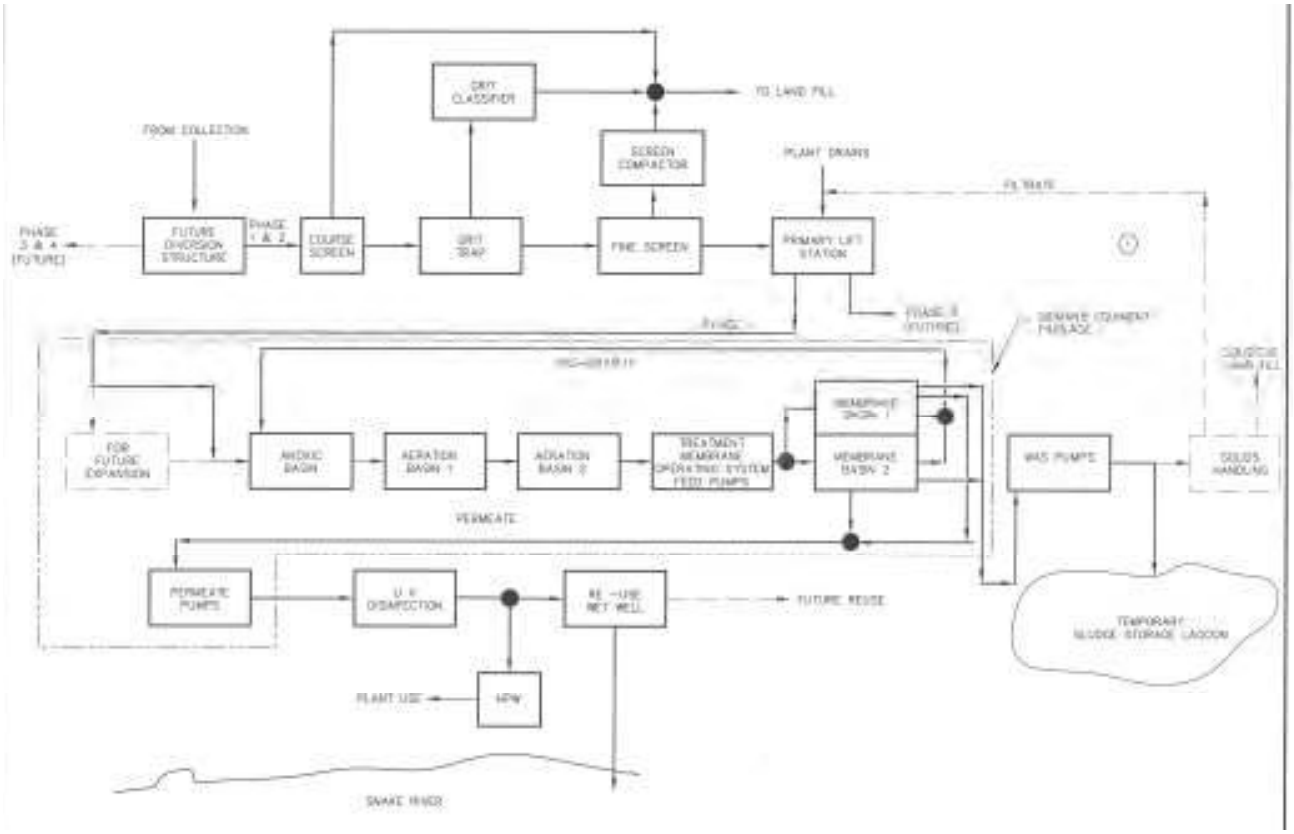
IX. References

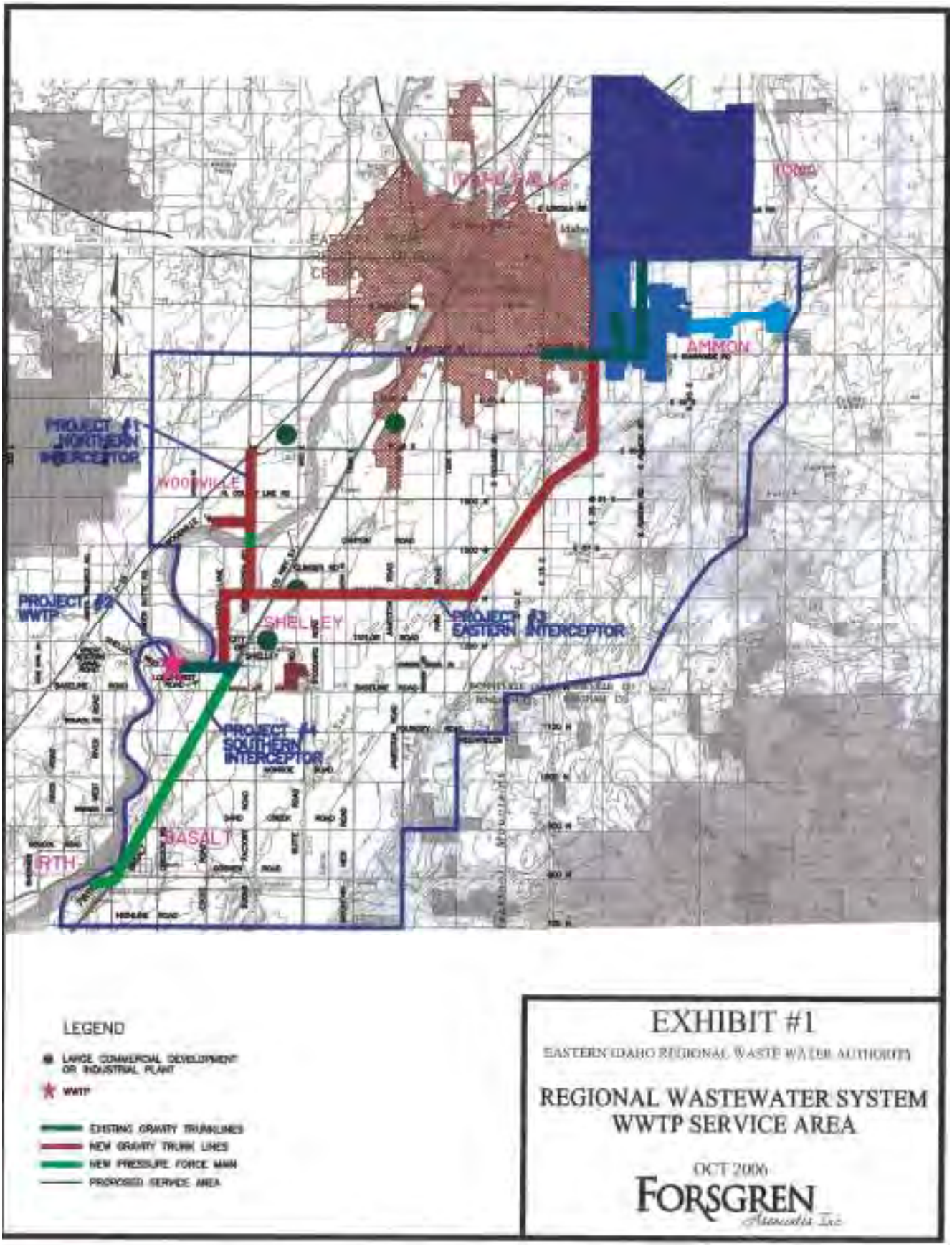
EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control.* US Environmental Protection Agency, Office of Water, EPA/505/2-90-001.

Water Pollution Control Federation. Subcommittee on Chlorination of Wastewater. *Chlorination of Wastewater.* Water Pollution Control Federation. Washington, D.C. 1976.

EPA. 2010. *NPDES Permit Writers' Manual.* Environmental Protection Agency, Office of Wastewater Management, EPA-833-K-10-001.

Appendix A: Facility Information




IDAHO FALLS
IDAHO
AMMON
PROJECT #1
NORTHERN
INTERCEPTOR
WOODVILLE
PROJECT #2
WWTP
SHELLEY
PROJECT #3
EASTERN INTERCEPTOR
PROJECT #4
SOUTHERN
INTERCEPTOR
BASALT
LEGEND
LARGE COMMERCIAL DEVELOPMENT OR INDUSTRIAL PLANT
WWTP
EXISTING GRAVITY TRUNKLINES
NEW GRAVITY TRUNK LINES
NEW PRESSURE FORCE MAIN
PROPOSED SERVICE AREA
EXHIBIT #1
EASTERN IDAHO REGIONAL WASTE WATER AUTHORITY
REGIONAL WASTEWATER SYSTEM
WWTP SERVICE AREA
OCT 2006
FORSGREN
Associates Inc

Appendix B: Water Quality Criteria Summary

This appendix provides a summary of water quality criteria applicable to the Snake River.

Idaho water quality standards include criteria necessary to protect designated beneficial uses. The standards are divided into three sections: General Water Quality Criteria, Surface Water Quality Criteria for Use Classifications, and Site-Specific Surface Water Quality Criteria. The EPA has determined that the criteria listed below are applicable to the Snake River. This determination was based on (1) the applicable beneficial uses of the river (i.e., cold water aquatic life, primary contact recreation, salmonid spawning, agricultural water supply, industrial water supply, wildlife habitats, and aesthetics), (2) the type of facility, (3) a review of the application materials submitted by the permittee, and (4) the quality of the water in the Snake River.

A. General Criteria (IDAPA 58.01.02.200)

Surface waters of the state shall be free from:

- hazardous materials,
- toxic substances in concentrations that impair designated beneficial uses,
- deleterious materials,
- radioactive materials,
- floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses,
- excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses,
- oxygen demanding materials in concentrations that would result in an anaerobic water condition

Surface water level shall not exceed allowable level for:

- radioactive materials, or
- sediments

B. Numeric Criteria for Toxics (IDAPA 58.01.02.210)

This section of the Idaho Water Quality Standards provides the numeric criteria for toxic substances for waters designated for aquatic life, recreation, or domestic water supply use. Monitoring of the effluent has shown that the following toxic pollutant has been present at detectable levels in the effluent: **Ammonia**

C. Surface Water Criteria To Protect Aquatic Life Uses (IDAPA 58.01.02.250)

1. pH: Within the range of 6.5 to 9.0
2. Dissolved Oxygen: Exceed 6 mg/L at all times.
3. Ammonia:

Ammonia criteria are based on a formula which relies on the pH and temperature of the receiving water, because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature. Therefore, the criteria become more stringent as pH and temperature increase. The table below details the equations used to determine water quality criteria for ammonia.

The pH and temperature data are in the Snake River upstream of the facility. These data were used to determine the appropriate pH and temperature values to calculate the ammonia criteria.

As with any natural water body the pH and temperature of the water will vary over time. Therefore, to protect water quality criteria it is important to develop the criteria based on pH and temperature values that will be protective of aquatic life at all times. The EPA used the 95% percentile of the pH and temperature data for the calculations.

Table B-1: Water Quality Criteria for Ammonia		
	Acute Criterion	**Chronic Criterion**
Equations:	$\frac{0.275}{1+10^{7.204-\text{pH}}}+\frac{39}{1+10^{\text{pH}-7.204}}$	$\left(\frac{0.0577}{1+10^{7.688-\text{pH}}}+\frac{2.487}{1+10^{\text{pH}-7.688}}\right)\times \text{MIN}\left(2.85,1.45\times 10^{0.028\times(25-T)}\right)$
Results:	1.77 mg/L	0.716 mg/L.

95th Percentile Ambient pH	8.6
95th Percentile Ambient Temperature °C	18.4
Highest Background Ammonia mg/L	0.06
Highest Discharge Ammonia mg/L	6.4
Coefficient of Variation	1.397

The coefficient of variation (CV) of the data and the highest observed effluent value are based on effluent data collected by the City of Shelley from May, 2006 through December, 2006. This is the most recent and only data available for ammonia. The 95th percentile pH (for the entire year) is 8.6 standard units and the 95th percentile temperature is 18.4 ºC are observed in the Snake River upstream from the discharge,

The reasonable potential analysis shows that there is no reasonable potential for the facility's discharge to cause or contribute to an exceedance of the acute or chronic criterion, therefore, effluent limits for ammonia are not required. Ammonia is a parameter commonly monitored for POTWs to determine performance. Monitoring will again be required. Ammonia monitoring will also be used to calculate the reasonable potential for the next reissuance of the permit.

D. Surface Water Quality Criteria For Recreational Use Designation (IDAPA 58.01.02.251)

a. Geometric Mean Criterion. Waters designated for primary or secondary contact recreation are not to contain *E. coli* in concentrations exceeding a geometric mean of 126 *E. coli* organisms per 100 ml based on a minimum of 5 samples taken every 3 to 7 days over a 30 day period.

b. Use of Single Sample Values: This section states that that a water sample that exceeds certain "single sample maximum" values indicates a likely exceedance of the geometric mean criterion, although it is not, in and of itself, a violation of water quality standards. For waters designated for primary contact recreation, the "single sample maximum" value is 406 organisms per 100 ml (IDAPA 58.01.02.251.01.b.ii.). for primary and contact recreation.

Appendix C: Low Flow Conditions and Dilution

A. Low Flow Conditions

The low flow conditions of a water body are used to determine water quality-based effluent limits. In general, Idaho's water quality standards require criteria be evaluated at the following low flow receiving water conditions (See IDAPA 58.01.02.210.03) as defined below:

Acute aquatic life	1Q10 or 1B3
Chronic aquatic life	7Q10 or 4B3
Non-carcinogenic human health criteria	30Q5
Carcinogenic human health criteria	harmonic mean flow
Ammonia	30B3 or 30Q10
1. The 1Q10 represents the lowest one day flow with an average recurrence frequency of once in 10 years. 2. The 1B3 is biologically based and indicates an allowable exceedence of once every 3 years. 3. The 7Q10 represents lowest average 7 consecutive day flow with an average recurrence frequency of once in 10 years. 4. The 4B3 is biologically based and indicates an allowable exceedance for 4 consecutive days once every 3 years. 5. The 30Q5 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 5 years. 6. The 30Q10 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 10 years. 7. The harmonic mean is a long-term mean flow value calculated by dividing the number of daily flow measurements by the sum of the reciprocals of the flows.	

Idaho's water quality standards do not specify a low flow to use for acute and chronic ammonia criteria, however, the EPA's *Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia; Notice* (64 FR 719769 December 22, 1999) identifies the appropriate flows to be used.

The EPA determined critical low flows upstream of the discharge from the following USGS Station: USGS station 13060000, Snake River near Shelley, Idaho

The estimated low flows for the station are presented in Table C-1.

Table C-1: Critical Flows

Flows	cfs
1Q10	1190
7Q10	1400
30B3	1790

B. Mixing Zones and Dilution

In some cases a dilution allowance or mixing zone is permitted. A mixing zone is an area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient water body. A mixing zone is an allocated impact zone where the water quality standards may be exceeded as long as acutely toxic conditions are prevented (the EPA, 1994).

The federal regulations at 40 CFR 131.13 states that "States may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances."

The Idaho Water Quality Standards at IDAPA 58.01.02.060 provides Idaho's mixing zone policy for point source discharges. The policy allows the IDEQ to authorize a mixing zone for a point source discharge after a biological, chemical, and physical appraisal of the receiving water and the proposed discharge. The IDEQ considers the following principles in limiting the size of a mixing zone in flowing receiving waters (IDAPA 58.01.02.060.01.e):

i. The cumulative width of adjacent mixing zones when measured across the receiving water is not to exceed 50% of the total width of the receiving water at that point;

ii. The width of a mixing zone is not to exceed 25% of the stream width or 300 meters plus the horizontal length of the diffuser as measured perpendicularly to the stream flow, whichever is less;

iii. The mixing zone is to be no closer to the 10 year, 7 day low-flow shoreline than 15% of the stream width;

iv. The mixing zone is not to include more than 25% of the volume of the stream flow.

In the State 401 Certification, the IDEQ proposes to authorize a mixing zone of 25% of the stream flow volume for ammonia and chlorine.

The following formula is used to calculate a dilution factor based on the allowed mixing zone.

$$D = \frac{Q_e + Q_u \times \%MZ}{Q_e}$$

Where:

D = Dilution Factor -
Q_e = Effluent flow rate (set equal to the design flow of the WWTP) -
Q_u = Receiving water low flow rate upstream of the discharge (1Q10, 7Q10, 30B3, etc)
%MZ = Percent Mixing Zone

The EPA calculated dilution factors for year round critical low flow conditions. All dilution factors are calculated with the effluent flow rate set equal to the design flow of 2.0 mgd. The dilution factors are listed in Table C-2.

Table C-2: Dilution Factors

Flows	Dilution Factors
1Q10	97
7Q10	114
30B3	146

Appendix D: Basis for Effluent Limits

The following discussion explains the derivation of technology and water quality based effluent limits proposed in the draft permit. Part A discusses technology-based effluent limits, Part B discusses water quality-based effluent limits in general, Part C discusses anti-backsliding provisions, Part D discusses the effluent limits imposed due to the State's anti-degradation policy, and Part E presents a summary of the facility specific limits.

A. Technology-Based Effluent Limits

Federal Secondary Treatment Effluent Limits

The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as "secondary treatment," which all POTWs were required to meet by July 1, 1977. The EPA has developed and promulgated "secondary treatment" effluent limitations, which are found in 40 CFR 133.102. These technology-based effluent limits apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD_5, TSS, and pH. The federally promulgated secondary treatment effluent limits are listed in Table C-1.

Table C-1: Secondary Treatment Effluent Limits (40 CFR 133.102)

Parameter	30-day average	7-day average
BOD_5	30 mg/L	45 mg/L
TSS	30 mg/L	45 mg/L
Removal for BOD_5 and TSS (concentration)	85% (minimum)	---
pH	within the limits of 6.0 - 9.0 s.u.	

Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass based limits are expressed in pounds per day and are calculated as follows:

Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34[1]

Since the design flow for this facility is 2.0 mgd, the technology based mass limits for BOD_5 and TSS are calculated as follows:

Average Monthly Limit = 30 mg/L × 2.0 mgd × 8.34 = 500 lbs/day

Average Weekly Limit = 45 mg/L × 2.0 mgd × 8.34 = 751 lbs/day

[1] 8.34 is a conversion factor with units (lb ×L)/(mg × gallon×10^6)

B. Water Quality-based Effluent Limits

Statutory and Regulatory Basis

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards. Discharges to State or Tribal waters must also comply with limitations imposed by the State or Tribe as part of its certification of NPDES permits under section 401 of the CWA. Federal regulations at 40 CFR 122.4(d) prohibit the issuance of an NPDES permit that does not ensure compliance with the water quality standards of all affected States.

The NPDES regulation (40 CFR 122.44(d)(1)) implementing Section 301(b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State or Tribal water quality standard, including narrative criteria for water quality, and that the level of water quality to be achieved by limits on point sources is derived from and complies with all applicable water quality standards.

The regulations require the permitting authority to make this evaluation using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water quality standards are met, and must be consistent with any available wasteload allocation.

Reasonable Potential Analysis

When evaluating the effluent to determine if the pollutant parameters in the effluent are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State/Tribal water quality criterion, the EPA projects the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern. The EPA uses the concentration of the pollutant in the effluent and receiving water and, if appropriate, the dilution available from the receiving water, to project the receiving water concentration. If the projected concentration of the pollutant in the receiving water exceeds the numeric criterion for that specific pollutant, then the discharge has the reasonable potential to cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required.

Sometimes it may be appropriate to allow a small area of the receiving water to provide dilution of the effluent. These areas are called mixing zones. Mixing zone allowances will increase the mass loadings of the pollutant to the water body and will decrease treatment requirements. Mixing zones can be used only when there is adequate receiving water flow volume and the concentration of the pollutant in the receiving water is less than the criterion necessary to protect the designated uses of the water body. Mixing zones must be authorized by the State.

The reasonable potential analysis for total ammonia nitrogen were based on a mixing zone of 25% based on the IDEQ's draft certification. If IDEQ revises the allowable mixing zone in its final certification of this permit, reasonable potential analysis will be revised accordingly.

Procedure for Deriving Water Quality-based Effluent Limits

The first step in developing a water quality-based effluent limit is to develop a wasteload allocation (WLA) for the pollutant. A wasteload allocation is the concentration or loading of a pollutant that the permittee may discharge without causing or contributing to an exceedance of water quality standards in the receiving water. Wasteload allocations are determined in one of the following ways:

1. TMDL-Based Wasteload Allocation

Where the receiving water quality does not meet water quality standards, the wasteload allocation is generally based on a TMDL developed by the State. A TMDL is a determination of the amount of a pollutant from point, non-point, and natural background sources that may be discharged to a water body without causing the water body to exceed the criterion for that pollutant. Any loading above this capacity risks violating water quality standards.

To ensure that these waters will come into compliance with water quality standards Section 303(d) of the CWA requires States to develop TMDLs for those water bodies that will not meet water quality standards even after the imposition of technology-based effluent limitations. The first step in establishing a TMDL is to determine the assimilative capacity (the loading of pollutant that a water body can assimilate without exceeding water quality standards). The next step is to divide the assimilative capacity into allocations for non-point sources (load allocations), point sources (wasteload allocations), natural background loadings, and a margin of safety to account for any uncertainties. Permit limitations are then developed for point sources that are consistent with the wasteload allocation for the point source.

The *American Falls Subbasin Total Maximum Daily Load (TMDL) Plan: Subbasin Assessment and Loading Analysis May, 2012* provided a total phosphorus allocation of 1.26 tons per year and a TSS allocation of 21 tons per year.

2. Mixing zone based WLA

When the State authorizes a mixing zone for the discharge, the WLA is calculated by using a simple mass balance equation. The equation takes into account the available dilution provided by the mixing zone, and the background concentrations of the pollutant.

3. Criterion as the Wasteload Allocation

In some cases a mixing zone cannot be authorized, either because the receiving water is already at, or exceeds, the criterion, the receiving water flow is too low to provide dilution, or the facility can achieve the effluent limit without a mixing zone. In such cases, the criterion becomes the wasteload allocation. Establishing the criterion as the wasteload allocation ensures that the effluent discharge will not contribute to an exceedance of the criteria.

Once the wasteload allocation has been developed, the EPA applies the statistical permit limit derivation approach described in Chapter 5 of the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001, March 1991, hereafter referred to as the TSD) to obtain monthly average, and weekly average or daily maximum permit limits. This approach takes into account effluent variability, sampling frequency, and water quality standards.

Summary - Water Quality-based Effluent Limits

The water quality based effluent limits in the draft permit are summarized below.

pH

The Idaho water quality standards at IDAPA 58.01.02.250.01.a, require pH values of the river to be within the range of 6.5 to 9.0. Mixing zones are generally not granted for pH, therefore the most stringent water quality criterion must be met before the effluent is discharged to the receiving water. Effluent pH data were collected daily at the facility from December, 2009 to May 2011, a total of 34 samples were collected. The data ranged from 6.9 – 7.9 standard units. The pH range of the effluent is well within the State's water quality criterion of 6.5 – 9.0 standard units, therefore no mixing zone is necessary for this discharge.

E. coli

The Idaho water quality standards state that waters of the State of Idaho, that are designated for recreation, are not to contain *E. coli* bacteria in concentrations exceeding 126 organisms per 100 ml based on a minimum of five samples taken every three to seven days over a thirty day period. Therefore, the draft permit contains a monthly geometric mean effluent limit for *E. coli* of 126 organisms per 100 ml (IDAPA 58.01.02.251.01.a.).

The Idaho water quality standards also state that a water sample that exceeds certain "single sample maximum" values indicates a likely exceedance of the geometric mean criterion, although it is not, in and of itself, a violation of water quality standards. For waters designated for primary contact recreation, the "single sample maximum" value is 406 organisms per 100 ml (IDAPA 58.01.02.251.01.b.ii.).

The goal of a water quality-based effluent limit is to ensure a low probability that water quality standards will be exceeded in the receiving water as a result of a discharge, while considering the variability of the pollutant in the effluent. Because a single sample value exceeding 406 organisms per 100 ml indicates a likely exceedance of the geometric mean criterion, the EPA has imposed an instantaneous (single grab sample) maximum effluent limit for *E. coli* of 406 organisms per 100 ml, in addition to a monthly geometric mean limit of 126 organisms per 100 ml, which directly implements the water quality criterion for *E. coli*. This will ensure that the discharge will have a low probability of exceeding water quality standards for *E. coli*.

Regulations at 40 CFR 122.45(d)(2) require that effluent limitations for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable. Additionally, the terms "average monthly limit" and "average weekly limit" are defined in 40 CFR 122.2 as being arithmetic (as opposed to geometric) averages. It is impracticable to properly implement a 30-day geometric mean criterion in a permit using monthly and weekly arithmetic average limits. The geometric mean of a given data set is equal to the arithmetic mean of that data set if and only if all of the values in that data set are equal. Otherwise, the geometric mean is always less than the arithmetic mean. In order to ensure that the effluent limits are "derived from and comply with" the geometric mean water quality criterion, as required by 40 CFR 122.44(d)(1)(vii)(A), it is necessary to express the effluent limits as a monthly geometric mean and an instantaneous maximum limit.

Residues -

The Idaho water quality standards require that surface waters of the State be free from floating, suspended or submerged matter of any kind in concentrations impairing designated beneficial - uses. The draft permit contains a narrative limitation prohibiting the discharge of such materials. -

Phosphorus

From TMDL, refer to Appendix E.

TSS

From TMDL, refer to Appendix E.

C. Antidegradation

The proposed issuance of an NPDES permit triggers the need to ensure that the conditions in the permit ensure that Tier I, II, and III of the State's antidegradation policy are met. An anti-degradation analysis was conducted by the IDEQ. See Appendix E for the antidegradation analysis.

D. Facility Specific Limits

Table C-2 summarizes the numeric effluent limits that are in the proposed permit. The final limits are the more stringent of technology treatment requirements, water quality based limits or limits retained as the result of anti-backsliding analysis or to meet the State's anti-degradation policy.

Table C-2: Proposed Effluent Limits

Parameter	Units	Effluent Limits			Basis for Effluent Limits
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	
Five-Day Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	---	Technology
	lb/day	500	751	---	
BOD_5 Removal	percent	85 minimum	---	---	
TSS	mg/L	30	45	---	Technology
	lb/day	179	377	---	Water Quality
		Annual Average Limit 115			Water Quality
TSS Removal	percent	85 minimum	---	---	Technology
Total Phosphorus[1]	Lbs/day	10.7	20.4	---	Water Quality
		Annual Average Limit 6.90			
E. coli	#/100 ml	126 (geometric mean)	---	406	Water Quality

1. Within four years and 11 months of the effective date for the continue to discharge and treatment option or by June 1, 2021 for the reuse option.

Appendix E: Reasonable Potential and Water Quality-Based Effluent Limit Calculations

Part A of this appendix explains the process the EPA has used to determine if the discharge authorized in the draft permit has the reasonable potential to cause or contribute to a violation of Idaho's federally approved water quality standards. Part B demonstrates how the water quality-based effluent limits (WQBELs) in the draft permit were calculated.

A. Reasonable Potential Analysis

The EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, the EPA compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a water quality-based effluent limit must be included in the permit. This following section discusses how the maximum projected receiving water concentration is determined

Mass Balance

For discharges to flowing water bodies, the maximum projected receiving water concentration is determined using the following mass balance equation:

$$C_d Q_d = C_e Q_e + C_u Q_u \qquad \text{Equation 1}$$

where,

C_d = Receiving water concentration downstream of the effluent discharge (that is, the concentration at the edge of the mixing zone)
C_e = Maximum projected effluent concentration
C_u = 95th percentile measured receiving water upstream concentration
Q_d = Receiving water flow rate downstream of the effluent discharge = Q_e+Q_u
Q_e = Effluent flow rate (set equal to the design flow of the WWTP)
Q_u = Receiving water low flow rate upstream of the discharge (1Q10, 7Q10 or 30B3)

When the mass balance equation is solved for C_d, it becomes:

$$C_d = \frac{C_e \times Q_e + C_u \times Q_u}{Q_e + Q_u} \qquad \text{Equation 2}$$

The above form of the equation is based on the assumption that the discharge is rapidly and completely mixed with 100% of the receiving stream.

If the mixing zone is based on less than complete mixing with the receiving water, the equation becomes:

$$C_d = \frac{C_e \times Q_e + C_u \times (Q_u \times \%MZ)}{Q_e + (Q_u \times \%MZ)} \qquad \text{Equation 3}$$

Where:

% MZ = the percentage of the receiving water flow available for mixing.

If a mixing zone is not allowed, dilution is not considered when projecting the receiving water concentration and,

$$C_d = C_e \qquad \text{Equation 4}$$

A dilution factor (D) can be introduced to describe the allowable mixing. Where the dilution factor is expressed as:

$$D = \frac{Q_e + Q_u \times \%MZ}{Q_e} \qquad \text{Equation 5}$$

The calculation of the dilution factor for Oxbow is shown below.

Qe = maximum effluent flow = 2.0 mgd

Q_u = 1Q10 = upstream acute critical low flow = 1190 CFS = 769 mgd

Acute dilution ratio = $\frac{2.0 + 769(0.25)}{2.0} = 97$

Q_u = 7Q10 = upstream chronic critical low flow = 1400 CFS = 904 mgd

Chronic dilution ratio = $\frac{2.0 + 904(0.25)}{2.0} = 114$

Q_u = 30B3 = ammonia upstream chronic critical low flow = 1790 CFS = 1156 mgd

Ammonia Chronic dilution ratio = $\frac{2.0 + 1156(0.25)}{2.0} = 146$

Maximum Projected Effluent Concentration

When determining the projected receiving water concentration downstream of the effluent discharge, the EPA's Technical Support Document for Water Quality-based Toxics Controls (TSD, 1991) recommends using the maximum projected effluent concentration (Ce) in the mass balance calculation (see equation 3, page C-5). To determine the maximum projected effluent concentration (Ce) the EPA has developed a statistical approach to better characterize the effects of effluent variability. The approach combines knowledge of effluent variability as estimated by

a coefficient of variation (CV) with the uncertainty due to a limited number of data to project an estimated maximum concentration for the effluent. Once the CV for each pollutant parameter has been calculated, the reasonable potential multiplier (RPM) used to derive the maximum projected effluent concentration (Ce) can be calculated using the following equations:

First, the percentile represented by the highest reported concentration is calculated.

$p_n = (1 - \text{confidence level})^{1/n}$ Equation 6

where,
p_n = the percentile represented by the highest reported concentration
n = the number of samples
confidence level = 99% = 0.99

and

$$RPM = \frac{C_{99}}{C_{P_n}} = \frac{e^{Z_{99} \times \sigma - 0.5 \times \sigma^2}}{e^{Z_{P_n} \times \sigma - 0.5 \times \sigma^2}}$$ Equation 7

Where,

σ^2 = $\ln(CV^2 + 1)$
Z_{99} = 2.326 (z-score for the 99th percentile)
Z_{Pn} = z-score for the P_n percentile (inverse of the normal cumulative distribution function at a given percentile)
CV = coefficient of variation (standard deviation ÷ mean)

The maximum projected effluent concentration is determined by simply multiplying the maximum reported effluent concentration by the RPM:

$C_e = (RPM)(MRC)$ Equation 8

where MRC = Maximum Reported Concentration

Reasonable Potential

The discharge has reasonable potential to cause or contribute to an exceedance of water quality criteria if the maximum projected concentration of the pollutant at the edge of the mixing zone exceeds the most stringent criterion for that pollutant.

Results of Reasonable Potential Calculations

It was determined that ammonia does not have a reasonable potential to cause or contribute to an exceedance of water quality criteria at the edge of the mixing zone. The results of the calculations are presented in Table D-2 of this appendix.

B. WQBEL Calculations

The following TP and TSS allocations are from the American Falls TMDL, Executive Summary Table ES-2a on page xx and Table 5-9 on page 102(excerpts):

Table ES-2a. Load and wasteload allocations for phosphorus (TP targets of 0.05 mg/L) and sediment for American Falls Subbasin water bodies & point sources

Point Source	Total phosphorus (tons/year)		Suspended sediment (tons/year)	
	Annual wasteload		Annual wasteload	
	Allocation	Reduction	Allocation	Reduction
Shelley WWTP	1.26	0.00	21.0	0.00

Table 5-9. Wasteload analyses for point source (wastewater treatment plants and fish hatcheries) dischargers in American Falls Subbasin.

Point Source	Average Flow (mgd)	Total Phosphorus	Wasteload Reduction (tons/year)	Suspended Sediment (tons/year)	Wasteload Reduction (tons/year)
		Waste Load Allocation (tons/year)		Waste Load Allocation (tons/year)	
Shelley WWTP	0.47	1.26	0.00	21.0	0.00

Derive the average weekly and average monthly effluent limits

TSS

Calculating the Average Monthly Limit

21.0 tons/yr x 2000 lb/ton ÷ 365 days/yr = 115 lb/day (annual average) -

Assume LTA = 115 lb/day -

AML = LTA x $\exp[z\sigma_n - 0.5\sigma_n^2]$ (from Table 5-2 of the TSD) -

Where: -

CV = coefficient of variation = 0.60 (based on 65 samples reported as monitoring data taken - before December 2009) -

n = 4 (number of samples in a month) -

$\sigma_4^2 = \ln((CV^2/n)+1) = \ln((0.6^2/4) + 1) = 0.0863$ -

$\sigma_4 = 0.294$ -

z = percentile exceedance probability for AML (95%) = 1.645 -

AML = 115 x exp[(1.645 x 0.294) – (0.5 x 0.0863)] = 179 lb/day

Calculating the Average Weekly Limit

The AWL is calculated from the following relationship with the AML (from Table 5-3 of the TSD):

$$AWL = \frac{\exp[z_m\sigma - 0.5\sigma^2]}{\exp[z_a\sigma_4 - 0.5\sigma_4^2]} \times AML$$

Where CV = 0.634, based on 65 weekly data samples

$\sigma^2 = \ln(CV^2 + 1) = \ln(0.634^2 + 1) = 0.338$

$\sigma = 0.582$

z_m = percentile exceedance probability for AWL (99%) = 2.326

z_a = percentile exceedance probability for AML (95%) = 1.645

$$AWL = \frac{\exp[(2.326 \times 0.582) - (0.5 \times 0.338)]}{\exp[(1.645 \times 0.294) - (0.5 \times 0.0863)]} \times 179 \text{ lb/day}$$

AWL = 377 lb/day

These water quality based loading limits are compared with the technology based loading limits for TSS in Table D-1 Below.

Table D-1
Comparison of Technology-based and Water Quality-based Limits for TSS

Parameter	Average Monthly Limit	Average Weekly Limit
Technology-based	500 lb/day	751 lb/day
Water Quality-based	179 lb/day	377 lb/day
Most Stringent	**179 lb/day**	**377 lb/day**

The most stringent limits above are selected and applied in the draft permit as the final effluent limits. The technology-based concentration standards are also applied; the facility must meet both. If it is discharging at flows that approach the design flow rate of 2.0 mgd, the mass-based average monthly loading limit will be more stringent and limiting.

Total Phosphorus

The TMDL established a wasteload allocation for Total Phosphorus of 1.26 tons per year.

Calculating the Average Monthly Limit

1.26 tons/yr x 2000 lb/ton ÷ 365 days/yr = 6.90 lb/day (annual average) -

Assume LTA = 6.90 lb/day -

AML = LTA x $\exp[z\sigma_n - 0.5\sigma_n^2]$ (from Table 5-2 of the TSD) -

Where: -

CV = coefficient of variation = 0.6 (a default value for < 10 effluent samples, since only 8 phosphorus samples were reported under the current permit)

n = 4 (number of samples in a month)

$\sigma_4^2 = \ln((CV^2/n)+1) = \ln((0.6^2/4) + 1) = 0.0862$

$\sigma_4 = 0.294$

z = percentile exceedance probability for AML (95%) = 1.645

AML = 6.90 x exp[(1.645 x 0.294) – (0.5 x 0.0862)] = 10.7 lb/day

Calculating the Average Weekly Limit

The AWL is calculated from the following relationship with the AML (from Table 5-3 of the TSD):

$$AWL = \frac{\exp[z_m\sigma - 0.5\sigma^2]}{\exp[z_a\sigma_4 - 0.5\sigma_4^2]} \times AML$$

Where CV = 0.6, the default value, as above

$\sigma^2 = \ln(CV^2 + 1) = \ln(0.6^2 + 1) = 0.307$

$\sigma = 0.554$

z_m = percentile exceedance probability for AWL (99%) = 2.326

z_a = percentile exceedance probability for AML (95%) = 1.645

$$AWL = - \frac{\exp[(2.326 \times 0.554) – (0.5 \times 0.307]}{\exp[(1.645 \times 0.294) – (0.5 \times 0.0862)]} \times 10.7 \text{ lb/day}$$

AWL = 20.4 lb/day

Interim Limit

The highest existing monthly average phosphorus load based on phosphorus monitoring and the current design flow is 52 lbs/day. An interim limit at the current discharge of maximum loading of 52 lbs/day is established.

An average weekly limit (AWL) is derived using the following procedure from the TSD.

$$AWL = 1.5 \times AML$$

Interim Limit: $AWL = 1.5 \times 52 \text{ lbs/day} = 78 \text{ lbs/day}$

Table D-2, below, details the calculations for reasonable potential.

Table D-2
REASONABLE POTENTIAL FOR AQUATIC LIFE

		State Water Quality Standard		Max concentration at edge of...										
	Ambient Conc.	Acute	Chronic	Acute Mixing Zone	Chronic Mixing Zone	**LIMIT REQ'D?**	Effluent percentile value	*Pn*	Max effluent conc. measure	Coeff Variation	# of samples	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor
Parameter	*mg/L*	*mg/L*	mg/L	*mg/L*	*mg/L*				*mg/L*	*CV*	*n*			
Total Ammonia Nitrogen	0.06	1.77	0.716	0.702	0.487	**NO**	0.99	0.562	6.4	1.397	8	9.74	97	146

Appendix F: IDEQ 401 Certification

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

444 Hospital Way #300 • Pocatello, ID 83201 • (208) 236-6160
www.deq.idaho.gov

C. L. "Butch" Otter, Governor
Curt Fransen, Director

21 March 2014
Michael J. Lidgard
NPDES Permits Unit Manager
EPA Region 1 0
1200 Sixth Avenue, Suite 900
Seattle WA 98101-3140

RE: Final 401 Certification of the Eastern Idaho Regional Wastewater Authority, Oxbow Wastewater Treatment Facility, Bingham County, Idaho, NPDES Permit No. ID-0020133-0.

Dear Mr. Lidgard:

The Pocatello Regional Office of the Idaho Department of Environmental Quality has reviewed the proposed final NPDES permit for the Eastern Idaho Regional Wastewater Authority, Oxbow Wastewater Treatment Facility. Section 401 of the Federal Clean Water Act requires that states issue certifications for activities which are authorized by a Federal permit and that may result in a discharge to surface waters. In Idaho, the Department of Environmental Quality (DEQ) is responsible for reviewing these activities and evaluating whether the activity will comply with Idaho Water Quality Standards, including any applicable water quality management plans (e.g., total maximum daily loads). A federal permit cannot be issued until DEQ has provided a certification or waived certification either expressly or by taking no action.

Attached under this cover please find the Final 401 Certification for NPDES Permit No. ID-0020133-0. Please call me at 208-236-6160 to discuss any concerns or questions regarding this final document.

Sincerely,

/s/ Lynn Van Every

Lynn Van Every
Regional Water Quality Manager

Cc: Bruce Olenick, Regional Administrator, Pocatello
Miranda Adams, 401 Program Coordinator, Boise

Idaho Department of Environmental Quality

Final §401 Water Quality Certification

March 21, 2014

NPDES Permit Number(s): Eastern Idaho Regional Wastewater Treatment Authority Oxbow Wastewater Treatment Plant, Permit #ID-0020133-0

Receiving Water Body: Snake River

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. Section 1341(a)(1); and Idaho Code §§ 39-101 et seq. and 39-3601 et seq., the Idaho Department of Environmental Quality (DEQ) has authority to review National Pollutant Discharge Elimination System (NPDES) permits and issue water quality certification decisions.

Based upon its review of the above-referenced permit and associated fact sheet, DEQ certifies that if the permittee complies with the terms and conditions imposed by the permit along with the conditions set forth in this water quality certification, then there is reasonable assurance the discharge will comply with the applicable requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02), and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations, or permits.

Antidegradation Review

The WQS contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

- Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).
- Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

Pollutants of Concern

The Oxbow Wastewater Treatment Plant discharges the following pollutants of concern: BOD_5, TSS, *E. coli*, pH, and total phosphorus for which effluent limits have been developed. No effluent limits are proposed for total ammonia.

Receiving Water Body Level of Protection

The Oxbow Wastewater Treatment Plant discharges to the Snake River within the American Falls subbasin assessment unit (AU) 17040206SK022_04 (river mile 791 (T01N, R37E, Sec. 10) to American Falls Reservoir). This AU has the following designated beneficial uses: cold water aquatic life, salmonid spawning, primary contact recreation and domestic water supply. In addition to these designated uses, all waters of the state are protected for wildlife habitat, aesthetics, and agricultural and industrial water supply.

The cold water aquatic life and recreation beneficial uses in this Snake River AU are not fully supported due to excess mercury (2010 Integrated Report). As such, DEQ will provide Tier 1 protection only for these two uses (Idaho Code§ 39-3603(2)(b)).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The numeric and narrative criteria in the WQS are set at levels that ensure protection of designated beneficial uses. The effluent limitations and associated requirements contained in the Oxbow Wastewater Treatment Plant permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limitations that are consistent with wasteload allocations in the approved TMDL.

This reach of the Snake River is impaired by mercury and DEQ has not scheduled TMDL development to address this impairment listing. The WQS stipulate that either there be no

further impairment of the designated or existing beneficial uses or that the total load of the impairing pollutant remains constant or decreases (IDAPA 58.01.02.055.04 and 58.01.02.055.05). DEQ has no data to suggest that the discharge from the Oxbow Waste Water Treatment Plant is contributing to this impairment. DEQ has determined that this discharge permit will comply with these provisions of Idaho WQS.

The EPA-approved American Falls Subbasin Total Maximum Daily Load Plan: Subbasin Assessment and Loading Analysis (May 2012 rev., approved by EPA in August 2012) establishes wasteload allocations for total suspended sediment (TSS) and total phosphorus (TP). These wasteload allocations are designed to ensure the Snake River and American Falls Reservoir will maintain and/or achieve the water quality necessary to support its existing and designated aquatic life beneficial uses and comply with the applicable numeric and narrative criteria. While the Snake River AU is not impaired by TP or TSS, pollutant levels in the Snake River affect water quality in the American Falls Reservoir. Therefore, wasteload allocations were assigned to the City of Shelley's wastewater discharge and are therefore applicable to the Oxbow Wastewater Treatment Plant. The effluent limitations and associated requirements contained in the Oxbow Wastewater Treatment Plant permit are set at levels that comply with these wasteload allocations.

In sum, the effluent limitations and associated requirements contained in the Oxbow Wastewater Treatment Plant permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS and the wasteload allocations established in the American Falls TMDL. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Snake River in compliance with the Tier 1 provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

Compliance Schedule

Pursuant to IDAPA 58.01.02.400.03, DEQ may authorize compliance schedules for water quality–based effluent limits issued in a permit for the first time. Oxbow Wastewater Treatment Plant cannot immediately achieve compliance with the effluent limits for total phosphorus; therefore, DEQ authorizes a compliance schedule and interim requirements as set forth in section I.C. of this discharge permit. This compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible.

Other Conditions

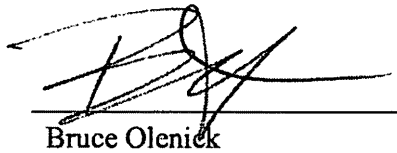
This certification is conditioned upon the requirement that any material modification of the permit or the permitted activities—including without limitation, any modifications of the permit to reflect new or modified TMDLs, wasteload allocations, site-specific criteria, variances, or

other new information—shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401.

Right to Appeal Final Certification

The final Section 401 Water Quality Certification may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code § 39-107(5) and the "Rules of Administrative Procedure before the Board of Environmental Quality" (IDAPA 58.01.23), within 35 days of the date of the final certification.

Questions or comments regarding the actions taken in this certification should be directed to Lynn Van Every, Pocatello Regional Office, (208) 236-6160 or lynn.vanevery@deq.idaho.gov.



Bruce Olenick
Regional Administrator
Pocatello Regional Office

Appendix C – Tribal Consultation Letters

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United States Department of the Interior
BUREAU OF RECLAMATION
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

IN REPLY REFER TO:

Apr 02 2020

USF-1219
2.1.1.04

VIA FEDERAL EXPRESS

Honorable Ladd Edmo
Chairman
Fort Hall Business Council
Shoshone-Bannock Tribes
85 W. Agency Rd., Building #82
Fort Hall, ID 83203-0306

Subject: Invitation to Consult on the Snake River Valley Irrigation District Piping Project, Bingham County, Idaho

Dear Chairman Edmo:

The Bureau of Reclamation is proposing to grant money to the Snake River Valley Irrigation District to complete a pipe replacement project located in T1N, R37E, Sections 31 and 32, Bingham County, Idaho. At this time, Reclamation is requesting any information concerning cultural resources known to the Shoshone-Bannock Tribes that may be affected by these projects.

The current project proposes to replace deteriorated and undersized supply piping; install telemetered measurement of flows in the pipe; clean out existing pond areas to increase capacity for incentivized aquifer recharge; model the recharge; and monitor recharge via a series of existing monitor wells. The area of potential effects (APE) is limited to the pipeline corridor and the staging area located approximately a quarter mile west of the project. The ponds are an existing feature and excavation within the ponds would not disturb any new ground surface so they were not included in the APE. Reclamation performed a cultural resources inventory of the APE identifying that the Cedar Point Canal was determined eligible for listing in the National Register in 2015. An evaluation of the potential effects to the Cedar Point Canal finds that as the project will connect into existing non-historic facilities already constructed on the canal and no changes will occur to the alignment or structure of the canal that the project will result in no adverse effects to historic properties.

Please advise this office as to whether the Shoshone-Bannock Tribes wish to join in this consultation by contacting me directly at 208-383-2246 or via email at

bhorsburgh@usbr.gov. You may also contact my staff archaeologist, Ms. Nikki Polson, at 208-678-0461, extension 13, with any questions regarding this letter or report.

Sincerely,

Bryan Horsburgh
Acting Area Manager

Enclosure

cc: Ms. Carolyn Smith
Cultural Resources Coordinator
Cultural Resources/Heritage Tribal Office (HeTO)
Shoshone-Bannock Tribes
85 W. Agency Rd, Building #82
Fort Hall, ID 83203

Ms. Christina Cutler
Environmental Coordinator
Shoshone-Bannock Tribes
85 W. Agency Rd, Building #82
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Ms. Yvette Tuell
Tribal Policy Analyst
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(w/encl to each)

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2205 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2682
Fax: 208.334.2774

Idaho State Museum:
610 Julia Davis Dr.
Boise, Idaho 83702
208.334.2120

Idaho State Archives and State Records Center:
2205 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2620

State Historic Preservation Office:
210 Main St.
Boise, Idaho 83702
208.334.3861

Old Idaho Penitentiary and Historic Sites:
2445 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2844

HISTORY.IDAHO.GOV

7 May 2020

Nikki Polson, M.A., R.P.A.
Upper Snake Field Office Archaeologist
Bureau of Reclamation
470 22nd Street
Heyburn, Idaho 83336

Re: SVID Piping Project, Bingham, Idaho / SHPO Rev. 2020-458

Dear Ms. Polson,

Thank you for continuing consultation with our office on the above referenced project. We understand that Bureau of Reclamation (Reclamation) scope of work will include replacing piping, installing telemetered measurement of flows in the pipe, cleaning out the existing ponds of the Cedar Point Canal in Bingham County, Idaho.

Pursuant to 36 CFR 800, we have applied the criteria of effect to the proposed undertaking. Based on the information received 30 March and 20 April 2020, we concur the proposed project actions will have **no adverse effect** to historic properties.

In the event that cultural material is inadvertently encountered during implementation of this project, work shall be halted in the vicinity of the finds until they can be inspected and assessed by the appropriate consulting parties.

If you have any questions or the scope of work changes, please contact me via phone or email at 208.488.7463 or ashley.brown@ishs.idaho.gov.

Sincerely,

Ashley Brown, M.A.
Historical Review Officer
Idaho State Historic Preservation Office

United States Department of the Interior
BUREAU OF RECLAMATION
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

IN REPLY REFER TO:
USF-1219
2.1.1.04

Apr 02 2020

VIA FEDERAL EXPRESS

Ms. Ashley Brown
Historical Review Officer
State Historic Preservation Office
210 Main Street
Boise, ID 83702

Subject: Invitation to Consult on the Snake River Valley Irrigation District Piping Project, Bingham County, Idaho

Dear Ms. Brown:

The Bureau of Reclamation is proposing to grant money to the Snake River Valley Irrigation District to complete a pipe replacement project located in T1N, R37E, Sections 31 and 32, Bingham County, Idaho. At this time, Reclamation is consulting on the area of potential effects (APE) and finding of no adverse effects to historic properties.

The current project proposes to replace deteriorated and undersized supply piping; install telemetered measurement of flows in the pipe; clean out existing pond areas to increase capacity for incentivized aquifer recharge; model the recharge; and monitor recharge via a series of existing monitor wells. The area of potential effects (APE) is limited to the pipeline corridor and the staging area located approximately a quarter mile west of the project. The ponds are an existing feature and excavation within the ponds would not disturb any new ground surface so they were not included in the APE. Reclamation performed a cultural resources inventory of the APE identifying that the Cedar Point Canal was determined eligible for listing in the National Register in 2015. An evaluation of the potential effects to the Cedar Point Canal finds that as the project will connect into existing non-historic facilities already constructed on the canal and no changes will occur to the alignment or structure of the canal that the project will result in no adverse effects to historic properties.

In accordance with procedures specified in 36 CFR § 800, Reclamation requests your concurrence with our APE and the finding that this project will result in no adverse effect to historic properties. Please direct any questions to Ms. Nikki Polson, Upper Snake Field Office Archaeologist, at 208-678-0461, extension 13, or by email at npolson@usbr.gov.

Sincerely,

Bryan Horsburgh
Acting Area Manager

Enclosures

Appendix D – USFWS Information for Planning and Conservation (IPaC)

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IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

Oxbow Incentivised Aquifer Recharge Pipeline and recharge ponds

LOCATION

Bingham County, Idaho

DESCRIPTION

Replacement of a small capacity pipeline with a larger capacity one to feed existing aquifer recharge ponds just outside of the city of Shelley in Eastern Idaho

Local office

Idaho Fish And Wildlife Office

(208) 378-5243

(208) 378-5262

1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

THERE ARE NO ENDANGERED SPECIES EXPECTED TO OCCUR AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES

THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle Haliaeetus leucocephalus — Breeds Dec 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Golden Eagle Aquila chrysaetos — Breeds Dec 1 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/1680

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

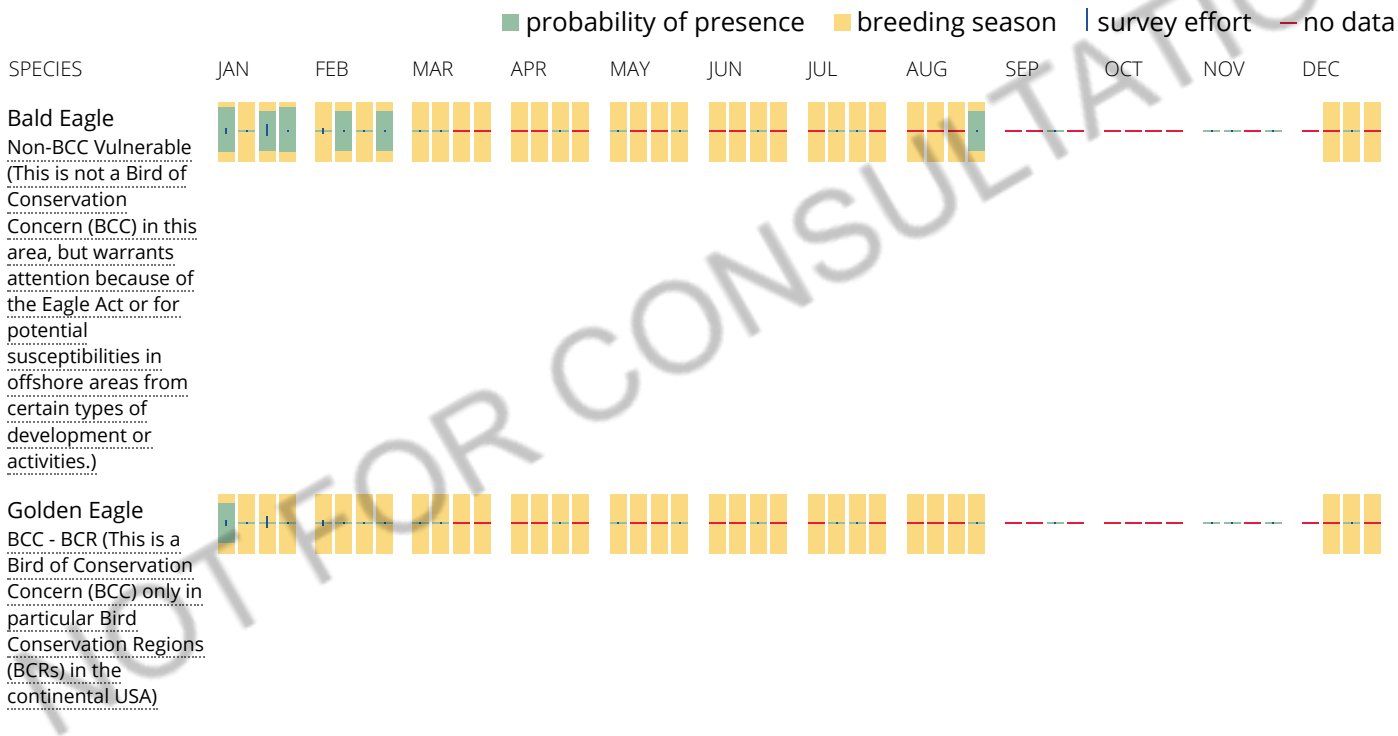
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

LAKE

L2UBHx

RIVERINE

R2UBHx

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix E – Public Scoping Mailing List, Letters, and Comments

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United States Department of the Interior
BUREAU OF RECLAMATION
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

Jun 02 2020

IN REPLY REFER TO:
SRA-1212
2.1.4.17

Subject: Request for Public Comments Regarding a Proposed Pipeline Installation in Support of the Oxbow Incentivized Managed Aquifer Recharge Project in Bingham County, Idaho

Dear Interested Party:

The Bureau of Reclamation has received a proposal from the Snake River Valley Irrigation District (SRVID) for a WaterSMART (Sustain and Manage America's Resources for Tomorrow) grant to install a pipeline to support the Oxbow Incentivized Managed Aquifer Recharge Project. This project would provide recharge water for the Eastern Snake Plain Aquifer, near Shelley, Idaho. Reclamation would be providing funding for installation of 3,150 feet of a 36-inch diameter pipeline to replace an existing low volume pipeline that would allow water from the Snake River, via existing SRVID canals and the new pipeline, to reach existing recharge ponds. This would improve drought resiliency by storing water in the aquifer that could be used in future drought years. Enclosed is a Scoping Information Package describing the project proposal in more detail.

The U.S. Department of the Interior's WaterSMART Program establishes a framework to provide Federal leadership and assistance on the efficient use of water; integrate water and energy policies to support the sustainable use of all natural resources; form strong diverse partnerships with states, tribes and local entities, and coordinate with other Department Bureaus and offices on water conservation activities.

Scoping is a public involvement process used to determine the scope of issues to be addressed and identify issues related to a proposed action. Comments received in response to this solicitation will be used to identify potential environmental issues related to the proposed action and to identify alternatives to the proposed action that meet the purpose and need for the project.

Please send your written comments by **July 6, 2020**, electronically to sra-nepa-comments@usbr.gov, or mail or hand-deliver to:

Mr. Anthony Prisciandaro
Fisheries Biologist
Bureau of Reclamation
Snake River Area Office
230 Collins Road
Boise, ID 83702

Before including your address, phone number, email address, or other personal identifying information in your comment, please be advised that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may request that we withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

The primary contact for questions or comments for this analysis, accessibility needs, or other information is Mr. Anthony Prisciandaro, and he can be reached at 208-383-2233.

Sincerely,

BRYAN HORSBURGH

Digitally signed by BRYAN HORSBURGH
Date: 2020.06.02 13:21:09 -06'00'

Bryan Horsburgh
Acting Area Manager

Enclosure