Environmental Review

City of Pierce

Wastewater Utility

June 2016

City Contact:
Trevor Sparrow
Mayor
PO Box 356
Pierce, Idaho 83546
208-464-2222
cityofpierce@qroidaho.net

Environmental Contact:
Keri Hill, Environmental Scientist
Mountain Waterworks, Inc.
PO Box 9906
Boise, Idaho 83707
208-780-3993
khill@mountainwtr.com

Table of Contents

List of Tables

Exhibits

Appendices

1.0 PURPOSE AND NEED

Mountain Waterworks was contracted in 2014 to conduct a *Wastewater Facility Planning Study* for the City of Pierce's wastewater system. The City's wastewater collection system conveys raw wastewater by gravity from the community to the Water Resource Recovery Facility (WRRF). The WRRF consists of an activated sludge mechanical package plant followed by chlorine disinfection and surface water discharge to Orofino Creek. Surface water discharge is regulated by the Environmental Protection Agency (EPA) through a National Pollutant Discharge Elimination System (NPDES) permit. Due to aging infrastructure and documented cases of the treatment plant exceeding NPDES discharge permit limits, the City has chosen to move forward with the recommended improvements from the Facility Plan.

The City has a second NPDES permit associated with their surface water treatment plant (WTP). The facility utilizes rapid sand filters, and filter backwash water flows through a small unlined settling pond prior to surface water discharge to Canal Creek. The pond does not consistently meet the requirements of the NPDES permit and Idaho Department of Environmental Quality (IDEQ) seepage requirements.

Upgrades are necessary for the City to achieve compliance with their current wastewater and water NPDES permits as well as provide safe, reliable sewer services to residences and businesses within the City.

The recommended improvements are sized to treat projected demands on the system for the next 20 years and collection system repairs are sized for 40 years. This document will demonstrate that the proposed action will not cause adverse effects to the environment. All proposed wastewater and water treatment improvements will be contained within the existing boundaries of the treatment facilities. Collection system work will be within existing right-of-ways, no excavation is planned to occur outside of previously disturbed and developed areas. Exhibit A describes the project area and locations of all identified improvements.

2.0 PROJECT DESCRIPTION (PROPOSED ACTION)

The proposed improvements will address the City's aging sewer collection system with manhole, sewer main, and service line repair or replacement. The wastewater treatment plant will be upgraded with construction of a parallel treatment system to meet redundancy requirements. The existing sludge drying beds will be removed and mechanical dewatering will be installed. All upgrades will be within the existing treatment plant footprint. Exhibit A and B show the locations of the collection system repairs and treatment upgrades, respectively.

At the water treatment plant, equalization storage and a concrete sedimentation basin will be installed to treat the filter backwash water that is discharged from the plant. The two possible locations of the storage and sedimentation basin are provided in Exhibit C.

Project Components Include:

- Camera survey and investigation of the entire collection system. Some system deficiencies have been identified. However, a large portion of the collection system will be evaluated to identify issues to be addressed during design and construction.
- Manhole, sewer main, and service line repair or replacement, as shown in Exhibit A. Priority 1 and Priority 2 areas are planned for improvements. Priority 3 areas will be evaluated during the camera survey with repairs or replacements based on the camera results.
- Construction of a parallel 191,000 gpd wastewater treatment plant to meet regulatory redundancy requirements (Exhibit B).
- Repair and rehabilitation of the existing wastewater treatment plant (Exhibit B).
- Installation of a mechanical sludge dewatering system and removal of the existing sludge drying beds (Exhibit B).
- Construction of equalization storage and a concrete sedimentation basin to treat the water treatment plant filter backwash (Exhibit C).

The project is planned to occur in the following general sequence:

- Camera entire collection system and identify serious inflow and infiltration issues. Complete the collection repairs and monitor flow through one wet season.
- Complete planned improvements at the water treatment plant.
- Construct a new mechanical package plant.
- After new plant is operational, repair the existing treatment plant.
- Construct new mechanical dewatering facility.

2.1 Estimated Project Costs and Funding Sources

A summary of the estimated capital costs for the proposed improvement is provided in Table 1.

Table 1: Proposed Improvement Capital Costs

Item Description	Cost
Collection System	
Additional Camera Survey (25,400 feet)	$53,000
New Manholes and Manhole Repairs	$216,000
CIPP Repairs and Manhole Lining	$152,500
New Sewer Main and Service Line Repairs	$637,500
Collection System Subtotal	**$1,059,000**
Water Resource Reclamation Facility (WRRF)	
Existing Plant Repairs and Upgrades	$100,000
Replace Blowers	$70,000
Additional Package Plant (0.150 MGD)	$1,000,000
Concrete Plant Foundation	$102,400
Chemical Dechlorination System	$20,000
Remove Detention Storage Tank	$10,000
Screw press system	$335,000
Demo sludge drying beds	$5,000
Electrical @ 5%	$82,100
Instrumentation @ 3%	$49,300
Yard piping @ 5%	$82,100
Site work @ 3%	$49,300
WRRF Improvements Subtotal	**$1,905,200**
Water Treatment Plant (WTP)	
Bolted Steel Detention Tank (45,659 gallons)	$73,500
Submersible Mixer	$3,800
Concrete Sedimentation Basin (15,000 gallons)	$45,000
Pumps and Controls	$50,000
Chemical dechlorination system	$20,000
Sludge Dewatering Boxes	$10,000
Yard piping @ 5%	$10,100
Site work @ 3%	$6,100
WTP Improvements Subtotal	**$218,500**
Construction Summary	
Construction Subtotal	**$3,182,700**
Omission and Contingency at 20%	$636,540
Construction Total	$3,819,240
Engineering and Administration	
Engineering and CMS at 15%	$477,405
Legal and Administration at 5%	$159,135
Construction Inspection	$80,000
Engineering and Administration Subtotal	**$716,540**
Total Project Cost	**$4,535,800**

The City of Pierce passed a revenue bond in 2015 for $2,100,000 to fund the necessary improvements. Funding for the completion of the Facility Plan and Environmental Review was provided through IDEQ and USDA Rural Development planning grants. To pay for design and construction, the City has applied for a $500,000 Community Development Block Grant from the Idaho Department of Commerce. In addition to the Block Grant, the City qualifies for additional grant and low-interest loan funding with USDA Rural Development. The estimated end user rate is anticipated to increase by $11 - $16, bringing the average sewer bill to $45 - $50 per month.

3.0 ALTERNATIVES TO THE PROPOSED ACTION

The Pierce wastewater collection system is aging and in poor condition. During wet weather periods excessive inflow and infiltration (I/I) hydraulically overloads the WRRF, making it difficult or impossible to operate the facility in compliance with its NPDES Permit. The WRRF lacks redundancy and will become increasingly difficult and expensive to repair due to the advanced age of the facility.

3.1 Collection System Alternatives

Collection system alternatives considered are simply to take no action (Alternative 1) or to repair the system (Alternative 2). Under the no-action alternative nothing would be done to repair or upgrade the collection system. The primary benefit of this alternative to the City is that there is no expense. The disadvantage of this approach is it does nothing to address the current I/I problem, which is the principal cause of the operational problems and NPDES violations at the WRRF.

3.2 Wastewater Treatment Alternatives

Wastewater treatment alternatives for the City to meet current and future flow, loading, and permitting conditions included the following:

- Take no action (Alternative 1).
- Add a second package wastewater treatment plant. The existing plant would remain in service and be repaired as necessary after the second plant is operational (Alternative 2).
- Remove the existing plant from service and install two new package plants (Alternative 3).

Consideration was given to options other than mechanical treatment (e.g. lagoons and land application), but mechanical treatment is the only practical option due to the space constraints of the current treatment plant site, the mountainous topography of the area, and the cost of moving the treatment facilities to a different location. Package treatment systems are less expensive than custom plant designs for small communities. Completion of collection system repairs to reduce I/I is recommended prior to major plant modifications. Specific collection system improvements will be developed as part of the preliminary engineering and final design effort.

3.3 Water Treatment Plant Alternatives

In addition to upgrading the sewer collection system and the WRRF, the City must take action to improve the quality of the water treatment plant (WTP) backwash water discharged to Canal Creek in order to ensure compliance with current and future permits. The WTP alternatives included the following:

- Take no action (Alternative 1).
- Re-Purpose WWRF Detention Tank as WTP Clarifier (Alternative 2)
- Rectangular Sedimentation Basins (Alternative 3)
- High Rate Clarification (Alternative 4)
- Lagoon Expansion and Lining (Alternative 5)

3.4 Estimated Capital Costs

Estimated capital costs for the collection, WRRF, and WTP alternatives are included in Tables 2 through 4. The *take no action* alternative for each category does not have a capital cost associated with it. Each WRRF alternate includes the cost for collection system improvements.

Table 2: Estimated Capital Cost for Collection System Alternatives

Collection System Alternatives	
Alternative 2 - Collection System Improvements	
Additional Camera Survey (25,400 feet)	$53,000
New Manholes and Manhole Repairs	$216,000
CIPP Repairs and Manhole Lining	$152,500
New Sewer Main and Service Line Repairs	$637,500
Subtotal	$1,059,000
Contingency @ 20%	$211,800
Engineering, Legal, Admin @ 20%	$211,800
TOTAL	**$1,482,600**

Table 3: Estimated Capital Costs for WWRF Alternatives

WWRF Alternatives	
Alternative 2 - Add Second Package Plant	
Plant Repairs and Upgrades	$100,000
Replace Blowers	$70,000
Add additional package plant (0.150 MGD)	$1,000,000
Concrete plant foundation	$102,400
Chemical dechlorination system	$20,000
Remove detention storage tank	$10,000
Electrical @ 10%	$130,200
Instrumentation @ 3%	$39,100
Yard piping @ 5%	$65,100
Site work @ 3%	$39,100
WRRF Improvements Subtotal	$1,575,900
Collection System I/I Repairs	$1,059,000
Subtotal	$2,634,900
Contingency @ 20%	$527,000
Engineering, Legal, Admin @ 20%	$527,000
TOTAL	**$3,688,900**
Alternative 3 - Remove Existing & Install Two New Package Plants	
Scrap existing plant	$50,000
Two package plants (0.150 MGD each)	$1,900,000
Concrete plant foundation	$200,000
Chemical dechlorination system	$20,000
Remove detention storage tank	$10,000
Replace influent pumps	$25,000
Electrical @ 10%	$218,000
Instrumentation @ 3%	$65,400
Yard piping @ 5%	$109,000
Site work @ 3%	$65,400
WRRF Subtotal	$2,662,800
Collection System I/I Repairs	$1,059,000
Project Subtotal	$3,721,800
Contingency @ 20%	$744,400
Engineering, Legal, Admin @ 20%	$744,400
TOTAL	**$5,210,600**

Table 4: Estimated Capital Costs for WTP Alternatives

WTP Alternatives	
Alternative 2 - Re-Purpose WWRF Detention Tank as Clarifier	
Alternative 2 was not evaluated further due to not being feasible	
Alternative 3 - Rectangular Sedimentation Basins	
Bolted Steel Detention Tank (45,659 gallons)	$73,500
Submersible Mixer	$3,800
Concrete Sedimentation Basin (15,000 gallons)	$45,000
Pumps and Controls	$50,000
Chemical dechlorination system	$20,000
Sludge Dewatering Boxes	$10,000
Yard piping @ 5%	$10,100
Site work @ 3%	$6,100
Subtotal	$218,500
Contingency @ 20%	$43,700
Engineering, Legal, Admin @ 20%	$43,700
TOTAL	**$305,900**
Alternative 4 - High Rate Clarification	
High Rate Clarifier	$150,000
Bolted Steel Detention Tank (45,659 gallons)	$73,500
Submersible Mixer	$3,800
20' x 30' Outbuilding and Installation	$90,000
Thickener	$13,000
Pumps and Controls	$50,000
Sludge Dewatering Boxes	$10,000
Chemical dechlorination system	$20,000
Yard piping @ 5%	$20,500
Site work @ 3%	$12,300
Subtotal	$443,100
Contingency @ 20%	$88,600
Engineering, Legal, Admin @ 20%	$88,600
TOTAL	**$620,300**
Alternative 5 - Lagoon Expansion & Lining	
Settling Pond Expansion & Lining	$200,000
Lot Purchase	$30,000
Pumps and Controls	$25,000
Chemical dechlorination system	$20,000
Site work @ 3%	$8,300
Yard piping @ 5%	$13,800
Subtotal	$297,100
Contingency @ 20%	$59,420
Engineering, Legal, Admin @ 20%	$59,420
TOTAL	**$415,940**

3.5 Public Participation

Mountain Waterworks has presented the findings of the Wastewater Facility Plan to the City of Pierce at an advertised public meeting on 2/8/2016. Public comments were accepted through 2/26/2016 although none were received. The City officially selected the *Recommended* Alternative at the 3/14/2016 public meeting. Meeting minutes, the publication affidavit, and presentation given to the Council are included as Appendix H.

4.0 AFFECTED ENVIRONMENT/ ENVIRONMENTAL CONSEQUENCES

The City of Pierce is located in Clearwater County approximately ten miles northeast of Weippe, Idaho in a valley along Orofino Creek. The affected environment and environmental consequences for the proposed alternatives are evaluated within the planning area identified on Exhibit A and discussed below.

4.1 Land Use

4.1.1 *Affected Environment*

The wastewater collection and treatment system serves the entire community, approximately 300 acres in size, including residential, industrial, and commercial entities. The proposed improvements are located within the Pierce city limits and will not expand the existing city limit boundary. A site plan showing the City's service area, WWRF and WTP is provided as Exhibit A. Land uses are reflected on the City's current zoning map, included as Appendix A.

4.1.2 *Environmental Consequences*

Construction consists of repair or replacement of existing infrastructure within existing site boundaries and right-of-ways. Temporary construction disturbances will be minimal.

4.1.3 *Mitigation*

No mitigation required.

4.2 General Land Use

4.2.1 *Important Farmland*

4.2.1.1 Affected Environment

The proposed improvements will not convert any land resources. Soils within the planning area consist primarily of Brequito-Lado complex and Dullaxe-Vassar soils. The Brequito series consists of very deep well-drained loess soils, while the Vassar series comprises deep, well-drained volcanic ash soils that overlie material weathered from granitic bedrock. Approximately 25% of the soils within the planning area are described as *prime farmland if drained.* The location of those soils is in the urban area of town, no farmland will be converted or impacted as a part of any of the proposed improvements. The map of the prime farmland is included in the NRCS Soil Report in Appendix B.

4.2.1.2 Environmental Consequences

The Clearwater County Planning Department was consulted regarding any potential environmental effects although no response was provided.

4.2.1.3 Mitigation

No mitigation required.

4.2.2 *Formally Classified Land*

4.2.2.1 Affected Environment

No *formally classified lands* exist within the planning area. That description includes wild and scenic rivers, lands administered by the State or Federal government, and tribal lands. Canal Creek and Orofino Creek are within the planning area and will both be positively affected by the proposed project. The proposed improvements will not negatively impact any beneficial uses of the rivers.

4.2.2.2 Environmental Consequences

No *formally classified lands* will be affected as a result of the proposed improvements.

4.2.2.3 Mitigation

No mitigation required.

4.3 Floodplains

4.3.1 *Affected Environment*

The designated floodplain within the planning area is concentrated immediately around Orofino Creek and at the confluence of Canal Creek. Collection system repair and replacement would occur intermittently within the floodplain although no infrastructure elevations will change and no floodplain will be converted.

The hydraulic profile from the 1990 wastewater and sewer system improvement project design shows the flood elevation of the WRRF at 3,054 feet. The water surface elevations in the treatment basins and the chlorine contact basin are set well above the flood elevation at 3063.02 feet and 3060 feet, respectively. The water surface elevations of the new treatment facility will be similar to those of the existing facilities to ensure they will remain operational during a 100-year flood event.

In addition to the proposed WRRF facilities being above the 100-year floodplain elevation, no floodplain will be converted as part of the proposed improvements. The proposed new package treatment plant will not be beyond the current limits of the detention storage tank. The Clearwater County floodplain map is included as Appendix C.

4.3.2 *Environmental Consequences*

Consultation with the Idaho Department of Water Resources (IDWR) confirms that although some of the proposed collection system improvements are located within the Special Flood Hazard Area, they will not have a long-term, negative impact. IDWR also noted that there are two proposed areas in which collection repair or replacement will cross Orofino Creek. The Idaho Stream Channel Protection Act requires that the stream channels of the state and their

environment be protected against alteration. Correspondence with IDWR, including an overlay map is included in Appendix F-1.

4.3.3 *Mitigation*

A floodplain development permit from the community's floodplain administrator, Vianna Marshall, will be required prior to construction. IDWR must approve in advance any work being done within the beds and banks of Orofino Creek.

4.4 Wetlands

4.4.1 *Affected Environment*

A map of the wetlands within the planning area are included as Appendix D. The collection system construction will take place in existing right-of-ways and will not be within any wetland areas.

4.4.2 *Environmental Consequences*

The proposed improvements will not impact or be impacted by wetlands.

4.4.3 *Mitigation*

No mitigation required.

4.5 Historic Properties

4.5.1 *Affected Environment*

The planning area includes two properties that are currently included on the Idaho State Historic Preservation Office (SHPO) National Register of Historic Places, including the Moore Gulch Chinese Mining Site and Pierce Courthouse.

4.5.2 *Environmental Consequences*

In conjunction with SHPO, an Inadvertent Discovery Plan was developed and adopted by City Council, Appendix G. SHPO has recommended a *No Adverse Effect* determination for the project, correspondence is included in Appendix F-3. USDA Rural Development has determined that the project will have no effect on historical properties and is in compliance with the National Historic Preservation Act, Appendix F-3. The proposed improvements are not anticipated to disturb or adversely affect any cultural or historic resources.

4.5.3 *Mitigation*

The City recognizes the potential for discovery and has developed an Inadvertent Discovery Plan for this project. The plan should be familiar to the Project Manager, Construction Manager, and appropriate City staff. The plan is included as Appendix G.

4.6 Biological Resources

4.6.1 *Affected Environment*

The United States Fish and Wildlife Service (USFWS) Information Planning and Conservation (IPaC) Tool was used for determining endangered and threatened species within the planning area. There are no endangered and threatened species or critical habitats within the planning area. The IPaC report is included as Appendix E.

4.6.2 *Environmental Consequences*

IDEQ consulted with the USFWS and National Marine Fisheries Service regarding potential impacts to endangered or threatened species. IDEQ has determined that due to all of the improvements being in an urban area, within existing footprints, and within existing right-of-ways, there are no endangered species concerns. IDEQ has determined "No Effect" on federally listed, proposed, or candidate species or critical habitat. Regarding Essential Fish Habitat (EFH), IDEQ stated that the project, "May Affect but Is Not Likely to Adversely Affect" EFH. All correspondence is included as Appendix F-5. The proposed improvements will not impact or be impacted by any biological resources.

4.6.3 *Mitigation*

No mitigation required.

4.7 Water Quality

4.7.1 *Affected Environment*

Sole Source Aquifer

The planning area is not located within any designated sole source aquifers or contribution zones.

Ground Water

Public drinking water for the City of Pierce is supplied by Canal Creek. The City does not own or operate any public drinking water wells. The Idaho Department of Water Resources online GIS mapping tool reports no domestic wells recorded within the planning area.

Surface Water

The City of Pierce relies on surface water from Canal Creek for drinking water. The points of diversion for the drinking water sources are upstream of the wastewater treatment facility point of discharge.

4.7.2 *Environmental Consequences*

Modifications to the water or wastewater treatment systems will not adversely affect surface water quality. Rather, modifications will allow for a higher quality of effluent to be discharged in to Orofino Creek at the wastewater treatment plant and Canal Creek at the water treatment plant. Proposed collection system upgrades will not impact surface or ground water.

4.7.3 *Mitigation*

Proper BMPs should be used during any excavation activities near Orofino or Canal Creek to limit potential runoff. BMP's may include: silt fencing, straw waddles, biofilter bags, temporary berms or other approved BMPs. Additional information is referenced in Idaho DEQ's *Catalogue of Stormwater Best Management Practices for Idaho Cities and Counties*.

4.8 Socio-Economic/ Environmental Justice

4.8.1 *Affected Environment*

The American Community Survey reports a median household income of $40,556 for the City of Pierce. The proposed maximum rate increase per user for the proposed improvements is estimated at approximately $16.00 per month.

The US Census Bureau reports that 16.3% of residents within the City live below the poverty level. Although residents living below the poverty level will be effected most by the rate increase to support this project, increases are implemented evenly to every resident. The 2014 American Community Survey reported 97% of the population as *White*.

4.8.2 *Environmental Consequences*

The proposed improvements are not anticipated to adversely impact economics in the area or affect the social profile in a significantly negative manner. Although the anticipated monthly fee will be an additional expense for community residents, upgrades will eliminate NPDES violations that could lead to additional fines by the EPA.

4.8.3 *Mitigation*

No mitigation required.

4.9 Air Quality & Noise

4.9.1 *Affected Environment*

The primary impact related to air quality and noise associated with the proposed improvements will occur during construction. Odor resulting from the proposed improvements will not increase above the current levels.

Noise levels during construction will not be significantly higher than the current street traffic within the planning area. Long-term noise levels are not a concern with any of the proposed improvements.

4.9.2 *Environmental Consequences*

The proposed improvements will not impact or be impacted by air quality and noise characteristics.

4.9.3 *Mitigation*

Dust control measures will be implemented during construction and construction equipment will be required to meet applicable emission standards. Best management practices should be

employed to minimize construction related disturbances. The contractor must comply with State standards to minimize odors during any collection system repair and replacement as well as external treatment plant work.

4.10 Transportation

4.10.1 *Affected Environment*

Short-term traffic to the wastewater and water treatment sites will increase as construction workers and equipment access the site for the proposed improvements. In the long-term, none of the proposed improvements will add increased traffic. Site access will be provided from existing access locations within the planning area, which all have sufficient capacity to handle the additional construction traffic load.

4.10.2 *Environmental Consequences*

Temporary construction traffic will not have any environmental consequences.

4.10.3 *Mitigation*

Temporary construction may limit access or close various streets within the planning area during construction, clearly marked detours should be provided as needed.

4.11 Environmental Consequences Summary

The environmental consequences are summarized in separate tables for treatment, disposal, and collection repairs. The effects are categorized by direct or indirect and are defined in RUS Bulletin 1794A-602 as follows:

> ***Direct effects*** *are caused by the action and occur at the same time and place (e.g. construction activities).*
>
> ***Indirect effects*** *are those caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (e.g. impacts caused by growth induced by a proposal).*
>
> ***Cumulative effects*** *result from the incremental impact of a proposal when added to other past, present, and future actions regardless of who undertakes such other actions (e.g. effects of the interaction of a proposal with other past, present, and future activities in the area. (A good example would be the effect of a proposal's well field for ground water appropriations where it is only one of many well fields that utilize an aquifer of limited size or recharge.)*

Each alternative is evaluated based on beneficial and adverse consequences to the existing environment with respect to *short* or *long-term* effects. The *short-term* effects are during the construction of the project. *Long-term* effects are those that will remain after project completion, again, beneficial and adverse.

Table 5: Collection Upgrades Cursory Environmental Screening

Impact	Collection System	No Action
Land Use	None	None
General Land Use	None	None
Important Farmland	None	None
Formally Classified Lands	None	None
Flood Plains	None	None
Wetlands	None	None
Historic Properties	Direct, Adverse Short-term	None
Biological Resources	None	None
Water Quality	None	None
Socio-Economic/ Enviro Justice	None	Cumulative, Adverse Long-term*
Air Quality and Noise	None	None
Transportation	Direct, Adverse Short-term	None
*Choosing to not upgrade the collection system will result in overloading at the WRRF and potential NPDES violations and EPA fines. Those fines would be paid through rate increases to the residents.		

Table 6: WRRF Upgrades Cursory Environmental Screening

Impact	Add Second Package Plant	Remove Existing, Add Two New Plants	No Action
Land Use	None	None	None
General Land Use	None	None	None
Important Farmland	None	None	None
Formally Classified Lands	None	None	None
Flood Plains	None	None	None
Wetlands	None	None	None
Historic Properties	None	None	None
Biological Resources	None	None	None
Water Quality	Cumulative, Beneficial Long-term	Cumulative, Beneficial Long-term	Cumulative, Adverse Long-term*
Socio-Economic/ Environmental Justice	None	None	Cumulative, Adverse Long-term*
Air Quality and Noise	None	None	None
Transportation	Direct, Adverse Short-term	Direct, Adverse Short-term	None
*The No Action alternative would fail to improve the wastewater effluent discharging to Orofino Creek, negatively impacting water quality. This could result in further NPDES violations and EPA fines, resulting in rate increases to the residents.			

Table 7: WTP Upgrades Cursory Environmental Screening

Impact	Repurpose WWRF Detention Tank	Rectangular Sed. Basins	High Rate Clarification	Lagoon Expansion & Lining	No Action
Land Use	None	None	None	None	None
General Land Use	None	None	None	None	None
Important Farmland	None	None	None	None	None
Formally Classified Lands	None	None	None	None	None
Flood Plains	None	None	None	None	None
Wetlands	None	None	None	None	None
Historic Properties	None	None	None	None	None
Biological Resources	None	None	None	None	None
Water Quality	Cumulative, Beneficial Long-term	Cumulative, Beneficial Long-term	Cumulative, Beneficial Long-term	Cumulative, Beneficial Long-term	Cumulative, Adverse Long-term*
Socio-Economic/ Enviro Justice	None	None	None	None	Cumulative, Adverse Long-term*
Air Quality and Noise	None	None	None	None	None
Transportation	None	None	None	None	None

*The No Action alternative would fail to improve the backwash effluent discharging to Canal Creek, negatively impacting water quality in Orofino Creek as well. This could result in further NPDES violations and EPA fines, resulting in rate increases to the residents.

5.0 SUMMARY OF MITIGATION

Table 8: Mitigation Measures Summary

Environmental Resource	Section	Mitigation Measure
Land Use	4.1	No mitigation required.
General Land Use	4.2	No mitigation required.
Important Farmland	4.2.1	No mitigation required.
Formally Classified Lands	4.2.2	No mitigation required.
Flood Plains	4.3	Floodplain permit required from the Community's floodplain administrator, Vianna Marshall.
Wetlands	4.4	No mitigation required.
Historic Properties	4.5	Inadvertent Discovery Plan to be followed, Appendix G.
Biological Resources	4.6	No mitigation required.
Water Quality	4.7	Erosion control and site containment BMPs such as silt fencing should be used when excavating near Orofino or Canal Creek.
Socio-Economic/ Enviro Justice	4.8	No mitigation required.
Air Quality and Noise	4.9	Dust and odor control BMPs.
Transportation	4.10	Marked detours to be provided when necessary.

6.0 CORRESPONDENCE AND COORDINATION

The mailing list of agencies consulted is included as Table 9. All agency correspondence is included in Appendix F, including a copy of the letters sent to all agencies listed.

Table 9: Agency Consultation Mailing List

Agency	Contact	Address
State Fire Marshall	Knute Sandahl	PO Box 83720, Boise, ID 83720-0043
Department of Commerce	Dennis Porter	PO Box 83720, Boise, ID 83720-0093
Idaho DEQ - Lewiston	Nicholas Hiebert	1118 F St., Lewiston, ID 83501
Idaho DEQ - State	Mike Stambulis	1410 N. Hilton St., Boise, ID 83706
IDWR	Aaron Skinner	P.O. Box 83720, Boise, ID 83720-0098
Dept. of Fish and Game	Ray Hennekey	3316 16th St., Lewiston, ID 83501
USACE-Boise Outreach	Project Review	10095 Emerald St., Boise, ID 83704
USFWS	Project Review	1387 S. Vinnell Way, Boise, ID 83709
SHPO	Ethan Morton	210 Main St., Boise, ID 83702
Nez Perce THPO	Patrick Baird	PO Box 365, Lapwai, ID 83540
Clearwater Economic Development Assoc.	Project Review	1626 6th Ave. N., Lewiston, ID 83501
Clearwater County Planning	Bobbi Kaufman	150 Michigan Ave., Orofino, ID 83544

7.0 REFERENCES

The Wastewater Facility Planning Study, prepared and submitted to IDEQ by Mountain Waterworks in October of 2015, provided information for this Environmental Information Document. This document is supplement to the referenced Wastewater Facility Plan.

Other sources include:

Federal Emergency Management Agency. Flood Insurance Rate Map City of Priest River, ID, Web, 11 February 2016. <http://www.clearwatercounty.org/departments/gis_and_mapping/fema_flood.html>

Idaho Department of Environmental Quality. *Source Water Assessment Online Tool.* Web, 11 February 2016. <http://www.deq.idaho.gov/water/swaOnline/>

Idaho Department of Water Resources, Geographic Information Services. *General Mapping Tool.* Web, 11 February 2016. <http://maps.idwr.idaho.gov/map/>

Mountain Waterworks, Inc. Waste*water System Facility Plan, City of Pierce Wastewater System.* Mountain Waterworks, Inc., 2015.

United States. *State and County Quick Facts*. U.S. Census Bureau. Web, 11 February 2016. <http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml>

United States Department of Agriculture. *Web Soil Survey.* Natural Resource Conservation Service. Web, 25 February 2016. <http://websoilsurvey.nrcs.usda.gov/app/websoilsurvey.aspx>

United States Department of Agriculture, Rural Development. *RUS Bulletin 1794A-602, Guide for Preparing the Environmental Report.* Web, 11 February 2016. <http://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program/id>

United States Fish and Wildlife Service. *Information Planning and Conservation Tool*. Web, 12 February 2016. <http://www.fws.gov/endangered/>

United States Fish & Wildlife Service. *FWS Critical Habitat for Threatened & Endangered Species*. Web, 11 February 2016. < https://ecos.fws.gov/ipac/>

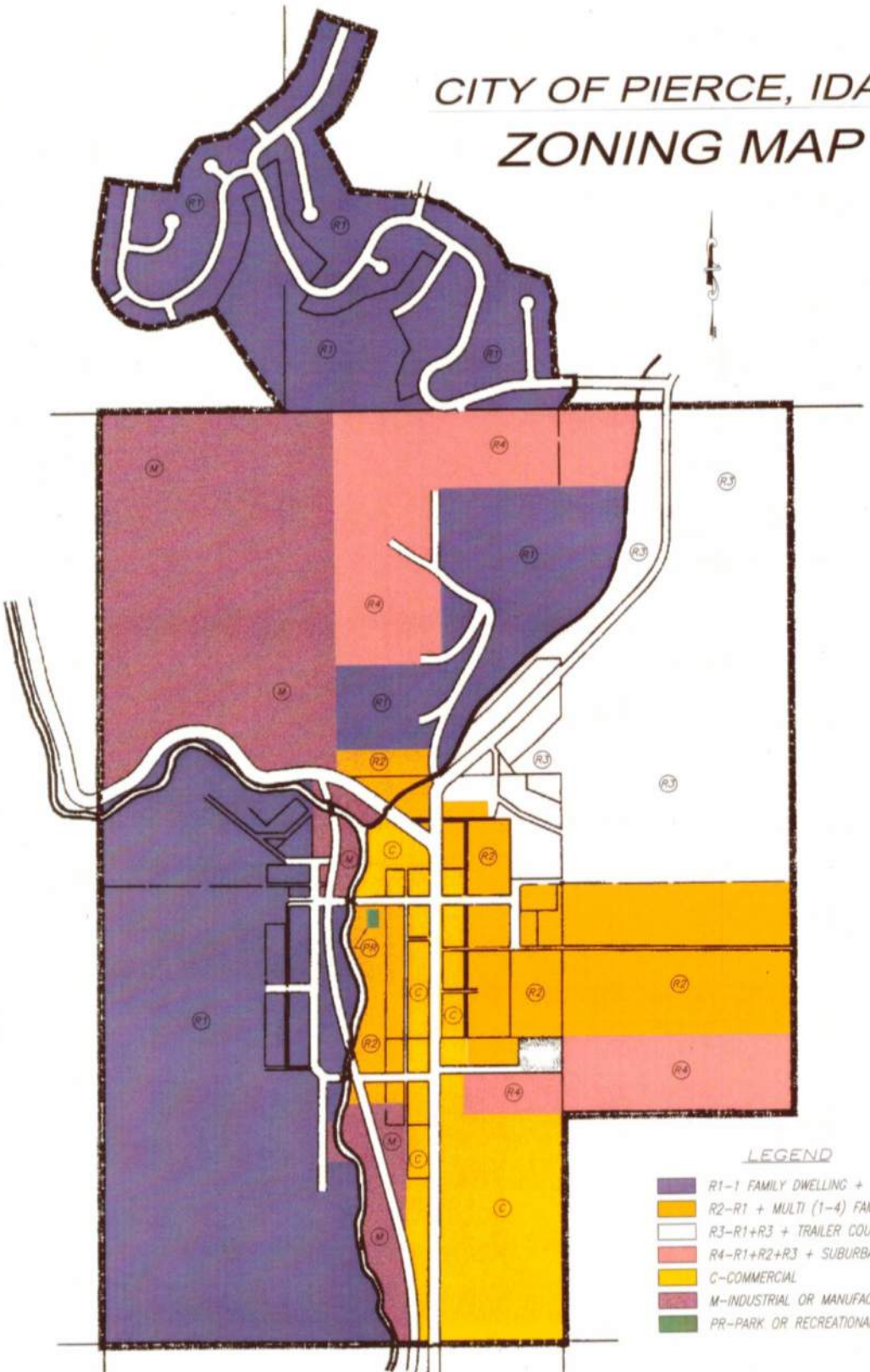
United States Fish & Wildlife Service. *National Wild and Scenic Rivers.* Web, 11 February 2016. <http://www.rivers.gov/>

United States Fish & Wildlife Service, Wetlands Online Mapper. Web, 11 February 2016. http://www.fws.gov/wetlands

Appendix A

City of Pierce Planning and Zoning Map

CITY OF PIERCE, IDAHO
ZONING MAP



LEGEND

- R1–1 FAMILY DWELLING + CHURCHES
- R2–R1 + MULTI (1–4) FAMILY UNITS
- R3–R1+R3 + TRAILER COURTS (10 OR MORE SPACES)
- R4–R1+R2+R3 + SUBURBAN 1 ACRE SPACES
- C–COMMERCIAL
- M–INDUSTRIAL OR MANUFACTURING
- PR–PARK OR RECREATIONAL AREA

INFORMATION PROVIDE BY CITY OF PIERCE

PIERCE, IDAHO
ZONING MAP
PIERCE WATER
MASTER PLAN

WYATT ENGINEERING, INC.
ENGINEERS & SURVEYORS
1320 N. HOWARD
SPOKANE, WA. 99201
FAX (509) 328-0423
(509) 328-3139
101 THAIN RD.
LEWISTON, ID. 83501
FAX (208) 746-9815
(208) 746-2661

NO.	DATE	BY	FILENAME	REVISIONS
0				ORIGINAL DRAWING

Appendix B

NRCS Soil Report and Map

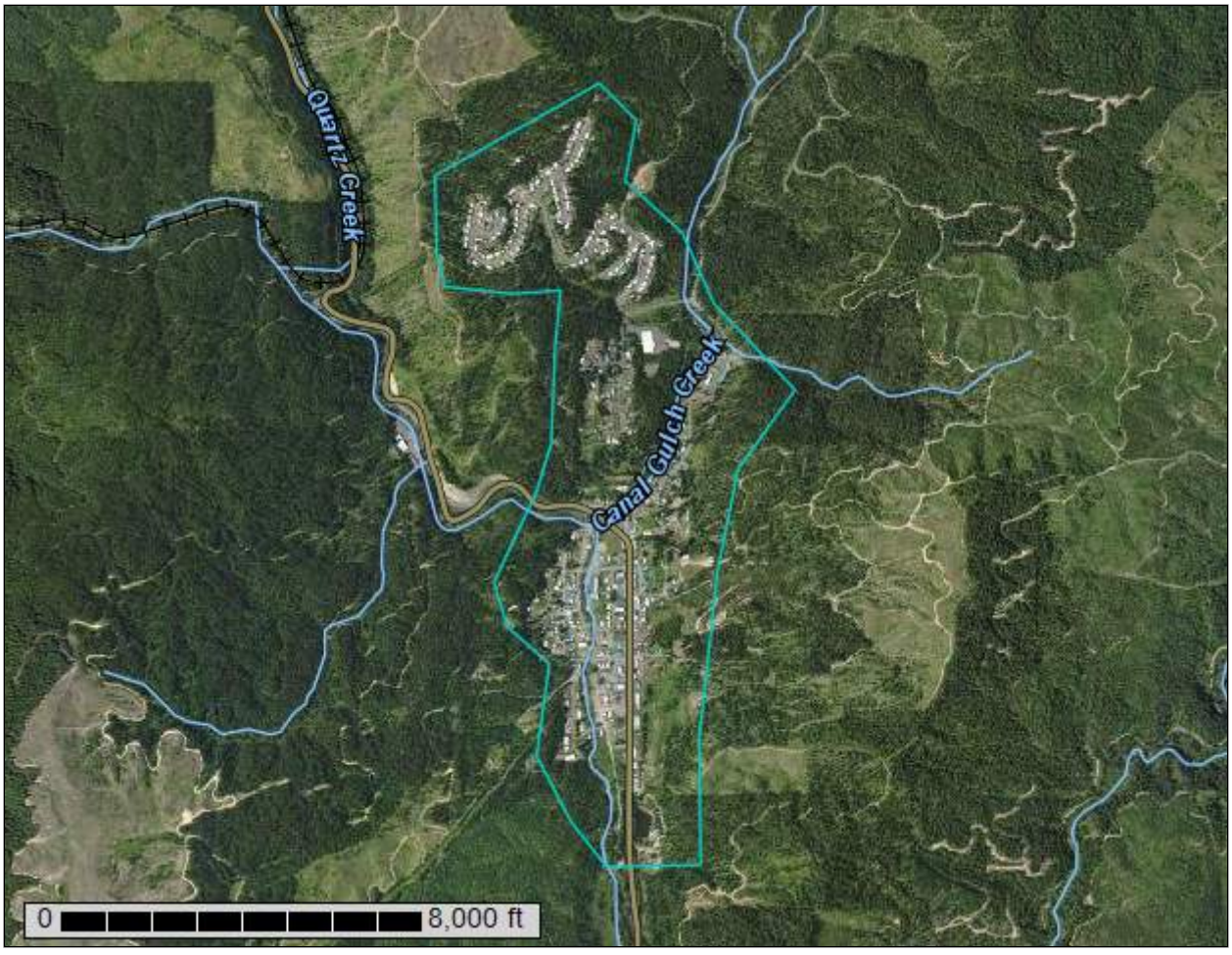
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Clearwater Area, Idaho



March 21, 2016

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

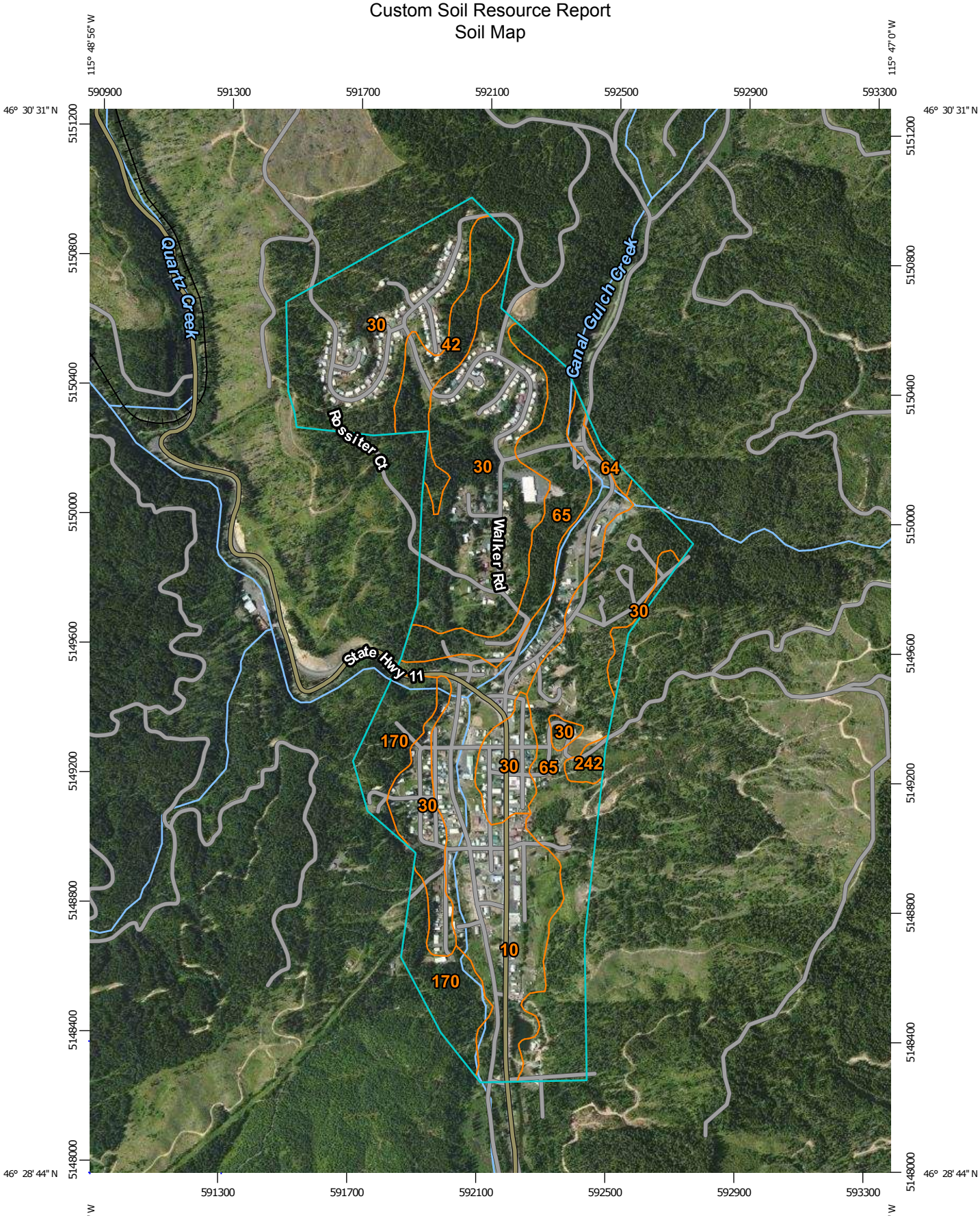
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:16,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 200 400 800 1200

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clearwater Area, Idaho
Survey Area Data: Version 8, Sep 9, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 24, 2011—Jul 30, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Clearwater Area, Idaho (ID612)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
10	Aquandic Endoaquepts and Aquandic Dystrudepts soils, 0 to 10 percent slopes	91.7	21.3%
30	Brequito-Lado complex, 15 to 35 percent slopes	172.4	40.0%
42	Brodeer-Mushel complex, 35 to 75 percent slopes	20.1	4.7%
64	Dullaxe-Vassar complex, 35 to 70 percent slopes	1.9	0.4%
65	Dullaxe-Vassar, moist complex, 35 to 55 percent slopes	108.6	25.2%
170	Mushel-Dullaxe complex, 35 to 70 percent slopes	33.3	7.7%
242	Water	3.0	0.7%
Totals for Area of Interest		**430.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with

some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Clearwater Area, Idaho

10—Aquandic Endoaquepts and Aquandic Dystrudepts soils, 0 to 10 percent slopes

Map Unit Setting

National map unit symbol: tt47
Elevation: 2,800 to 3,400 feet
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 38 to 44 degrees F
Frost-free period: 50 to 110 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Aquandic endoaquepts and similar soils: 60 percent
Aquandic dystrudepts and similar soils: 20 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aquandic Endoaquepts

Setting

Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 10 inches: ashy silt loam
Bg - 10 to 52 inches: loam
C - 52 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 to 24 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C/D
Ecological site: MEADOW (R009XY018ID)

Description of Aquandic Dystrudepts

Setting

Landform: Flood plains, drainageways
Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 10 inches: gravelly ashy loam
Bw - 10 to 31 inches: extremely gravelly sandy loam
C - 31 to 70 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 0 to 10 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 7 to 19 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C/D
Ecological site: DRY MEADOW (R009XY019ID)

Minor Components

Teneb

Percent of map unit: 3 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: MEADOW (R009XY018ID)

30—Brequito-Lado complex, 15 to 35 percent slopes

Map Unit Setting

National map unit symbol: v122
Elevation: 3,200 to 3,400 feet
Mean annual precipitation: 38 to 45 inches
Mean annual air temperature: 38 to 44 degrees F
Frost-free period: 50 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Brequito and similar soils: 45 percent
Lado, dry, and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brequito

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash over loess over colluvium derived from granite and/or gneiss

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oe - 1 to 3 inches: moderately decomposed plant material
A - 3 to 5 inches: ashy silt loam
Bw - 5 to 11 inches: ashy silt loam
2B/E - 11 to 20 inches: silt loam
2Bt - 20 to 37 inches: silty clay loam
3BC - 37 to 67 inches: loam

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/queencup beadlily (CN530)

Description of Lado, Dry

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Volcanic ash over loess over colluvium derived from granite and/or gneiss

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oe - 1 to 2 inches: moderately decomposed plant material

A - 2 to 4 inches: medial silt loam
Bw - 4 to 20 inches: medial silt loam
2Bt - 20 to 48 inches: clay loam
3Bt - 48 to 64 inches: loam

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 13.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/queencup beadlily (CN530)

42—Brodeer-Mushel complex, 35 to 75 percent slopes

Map Unit Setting

National map unit symbol: v125
Elevation: 3,200 to 4,000 feet
Mean annual precipitation: 38 to 45 inches
Mean annual air temperature: 38 to 44 degrees F
Frost-free period: 50 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Brodeer and similar soils: 60 percent
Mushel and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brodeer

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Volcanic ash over colluvium derived from granite and/or gneiss

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oe - 1 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: ashy silt loam

Bw - 4 to 21 inches: ashy silt loam
2Bt - 21 to 59 inches: loam
2BC - 59 to 67 inches: gravelly sandy loam

Properties and qualities

Slope: 35 to 75 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/wild ginger (CN545)

Description of Mushel

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash over colluvium derived from granite and/or metamorphic rock

Typical profile

Oi - 0 to 3 inches: slightly decomposed plant material
A - 3 to 6 inches: ashy silt loam
Bw - 6 to 13 inches: ashy silt loam
2BE - 13 to 21 inches: loam
2Bt - 21 to 39 inches: loam
2BC - 39 to 48 inches: loam
2C - 48 to 68 inches: sandy loam

Properties and qualities

Slope: 35 to 75 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/queencup beadlily (CN530)

64—Dullaxe-Vassar complex, 35 to 70 percent slopes

Map Unit Setting

National map unit symbol: v2z0
Elevation: 2,000 to 4,500 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 38 to 44 degrees F
Frost-free period: 50 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Dullaxe and similar soils: 60 percent
Vassar and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dullaxe

Setting

Landform: Mountain slopes
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Volcanic ash over colluvium derived from granite and/or gneiss

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: ashy loam
Bw1 - 7 to 19 inches: ashy loam
2Bw2 - 19 to 27 inches: loam
2Bw3 - 27 to 38 inches: sandy loam
2BC - 38 to 46 inches: sandy loam
2C - 46 to 66 inches: loamy sand

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/wild ginger (CN545)

Description of Vassar

Setting

Landform: Mountain slopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash over residuum weathered from granite and/or gneiss

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oe - 1 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: ashy loam
Bw1 - 4 to 17 inches: ashy loam
2Bw2 - 17 to 30 inches: sandy loam
2C - 30 to 52 inches: loamy coarse sand
2Cr - 52 to 62 inches: bedrock

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/queencup beadlily (CN530)

65—Dullaxe-Vassar, moist complex, 35 to 55 percent slopes

Map Unit Setting

National map unit symbol: v24m
Elevation: 3,700 to 5,000 feet
Mean annual precipitation: 45 to 50 inches
Mean annual air temperature: 38 to 44 degrees F
Frost-free period: 50 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Dullaxe and similar soils: 70 percent
Vassar, moist, and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dullaxe

Setting

Landform: Ridges, mountain slopes
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Volcanic ash over colluvium derived from granite and/or gneiss

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: ashy loam
Bw1 - 7 to 19 inches: ashy loam
2Bw2 - 19 to 27 inches: loam
2Bw3 - 27 to 38 inches: sandy loam
2BC - 38 to 46 inches: sandy loam
2C - 46 to 66 inches: loamy sand

Properties and qualities

Slope: 35 to 55 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/wild ginger (CN545)

Description of Vassar, Moist

Setting

Landform: Mountain slopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash over residuum weathered from granite and/or gneiss

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oe - 1 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: ashy loam
Bw1 - 4 to 17 inches: ashy loam
2Bw2 - 17 to 30 inches: sandy loam
2C - 30 to 52 inches: loamy coarse sand
2Cr - 52 to 62 inches: bedrock

Properties and qualities

Slope: 35 to 55 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/wild ginger (CN545)

170—Mushel-Dullaxe complex, 35 to 70 percent slopes

Map Unit Setting

National map unit symbol: v24p
Elevation: 3,600 to 4,000 feet
Mean annual precipitation: 45 to 50 inches
Mean annual air temperature: 38 to 44 degrees F
Frost-free period: 30 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Mushel and similar soils: 50 percent
Dullaxe and similar soils: 45 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mushel

Setting

Landform: Mountain slopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash over colluvium over residuum weathered from granite and/or metamorphic rock

Typical profile

Oi - 0 to 3 inches: slightly decomposed plant material
A - 3 to 6 inches: ashy silt loam
Bw - 6 to 13 inches: ashy silt loam
2BE - 13 to 21 inches: loam
2Bt - 21 to 39 inches: loam
2BC - 39 to 48 inches: loam
2C - 48 to 68 inches: sandy loam

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/queencup beadlily (CN530)

Description of Dullaxe

Setting

Landform: Mountain slopes
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Volcanic ash over colluvium derived from granite and/or gneiss

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: ashy loam
Bw1 - 7 to 19 inches: ashy loam
2Bw2 - 19 to 27 inches: loam
2Bw3 - 27 to 38 inches: sandy loam
2BC - 38 to 46 inches: sandy loam
2C - 46 to 66 inches: loamy sand

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: B
Other vegetative classification: western redcedar/wild ginger (CN545)

Minor Components

Aquandic cryaquepts

Percent of map unit: 1 percent
Landform: Flood plains
Ecological site: MEADOW (R009XY018ID)

242—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Soil Information for All Uses

Suitabilities and Limitations for Use

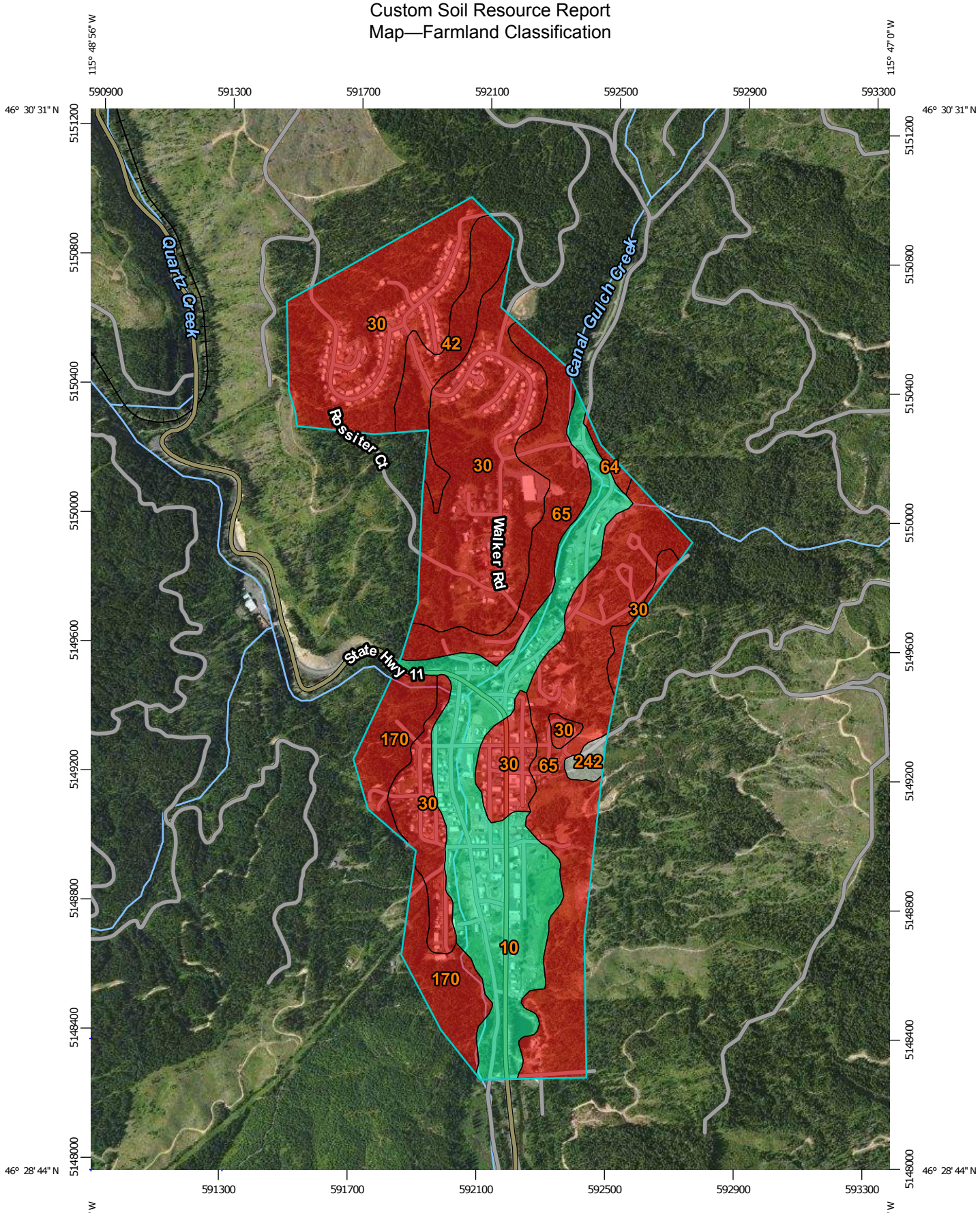
The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.



Map Scale: 1:16,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 200 400 800 1200

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Water Features

MAP INFORMATION

Streams and Canals

Transportation


Rails


Interstate Highways


US Routes

Major Roads

Local Roads

Background


Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clearwater Area, Idaho
Survey Area Data: Version 8, Sep 9, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 24, 2011—Jul 30, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Farmland Classification

Farmland Classification— Summary by Map Unit — Clearwater Area, Idaho (ID612)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
10	Aquandic Endoaquepts and Aquandic Dystrudepts soils, 0 to 10 percent slopes	Prime farmland if drained	91.7	21.3%
30	Brequito-Lado complex, 15 to 35 percent slopes	Not prime farmland	172.4	40.0%
42	Brodeer-Mushel complex, 35 to 75 percent slopes	Not prime farmland	20.1	4.7%
64	Dullaxe-Vassar complex, 35 to 70 percent slopes	Not prime farmland	1.9	0.4%
65	Dullaxe-Vassar, moist complex, 35 to 55 percent slopes	Not prime farmland	108.6	25.2%
170	Mushel-Dullaxe complex, 35 to 70 percent slopes	Not prime farmland	33.3	7.7%
242	Water		3.0	0.7%
Totals for Area of Interest			**430.9**	**100.0%**

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

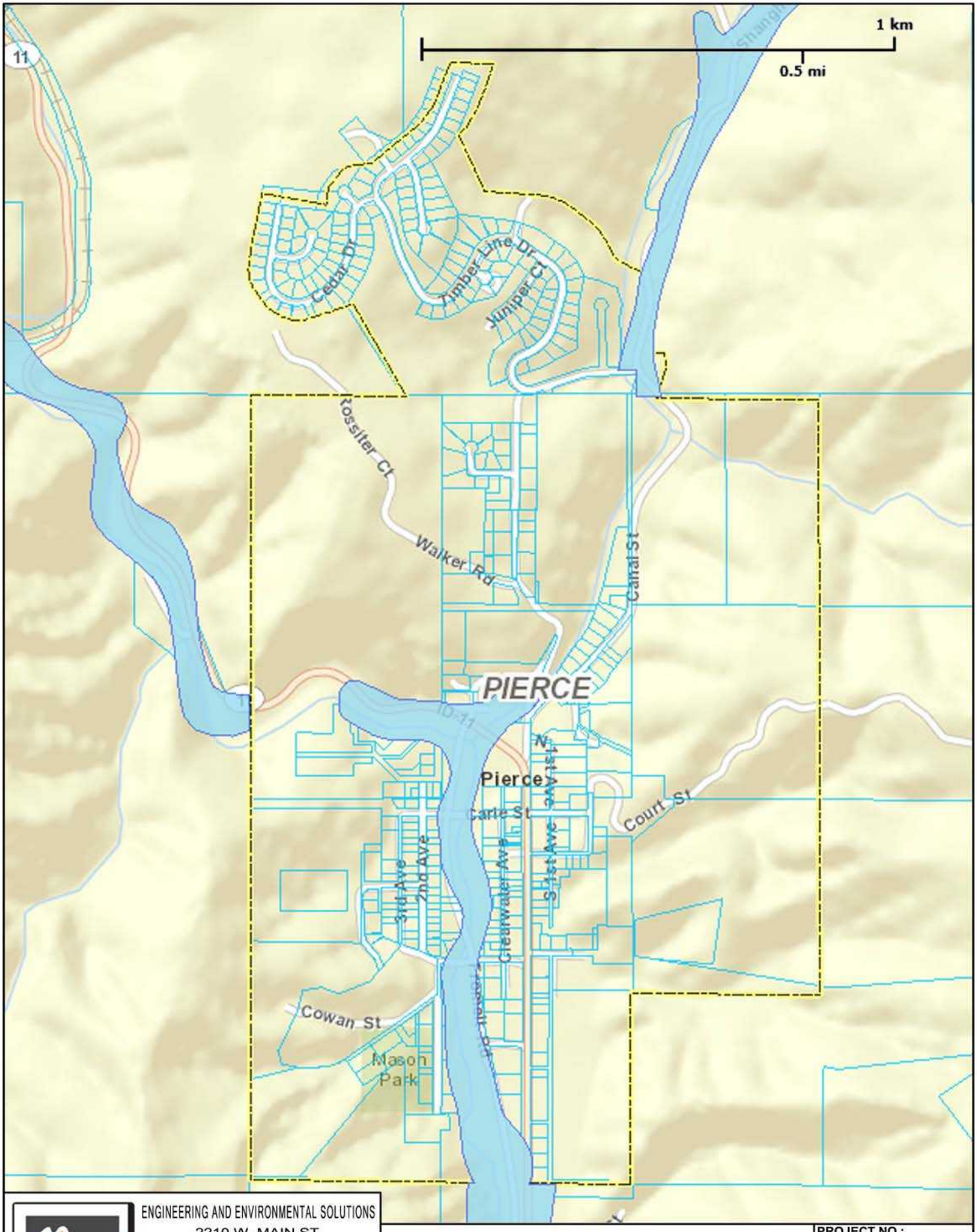
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix C

Clearwater County Floodplain Map



MOUNTAIN WATERWORKS

ENGINEERING AND ENVIRONMENTAL SOLUTIONS
2210 W. MAIN ST.
BOISE, IDAHO 83702
208.850.9978

IDAHO OFFICES
BOISE · McCALL · PLUMMER

CITY OF PIERCE

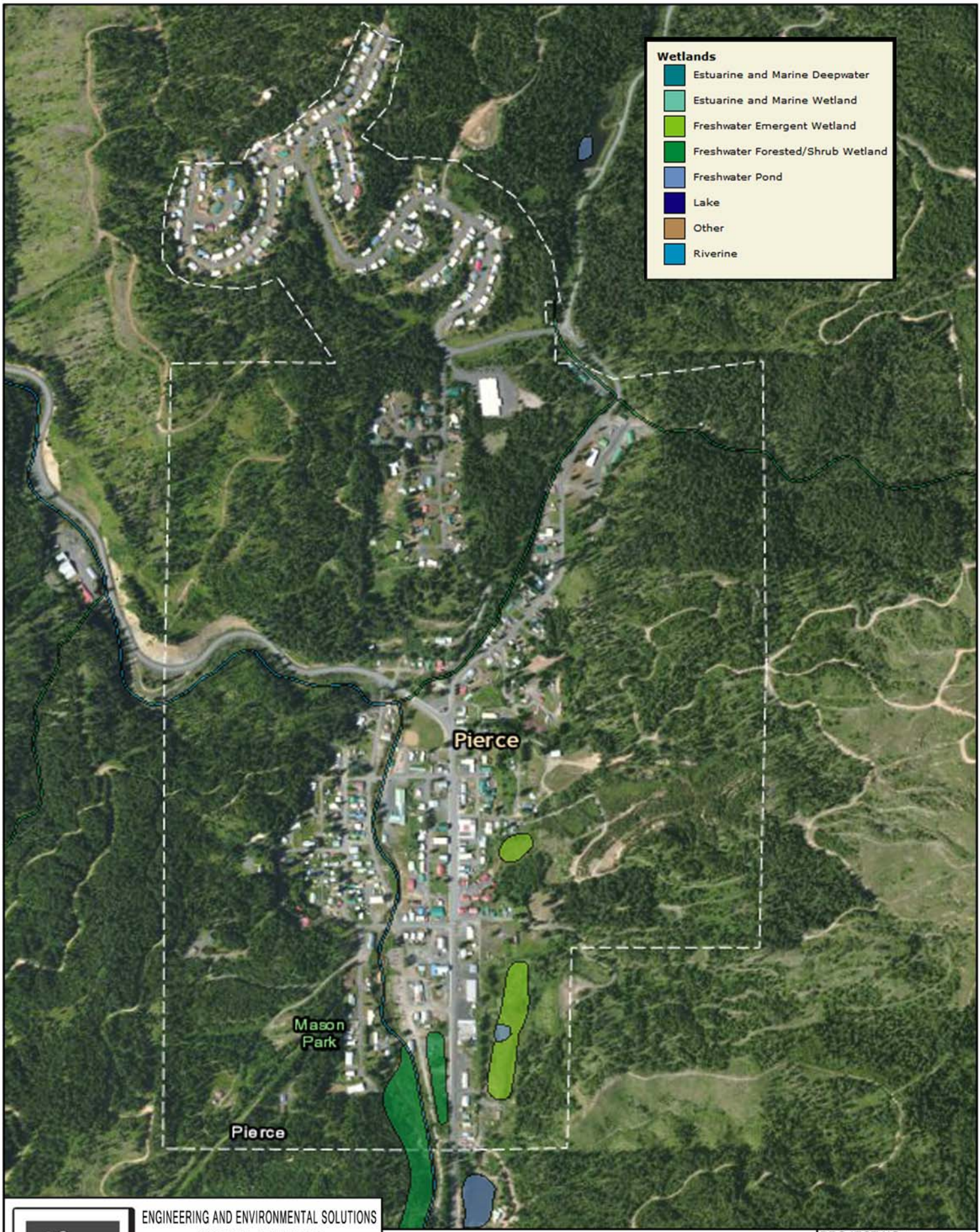
CLEARWATER COUNTY FLOOD MAP

PROJECT NO.: 118.0020.01

SHEET NO.

Appendix D

USFWS Wetlands Map



MOUNTAIN WATERWORKS
ENGINEERING AND ENVIRONMENTAL SOLUTIONS
2210 W. MAIN ST.
BOISE, IDAHO 83702
208.850.9978
IDAHO OFFICES
BOISE · McCALL · PLUMMER

CITY OF PIERCE

WETLANDS MAP

PROJECT NO.: 118.0020.01

SHEET NO.

Appendix E

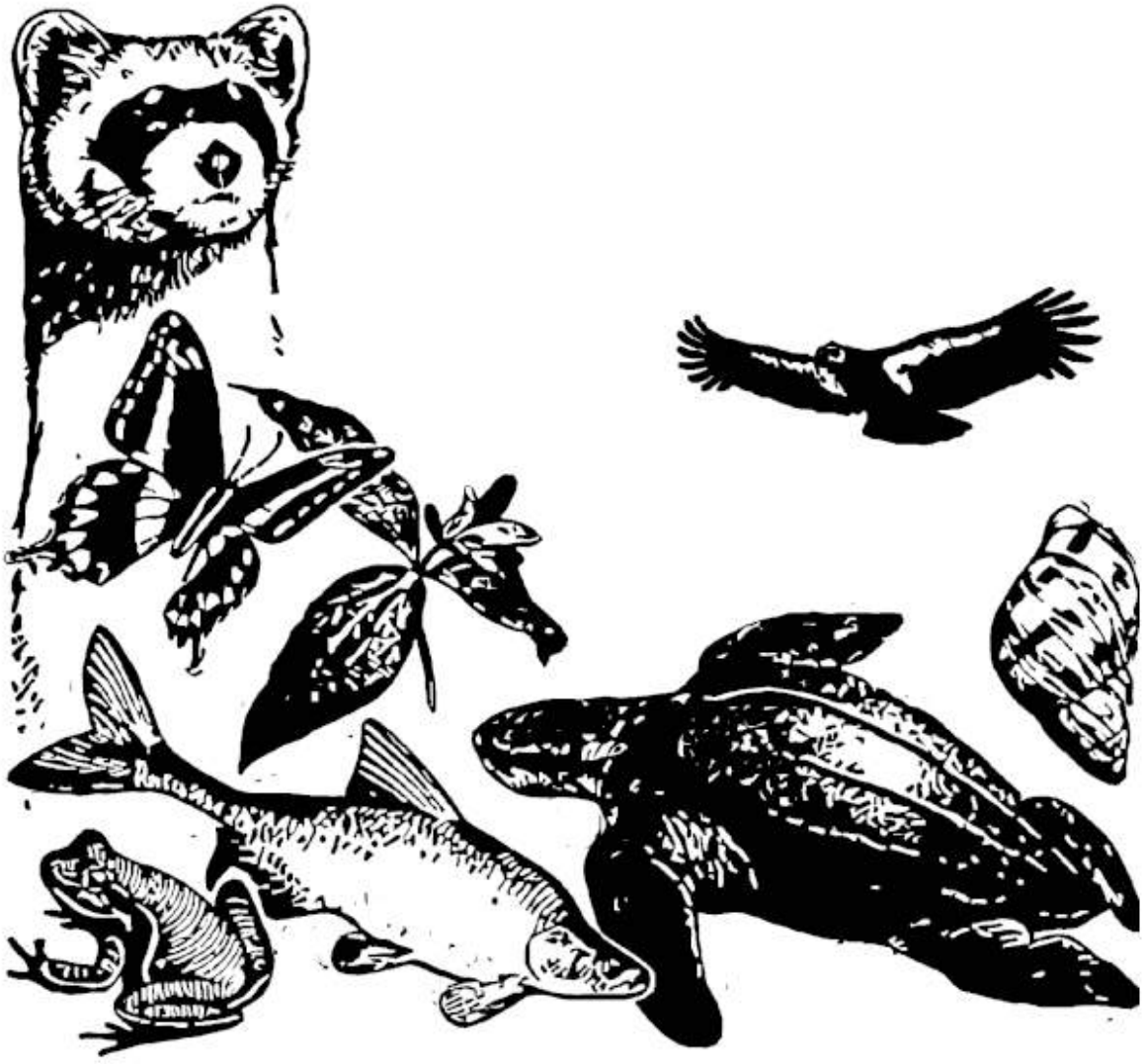
USFWS IPaC Report

City of Pierce Wastewater Upgrades

IPaC Trust Resource Report

Generated November 25, 2015 10:25 AM MST

This report is for informational purposes only and should not be used for planning or analyzing project-level impacts. For projects that require FWS review, please return to this project on the IPaC website and request an official species list from the Regulatory Documents page.



US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

City of Pierce Wastewater Upgrades

PROJECT CODE

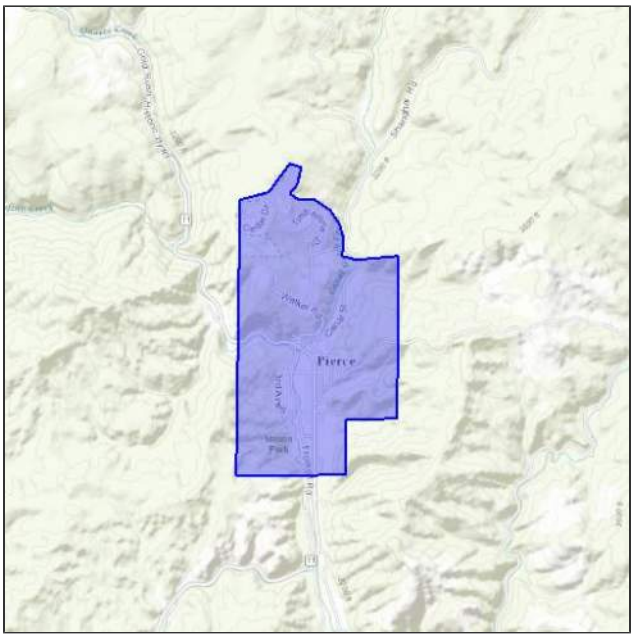
NKWTJ-PNA25-EEXFT-T3OL2-PLOHDA

LOCATION

Clearwater County, Idaho

DESCRIPTION

The City of Pierce, Idaho will be replacing existing collection line and performing wastewater treatment upgrades on their existing treatment plant.



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Idaho Fish And Wildlife Office
1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657
(208) 378-5243

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under Section 7 of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an official species list on the Regulatory Documents page.

There are no endangered species identified for this project area

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Calliope Hummingbird Stellula calliope — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0K3

Cassin's Finch Carpodacus cassinii — Bird of conservation concern
Year-round

Flammulated Owl Otus flammeolus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DK

Fox Sparrow Passerella iliaca — Bird of conservation concern
Season: Breeding

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Breeding

Olive-sided Flycatcher Contopus cooperi — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN

Rufous Hummingbird selasphorus rufus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0E1

Short-eared Owl Asio flammeus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD

Swainson's Hawk Buteo swainsoni — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070

Western Grebe aechmophorus occidentalis — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EA

White Headed Woodpecker Picoides albolarvatus Bird of conservation concern

Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HU

Willow Flycatcher Empidonax traillii Bird of conservation concern

Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F6

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

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

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

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.

Freshwater Emergent Wetland

PEMFx 4.04 acres

Freshwater Forested/shrub Wetland

PSSC 16.0 acres

PSSA 1.68 acres

Freshwater Pond

PUBHx 0.243 acre

Riverine

R3RBH 5.41 acres

Appendix F

Agency Environmental Consultation Letter

December 21, 2015

SHPO
Attn: Ethan Morton
210 Main St.
Boise, ID 83702

SUBJECT: **(1)** Environmental Screening

Environmental Screening

(1) We are seeking information from your agency regarding any known environmental issues associated with the proposed project. Your comments are being solicited as part of National Environmental Policy Act (NEPA) compliance, related cross-cutting act compliance and agency regulatory requirements.

The following information is being provided to aid in your evaluation of the proposal:

1. **Area of Potential Effect**: The *Area of Potential Effect (APE)* is defined on Figure 1.

2. **Location**: The APE is within S2, T36N, R5E.

3. **Federal Agencies Involved**: USDA Rural Development is providing funding for this project.

4. **Project Description:** Detailed project information is provided on the attached *Proposed Scope of Work*. Project improvement maps are included as Figures 1 thru 3.

5. **Environmental Information:** Discussion of the effected environment is included in the attached *Proposed Scope of Work.*

6. **Attachments:** Figure 1 depicts entire project area, including all collection system locations. Figure 2 depicts the specific water treatment project location as it relates to this review. Figure 3 depicts the wastewater treatment facility upgrades.

Please provide your comments on the enclosed comment sheet or by letter within 30-days of the date of this letter to **USDA Rural Development, Attn: John Lynn, 7830 Meadowlark Way, Ste. C3, Coeur d'Alene, ID 83815**. If you have any questions regarding the proposed project, please contact Keri Hill, 208-780-3993.

Sincerely,

Carmen Syed

Carmen Syed, Mayor

Attachments
cc: USDA, Rural Development Area Office

PROPOSED SCOPE OF WORK

The City of Pierce, Idaho is seeking USDA Rural Development funding to upgrade their wastewater system. The wastewater system is located in Clearwater County, along Orofino creek, approximately 20 miles east of Orofino, Idaho. A map of the proposed wastewater collection system upgrades is included as Figure 1, proposed water treatment plant upgrades are shown on Figure 2, and planned wastewater treatment plant upgrades are provided in Figure 3.

Project Components Include:

- Camera survey and investigation of the entire collection system. Some system deficiencies have been identified. However, a large portion of the collection system will be evaluated to identify issues to be addressed during design and construction.
- Manhole, sewer main, and service line repair or replacement, as shown in Figure 1. Priority 1 and Priority 2 areas are planned for improvements. Priority 3 areas will be evaluated during the camera survey with repairs or replacements based on the camera results.
- Construction of a parallel 191,000 gpd wastewater treatment plant to meet regulatory redundancy requirements (Figure 3).
- Repair and rehabilitation of the existing wastewater treatment plant (Figure 3).
- Installation of a mechanical sludge dewatering system and removal of the existing sludge drying beds (Figure 3).
- Construction of equalization storage and a concrete sedimentation basin to treat the water treatment plant filter backwash (Figure 2).

The project is planned to occur in two phases:

1. Phase 1: Collection and Water Plant Upgrades
    - Camera entire collection system and identify serious inflow and infiltration issues. Complete the collection repairs and monitor flow through one wet season.
    - Complete planned improvements at the water treatment plant.
2. Phase 2: Wastewater Treatment Plant Upgrades
    - Construct a new mechanical package plant.
    - After new plant is operational, repair the existing treatment plant.
    - Construct new mechanical dewatering facility.

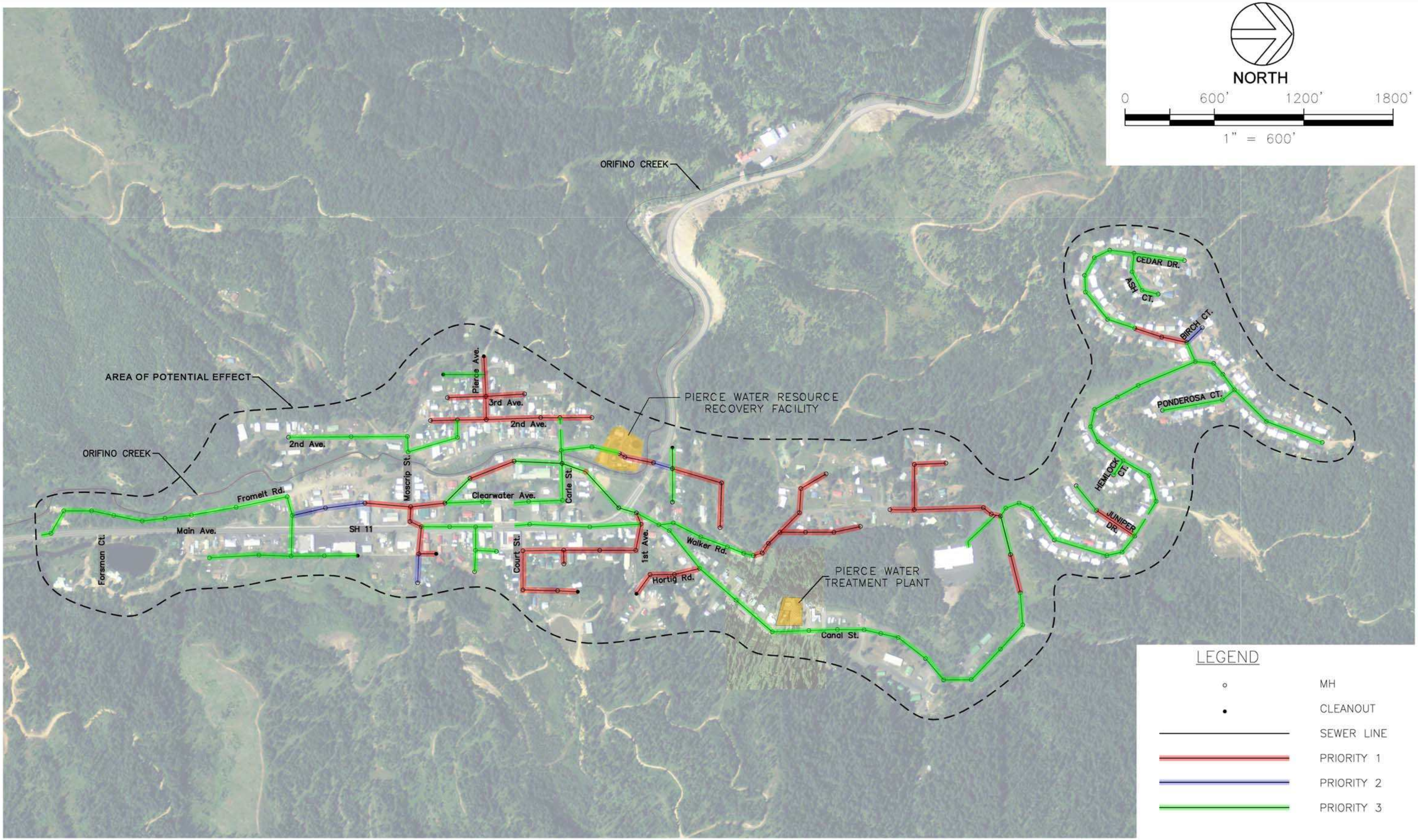
The project is necessary for the City of Pierce to achieve compliance with their current wastewater National Pollutant Discharge Elimination System (NPDES) permit as well as provide safe, reliable sewer services to residents and businesses within the City.

All collection system repair and/or replacement work will be within existing right-of-ways. No excavation is planned to occur outside of previously disturbed and developed areas. The anticipated repairs are prioritized on Figure 1. As discussed, the system will be evaluated and collection system repair or replacement may be completed within the area of potential effect. Wastewater treatment upgrades will occur within the existing footprint of the City's existing facility.

The City has a second NPDES permit associated with the surface water treatment plant. The water treatment facility utilizes rapid sand filters, and filter backwash water flows through a small, unlined settling pond prior to surface water discharge to Canal Creek. The pond does not consistently meet the requirements of the NPDES permit and Idaho Department of Environmental Quality (IDEQ) seepage requirements. Planned construction of an equalization basin and sedimentation basin will greatly improve water quality in the creek and satisfy NPDES and IDEQ requirements. Figure 2 provides two alternative locations for the basin to be constructed. One alternative involves constructing on existing City owned property. The second alternative considers City purchase of an adjacent residential lot to offer more space for operation and maintenance. Please review both potential locations for possible environmental impacts.

Development, submission, and approval of all required documents to the Idaho Department of Environmental Quality and USDA Rural Developmentwill be included as part of this project. The total project cost is estimated at $4,535,800.

For more information regarding the City of Pierce's wastewater and water system upgrades, please contact Keri Hill at 208-780-3993 or at khill@mountainwtr.com.



NORTH
0
600'
1200'
1800'
1" = 600'
ORIFINO CREEK
AREA OF POTENTIAL EFFECT
PIERCE WATER RESOURCE RECOVERY FACILITY
PIERCE WATER TREATMENT PLANT
Pierce Ave.
3rd Ave.
2nd Ave.
2nd Ave.
Moscrip St.
Clearwater Ave.
Carle St.
Fromelt Rd.
Main Ave.
SH 11
Forsman Ct.
Court St.
1st Ave.
Walker Rd.
Hortig Rd.
Canal St.
CEDAR DR.
ASH CT.
BIRCH CT.
PONDEROSA CT.
HEMLOCK CT.
JUNIPER DR.
LEGEND
MH
CLEANOUT
SEWER LINE
PRIORITY 1
PRIORITY 2
PRIORITY 3

PROJECT	119.0010.01
DATE	7/19/2015
FIGURE NO.	

FIGURE 1

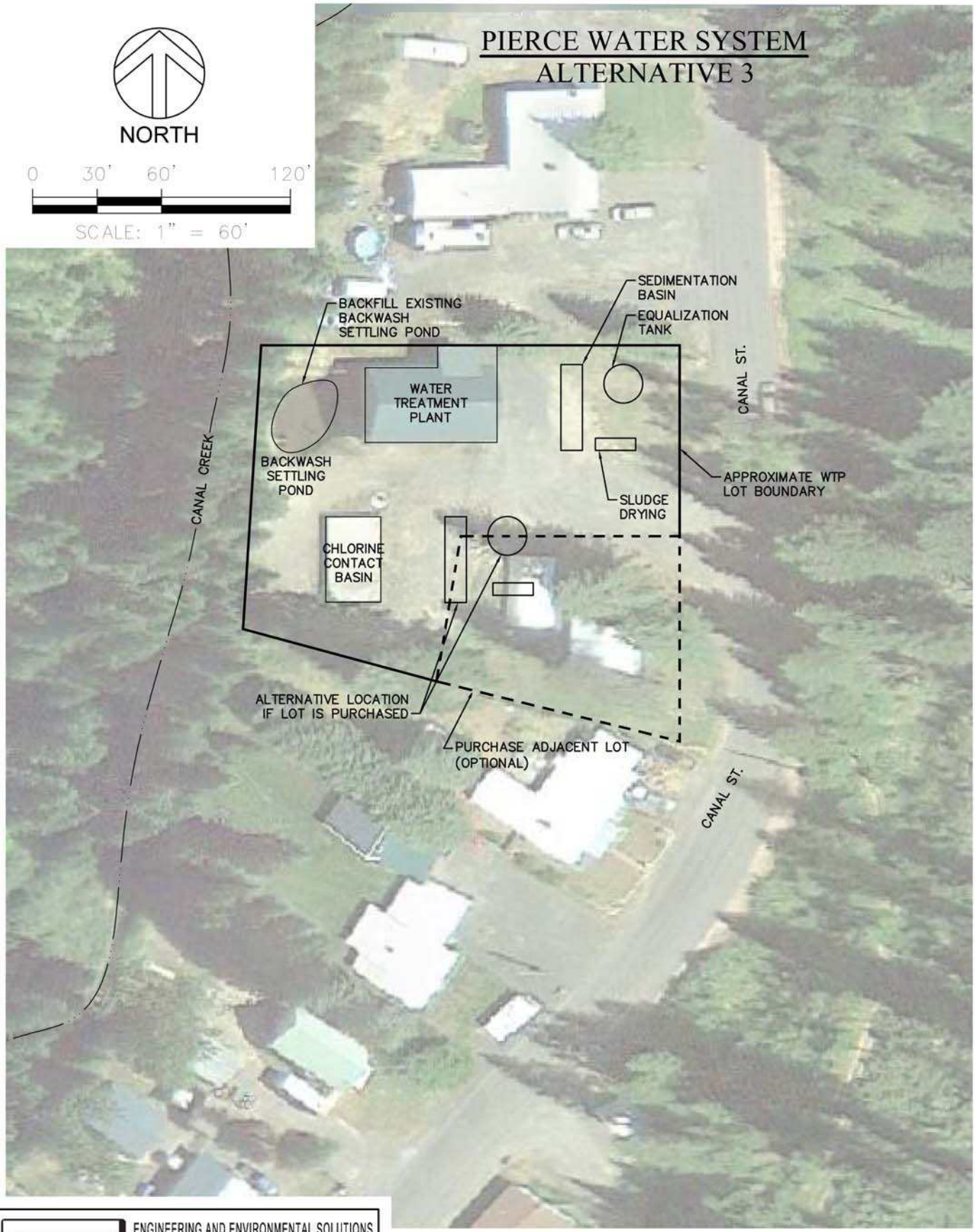
MOUNTAIN WATERWORKS
ENGINEERING AND ENVIRONMENTAL SOLUTIONS
2210 W. MAIN ST.
BOISE, IDAHO 83702
208.780.3990
IDAHO OFFICES
BOISE · McCALL · COEUR D'ALENE

EXISTING WASTEWATER SYSTEM

PIERCE, IDAHO

COLLECTION SYSTEM REPAIR / REPLACE PRIORITY MAP

PIERCE WATER SYSTEM
ALTERNATIVE 3



MOUNTAIN WATERWORKS

ENGINEERING AND ENVIRONMENTAL SOLUTIONS
2210 W. MAIN ST.
BOISE, IDAHO 83702
208.780.3990

IDAHO OFFICES
BOISE · McCALL · COEUR D'ALENE

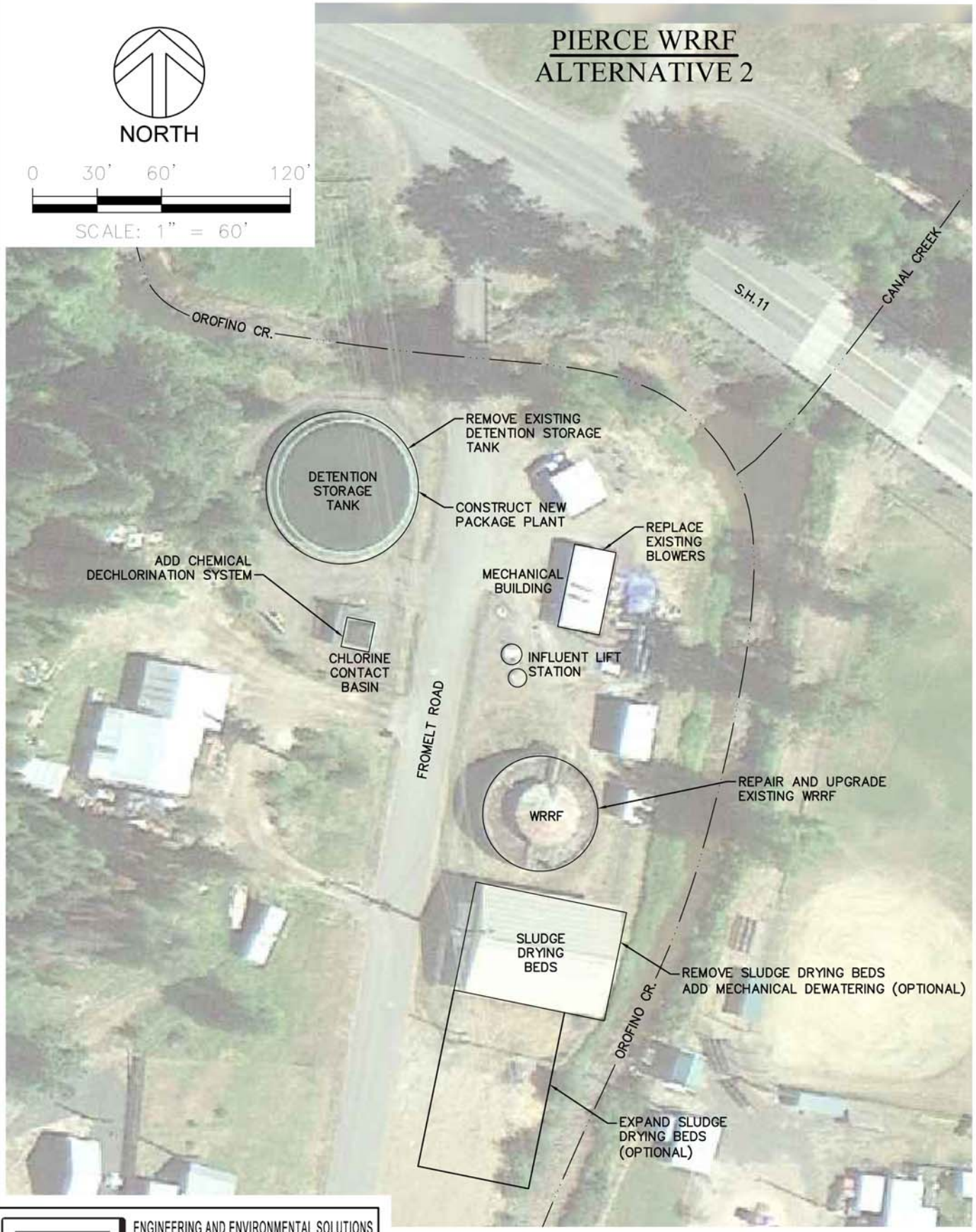
CITY OF PIERCE

WTP ALTERNATIVE 3 SITE MAP

PROJECT NO.: 118.0010.01

SHEET NO. FIG 2

PIERCE WRRF
ALTERNATIVE 2



MOUNTAIN WATERWORKS
ENGINEERING AND ENVIRONMENTAL SOLUTIONS
2210 W. MAIN ST.
BOISE, IDAHO 83702
208.780.3990
IDAHO OFFICES
BOISE · McCALL · COEUR D'ALENE

CITY OF PIERCE

WASTEWATER TREATMENT PLANT UPGRADES

PROJECT NO.: 118.0010.01

SHEET NO. FIG 3

INTERGOVERNMENTAL REVIEW COMMENT SHEET
FOR

City of Pierce, Idaho
(APPLICANT NAME)

Wastewater System Upgrades
(PROJECT TYPE)

****

TO AGENCY ADDRESSED:

If you intend to comment but cannot respond to USDA, Rural Development within 30 calendar days, please notify USDA, Rural Development immediately. If no response is received by the due date, it will be assumed that you have no comment and the file will be closed.

****

PROGRAM REVIEW AND COMMENT

TO USDA, RURAL DEVELOPMENT:

We have reviewed the subject preapplication for Federal assistance and have reached the following conclusions on its relationship to our plans and programs:

[ ] It has no adverse effect.

[ ] We have no comment.

[ ] Effects, although measurable, would be acceptable.

[ ] It has adverse effects. (Explain in the Remarks Section.)

[ ] We are interested but require more information to evaluate the proposal. (Explain in the Remarks Section)

[ ] Additional comments for project improvement. (Attach if necessary)

REMARKS:

AGENCY: _____

BY: _____

PHONE NUMBER: _____

Appendix F-1

Idaho Department of Water Resources

State of Idaho
DEPARTMENT OF WATER RESOURCES
322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098
Phone: (208) 287-4800 • Fax: (208) 287-6700 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

John Lynn
USDA Rural Development
7830 Meadowlark Way, Ste. C3
Coeur d'Alene, ID 83815

December 31, 2015

Re: City of Pierce Wastewater and Water System Upgrades

Dear Mr. Lynn,

This letter is in response to the development review that was received by IDWR on December 30, 2015. The subject area located at Township 36 North, Range 5 East, Section 2 in which the proposed development will occur is potentially located within the Special Flood Hazard Area (SFHA) as shown on the attached overlay for the City of Pierce. The overlay was created using Flood Insurance Rate Map (FIRM) Panel Numbers 160048B and 1600460925B. The proposed project will extend into the SFHA periodically when updating the sewer lines throughout the proposed phases. Development within the identified Zone A will require a floodplain development permit from the community. The local floodplain administrator is Vianna Marshall. Ms. Marshall may be reached at (208) 464-2207 or cityofpierce@groidaho.net to verify permitting requirements.

Each community has an ordinance that regulates development in the SFHA. I have included typical minimum standards that are applicable and ensure compliance with the National Flood Insurance Program (NFIP) as found in the Code of Federal Regulations § 60.3(a):

(1) Require within flood-prone areas new and replacement water supply systems to be designed to minimize or eliminate infiltration of flood waters into the systems; and

(2) Require within flood-prone areas

(i) New and replacement sanitary sewage systems to be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters and

(ii) On-site waste disposal systems to be located to avoid impairment to them or contamination from them during flooding.

The proposed scope of work estimated the total upgrade cost is $4,535,800. Please discuss with Ms. Marshall if these upgrades constitute substantial improvement. If the development is determined to be substantial improvement, then the entire structure(s) must be brought into compliance with the NFIP floodplain standards if not previously compliant.

Substantial improvement: reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage," regardless of the actual repair work performed. The market value of the structure should be:

(1) The appraised value of the structure prior to the start of the initial repair or improvement.

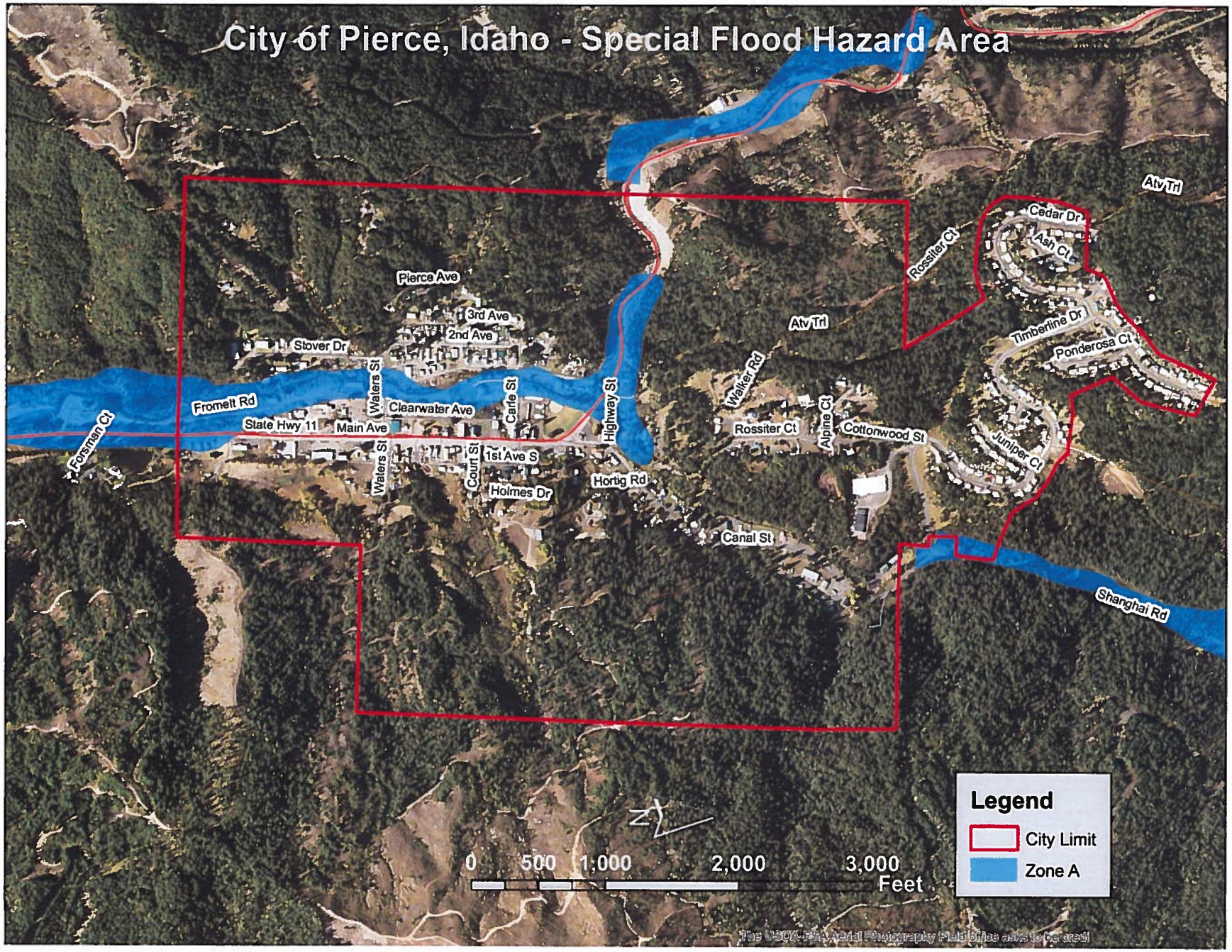
In Figure 1, there are two (2) areas where existing sewer lines will be replaced and cross Orofino Creek (State Highway 11, north of the Water Resource Recovery Facility and Carle Street). The Idaho Stream Channel Protection Act requires that the stream channels of the state and their environment be protected against alteration for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, and water quality. This means IDWR must approve in advance any work being done within the beds and banks of a continuously flowing stream. Please view IDWR's website at https://www.idwr.idaho.gov/streams/ for permitting information.

The objective of these requirements are to ensure that development, including public services, are protected from flood damage and can still be used after the flood recedes. Please let me know if you have any additional questions. Thank you for the opportunity to comment and for giving notice of the proposed development.

Sincerely,

Aaron Skinner
Floodplain Specialist
t. 208-287-4912
aaron.skinner@idwr.idaho.gov

Cc via email: Vianna Marshall (City of Pierce Floodplain Administrator)
Maureen O'Shea (State of Idaho Floodplain Coordinator)


City of Pierce, Idaho - Special Flood Hazard Area
Pierce Ave
3rd Ave
2nd Ave
Stover Dr
Waters St
Clearwater Ave
Carle St
Highway St
Fromelt Rd
State Hwy 11
Main Ave
Forsman Ct
1st Ave S
Court St
Holmes Dr
Hortig Rd
Canal St
Atv Trl
Rossiter Ct
Walker Rd
Alpine Ct
Cottonwood St
Juniper Ct
Cedar Dr
Ash Ct
Timberline Dr
Ponderosa Ct
Shanghai Rd
N
0 500 1,000 2,000 3,000
Feet
Legend
City Limit
Zone A

INTERGOVERNMENTAL REVIEW COMMENT SHEET
FOR

City of Pierce, Idaho
(APPLICANT NAME)

Wastewater System Upgrades
(PROJECT TYPE)

****

TO AGENCY ADDRESSED:

If you intend to comment but cannot respond to USDA, Rural Development within 30 calendar days, please notify USDA, Rural Development immediately. If no response is received by the due date, it will be assumed that you have no comment and the file will be closed.

****

PROGRAM REVIEW AND COMMENT

TO USDA, RURAL DEVELOPMENT:

We have reviewed the subject preapplication for Federal assistance and have reached the following conclusions on its relationship to our plans and programs:

[ ] It has no adverse effect.

[ ] We have no comment.

[X] Effects, although measurable, would be acceptable.

[ ] It has adverse effects. (Explain in the Remarks Section.)

[ ] We are interested but require more information to evaluate the proposal. (Explain in the Remarks Section)

[X] Additional comments for project improvement. (Attach if necessary)

REMARKS:

AGENCY: Idaho Department of Water Resources
BY: Aaron Skinner
PHONE NUMBER: (208) 287-4912

December 30, 2015

IDWR
Attn: Aaron Skinner
P.O. Box 83720
Boise, ID 83720-0098

SUBJECT: **(1)** Environmental Screening

Environmental Screening

(1) We are seeking information from your agency regarding any known environmental issues associated with the proposed project. Your comments are being solicited as part of National Environmental Policy Act (NEPA) compliance, related cross-cutting act compliance and agency regulatory requirements.

The following information is being provided to aid in your evaluation of the proposal:

1. **Area of Potential Effect**: The *Area of Potential Effect (APE)* is defined on Figure 1.

2. **Location**: The APE is within S2, T36N, R5E.

3. **Federal Agencies Involved**: USDA Rural Development is providing funding for this project.

4. **Project Description:** Detailed project information is provided on the attached *Proposed Scope of Work.* Project improvement maps are included as Figures 1 thru 3.

5. **Environmental Information:** Discussion of the effected environment is included in the attached *Proposed Scope of Work.*

6. **Attachments:** Figure 1 depicts entire project area, including all collection system locations. Figure 2 depicts the specific water treatment project location as it relates to this review. Figure 3 depicts the wastewater treatment facility upgrades.

Please provide your comments on the enclosed comment sheet or by letter within 30-days of the date of this letter to **USDA Rural Development, Attn: John Lynn, 7830 Meadowlark Way, Ste. C3, Coeur d'Alene, ID 83815**. If you have any questions regarding the proposed project, please contact Keri Hill, 208-780-3993.

Sincerely,

Carmen R Syed

Carmen Syed, Mayor

Attachments
cc: USDA, Rural Development Area Office

PROPOSED SCOPE OF WORK

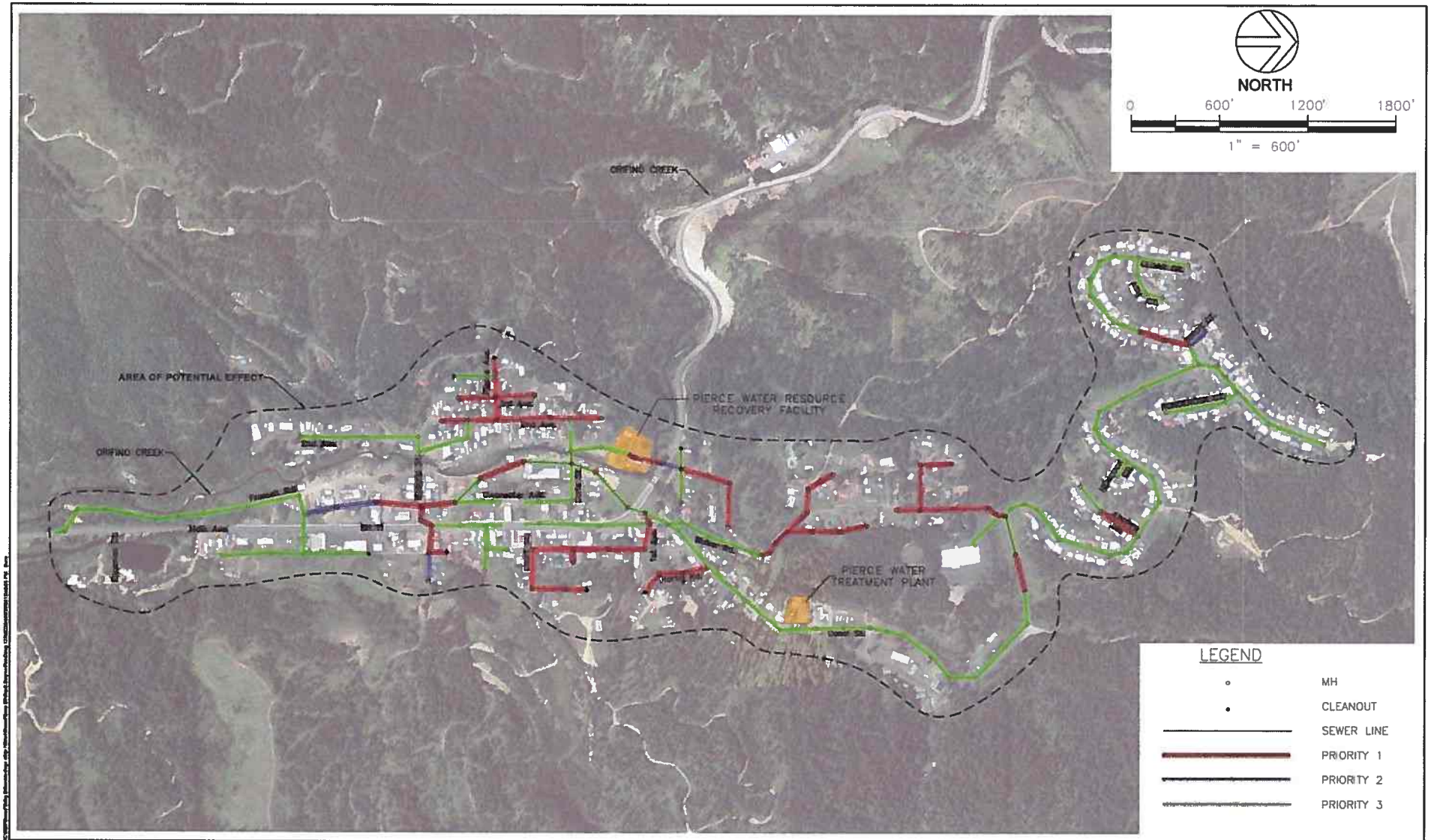
The City of Pierce, Idaho is seeking USDA Rural Development funding to upgrade their wastewater system. The wastewater system is located in Clearwater County, along Orofino creek, approximately 20 miles east of Orofino, Idaho. A map of the proposed wastewater collection system upgrades is included as Figure 1, proposed water treatment plant upgrades are shown on Figure 2, and planned wastewater treatment plant upgrades are provided in Figure 3.

Project Components Include:

- Camera survey and investigation of the entire collection system. Some system deficiencies have been identified. However, a large portion of the collection system will be evaluated to identify issues to be addressed during design and construction.
- Manhole, sewer main, and service line repair or replacement, as shown in Figure 1. Priority 1 and Priority 2 areas are planned for improvements. Priority 3 areas will be evaluated during the camera survey with repairs or replacements based on the camera results.
- Construction of a parallel 191,000 gpd wastewater treatment plant to meet regulatory redundancy requirements (Figure 3).
- Repair and rehabilitation of the existing wastewater treatment plant (Figure 3).
- Installation of a mechanical sludge dewatering system and removal of the existing sludge drying beds (Figure 3).
- Construction of equalization storage and a concrete sedimentation basin to treat the water treatment plant filter backwash (Figure 2).

The project is planned to occur in two phases:

1. Phase 1: Collection and Water Plant Upgrades
    - Camera entire collection system and identify serious inflow and infiltration issues. Complete the collection repairs and monitor flow through one wet season.
    - Complete planned improvements at the water treatment plant.
2. Phase 2: Wastewater Treatment Plant Upgrades
    - Construct a new mechanical package plant.
    - After new plant is operational, repair the existing treatment plant.
    - Construct new mechanical dewatering facility.

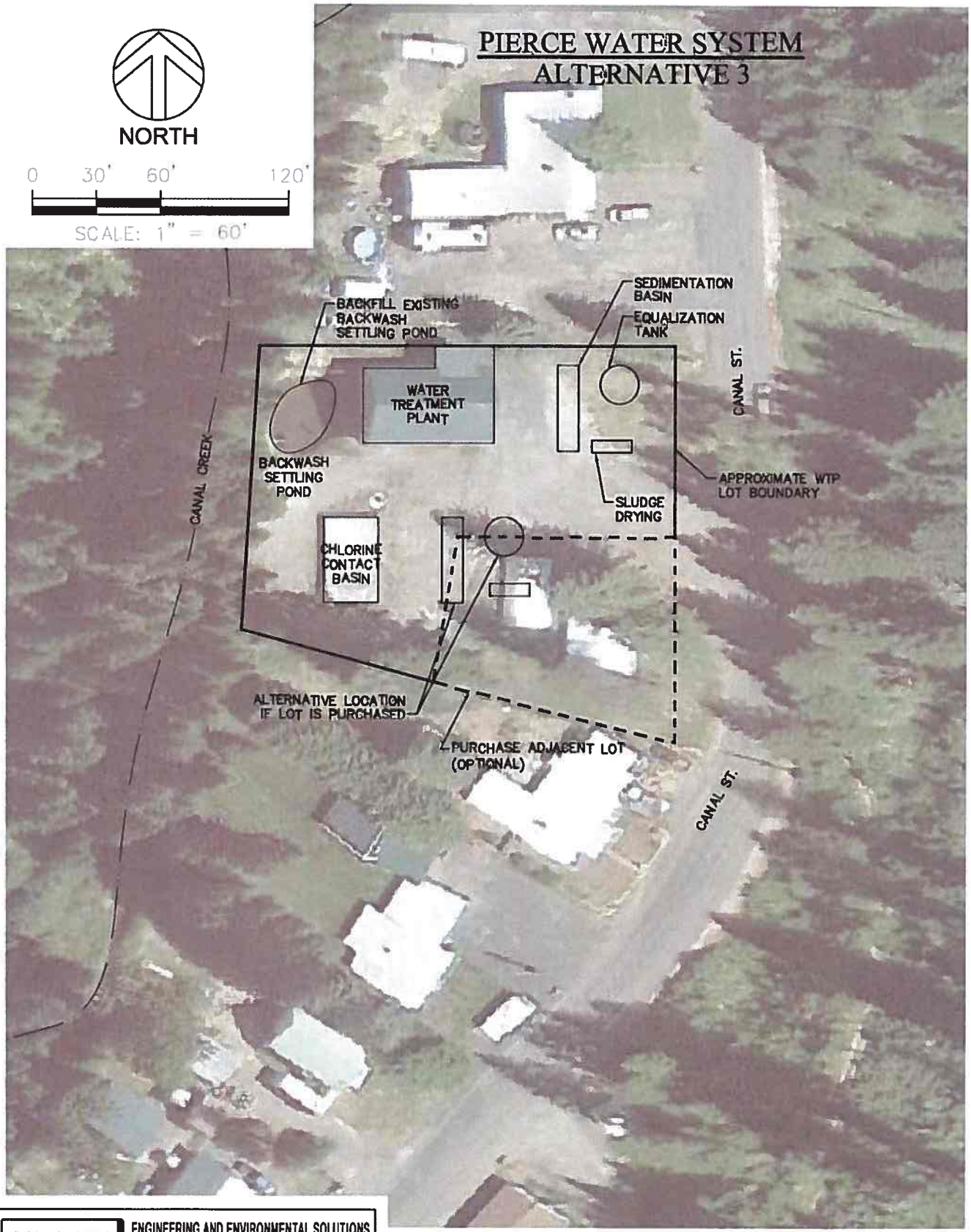


PROJECT 110.0010.01
DATE 7/10/2010
FIGURE NO
FIGURE 1

MOUNTAIN WATER WORKS
ENGINEERING AND ENVIRONMENTAL SOLUTIONS
2210 W. MAIN ST.
BOISE, IDAHO 83702
208.780.3990
IDAHO OFFICES
BOISE · McCALL · COEUR D'ALENE

EXISTING WASTEWATER SYSTEM
PIERCE, IDAHO
COLLECTION SYSTEM REPAIR / REPLACE PRIORITY MAP

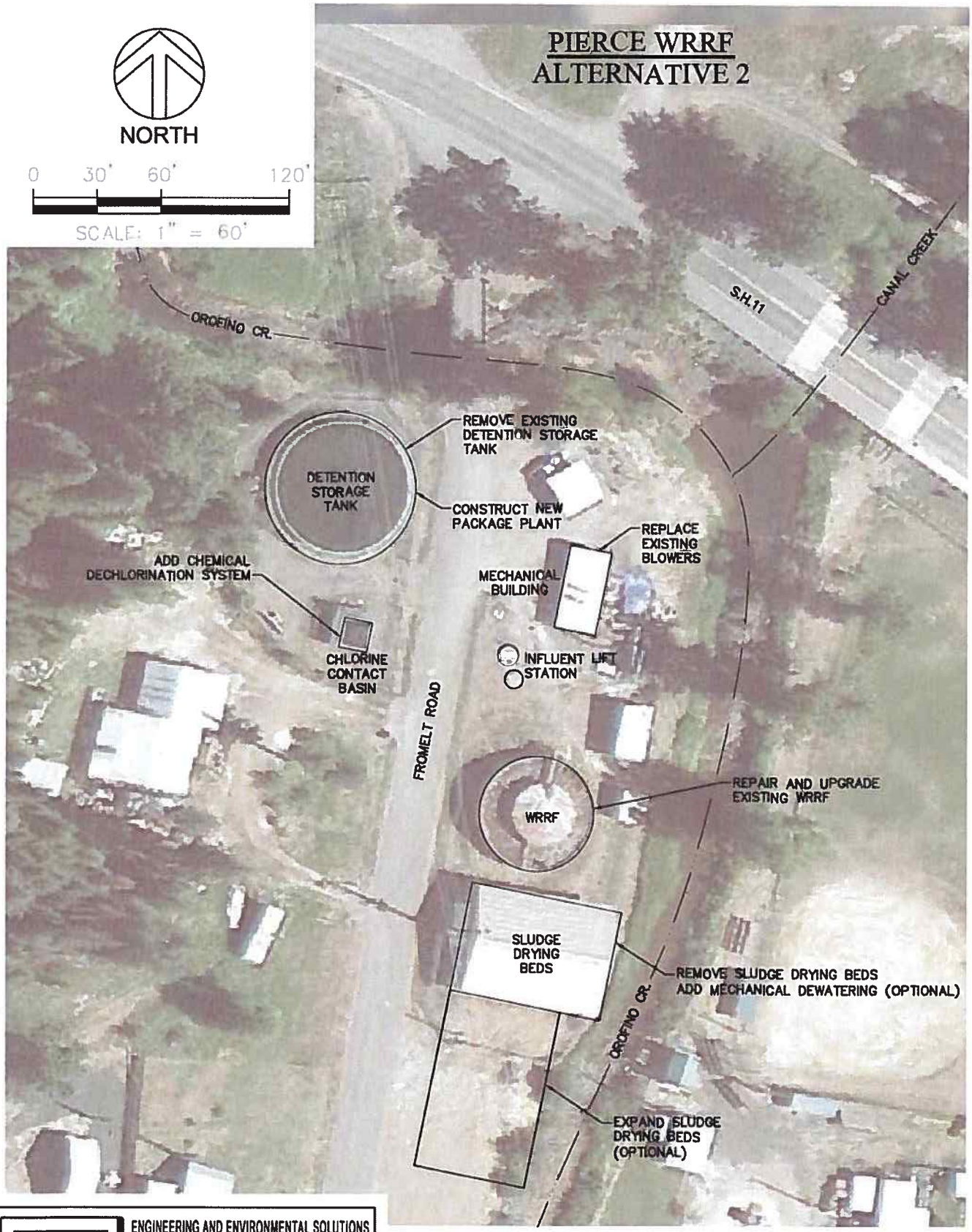
PIERCE WATER SYSTEM
ALTERNATIVE 3



MOUNTAIN WATERWORKS
ENGINEERING AND ENVIRONMENTAL SOLUTIONS
2210 W. MAIN ST.
BOISE, IDAHO 83702
208.780.3990
IDAHO OFFICES
BOISE · McCALL · COEUR D'ALENE

CITY OF PIERCE	PROJECT NO.: 118.0010.01
WTP ALTERNATIVE 3 SITE MAP	SHEET NO. FIG 2

PIERCE WRRF
ALTERNATIVE 2



MOUNTAIN WATERWORKS
ENGINEERING AND ENVIRONMENTAL SOLUTIONS
2210 W. MAIN ST.
BOISE, IDAHO 83702
208.780.3990
IDAHO OFFICES
BOISE McCALL COEUR D'ALENE

CITY OF PIERCE

WASTEWATER TREATMENT PLANT UPGRADES

PROJECT NO.: 118.0010.01

SHEET NO. FIG 3

Appendix F-2

US Army Corps of Engineers

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
COEUR D'ALENE REGULATORY OFFICE
1910 NORTHWEST BLVD. SUITE 210
COEUR D'ALENE, IDAHO 83814

REPLY TO
ATTENTION OF

January 14, 2015

Regulatory Division

SUBJECT: NWW-2016-00017, City of Pierce Wastewater System Improvement Project

Mr. John Lynn
USDA Rural Development
7830 Meadowlark Way, Ste. C3
Coeur d'Alene, ID 83815

Dear Mr. Lynn:

This is in response to your December 21, 2015 letter requesting comments on the wastewater system improvement project for the City of Pierce. Thank you for providing the Corps of Engineers (Corps) the opportunity to provide comments. According to information provided, the proposed project includes improvements to the mainline, construction of a mechanical package plant, sedimentation basin and a dewatering facility for the City of Pierce.

The site is located in the City of Pierce, within Sections 2 of Township 36 North, Range 5 East, near latitude 46.491033° N and longitude -115.799258° W, in Clearwater County, Idaho. Your project has been assigned Department of the Army (DA) File # NWW-2016-00017, which should be referred to in all future correspondence.

AUTHORITY

The DA exerts regulatory jurisdiction over waters of the United States (U.S.), including wetlands, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). Section 404 of the Clean Water Act requires a DA permit be obtained prior to discharging dredged or fill material into Waters of the U.S., which includes most perennial and intermittent rivers and streams, natural and man-made lakes and ponds, irrigation and drainage canals and ditches that are tributaries to other waters, and wetlands. Orofino Creek and Canal Gulch Creek, including their adjacent wetlands, are waters of the United States and subject to regulation under Section 404 of the Clean Water Act.

The repair or replacement of the existing wastewater line crossing Orofino Creek and Canal Gulch Creek would require DA approval if the activity results in a discharge of dredged or fill material into either creek, or their adjacent wetlands. However, there are construction methods like boring under the stream which does not require DA approval. Once the design and construction methods are developed further, please contact the Coeur d'Alene Regulatory office and we can discuss the project in greater detail.

Please be aware that the proposed project is located within Essential Fish Habitat (EFH) and may affect waters inhabited by the steelhead & chinook salmon, which are listed species under the Endangered Species Act (ESA). Due to the presence of ESA listed species and EFH, submittal of a Joint Application would be required under Nationwide Permit Regional General Condition *Watersheds Requiring Pre-Construction Notification, Specific to Anadromous Fish* if a DA permit is required. A copy of the Joint Application can be found on our website: http://www.nww.usace.army.mil/BusinessWithUs/RegulatoryDivision/JointApplicationforPermit.aspx. For additional information on the Endangered Species Act or Essential Fish Habitat please contact Bob Ries with National Marine Fisheries Service at (208) 882-6148.

Please contact me by telephone at (208) 433-4476, by mail at the address in the letterhead, or via email at shane.k.skaar@usace.army.mil if you have any questions or need additional information. A copy of this letter is being sent to The City of Pierce.

Sincerely,

Shane Skaar
Project Manager, Regulatory Division

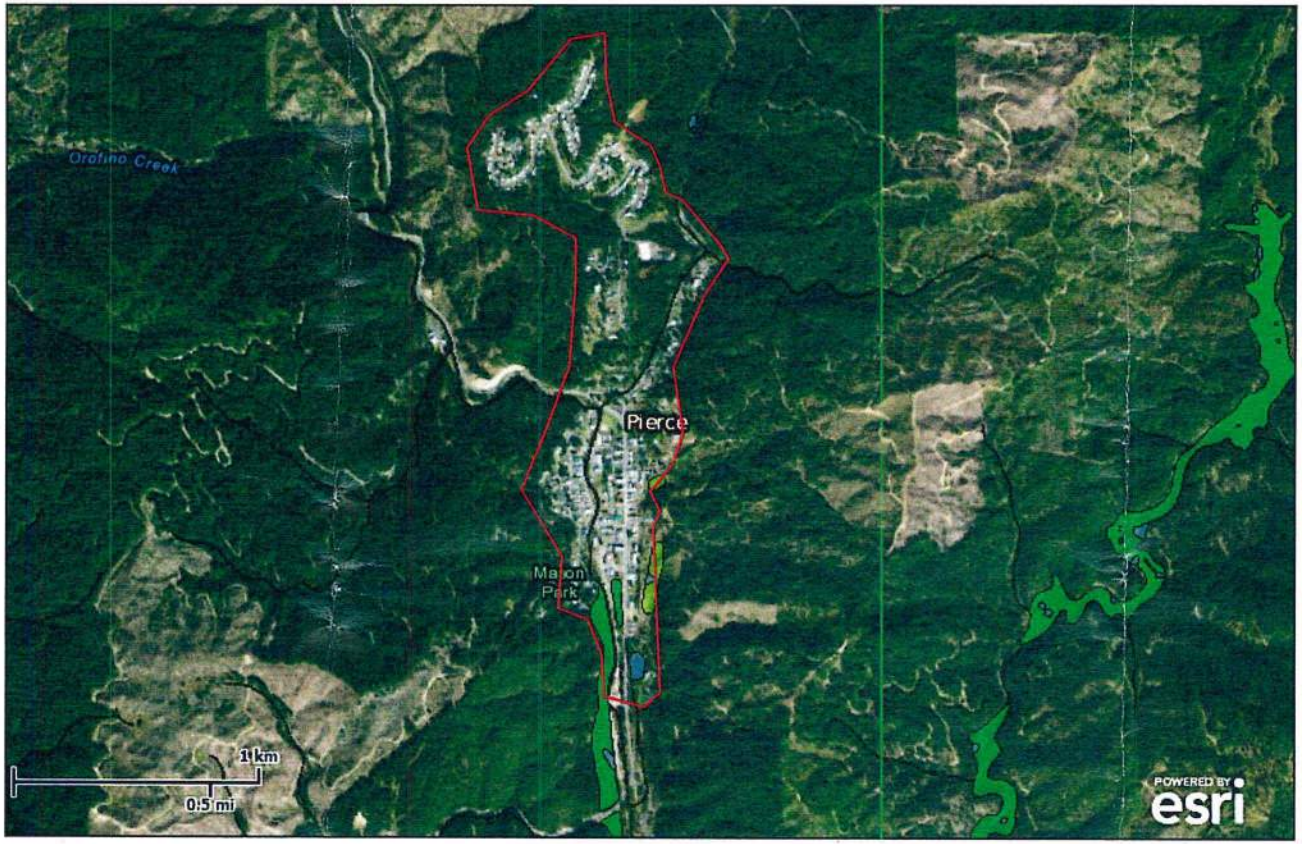
Enclosure(s):
NWW-2016-00017 National Wetland Inventory Map, dated Jan 12, 2016

U.S. Fish and Wildlife Servic

National Wetlands Inventory

NWW-2016-00017

Jan 12, 2016



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Proposed Project Area

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

City of Pierce, Wastewater System improvement Project

Appendix F-3

Cultural Resources Correspondence

www.history.idaho .gov

Idaho • State Historical SOCIETY

C.L. "Butch " Otter
Governor of Idaho

Janet Gallimore
Executive Director

Administration
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2682
Fax: (208) 334-2774

Membership and Fund Development
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2682
Fax: (208) 334-2774

Historical Museum and Education Programs
610 North Julia Davis Drive
Boise, Idaho 83702-7695
Office: (208) 334-2120
Fax: (208) 334-4059

State Historic Preservation Office and Historic Sites
Archeological Survey of Idaho
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3861
Fax: (208) 334-2775

Statewide Sites:
• Franklin Historic Site
• Pierce Courthouse
• Rock Creek Station and
• Stricker Homesite

Old Penitentiary
2445 Old Penitentiary Road
Boise, Idaho 83712-8254
Office: (208) 334-2844
Fax: (208) 334-3225

Idaho State Archives
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2620
Fax: (208) 334-2626

North Idaho Office
112 West 4th Street, Suite #7
Moscow, Idaho 83843
Office: (208) 882-1540
Fax: (208) 882-1763

January 28, 2016

Walter M. Steed
Walter M. Steed and Associates
218 Samaritan Lane
Moscow, ID 83843

Re: City of Pierce, Improvements to Wastewater and Water Infrastructure Systems
Idaho SHPO Review No.: 2015-1021

Dear Mr. Steed,

Thank you for the City of Pierce Inadvertent Discovery Plan for Archaeological Artifacts. It is important to have these types of documents when working with archaeologically sensitive areas. The Nez Perce Tribe has expressed interested in this project. According to Section 106 of the National Historic Preservation Act, project proponents must contact potential interested parties, like the Nez Perce Tribe. I have included the Tribal Historic Preservation Officer's contact information below:

Patrick Baird
Tribal Historic Preservation Officer/Archaeologist
Cultural Resource Program
Nez Perce Tribe
PO Box 365 Lapwai, ID 83540
208-621-3851

Contact Pat Baird at the Nez Perce Tribe regarding this project, for any potential concerns. If you have any questions, don't hesitate to contact me at jamee.fiore@ishs.idaho.gov or (208) 334-3861 x 101.

Thank you for consulting with us,

Jamee N. Fiore, MHP
Historic Preservation Review Officer
Idaho State Historic Preservation Office

Keri Hill

From: LaRoque, Noel - RD, Boise, ID <Noel.LaRoque@id.usda.gov>
Sent: Monday, February 08, 2016 3:02 PM
To: keithb@nezperce.org
Cc: Lynn, John - RD, Coeur d' Alene, ID; Keri Hill; Flesher, David - RD, Boise, ID; Ethan Morton; jamee.fiore@ishs.idaho.gov
Subject: RE: Pierce - Wastewater - RD Determination Letter

Pat,
Good afternoon. Thanks for your comments concerning the Pierce wastewater improvement project. Based on your comments Rural Development revisited the scope of work and location of the proposed work. We stand by our original determination and plan of action. An Inadvertent Discovery Plan will be required for the project.

The plan is currently being developed and RD will send you a copy for your review once it is completed.

Thanks,
Noel

From: Keith P Baird [mailto:keithb@nezperce.org]
Sent: Monday, January 25, 2016 12:15 PM
To: LaRoque, Noel - RD, Boise, ID <Noel.LaRoque@id.usda.gov>
Cc: Lynn, John - RD, Coeur d' Alene, ID <john.lynn@id.usda.gov>; Keri Hill <khill@mountainwtr.com>; Flesher, David - RD, Boise, ID <David.Flesher@id.usda.gov>; Ethan Morton <Ethan.Morton@ishs.idaho.gov>
Subject: RE: Pierce - Wastewater - RD Determination Letter

Hi Noel,
I appreciate the proponents and Rural Development discussing this project with the Tribe. Although the proposal does not cross any formally recorded historic properties, the City of Pierce has a high potential for both precontact and historic cultural resources.

Because the proposal will require new ground disturbance, i.e., the trenches will be wider than previously dug, I would like archaeological monitoring in addition to the inadvertent discovery plan. It is not sufficient to expect the equipment operator to look for buried archaeological deposits and report them to the agency. I would also like to review the inadvertent discovery plan before it is finalized.
Thanks, Pat

Patrick Baird
Tribal Historic Preservation Officer
Cultural Resource Program
Nez Perce Tribe
PO Box 365
Lapwai, ID 83540
208-621-3851 (o)
208-791-8610 (c)

From: LaRoque, Noel - RD, Boise, ID [mailto:Noel.LaRoque@id.usda.gov]
Sent: Thursday, January 7, 2016 2:51 PM
To: Keith P Baird <keithb@nezperce.org>

Cc: Lynn, John - RD, Coeur d' Alene, ID <john.lynn@id.usda.gov>; Flesher, David - RD, Boise, ID <David.Flesher@id.usda.gov>
Subject: Pierce - Wastewater - RD Determination Letter

Pat,
Good afternoon. RD has sent our determination letter to the SHPO for the City of Pierce wastewater improvement project. Attached is a letter informing your office of our determination. A hard copy will follow by mail.

Sincerely,
Noel

Noel J. LaRoque, P.E. | State Engineer, Architect & Environmental Coordinator
Rural Development
U.S. Department of Agriculture
9173 W. Barnes Dr., Suite A1 | Boise, ID 83709
Phone: 208.378.5619 | Fax: 855.505.1564
www.rd.usda.gov/id | "Committed to the Future of Rural Communities"

USDA

United States Department of Agriculture

January 7, 2016

Jamee N. Fiore, Historic Preservation Review Officer
Idaho State Historical Preservation Office
210 Main St.
Boise, ID 83702

Re: City of Pierce, Wastewater Improvements

Dear Ms. Fiore,

The City of Pierce has applied for USDA Rural Development funding to make improvements to their wastewater system. Your office responded in a letter to Walter Steed recommending the project would have no adverse effect on November 19, 2015. Your office also recommended an Inadvertent Discovery Plan for Archaeological Artifacts be created, with no requirement for orientation or monitoring. Development of the plan will be a requirement of RD funding.

Based on our understanding of the project and your offices comments, USDA Rural Development has determined the proposed project will have no effect on historical properties and by proceeding as discussed above we are in compliance with the National Historic Preservation Act.

If you have any questions or need additional information, please contact Noel LaRoque at (208) 378-5619.

Sincerely,

DAVID A. FLESHER
Director, Community Programs

Cc: John Lynn; USDA RD

Rural Development • Idaho State Office
9173 West Barnes Drive • Suite A1 • Boise, ID 83709
Voice (208) 378-5600 • Fax (208) 378-5643

USDA

United States Department of Agriculture

January 7, 2016

Patrick Baird
Tribal Historic Preservation Officer
Nez Perce Tribe
P.O. Box 365
Lapwai, ID 83540

Re: City of Pierce, Wastewater Improvements

Dear Mr. Baird,

The City of Peirce has applied for USDA Rural Development funding to make improvements to their wastewater system. The proposed project scope and project information is attached. The project is not located on the Nez Perce reservation. The City's consultant solicited preliminary comments from the State Historic Preservation Office (SHPO) and your office. The SHPO reviewed the project and made a recommendation (attached). The SHPO recommended the project will have no adverse effect, and recommended an inadvertent discovery plan be created without orientation or monitoring requirements.

Based on our review and understanding of the project, and the SHPO recommendations, USDA Rural Development has determined that the proposed project will have no effect on historical properties and by proceeding as discussed above we are in compliance with the National Historic Preservation Act.

Rural Development will require an Inadvertent Discovery Plan for Archaeological Artifacts be created for the project (excluding orientation and archaeological monitoring). The plan will require that your office is contacted if any archaeological artifacts are discovered.

If you have any questions or need additional information, please contact Noel LaRoque at (208) 378-5619.

Sincerely,

DAVID A. FLESHER
Director, Community Programs

Enclosures

Cc: John Lynn; USDA RD

Rural Development • Idaho State Office
9173 West Barnes Drive • Suite A1 • Boise, ID 83709
Voice (208) 378-5600 • Fax (208) 378-5643

www.history.idaho .gov

Idaho • State Historical SOCIETY

C.L. "Butch " Otter
Governor of Idaho

Janet Gallimore
Executive Director

Administration
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2682
Fax: (208) 334-2774

Membership and Fund Development
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2682
Fax: (208) 334-2774

Historical Museum and Education Programs
610 North Julia Davis Drive
Boise, Idaho 83702-7695
Office: (208) 334-2120
Fax: (208) 334-4059

State Historic Preservation Office and Historic Sites
Archeological Survey of Idaho
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3861
Fax: (208) 334-2775

Statewide Sites:
• Franklin Historic Site
• Pierce Courthouse
• Rock Creek Station and
• Stricker Homesite

Old Penitentiary
2445 Old Penitentiary Road
Boise, Idaho 83712-8254
Office: (208) 334-2844
Fax: (208) 334-3225

Idaho State Archives
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2620
Fax: (208) 334-2626

North Idaho Office
112 West 4th Street, Suite #7
Moscow, Idaho 83843
Office: (208) 882-1540
Fax: (208) 882-1763

November 19, 2015

Walter M. Steed
Walter M. Steed and Associates
218 Samaritan Lane
Moscow, ID 83843

Re: City of Pierce, Improvements to Wastewater and Water Infrastructure Systems
Idaho SHPO Review No.: 2015-1021

Dear Mr. Steed,

Thank you for the information regarding the proposed Community Development Block Grant project indicated above. The project proposes making improvements due to the aging facility and excess discharge of the current system. On October 23, 2015, the Idaho SHPO contacted your office to gather further information and clarification regarding the project actions. Since that time, we have reviewed the original project submission and additional information to form a determination of effect.

Based on the information provided, it is our recommendation that the project will have no adverse effect to the surrounding historic properties. Additionally, due to the sensitive archaeological area, an Inadvertent Discovery Plan for Archaeological Artifacts should be created. Included with this letter is a sample of an Inadvertent Discovery Plan for Archaeological Artifacts. This sample plan includes an orientation and archaeological monitor for the site. We do not believe an orientation or monitoring is necessary for this particular project. The sample plan should provide the minimum procedural information should archaeological artifacts be discovered.

In order to complete a Section 106 Review for this project, the Idaho SHPO will need a completed Inadvertent Discovery Plan for Archaeological Artifacts submitted to our office for this project.

If you have any questions, don't hesitate to contact me at jamee.fiore@ishs.idaho.gov or (208) 334-3861 x 101.

Thank you for consutling with us,

Jamee N. Fiore, MHP
Historic Preservation Review Officer
Idaho State Historic Preservation Office

Keri Hill

From: Keith P Baird <keithb@nezperce.org>
Sent: Wednesday, January 06, 2016 4:43 PM
To: Keri Hill
Subject: RE: Pierce Wastewater Project Review

I do not – I want to see the results of a cultural resource study.
Pat

From: Keri Hill [mailto:khill@mountainwtr.com]
Sent: Wednesday, January 6, 2016 2:50 PM
To: Keith P Baird <keithb@nezperce.org>
Subject: RE: Pierce Wastewater Project Review

Hi Pat,

Well that was the specific wording he used but there has not been a cultural resource study done. I spoke to Ethan on the phone about the project and he was okay with the proposed improvement locations. It is exactly like other projects in that it is repair and replacement of existing collection lines and all are within existing roadways. The only new excavation will be at the water treatment plant site and should be pretty clear on the figure in that packet. I'm not sure how to proceed with SHPO, I have not gotten their letter yet. Aside from them, do you have enough information to proceed?

Thanks,

Keri Hill | Mountain Waterworks

From: Keith P Baird [mailto:keithb@nezperce.org]
Sent: Wednesday, January 06, 2016 3:39 PM
To: Keri Hill
Subject: RE: Pierce Wastewater Project Review

Hi Keri,
Thanks for keeping the Tribe in the loop on this project. I guess I don't understand what the SHPO is agreeing is an no adverse effect - was there a cultural resource study that has been signed off on by Rural Development? A determination of effect is a federal agency action, not something SHPO should be doing. SHPO concurs with agency determinations.

If there has not been a cultural resource study, I don't know that the Nez Perce Tribe can agree with any determination.
Pat

From: Keri Hill [mailto:khill@mountainwtr.com]
Sent: Wednesday, January 6, 2016 2:00 PM
To: Keith P Baird <keithb@nezperce.org>
Subject: Pierce Wastewater Project Review

Good Afternoon,

Attached is the environmental review request from the City of Pierce for their pending wastewater project. We have consulted with SHPO and they are on board to issue a No Adverse Effect recommendation with the development and use of an inadvertant discovery plan. That plan is being developed and will be sent to SHPO for review and approval.

Please let me know if you need anything additional or have questions.

Cheers,

Keri Hill | Mountain Waterworks
ENVIRONMENTAL & FUNDING SPECIALIST
Boise – McCall – Coeur d'Alene
P 208.780.3993
C 208.550.2056
E khill@mountainwtr.com

www.history.idaho .gov

Idaho • State Historical SOCIETY

C.L. "Butch " Otter
Governor of Idaho

Janet Gallimore
Executive Director

Administration
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2682
Fax: (208) 334-2774

Membership and Fund Development
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2682
Fax: (208) 334-2774

Historical Museum and Education Programs
610 North Julia Davis Drive
Boise, Idaho 83702-7695
Office: (208) 334-2120
Fax: (208) 334-4059

State Historic Preservation Office and Historic Sites
Archeological Survey of Idaho
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3861
Fax: (208) 334-2775

Statewide Sites:
• Franklin Historic Site
• Pierce Courthouse
• Rock Creek Station and
• Stricker Homesite

Old Penitentiary
2445 Old Penitentiary Road
Boise, Idaho 83712-8254
Office: (208) 334-2844
Fax: (208) 334-3225

Idaho State Archives
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2620
Fax: (208) 334-2626

North Idaho Office
112 West 4th Street, Suite #7
Moscow, Idaho 83843
Office: (208) 882-1540
Fax: (208) 882-1763

January 28, 2016

Walter M. Steed
Walter M. Steed and Associates
218 Samaritan Lane
Moscow, ID 83843

Re: City of Pierce, Improvements to Wastewater and Water Infrastructure Systems
Idaho SHPO Review No.: 2015-1021

Dear Mr. Steed,

Thank you for the City of Pierce Inadvertent Discovery Plan for Archaeological Artifacts. It is important to have these types of documents when working with archaeologically sensitive areas. The Nez Perce Tribe has expressed interested in this project. According to Section 106 of the National Historic Preservation Act, project proponents must contact potential interested parties, like the Nez Perce Tribe. I have included the Tribal Historic Preservation Officer's contact information below:

Patrick Baird
Tribal Historic Preservation Officer/Archaeologist
Cultural Resource Program
Nez Perce Tribe
PO Box 365 Lapwai, ID 83540
208-621-3851

Contact Pat Baird at the Nez Perce Tribe regarding this project, for any potential concerns. If you have any questions, don't hesitate to contact me at jamee.fiore@ishs.idaho.gov or (208) 334-3861 x 101.

Thank you for consulting with us,

Jamee N. Fiore, MHP
Historic Preservation Review Officer
Idaho State Historic Preservation Office

MOUNTAIN WATERWORKS

PHONE LOG

Date: 1/5/16 **Time:** 10:15 AM

Project Name: Pierce WW

Project No.:

MWW Representative: KH

Communication Initiated By: KH

Name: Ethan Morton SHPO **Phone No.**

Subject: Enviro Review Questions

Comments:

SHPO confirmed that we would not be disturbing an old mining site. They will concur w/ the project & issue a 'no effect' with the condition that an inadvertant discovery plan is developed.

MWW Follow-up Required? ☐ YES ☒ NO

Follow-up Communication Required? ☐ YES ☒ NO

Additional Notes:

Walter Steed creating the plan.

Appendix F-4

Idaho Department of Environmental Quality Lewiston Regional Office

Keri Hill

From: Nicolas.Hiebert@deq.idaho.gov
Sent: Tuesday, February 16, 2016 8:40 AM
To: Keri Hill
Subject: RE: Pierce Environmental Review

Hi Keri,
We don't have any comments other than what was addressed in the draft facility plan.

Nicolas Hiebert, P.E.
Staff Engineer
Idaho Department of Environmental Quality

From: Keri Hill [mailto:khill@mountainwtr.com]
Sent: Friday, February 12, 2016 12:44 PM
To: Nicolas Hiebert
Subject: Pierce Environmental Review

Hi Nicholas,

I didn't see that I got a response from you on the Pierce Wastewater Project and thought I'd run this by you before we wrap up the environmental review. I sent it out right before the holidays so it serves me right that I didn't get very many responses!

Please call if you have any questions for if I've just missed your response!

Cheers,

Keri Hill | Mountain Waterworks
ENVIRONMENTAL & FUNDING SPECIALIST
Boise – McCall – Coeur d'Alene
P 208.780.3993
C 208.550.2056
E khill@mountainwtr.com

Appendix F-5

Idaho Department of Environmental Quality State Office

MEMO

TO:	KERI HILL, MOUNTAIN WATERWORKS
FROM:	MICHAEL STAMBULIS, DEPARTMENT OF ENVIRONMENTAL QUALITY GRANT AND LOAN PROGRAM
SUBJECT:	CITY OF PIERCE WASTEWATER SYSTEM IMPROVEMENTS PROJECTS – THREATENED/ENDANGERED SPECIES AND ESSENTIAL FISH HABITAT
DATE:	MARCH 22, 2016

The proposed project for the City of Pierce wastewater system improvements is located in Clearwater County.

The proposed wastewater improvement project consists of the following improvements:

- Camera survey and investigation of the entire collection system
- Manhole, sewer main, and service line repair or replacement
- Construction of a parallel 191,000 gallon per day wastewater treatment plant to meet regulatory redundancy requirements
- Repair and rehabilitation of the existing wastewater treatment plant
- Installation of a mechanical sludge dewatering system and removal of the existing sludge drying beds
- Construction of equalization storage and a concrete sedimentation basin to treat the water treatment plant filter backwash

The wastewater improvements are necessary for the City for Pierce (City) to achieve compliance with their current wastewater National Pollutant Discharge Elimination System (NPDES) permit as well as provide safe, reliable sewer services to residents and businesses within the City. In addition, the City has a second NPDES permit associated with the surface water treatment plant. The City does not consistently meet the requirements of this NPDES permit. Planned construction of an equalization basin and sedimentation basin will greatly improve water quality in the creek and satisfy NPDES and Idaho Department of Environmental Quality (DEQ) requirements.

Summary of Determinations

Based on the information presented in the following sections of this memorandum, DEQ has made the following impact determinations:

- The proposed project will have "**NO EFFECT**" on federally listed, proposed, or candidate species or critical habitat.
- The proposed project **"May Affect, but Is Not Likely to Adversely Affect"** Essential Fish Habitat.
- Up to 13 **migratory birds, including bald eagles, could potentially be affected by project activities**. You may wish to contact USFWS or Idaho Department of Fish and Game to ensure project activities do not impact migratory birds or bald eagles.

Endangered Species Act

DEQ utilized the Information Planning and Conservation (IPaC) Tool to aid in determining endangered and threatened species within the Area of Potential Effect (APE). The IPaC Tool can currently be accessed at the following internet address:

http://ecos.fws.gov/ipac/

The official species list obtained via the IPaC tool on February 1, 2016 indicated there were no federally listed, proposed, or candidate species, or critical habitat, located within the boundaries of the APE. The output from the IPaC tool is attached to this memorandum. Therefore, the proposed project will have "**NO EFFECT**" on federally listed, proposed, or candidate species or critical habitat.

Migratory Bird Act

Please note the resource list provided by the IPaC tool indicated up to 13 migratory birds, including bald eagles, could potentially be affected by project activities. Under authority of the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712), it is unlawful to take, kill, or possess migratory birds, their parts, nests, or eggs. "Take" is defined as any attempt or success at pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting. Migratory Bird Permits must be obtained through the United States Fish and Wildlife Service (USFWS) Migratory Bird Permit Office for any unavoidable violation of the MBTA.

Bald eagles are afforded protection under two separate Acts of Congress. In addition to the MBTA, the Eagle Protection Act (16 U.S.C. 668) provides specific protection for bald and golden eagles. The act makes it illegal to take, possess, sell, purchase, barter, or transport any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. "Take" includes pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing.

USFWS is responsible for implementing the MBTA of 1918 and Bald and Golden Eagle Protection Act of 1940. You may wish to contact USFWS at (208) 378-5256 or your local Idaho Department of Fish and Game office at (208) 799-5010 to ensure project activities do not impact migratory birds protected under the MBTA or bald eagles protected under the Bald and Golden Eagle Protection Act.

Essential Fish Habitat

The City's wastewater improvement project is located within Essential Fish Habitat (EFH) for **chinook salmon** (*Oncorhynchus tshawytscha*) and **coho salmon** (*Oncorhynchus kisutch*) as identified in the attached EFH map. "All those water bodies occupied or historically accessible" in the identified hydrologic units are considered EFH, according to 50 CFR 660.412.

DEQ provided the National Marine Fisheries Service (NMFS) a 30-day comment period to provide any comments or concerns about the proposed project and potential impacts to EFH. At the time of this memorandum, DEQ has not received a response from the NMFS.

The proposed project will include work within 300 feet of both Canal Creek and Orofino Creek. The proposed project does not include work in either creek channel and will improve water quality discharged to either creek. The following list of best management practices (BMPs) and mitigation measures are required to minimize or eliminate impacts to the EFH.

- Implement BMPs to avoid and minimize the introduction of sediment into the river, including the following list:
    - Erosion control wattles, sediment drift fences, or other barriers to sediment traveling off the project area
    - Equipment staging areas must be slanted away from the creeks to minimize sediment delivery to each creek
    - Any other practices that would minimize the possibility of sedimentation to avoid the possibility of adverse effects to chinook salmon and coho salmon
- Equipment and material staging areas should be located in areas requiring the least amount of new soil disturbance and outside topographic lows where water may concentrate during snowmelt or storm events.
- Equipment should be cleaned of all dirt, mud, seeds, and vegetative matter prior to arriving on site to reduce the risk of invasive species introduction. The same equipment should be cleaned again prior to leaving, if warranted.
- Fuel storage should only occur within staging areas, and refueling shall not occur within 150 feet of creeks. If fueling must occur within 150 feet, it will occur inside an impervious containment structure with a volumetric holding capacity equal to at least 110 percent of the fueling tank. Engine and hydraulic fluids will be monitored for leaks. Spill packs must be on hand for minor leaks/spills.
- Washing of tools and equipment will occur only within staging areas where there is no potential for rinsate to reach surface waters.
- Materials resulting from demolition or site preparation should be removed to an appropriate disposal site.
- If poured in place concrete is used ensure that measures are taken to prevent green concrete from entering either creek.

Because the project will not include work in the Orofino Creek or Canal Creek channels, and the BMPs and mitigation measures identified above are protective of the creeks, any potential effects are insignificant in size or discountable. **The project "May Affect, but Is Not Likely to Adversely Affect" Essential Fish Habitat**.

Appendix G

Inadvertent Discovery Plan

INADVERTENT DISCOVERY PLAN

CITY OF PIERCE

WASTEWATER SYSTEM IMPROVEMENT PROJECT

This Inadvertent Discovery Plan establishes protocols to be followed if potentially important archaeological materials or human remains are unearthed during the City of Pierce Wastewater System Improvement project activities. These procedures are intended to provide compliance with applicable federal and state laws, preserve significant archaeological resources, and ensure that any human remains are appropriately treated.

Policies

As a general policy, potentially important archaeological materials and human remains will be avoided during project construction activities and protected in place. If such materials or remains are inadvertently unearthed during project construction, procedures described below under "Archaeological Resources Discovery" or "Human Remains Discovery" will be immediately initiated to prevent further disturbance to the resource.

Collection of archaeological materials or human remains by construction personnel or others with access to the construction area is illegal and prohibited.

Archaeological materials or human remains can become targets for vandalism or illegal excavation activities. To preserve these resources, all information regarding known or suspected archaeological materials or human remains, particularly locations of such resources, must be held confidential and exempted from public disclosure per Idaho Statute 9-340E. Confidentiality of information includes, but is not limited to, restricting access to information to authorized persons with a need to know and preventing persons with such information from contacting the media or sharing the information with a third party or any member of the public. All information generated by this project regarding discoveries of archaeological materials or human remains will be turned over to the Idaho SHPO and, as appropriate, the Nez Perce THPO.

Human Remains Discovery

If a find is obviously human remains, the Project Manager should immediately notify the Clearwater County Sheriff's Office and the Clearwater County Coroner/Medical Examiner and request that the Coroner/Medical Examiner determine if the remains are forensic or non-forensic; following this contact the Project Manager should immediately notify the State Historic Preservation Office (SHPO) and the Nez Perce THPO of the discovery of human remains.

The area of the find should be immediately secured, to a distance of 30 feet at a minimum, and the human remains should be covered. No further disturbance of the remains should occur and vehicles, equipment, and unauthorized personnel will not be permitted to enter the discovery area. Although construction work in the immediate area of the find will not

resume until assessment and treatment has been completed, construction work may continue in other parts of the project. Due to the sensitive nature of such a find, human remains should never be left unattended.

If the Clearwater County Coroner/Medical Examiner determines the human remains to be non-forensic, the Nez Perce Tribe will take jurisdiction over the remains. No work will resume in the area of discovery until a treatment plan has been developed and written authorization has been received from the SHPO and the Nez Perce THPO.

Adopted by the City Council this 8th day of February, 2016.

City of Pierce

Mayor

Appendix H

Publication Affidavit, Council Minutes
and Project Presentation

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO)
) **ss.**
County of Clearwater)

CLOANN MCNALL

being first duly sworn in, on oath, deposes and says:

That I am and at all times herein mentioned have been a citizen of the United States and of the State of Idaho, over 21 years of age, and that I am not a party to nor interested in the above entitled proceeding; that I am and at all times herein mentioned have been the Editor, Foreman, of THE CLEARWATER TRIBUNE; that said Clearwater Tribune is a newspaper of general circulation, printed and published weekly at Orofino, in the County of Clearwater and State of Idaho; that the Clearwater Tribune has been continuously and uninterruptedly published in Clearwater County, Idaho, during the period of seventy-eight consecutive weeks prior to the first publication of attached copy of:

City of Pierce
NOTICE OF MEETING

of which the annexed is a full, true and correct printed copy, was published in the regular and entire issue of said newspaper, and not in any supplement thereof, for a period of two consecutive weeks, commencing on the 4th day of February 2016 and ending on the 11th day of February 2016.

CloAnn McNall

STATE OF IDAHO)
)
COUNTY OF CLEARWATER)

On this 11th day of February in the year of 2016, before me, a Notary Public, personally appeared

CloAnn McNall

known or identified to me to be the person whose name subscribed to the within instrument, and being by me duly sworn, declared that the statements therein are true, and acknowledged to me that she executed the same.

Marcie Stanton

Notary Public for Idaho
Resident at Orofino, Idaho
My commission expires: 5-16-20

MARCIE STANTON
NOTARY PUBLIC
STATE OF IDAHO

NOTICE OF MEETING

The City of Pierce will hold a public meeting on February 8, 2016 beginning at 7:00 PM at the City of Pierce City Hall 404 South Main Street, regarding the Draft Pierce Wastewater Facility Plan. The public is invited to review and comment on the Draft Facility Plan upon publication of this Notice. Copies are available for review at City Hall. Verbal comments may be given at the public meeting on February 8, 2016, and written comments may be received at Pierce City Hall, P.O. Box 356, Pierce, ID 83546 or via email to cityofpierce@qroidaho.net until February 26th, 2016 at 4pm.

This Notice can be provided in a format accessible to persons with disabilities and/or persons with limited English proficiency upon request.

2-4,11-16c

DRAFT Council Meeting Minutes
Pierce City Hall
404 South Main Street
Pierce, Idaho 83546

March 14, 2016

Present: Sparrow, Buckingham, Shaw, Root, Cowger, Miller & Marshall

Guests: John Stinson, Carl & Carmen Griffith, Robert Harrell, Christine Frei and Kelly Dahlquist.

Mayor Sparrow called the public hearing for the Waste Water Facility Plan to order @ 7:00 p.m.

Roll call was taken and the following members of the Governing Board were present: Mayor Sparrow, Council Member Shaw, Council Member Buckingham, Council Member Root & Council Member Cowger.

Clerk Marshall read aloud the title of Ordinance #304; Root made a motion to suspend the file reading, and just adopt the ordinance under suspension of the rules. Cowger 2nd, roll call vote was taken, ayes and in favor: Shaw, Buckingham, Root and Cowger.

Christine Frei and Kelly Dahlquist with Clearwater Economic Development Association are here to tell the council about CEDA and how they can assist the city; they are a non-profit, member driven agency, and have been in existence since 1967, and serve five (5) Counties. Their mission is to assist businesses and communities by acting as a conduit. Economic Revenue services are focused regionally. Grant writing and grant administration, business development activities, work not to duplicate services that CCGP does, but rather work together. They also have business financing programs.

Working on a community project plan that will assist cities in learning how to manage projects on their own; the City of Pierce can attend next year. This is a free training and we are encouraged to attend. They are also able to help cities to revise comp. plan.

Mayor Sparrow asked what is needed from us as far as the Community Projects training goes. Frei and Dahlquist said they basically want a commitment from the city, and time to attend the meetings throughout the year; they will check back this summer regarding the project training.

Robert Harrell is here regarding Spring Clean-up. It is going to be April 30th, from 9 A.M. to noon. He is asking the city if they are willing to donate the garbage truck and trash bags. Root made a motion to donate the truck and garbage bags, Cowger 2nd; carried.

Maintenance Supervisor Martin Miller reported that they replaced the circuit breaker on the upper and lower Trojan lights, and #3 pump at the Pines Booster Station was repaired and re-installed. Avista was here to troubleshoot the meter issue; Cochrell will be installing a new 400 amp service, as per Avista's recommendation. A new chlorine feed line at the waste water treatment plant was installed. Cold patch and trees and brush were cleaned on Canal. They unplugged the line between the contact tank and the detention tank, and unplugged the line on

Fromelt between the sewer. They will try and schedule a time for the prison crew, prior to spring clean-up. They got a quote for the door and seat on the sanitation truck from Idaho Truck. Root made a motion to approve the purchases, in the amount of $760.35; Cowger 2nd, carried. Miller also reported that the Idaho Transportation Department is having an auction in Lewiston this month, and was interested in a crack sealer and ¾ pick-up; he asked if the council would be interested in these items. Root said it would be worth taking a look if we can afford it. Root made a motion to approve the bidding on the following items: Crack Sealer and Pick-up, contingent on good condition. Cowger 2nd, carried.

Fire Chief Tyrel Shaw reported no calls this month, but there was one lift assist for the ambulance. The pagers did arrive, and they are waiting for the tone fire frequencies from the county, in order to program them. There is an offer of $5,000 for the Ford, if the city opts to sell it. Four members are first aid certified, and the academy is this weekend; there are six (6) people attending. A new radio was donated by Clearwater County for engine 81, and the old radio was donated to IDYCA for their use, to help keep them in contact with emergency services. Shaw confirmed that we are a city fire department. There is possible training that we can bring here to town, and is currently working on the details to see if it is possible. Grangemont Fire needs ICOM batteries, and we have five (5), he is considering donating them.

Mayor Sparrow spoke regarding the contract negotiations with Clearwater County Sheriff's Department. Last week, a revised contract for 6 months of service had been provided for the council's review; it entails 123 hours of services per month, for $13,500. In September, a new contract would be negotiated and signed. Cowger wants to ensure that the new 3 year contract states that there will be a reimbursement clause, for hours which aren't provided. There was discussion regarding the items to be included, which includes the city's ability to dictate the hours for coverages. Cowger made a motion to sign the 6 month Sheriff Contract; Buckingham 2nd. Ayes: 3, Nays: 1-Root.

Selection of Waste Water Alternatives-Cowger made a motion to approve the Alternative 3 to the Water Treatment Plant- sedimentation basin, Alternative 2 to the Collection System-repair/replace priority area, and Alternative 2 to the Waste Water Treatment Plant- with mechanical dewatering.

CCTV needs to be done on sections of pipe not already done, which will be approximately $5,500; there is a possibility this may be reimbursed. Root made a motion to proceed with CCTV, Buckingham 2nd; carried.

Root made a motion to hire the prison crew to sweep the streets and do misc. clean-up , Shaw 2nd; carried.

The City of Lewiston has offered to donate wildlands gear to the Pierce Fire Department. In order for them to donate, we must sign their resolution, which states that it is a donation and is given with no warranty. Root made a motion to approve Mayor Sparrow to sign, Buckingham 2nd; carried.

Idaho Rural Water Association workshop is March 30th at 9 AM.

CEDA

Root asked if we can find out from Avista who pays for lights out of city limits. Marshall will check with the Avista Billing Department.

Root made a motion to adjourn the meeting at 8:02; Cowger 2nd, carried.

_____

Trevor Sparrow, Mayor

ATTEST:

_____

Vianna Marshall, City Clerk

City of Pierce

2015 Wastewater Facility Plan Public Meeting

February 8, 2016

Stuart Hurley, P.E.

MOUNTAIN WATERWORKS

Presentation Agenda

- Background and Purpose
- Recent History of the Wastewater System
- Community Planning
- Collection System
  - Piping and Manholes
- Water Resource Recovery Facility (WRRF)
  - Performance
  - Deficiencies
  - Improvement Alternatives
- Drinking Water Treatment Facility
  - Alternatives for Backwash Water Treatment

Introduction

- The wastewater treatment plant has had problems meeting discharge permit standards.
- The water treatment backwash water has had issues meeting discharge permit standards and seepage testing of the pond has not been performed per the Idaho Department of Environmental Quality (IDEQ) requirements.




Background

- Mountain Waterworks was hired by Pierce to complete a wastewater facility planning study in response to enforcement action by DEQ and the EPA.
- The Facility Plan has received technical approval by DEQ.
- The next step is for Pierce to select one of the alternatives presented in the Facility Plan.
- In order to do that, we need public input.




Purpose

- Wastewater Facility Plan
  - Evaluate the existing wastewater collection and treatment system
  - Define service and treatment standards
  - Develop feasible alternatives to get the system from where it is now to where it needs to be to meet the service and treatment standards for the next 20 years




Facility Plan Components

- Existing Facility Condition and Performance
- City Population and Growth
- Respond to Current and Anticipated Future Permit Conditions
- Develop Alternatives
- Evaluate Alternatives with Public Input
- Select Alternative
- Environmental Information Document




WASTEWATER SYSTEM HISTORY

Collections System Overview

- Pierce Collection System Facilities:
  - Approximately 32,000 feet of 8-inch main
  - 4-inch service connections
  - 140 concrete manholes
  - Small lift station
- Backbone installed in 1955
  - Expanded in 1965 and 1990
- Repair project in 1988 to reduce infiltration and inflow (I/I)
- Judgetown Collection System Facilities:
  - 7400 feet of 8-inch main, 30 manholes
  - 14 active services and 21 abandoned services
  - Pierce contracted to provide treatment while Judgetown maintains its own collections system

Water Resource Recovery Facility (WRRF)

WRRF Overview

- Originally constructed in 1954, reconditioned in 1991
- Discharges to Orofino Creek
- Treatment capacity = 300,000 gallons per day
- Sludge drying beds
- Lacks full redundancy—plant cannot be taken offline for maintenance without compromising effluent quality

1991 Upgrade Project

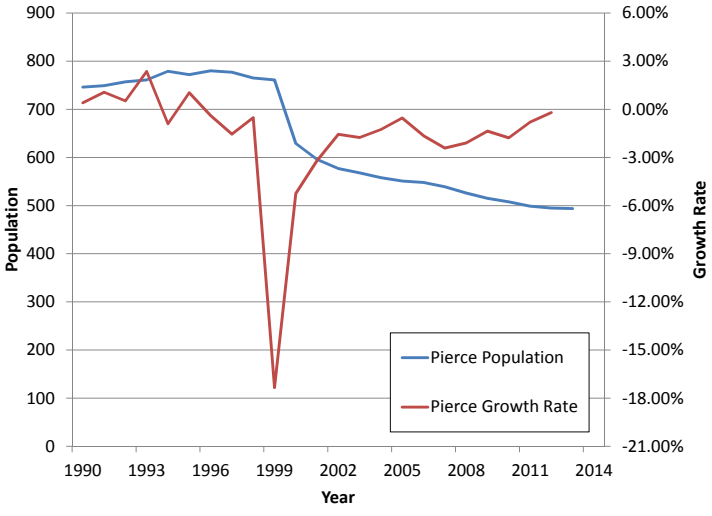
- Chlorine Contact Basin
  - Disinfection of effluent from WRRF
- Detention Storage Tank
  - Dechlorination prior to discharge
  - Additional clarification
  - Minimal level of redundancy—provides 12 hours of storage at design flow of 0.3 mgd
  - If mechanical plant is offline for extended period, only option is discharging chlorinated primary effluent to Orofino Creek

COMMUNITY PLANNING

Population Growth

- About 760 residents during 1990s
- Mill closure resulted in decline in population
- Population has stabilized in recent years at about 500 residents

Historic Population Trends

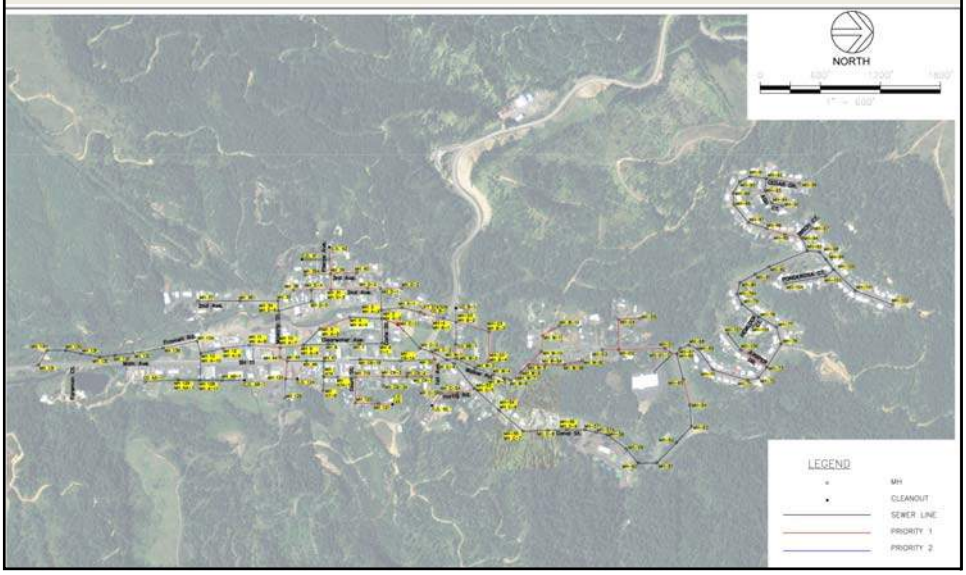


Anticipated Development

- Any?
- City plans to attract?
- Must define growth to ensure adequate treatment capacity is provided for a 20 year planning period.
- Consider 1% annual growth rate
- Current = 540 residents, including Judgetown
- Future = 660 at 1% growth per year over 20 years

COLLECTION SYSTEM IMPROVEMENTS

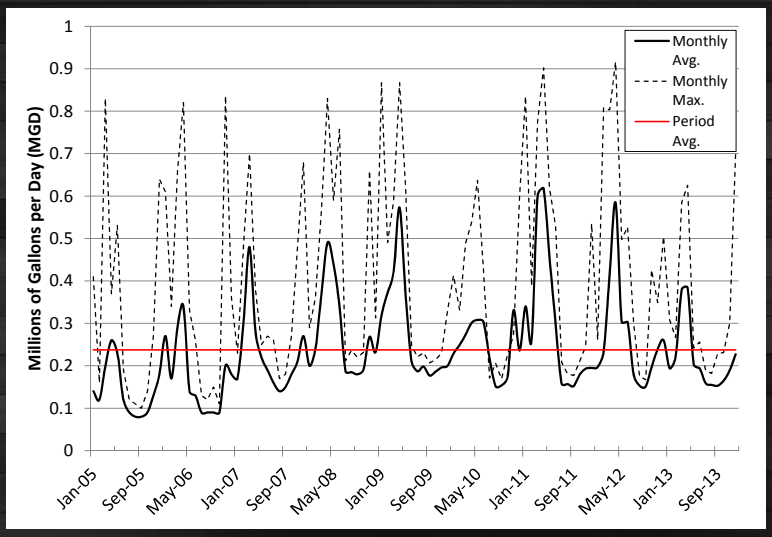
Collection System Site Plan



Existing Piping and Manholes

- Collection system has substantial problems with I/I
- Results in:
  - Hydraulic overloading of WRRF
  - Reduced treatment effectiveness
  - Difficulty maintaining adequate disinfection without violating permit for residual chlorine
- Action by City to date:
  - Service line repair
  - CCTV survey of 7500 feet of the collections system
  - Collections main and manhole repairs

Flow to WRRF



Actual vs. Expected Wastewater Flows

- 10 States Standards design flow = 100 gallons per person per day (gpcd); DEQ = 120 gpcd
  - Average flow = 480 gpcd
  - Average max month flow = 900 gpcd
  - Peak flow = 1830 gpcd
  - Pierce average max month flow equivalent to what would be expected from a town of 4500 residents
  - I/I reduction is recommended to minimize treatment cost

I/I Causing WRRF Effluent to Overflow Chlorine Contact Basin

Collections System Upgrades

- Alternative 1 – Take No Action
- Alternative 2 – Evaluate and Prioritize Repair/Replacement
  - Additional CCTV survey of collection system to identify additional problem areas
  - Priority System repair consisting of :
    - Manhole repair and replacement
    - Cured in place pipe repair (CIPP)
    - Sewer main replacement
    - Service repair/replacement

Alternative 2
Priority 1 and 2 Cost Estimate

Item	Estimated Cost
Additional Camera Survey (25,400 feet)	$53,000
New Manholes and Manhole Repairs	$216,000
CIPP Repairs and Manhole Lining	$152,500
New Sewer Main and Service Line Repairs	$637,500
Subtotal	$1,059,000
Contingency @ 20%	$211,800
Engineering, Legal, Admin @ 20%	$211,800
Total	**$1,482,600**
Total Cost per User (384 users)	$3,860.94
Annual Cost per User (20 year payment)	$193
Monthly Cost per User	$16.09

WATER RESOURCE RECLAMATION FACILITY (WRRF)

Facility Performance and Compliance

- Idaho code requires full redundancy at municipal treatment plants
  - Dual train or equivalent capable of handling peak flows without compromising treatment
  - Detention tank does not meet this requirement
- Current plant performs well when not hydraulically overloaded by I/I
  - Sludge handling is problematic as drying beds freeze during winter
  - Tanks may be in poor condition due to age of plant (rust out of interior wall and partitions)
  - Not possible to take plant offline for inspection
  - 24 years since plant last overhauled

Plant Performance Mar-14 – Jan 2015

Average Annual Flow (mgd)	0.28		
Max Month Flow (mgd)	0.62		
Max Daily Flow (mgd)	0.89		
	Average	Min	Percent Compliance
Percent Removal (BOD)	94.5%	66.7%	91%
Percent Removal (TSS)	94.1%	80.4%	91%
Effluent Quality	Average	Max	
BOD_5 (mg/L)	4.35	7.44	100%
BOD_5 (lbs/d)	12.63	44.40	91%
TSS (mg/L)	9.18	40.00	91%
TSS (lbs/d)	27.82	212.80	82%
	Average	Max	
E. coli (geometric mean)	42.85	231	91%
E. coli (Inst. max)	367.81	1986	82%
	Average	Max	
Chlorine (mg/L)	0.06	0.1	100%
Chlorine (lbs/d)	0.13	0.62	82%

Existing Plant Capacity

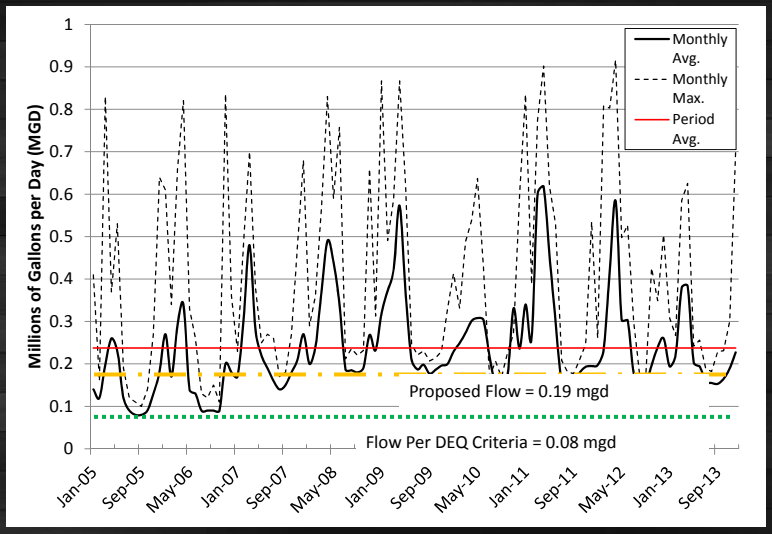
- Current plant capacity:
  - 0.3 mgd
- Average flow = 0.28 mgd, but can be as high as 0.9 mgd
- Overall: Existing plant has excess pollutant treatment capacity but inadequate hydraulic capacity due to high I/I

Preliminary Plant Design Criteria

	Flow (gpd)	BOD (mg/L)	TSS (mg/L)	NH_3-N (mg/L)
Average day	71,000	263.6	299.6	22.8
Max month	191,000	111.7	126.9	9.6

- Design flow = goal is 191,000 gpd for 670 people
  - Over twice the DEQ per capita flow
- Design flow value assumes 60% reduction in annual average max month flow can be achieved through I/I reduction
- Pollutant concentrations based on typical values for domestic wastewater

Flow to WRRF

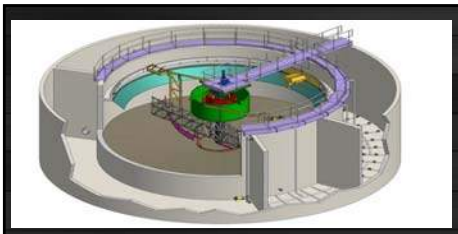


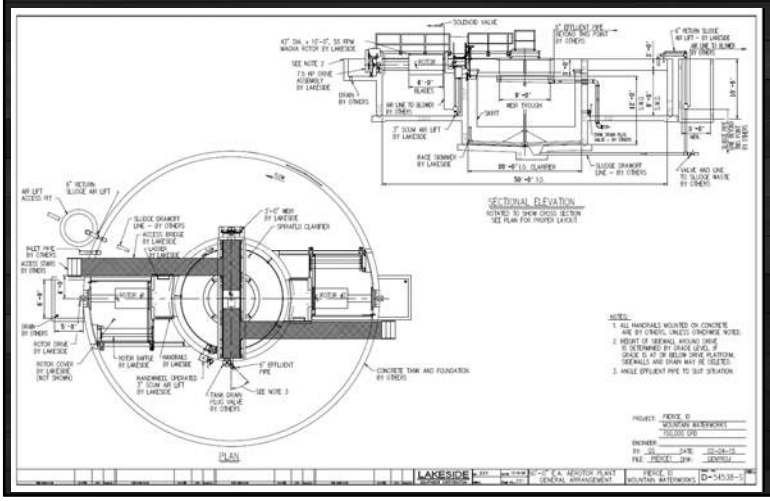
WRRF Improvement Alternatives

- Alternative 1 – No Action
- Alternative 2 - Repair existing plant and add an additional package plant
- Alternative 3 - Scrap existing plant and construct two identical package plants
  - Mechanical sludge dewatering could be implemented under both options
- Alternative 4 - Land application




Package Plants








WRRF Site Plan

Alternative 2 Overview

- Remove/scrap detention storage tank
- Construct new package plant at either:
  1. The detention tank site
  2. Adjacent to existing plant
- Add chemical dechlorination system
- Drain and inspect existing plant once new plant is online
  - Repair/replace components as needed based on inspection

Alternative 2 Preliminary Cost Estimate

Item	Estimated Cost
Plant Repairs and Upgrades	$100,000
Replace Blowers	$70,000
Add additional package plant (0.19 MGD)	$1,000,000
Concrete plant foundation	$102,400
Chemical dechlorination system	$20,000
Remove detention storage tank	$10,000
Electrical @ 10%	$130,200
Instrumentation @ 3%	$39,100
Yard piping @ 5%	$65,100
Site work @ 3%	$39,100
WRRF Improvements Subtotal	$1,575,900
Contingency @ 20%	$315,200
Engineering, Legal, Admin @ 20%	$315,200
Construction Total	**$2,206,300**
Total Cost per User (384 users)	$5,745.57
Annual Cost per User (20 year payment)	$287
Monthly Cost per User	$23.94

Alternative 3 Overview

- Remove/scrap detention storage tank and existing plant
- Construct two new package plants
- Add chemical dechlorination system

Alternative 3 Cost Estimate

Item	Estimated Cost
Scrap existing plant	$50,000
Two package plants (0.19 MGD each)	$1,900,000
Concrete plant foundation	$200,000
Chemical dechlorination system	$20,000
Remove detention storage tank	$10,000
Replace influent pumps	$25,000
Electrical @ 10%	$218,000
Instrumentation @ 3%	$65,400
Yard piping @ 5%	$109,000
Site work @ 3%	$65,400
WRRF Improvements Subtotal	$2,662,800
Contingency @ 20%	$532,600
Engineering, Legal, Admin @ 20%	$532,600
Project Total	**$3,728,000**
Total Cost per User (384 users)	$9,708.33
Annual Cost per User (20 year payment)	$485
Monthly Cost per User	$40.45

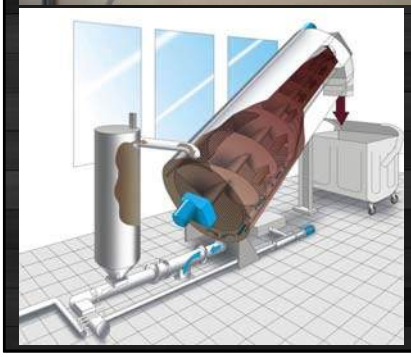
Existing Sludge Drying Beds

Sludge Drying Bed Alternatives

- Drying beds could be expanded or a mechanical dewatering system can be installed
- Existing beds could be redesigned to improve drainage and dewatering
  - Replace asphalt bed floor with sand and reconfigure drains
- Drying beds could be enclosed and heated/ventilated to allow year-round use and decrease odors
- Construct mechanical dewatering in new building

Dewatering Considerations

- Current system uses open-air sludge drying beds
- Beds freeze over during winter, reducing capacity
  - Forces operators to retain sludge in the plant until beds thaw and dry out
  - Reduced level of process control
  - Generates unpleasant odors
  - Large site footprint
- Mechanical screw press system would:
  - Eliminate problems associated with drying beds
  - Improve ease of sludge handling
- Could be included under both plant upgrade alternatives



Typical Screw Press System

http://www.huber-technology.com

Sludge Dewatering Cost Estimates

Mechanical Dewatering and Building	
Item	**Estimated Cost**
Screw press system	$335,000
Demo sludge drying beds	$5,000
Total	**$340,000**
Total Cost per User (384 users)	$885.42
Annual Cost per User (20 year payment)	$44.27
Monthly Cost per User	$3.69
Sludge Drying Bed Expansion	
Item	**Estimated Cost**
Sludge Drying Bed Expansion	$100,000
Yard piping @ 5%	$5,000
Site Work @ 5%	$5,000
Subtotal	$110,000
Contingency @ 10%	$11,000
Engineering, Legal, Admin @ 20%	$22,000
Total	**$143,000**
Total Cost per User (384 users)	$372.40
Annual Cost per User (20 year payment)	$19
Monthly Cost per User	$1.55

Land Application

- Not a substitute for mechanical treatment
- Could be cost-effective supplement to mechanical treatment if future NPDES permit contained stringent effluent limitations
- Land apply July – September; use mechanical plant October – June when flows are higher
- Would require City to:
  - Acquire suitable application site (e.g. a portion of the Jaype mill property)
  - Construct pipeline to site, pump station, site improvements, and detention storage

Land Application Cost Estimate

Item	Estimated Cost
Land purchase	$250,000
Pipeline installation (3.8 miles)	$1,000,000
Storage pond (1.8 MG)	$450,000
Pump station	$30,000
Land app site preparation	$100,000
Subtotal	$1,830,000
Contingency @ 20%	$366,000
Engineering, Legal, Admin @ 20%	$366,000
Total	**$2,562,000**
Total Cost per User (384 users)	$6,672
Annual Cost per User (20 year payment)	$334
Monthly Cost per User	$27.80

Comparison of WRRF Improvement Options

Option	Pros	Cons
Repair existing plant and add additional plant	Lowest cost	Existing plant condition unclear Repairs could be costly/extensive Plant is 61 years old and has finite working life Potentially more expensive to replace existing plant as a separate future project Operators would need to be familiar with two plant configurations
Replace both plants	New, modern system Greater ease of operation Long service life, repairs would not be required for extended period Provides long-term treatment solution	More expensive than Option 1
Mechanical dewatering	Reduce or eliminate odors Small site footprint Ease of operation Ease of sludge processing Year-round sludge processing Greater WRRF process control	More expensive than drying beds
Sludge drying beds	Simple to operate and construct Low cost Possible to redesign current beds for better dewatering Possible to enclose, heat, and ventilate beds to eliminate freezing	Odor production Large site footprint Freeze in winter without heating

Environmental Impacts

Environmental Consequence	Collection System Repairs	Repair Existing/Add New Plant	Replace Existing Plant/Add New Plant	Mechanical Dewatering	Sludge Drying Beds
Planning Area and Land Use	No Impact	No Impact	No Impact	No Impact	No Impact
Soil, Geology, and Topography	No Impact	No Impact	No Impact	No Impact	No Impact
Climate	No Impact	No Impact	No Impact	No Impact	No Impact
Population	No Impact	No Impact	No Impact	No Impact	No Impact
Economic Social Profile	Medium Impact	Medium Impact	High Impact—Expensive Option	Low Impact	Low Impact
Flood Plains	No Impact	No Impact	No Impact	No Impact	No Impact
Wetlands	No Impact	No Impact	No Impact	No Impact	No Impact
Wild and Scenic Rivers	No Impact	Will Meet NPDES Permit	Will Meet NPDES Permit	No Impact	No Impact
Cultural Resources	No Impact	No Impact	No Impact	No Impact	No Impact
Flora and Fauna	No Impact	No Impact	No Impact	No Impact	No Impact
Recreation and Open Space	No Impact	No Impact	No Impact	No Impact	No Impact
Agricultural Lands	No Impact	No Impact	No Impact	No Impact	No Impact
Air Quality and Noise	No Impact	No Impact	No Impact	No Impact	No Impact
Energy Consumption	No Impact	Medium Impact—Increased Energy Requirement	Medium Impact—Increased Energy Requirement	Low Impact—Increased Energy Requirement	No Impact
Water Quality, Quantity and Sole Source Aquifers	No Impact	Will Meet NPDES Permit	Will Meet NPDES Permit	No Impact	No Impact
Transportation	No Impact	No Impact	No Impact	No Impact	No Impact

Drinking Water Treatment Plant (WTP) Overview

- Plant uses sedimentation, sand filtration, and chlorination to remove contaminants
  - Contaminants removed from filters by flushing with clean water (backwashing)
  - Process generates chemical sludge regulated under separate NPDES permit (TSS and chlorine)
- Currently backwash water treatment is provided by a small unlined settling pond

Backwash Settling Pond

Backwash Settling Pond

- IDEQ requires lagoon seepage testing to prevent groundwater contamination
  - Discharge to groundwater is not permitted from current pond
  - Pond would not meet seepage requirements without a liner
- City must take action to ensure compliance with both IDEQ and EPA requirements

Treatment Pond Alternatives

1. No Action
2. Re-purpose the WRRF detention storage tank as a clarifier
3. Concrete sedimentation basin
4. Install a high rate clarifier
5. Lined lagoon

Water Treatment Plant Site

Detention Storage Tank

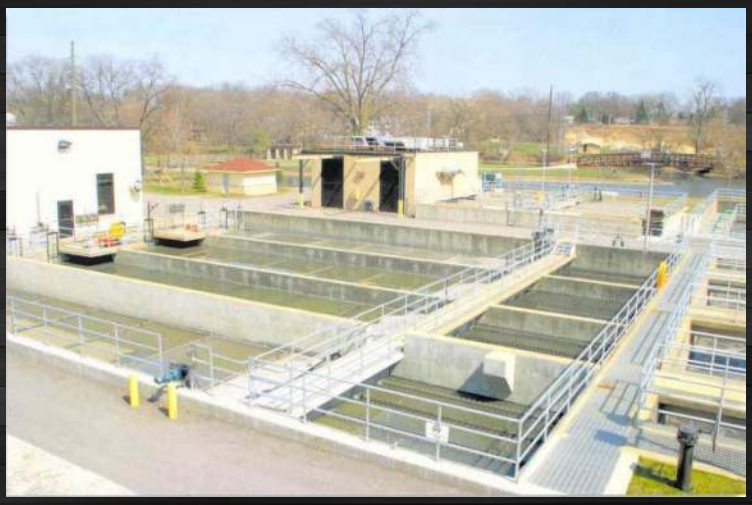
Alternative 2: Utilize Detention Storage Tank

- Option 1: Move tank to WTP site
  - Impractical due to WTP space constraints
- Option 2: Construct pipeline from WTP to WRRF and pump backwash water to detention tank
  - Sludge removal would be difficult
  - Pipeline construction expensive, but would require no major new structures
  - May be necessary to remove detention tank to construct second WRRF package plant
  - Updated NPDES permit required to discharge to Orofino Creek
  - Not a viable option

Alternative 3 Sedimentation Basins

- Construct concrete basin and detention tank for flow equalization
  - Capable of producing high quality effluent
  - Options for sludge removal
    - Mechanical collection and dewatering
    - Two basins used in alternating fashion
    - Install sump and pump sludge to drying beds
- Large site footprint

Typical Rectangular Sedimentation Basin



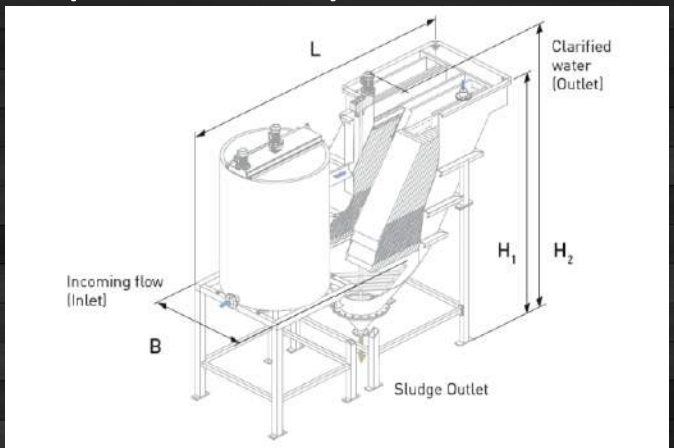
Alternative 3 Cost Estimate

Item	Estimated Cost
Bolted Steel Detention Tank (45,659 gallons)	$73,500
Submersible Mixer	$3,800
Concrete Sedimentation Basin (15,000 gallons)	$45,000
Pumps and Controls	$50,000
Chemical dechlorination system	$20,000
Sludge Dewatering Boxes	$10,000
Yard piping @ 5%	$10,100
Site work @ 3%	$6,100
Subtotal	$218,500
Contingency @ 20%	$43,700
Engineering, Legal, Admin @ 20%	$43,700
Total	**$305,900**
Total Cost per User (384 users)	$797
Annual Cost per User (20 year payment)	$40
Monthly Cost per User	$3.32

Alternative 4
High Rate Clarifier

- Package unit supplied by manufacturer
- Solids removed by passing water upward through an assembly of inclined plates
- Advantages:
  - Consistent, high quality effluent
  - Greater process control
  - Ease of sludge handling
  - Smallest site footprint
- Highest cost alternative

Option 4—Upflow Clarifier



Description	Symbol	Dimension	
Overall Length	L	15'-5"	4700 mm
Tank Height	H_1	12'-4"	3755 mm
Overall Height	H_2	15'-4"	4370 mm
Width	B	5'-3"	1588 mm

Alternative 4 Cost Estimate

Item	Estimated Cost
High Rate Clarifier	$150,000
Bolted Steel Detention Tank (45,659 gallons)	$73,500
Submersible Mixer	$3,800
20' x 30' Outbuilding and Installation	$90,000
Thickener	$13,000
Pumps and Controls	$50,000
Sludge Dewatering Boxes	$10,000
Chemical dechlorination system	$20,000
Yard piping @ 5%	$20,500
Site work @ 3%	$12,300
Subtotal	$443,100
Contingency @ 20%	$88,600
Engineering, Legal, Admin @ 20%	$88,600
Total	**$620,300**
Total Cost per User (384 users)	$1,615
Annual Cost per User (20 year payment)	$81
Monthly Cost per User	$6.73

Alternative 5
Lined Lagoon

- Enlarge existing pond and install synthetic geomembrane liners
- Provide inlet and outlet structures to minimize disturbance of settled sludge
- Sludge removal by pumping
  - Would be performed by contractor

Typical Lined Lagoon

Alternative 5 Cost Estimate

Item	Estimated Cost
Settling Pond Expansion & Lining	$200,000
Lot Purchase	$30,000
Pumps and Controls	$25,000
Chemical dechlorination system	$20,000
Site work @ 3%	$8,300
Yard piping @ 5%	$13,800
Subtotal	$297,100
Contingency @ 20%	$59,420
Engineering, Legal, Admin @ 20%	$59,420
Total	**$415,940**
Total Cost per User (384 users)	$1,083.18
Annual Cost per User (20 year payment)	$54
Monthly Cost per User	$4.51

Comparison of WTP BW Options

Alternative	Advantages	Disadvantages
Concrete Sedimentation Basin	City can remove/transport sludge to disposal Moderate level of process control Lowest capital cost	More expensive to operate than lagoons Less efficient sludge processing than high rate clarifier
High Rate Clarifier	High level of process control Most efficient sludge handling/removal City can remove/transport sludge to disposal	Highest capital cost Must be installed in heated building to prevent freezing
Lined Lagoons	Simple and inexpensive to operate Simple to construct	Sludge must be removed by contractor Seepage testing required every 10 years Large site footprint Additional land must be acquired Low level of process control

Environmental Impacts WTP BW Options

Environmental Consequence	Lined Lagoons	Concrete Sedimentation Basins	High Rate Clarification
Planning Area and Land Use	Moderate Impact	Low Impact	Low Impact
Soil, Geology, and Topography	Low Impact	No Impact	No Impact
Climate	No Impact	No Impact	No Impact
Population	No Impact	No Impact	No Impact
Economic Social Profile	Low Impact	Low Impact	High Impact—Expensive Option
Flood Plains	No Impact	No Impact	No Impact
Wetlands	No Impact	No Impact	No Impact
Wild and Scenic Rivers	Will Meet NPDES Permit	Will Meet NPDES Permit	Will Meet NPDES Permit
Cultural Resources	No Impact	No Impact	No Impact
Flora and Fauna	No Impact	No Impact	No Impact
Recreation and Open Space	No Impact	No Impact	No Impact
Agricultural Lands	No Impact	No Impact	No Impact
Air Quality and Noise	No Impact	No Impact	No Impact
Energy Consumption	Low Impact	Moderate Impact	Moderate Impact
Water Quality, Quantity and Sole Source Aquifers	Will Meet NPDES Permit	Will Meet NPDES Permit	Will Meet NPDES Permit
Transportation	No Impact	No Impact	No Impact

Recommendations

- Collection System Improvements
- Alternative 2 WRRF Upgrades
  - Construct 1 New Plant
- Mechanical Dewatering
- Alternative 3 WTP Upgrades
  - Sedimentation Basins

Financial Overview

- Rate Structure
  - Covers system operation and maintenance (current of approximately $32.30/month)
  - Includes debt service (future)
- Funding Package
  - Total Project approximately $4,600,000
  - Block Grant $500,000
  - USDA-RD Grant $2,400,000
  - USDA-RD Loan $1,700,000 (2.5% for 40 years)
  - Bond Amount $2,100,000
- End User Rate Estimated at $45-$50/month

2015 Facility Plan

- Status
  - Technically approved by IDEQ
- Next Steps
  - Present to the public for comments
  - City Council selection of project components
  - Prepare Environmental Information Document
  - Finalize Facility Plan and submit to IDEQ for final review
- Design and Construction
  - Block Grant likely successful
  - Funds become available in July for design
  - Anticipate summer 2017 beginning construction