

Chubbuck Water Facilities Planning Study - Environmental Information Document

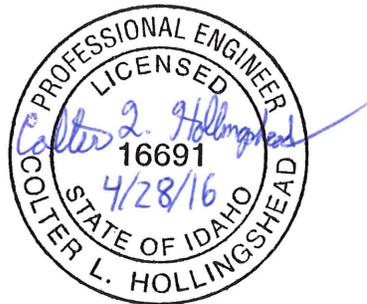
April 2016



KELLER
associates

CHUBBUCK, IDAHO

WATER FACILITIES PLANNING STUDY ENVIRONMENTAL INFORMATION DOCUMENT CITY OF CHUBBUCK, IDAHO



April, 2016
PROJECT NO. 210078



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Authorization

In August 2010, The City of Chubbuck contracted with Keller Associates to prepare a Water Facilities Planning Study (WFPS) and a Preliminary Engineering Report (PER) for the City to evaluate water distribution system and improvement options. This document contains the Environmental Information Document (EID) which was prepared in conjunction with the WFPS. The study was funded in part by a planning grant from the Idaho Department of Environmental Quality.

Chapter 1 Project Identification

1.1 General Information

Utility: City of Chubbuck, Idaho

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Keller Associates, Inc. Project No. 210078

Estimated Project Costs:

Water System Improvements

Well #6 Site Construction	\$327,000
Booster Station	\$1,733,000
1.5 MG Tank	\$2,672,000
New Well #6	\$845,000
Well #1 Rehabilitation	\$335,000
Fire Flow Improvements	\$1,429,000
Distribution Improvements	\$1,159,000

Estimated Total Cost: *\$8,500,000*

Funding: DEQ Funding Share *\$8,500,000*

Opinions of probable cost are based on Keller Associates’ perception of current conditions and reflect our opinion of probable costs at this time. Opinions of probable cost are subject to change as the project design matures. Keller Associates has no control over the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding, market conditions, and/or bidding practices or strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the costs presented herein.

1.2 User Costs

The City of Chubbuck currently has a minimum base charge of \$24.00 per month for residential connections and a volumetric charge of \$1.15 per one thousand gallons of metered water. With the proposed project the City does not plan to raise rates as they will repay the loan amount and additional O&M costs with capital reserves and their annual income.

A.	Current Average Monthly User Charge per EDU	\$	24.00
B.	Change in Operation & Maintenance Monthly Charge per EDU	\$	0.00
C.	Change in Debt Service Monthly Charge per EDU	\$	0.00
D.	Future Average Monthly User Charge per EDU (A+B+C)	\$	24.00

1.3 Abstract

This Environmental Information Document is an appended document to the City of Chubbuck Water Facility Planning Study (WFPS) completed by Keller Associates. The WFPS documents the potable water system evaluation, findings, and recommendations for improvements. This document presents the considered alternatives and addresses environmental issues that may be associated with the selected alternatives.

Chapter 2 Purpose and Need for Proposed Project

The Chubbuck Water System is well maintained and operates reliably. There are several deficiencies in the current state of the system as well as projected deficiencies that should be addressed to improve and maintain the quality delivery of water for the residents of the City of Chubbuck.

The purpose of the proposed project is to address existing or impending shortfalls in the City's water supply, storage and delivery systems. Deficits in storage and pumping delivery capacities already exist. IDAPA 58.01.08 requires that a water system be capable of providing Maximum Day Demand (MDD) plus Fire Flow Demand (FDD) in the event of the largest pump being out of service. The delivery shortfall prevents the system from providing fire protection and maximum day system demands. Potential ramifications of this deficiency range from a public health risk to loss of life. Improvements to the system must be made to meet these regulatory requirements and ensure public safety.

The Chubbuck water system has insufficient water supply and storage capacity to satisfy the regulatory minimums and assure adequate water supply in the event of failure of any well or pump. Current water supply deficiency is approximately 1,000 gpm and the 20-year projected water supply deficiency is approximately 4,000 gpm.

The current storage volume of 1.625 million gallons (MG) is insufficient to satisfy the peak demand periods under a well outage scenario. The current deficiency is 0.745 MG with a projected 20-year deficiency of 2.04 MG.

The system is fairly well interconnected for distribution efficiency. There are three major features restricting interconnection; the Hiline Canal, Interstate 86, and the Union Pacific Railroad line. Each of these has crossings that are adequate for the distribution of water.

There are several fire hydrants connected to 4-inch mains that need to be upgraded to larger mainline sizes to comply with regulations. Several locations with insufficient fire flow capacity were identified through the hydraulic model as presented in the WFPS.

The Bench Booster Pump Station operates near its operational peak capacity during high demand periods and requires upgrades to piping to eliminate intake concerns and increased capacity to address projected demand increases. The Bench Booster Pump Station will require additional capacity in the near future if population growth within its service area continues. Rehabilitation of Well #1 and its reconnection into the distribution system will alleviate peak demand issues at the booster pump station and future bench pressure zone service as well as increasing the capacity for the existing storage tanks to deliver water into the distribution system.

It is recommended that the City of Chubbuck implement water conservation measures and a leak detection program to help reduce the total volume of water that will be needed in the future. There were also several specific items for remedy listed on the most recent Sanitary Survey that have not yet been fully addressed.

Chapter 3 Alternatives Including the Preferred Alternative

The improvements for addressing system demand and system deficiencies that were considered in the planning process are presented in the following sections.

3.1 No Action Alternative

The City may choose to continue operating the water system as it is without addressing any of the deficiencies discussed in previous sections. The maximum day demand (4,950 gpm) currently exceeds the firm source capacity by 1,035 gpm. A shortfall in the water supply during peak demand periods could cause extremely low system pressures, increase the probability of system contamination, water outages, degraded water quality, and unhappy City residents. Also, taking no action may cause IDEQ to take enforcement actions up to and including civil enforcement. Such actions would involve prohibiting further connections until the deficiencies are corrected. Due to these issues, it is not prudent for the City to accept this alternative.

3.2 Regionalization

Regionalization of the Chubbuck water system has been considered in the past with the City of Pocatello. The Cities have agreed that it is in their best interests not to regionalize their potable water systems as neither City has an excess water supply.

3.3 Separate Irrigation System

Constructing a separate irrigation system may appear to be a viable option to significantly reduce the City's potable water consumption; however it would require the acquisition of surface water rights or existing groundwater irrigation rights. Currently, the only surface water reasonably accessible to the City of Chubbuck is the seasonal water in the Hiline Canal. This water way generally lies above the lower pressure zone of the City and would require pumping if it were used in the upper pressure zone. The largest challenge of a raw water irrigation system would be the acquisition of water rights from landowners along the canal.

Keller Associates recommends that further evaluation be conducted to determine the feasibility of supplying public open spaces with secondary water. Secondary irrigation is typically not reasonable for installation in all existing private homes as the amount of necessary infrastructure is quite extensive. A raw water irrigation system would require investment by private homeowners to convert and install new irrigation connections. With the required private modifications, the City would also require installation of RPZ type backflow protection for any connection deemed to present a potential cross-connection. As a measure to ensure the long-term viability of the City, any water rights that are associated with future annexations should be used by the development as a secondary irrigation system. In addition, new irrigation facilities for future subdivisions should be constructed to allow for connections to adjacent future developments. As previously mentioned, an additional separate study should be conducted if the City determines a secondary irrigation system is a

viable option they would like to pursue. Costs given in Section 3.7 are preliminary and can vary greatly depending on the size of the system and water rights available.

3.4 Water Supply

A water supply, storage, and distribution system must be designed to meet the peak hour demand (PHD) or the maximum day demand (MDD) with fire flow requirements, whichever is greater. The entire water volume can be delivered to the system directly from the source during peak demand or it can be delivered from a combination of supply sources and storage. In the case where the system is being supplied by the source and storage, PHD can be supplied from storage and the capacity of the sources can be reduced to MDD. This supply scenario reduces the demand capacity of the source due to the availability of water in storage. The City of Chubbuck currently operates their water system in this manner.

3.4.1 General Water Conservation

It is recommended that the City consider policy, public outreach, and capital improvement efforts to promote water conservation. A water conservation plan can typically be developed by City personnel or by a consultant. Promoting conservation efforts has the potential to extend the time before additional water supply sources are needed.

- Consider newspaper, websites, monthly newsletters, or radio advertisement to promote water conservation topics.
- Involve schools and students in promoting awareness such as video contests, radio ads, and other campaigns.
- Educate the general public regarding the net effect of small actions with specific examples of water conservation and water wastefulness. For example, quantify how much water is actually wasted through small household leaks over the course of a year, or the habit of running tap water to let it get cold as opposed to refrigerating drinking water.
- Host lawn care and landscaping classes identifying optimum water usage and highlighting consumption rate limits for typical lawns, gardens and shrubs. More water is not necessarily better when it comes to irrigating lawns.
- Establish a means for strictly regulating irrigation (citations for infractions)
- Provide both positive and negative incentives for water conservation to all customers focusing on % reduction.
- Require water saving fixtures on all new residential construction. Consider a retrofit water saving fixture program. Pipe insulation provides faster hot water and eliminates the need to run water to prevent pipes from freezing.

3.4.2 Add New Wells to the System

Based upon the analysis performed in the WFPS, additional water sources are currently needed based on MDD and firm source capacity. Current water usage in Chubbuck is below the Idaho average day demand (ADD) and relatively close to the United States ADD. The 2012 ADD in Chubbuck was 205 gpcd, the Idaho ADD is 263 gpcd, and the United States ADD is 180 gpcd. If the current ADD remains unchanged and the population grows as expected, the current average day flow rate will increase from 2,017 gpm to 3,566 gpm in 2035. The MDD will increase from 4,497 gpm to 7,952 gpm, which will be 4,037 gpm greater than the existing firm pumping capacity (3,915 gpm).

During the summer months, the City's available water rights exceeds the existing pumping capacities of wells No. 3, No. 4 and No. 5 by 3,613 gpm. The City could add 2 or 3 new wells (depending on size and location) to their system in the near future and not be required to purchase additional water rights, though it is advisable that the City continue to acquire additional water rights as budget and availability permit.

The City may consider either constructing new wells or acquiring existing private wells. An advantage of acquiring an existing well is that it removes some of the guesswork with respect to capacity and quality that are often taken into consideration when constructing a new well. However, one of the biggest challenges with acquiring an existing well is that it is not common to find a large diameter high producing private well that is constructed to existing potable water standards.

It is recommended that new well construction be equipped with the capability to add disinfection in the future; even if it is not currently used. The following are some of the factors that should be considered when determining new wells sites: water quality, elevation to water, effective yield, costs, and future growth areas. For Chubbuck, the primary area for the new wells would generally be to the north of the City.

3.4.3 Rehabilitate Well #1

Chubbuck Wells No. 1 and No. 2 are not currently being used by the City because of inefficiencies or water quality issues. Well No. 1 is in the same pressure zone as the Bench Booster Pump Station and is unable to pump under the head conditions created by the booster station. Previously Well No. 1 produced approximately 300-400 gpm and could be put back into service as a primary pump in the upper pressure zone if the pump and electrical components were upsized to overcome the head requirements. The well house has not been in service for several years and would likely require some minor improvements to become functional once again. In 1998 and 1999, Well No. 1 had measurable levels of arsenic and nitrate, but both were within their Maximum Contaminant Level (MCL) as reported by city staff.

If Well No. 1 were rehabilitated and brought back online the City could add capacity to the firm source capacity at a relatively low capital cost. Based on the existing population and projected growth, additional wells would still need to be drilled to meet IDEQ source

capacity requirements. However, bringing Well No. 1 online would reduce the capital \$/gallon cost.

3.4.4 Rehabilitate Well #2

Production at Well No. 2 was discontinued in 1996 and the well was disconnected from the water system due to perchloroethylene (PCE) levels greater than the MCL. Well No. 2 has a pumping capacity of 495 gpm and is planned to be placed back into service within the next year. Based on preliminary testing results there does not appear to be high contamination concerns. If there are problems with PCE, a potential treatment solution for PCE that could be implemented is an air stripping tower similar to the installation on Well No. 4. This aeration technology requires that the Henry's Law constant of PCE must be greater than 0.01 to release it from the water. PCE has a Henry's constant of 0.34. This alternative was considered previously in a 2007 Water Source Evaluation and Preliminary Design by Keller Associates and has additional design information included. City staff has reported that PCE concentrations at Well No. 4 have decreased and may no longer require the existing air stripping tower that is in place. It would be possible to relocate the air stripping tower from Well No. 4 to Well No. 2 if the City and IDEQ were comfortable with the pre-stripping contaminant levels that recorded at Well No. 4 over an appropriate time period.

3.5 Water Storage

Water storage is needed when the firm source supply does not meet the system demand. In addition, water storage typically provides water for fire protection, peak hour demands, and emergency needs. Because wells are expensive to construct compared to their relative capacity, storage helps meet PHD without the need to develop additional expensive water sources. Current and projected water demands in Chubbuck exceed the redundant source capacity. Two storage alternatives that address these issues are presented in Sections 3.5.1 and 3.5.2. The design requirements for either of the following alternatives would require similar tank sizes.

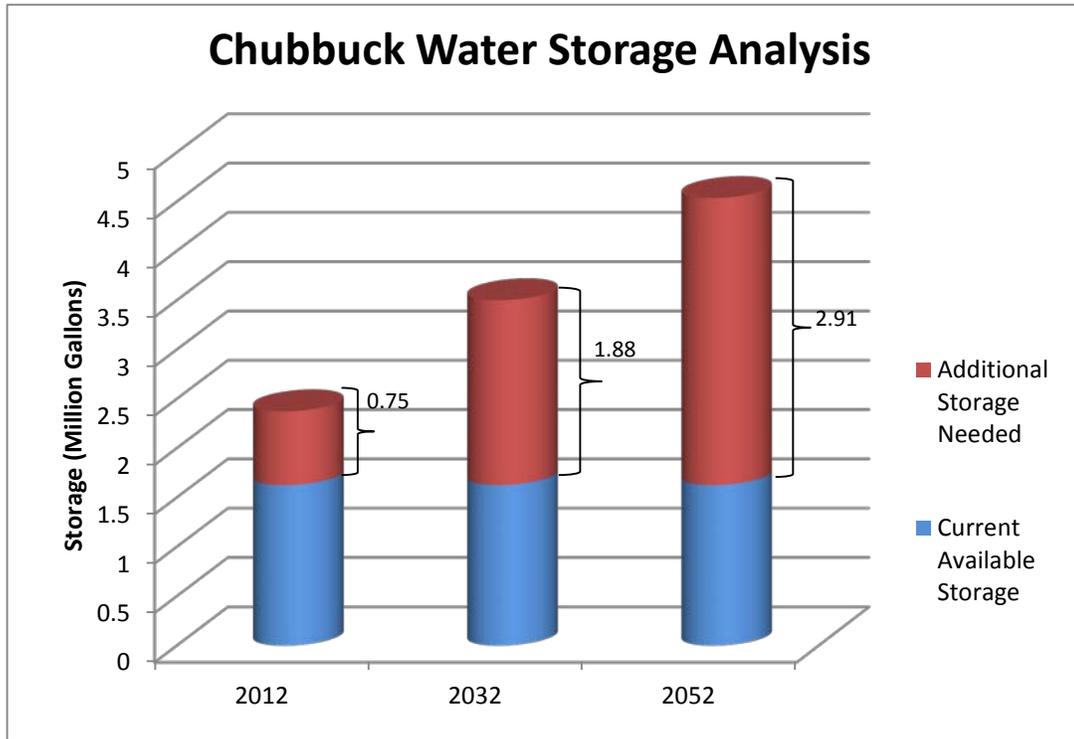
A new 2.0 MG tank would be needed to meet peak demand in 2035 if source capacity increased by 4,037 gpm to a MDD total available firm pumping capacity of 7,952 gpm. If the City determined they would like to plan through 2055, a 3.0 MG tank would be needed to meet peak demand if source capacity increased by a total of 6,836 gpm to a total available firm pumping capacity of 10,751 gpm (Figure 3-1). A new transmission line would be required as part of either alternative to connect the new tank to the existing system.

3.5.1 New Tank at Tank Farm

This alternative evaluates placing a new ground level tank to the North of the City's existing tank farm. The tank would preferably be placed near the same elevation as the existing tanks to maintain system pressures and hydraulic balance. The tank could be placed at a higher elevation if it were anticipated there would be significant additional growth to the east of Hiline Road to help minimize the need of significantly expanding the Bench Booster Station. One of the primary factors that would dictate the location of

the tank would be a landowner’s willingness to sell a portion of their property in the area of interest. The size of the tank required would depend on the capacity of the sources that are added to system over the next 20 years or 40 years as described in Section 3.4.5.

Figure 3-1 Water Storage Requirements



3.5.2 New Tank and Booster Pump Station

A new tank, booster pump station and well could be placed to the north of the City near the intersection of Siphon and Hawthorne. A site to the southwest of the intersection has been identified by the City as the preferred site location for Well #6. The well would supply the tank with water throughout the year and during high demand periods. A well near the tank site eliminates the need for two separate transmission lines running into and out of the tank. The new well would be operated based on tank level through SCADA controls and the booster pump station would draw water directly from the tank to maintain system pressures in the City. The booster pump station would likely be installed with VFD’s to increase efficiency and maintain a set system pressure similar to the existing Bench booster station. The size of the tank required would be based upon source capacity as described in Section 3.4.

3.6 Distribution/Transmission System

As discussed in Chapter 3 of the WFPS, the design life of distribution and transmission pipelines is 25 to 50 years. A majority of the existing water system is in relatively good condition. The City will continue to replace water lines as problems present themselves. There are several lines around the City that are buried at shallow depths and are prone to

freezing. As these lines reach the end of their useful lives they should be buried to a proper depth to prevent freezing. Future developments within the City will need to incorporate appropriate looping and interconnectivity to prevent problems associated with dead end lines.

The Bench Booster Station is nearing its capacity during peak demand periods. As the service area for the station continues to grow, some upgrades will need to be made to meet demand requirements.

In addition to the transmission and distribution system reaching the end of its usable life, many of the water lines utilized by the City are undersized and do not support required fire flows or future growth. According to the *Idaho Rules for Drinking Water Systems (IDAPA 58.01.08)* fire hydrants must be connected to a minimum pipeline diameter of 6 inches. There are known fire hydrants located in Chubbuck that are connected to 4 inch lines and are not capable of supplying the fire flows required by the International Fire Code. These undersized hydrants are located on the following streets: Scott (1), Easy (1), Joy (2), Sheppard (2), Spraker (1) and Sorrel (1). These issues are addressed in Section 3.6.1.

3.6.1 Fire Flow Improvements

A MDD plus fire flow scenario was run in a computerized water model for the City of Chubbuck to determine areas within the City not meeting fire flow requirements. Table 3-1 and Table 3-2 show possible improvements that could be made to the water system to improve fire flows in the deficient areas. The commercial/industrial flow requirements were modeled at 3,500 gpm while the residential requirement was 1,500 gpm. The improvements shown below improved a large majority of the deficient areas with the exception of a few service lines. The water model should be updated as development within the City occurs.

Table 3-1 Residential Fire Flow Improvements

Residential Fire Flow 1,500 gpm				
Street	New Pipe Diameter (in)	Approx. Length (ft.)	Type of Installation	Probable Cost
Sorrel Street	8	1,000	Parallel 4"	\$ 150,000
Briscoe Road	8	400	New	\$ 60,000
Lisa Street	8	1,200	New	\$ 179,000
Stuart Avenue	8	1,200	Parallel 6"	\$ 179,000
Rose Street	8	1,100	Parallel 6"	\$ 165,000
Eric to Moose	8	1,200	New	\$ 180,000
Teton Street	8	900	New	\$ 135,000
Kymball Street	8	670	New	\$ 100,000
Canterbury Street	8	670	New	\$ 100,000
Afton Street	8	900	New	\$ 135,000
Tree Valley Road	8	700	Parallel 6"	\$ 105,000
Sacajawea Drive	8	530	Parallel 6"	\$ 79,000

Table 3-2 Commercial Fire Flow Improvements

Commercial Fire Flow 3,500 gpm				
Street	New Pipe Diameter (in)	Approx. Length (ft.)	Type of Installation	Probable Cost
Pine Ridge Mall North	12	900	Parallel 8"	\$ 147,000
Pine Ridge Mall East	8	270	Parallel 6"	\$ 41,000
Victor Avenue	8	320	Parallel 6"	\$ 48,000
Linden/Parrish Area	8	3,500	Parallel 6" & New	\$ 520,000
Linden/Parrish Area	10	450	New	\$ 70,000
Behind Walmart	8	1,200	Parallel 6"	\$ 180,000
Laurel Drive to Burkley	8	2,400	Parallel 6" & New	\$ 360,000
Yellowstone to Southside	12	900	New	\$ 147,000

3.6.2 Annual Improvements

The City's existing waterlines are in relatively good condition, but lines should be replaced or budgeted for and the money saved every year to keep up with aging infrastructure. Waterline replacement should be coordinated with planned roadway improvements to minimize costs and differential base settlement. Table 3-3 summarizes the suggested annual improvements within Chubbuck.

Table 3-3 Annual Improvements

Annual Improvements				
Street	New Pipe Diameter (in)	Approx. Length (ft.)	Location	Probable Cost
Yellowstone Ave.	12	5,230	Chubbuck Rd. to Siphon Rd.	\$ 853,000
Hiline Rd.	16	500	North of Chubbuck Rd.	\$ 96,000
Hawthorne Rd.	12	4,000	James Ave. to Lariat Ln.	\$ 652,000
Cole St.	12	4,000	Chubbuck Rd. to Dell Rd.	\$ 652,000
Siphon Rd.	16	1,100	Yellowstone to Eve St.	\$ 209,000
Chubbuck Rd.	12	600	Burley Dr. to Branson Dr.	\$ 97,000
Yellowstone Ave.	12	2,000	Bullock St. to Quinn Rd.	\$ 327,000
Ponderosa St.	12	2,000	Chubbuck Rd. to Pinewood Ave.	\$ 327,000
Pleasant View Rd.	12	2,470	Chubbuck Rd. to Mark Dr.	\$ 403,000
Burnside Ave.	12	1,300	West of Yellowstone Rd.	\$ 213,000

3.6.3 Bench Booster Station Improvements

The pumps and controls at the Bench Booster Station could be upgraded to accommodate the increased demands in the upper pressure zone. Upgrades to the existing booster station would likely include 2 new pump(s) and associated motors, VFD's, electrical control panels, wiring, pump pad modifications, reprogramming and rewiring of the generator control panel/ATS (pending motor size), and potentially replacing some suction and discharge piping to and from the pumps. In the short term, the City may be able to adjust the control programming of the station to maintain a constant discharge pressure when flows approach 2,000 gpm.

3.6.4 Additional Bench Booster Station

An alternative to increasing the capacity of the existing booster station would be to construct an additional bench booster station to the north of the existing station. As the area between Hiline and I-15 continues to grow to the north, the 8" distribution lines from the existing booster station will begin to restrict the flow during high demand periods. An additional booster station could be interconnected into the existing upper pressure zone or developed as an independent zone. Some of the advantages of connecting into the existing zone would be additional redundancy for the existing station, water withdraw from the tank transmission line would be at a separate location, and efficiencies of the stations are increased due to decreased system headloss. The setup and operation of a new booster station would likely be similar to the existing booster with the largest variable being the design capacity to accommodate future population growth in the upper zone.

3.6.5 Transmission Line to Tank

In the past it has been noted there are large pressure fluctuations near the booster station because of the piping configuration as mentioned in Section 5.2.9. There is currently only one bidirectional 16" line that runs from the Bench Booster Station to the tanks. It is recommended that the 24" line that runs from Hiline to the suction side of the booster station be extended under the interstate to the tank farm. The 24" diameter could potentially be reduced prior to boring the interstate depending on future tank farm plans. If the City decided additional storage would be added to the system somewhere besides the existing tank farm the new line size could be reduced. The new transmission line would tee into the 24" line to the east of the 12" suction line going into the booster station, run east under the interstate, and tee in near the intersection of the 20" and 8" lines coming from the tanks at the tank farm.

3.7 The Low-Cost Alternative

Cost estimates include construction and materials (actual material costs plus installation, 5% for utility work, and 5% for site work), engineering service during design (8%), engineering services during bidding (1%), engineering services during construction (6%), funding/legal fees (5%), contractor overhead and profit (15%), and a concept level factor (20%) to account

for constantly fluctuating construction costs. A summary of estimated costs can be found in Table 3-4.

Opinions of probable cost are based on Keller Associates perception of the current conditions and reflect our opinion of probable cost at the time. Opinions of probable cost are subject to change as the project design matures. The design costs for each of the alternatives have been estimated to reflect the anticipated conditions for each of the various project alternatives. Keller Associates has no control over the cost of labor materials, equipment, services provided by others, contractor’s methods of determining prices, competitive bidding, market conditions, and/or bidding practices or strategies. Keller Associates cannot and does not guarantee the proposals, bids, or actual construction costs will not vary from the costs presented herein.

Table 3-4 Summary of Conceptual Cost Estimates

Alternative	Estimated Cost
Alternative 1 – New Wells	\$22,895,000
Alternative 2 – 40-year Equalization Storage	\$15,436,000
Alternative 3 – Well/Tank/BPS Packages	\$17,563,000
Alternative 4 – Wells with Conservation	\$13,720,000
Alternative 5 – 40-year Equalization Storage with Conservation	\$12,739,000
Alternative 6 – Well/Tank/BPS Packages with Conservation	\$10,145,000
Alternative B1 – Rehabilitate Well No. 1 & Upsize Bench BPS	\$480,000
Alternative B2 – Upsize Well No. 1 and Bench BPS	\$622,000
Alternative B3 – Install New Pump in Bench BPS	\$207,000
Alternative B4 – New Bench BPS	\$635,000

As shown in Table 3-4, Alternative 6 – Well/Tank/BPS Packages with Conservation would be the low-cost alternative. This addresses the short term deficiencies for the City along with some distribution system improvements. Implementing a conservation plan would only extend the time before additional water supply sources are needed.

3.8 Relevant Environmental Impacts

The area of potential impact includes the City of Chubbuck and land in the surrounding area. Land around Chubbuck consists of rural farmlands, roads, and homes or other structures. These areas have been previously disturbed by farming, development or other human activities. Any additional environmental impacts in these areas will likely be limited to erosion typical of construction zones. Table 3-5 below shows the expected alternative impacts associated with the implementation of each proposed alternative.

3.8.1 No Action Alternative

The no action alternative does nothing to address the deficiencies with the water system. Due to the current water supply deficit, implementation of this alternative may result in the prohibition of further connections. Furthermore, this alternative may pose a public

health risk due to the loss of pressure that may result with increased demand. No other environmental impacts are expected to be incurred by this alternative.

3.8.2 Regionalization

Neither the City of Chubbuck nor the City of Pocatello have an excess water supply. Regionalizing these two systems would not solve any of the issues associated with the Chubbuck system. Instead, the water deficit could result in the prevention of future water connections and public health risks similar to the no action alternative. There could be a negligible increase in erosion at the construction zones where the two systems would be joined. No other environmental impacts are expected to be incurred by this alternative.

3.8.3 Separate Irrigation System

A temporary increase in erosion near construction activities could result with this alternative. No other adverse environmental impacts are expected by the implementation of this alternative.

3.8.4 Water Supply

3.8.4.1 Water Conservation

No adverse environmental impacts are expected by the implementation of this alternative. It is expected that this alternative would decrease water and power usage by encouraging conservation practices.

3.8.4.2 Additional Wells

A temporary increase in erosion near construction activities could result with this alternative. Additional water withdrawals from the aquifer and energy usage would occur.

3.8.4.3 Well #1 Rehabilitation

If the well were placed back into service additional water withdrawals and increased energy usage would result. No other impacts are expected with this alternative.

3.8.4.4 Well #2 Rehabilitation

If the well were placed back into service additional water withdrawals and increased energy usage would result. No other impacts are expected with this alternative.

3.8.5 Water Storage

3.8.5.1 New Tank at Tank Farm

This proposal suggests building a new water storage tank north of the existing tank farm. This land is composed primarily of natural vegetation. The vegetation would need to be cleared to provide a tank site and access to the tank site. These roads and the construction process would result in a temporary increase in erosion. No other adverse impacts would be expected from the implementation of this alternative.

3.8.5.2 New Tank and Booster Pump Station

This alternative would increase energy consumption through the addition booster pump station. A temporary increase in erosion would occur during construction.

3.8.6 Distribution/Transmission System

3.8.6.1 Fire Flow Improvements

A temporary increase in erosion would occur during construction.

3.8.6.2 Annual Improvements

This alternative will likely decrease water loss by replacing aging pipe. An associated decrease in energy usage would also occur. A temporary increase in erosion would occur during construction.

3.8.6.3 Bench Booster Station Improvements

Additional energy consumption would occur with the installation of another pump at the booster station.

3.8.6.4 Additional Bench Booster Station

A temporary increase in erosion would occur during construction. Increased energy usage would occur with the additional pump.

3.8.6.5 Transmission Line to Tank

A temporary increase in erosion would occur during construction.

Table 3-5 Environmental Screening Matrix

		Proposed Alternatives													
		No Action Alternative	Regionalization	Separate Irrigation System	Water Supply				Water Storage		Distribution/Transmission System				
					Water Conservation	Additional Wells	Well #1 Rehabilitation	Well #2 Rehabilitation	New Elevated Tank	New Tank and Booster Pump Station	Fire Flow Improvements	Annual Improvements	Bench Booster Station Improvements	Additional Bench Booster Station	Transmission Line to Tank
Environmental Criteria	Physical Aspects	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Climate	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Population, Economic, and Social Profile	May prohibit further connections	May prohibit further connections	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Land Use	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	Convert Natural Vegetation to Tank Site	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Floodplain Development	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Wetlands and Water Quality	No Adverse Impact	No Adverse Impact	No Adverse Impact	Decreases Water Use	Withdraws Additional Water From Aquifer	Withdraws Additional Water From Aquifer	Withdraws Additional Water From Aquifer	No Adverse Impact	No Adverse Impact	No Adverse Impact	Decrease Water Consumption	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Wild & Scenic Rivers	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Cultural Resources	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Flora and Fauna	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Recreation/Open Space	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Agricultural Lands	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Air Quality	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
	Energy	No Adverse Impact	No Adverse Impact	No Adverse Impact	Decreases Energy Use	Additional Energy Consumption for Pumping	Additional Energy Consumption for Pumping	Additional Energy Consumption for Pumping	No Adverse Impact	Additional Energy Consumption for Pumping	No Adverse Impact	Will Likely Decrease Energy Use	Additional Energy Consumption for Pumping	Additional Energy Consumption for Pumping	No Adverse Impact
	Regionalization	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact
Public Health	Potential for Public Health Endangerment	Potential for Public Health Endangerment	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	No Adverse Impact	

3.9 Selected Alternative Project Information

Each option and improvement presented in this chapter was ranked based upon current Idaho Rules for Drinking Water Systems violations, potential Idaho Rules for Drinking Water Systems violations, cost, public sentiment, maintenance needs, and feedback from City leaders and employees. It was necessary to evaluate the proposed improvements based upon all of these criteria to ensure that the needs of the City's water system are met as a whole rather than simply addressing one aspect of the water system's needs.

Alternative 6 improvements are vital to reliable operation of the water system and should be addressed immediately. Implementing a new Well #6, booster station and tank near the Hawthorne and Siphon Intersection will improve the long term and short term operation of the system. If any of the existing wells (Well #3, #4 or #5) fail during peak demand periods, the City would be faced with serious water shortages and IDEQ violations (i.e. minimum pressure violations). Water produced by this new well will be treated with a sodium hypochlorite injection system. Keller Associates is currently beginning the design of these projects now with construction beginning in 2016 and finishing in 2017. Figure 3-2 provides the locations of the proposed improvements. The improvements include:

- Secure land for well site (target 1.5 acres)
- Drill Well #6 (target >2,200 gpm)
- New booster pump station
- New storage tank (1.5 million gallons)
- Transmission line to distribution system
- Distribution system upgrades
- Fire flow distribution improvements
- Well #1 rehabilitation

Priority 2 improvements are those improvements that are going to be necessary for Chubbuck to meet future demands and regulatory requirements. However, the City is currently operating effectively without these improvements. By placing these improvements as Priority 2 improvements, Chubbuck will have the time necessary to increase user rates, pursue grant funding, and educate the public on the need for these projects. Priority 2 improvement locations will be determined in the future as the project progresses. Priority 2 improvements include the following:

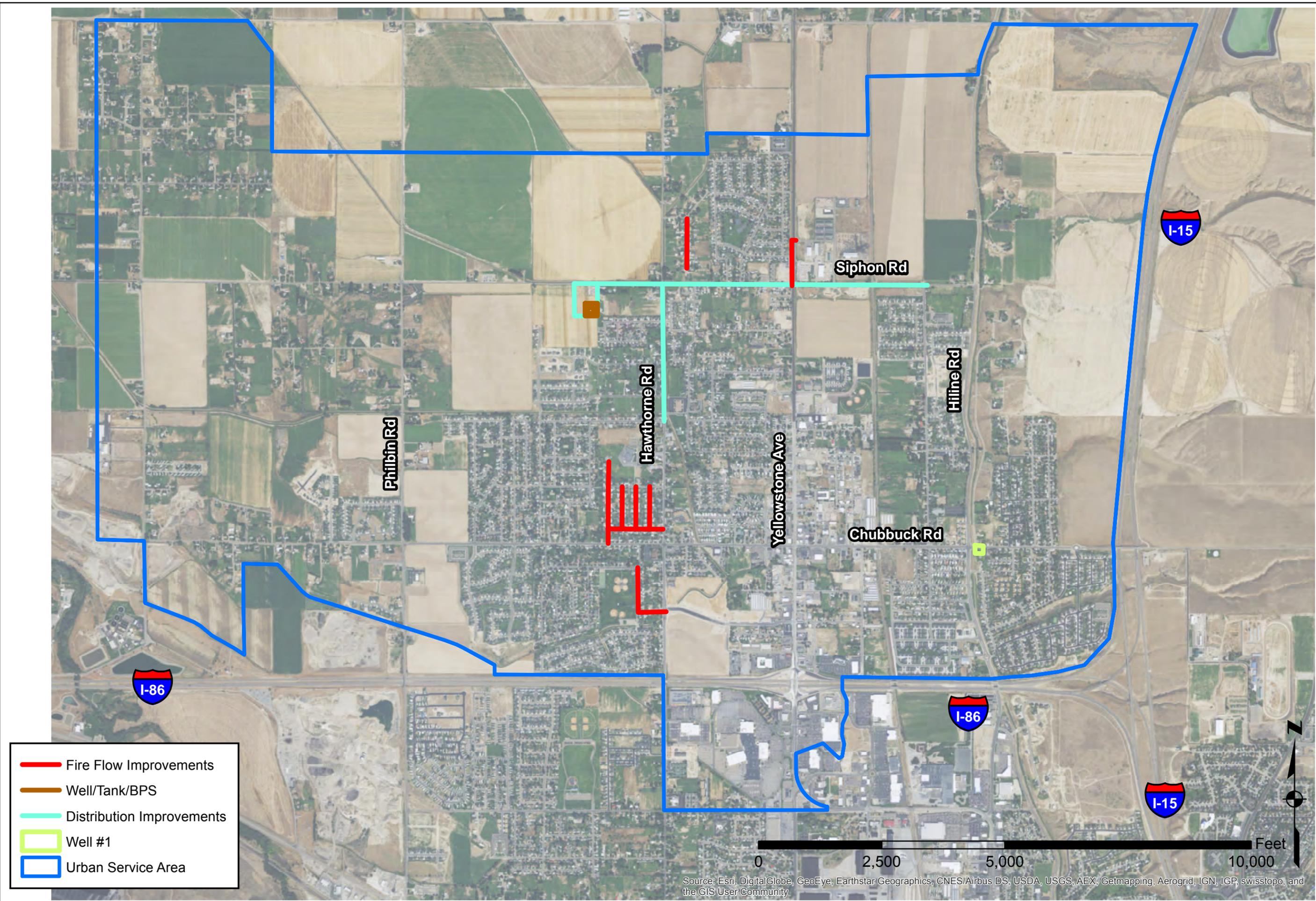
- Extend service area to the west and north
 - i. Phased approach determined by water service opportunities
 - ii. Goal of water service availability to area where sewer service is available
- Construct 1 new well (Well #7), tank and booster station with a pumping capacity of at least 2,000 gpm and a sodium hypochlorite disinfection system

- Transmission line connecting the Well #7 to the distribution system
- Water Conservation Program

Design and construction of Priority 2 improvements is recommended to begin as system demands require. The environmental impacts of the selected alternative are provided in the following chapters.

3.10 Justification of the Chosen Alternative

As discussed in Section 3.7, the low cost alternative (Alternative 6) addressed the short term supply, transmission and storage deficiencies within the water distribution system.



- Fire Flow Improvements
- Well/Tank/BPS
- Distribution Improvements
- Well #1
- Urban Service Area

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PROJECT NO. 215044-000	
FILENAME Fig. 3-2	
305 N. 3rd Avenue Pocatello, ID 83201 208.238.2146 www.kellerassociates.com	
KELLER ASSOCIATES	
City of Chubbuck	
Water System Improvements	Proposed Improvements
FIGURE NO. 3-2	

Chapter 4 Affected Environment

4.1 Proposed Project Planning Area

The planning area of this study is defined by the established Impact Area of the City of Chubbuck. The City is bounded on the south by the City of Pocatello. The City's potential growth area is limited to the north and west by the Fort Hall Indian Reservation, to the south by Pocatello, and to the east by a designated area of impact for the City of Pocatello. The planning area encompasses approximately 11,047 acres. Figure 4-1 shows the extent of the proposed planning area for this study. The proposed project planning area (PPPA) and the Area of Potential Effect (APE) are the same.

4.1.1 Topography

The topography of the planning area is relatively flat on the valley floor. Rio Vista Road lies on the western side of the planning area. Moving east from Rio Vista Road, the topography increases in elevation until the eastern edge of the planning area is reached near Interstate 15.

4.1.2 Population Distribution

The population of Chubbuck from the 2010 Census was 13,922 (US Census Bureau, 2010). Dominant industries for employment in Chubbuck are educational services and health care at 24% and retail trade at 14.8%. Ten percent of the population was over the age of 65 (US Census Bureau, 2010).

In Chubbuck, the growth rate from 2000 to 2010 averaged approximately 3.7% per year. Growth in Chubbuck has significantly exceeded the growth of surrounding communities. The Bannock Transportation Planning Organization reported a population projection for the City of Chubbuck as part of the Pocatello/Chubbuck Urbanized Area Metropolitan Transportation Plan. This population projection was used in the WFPS to predict future population growth for the City of Chubbuck.

4.1.3 Commerce and Industry

Chubbuck supports a number of commercial and industrial companies. Most of the commercial development is in the downtown area. These businesses are primarily located along Yellowstone Avenue. There is also some industrial activity occurring on the far western side of the PPPA.

4.2 Major Project Features

4.2.1 Proposed Distribution Lines (fire flow requirements)

As discussed in Section 3.6.1, a number of distribution lines need to be upgraded to provide adequate fire flow. The suggested improvements, including the lengths and

diameters, are shown in Table 3-1 and Table 3-2. A majority of these pipelines will be constructed of C-900 PVC pipe.

4.2.2 Proposed Wells

One well (#6) will be constructed as part of Priority 1 improvements. The targeted flow rate of Well #6 is approximately 2,200 gpm. A second well (#7) with a targeted flow rate of 2,000 gpm is included in Priority 2 improvements. Each well will be located inside of a secured well house which will house the well, the pump, and the necessary treatment equipment.

Well #6 will be drilled near the intersection of Hawthorne and Siphon Road. As discussed in the WFPS, a perchloroethylene (PCE) plume exists in the groundwater on the south and south east portion of the PPPA. Additionally, water flow to the far north and north-west of the PPPA is contaminated with ethylene dibromide (EDB). A zone expected to contain clean potable water exists between the contamination plume on the north and the plume on the south. Test wells for Well #6 and Well #7 did not appear to have contamination issues.

4.2.3 Proposed Storage Facilities

Priority 1 improvements include the construction of a new 1.5 MG water storage tank. This tank is planned to be built at the same location as the new Well #6.

4.2.4 Proposed Pumping Station

A new pumping station is included in Priority 1 improvements. The new pumping station will be built on the same site as the new water storage facility.

4.3 Flow Projections

Chubbuck's population in the year 2012 was estimated by the US Census Bureau to be 14,140 (U.S. Census Bureau, 2010). The U.S. Census Bureau reported the 2010 population in Chubbuck to be 13,922. Growth rate for the planning area was based on the Bannock Transportation Planning Organization's (BTPO) projection for the City of Chubbuck through 2035. Based on the BTPO's projection through 2035, the City's population was projected at an annual rate of 1.6% through 2052.

Per capita demands were determined using water production records for the year 2012. Projections of 20-year and 40-year demands are as shown in Table 4-1. Water demands are anticipated to increase over time according to the values presented in the Water Facilities Planning Study and reproduced here in Table 4-1.

Table 4-1 Future Flow Projections

Estimated Year	Estimated Population	Max Day Demand (gpm)	Firm Supply (gpm)	Reserve Supply (gpm)
2012	14,166	4,497	3,915	-582
2015	15,593	4,950	3,915	-1,035
2020	18,111	5,750	3,915	-1,835
2035	25,048	7,952	3,915	-4,037
2055	33,866	10,751	3,915	-6,836

* gpm = gallons per minute

A large majority of the maximum day system demand stems from residential usage, particularly irrigation of residential properties in the early morning hours on Mondays and Wednesdays.

4.4 Operation & Maintenance Changes

Operation and maintenance of the system includes a new well, water tank, and a booster pump station. Introduction of the new well, tank, and booster pump station will expand on the existing O&M procedures already in place.

4.5 Characterization of Environmental Features

4.5.1 Physical Aspects

The physical aspects of the project area do not present issues for the project and the project does not impact any physical aspects of the area.

There are no unusual or unique geological features in the vicinity that might be affected by or that would affect the project. There are not any hazardous areas that might affect construction or development. The PPPA elevation map shown in Figure 4-2 illustrates the topography of the area with elevations ranging from 4,420 to 4,675 feet above sea level. The highest elevations are on the east side of the City near the existing tank farm with the elevations dropping towards the western boundary.

The main soil units in and around the City include Bahem silt loam, Broxon silt loam, Broncho cobbly loam, and Pocatello silt loam (USDA-NRCS, 2014). These soils are typical for the Chubbuck area and will require the same construction techniques typically used to effectively manage excavation, dewatering, steel corrosion, and sloughing issues that may arise. A soil report can be found in Appendix D.

The USGS reports a low probability (8-10%) for a significant earthquake (magnitude greater than 6.0) in the next 50 years as shown in the following Figure 4-3 (USGS, 2009). The proposed project area is marked by an inverted triangle located north of the Pocatello square marker. Any necessary precautions arising from this probability will be addressed in the design phase of the project.

The earthquake hazard for the project area is relatively low according to the US Geological Survey probability model as shown in Figure 4-3.

4.5.2 Climate

Climate does not present issues for the project.

The climate summary (March 1939 through March 2013) for Pocatello (the closest station with similar weather) shows average minimum temperatures ranging from 15°F to 53°F and average maximum temperatures ranging from 32°F to 88°F (WRCC, 2012). Over this same period, the total annual precipitation averaged about 11.54 inches with a snowfall average of 40.3 inches. The coldest month is January, the wettest month is May; the hottest and driest month is July.

Based on Western Regional Climate Center wind data (June 1996 to 2006) for Pocatello, Idaho Airport (about 6 miles west of Chubbuck) the average wind speed is about 10 mph. The windiest time of the year is typically between March and June. Climate summaries prepared by the Western Regional Climate Center have been included in Appendix D.

The project will include a water tank, well house and booster station that will not have air emissions that would require consideration with respect to unusual or special meteorological constraints.

4.5.3 Population

For the purposes of this project, the BTPO's population growth projection served as the planning basis. The growth scenario used resulted in 2035 and 2055 populations of 25,048 and 33,866 people respectively. Populations for other years can be found in Table 4-1 of this document.

The estimated population of 25,048 in the year 2035 represents an increase of nearly 9,455 people over the 20-year life of the project. Based on 2010 census data for Chubbuck an average of 2.92 people per household would result in an additional 3,238 EDUs by 2035. DEQ considers a change greater than 500 residential units over the life of the project as excessive growth.

The Idaho Division of Financial Management projects the population growth from 2013 to 2016 at a geometrically average rate of 1.45 % (IDFM, 2011). The project planning growth rate is greater than the state's rate by an average annual of 2.45%.

4.5.4 Economics and Social Profile

The benefits and costs are distributed equally. It is anticipated that the local populace will not be affected by this project as monthly rates are not anticipated to increase as a result of this project.

Based on 2010 census data, about 90.7% of Chubbuck's population 25 years old and over have graduated high school or higher (compared to 88.5% for the State overall) (U.S. Census Bureau, 2010). The median household and per capita incomes in Chubbuck were \$46,570 and \$19,241, respectively. About 12.2% of the people were below the poverty level, lower than both Idaho overall (14.3%) and the US average of 14.3%. Based on growth rates projected by the BTPO, the estimated population for the year 2032 in Chubbuck would be 23,901.

Specific landowners will not appreciably gain or lose more than other landowners due to the location of the proposed improvements. It is anticipated that these improvements will have little impact on the land values in the City of Chubbuck. No poor or disadvantaged groups will be adversely impacted; conversely, all citizens would benefit equally by the improved delivery capabilities of the water distribution system.

4.5.5 Land Use

The new well, booster pump station, and water storage tank are going to be built upon ground that was previously farmed. The farm field is platted for a future subdivision. The lot was chosen and purchased from the farmer because of the advantageous location. A 1.5-acre lot was purchased for the construction of the new facilities. The proposed improvements are compatible with local land use plans.

Inhabited areas will not be adversely impacted by the project site. The expansion of the water distribution system, as proposed in Priority 2 improvements, will occur as service opportunities become available. Expansion will occur as a result of development. Development will not occur because of the expansion of the distribution system. The project will not contribute to changes in land use associated with recreation, mining, or other large industrial or energy development.

Other proposed improvements will not affect the land use as the proposed waterline installations and replacements will be placed in existing utility corridors.

4.5.6 Floodplain Development

The entire APE lies outside of the 100-year flood event floodplain. There are a few floodplains that are adjacent to the APE, but they will not affect the project (Federal Emergency Management Agency, 2015). A floodplain map can be found in Figure 4-4.

4.5.7 Wetlands

Areas classified as wetlands in the planning area include areas along the Portneuf River, and a couple of small areas in the northwest section of the planning area. Approximately 106 acres are classified as riverine, 21 acres as freshwater forested/shrub wetlands, 3.7 acres as freshwater emergent and 0.6 acres as freshwater ponds (US Fish and Wildlife Service, 2010). Figure 4-5 shows the extent of areas classified as wetlands in the planning area. No work is planned in these areas classified as wetlands.

There are a couple of canals that traverse the City of Chubbuck that are considered Waters of the US. These canals are planned to be crossed as part of the distribution and fire flow improvements portion of the project.

A letter was sent to the Army Corps of Engineers requesting comments regarding a further review. James Joyner determined that the project may involve work requiring Department of Army authorization, specifically installation of replacement lines crossing Tyhee Wasteway and the Dubois Lateral Canals. Upon further conversations with Mr. Joyner, he conveyed that the installation of these replacement waterlines across the canals would be covered in the existing utility permit and further reporting/notifying would not be required. Canal bores would not be required since these are manmade canals with no preexisting conditions. The response letter can be found in Appendix C.

4.5.8 Wild & Scenic Rivers

The Wild & Scenic Rivers Act enacted by Congress on October 2, 1968 states that certain selected rivers of the Nation which, with their immediate environments, possess outstanding remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations (U.S. Congress, 1968).

None of the nearby rivers, including the Portneuf River, Snake River, nor any of their tributaries, are listed as Wild and Scenic Rivers as shown in Figure 4-6 (National Wild and Scenic Rivers System, 2015).

4.5.9 Cultural Resources

According to the Idaho State Historic Preservation Office, there are no historic properties identified within the project area and no additional investigations are recommended.

The Shoshone-Bannock and Shoshone-Paiute Tribes were contacted with a project scoping letter by DEQ. The Tribes did not respond to the scoping letters that can be found in Appendix C.

As is common practice, the tribes will be contacted immediately if Native American Artifacts or human remains are encountered during construction. A Stop Work Order

will be in place if any undisturbed ground is found to be of historical interest, and a monitor from the tribe be will be notified.

There are not anticipated to be any cultural resources on the proposed project site. However, a letter requesting a review of any potential impacts to existing tribal cultural resources was sent to the State Historic Preservation Officer. The response letter stated that no additional investigations were needed and the project can proceed as planned. The response can be found in Appendix C.

4.5.10 Flora and Fauna

The Department of Environmental Quality used the Environmental Conservation Online System Information Planning and Conservation website to determine if any threatened species would be impacted by the project. The USFWS response indicated that there are no federally listed, proposed or candidate species within the project area. A copy of the response is included in Appendix C.

No threatened or endangered species were listed in the proposed project area by the US Fish and Wildlife Service.

4.5.11 Recreation and Open Space

A small parcel of land will be converted from farmland for the construction of Priority 1 improvements. It is anticipated that after construction is completed a large portion of the parcel will be converted into a park area. Additional Priority 1 improvements involving fire flow and distribution line construction will be located in previously disturbed utility corridors within the City.

A site location for well construction associated with Priority 2 improvements has not yet been finalized, but is suspected to be along Hiline Road and to the north of Siphon Road. However, the construction of the well is planned to occur on property that the City purchases specifically for the purpose of constructing the well. Depending on the location of the well site and the desires of the City, it may be possible to use the well house site as a recreational area. The associated transmission line will be built on previously existing utility corridors.

The project will not eliminate or modify recreational open space, parks, or areas of recognized scenic or recreational value. It is possible that the proposed project will be combined with a planned City park and walking paths.

4.5.12 Agricultural Lands

Nearly 68 percent of the non-urban land in the Chubbuck planning area is designated by the NRCS as prime farmland if irrigated. (Of the primary soil units listed in the NRCS report, the, Bahem silt loam, Broxon silt loam, and McDole-McDole variant complex are considered prime farmland if irrigated.)

Priority 2 improvements include extending the water distribution system to the west and north. While some of the lands in these areas are considered prime farm lands, the distribution system will be extended only to meet demand. Therefore, the distribution system will only be extended to areas where development has already taken place. The project will not directly or indirectly encourage the irreversible conversion of environmentally significant agricultural lands to other uses.

Construction of Priority 1 improvements will include the conversion of approximately 1.5 acres of prime farmland into land designated for utility use. Trudy Pink with the NRCS District also reviewed the project and found that the after completion the Farmland Conversion Impact Rating, no additional evaluations were needed. The impact rating of 139.5 was below the threshold of 160, which meant further assessments were not required as shown in Appendix C.

4.5.13 Air Quality

There will not be any direct air emissions from the project that will not meet federal and state emission standards contained in the air quality state implementation plan, nor will the project violate national ambient air quality standards in an attainment area. The proposed improvements are not anticipated to cause odor or noise nuisance problems. Correspondence was sent to the regional DEQ office requesting further review which the response stated that control of fugitive dust was needed during all phases of the project, construction debris and other wastes must be properly disposed of in a landfill, and that odor be controlled during and after the completion of the final project.

4.5.14 Energy

The proposed booster station and wells are anticipated to use high efficiency motors and VFD's to help reduce energy consumption. Priority 1 improvements involve increasing the water production capacity and the pumping capacity of the system, which may result in an increased use of energy as the population and system demands continue to grow. The Water Conservation Program included in Priority 2 will work to decrease water usage and, therefore, energy consumption.

4.5.15 Regionalization

Regionalization of the Chubbuck water system has been considered in the past with the City of Pocatello. The Cities have agreed that it is in their best interests not to regionalize their potable water systems as neither City has an excess of water supply.

There are no jurisdictional disputes between Pocatello and Chubbuck. There are no inter-municipal agreements.

4.5.16 Water Quality

Priority 1 improvements will not adversely affect the quality of the ground water. Chubbuck and the associated improvements are located over the Eastern Snake River Plain Aquifer, which is a sole source aquifer (EPA Region 10, 2008). After installation of

the improvements, the water lines are not anticipated to interact with groundwater or surface water in the project's area of potential impact. Commonly required and permit required practices to prevent water quality degradation during construction are outlined in Chapter 6 of this report.

As the City's population grows additional ground water will be withdrawn from the aquifer. The City will apply for a well permit in the future when the details of Priority 2 improvements are more certain. Dennis Dunn with the Idaho Department of Resources was contacted for department comment. He stated that the City must have an approved transfer adding the proposed Well #6 to the City's water system before IDWR will issue a drilling permit as shown in Appendix C.

Ed Hagan with Idaho DEQ was contacted and replied that if best management practices and compliance with state regulations are followed there should not be any adverse impacts to groundwater quality. It is encouraged that the City implement Source Water Protection strategies to protect the new groundwater well as described in Appendix C.

Since the proposed wells will be located over the sole source aquifer, additional considerations must therefore be addressed regarding the proposed improvements. The considerations for the sole source aquifer include the following:

4.5.16.1 Impervious Area

Implementation of the project alternatives will increase the impervious area of the aquifer. However, the increase will be negligible. Those structures contributing to the increase in impervious area is the new well house and booster station as the tank is planned to be buried.

4.5.16.2 Stormwater

Stormwater is currently conveyed through a typical residential curb and gutter catch basin system in the project planning area. However, construction for the improvements will largely occur on the outskirts of the City. In these areas, there are no stormwater collection facilities.

4.5.16.3 Underground Storage/Pilings

An underground water storage tank will be included, but foundation pilings will not be constructed as part of this project. Underground piping within the proposed area will be constructed to connect the well, storage, and pumping facilities to the existing transmission line onsite. All of these underground pipes and tank will hold potable water and are not anticipated to negatively affect groundwater quality.

4.5.16.4 Waste

No waste will be generated by the proposed project improvements.

4.5.16.5 Excavation

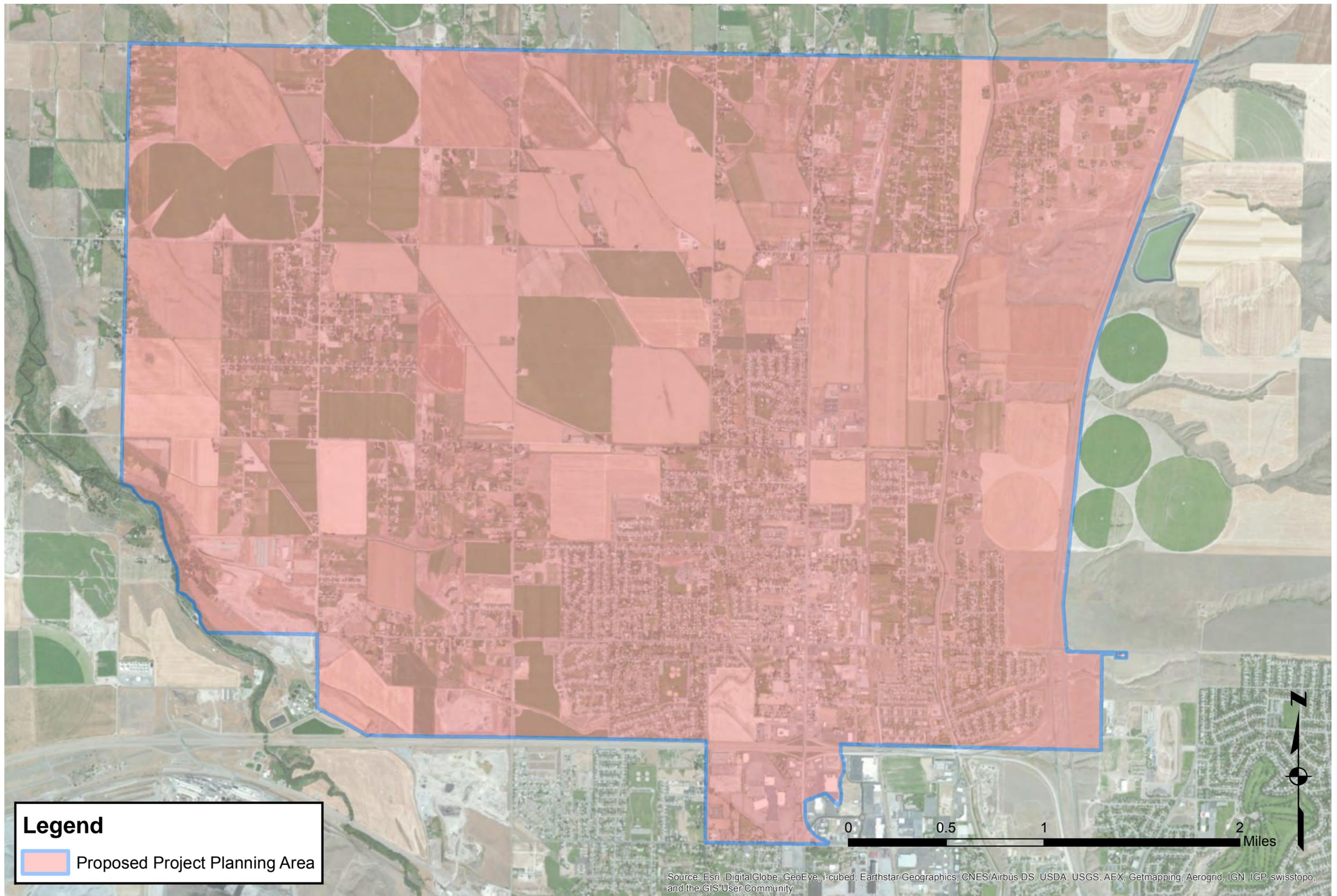
Excavation will be a part of this project and depths are not anticipated to exceed 30 ft.

4.5.16.6 Wellhead Protection

All necessary precautions will be taken to prevent pollution from reaching the aquifer during and after construction by following local and state wellhead protection requirements. The well will be constructed with a surface seal and packed/sealed to prevent cross contamination. DEQ standards will be followed during construction of the well. The existing wells within the planning area have been constructed in a manner consistent with these requirements.

4.5.16.7 Hazardous Waste Sites

There is no hazardous waste site involved with this project.



Legend

Proposed Project Planning Area

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

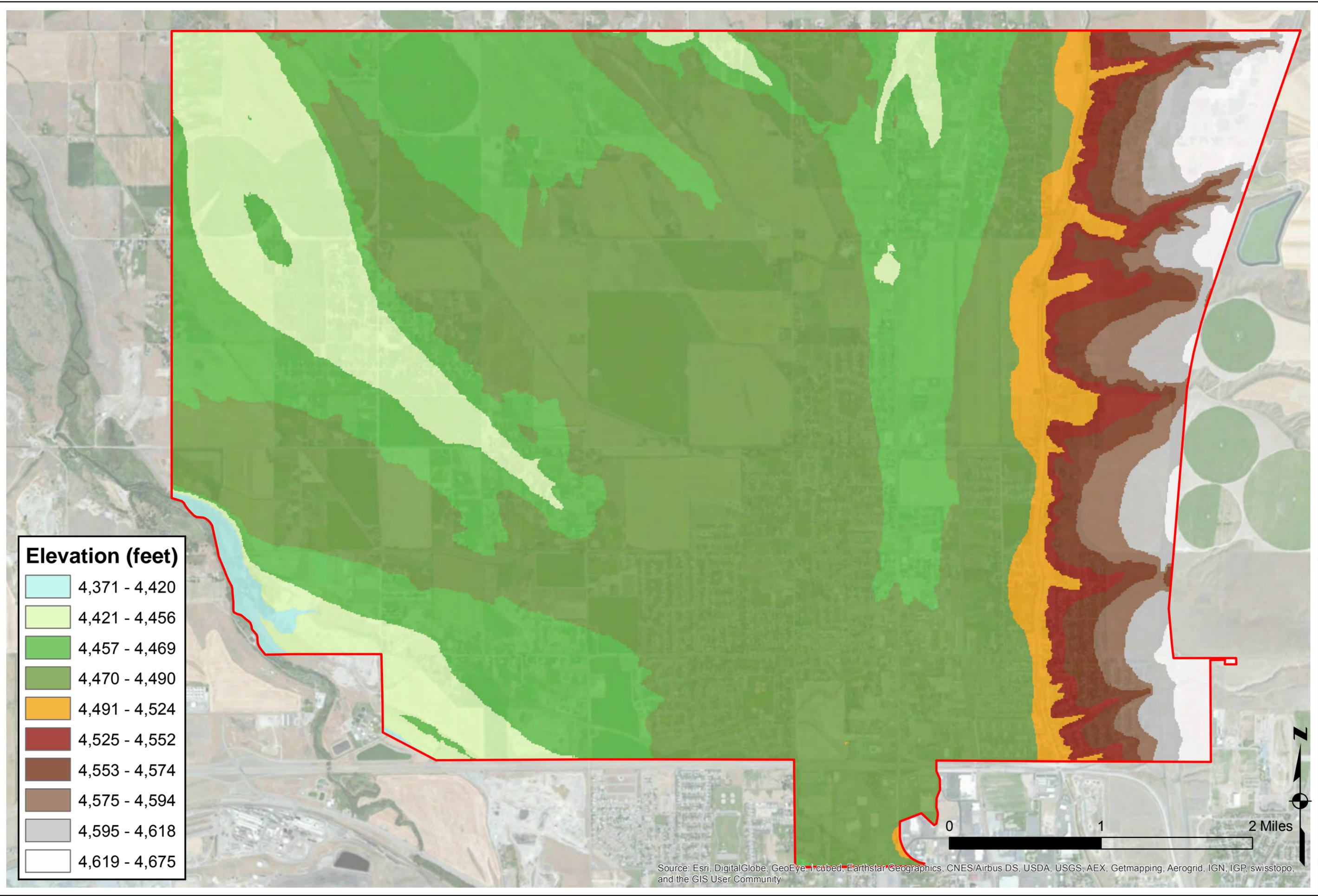
PROJECT NO. **210078**
 FILENAME **PPPA.mxd**

KELLER ASSOCIATES
 305 N. 3rd Avenue
 Pocatello, ID 83201
 208.238.2146
 www.kellerassociates.com

City of Chubbuck

Environmental Information Document
 Proposed Project Planning Area

FIGURE NO.
4-1



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PROJECT NO. **210078**
 FILENAME **PPPA Elevation.mxd**

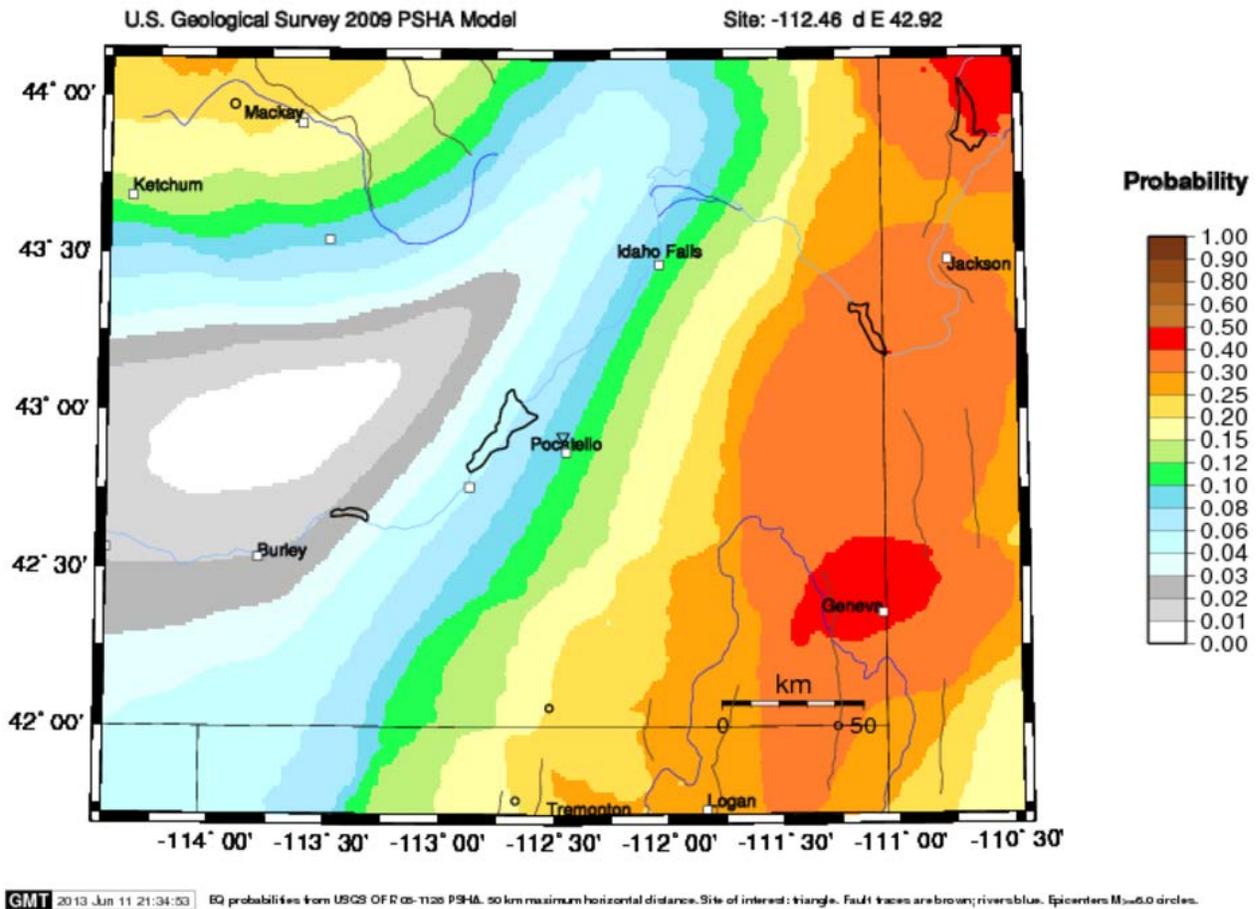
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 Pocatello, ID 83201
 208.238.2146
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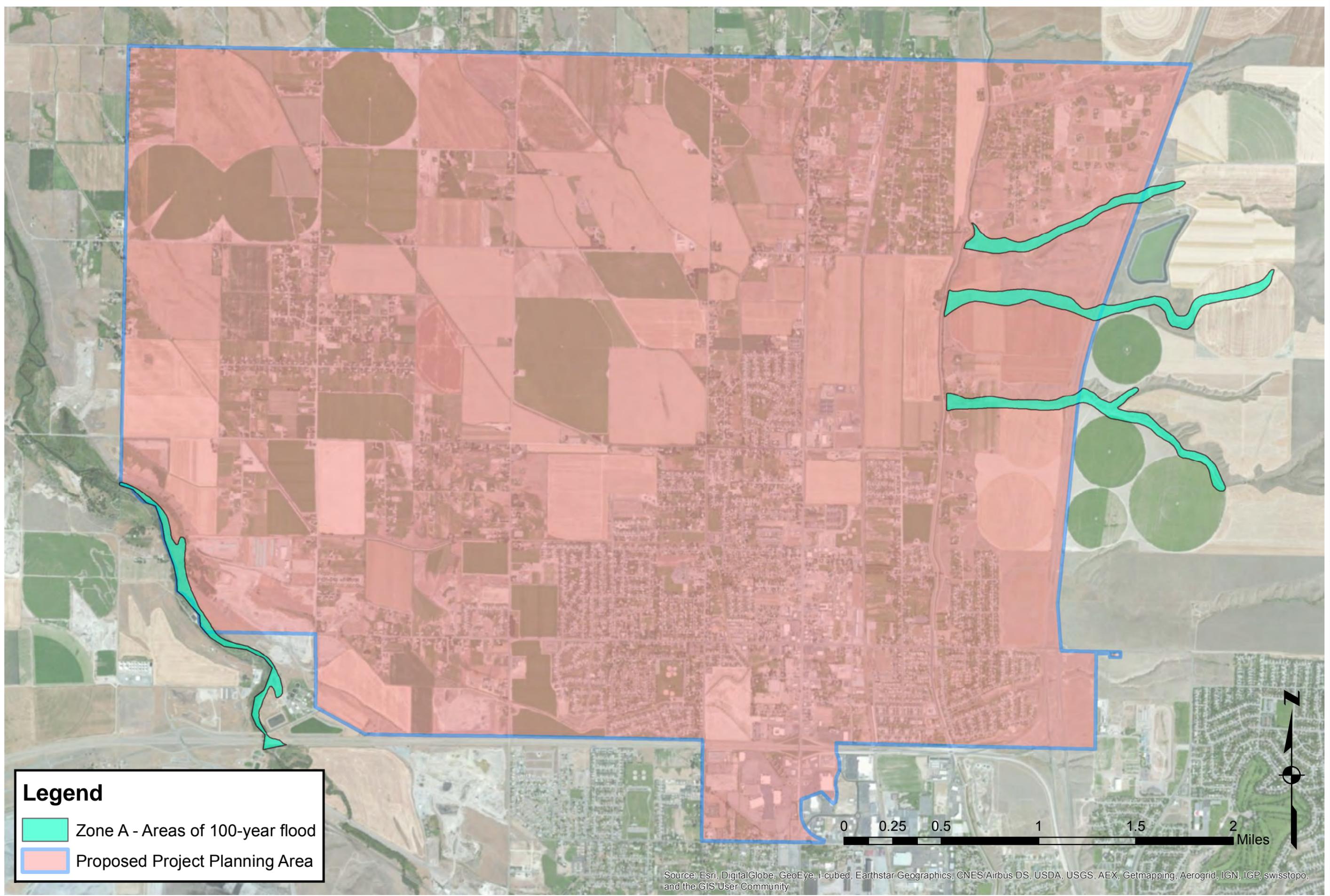
City of Chubbuck

Environmental Information Document
 Proposed Project Planning Area Elevations
 FIGURE NO. **4-2**

Figure 4-3 Earthquake Hazard Map

Probability of earthquake with $M > 6.0$ within 50 years & 50 km





Legend

- Zone A - Areas of 100-year flood
- Proposed Project Planning Area

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

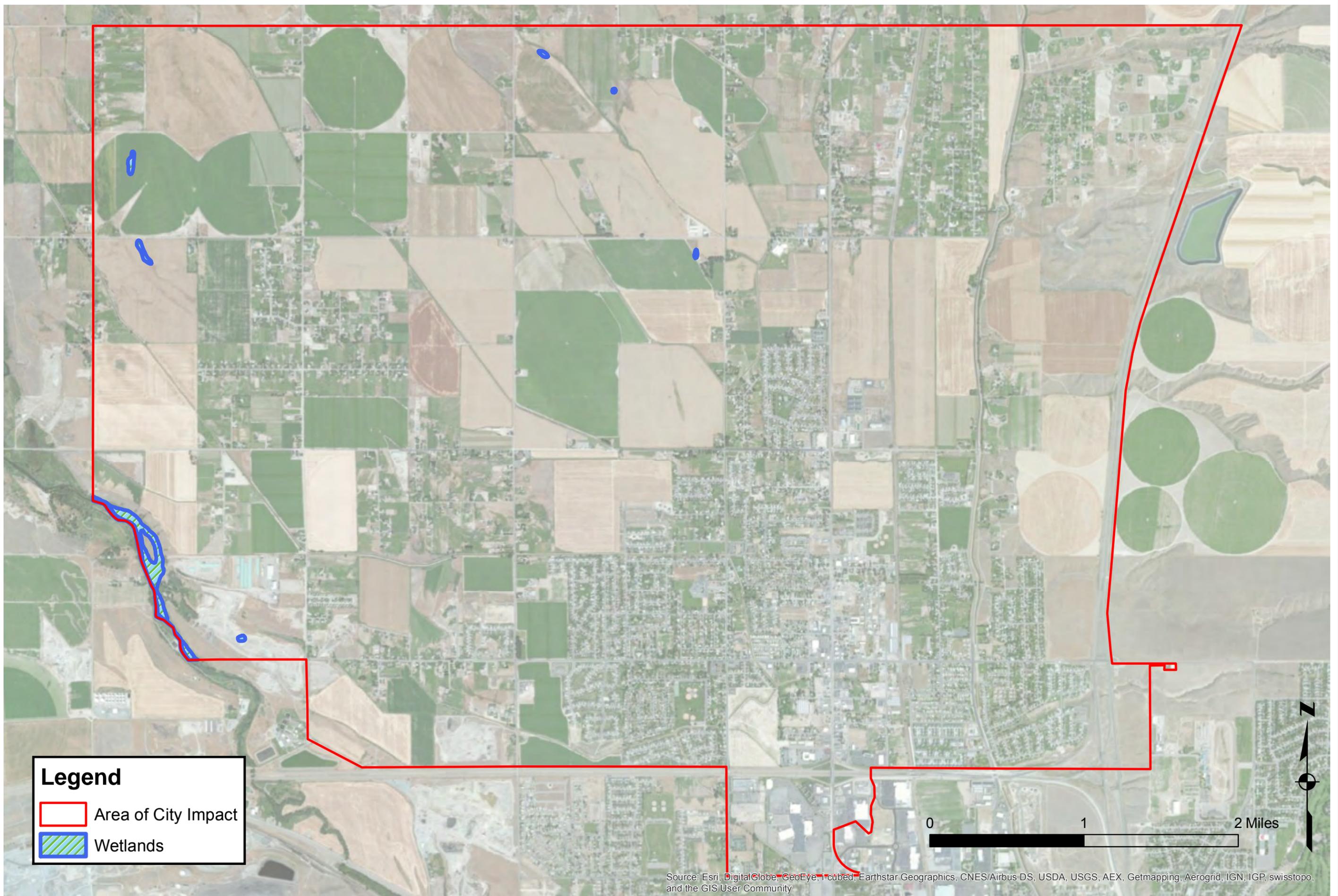
PROJECT NO. **210078**
 FILENAME **Flood Hazards.mxd**

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KELLER
 ASSOCIATES

City of Chubbuck

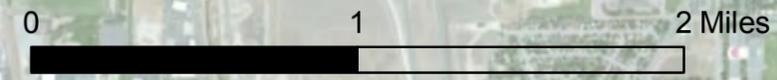
Environmental Information Document
100 Year Flood Hazards

FIGURE NO.
4-4



Legend

- Area of City Impact
- Wetlands



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PROJECT NO. **210078**
 FILENAME **Wetland Map.mxd**

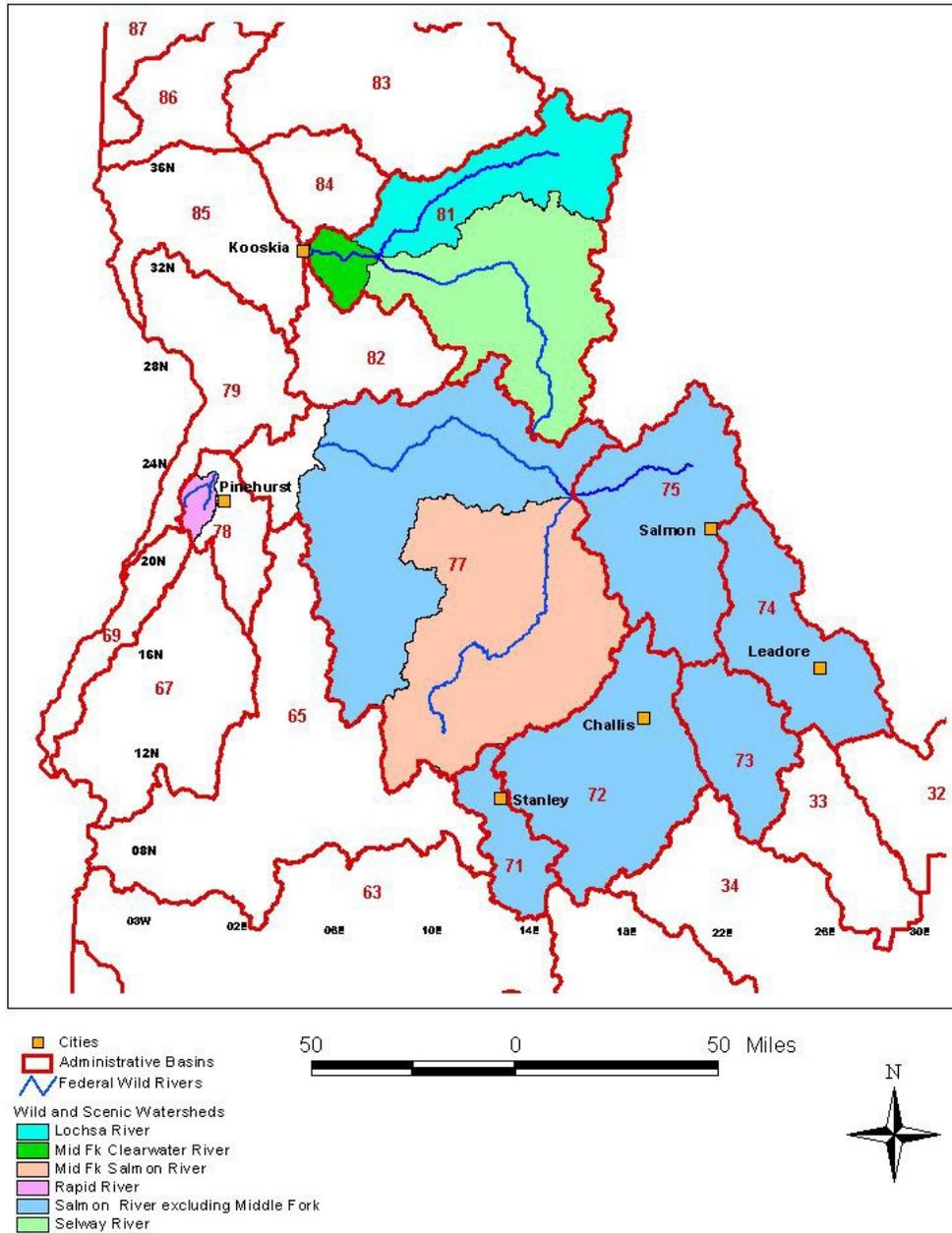
305 N. 3rd Avenue
 Pocatello, ID 83201
 208.238.2146
www.kellerassociates.com
KELLER ASSOCIATES

City of Chubbuck

Environmental Information Document
Wetlands

FIGURE NO.
4-5

Figure 4-6 Idaho Wild and Scenic Rivers



Chapter 5 Environmental Impacts of the Proposed Project

Impacts that may occur as a result of the project may be either beneficial or adverse to the human population and the surrounding environment. The following sections discuss the direct, indirect, short term, long term, and cumulative impacts that will result from completion of the preferred alternative. These impacts are discussed in Chapter 4 and summarized in this chapter along with mitigation measures in Chapter 6. The various types of impacts are discussed below:

- **Direct Impacts** – Caused by the actual construction of the preferred alternative and occur at the same time and place as construction.
- **Indirect Impacts** – Caused by the construction of the proposed project and occur at a later, foreseeable time.
- **Short Term Impacts** – Those that affect the project area for a brief amount of time after the project's completion.
- **Long Term Impacts** – Those that affect the project area for an extended amount of time after the project's completion.
- **Cumulative Impacts** – The sum of past, present, and reasonably foreseeable actions in the project area.

5.1 Environmental Impacts

The following impacts have been identified for the proposed project:

1. For construction of the new storage tank and booster station facility, a small amount of land will be affected for the long term from its current use.
2. The development of Well #6 will pump water into the system from a different point of diversion within the aquifer under the City's current water rights.
3. Some vegetation will be disturbed during the construction project, but it is not expected to be excessive. Most of the pipelines are in previously disturbed areas and will be re-vegetated accordingly.
4. There are wetlands in the proposed planning area, but are planned to be avoided as part of this project.
5. A small amount of farmland will be affected for construction of the new tank, well and booster station site.
6. Proposed improvements may have a temporary local impact on noise and air quality (dust) during construction.
7. A Nationwide Permit from the U.S. Army Corps of Engineers already exists for these pipelines and notification is not anticipated to be required for the canal crossings.

5.2 Cumulative Impacts

Cumulative impacts are the sum of past, present, and reasonably foreseeable actions in the project area.

There are not anticipated to be any cumulative impacts from the proposed project, besides the possible impacts listed above. All agency mitigation impact measures have been provided in Chapter 6.

5.3 Unavoidable Adverse Impacts

Unavoidable impacts include those to the local vegetation and soils from construction of the storage tank and the temporary vegetative and soil impacts during pipeline installations.

Chapter 6 Mitigation of Adverse Environmental Impacts

Mitigation measures for direct, indirect, short-term, long-term and cumulative impacts identified by the consulting agencies have been included in this document.

If mitigation measures are required, a means of achieving mitigation measures (enforceable, authority to fulfill commitments, appropriate monitoring during implementation) will also be addressed.

Based on agency consultation and best practices, the following mitigation measures or precautions will be required to take place during the construction process.

- Contact the State Historical Preservation Office if any archeological artifacts are discovered during excavations. In association with common practice, the Shoshone-Paiute Tribe or Shoshone-Bannock Tribe will be contacted if any Native American artifacts are discovered in the project area in the process of constructing the selected alternative.
- Have an approved transfer that adds the proposed Well #6 to the City's system before obtaining a drilling permit.
- Implement Best Management Practices and comply with state regulations for a new well.
- Implement Source Water Protection strategies to protect the new well.
- Mitigate fugitive dust and potential storm water runoff during construction of the project.
- Obtain the necessary construction permits in accordance with local, state, and federal management agencies and comply with the applicable permit regulations addressing temporary fugitive dust, temporary construction equipment noise and exhaust. See IDAPA 58.01.01.651 and 58.01.01.201.

During and prior to construction of the proposed project, certain environmental safety precautions need to be taken as well as enforced if a problem should occur. These measures are as follows:

- Proper steps need to be taken to contain all runoff during any type of construction. Examples would be silt fence, a mulch or vegetative cover, and temporary berms.
- Drains are needed to control surface runoff and keep soil losses to a minimum.
- When reseeding the areas of disturbance, make sure the seeding plans are site specific to surrounding vegetation.
- Accidental surface spills of petroleum hydrocarbon products (i.e. fuel, oil, and similar products) are most commonly associated with the transportation and delivery of fuel to work sites or facilities. The Idaho Release, Reporting, and Corrective Action Regulations (IDAPA 58.01 .02.851 and .852), require notification within 24 hours of any spill of petroleum product greater than 25 gallons and notification for the release of lesser

amounts if they cannot be cleaned up within twenty-four (24) hours. The cleanup requirements are also contained in those regulations. Both federal and Idaho regulations require the cleanup of any spill or release of used oil. [IDAPA 58.01.05.015; [40 CFR 279.22(d)(3)].

- All reasonable precautions shall be taken to prevent the generation of fugitive dust. Consideration will be given to factors such as the proximity of dust emitting operations to human habitations and/or activities and atmospheric conditions which might affect the movement of particulate matter. Some of the reasonable precautions may include, but are not limited to, the following:
 - Use of water or chemicals
 - Application of dust suppressants
 - Use of control equipment
 - Covering of trucks
 - Paving
 - Removal of materials

Chapter 7 Public Participation

40 CFR Part 25 discusses objectives and requirements for public participation. The public refers to, in the broadest sense, the general populace. This may include any special interest groups. This process helps responsible officials become aware of public attitudes by allowing the public to communicate their views.

As part of this Water Facilities Planning Study; City Council Study Sessions, City Council Meetings and a Public Hearing were held to inform the public of the study and proposed project. The purpose of meetings was to provide members of the community education about the current issues in the planning area and to seek community feedback. In addition, presentations were typically created for these public meetings throughout the study process in an effort to include the general public. Public participation information and presentations from these meetings can be found in the Water Facilities Planning Study. Table 7-1 summarizes the dates of the various meetings.

Table 7-1: Public Participation

City Council Meetings	City Council Study Session	Public Hearing
12/16/2015	6/3/2015	12/2/2015
12/2/2015	4/9/2014	--
4/24/2012	--	--

In addition to the City Council meetings, the City and Keller Associates conducted a Public Hearing as part of the City Council Meeting on 12/2/2015 to update the community on the recommended improvements for the water system and present potential environmental impacts. This meeting was publicized in the local newspaper. At this meeting, the City solicited those in attendance to provide comments and concerns about the proposed system improvements. During this comment period, there were a couple of comments received by community members as shown in the meeting minutes in Appendix B. The City selected to move forward with the preferred alternative after the comment period on 12/16/2015. Details including published meeting minutes and the public hearing newspaper advertisement can be found in Appendix B.

Documentation for the public participation activities can be found in Appendix B and the Water Facilities Planning Study.

Chapter 8 Agency Consultation

Various management agencies were consulted during preparation of this EID, and are listed in Table 8-1. A copy of the mailing list can be found in Appendix A.

Of the agencies that were consulted, several provided responses to the request for consultation. Agency consultation letter and responses can be found in Appendix C.

Table 8-1 Agencies Consulted

Agency Consulted	Contacted By	Date Received
Idaho Dept. of Environmental Quality – Pocatello Regional Office (Tom Hepworth)	Keller Associates	2/19/2016
Idaho Dept. of Environmental Quality – State Office (Ed Hagan)	Keller Associates	2/18/2016
Idaho Dept. of Fish and Game, SE Region (Jim Mende)	DEQ	Not Received
Idaho Dept. of Water Resources (Dennis Dunn)	Keller Associates	2/8/2016
Idaho State Historical Society (Ethan Morton)	Keller Associates	2/26/2016
US Army Corps of Engineers (James Joyner)	Keller Associates	2/11/2016
Southeast District Health Department (Steve Pew)	Keller Associates	Not Received
USDA-NRCS District Conservationist (Trudy Pink)	DEQ	3/1/2016
U.S. Fish and Wildlife Service (Michael Carrier) - DEQ Consult	DEQ	2/5/2016
Shoshone-Paiute Tribe (Ted Howard) -DEQ Consult	DEQ	Not Received
Shoshone-Bannock Tribes (Carolyn Smith) -DEQ Consult	DEQ	Not Received
Northwestern Band, Shoshone (Patti Timbimboo) -DEQ Consult	DEQ	Not Received

Chapter 9 References

The following references were used in preparation of the Environmental Information Document:

EPA Region 10 (2008). *Region 10 Sole Source Aquifer Map*. Retrieved November, 2014, from https://www.deq.idaho.gov/media/462639-sole_source_aquifers_west_map.pdf

Idaho Department of Water Resources (2010). *Designated Wild and Scenic Rivers*. Retrieved November, 2014, from http://www.idwr.idaho.gov/WaterManagement/WaterRights/Wild_Scenic/WildScenic.htm.

Idaho Department of Water Resources (2011). *Flood hazard mapping tool*. Retrieved November, 2014, from <http://maps.idwr.idaho.gov/floodhazard/Map>.

IDFM (Idaho Department of Financial Management). (2013). *Idaho Economic Forecast, Demographics Quarterly Detail p. 51*. Retrieved November, 2014, from http://dfm.idaho.gov/Publications/EAB/Forecast/2013/ieffulldocument_April2013.pdf.

USDA Natural Resource Conservation Service. (2014). *Web Soil Survey*. Retrieved November 2014, from <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.

USGS (US Geological Survey) (2009). *2009 Earthquake Probability Mapping*. Retrieved November 2015, from geohazards.usgs.gov/eqprob/2009/

U.S. Census Bureau. (2010). *Chubbuck City, State & County QuickFacts*. Retrieved November 2014, from <http://quickfacts.census.gov/qfd/states/16/1614680.html>

US Fish and Wildlife Service. (2014). *Download Seamless Wetlands Data by State*. Retrieved November 4, 2015, from <http://www.fws.gov/wetlands/Data/State-Downloads.html>

Western Regional Climate Center. (2012). *Pocatello WSO ARPT, Idaho (107211)*. Retrieved February 28, 2015, from <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?id7211>

Appendix A Mailing List

Name	Representing	Environmental Resource Associated with Contact Agency	Address	City	State	Zip	Phone	Email	Contacted By
James Joyner	US Army Corps of Engineers	Wetlands, 404 Permits, Flood Plains	900 N. Skyline Drive, Suite A	Idaho Falls	ID	83402-1718	208-522-1676	james.m.joyner@usace.army.mil	Keller Associates
Tom Hepworth	Department of Environmental Quality, Pocatello Regional Office	Water Quality & Air Quality	444 Hospital Way, #300	Pocatello	ID	83201	208-236-6160	tom.hepworth@deq.idaho.gov	Keller Associates
Ed Hagan	Department of Environmental Quality, State Office	New drinking water wells	1410 N. Hilton	Boise	ID	83706		ed.hagan@deq.idaho.gov	Keller Associates
Jim Mende	Idaho Dept. of Fish and Game, SE Region	Biological resources, non game plant and animal species	1345 Barton Road	Pocatello	ID	83204	208-232-4703	jim.mende@idfg.idaho.gov	IDEQ
Susan Eastman	EPA Region 10, Office of Environmental Assessment	Projects located over sole source aquifer.	1200 6th Avenue, Ste. 900, OWW-136	Seattle	WA	98101	206-553-6249	eastman.susan@epamail.epa.gov	Not Required
Keri Sigman	Idaho Dept. of Water Resources	Floodplain management, maps, general program assistance	322 East Front Street PO Box 83720	Boise	ID	83720-0098	208-287-4928	keri.sigman@idwr.idaho.gov	Not Required
Dennis Dunn	Idaho Dept. of Water Resources, Easter Region	Decommissioning or drilling new drinking water well	900 N. Skyline Dr., Suite A	Idaho Falls	ID	83402	208-525-7161	dennis.dunn@idwr.idaho.gov	Keller Associates
Ethan Morton	Idaho State Historical Society	Historic and archaeological sites and sensitive areas	210 Main Street	Boise	ID	83702	208-334-3847 x107	ethan.morton@ishs.idaho.gov	Keller Associates
Jeff KenKnight	EPA Region 10	Projects discharging to waters of the US	1200 6th Avenue, OWW-130	Seattle	WA	98101	206-553-6641	KenKnight.Jeff@epamail.epa.gov	Not Required
James Wertz	US EPA, Idaho Operations Office	Water Quality & Air Quality	950 W. Bannock Street, Ste. 900	Boise	ID	83702	208-378-5746	wertz.james@epamail.epa.gov	Not Required
Steve Pew	Southeast District Health Department	Solid Waste and Septic System	1901 Alvin Ricken Drive	Pocatello	ID	83201	208-233-9080		Keller Associates
Shawn J. Nield	USDA-NRCS	Prime agricultural & rangelands	9173 W. Barnes Dr., Ste. C	Boise	ID	83709	208-378-5728	shawn.nield@id.usda.gov	IDEQ
Dennis Porter	Idaho Dept. of Commerce	Community Development Block Grant	P.O. Box 83720	Boise	ID	83720	208-334-2470	Dennis.Porter@commerce.idaho.gov	Not Required
Lana Duke	USDA-RD	USDA-RD	725 Jensen Grove Dr., Suite 1	Blackfoot	ID	83221	208-785-5840	lane.duke@id.usda.gov	Not Required
Ara Andrea	Department of Lands	State Land Use	300 N. 6th Street, Ste. 103	Boise	ID	83702	208-334-0257	aandrea@idl.idaho.gov	Not Required
Gary Bahr	Idaho Department of Agriculture	Important Farmland	PO Box 790	Boise	ID	83701	208-332-8500	gary.bahr@agri.idaho.gov	Not Required
DEQ will consult with the Tribes/Agencies listed below									
Michael Carrier	US Fish and Wildlife Service	Threatened, Endangered Species	1387 South Vinnell Way, Room 368	Boise	ID	83709	208-378-5256		IDEQ
Carolyn Boyer Smith	Shoshone-Bannock Tribes	Historic and Archaeological and Sensitive Religious Sites	PO Box 306	Fort Hall	ID	83203	208-478-3707		IDEQ
Ted Howard	Shoshone-Paiute Tribe	Historic and Archaeological and Sensitive Religious Sites	PO Box 219	Owyhee	NV	89832	775-757-3161 x243	howard.ted@shopai.org	IDEQ
Patti Timbimboo	Northwestern Band, Shoshone	Historic and Archaeological and Sensitive Religious Sites	707 North Main Street	Brigham City	UT	84302	435-734-2286 x13		IDEQ

Appendix B Public Participation

CITY OF CHUBBUCK
COUNCIL MEETING AGENDA
DECEMBER 16, 2015 – 6:00PM

CALL TO ORDER by Mayor England

PLEDGE ALLEGIANCE TO THE FLAG led by Councilmember Morrison

INVOCATION given by Councilmember Marshall

AMEND COUNCIL MEETING AGENDA:

APPROVAL OF MINUTES:

Council Study Session Minutes of December 2, 2015

Council Meeting Minutes of December 2, 2015

It was explained to the council that the minutes for December 2, 2015 will be provided with the minutes for tonight at the first council meeting in January for the council's approval.

GENERAL BUSINESS:

1. Resolution approving indebtedness, subject to judicial confirmation, with the Department of Environmental Quality, for the improvement of the City's water system.

Councilmember Ellis mentioned that he has some concerns about the effort or lack thereof, the City undertook in educating the public on this project. Councilmember Ellis does agree with the project and would like to explain to the public the capital plan the city has for the project. He would like to talk about public outreach at the next study session.

Councilmember Marshall has two concerns; the first is the total debt the city will have once the project is complete and second, he does not agree with incurring debt through judicial confirmation.

Councilmember Lewis has some concerns with the delay of the project. If the resolution is passed tonight, the City still has one more summer season to go through before any production from the new well is on line. This project and the necessity of the project have been discussed many times, the city has made plans, there will be no increase in fees, and the risk is justified by the improvements to the system.

Councilmember Ellis moved to pass resolution 2015-03 to approve the indebtedness subject to judicial confirmation. Councilmember Lewis seconded. Roll call vote: Ellis-yes, Lewis-yes, Morrison-yes, Marshall-no.

CITY OF CHUBBUCK
COUNCIL MEETING MINUTES
DECEMBER 2, 2015 – 6:00PM

CALL TO ORDER by Mayor England

PLEDGE ALLEGIANCE TO THE FLAG was led by Councilmember Lewis

INVOCATION offered by Councilmember Elect Melanie Evans

AMEND COUNCIL MEETING AGENDA:

APPROVAL OF MINUTES:

Council Study Session Minutes of November 4, 2015

Council Meeting Minutes of November 18, 2015

Councilmember Lewis moved to approve the Study Session Minutes of November 4, 2015 and the regular Council Meeting Minutes of November 18, 2015. Councilmember Marshall seconded. Roll call vote: Ellis-yes, Lewis-yes, Morrison-yes, Marshall-yes.

PUBLIC HEARING:

Notice of Hearing to consider a resolution authorizing the filing of a petition of judicial confirmation under the Idaho judicial confirmation law in order to incur indebtedness as an ordinary and necessary expense of the City to install a new well, rehabilitate an existing well, and construct water storage and distribution improvements.

Rodney Burch, Public Works Director for the City of Chubbuck introduced Keller Associates, consultants for the water system for the City of Chubbuck. Representatives for Keller Associates explained that the City has an immediate need for improvements to the water system, including new wells, storage, and distribution. The City's capacity to produce water does not meet State standards. During July 2015 the three working wells of the City ran for 22 hours a day to meet the City's needs. If one of the wells were to go down, the city would not be able to meet the demand on the system and would also be out of compliance with the DEQ regulations. The plans to upgrade the water system that are in front of you are critical to the system. The judicial confirmation process includes a step to have a public hearing. The council has discussed the project and the systems needs for several years now, over the last 6 months we have discussed the process of judicial confirmation. Tonight we are holding the public hearing that is required in the process. What the City is asking for in the confirmation is an 8.5 million dollar loan with DEQ. Currently, this project will not cause an increase in our utility rates. We will use our reserves to service the debt. Councilmember Lewis pointed out as an example of the situation the City finds itself in. On July 20, 2015, with all wells running at full capacity the city produced 9000 gallons per minute, during this same time the draw down was 11,000 gallons per minute. Mayor England opened the public hearing.

Glen Schwartz, 762 Homestead Rd, testified against the project. Glen stated, that the city needs to provide the water; However, He does not like the process of judicial confirmation or the added indebtedness.

Niki Taysom, 4963 Yellowstone, strongly opposes the confirmation.

Mayor England closed the public hearing.

Councilmember Ellis added that this is the next step in direction the City has been moving to better provide for the Citizen. The population of the city has gone from 9 thousand to 15 thousand. We now require each development to utilize secondary irrigation water and we have purchased additional water rights.

Rodney Burch, the City's Public Works Director, explained that the City annually pumps over a billion gallons of water a year, the Cities reserves capacity is just over a million gallons. We need more storage capacity. He also explained that the city is not asking for something that it wants. It is asking for something that according to the DEQ is ordinary and necessary.

Mayor England ADJOURNED the meeting at 6:42pm.


Mayor Kevin England


Rich Morgan, City Clerk

CITY OF CHUBBUCK
June 3, 2015
COUNCIL STUDY SESSION MINUTES – 4:00PM

GENERAL BUSINESS:

2. Discussion about City water project and the DEQ approval of SRF loan. Steve presented the DEQ letter that offers the City a loan for 5.5 million at 2.75% interest to build additional water assets. Steve mentioned that the City is underway in bringing well #2 back on line. Steve introduced Keller Engineering. Jim from Keller Engineering explained the current situation the City has with respect to its water system. Two new wells are needed. storage of 1 million gallons is needed. Skyler from Keller Engineering presented the proposed project in 3 phases. Councilmember Ellis asked, as we look at this, can we locate the well in the ground? Skyler explained that is the plan. The City is in a great position to go forward with this plan. There are reserves that cover about half the projected cost. There is sufficient room in the current water rate to adjust budgets and make the debt payment without raising rates to the citizens. All we need is a bond election or judicial confirmation to authorize the debt. Steve would recommend we proceed with judicial confirmation.

Kevin England
Mayor Kevin England

Rich Morgan
Rich Morgan, City Clerk

CITY OF CHUBBUCK
COUNCIL STUDY SESSION MINUTES
April 9, 2014
3:00 p.m.

43

Minutes of a regular Council Study Session held at the City Council Chambers, April 9, 2014.
The meeting was **called to order** at 3:00pm by Mayor Kevin England.

Water Capital Plan-

Steve introduced the water capital plan. The City has taken some important steps in the water capital plan such as adding standby generators to all producing wells and purchasing 2900 acre feet annually of irrigation water rights. We have also been building reserves in order to take the next steps and are ready to purchase land and drill a well. Mike Jaglowski from Keller Associates in Pocatello went through the water facility plan with the council. This plan gives the council an idea of how the current system compares to state standards. The system does currently operate at a critical water deficit. The State requirements are that you are able to supply water at peak demand with your largest producer off line. The plan outlines a three tier action plan.

Priority 1A - Secure land for well site, drill wells, construct transmission line to distribution system, construct a storage reservoir(40 year solution) and booster pump station (10 year solution).

Priority 1B - Improve current tank farm transmission lines, Improve bench booster pump station, and Improve fire flow distribution improvements,

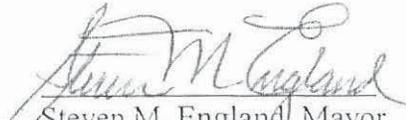
Priority 2 - Extend service Area to west and north, Growth Driven.

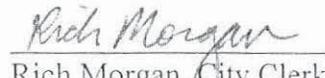
City of Chubbuck
Council Meeting Minutes
April 24, 2012
7:00 p.m.

141

Minutes of a regular Council Meeting held at the Chubbuck City Council Chambers, April 24, 2012. Present: Mayor Steven England, Council Members: Josh Ellis, Kevin England, Brent Marshall, Kermit Morrison, Attorney Thomas Holmes, Public Works Director Steven Smart, City Clerk Rich Morgan.

Keller Engineering presented an update of the City's water facility planning study including the current systems physical facilities and statistics, how the city's current parameters fit into Idaho Rules for Public Drinking Water Systems and what actions are recommended to strengthen the City's water facilities now, ten years from now and 20 years from now.


Steven M. England, Mayor


Rich Morgan, City Clerk

AFFIDAVIT OF DISTRIBUTION

STATE OF IDAHO)

COUNTY OF Bannock)

CITY OF POCATELLO)

I, Pamela E. Powell, being duly sworn on oath now and during all times herein stated, have been the publisher and designated agent of the publication known as,

IDAHO STATE Journal ("Publication")

and have full knowledge of the facts herein stated as follows:

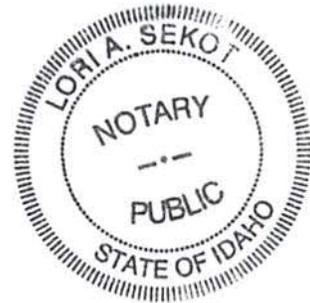
The ^{AD} insert for CITY OF CHUBBUCK ("Ad/Advertiser") with Insertion Order No. MOORE, SMITH, BLYTON was distributed according to the Insertion Order/Distribution List on the 6th day of NOVEMBER, 2015.

By: Pamela E Powell

Subscribed and sworn to before me this 6th day of NOV, 2015.

Notary Seal:

Lori A. Sekot
Notary Public



**CITY OF CHUBBUCK
NOTICE OF HEARING TO CONSIDER A
RESOLUTION AUTHORIZING THE
FILING OF A PETITION FOR JUDICIAL
CONFIRMATION UNDER THE IDAHO
JUDICIAL CONFIRMATION LAW**

NOTICE IS HEREBY GIVEN that on Wednesday, the 2nd day of December, 2015, at 6:00 o'clock P.M., or as soon thereafter as the matter may be heard, at the City Council meeting room at the Chubbuck City Hall, 5160 Yellowstone Avenue, Chubbuck, Idaho, the City Council of the City of Chubbuck, Idaho (the "City"), will conduct a public hearing to consider the adoption of a resolution authorizing the filing of a petition for judicial confirmation under the Idaho Judicial Confirmation Law, Title 7, Chapter 13, Idaho Code.

The proposed petition would seek judicial confirmation of the power of the City (1) to incur an indebtedness as an "ordinary and necessary expense" of the City authorized by the general laws of the State, within the meaning of Article 8, Section 3, of the Idaho Constitution, in a principal amount not to exceed \$8,500,000, for the installation of a new well, rehabilitation of existing well, water storage, and distribution line improvements; (2) to issue revenue bonds or other evidence of indebtedness of the City for the same, for the purpose of financing the cost of necessary improvements to the public water system of the City; and (3) to pledge the City's water system revenues for the payment of such indebtedness for a term of years.

Information relating to the proposed petition is available at the office of the City Clerk, Chubbuck City Hall during normal business hours of the City. Interested persons are encouraged to attend the public hearing and to present comments. Comments may also be submitted in writing.

Appendix C Agency Consultation



February 5, 2016

James Joyner
U.S. Army Corps of Engineers
900 N. Skyline Road, Suite A
Idaho Falls, ID 83402

Re: **City of Chubbuck Water System Improvements – Request for Comments for Preparation of an Environmental Information Document**

Dear Mr. Joyner:

The City of Chubbuck is in the final planning phase of developing a drinking water system improvements project. The purpose of this letter is to request your review and response regarding any environmental impacts that your agency may identify for this proposed project pursuant to the Idaho Department of Environmental Quality's State Environmental Review Process which mirrors the National Environmental Policy Act.

The project includes efforts to address deficiencies in water supply, storage, distribution, and fire protection. The proposed project consists of the following new ground disturbance all at the same location, which is currently farm ground along Siphon Road in Chubbuck:

- New well source
- New distribution main ~ 500 feet
- New storage tank – 1.5 million gallons
- New booster station ~ 4,000 gpm

The project also involves the following:

- New distribution mains within previously disturbed Siphon Road ~1,500 feet
- Rehabilitation of existing Well #1
- Replacement of distribution mains ~7,100 feet
- Replacement secondary waterlines to address fireflow deficiencies ~ 11,000 feet

The project is being proposed to address water quantity deficiencies and bring the system into compliance with the Drinking Water Rules. Enclosed is a map of the proposed project planning area that depict the proposed project improvements and area of potential effect for all construction activities.

We request that you advise us of any comments that you may have regarding this project within 30 days, so the City can proceed with the completion of the Environmental Information Document.

If you have any questions concerning this proposed project or if you need any further information, please feel free to contact us at your convenience. Please send any questions and comments to:

Colter Hollingshead
Email: chollingshead@kellerassociates.com
Phone: (208) 238-2146

Sincerely,

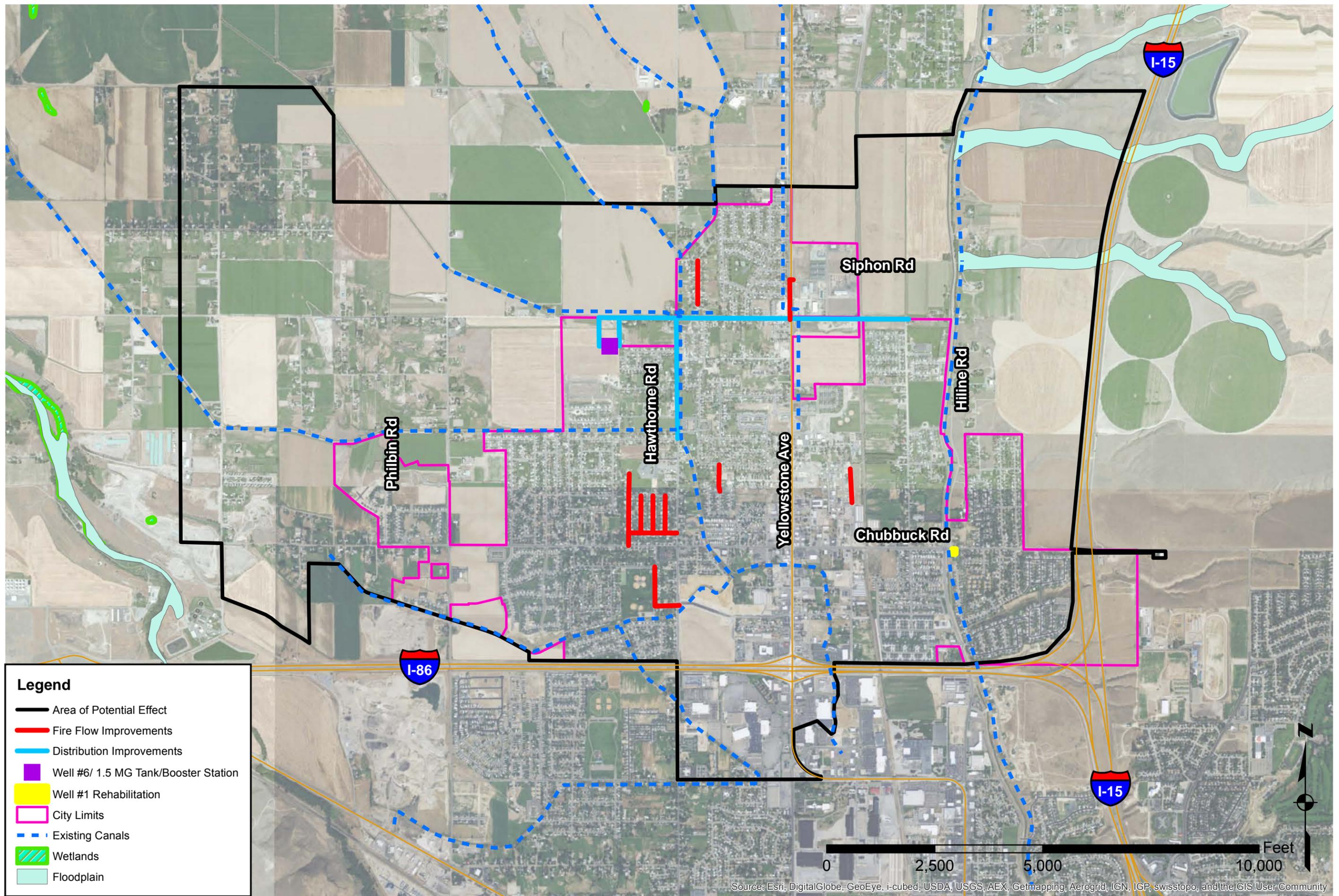
KELLER ASSOCIATES, INC.



Colter Hollingshead, P.E.
Project Engineer

cc: Rodney Burch, Public Works Director – City of Chubbuck
Bridger Morrison, City Engineer – City of Chubbuck

Encl: Environmental Consultation Figure



Legend

- Area of Potential Effect
- Fire Flow Improvements
- Distribution Improvements
- Well #6/ 1.5 MG Tank/Booster Station
- Well #1 Rehabilitation
- City Limits
- - - Existing Canals
- ▨ Wetlands
- Floodplain



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PROJECT NO. **215044-000**
 FILENAME **Consultation Letter**

305 N. 3rd Avenue
 Pocatello, ID 83201
 208.238.2146
 www.kellerassociates.com
KELLER
 ASSOCIATES

City of Chubbuck

Water System Improvements
Environmental Consultation Figure

FIGURE NO.
A



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
IDAHO FALLS REGULATORY OFFICE
900 NORTH SKYLINE DRIVE, SUITE A
IDAHO FALLS, IDAHO 83402-1700

11 February 2016

Regulatory Division

SUBJECT: NWW-2016-54, City of Chubbuck Water System Improvements

City of Chubbuck
c/o Colter Hollingshead
305 North 3rd Avenue, Suite A
Pocatello, Idaho 83201

Dear Mr. Hollingshead:

This is in response to your 5 February 2016 letter requesting comments on the City of Chubbuck's proposed water system improvement project. Thank you for providing the Corps of Engineers (Corps) the opportunity to provide comment. According to information provided, the proposed project would involve water system improvements to include: a new well source, new distribution main, new storage tank, new booster station, and replacement and rehabilitation of an existing well, distribution mains and secondary waterlines.

The project area is within Section(s) 34 and 35 of Township 5 South, Range 34 East and Section(s) 2, 3, 4, 9, 10, and 11 of Township 6 South, Range 34 East, near latitude 42.92025° N and longitude -112.45227° W, in Bannock County, in Chubbuck, Idaho. The project has been assigned Department of Army (DA) File # NWW-2016-54, 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) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). 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.

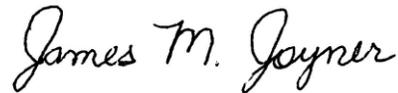
Based on our review of the information you furnished and available to our office, we have preliminarily determined that as currently proposed your project may involve work requiring DA authorization, specifically installation of new/replacement lines crossing Tyhee Wasteway and the Dubois Lateral.

We realize that a project at the planning level is less detailed than a project that is being reviewed for a DA permit. Our scoping comments at this time are limited and are prepared to assist you in preparing a DA permit application if necessary.

A preliminary review of the project indicates that it has the potential to be verified under Nationwide Permit (NWP) 12, Utility Line Activities. For your convenience, we have enclosed copies of the terms and conditions of this permits authorization. You may find these useful in project design.

Please contact me by telephone at (208) 522-1676, by mail at the address in the letterhead, or via email at james.m.joyner@usace.army.mil if you have any questions or need additional information.

Sincerely,



James M. Joyner
Sr. Project Manager, Regulatory Division

Enclosures:

11 Feb 2016 Preliminary Jurisdictional Determination Form
Appeals Form
NWP 12 Terms and Conditions

NATIONWIDE PERMIT 12

UTILITY LINE ACTIVITIES: Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours.

A “*utility line*” is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term “*utility line*” does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily side cast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate.

In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States.

This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States.

This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over

section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites.

Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

* **Notification:** The permittee must submit a Pre-Construction Notification (PCN) to the district engineer prior to commencing the activity if any of the following criteria are met:

- (1) *The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way;*
- (2) *A section 10 permit is required;*
- (3) *The utility line in waters of the United States, excluding overhead lines, exceeds 500 feet;*
- (4) *The utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area;*
- (5) *Discharges that result in the loss of greater than 1/10-acre of waters of the United States;*
- (6) *Permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or*
- (7) *Permanent access roads are constructed in waters of the United States with impervious materials;*

See general condition 31 (*Section 10 and 404*)

NOTE 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

NOTE 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

NOTE 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

NOTE 4: For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

WATER QUALITY CERTIFICATION, NWP 12:

Agency responsible for administration of water quality, based on project location is listed below. *If DENIED, then an Individual Water Quality Certification or Waiver of Certification is required, prior to the commencement of any work activities and/or issuance of a DA verification, authorization and/or permit.*

State of Idaho: **DENIED**, *except for activities occurring on man-made waters; activities requiring a PCN* (pre-construction notification) for NWP 12 are also categorically DENIED*

Coeur d'Alene Tribal Lands: **DENIED**

Shoshone-Bannock Tribal Lands: **DENIED**

U.S. Environmental Protection Agency for all other Tribal Lands: **DENIED**

NATIONWIDE – SPECIFIC CONDITION

Trenching Materials: Materials from exploratory trenching may be temporarily side cast into the de-watered coffered area for up to 30 days but not within flowing waters. Materials from exploratory trenching in wetlands may be temporarily side cast into emergent and scrub-shrub wetlands up to 30 days. Materials from exploratory trenching in forested wetlands may be side cast up to 30 days provided the District Engineer determines in writing that the discharge will only result in minimal adverse effects.

REGIONAL CONDITIONS, WALLA WALLA DIVISION

Watersheds Requiring Pre-Construction Notification, Specific to Anadromous Fish:

“Pre-construction notification will be required for all nationwide permits in geographic areas as shown on Figure 1: *Watersheds Requiring Pre-Construction Notification*,” dated March 06, 2012 (see pg 16).

Vegetation Protection & Restoration: Permittee shall minimize removal of native vegetation in riparian and wetland areas to the maximum extent possible. Areas subject to temporary vegetation removal in riparian and wetland areas during construction shall be replanted with appropriate native species by the end of the first growing season following the disturbance, except as waived by the District Engineer.

Select Waters and Wetlands: Corps shall coordinate with Idaho Department of Fish and Game for activities in the following waters and wetlands that require notification:

Henry’s Fork, Snake River	Medicine Lodge Creek
Teton River, upstream of State Highway 33	Crooked Creek Mud Lake Basin
South Fork, Snake River	Kootenai River Basin
Big Lost River, upstream of US 93 crossing, south of Leslie	Big Sand Creek
East Fork Big Lost River	Potlatch River
Boise River, upstream of Arrow Rock Reservoir	Hog Meadow Creek
Salmon River and its tributaries	East Fork, Palouse River
St. Joe River	Lolo Creek
Priest River	Musselshell Creek
Falls River	Eldorado Creek
Big Wood River	Camas Prairie (northern Idaho)
Closed Basins of Beaver-Camas Creeks	Middle and South Fork Clearwater River Basins
	Weiser River Basin, Adams & Washington Counties

Or, when the project would affect forested wetlands, peat lands, vernal pools, kettles or wetlands identified in Idaho Department of Fish and Game Wetland Conservation Strategy as Class I, Class II and Reference Habitat Sties.

De-Watering: Permittee shall comply with the following conditions:

- 1) Water removed from within the coffered area must be pumped to a sediment basin or otherwise treated to remove suspended sediments prior to its return to the
- 2) The intake of the water pipe must be screened (openings <3/32 inch) to prevent entrainment of fish trapped in the coffered area;
- 3) Where ESA listed fish are present, fish trapped within the coffered area shall be salvaged by a qualified professional and returned to the waterway upstream of the project area.

Waiver Requirement: The applicant must request a wavier in writing and provide documentation and environmentally based reasons to support the waiver request. Native riparian plants shall be incorporated into bank stabilization projects unless the permittee demonstrates, in writing, that a planting plan is not appropriate or practicable. District coordination with IDEQ and EPA (for projects on tribal lands) will be conducted prior to the District Engineer making the waiver determination to ensure the proposed activity will result in only minimal impacts and is in compliance with Section 401 Water Quality Standards.

REGIONAL ADDITIONS to the GENERAL CONDITIONS

General Condition #2, Aquatic Life Movement: The stream bed shall be returned to pre-construction contours after construction, unless the purpose of the activity is to eliminate a fish barrier and restore the natural substrate and contour.

General Condition #4, Migratory Bird Breeding Areas: The U.S. Fish and Wildlife Service (USFWS) is the primary Federal agency responsible for the conservation and management of migratory bird resources. Applicants should contact the Spokane Office at (509) 893-8009, for additional information.

General Condition #9, Management of Water Flows: Expected high flows referenced in this general condition are defined at the minimum as a 25-year flood event, as identified by the Idaho Department of Water Resources (IDAPA 37.03.07, Rule 62.03.04.a). For culverts or bridges located in a community qualifying for the national flood insurance program, the minimum size culvert shall accommodate the 100-year flood design flow frequency (IDAPA 37.03.07, Rule 62.03.04.c).

General Condition #12, Soil Erosion and Sediment Controls: If the permittee does not have a Best Management Plan (BMP), refer to the Idaho Department of Environmental Quality Catalog of Stormwater Best Management Practices for Idaho Cities and Counties at <http://www.deq.idaho.gov/media/494058-entire.pdf>.

Use of native vegetation is the preferred method to treat soil erosion and stabilize areas disturbed during construction. Eroded and/or disturbed areas shall be replanted with native vegetation and stabilized until vegetative root mass can become established, unless the District Engineer determines this is not practicable. Non-biodegradable materials, such as chicken or hog wire or plastic netting that may entrap wildlife or pose a safety concern should not be used for soil stabilization.

General Condition #13, Removal of Temporary Fills: Temporary stockpiles in waters of the United States may not be placed so a berm or levee is formed parallel to the stream that could confined flows or restrict overbank flow to the floodplain.

General Condition #18, Endangered Species: Non-Federal applicants must contact either their local Idaho Department of Fish and Game (IDFG) or the U.S. Fish and Wildlife Service (USFWS) to determine if any listed species or designated critical habitat might be in the vicinity of their project. Applicants shall notify District Engineer of their findings (see County contact numbers below).

Contact USFWS at (509) 893-8009 for *Bonner, Boundary, Kootenai, Shoshone, Benewah* and *Latah* Counties

Contact USFWS at (208) 378-5388 for all other Idaho Counties

General Condition #20, Historic Properties: Applicants must contact the Idaho State Historic Preservation Office at (208) 334-3847 located in Boise, Idaho to determine if their project may affect historic properties listed in the National Register of Historic Places. Applicant shall notify the District Engineer of their findings.

GENERAL CONDITIONS

To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation.

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements.

**See Regional Addition*

No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbody shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas.

Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity)

of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas.

**See Regional Addition*

Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

5. Shellfish Beds.

No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material.

No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes.

No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments.

If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows.

**See Regional Addition*

To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream

channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the preconstruction course; condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year

Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment

Controls. **See Regional Addition*

Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills.

**See Regional Addition*

Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance.

Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions

added by the district engineer to an NWP authorization.

15. Single and Complete Project.

The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers.

No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or Study River (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights.

No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species.

**See Regional Addition*

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless Section 7 consultation addressing

the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have “no effect” on listed species or critical habitat, or until

Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles.

The permittee is responsible for obtaining any “take” permits required under the U.S. Fish and Wildlife Service’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection

Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties.

**See Regional Addition*

(a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultations is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the preconstruction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation

Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)).

When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k))

prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts.

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters.

Critical resource waters include, NOAA managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are **not authorized** by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation.

The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate Compensatory Mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the

applicable requirements of 33 CFR 332.4(c)(2)–(14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible

mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures.

To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality.

Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management.

In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an

individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions.

The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits.

The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications.

If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide

permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property.

To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. Compliance Certification.

Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to General Condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the

potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction

Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed

project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-

Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction

Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination:

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater

than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, sites specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the preconstruction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization

should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer

will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of preconstruction notifications to expedite agency coordination.

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FURTHER INFORMATION

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
 2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
 3. NWPs do not grant any property rights or exclusive privileges.
 4. NWPs do not authorize any injury to the property or rights of others.
 5. NWPs do not authorize interference with any existing or proposed Federal project
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DEFINITIONS

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration, establishment (creation), enhancement, or preservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Discharge: The term "discharge" means any discharge of dredged or fill material and any activity that causes or results in such a discharge.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from

rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: Re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects

waterbodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete project: The term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a “single and complete project” is all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent—meaning bordering, contiguous, or neighboring—to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbody” include streams, rivers, lakes, ponds, and wetlands.

DEFINITIONS, REGIONAL ADDITIONS

Forested Wetlands: Wetlands characterized by woody vegetation that is 6 meters tall or taller; They are located where moisture is relatively abundant, particularly along rivers and in the mountains and normally possess an overstory of trees and an understory of young trees or shrubs and an herbaceous layer.

REFERENCE: *Classification of Wetlands and Deepwater Habitats of the United States*, Mr. Lewis M. Cowardin; Office of Biological Services; Fish & Wildlife Services; 1979

High Value Wetlands: Forested wetlands, peatlands, vernal pools, playa lakes, kettles, prairie potholes and Class I, Class II, reference and habitat sites identified in Wetland Conservation Strategies, prepared by the Idaho Department of Fish & Game, Conservation Data Center.

Invasive Species: Species of plants not native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

REFERENCE: *Executive Order No. 13112; U.S. Department of Agriculture National Invasive Species Information Center*

Kettle: A steep sided, usually basin or bowl shaped hole or depression, commonly without surface drainage, in glacial drift deposits, often containing a lake or swamp.

REFERENCE: *Bates, Robert L. & Jackson, Julia A.; Glossary of Geology, American Geological Institute; Falls Church; 1980*

Native Species: Species that occurs naturally in a particular region, state, ecosystem and habitat without direct or indirect human actions.

REFERENCE: *Federal Native Plant Conservation Committee; 1994*

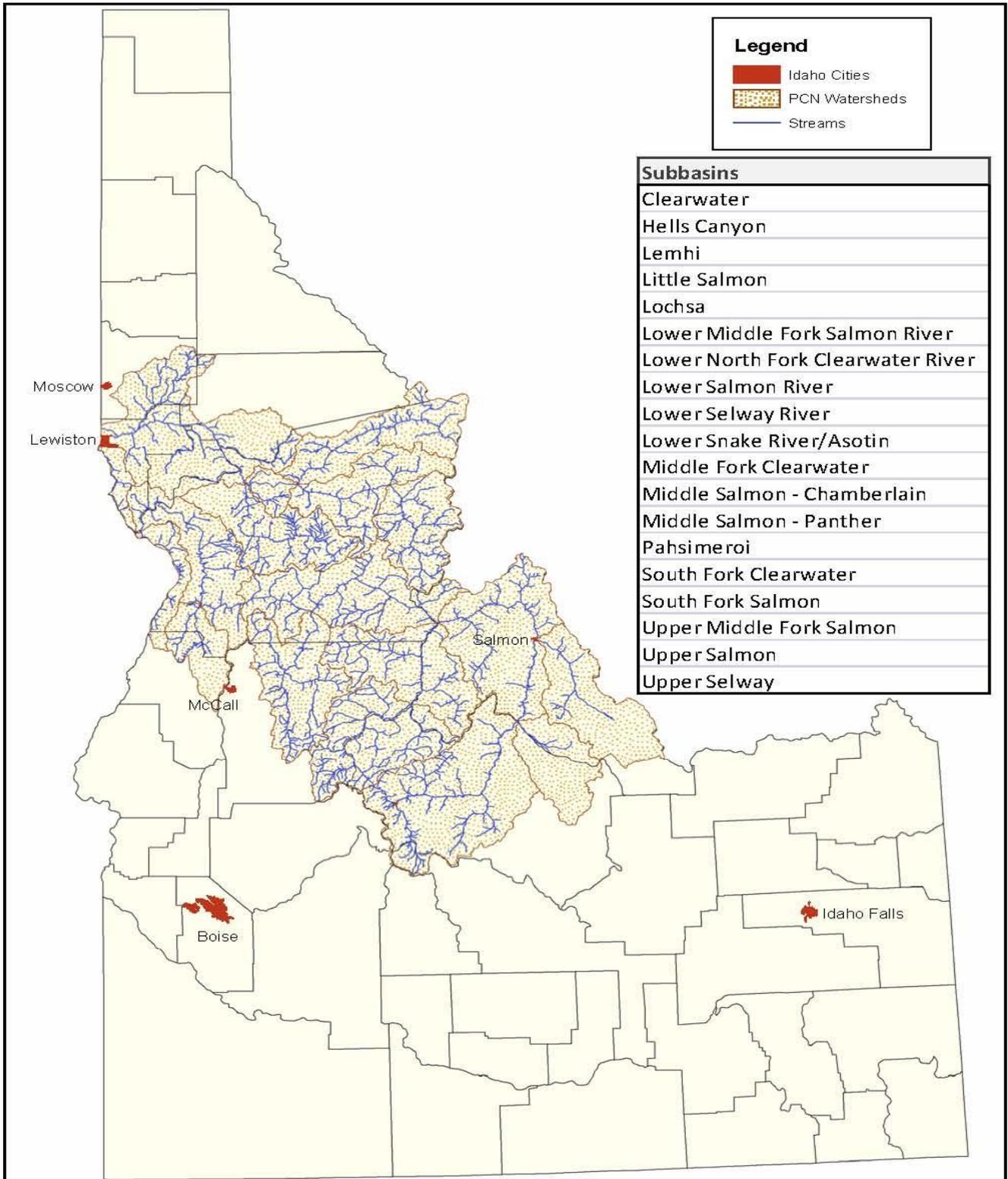
Peatland: Wetlands with waterlogged substrates and at least 30cm of peat accumulation.

REFERENCE: *Bursik, R.J. and Moseley, R.K.; Ecosystem Conservation Strategy for Idaho Panhandle Peatlands; Cooperative project between Idaho Panhandle National Forest and Idaho Department of Fish & Game; Conservation Data Center; Boise 28 pp plus Appendix; 1995*

Vernal Pools: Precipitation-filled seasonal wetlands inundated during periods when temperature is sufficient for plant growth, followed by a brief waterlogged-terrestrial stage and culminating in extreme desiccating soil conditions of extended duration.

REFERENCE: *Keely, J.E. & Zedler, P.H.; Characterization and Global Distribution of Vernal Pools; Pp 1-14 in C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Editors); Ecology, Conservation, and Management of Vernal Pool Ecosystems (Proceedings from Conference, 1996); California Native Plant Society, Sacramento, CA; 1998*

Figure 1: Watersheds Requiring Pre-Construction Notification



NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: City of Chubbuck	File Number: NWW-2016-54	Date: 11 Feb 2016
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found in Corps regulations at 33 CFR Part 331, or at <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/FederalRegulation.aspx>

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

If you only have questions regarding the appeal process you may also contact:

US Army Corps of Engineers, Northwestern Division
Attn: Mary Hoffman, Regulatory Appeals Review Officer
P.O. Box 2870
Portland, OR 97208-2870 Telephone (503) 808-3888
Mary.J.Hoffman@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

I. BACKGROUND INFORMATION

A. Report completion date for Preliminary Jurisdictional Determination (PJD): 11 Feb 2016

B. Name/address of person requesting preliminary JD:

City of Chubbuck
c/o Colter Hollingshead
Keller Associates, Inc.
305 North 3rd Avenue, Suite A
Pocatello, Idaho 83201

C. District Office: Walla Walla District

File Name: City of Chubbuck Water System Improvements, Tyhee Wasteway and Dubois Lateral

File Number: NWW-2016-00054

D. Project Location(s) and Background Information:

State: Idaho County/Parish/Borough: Bannock City: Chubbuck

Center Coordinates of Site (lat/long in degree decimal format): Lat.: 42.92025° North
Long.: -112.45227° West

Name of nearest waterbody(s): Tyhee Wasteway and Dubois Lateral

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 115.0 and 20 Linear feet (respectively)

Cowardin Class: Riverine

Stream Flow: Intermittent

Wetlands: 0.00 acres

Cowardin Class: N/A

Name of any water bodies on the site identified as Section 10 waters:

Tidal: N/A

Non-Tidal: N/A

E. Review performed for site evaluation (Check all that Apply):

Office (Desk) Determination Date: 11 February 2016

Field Determination Date(s):

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site. The permit applicant or other affected person/party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for the site, as described above. Nevertheless, the permit applicant or other affected person/party who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "Pre-Construction Notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following:
 - (a) The permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters;

- (b) That the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions;
- (c) That the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization;
- (d) That the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary;
- (e) That undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable;
- (f) Accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and
- (g) Whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable.

3. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein) or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

II. SUPPORTING DATA. Data reviewed for Preliminary JD

This preliminary JD finds that there “*may be*” waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Check all boxes below that apply. The checked information should be included in the administrative file. Provide detailed reference sources for each checked box.

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
 - (1) [City of Chubbuck Water System Improvements Environmental Consultation Figure, Figure A, Dated 4 Feb 2016](#)
- Data sheets prepared/submitted by or on behalf of the applicant/consultant
 - Office concurs with data sheets/delineation report
 - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps:
 - Corps navigable waters’ study:
 - U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data

- USGS 8 and 12 digit HUC maps
- U.S. Geological Survey map(s): Cite scale & Quad Name: [1:24,000 Pocatello North](#)
- USDA Natural Resources Conservation Service Soil Survey, Citation: [NRCS \(Web Soil Survey\)](#)
- National wetlands inventory map(s): Cite name: [USFWS \(Wetlands Mapper\)](#)
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: _____ (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): [Google Earth/Google Aerials](#) OR Other (Name & Date):
- Previous determination(s): File no. and Date of Response Letter:
- Other information (please specify):

[Tyhee Wasteway and the Dubois Lateral are intermittent channels it is unclear if they return flows to a traditional navigable water \(TNW\) or tributary to a TNW.](#)

This constitutes a preliminary jurisdictional determination (JD) and is useful for the planning of your project. An approved JD is not necessary in order for the Corps to process a 404 permit application.

Admin File No. NWW-2016-54

Important Note: *The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.*

James M. Joyner

Signature of Regulatory Project Manager

REQUIRED

February 11, 2016

Date

Signature of person requesting Preliminary JD

REQUIRED (unless obtaining signature is impracticable)

Date



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502
www.deq.idaho.gov

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

February 5, 2016

Certified Mail No: 7015 1730 0000 9904 7025

Carolyn Boyer-Smith
Cultural Resources Coordinator
Shoshone-Bannock Tribes
P.O. Box 306
Fort Hall, Idaho 83203

RE: Chubbuck Water Improvements Project – Request for Comments for
Preparation of an Environmental Information Document

Dear Ms. Boyer-Smith:

The City of Chubbuck (City) is preparing a facility planning document to identify and make necessary improvements to their drinking water system that are cost effective and environmentally sound. The facility plan for this project is being funded 50% by a Department of Environmental Quality (DEQ) planning grant which requires compliance with the Rules for Administration of Planning Grants for Drinking Water Facilities, IDAPA 58.01.22. The purpose of this letter is to request your review and response regarding any environmental impacts that your agency may identify for this proposed project pursuant to the Idaho Department of Environmental Quality's State Environmental Review Process, which mirrors the National Environmental Policy Act.

The proposed project includes efforts to address deficiencies in water supply, storage, distribution, and fire protection. The proposed project consists of the following new ground disturbance all at the same location, which is currently farm ground along Siphon Road in Chubbuck:

- New well source
- New distribution main – approximately 500 feet
- New storage tank – 1.5 million gallons
- New booster station – approximately 4,000 gpm

The project also involves the following:

- New distribution mains within previously disturbed Siphon Road – approximately 1,500 feet
- Rehabilitation of existing Well #1
- Replacement of distribution mains - approximately 7,100 feet
- Replacement secondary waterlines to address fireflow deficiencies – approximately 11,000 feet.

The project is being proposed to address the City's water system regulatory requirements and to protect the health, safety and welfare of the public and environment. Enclosed are maps of the proposed project planning area that depict the proposed project improvements and area of potential effect for all construction activities.

Carolyn Boyer-Smith
Shoshone-Bannock Tribes
February 5, 2016
Page 2

We request that you advise us of any comments that you may have regarding this project within 30 days, so the City of Chubbuck can proceed with the completion of the Environmental Information Document. If you have any questions concerning this proposed project or if you need any further information, please feel free to contact me at 208-373-0556, or via email at aimee.hill@deq.idaho.gov at your convenience.

Sincerely,



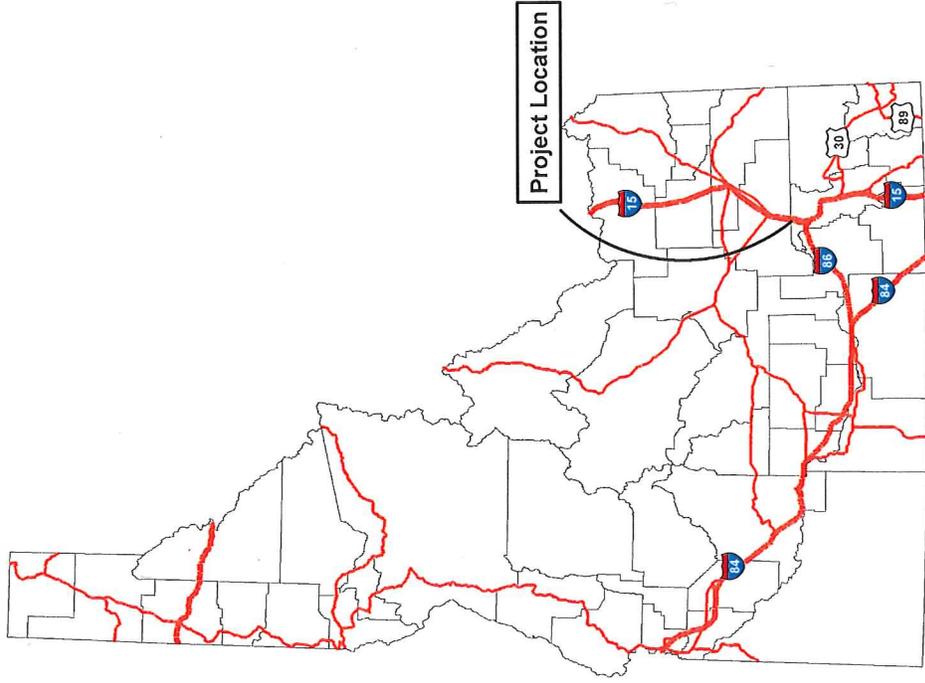
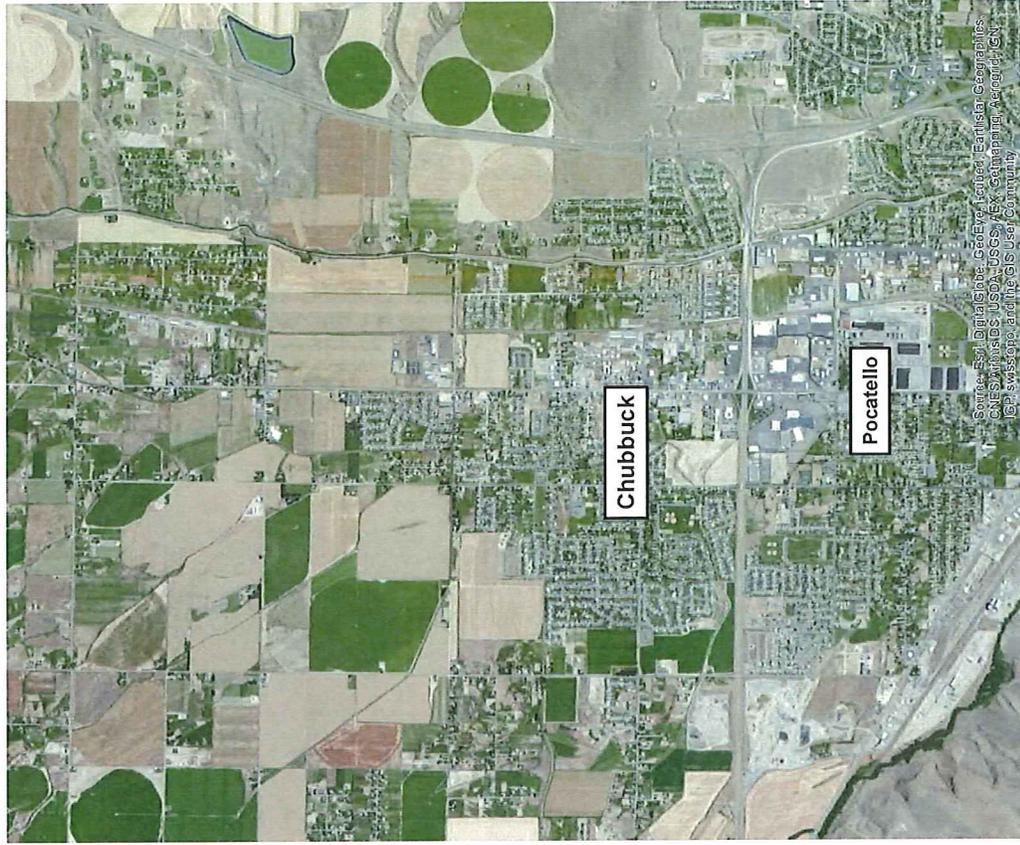
Aimee Hill
Outreach and Environmental Planner (SERP Coordinator)

AH:dls

Encl: PPPA/APE map

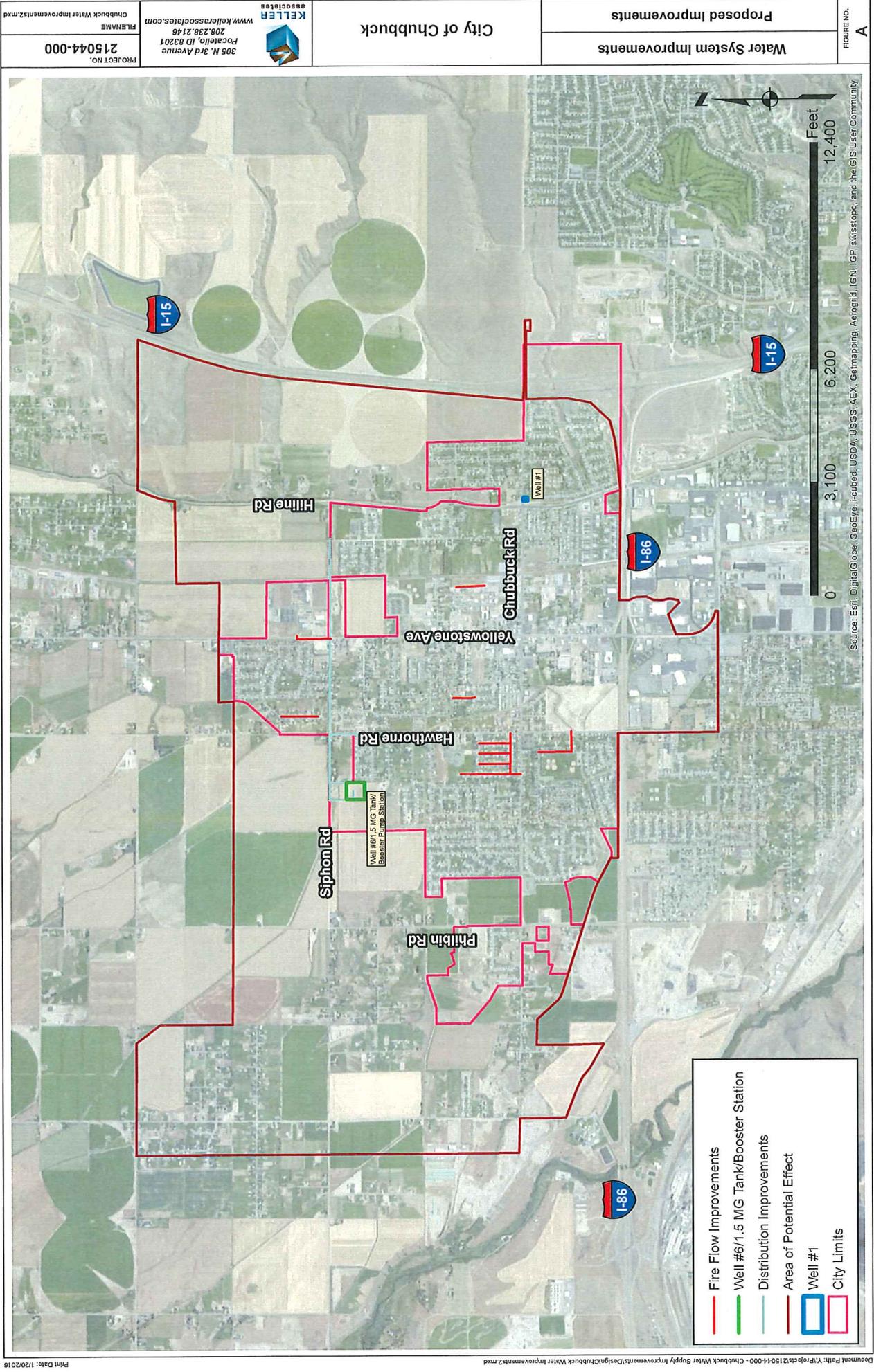
Cc: Skyler Allen, Keller Associates (sallen@kellerassociates.com)

Chubbuck, Idaho
Water Facilities Planning Study
 Project No. 210078 - August 2015



Source: Esri, DigitalGlobe, GeoEye, IGN, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, GEBCO, Swisstopo, and the GIS User Community

PROJECT NO. 210078	FILENAME 2.1 - Location	 KELLER 305 N. 3rd Avenue Pocatello, ID 83201 208.238.2146 www.kellerassociates.com	City of Chubbuck	Water Facility Planning Study	FIGURE NO. 2.1
			Location Map		



- Fire Flow Improvements
- Well #6/1.5 MG Tank/Booster Station
- Distribution Improvements
- Area of Potential Effect
- Well #1
- City Limits



Source: Esri, DigitalGlobe, GeoEye, Earthstar (USDA), USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

PROJECT NO. 215044-000	FILENAME Chubbuck Water Improvements2.mxd	KELLER ASSOCIATES www.kellerassociates.com 305 N. 3rd Avenue Pocahontas, ID 83201 208.238.2146	City of Chubbuck	Water System Improvements	FIGURE NO. A
				Proposed Improvements	



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502
www.deq.idaho.gov

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

February 5, 2016

Certified Mail No: 7015 1730 0000 9904 7015

Ted Howard
Cultural Resources Program
Shoshone-Paiute Tribe
P.O. Box 219
Owyhee, Nevada 89832

RE: Chubbuck Water Improvements Project – Request for Comments for
Preparation of an Environmental Information Document

Dear Mr. Howard:

The City of Chubbuck (City) is preparing a facility planning document to identify and make necessary improvements to their drinking water system that are cost effective and environmentally sound. The facility plan for this project is being funded 50% by a Department of Environmental Quality (DEQ) planning grant which requires compliance with the Rules for Administration of Planning Grants for Drinking Water Facilities, IDAPA 58.01.22. The purpose of this letter is to request your review and response regarding any environmental impacts that your agency may identify for this proposed project pursuant to the Idaho Department of Environmental Quality's State Environmental Review Process, which mirrors the National Environmental Policy Act.

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The project is being proposed to address the City's water system regulatory requirements and to protect the health, safety and welfare of the public and environment. Enclosed are maps of the proposed project planning area that depict the proposed project improvements and area of potential effect for all construction activities.

Ted Howard
Shoshone-Paiute Tribe
City of Chubbuck
February 5, 2016
Page 2

We request that you advise us of any comments that you may have regarding this project within 30 days, so the City of Chubbuck can proceed with the completion of the Environmental Information Document. If you have any questions concerning this proposed project or if you need any further information, please feel free to contact me at 208-373-0556, or via email at aimee.hill@deq.idaho.gov at your convenience.

Sincerely,

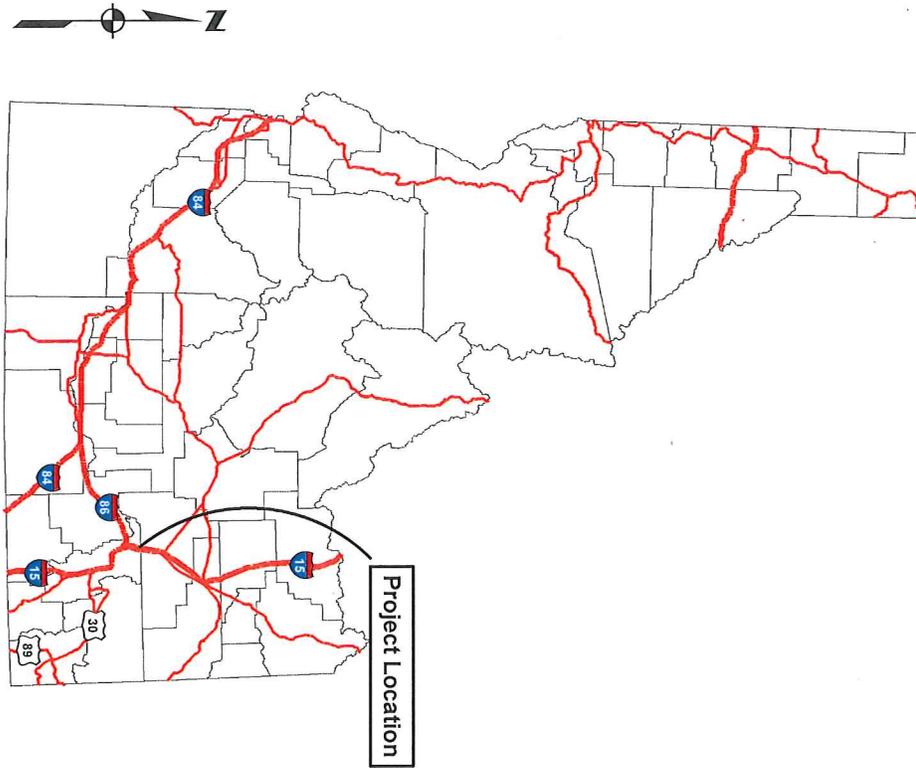


Aimee Hill
Outreach and Environmental Planner (SERP Coordinator)

AH:dls

Encl: PPPA/APE map

Cc: Skyler Allen, Keller Associates (sallen@kellerassociates.com)



Chubbuck, Idaho
Water Facilities Planning Study
 Project No. 210078 - August 2015

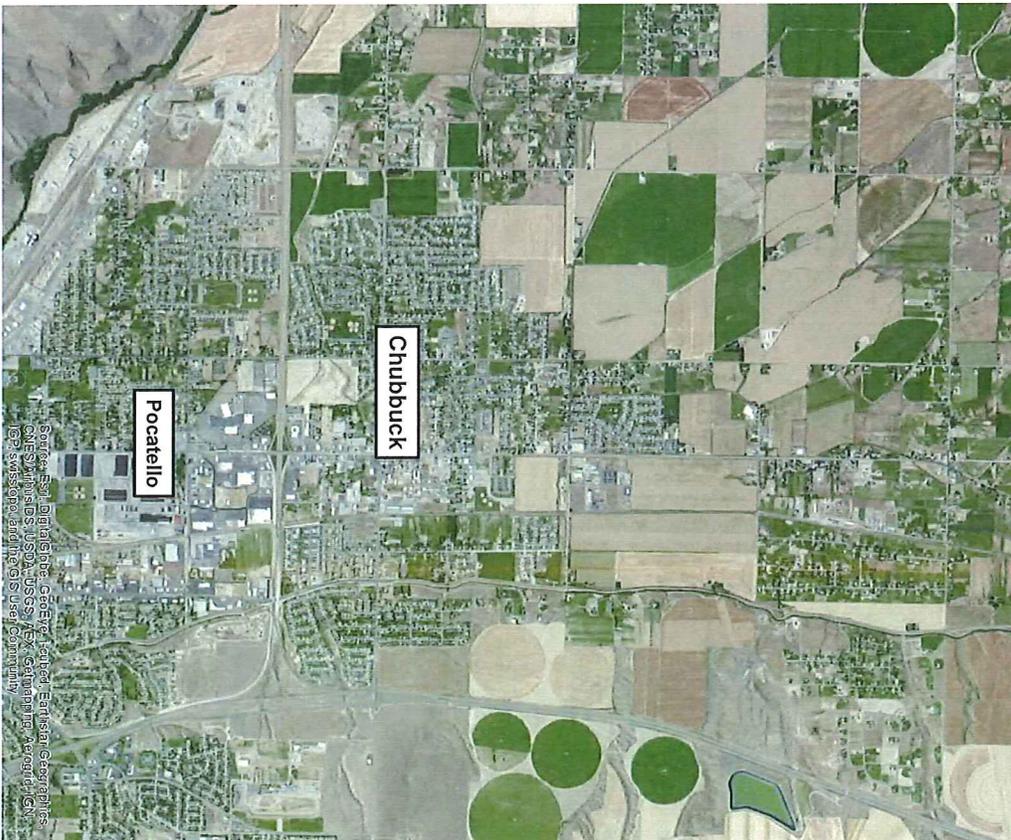


Figure No. 2.1	Water Facility Planning Study	City of Chubbuck	 305 N. 3rd Avenue Pocatello, ID 83201 208.238.2146 www.kellerassociates.com	PROJECT NO. 210078
	Location Map			FILENAME 2.1 - Location

— Fire Flow Improvements
— Well #6/1.5 MG Tank/Booster Station
— Distribution Improvements
 Area of Potential Effect
 Well #1
 City Limits

Source: Esri, DigitalGlobe, GeoEye, USDA, USGS, AEX, Geomatics, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

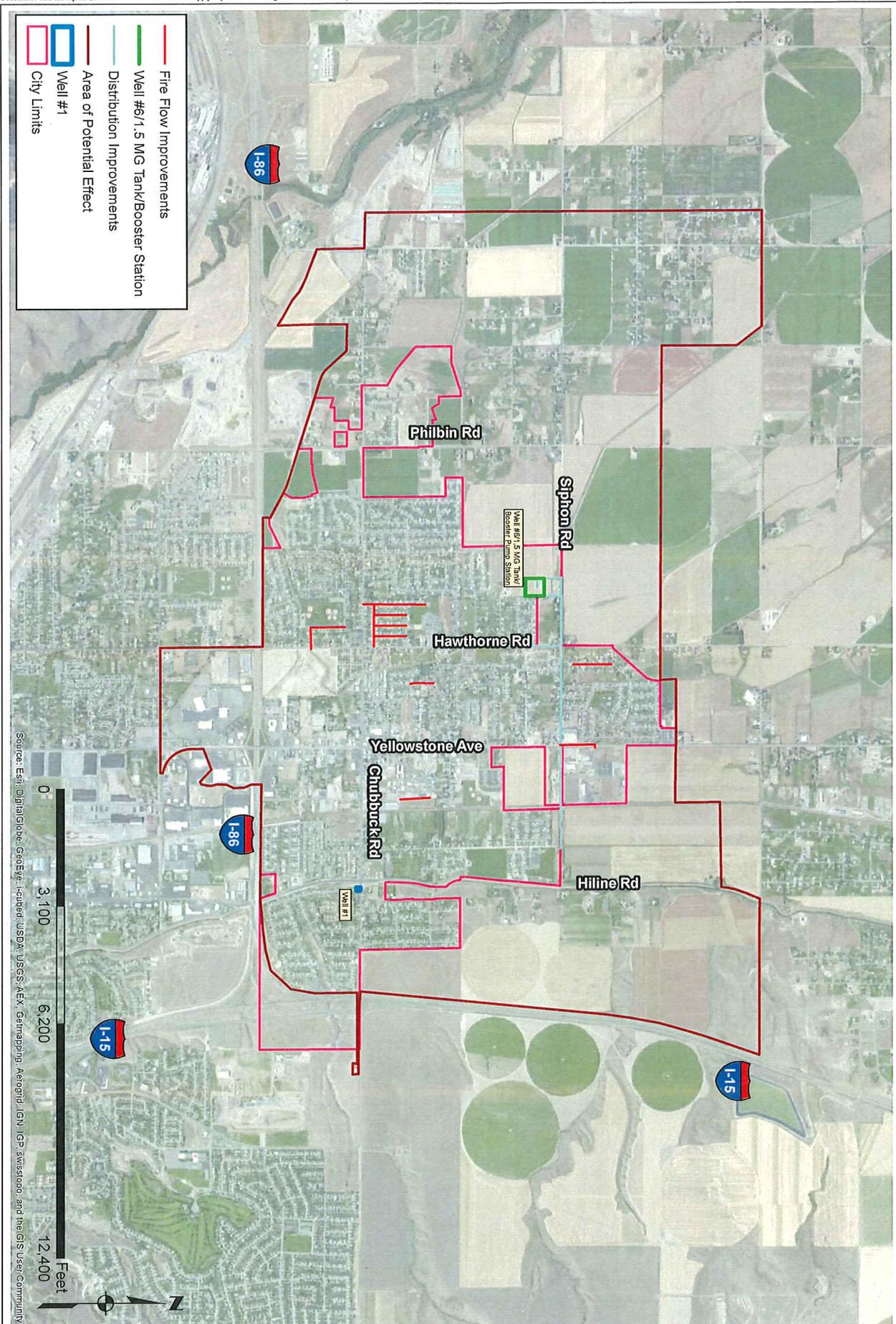


FIGURE NO. A	Water System Improvements	City of Chubbuck	 305 N. 3rd Avenue Pocatello, ID 83201 208.238.2146 www.kellerassociates.com	PROJECT NO. 215044-000
	Proposed Improvements			FILENAME Chubbuck Water Improvements2.mxd



C.L. "Butch" Otter
Governor of Idaho

February 26, 2016

Janet Gallimore
Executive Director

Mr. Colter Hollingshead
Project Engineer
Keller Associates
305 North 3rd Avenue, Suite A
Pocatello, ID 83201

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

RE: City of Chubbuck Water System Improvements (Idaho SHPO REV 2016-397)

Membership and Fund
Development
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 514-2310
Fax: (208) 334-2774

Dear Mr. Hollingshead,

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

Thank you for your informational letter and project materials regarding the proposed improvements to the City of Chubbuck's water system. We understand that you are contacting us in regards to compliance with Section 106 of the National Historic Preservation Act in anticipation of receipt of federal funding through the Idaho Department of Environmental Quality's environmental review process.

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

We have reviewed the proposed undertaking and believe it will have no effect on *historic properties* (36 CFR 800.4). The area of potential effect has been subjected to substantial disturbances which have likely obliterated any integrity of undocumented *historic properties*. There are no locations within the area of potential effect that have a high potential for buried cultural material. The nature of the proposed undertaking will have no indirect effects to any documented or undocumented *historic properties* within the built environment. If any artifacts or features are discovered during the course of this undertaking please contact our office immediately.

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

This fulfills the City of Chubbuck's consultation responsibilities with the Idaho State Historic Preservation under Section 106 of the National Historic Preservation Office. We appreciate your consulting with our office. If you have any questions feel free to contact me at 208-334-3847 x107 or ethan.morton@ishs.idaho.gov.

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

Sincerely,

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

Ethan Morton, State Historic Preservation Office

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

CC: Rodney Burch, Public Works Director – City of Chubbuck
Bridger Morrison, City Engineer – City of Chubbuck



MEMO

TO: SKYLER D. ALLEN, P.E., KELLER ASSOCIATES, INC.
FROM: AIMEE HILL, IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY *AH*
SUBJECT: CHUBBUCK WATER SYSTEM IMPROVEMENT PROJECT
THREATENED/ENDANGERED SPECIES AND ESSENTIAL FISH HABITAT
DATE: FEBRUARY 5, 2016

The proposed project for the Chubbuck Water System Improvements is located in Bannock County and consists of proposed upgrades to the existing drinking water system to address deficiencies in supply, storage, distribution, and fire protection.

The proposed project will address the following deficiencies:

- Rehabilitation of existing Well #1
- Establishment of a new 2,200 gallons-per-minute (gpm) well source
- Installation of a new 1.5 million-gallon storage tank
- Construction of a new approximately 4,000 gpm booster station
- Replacement and/or installation of approximately 7,200 lineal feet of distribution main piping
- Replacement and/or installation of approximately 11,000 lineal feet of secondary waterlines to address fireflow deficiencies.

The Department of Environmental Quality (DEQ) utilized the Environmental Conservation Online System (ECOS) Information Planning and Conservation (IPaC) website to aid in determining endangered and threatened species within the Area of Potential Effect (APE). The ECOS IPaC site can currently be accessed at the following internet address:

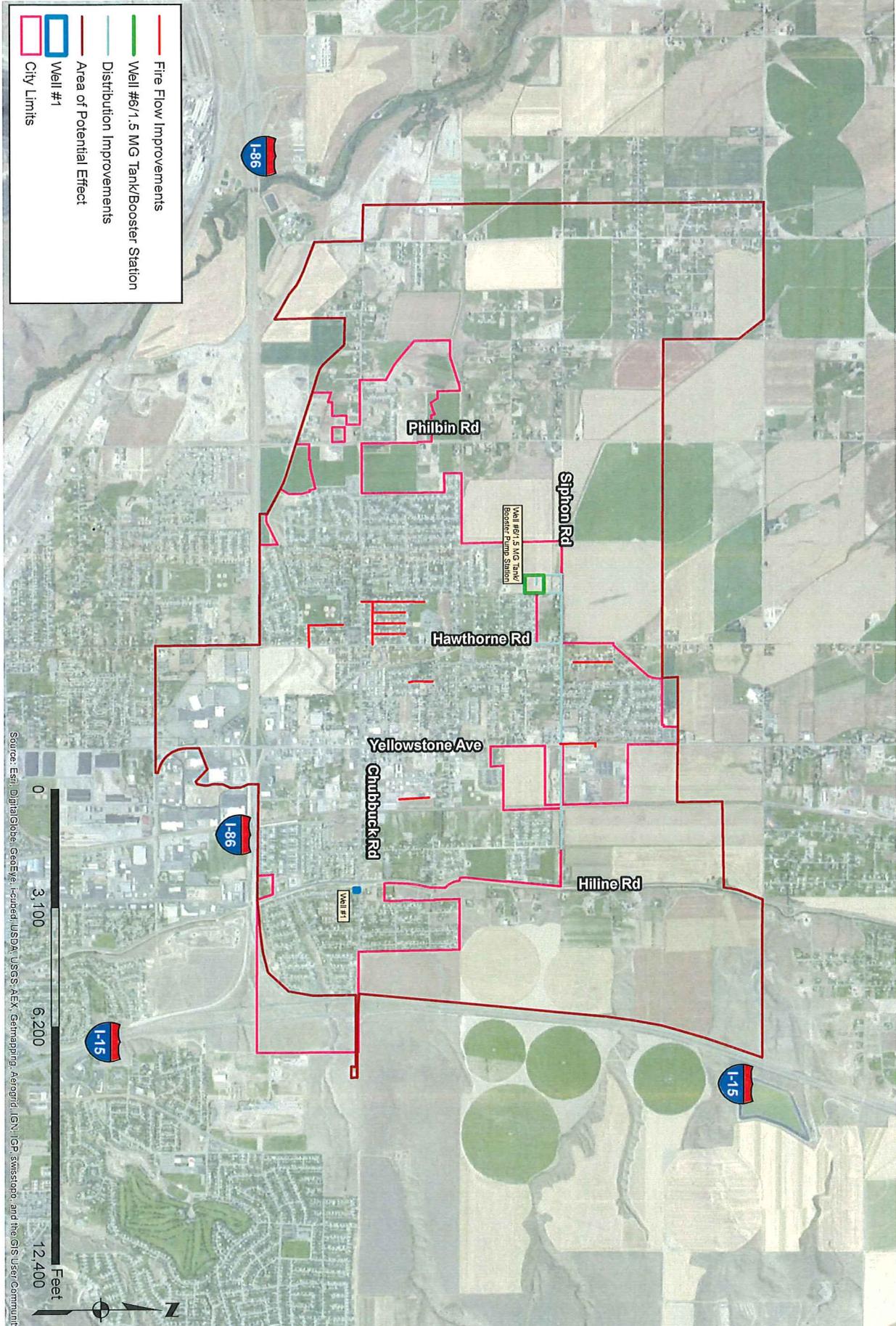
<http://ecos.fws.gov/ipac/>

The official species list obtained via the USFWS dated January 25, 2016 (see attached response) indicated there are no federally listed, proposed, or candidate species, and there are no critical habitats located within the APE. Therefore, the proposed project will have "NO EFFECT" on federally listed, proposed, or candidate species or critical habitat.

USFWS is also responsible for implementing the Migratory Bird Treaty Act of 1918 (MBTA). The preliminary resource list provided by the IPaC tool indicated USFWS indicated up to 21 migratory birds may be identified in the project vicinity. You may wish to contact the local Idaho Fish and Wildlife Office at (208) 378-5243 to ensure project activities do not impact migratory birds protected under the MBTA.

Essential Fish Habitat

The Chubbuck Water Improvements Project is not located within Essential Fish Habitat (EFH) for Salmon as identified in the attached EFH map and will have "NO EFFECT."



Source: Esri, DigitalGlobe, GeoEye, Earthstar USGS, AEX, GeoMapping, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

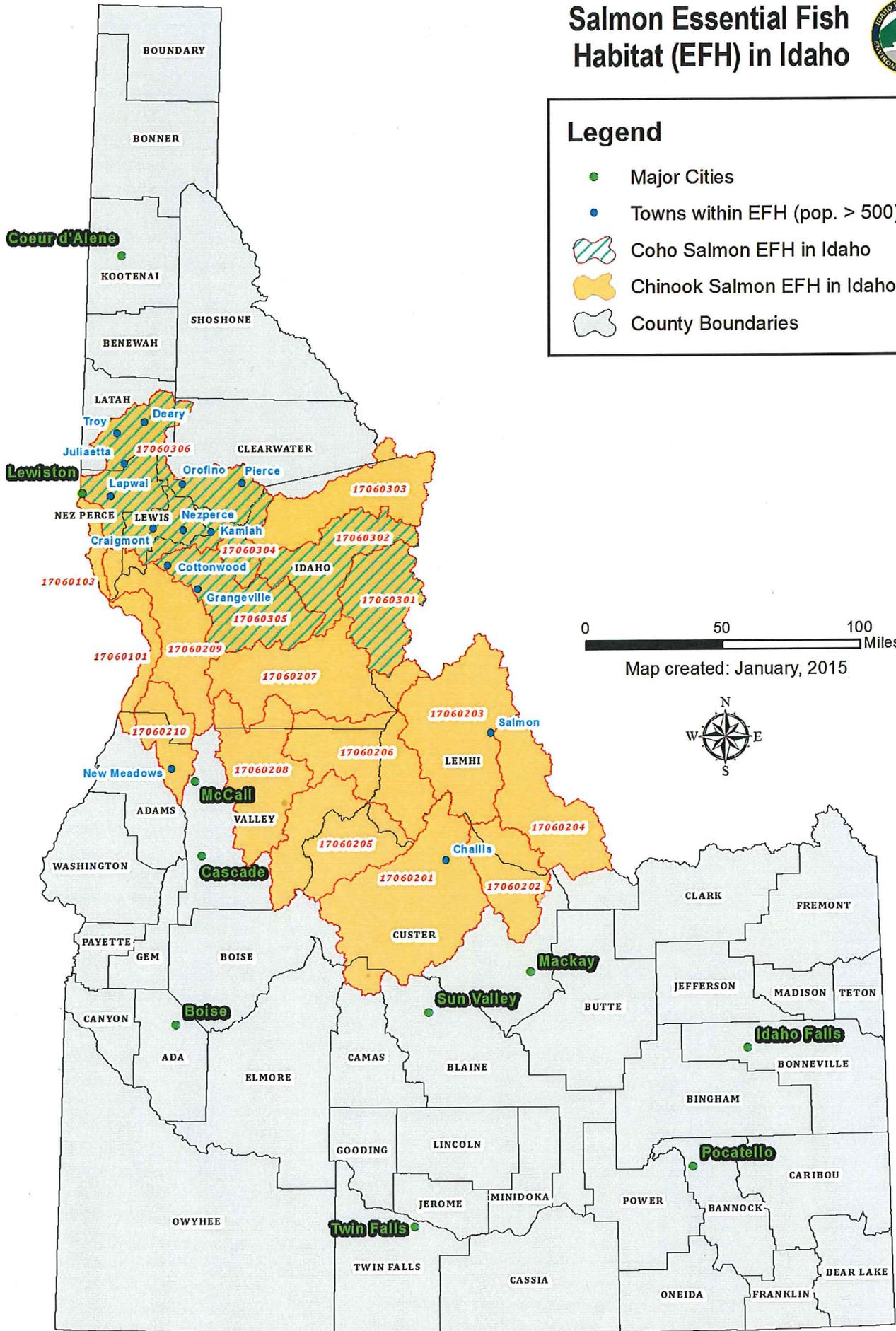
FIGURE NO. A	Water System Improvements	City of Chubbuck	 305 N. 3rd Avenue Pocatello, ID 83201 208.238.2146 www.kellerassociates.com	PROJECT NO. 215044-000
	Proposed Improvements			FILENAME Chubbuck Water Improvements2.mxd

Salmon Essential Fish Habitat (EFH) in Idaho



Legend

- Major Cities
- Towns within EFH (pop. > 500)
- Coho Salmon EFH in Idaho
- Chinook Salmon EFH in Idaho
- County Boundaries



0 50 100 Miles

Map created: January, 2015





United States Department of the Interior

FISH AND WILDLIFE SERVICE
Idaho Fish and Wildlife Office
1387 SOUTH VINNELL WAY, SUITE 368
BOISE, ID 83709
PHONE: (208)378-5243 FAX: (208)378-5262



Consultation Code: 01EIFW00-2016-SLI-0300

January 25, 2016

Event Code: 01EIFW00-2016-E-00312

Project Name: Chubbuck Water Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

Please note: The IPaC module for producing a list of proposed and designated critical habitat is currently incomplete. At this time, we ask that you use the information given below to determine whether your action area falls within a county containing proposed/designated critical habitat for a specific species. If you find that your action falls within a listed county, use the associated links for that species to determine if your action area actually overlaps with the proposed or designated critical habitat.

Canada Lynx (*Lynx canadensis*) - Designated February 24, 2009.

Counties: Boundary County.

Federal Register Notice:

<http://www.gpo.gov/fdsys/pkg/FR-2009-02-25/pdf/E9-3512.pdf#page=1>

Printable Maps:

http://www.fws.gov/mountain-prairie/species/mammals/lynx/criticalhabitat_files/20081222_fedre

GIS Data: http://criticalhabitat.fws.gov/docs/crithab/zip/lynx_ch.zip

KML for Google Earth: (None Currently Available)

Selkirk Mountains Woodland Caribou (*Rangifer tarandus Caribou*) - Proposed November 30, 2011.

Counties: Bonner and Boundary Counties.

Federal Register Notice: <http://www.fws.gov/idaho/home/2011-30451FINALR.pdf>

Printable Maps: http://www.fws.gov/idaho/home/Map1_sub1_150.pdf

GIS Data: (None Currently Available)

KML for Google Earth: (None Currently Available)

Bull Trout (*Salvelinus confluentus*) - Designated September 30, 2010.

Counties: Adams, Benewah, Blaine, Boise, Bonner, Boundary, Butte, Camas, Clearwater, Custer, Elmore, Gem, Idaho, Kootenai, Lemhi, Lewis, Nez Perce, Owyhee, Shoshone, Valley, and Washington Counties.

Federal Register Notice:

<http://www.gpo.gov/fdsys/pkg/FR-2010-10-18/pdf/2010-25028.pdf#page=2>

Printable Maps: http://www.fws.gov/pacific/bulltrout/CH2010_Maps.cfm#CHMaps

GIS Data: <http://criticalhabitat.fws.gov/docs/crithab/zip/bulltrout.zip>

KML for Google Earth:

http://www.fws.gov/pacific/bulltrout/finalcrithab/BT_FCH_2010_KML.zip

Kootenai River White Sturgeon (*Acipenser transmontanus*) - Designated July 9, 2008.

Counties: Boundary County.

Federal Register Notice:

<http://www.gpo.gov/fdsys/pkg/FR-2008-07-09/pdf/E8-15134.pdf#page=1>

Printable Maps: (None Currently Available)

GIS Data: http://criticalhabitat.fws.gov/docs/crithab/zip/fch_73fr39506_acit_2009.zip

KML for Google Earth: (None Currently Available)

Slickspot Peppergrass (*Lepidium papilliferum*) - Proposed May 10, 2011. Counties: Ada, Canyon, Elmore, Gem, Owyhee, and Payette Counties.

Federal Register Notice: <http://www.gpo.gov/fdsys/pkg/FR-2011-10-26/pdf/2011-27727.pdf>

Printable Maps: <http://www.fws.gov/idaho/Lepidium.html>

GIS Data: (None Currently Available)

KML for Google Earth: (None Currently Available)

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Chubbuck Water Improvements

Official Species List

Provided by:

Idaho Fish and Wildlife Office
1387 SOUTH VINNELL WAY, SUITE 368
BOISE, ID 83709
(208) 378-5243

Consultation Code: 01EIFW00-2016-SLI-0300

Event Code: 01EIFW00-2016-E-00312

Project Type: WATER SUPPLY / DELIVERY

Project Name: Chubbuck Water Improvements

Project Description: The project is being proposed to address the City's water system regulatory requirements and to protect the health, safety and welfare of the public and environment. The following elements are included:

- Rehabilitation of existing Well #1
- New well source (2,200 gpm)
- New storage tank (1.5 mil gals)
- New booster station (4,000 gpm)
- New and replacement distribution mains (7,200 ft)
- New and replacement secondary waterlines to address fireflow deficiencies (11,000 ft)

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Chubbuck Water Improvements

Endangered Species Act Species List

There are a total of 0 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

There are no listed species identified for the vicinity of your project.



United States Department of Interior
Fish and Wildlife Service

Project name: Chubbuck Water Improvements

Critical habitats that lie within your project area

There are no critical habitats within your project area.

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request			
Name of Project		Federal Agency Involved			
Proposed Land Use		County and State			
PART II (To be completed by NRCS)		Date Request Received By NRCS		Person Completing Form:	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %		Amount of Farmland As Defined in FPPA Acres: %		
Name of Land Evaluation System Used	Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS		
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly					
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site					
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide Important or Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)					
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)			
2. Perimeter In Non-urban Use		(10)			
3. Percent Of Site Being Farmed		(20)			
4. Protection Provided By State and Local Government		(20)			
5. Distance From Urban Built-up Area		(15)			
6. Distance To Urban Support Services		(15)			
7. Size Of Present Farm Unit Compared To Average		(10)			
8. Creation Of Non-farmable Farmland		(10)			
9. Availability Of Farm Support Services		(5)			
10. On-Farm Investments		(20)			
11. Effects Of Conversion On Farm Support Services		(10)			
12. Compatibility With Existing Agricultural Use		(10)			
TOTAL SITE ASSESSMENT POINTS		160			
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100			
Total Site Assessment (From Part VI above or local site assessment)		160			
TOTAL POINTS (Total of above 2 lines)		260			
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>			
Reason For Selection:					
Name of Federal agency representative completing this form:					Date:

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Colter Hollingshead

From: Dunn, Dennis <Dennis.Dunn@idwr.idaho.gov>
Sent: Monday, February 08, 2016 9:30 AM
To: Colter Hollingshead
Subject: RE: Chubbuck, Idaho Agency Consultation Letter

Good Morning Colter,

The City of Chubbuck must have an approved transfer adding the proposed well to the city's water system before the Department may issue a drilling permit. If the City wants additional water they must have an approved application for water right permit, and this will require the city to supply mitigation.

Sincerely,

Dennis M. Dunn
Sr. Water Resource Agent, IDWR

From: Colter Hollingshead [mailto:chollingshead@Kellerassociates.com]
Sent: Friday, February 05, 2016 3:59 PM
To: Dunn, Dennis
Subject: Chubbuck, Idaho Agency Consultation Letter

Mr. Dunn,

We are sending this email and the included attachment for your review and response regarding any environmental impacts your agency may identify for a proposed project in Bannock County, Idaho. The proposed Water System Improvements project is located in Chubbuck, ID. Please read through the attached pdf for the project details. We have also mailed a hard copy of the attachment to your office. Please send any questions and comments to:

Email: chollingshead@kellerassociates.com

Thank you for your time and consideration of these improvements,

Colter L. Hollingshead, P.E.
Project Engineer | Keller Associates, Inc.

P 208.238.2146 | C 307.679.6310
305 North 3rd Avenue, Suite A | Pocatello | Idaho 83201
chollingshead@kellerassociates.com | www.kellerassociates.com

Colter Hollingshead

From: Ed.Hagan@deq.idaho.gov
Sent: Thursday, February 18, 2016 3:03 PM
To: Colter Hollingshead
Cc: Steven.Smith@deq.idaho.gov; David.Goings@deq.idaho.gov; Tom.Hepworth@deq.idaho.gov
Subject: RE: Chubbuck, Idaho Agency Consultation Letter

Mr. Hollingshead,

Thank you for providing information on the City of Chubbuck Water System Improvements. Based on the information you provided, if all activities are conducted in accordance with best management practices and comply with current state regulations, the project should not result in adverse impacts to ground water quality.

DEQ encourages the City Chubbuck to implement Source Water Protection strategies to protect the capital investment associated with the new drinking water supply well. Protecting the quality of the ground water supplying the new well protects the investment and helps ensure a safe drinking water supply for the future. Please contact Steven Smith (208.236.5024) in the DEQ Pocatello Regional Office for additional information regarding Source Water Protection.

Sincerely,

Edward Hagan, P.G.
Ground Water Program Manager
Idaho DEQ
Ed.Hagan@deq.idaho.gov
208.373.0356

From: Colter Hollingshead [mailto:chollingshead@kellerassociates.com]
Sent: Friday, February 05, 2016 3:59 PM
To: Ed Hagan
Subject: Chubbuck, Idaho Agency Consultation Letter

Mr. Hagan,

We are sending this email and the included attachment for your review and response regarding any environmental impacts your agency may identify for a proposed project in Bannock County, Idaho. The proposed Water System Improvements project is located in Chubbuck, ID. Please read through the attached pdf for the project details. We have also mailed a hard copy of the attachment to your office. Please send any questions and comments to:

Email: chollingshead@kellerassociates.com

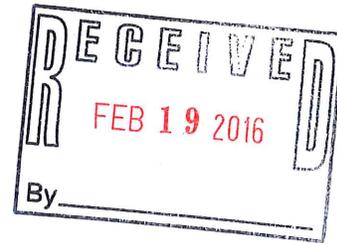
Thank you for your time and consideration of these improvements,

Colter L. Hollingshead, P.E.
Project Engineer | Keller Associates, Inc.

P 208.238.2146 | C 307.679.6310
305 North 3rd Avenue, Suite A | Pocatello | Idaho 83201
chollingshead@kellerassociates.com | www.kellerassociates.com



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY



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

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

February 16, 2016

Colter Hollingshead, Project Manager
Keller Associates
305 North 3rd Ave, Suite A
Pocatello ID 83201

RE: Environmental Information Document (EID) Review, Environmental Impacts for City of Chubbuck, ID Water System Improvements

Dear Mr. Hollingshead,

The Idaho Department of Environmental Quality (IDEQ) has reviewed information you provided in preparation of an Environmental Information Document (EID) required to describe potential environmental impacts associated with the subject project. Please see the following comments.

Storm Water Management

Land disturbance activities associated with development (i.e. road building, stream crossings, land clearing) have the potential to impact water quality and riparian habitats through the generation and transport of sediment laden run-off and related contaminants. The Department recommends the development of a Storm-Water Pollution Prevention Plan (SWPPP) in accordance with federal requirements.

The Department strongly recommends that the city incorporate Best Management Practices (BMPs) and/or Best Available Technology (BAT) for storm water management. BMPs and/or BAT should be implemented as an integral part of any construction or modification associated with this project.

Air Quality

Land development projects are generally required to follow applicable regulations outlined in the Rules for the control of Air Pollution in Idaho. Of particular concern is IDAPA 58 .01.01.650 and 651 Rules for Control of Fugitive Dust.

Section 650 states, "The purpose of sections 650 through 651 is to require that all reasonable precautions be taken to prevent the generation of fugitive dust." Section 651 states "All reasonable precautions shall be taken to prevent particulate matter from becoming airborne. In determining what is reasonable, consideration will be given to factors such as the proximity of dust emitting operations to human habitations and/or activities and atmospheric conditions which might affect the movement of particulate matter. Some of the reasonable precautions may include, but are not limited to, the following:

1. Use of Water or Chemicals. Use, where practical, of water or chemicals for control of dust in the demolition of existing building or structures, construction operations, the grading of roads, or the clearing of land.
2. Application of Dust Suppressants. Application, where practical of asphalt, oil, water or suitable chemicals to, or covering of dirt roads, materials stockpiles, and other surfaces which can create dust.
3. Use of Control Equipment. Installation and use, where practical, of hoods, fans and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations.
4. Covering of Trucks. Covering, when practical, open bodied trucks transporting materials likely to give rise to airborne dusts.
5. Paving. Paving of roadways and their maintenance in a clean condition, where practical.
6. Removal of Materials. Prompt removal of earth or other stored materials from streets, where practical."

Hazardous Waste

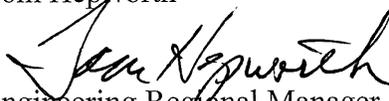
Accidental surface spills of petroleum hydrocarbon products (i.e. fuel, oil, and similar products) are most commonly associated with the transportation and delivery of fuel to work sites or facilities. The Idaho Release, Reporting, and Corrective Action Regulations (IDAPA 58.01 .02 .851 and .852), require notification within 24 hours of any spill of petroleum product greater than 25 gallons and notification for the release of lesser amounts if they cannot be cleaned up within twenty-four (24) hours. The cleanup requirements are also contained in those regulations. Both federal and Idaho regulations require the cleanup of any spill or release of used oil. [IDAPA 58.01.05.015; [40 CFR 279.22(d)(3)].

Engineering Review

In accordance with Idaho Code 3 9-118, construction plans & specifications prepared by a professional engineer are required for DEQ review and approval prior to construction if the proposed system upgrade is to serve a public water system.

Thanks for the opportunity to provide comments on this important project for the City of Chubbuck. If you have questions or comments, please contact me at 236-6160 or via email at tom.hepworth@deg.idaho.gov.

Sincerely,
Tom Hepworth


Engineering Regional Manager

CC. Bruce Olenick, Regional Administrator, Pocatello Regional Office, Idaho DEQ (email)

File: TRIM Reference: 2016AGE9

Appendix D Environmental Information

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 tubercid 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

PEM1F	2.94 acres
PEM1Ch	0.846 acre
PEM1B	0.526 acre
PEM1C	0.31 acre

Freshwater Forested/shrub Wetland

PSS1C	24.3 acres
PFO1A	3.71 acres

Freshwater Pond

PUBHx	1.21 acres
PAB4F	0.831 acre

PUBFh	0.714 acre
PUBFx	0.659 acre
Lake	
L1UBKHx	9.4 acres
Riverine	
R2UBH	106.0 acres

IDAHO

MONTHLY AVERAGE PAN EVAPORATION (INCHES)

	PERIOD OF RECORD	MONTHLY AVERAGE PAN EVAPORATION (INCHES)												YEAR
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
ABERDEEN EXPERIMNT STN	1914-2005	0.00	0.00	0.00	0.00	7.46	8.95	10.28	9.40	6.41	3.85	0.00	0.00	46.35
ARROWROCK DAM	1916-2005	0.00	0.00	0.00	0.00	5.94	7.53	10.18	8.93	5.75	2.35	0.00	0.00	40.68
BLACKFOOT DAM	1948-1971	0.00	0.00	0.00	0.00	0.00	7.56	9.19	7.42	3.97	0.00	0.00	0.00	28.14
EMMETT 2 E	1948-2005	0.00	0.00	0.00	5.62	7.09	8.82	10.58	9.44	6.56	4.57	0.00	0.00	52.68
ISLAND PARK	1937-2005	0.00	0.00	0.00	0.00	0.00	4.90	6.58	5.69	0.00	0.00	0.00	0.00	17.17
LIFTON PUMPING STN	1935-2005	0.00	0.00	0.00	4.08	5.97	7.41	8.70	7.80	5.35	3.02	0.00	0.00	42.33
MACKAY 4 NW	1965-1988	0.00	0.00	0.00	0.00	6.81	8.39	10.23	8.73	6.39	0.00	0.00	0.00	40.55
MINIDOKA DAM	1947-2005	0.00	0.00	0.00	6.79	8.17	10.76	13.01	11.48	8.26	4.63	2.94	0.00	66.04
MOSCOW UNIV OF IDAHO	1893-2005	0.00	0.00	3.03	3.85	5.66	6.53	8.62	8.23	5.29	3.03	2.85	0.00	47.09
PALISADES	1947-1993	0.00	0.00	0.00	4.01	5.56	7.04	9.38	8.32	5.48	3.58	0.00	0.00	43.37
PARMA EXPERIMENT STN	1922-2005	0.00	0.00	0.00	6.00	8.26	9.05	10.41	9.47	6.30	0.00	0.00	0.00	49.49
REXBURG RICKS COLLEGE	1977-2005	0.00	0.00	0.00	0.00	6.59	7.29	8.06	7.36	5.23	0.00	0.00	0.00	34.53
SANDPOINT EXPERMNT STN	1910-2005	0.00	0.00	0.00	0.00	4.96	5.51	7.47	6.78	4.47	0.00	0.00	0.00	29.19
TWIN FALLS WSO	1963-2005	0.00	0.00	0.00	5.80	8.09	9.15	10.24	9.09	6.65	4.25	0.77	0.00	54.04

POCATELLO WSO ARPT, IDAHO (107211)

Period of Record Monthly Climate Summary

Period of Record : 1/ 3/1939 to 9/30/2012

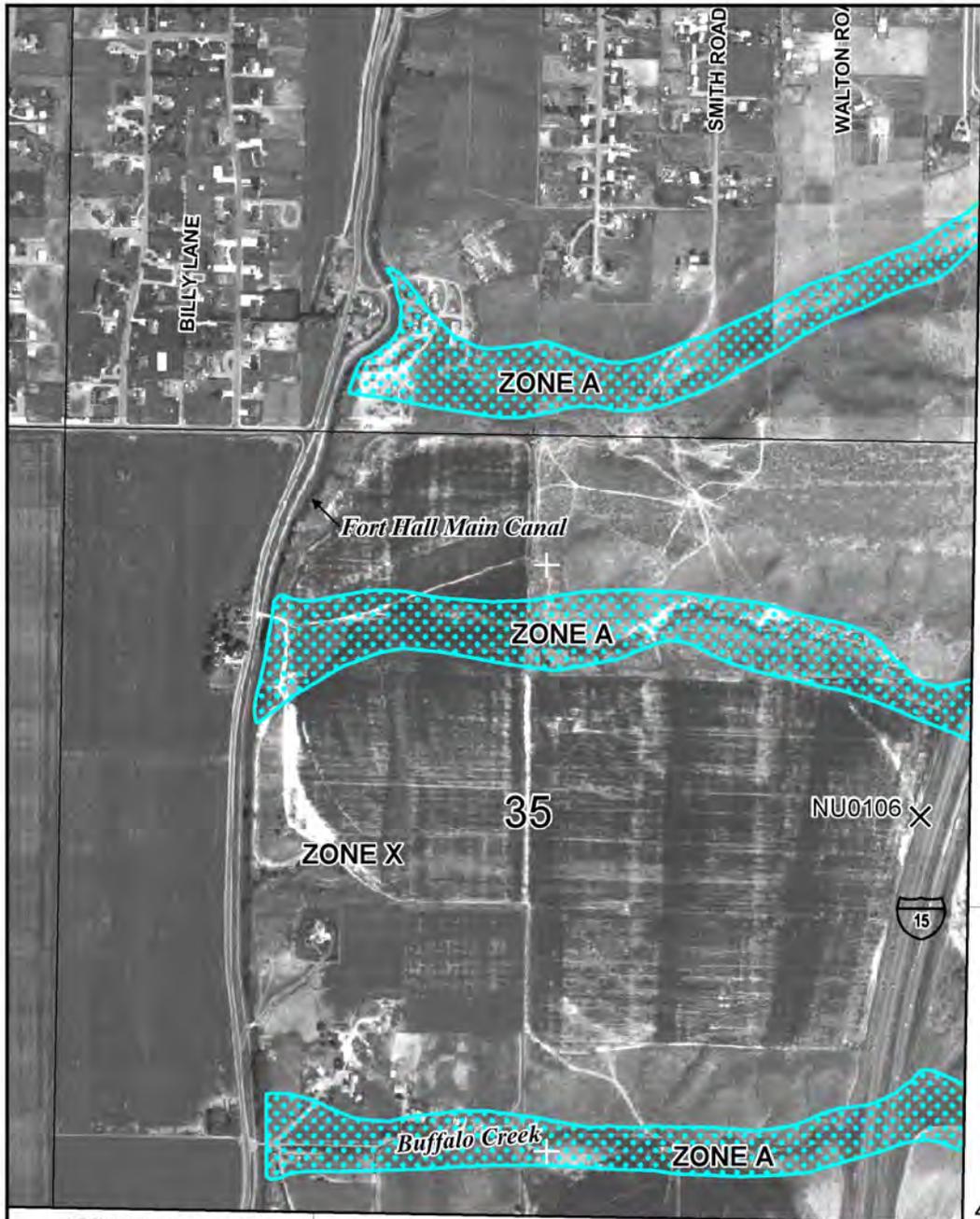
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	32.5	38.2	47.6	58.1	68.1	77.5	88.5	87.0	76.0	62.3	45.3	34.8	59.7
Average Min. Temperature (F)	15.1	19.8	26.3	32.8	40.2	46.8	53.2	51.5	42.6	33.6	24.7	17.4	33.7
Average Total Precipitation (in.)	1.08	0.90	1.17	1.12	1.34	1.05	0.53	0.59	0.78	0.92	1.05	1.07	11.59
Average Total SnowFall (in.)	9.1	6.5	5.4	3.4	0.4	0.0	0.0	0.0	0.1	1.8	4.7	8.6	39.8
Average Snow Depth (in.)	2	1	0	0	0	0	0	0	0	0	0	1	0

Percent of possible observations for period of record.

Max. Temp.: 100% Min. Temp.: 100% Precipitation: 100% Snowfall: 100% Snow Depth: 94.6%

Check [Station Metadata](#) or [Metadata graphics](#) for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu



470000 FT

465000 FT

42° 56' 15"

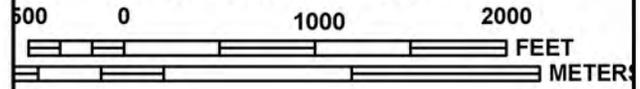
112° 26' 15"

JOINS PANEL 0237

580000 FT



MAP SCALE 1" = 1000'



PANEL 0230D

FIRM

FLOOD INSURANCE RATE MAP
 BANNOCK COUNTY,
 IDAHO
 AND INCORPORATED AREAS

PANEL 230 OF 925
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BANNOCK COUNTY	160009	0230	D
CHUBBUCK, CITY OF	160162	0230	D

NATIONAL FLOOD INSURANCE PROGRAM

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
 16005C0230D
EFFECTIVE DATE
 JULY 7, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



United States
Department of
Agriculture

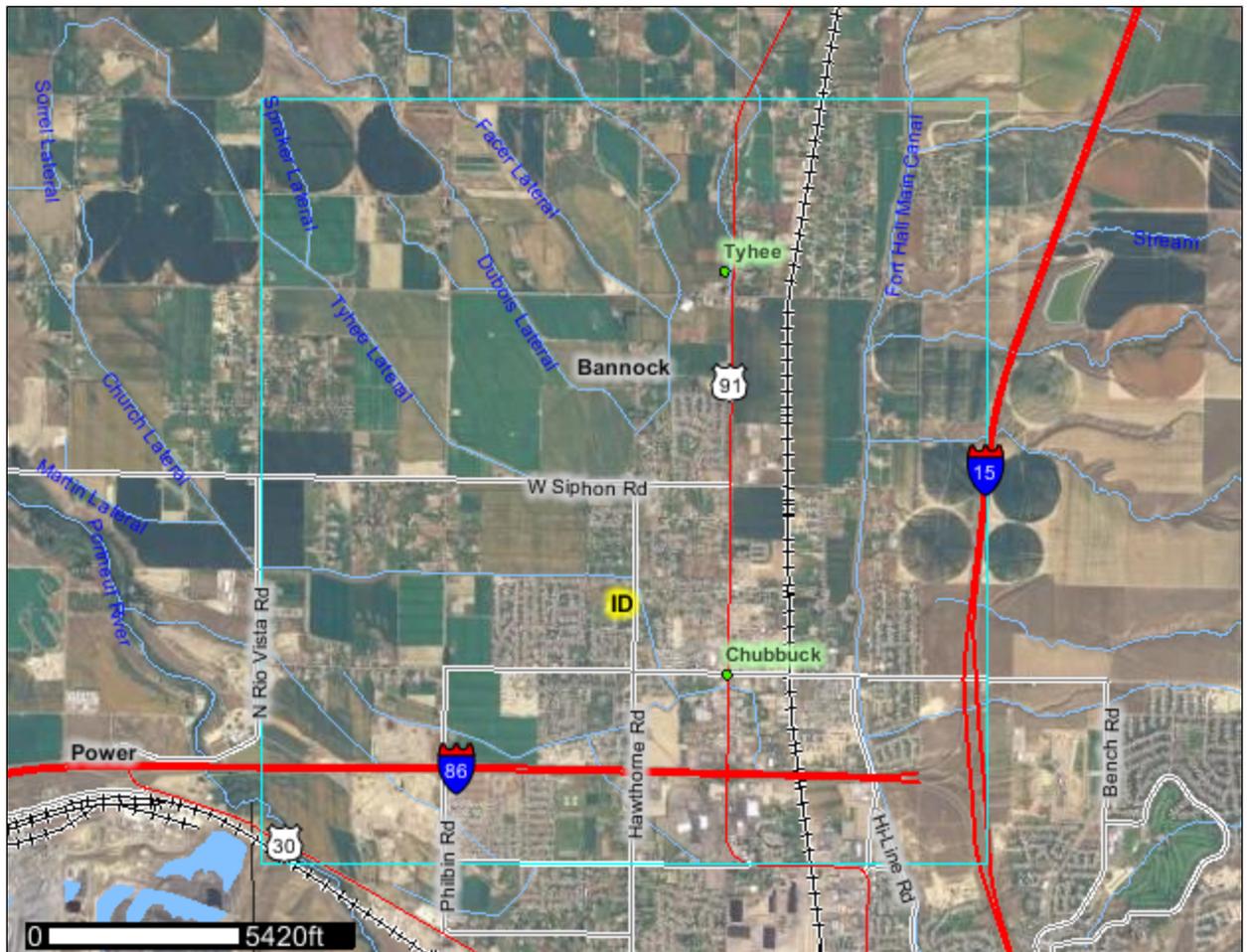


NRCS

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 Bannock County Area, Idaho, Parts of Bannock and Power Counties; and Fort Hall Area, Idaho, Parts of Bannock, Bingham, Caribou, and Power Counties



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://soils.usda.gov/sqi/>) 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=nracs>) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

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 Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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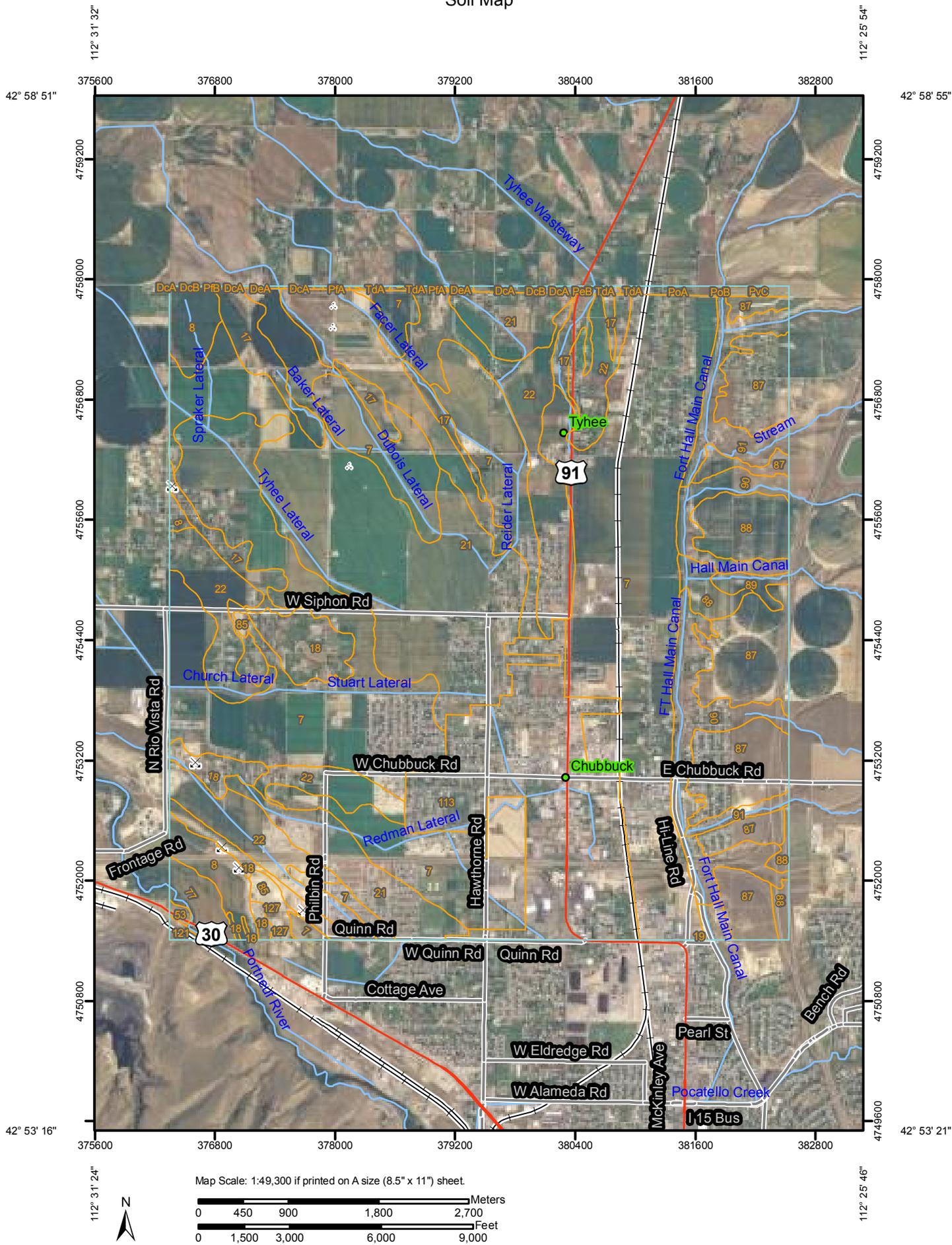
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Soil Map

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: 1:49,300 if printed on A size (8.5" x 11") sheet.



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

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

-  Gully
-  Short Steep Slope
-  Other

Political Features

 Cities

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads

MAP INFORMATION

Map Scale: 1:49,300 if printed on A size (8.5" × 11") sheet.

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

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: UTM Zone 12N NAD83

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

Soil Survey Area: Bannock County Area, Idaho, Parts of Bannock and Power Counties
 Survey Area Data: Version 7, Aug 14, 2012

Soil Survey Area: Fort Hall Area, Idaho, Parts of Bannock, Bingham, Caribou, and Power Counties
 Survey Area Data: Version 7, Aug 14, 2012

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Date(s) aerial images were photographed: 7/12/2004; 7/11/2004

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

Bannock County Area, Idaho, Parts of Bannock and Power Counties (ID711)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7	Bahem silt loam, 0 to 2 percent slopes	3,487.0	34.9%
8	Bahem silt loam, 2 to 4 percent slopes	201.9	2.0%
17	Broncho cobbly loam, 1 to 8 percent slopes	322.1	3.2%
18	Broncho cobbly loam, 4 to 20 percent slopes, extremely stony	295.7	3.0%
19	Broncho variant-Pocatello complex, 20 to 50 percent slopes	23.3	0.2%
21	Broxon silt loam, 0 to 2 percent slopes	1,646.1	16.5%
22	Broxon silt loam, 2 to 4 percent slopes	1,241.8	12.4%
53	Hondoho-Arbone complex, 4 to 12 percent slopes	8.0	0.1%
77	McDole-McDole variant complex, 0 to 2 percent slopes	74.9	0.8%
85	Pits, gravel	46.6	0.5%
87	Pocatello silt loam, 1 to 4 percent slopes	750.6	7.5%
88	Pocatello silt loam, 4 to 8 percent slopes	235.6	2.4%
89	Pocatello silt loam, 8 to 12 percent slopes	34.9	0.3%
90	Pocatello silt loam, 12 to 20 percent slopes	387.0	3.9%
91	Pocatello silt loam, 20 to 30 percent slopes	191.8	1.9%
113	Urban land-Bahem-Broxon complex, 0 to 3 percent slopes	929.1	9.3%
121	Watercanyon-Swanner-Rock outcrop complex, 20 to 50 percent slopes	10.6	0.1%
127	Water	1.2	0.0%
Subtotals for Soil Survey Area		9,888.1	99.1%
Totals for Area of Interest		9,979.2	100.0%

Fort Hall Area, Idaho, Parts of Bannock, Bingham, Caribou, and Power Counties (ID710)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DcA	Declo loam, 0 to 2 percent slopes	17.4	0.2%
DcB	Declo loam, 2 to 4 percent slopes	2.9	0.0%
DeA	Declo loam, saline-alkali, 0 to 2 percent slopes	5.9	0.1%
GP	Pits, gravel	0.1	0.0%
PeA	Paniogue loam, 0 to 2 percent slopes	3.8	0.0%
PeB	Paniogue loam, 2 to 4 percent slopes	6.6	0.1%
PeC	Paniogue loam, 4 to 8 percent slopes	2.1	0.0%
PfA	Paniogue loam, saline-alkali, 0 to 2 percent slopes	2.9	0.0%

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Fort Hall Area, Idaho, Parts of Bannock, Bingham, Caribou, and Power Counties (ID710)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PfB	Paniogue loam, saline-alkali, 2 to 4 percent slopes	1.7	0.0%
PoA	Penoyer silt loam, 0 to 2 percent slopes	18.7	0.2%
PoB	Penoyer silt loam, 2 to 4 percent slopes	1.3	0.0%
PvC	Pocatello silt loam, 4 to 8 percent slopes	15.9	0.2%
TdA	Tickason loam, 0 to 2 percent slopes	10.4	0.1%
W	Water	0.4	0.0%
WhF	Wheeler silt loam, 30 to 55 percent slopes	1.0	0.0%
Subtotals for Soil Survey Area		91.0	0.9%
Totals for Area of Interest		9,979.2	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

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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.

Bannock County Area, Idaho, Parts of Bannock and Power Counties

7—Bahem silt loam, 0 to 2 percent slopes

Map Unit Setting

Landscape: Valleys

Elevation: 4,400 to 4,500 feet

Mean annual precipitation: 9 to 11 inches

Mean annual air temperature: 48 to 54 degrees F

Frost-free period: 110 to 130 days

Map Unit Composition

Bahem and similar soils: 85 percent

Description of Bahem

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Silty alluvium and/or loess

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: 27 to 60 inches to strongly contrasting textural stratification

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Available water capacity: High (about 9.8 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated

Land capability classification (irrigated): 2c

Land capability (nonirrigated): 6e

Hydrologic Soil Group: B

Typical profile

0 to 11 inches: Silt loam

11 to 49 inches: Silt loam

49 to 60 inches: Extremely cobbly sand

8—Bahem silt loam, 2 to 4 percent slopes

Map Unit Setting

Landscape: Valleys

Custom Soil Resource Report

Elevation: 4,400 to 4,500 feet
Mean annual precipitation: 9 to 11 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 110 to 130 days

Map Unit Composition

Bahem and similar soils: 85 percent

Description of Bahem

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium and/or loess

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: 27 to 60 inches to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 9.8 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2e
Land capability (nonirrigated): 6c
Hydrologic Soil Group: B

Typical profile

0 to 11 inches: Silt loam
11 to 49 inches: Silt loam
49 to 60 inches: Extremely cobbly sand

17—Broncho cobbly loam, 1 to 8 percent slopes

Map Unit Setting

Landscape: Valleys
Elevation: 4,400 to 4,500 feet
Mean annual precipitation: 9 to 11 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 110 to 130 days

Map Unit Composition

Broncho and similar soils: 85 percent

Description of Broncho

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Very low (about 1.4 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 4e
Hydrologic Soil Group: B

Typical profile

0 to 6 inches: Cobbly loam
6 to 13 inches: Cobbly loam
13 to 60 inches: Extremely cobbly coarse sand

18—Broncho cobbly loam, 4 to 20 percent slopes, extremely stony

Map Unit Setting

Landscape: Valleys
Elevation: 4,400 to 4,500 feet
Mean annual precipitation: 9 to 11 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 110 to 130 days

Map Unit Composition

Broncho, extremely stony surface, and similar soils: 80 percent

Description of Broncho, Extremely Stony Surface

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear

Custom Soil Resource Report

Parent material: Mixed alluvium

Properties and qualities

Slope: 4 to 20 percent

Surface area covered with cobbles, stones or boulders: 9.0 percent

Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 20 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

Available water capacity: Very low (about 1.3 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 7s

Hydrologic Soil Group: C

Ecological site: STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)

Typical profile

0 to 6 inches: Cobbly loam

6 to 13 inches: Cobbly loam

13 to 60 inches: Extremely cobbly coarse sand

19—Broncho variant-Pocatello complex, 20 to 50 percent slopes

Map Unit Setting

Landscape: Valleys

Elevation: 3,000 to 5,200 feet

Mean annual precipitation: 8 to 13 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 100 to 140 days

Map Unit Composition

Pocatello and similar soils: 45 percent

Broncho variant and similar soils: 45 percent

Description of Broncho Variant

Setting

Landform: Terraces

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Alluvium derived from sedimentary rock and/or metasedimentary rock

Properties and qualities

Slope: 20 to 50 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Maximum salinity: Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Low (about 4.7 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)

Typical profile

0 to 4 inches: Very gravelly loam
4 to 20 inches: Extremely cobbly loam
20 to 28 inches: Extremely cobbly clay loam
28 to 60 inches: Extremely cobbly sandy loam

Description of Pocatello

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess and/or mixed alluvium

Properties and qualities

Slope: 20 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 25.0
Available water capacity: High (about 10.9 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: SOUTH SLOPE LOAMY 11-13 ARTRW8/PSSPS (R011BY012ID)

Typical profile

0 to 8 inches: Silt loam
8 to 40 inches: Silt loam
40 to 60 inches: Silt loam

21—Broxon silt loam, 0 to 2 percent slopes

Map Unit Setting

Landscape: Plains

Elevation: 4,400 to 4,500 feet

Mean annual precipitation: 9 to 11 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 110 to 130 days

Map Unit Composition

Broxon and similar soils: 85 percent

Description of Broxon

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess over mixed alluvium

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

Available water capacity: Low (about 5.0 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated

Land capability classification (irrigated): 2c

Land capability (nonirrigated): 6c

Hydrologic Soil Group: B

Typical profile

0 to 8 inches: Silt loam

8 to 25 inches: Silt loam

25 to 60 inches: Extremely stony sand

22—Broxon silt loam, 2 to 4 percent slopes

Map Unit Setting

Landscape: Plains

Elevation: 4,400 to 4,500 feet

Mean annual precipitation: 9 to 11 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 110 to 130 days

Map Unit Composition

Broxon and similar soils: 85 percent

Description of Broxon

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess over mixed alluvium

Properties and qualities

Slope: 2 to 4 percent

Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

Available water capacity: Low (about 5.0 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated

Land capability classification (irrigated): 2e

Land capability (nonirrigated): 6e

Hydrologic Soil Group: B

Typical profile

0 to 8 inches: Silt loam

8 to 25 inches: Silt loam

25 to 60 inches: Extremely stony sand

53—Hondoho-Arbone complex, 4 to 12 percent slopes

Map Unit Setting

Landscape: Mountains, valleys
Elevation: 4,400 to 5,800 feet
Mean annual precipitation: 11 to 18 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 70 to 100 days

Map Unit Composition

Hondoho and similar soils: 50 percent
Arbone and similar soils: 45 percent

Description of Hondoho

Setting

Landform: Mountain slopes, fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or colluvium

Properties and qualities

Slope: 4 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Low (about 5.8 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: STONY LOAM 13-16 ARTRV/PSSPS (R013XY002ID)
Other vegetative classification: mountain big sagebrush/bluebunch wheatgrass
(HFW019)

Typical profile

0 to 15 inches: Cobbly silt loam
15 to 60 inches: Very cobbly sandy clay loam

Description of Arbone

Setting

Landform: Mountain slopes, fan remnants
Down-slope shape: Linear

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Across-slope shape: Linear

Parent material: Mixed alluvium and/or loess

Properties and qualities

Slope: 4 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Available water capacity: High (about 10.2 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: LOAMY 12-16 ARTRV/PSSPS-FEID (R013XY001ID)

Other vegetative classification: mountain big sagebrush/bluebunch wheatgrass
(HFW019)

Typical profile

0 to 9 inches: Silt loam

9 to 12 inches: Silt loam

12 to 60 inches: Silt loam

77—McDole-McDole variant complex, 0 to 2 percent slopes

Map Unit Setting

Landscape: Valleys

Elevation: 4,200 to 5,200 feet

Mean annual precipitation: 10 to 14 inches

Mean annual air temperature: 46 to 50 degrees F

Frost-free period: 100 to 140 days

Map Unit Composition

Mcdole and similar soils: 50 percent

Mcdole variant and similar soils: 35 percent

Description of McDole

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Silty alluvium

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Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: High (about 12.0 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2c
Land capability (nonirrigated): 6c
Hydrologic Soil Group: B

Typical profile

0 to 21 inches: Silt loam
21 to 74 inches: Silt loam

Description of Mcdole Variant

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or loess

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: High (about 10.9 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 3w
Land capability (nonirrigated): 6w
Hydrologic Soil Group: B

Typical profile

0 to 34 inches: Silt loam
34 to 60 inches: Fine sandy loam

85—Pits, gravel

Map Unit Composition

Pits, gravel: 100 percent

Description of Pits, Gravel

Typical profile

0 to 60 inches: Gravel, cobbles

87—Pocatello silt loam, 1 to 4 percent slopes

Map Unit Setting

Landscape: Foothills

Elevation: 3,000 to 5,200 feet

Mean annual precipitation: 8 to 13 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 100 to 140 days

Map Unit Composition

Pocatello and similar soils: 90 percent

Description of Pocatello

Setting

Landform: Hillslopes, fan remnants

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess and/or mixed alluvium

Properties and qualities

Slope: 1 to 4 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 25.0

Available water capacity: High (about 10.9 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance, if irrigated

Land capability classification (irrigated): 3e

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Land capability (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: LOAMY 11-13 ARTRW8/PSSPS (R013XY018ID)

Typical profile

0 to 8 inches: Silt loam
8 to 40 inches: Silt loam
40 to 60 inches: Silt loam

88—Pocatello silt loam, 4 to 8 percent slopes

Map Unit Setting

Landscape: Foothills
Elevation: 3,000 to 5,200 feet
Mean annual precipitation: 8 to 13 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 140 days

Map Unit Composition

Pocatello and similar soils: 90 percent

Description of Pocatello

Setting

Landform: Fan remnants, hillslopes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess and/or mixed alluvium

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 25.0
Available water capacity: High (about 10.9 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: LOAMY 11-13 ARTRW8/PSSPS (R013XY018ID)

Typical profile

0 to 8 inches: Silt loam
8 to 40 inches: Silt loam

40 to 60 inches: Silt loam

89—Pocatello silt loam, 8 to 12 percent slopes

Map Unit Setting

Landscape: Foothills

Elevation: 3,000 to 5,200 feet

Mean annual precipitation: 8 to 13 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 100 to 140 days

Map Unit Composition

Pocatello and similar soils: 90 percent

Description of Pocatello

Setting

Landform: Fan remnants, hillslopes

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess and/or mixed alluvium

Properties and qualities

Slope: 8 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 25.0

Available water capacity: High (about 10.9 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability classification (irrigated): 6e

Land capability (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: LOAMY 11-13 ARTRW8/PSSPS (R013XY018ID)

Other vegetative classification: Wyoming big sagebrush/bluebunch wheatgrass
(HFW033)

Typical profile

0 to 8 inches: Silt loam

8 to 40 inches: Silt loam

40 to 60 inches: Silt loam

90—Pocatello silt loam, 12 to 20 percent slopes

Map Unit Setting

Landscape: Foothills

Elevation: 3,000 to 5,200 feet

Mean annual precipitation: 8 to 13 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 100 to 140 days

Map Unit Composition

Pocatello and similar soils: 90 percent

Description of Pocatello

Setting

Landform: Fan remnants, hillslopes

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess and/or mixed alluvium

Properties and qualities

Slope: 12 to 20 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 25.0

Available water capacity: High (about 10.9 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: LOAMY 11-13 ARTRW8/PSSPS (R013XY018ID)

Typical profile

0 to 8 inches: Silt loam

8 to 40 inches: Silt loam

40 to 60 inches: Silt loam

91—Pocatello silt loam, 20 to 30 percent slopes

Map Unit Setting

Landscape: Foothills

Elevation: 3,000 to 5,200 feet

Mean annual precipitation: 8 to 13 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 100 to 140 days

Map Unit Composition

Pocatello and similar soils: 90 percent

Description of Pocatello

Setting

Landform: Fan remnants, hillslopes

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess and/or mixed alluvium

Properties and qualities

Slope: 20 to 30 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 25.0

Available water capacity: High (about 10.9 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: LOAMY 11-13 ARTRW8/PSSPS (R013XY018ID)

Typical profile

0 to 8 inches: Silt loam

8 to 40 inches: Silt loam

40 to 60 inches: Silt loam

113—Urban land-Bahem-Broxon complex, 0 to 3 percent slopes

Map Unit Setting

Landscape: Valleys

Elevation: 4,400 to 4,500 feet

Mean annual precipitation: 9 to 11 inches

Mean annual air temperature: 46 to 54 degrees F

Frost-free period: 110 to 130 days

Map Unit Composition

Urban land: 50 percent

Broxon and similar soils: 20 percent

Bahem and similar soils: 20 percent

Description of Bahem

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Silty alluvium and/or loess

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 27 to 60 inches to strongly contrasting textural stratification

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Available water capacity: High (about 9.8 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability classification (irrigated): 2c

Land capability (nonirrigated): 6e

Hydrologic Soil Group: B

Typical profile

0 to 11 inches: Silt loam

11 to 49 inches: Silt loam

49 to 60 inches: Extremely cobbly sand

Description of Broxon

Setting

Landform: Terraces

Down-slope shape: Linear

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Across-slope shape: Linear

Parent material: Loess over mixed alluvium

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

Available water capacity: Low (about 5.0 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability classification (irrigated): 2c

Land capability (nonirrigated): 6c

Hydrologic Soil Group: B

Typical profile

0 to 8 inches: Silt loam

8 to 25 inches: Silt loam

25 to 60 inches: Extremely stony sand

121—Watercanyon-Swanner-Rock outcrop complex, 20 to 50 percent slopes

Map Unit Setting

Landscape: Mountains

Elevation: 4,500 to 7,000 feet

Mean annual precipitation: 12 to 16 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 70 to 115 days

Map Unit Composition

Watercanyon and similar soils: 40 percent

Swanner and similar soils: 30 percent

Rock outcrop: 15 percent

Description of Watercanyon

Setting

Landform: Mountain slopes

Down-slope shape: Linear

Across-slope shape: Concave

Parent material: Volcanic ash and/or silty alluvium and/or loess

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Properties and qualities

Slope: 20 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: High (about 9.9 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: SOUTH SLOPE LOAMY 12-16 ARTRW8/PSSPS (R013XY035ID)

Typical profile

0 to 7 inches: Silt loam
7 to 16 inches: Silt loam
16 to 60 inches: Silt loam

Description of Swanner

Setting

Landform: Mountain slopes, ridges
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over bedrock derived from tuff and/or rhyolite

Properties and qualities

Slope: 20 to 50 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Very low (about 1.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: SHALLOW STONY 12-20 ARAR8/PSSPS (R013XY014ID)

Typical profile

0 to 9 inches: Extremely stony loam
9 to 17 inches: Extremely stony loam
17 to 31 inches: Bedrock

Description of Rock Outcrop

Properties and qualities

Slope: 20 to 50 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 8

Typical profile

0 to 60 inches: Bedrock

127—Water

Map Unit Composition

Water: 100 percent

Fort Hall Area, Idaho, Parts of Bannock, Bingham, Caribou, and Power Counties

DcA—Declo loam, 0 to 2 percent slopes

Map Unit Setting

Landscape: Plains

Elevation: 2,500 to 5,600 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 46 to 55 degrees F

Frost-free period: 100 to 140 days

Map Unit Composition

Declo and similar soils: 85 percent

Description of Declo

Setting

Landform: Stream terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium and/or eolian deposits and/or lacustrine deposits

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Sodium adsorption ratio, maximum: 8.0

Available water capacity: High (about 11.0 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated

Land capability classification (irrigated): 2c

Land capability (nonirrigated): 6c

Hydrologic Soil Group: B

Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Typical profile

0 to 5 inches: Loam

5 to 10 inches: Silt loam

10 to 60 inches: Very fine sandy loam

DcB—Declo loam, 2 to 4 percent slopes

Map Unit Setting

Landscape: Plains
Elevation: 2,500 to 5,600 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 55 degrees F
Frost-free period: 100 to 140 days

Map Unit Composition

Declo and similar soils: 85 percent

Description of Declo

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian deposits and/or lacustrine deposits

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Sodium adsorption ratio, maximum: 8.0
Available water capacity: High (about 11.0 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2e
Land capability (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Typical profile

0 to 5 inches: Loam
5 to 10 inches: Silt loam
10 to 60 inches: Very fine sandy loam

DeA—Declo loam, saline-alkali, 0 to 2 percent slopes

Map Unit Setting

Landscape: Plains
Elevation: 4,200 to 5,600 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 55 degrees F
Frost-free period: 95 to 130 days

Map Unit Composition

Declo, saline-alkali, and similar soils: 75 percent

Description of Declo, Saline-alkali

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian deposits and/or lacustrine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 8.0
Available water capacity: High (about 11.0 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance, if irrigated
Land capability classification (irrigated): 3e
Land capability (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Typical profile

0 to 5 inches: Loam
5 to 10 inches: Silt loam
10 to 60 inches: Very fine sandy loam

GP—Pits, gravel

Map Unit Composition

Pits, gravel: 100 percent

Description of Pits, Gravel

Typical profile

0 to 60 inches: Gravel, cobbles

PeA—Paniogue loam, 0 to 2 percent slopes

Map Unit Setting

Landscape: Plains

Elevation: 2,100 to 5,000 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 45 to 54 degrees F

Frost-free period: 100 to 155 days

Map Unit Composition

Paniogue and similar soils: 85 percent

Description of Paniogue

Setting

Landform: Fan remnants, terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0

Available water capacity: Very low (about 2.9 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated

Land capability classification (irrigated): 3s

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Land capability (nonirrigated): 6s

Hydrologic Soil Group: B

Ecological site: SEMIWET SALINE MEADOW SAVE4/DISP (R011AY007ID)

Typical profile

0 to 7 inches: Loam

7 to 18 inches: Silt loam

18 to 60 inches: Stratified very gravelly coarse sand to silt loam

PeB—Paniogue loam, 2 to 4 percent slopes

Map Unit Setting

Landscape: Plains

Elevation: 2,100 to 5,000 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 45 to 54 degrees F

Frost-free period: 100 to 155 days

Map Unit Composition

Paniogue and similar soils: 85 percent

Description of Paniogue

Setting

Landform: Fan remnants, terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Properties and qualities

Slope: 2 to 4 percent

Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0

Available water capacity: Very low (about 2.9 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated

Land capability classification (irrigated): 3e

Land capability (nonirrigated): 6s

Hydrologic Soil Group: B

Ecological site: SEMIWET SALINE MEADOW SAVE4/DISP (R011AY007ID)

Typical profile

0 to 7 inches: Loam

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7 to 18 inches: Silt loam

18 to 60 inches: Stratified very gravelly coarse sand to silt loam

PeC—Paniogue loam, 4 to 8 percent slopes

Map Unit Setting

Landscape: Plains

Elevation: 2,100 to 5,000 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 45 to 54 degrees F

Frost-free period: 100 to 155 days

Map Unit Composition

Paniogue and similar soils: 80 percent

Description of Paniogue

Setting

Landform: Fan remnants, terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Properties and qualities

Slope: 4 to 8 percent

Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0

Available water capacity: Very low (about 2.9 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated

Land capability classification (irrigated): 3e

Land capability (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: SEMIWET SALINE MEADOW SAVE4/DISP (R011AY007ID)

Typical profile

0 to 7 inches: Loam

7 to 18 inches: Silt loam

18 to 60 inches: Stratified very gravelly coarse sand to silt loam

PfA—Paniogue loam, saline-alkali, 0 to 2 percent slopes

Map Unit Setting

Landscape: Plains
Elevation: 4,400 to 4,700 feet
Mean annual precipitation: 9 to 11 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 120 days

Map Unit Composition

Paniogue, saline-alkali, and similar soils: 80 percent

Description of Paniogue, Saline-alkali

Setting

Landform: Fan remnants, terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Very low (about 2.9 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated and reclaimed of excess salts and sodium
Land capability classification (irrigated): 3s
Land capability (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: SEMIWET SALINE MEADOW SAVE4/DISP (R011AY007ID)

Typical profile

0 to 7 inches: Loam
7 to 18 inches: Silt loam
18 to 60 inches: Stratified very gravelly coarse sand to silt loam

PfB—Paniogue loam, saline-alkali, 2 to 4 percent slopes

Map Unit Setting

Landscape: Plains
Elevation: 4,400 to 4,700 feet
Mean annual precipitation: 9 to 11 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 120 days

Map Unit Composition

Paniogue, saline-alkali, and similar soils: 85 percent

Description of Paniogue, Saline-alkali

Setting

Landform: Fan remnants, terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Very low (about 2.9 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated and reclaimed of excess salts and sodium
Land capability classification (irrigated): 3e
Land capability (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: SEMIWET SALINE MEADOW SAVE4/DISP (R011AY007ID)

Typical profile

0 to 7 inches: Loam
7 to 18 inches: Silt loam
18 to 60 inches: Stratified very gravelly coarse sand to silt loam

PoA—Penoyer silt loam, 0 to 2 percent slopes

Map Unit Setting

Landscape: Plains

Elevation: 4,300 to 5,600 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 110 to 130 days

Map Unit Composition

Penoyer and similar soils: 85 percent

Description of Penoyer

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Sodium adsorption ratio, maximum: 10.0

Available water capacity: High (about 10.6 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated

Land capability classification (irrigated): 2c

Land capability (nonirrigated): 6c

Hydrologic Soil Group: B

Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Typical profile

0 to 5 inches: Silt loam

5 to 39 inches: Silt loam

39 to 60 inches: Silt loam

PoB—Penoyer silt loam, 2 to 4 percent slopes

Map Unit Setting

Landscape: Plains
Elevation: 4,300 to 5,600 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 130 days

Map Unit Composition

Penoyer and similar soils: 80 percent

Description of Penoyer

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Sodium adsorption ratio, maximum: 10.0
Available water capacity: High (about 10.6 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 3e
Land capability (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Typical profile

0 to 5 inches: Silt loam
5 to 39 inches: Silt loam
39 to 60 inches: Silt loam

PvC—Pocatello silt loam, 4 to 8 percent slopes

Map Unit Setting

Landscape: Plateaus

Elevation: 3,000 to 5,200 feet

Mean annual precipitation: 8 to 13 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 100 to 140 days

Map Unit Composition

Pocatello and similar soils: 85 percent

Description of Pocatello

Setting

Landform: Hillslopes

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess and/or mixed alluvium

Properties and qualities

Slope: 4 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 25.0

Available water capacity: High (about 10.9 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability classification (irrigated): 3e

Land capability (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Typical profile

0 to 8 inches: Silt loam

8 to 38 inches: Silt loam

38 to 60 inches: Silt loam

TdA—Tickason loam, 0 to 2 percent slopes

Map Unit Setting

Landscape: Plains

Elevation: 3,000 to 4,500 feet

Mean annual precipitation: 10 to 14 inches

Mean annual air temperature: 46 to 54 degrees F

Map Unit Composition

Tickason and similar soils: 85 percent

Description of Tickason

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium and/or beach sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: 40 to 55 inches to strongly contrasting textural stratification

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

Available water capacity: Moderate (about 8.4 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated

Land capability classification (irrigated): 2c

Land capability (nonirrigated): 6c

Hydrologic Soil Group: B

Ecological site: LOAMY 12-16 ARTRV/PSSPS-FEID (R013XY001ID)

Typical profile

0 to 12 inches: Loam

12 to 20 inches: Loam

20 to 54 inches: Silt loam

54 to 61 inches: Loamy sand

W—Water

Map Unit Composition

Water: 100 percent

WhF—Wheeler silt loam, 30 to 55 percent slopes

Map Unit Setting

Landscape: Plateaus

Elevation: 3,000 to 5,500 feet

Mean annual precipitation: 8 to 13 inches

Mean annual air temperature: 46 to 54 degrees F

Frost-free period: 100 to 140 days

Map Unit Composition

Wheeler and similar soils: 85 percent

Description of Wheeler

Setting

Landform: Fan remnants

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess

Properties and qualities

Slope: 30 to 55 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0

Available water capacity: High (about 12.0 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability (nonirrigated): 7e

Hydrologic Soil Group: B

Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Typical profile

0 to 3 inches: Silt loam

3 to 72 inches: Silt loam

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