CITY OF HAGERMAN

Environmental Report
for
Wastewater System Improvements

June 2016

J-U-B ENGINEERS, Inc.
115 Northstar Avenue
Twin Falls, ID 83301
(208) 733-2414
Project Number: 60-16-020

City of Hagerman

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PROFESSIONAL ENGINEER
REGISTERED
10586
6-17-16
STATE OF IDAHO
MARK HOLTZEN

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1.0 PURPOSE AND NEED FOR THE PROPOSAL

1.1 PROJECT DESCRIPTION (PROPOSED ACTION)

1.1.1 Collection System

No action will be taken and the existing collection system will continue to operate as it currently exists. The City anticipates implementing a routine, systematic cleaning and video inspection schedule of the gravity mains. This will allow them to identify the condition of the system and implement maintenance and/or repair activities, as needed. Additionally, a video inspection will provide for an evaluation of potential sources of infiltration and inflow (I/I) and allow the City to identify and implement solutions to reduce I/I flows. It is anticipated that this work will be funded through the City's regular budgeting of maintenance activities, and is not included in the scope of this project.

1.1.2 Lift Stations

The City has elected to replace Lift Stations 1 and 2 due to their severely deteriorated condition and inability to meet current regulations. It is anticipated that Lift Station 2 will be relocated approximately one-quarter mile west of its current location on Valley Road to provide service to additional area northwest of the City. As part of this improvement, an 8-inch gravity main will be extended along Valley Road from the intersection of West Avenue to the lift station and a 6-inch pressure main will constructed from the lift station to an existing manhole at the intersection of Spring Street and Second Avenue. A new flow meter and vault will also be constructed for Lift Station 3 to comply with current regulations. The proposed lift station improvements are shown in **Figure 1**.

1.1.3 Treatment Facilities

The City has elected to retain the existing treatment lagoons and discharge the effluent to a slow-rate land application site to irrigate crops. The effluent will be applied at agronomic rates such that the water and nutrients are taken up by the crops to further enhance treatment of the effluent. Since the effluent cannot be discharged during the winter months when crops are not present (e.g., the non-growing season from October through March), construction of a lined storage lagoon(s) is required.

IDEQ will regulate this alternative under their Recycled Water Rules. A Reuse Permit will be issued that outlines effluent loading limits and monitoring and reporting requirements. It is anticipated that the effluent will likely be classified as Class C or D with the existing treatment lagoons and a new chlorine disinfection system. Under this alternative, effluent will no longer be discharged to the Snake River under the NPDES Permit; however, the City may retain the right to the river, if needed.

The City will acquire additional land for the winter storage lagoons, land application site, buffer zones, and access roads. A property owner adjacent to the treatment lagoons (to the east and southeast) has agreed to sell their farmland to the City for winter storage and land application. For this option, two additional lagoons will ultimately be constructed for winter storage: one at the existing Cell #3 and rock filter site and one at a site immediately south of the existing treatment lagoons (Cell #4). It is anticipated that Cell #3 will be phased in over time as dictated by growth in the community. **Figure 2, Figure 3,** and **Table 1** summarize the proposed wastewater treatment facility improvements.

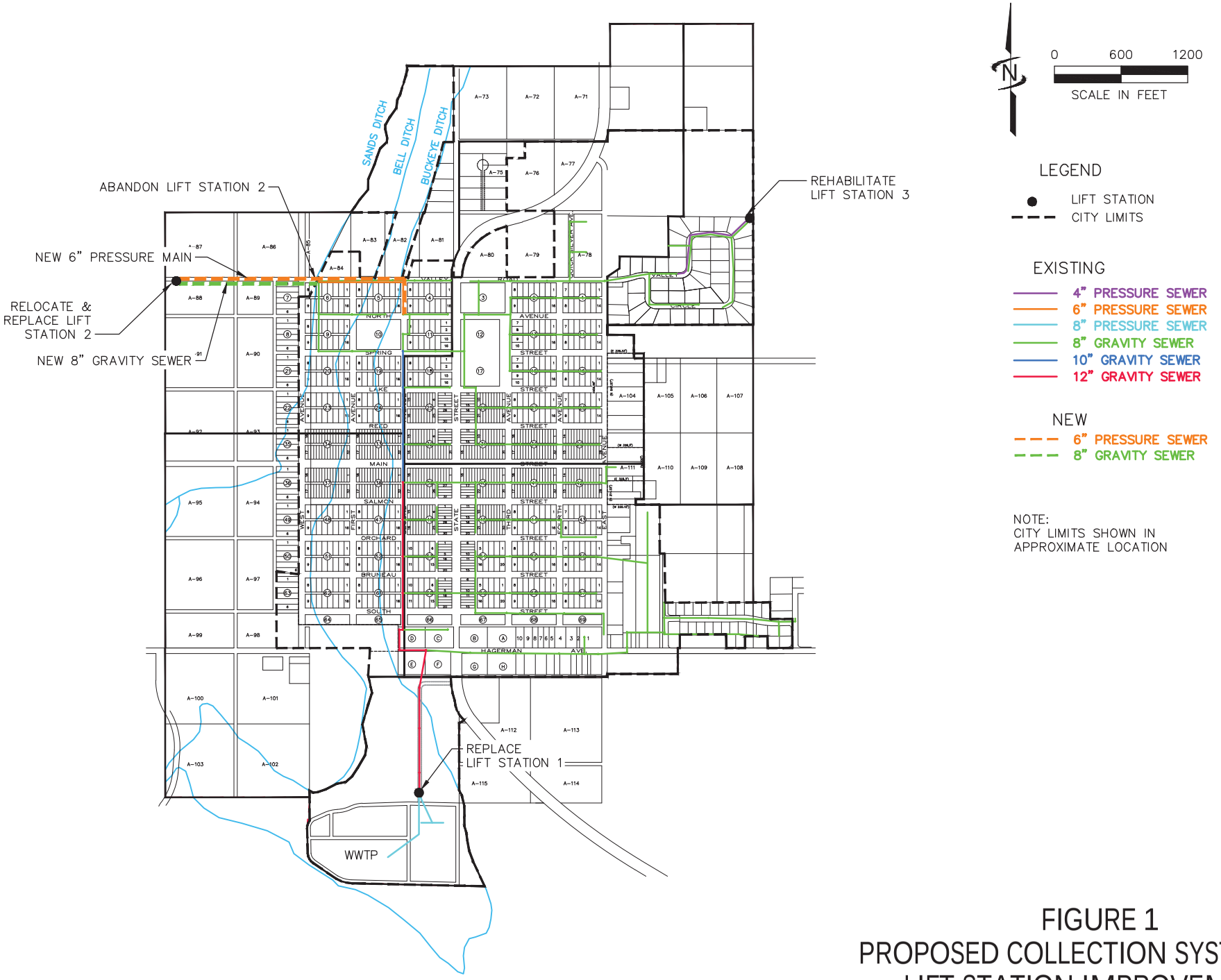
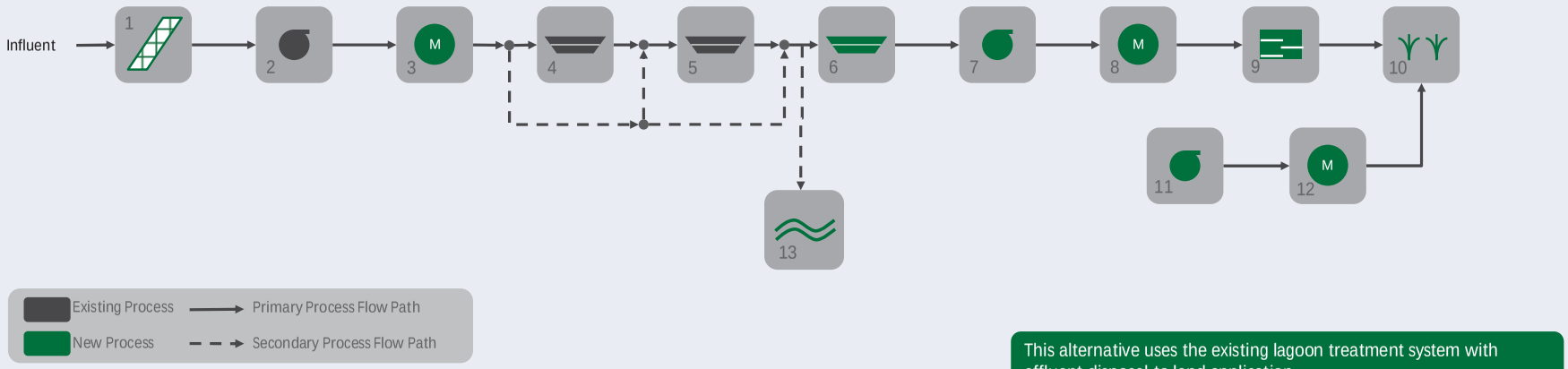


FIGURE 1
PROPOSED COLLECTION SYSTEM AND LIFT STATION IMPROVEMENTS

Figure 2 – Proposed Treatment Facility Process Schematic

Lagoon Treatment with Winter Storage and Land Application



This alternative uses the existing lagoon treatment system with effluent disposal to land application.

Note: Flow schematic is simplified to show only major processes and primary flow paths for clarity.

Component	Description
1	Bar Rack
2	Lift Station No. 1
3	Influent Flow Meter
4	Lagoon Cell #1
5	Lagoon Cell #2
6	Winter Storage Pond(s)
7	Effluent Pump Station
8	Effluent Flow Meter
9	Chlorine Disinfection
10	Land Application Site
11	Canal Water Pump Station
12	Canal Water Flow Meter
13	Snake River Discharge (Alternate)

Advantages

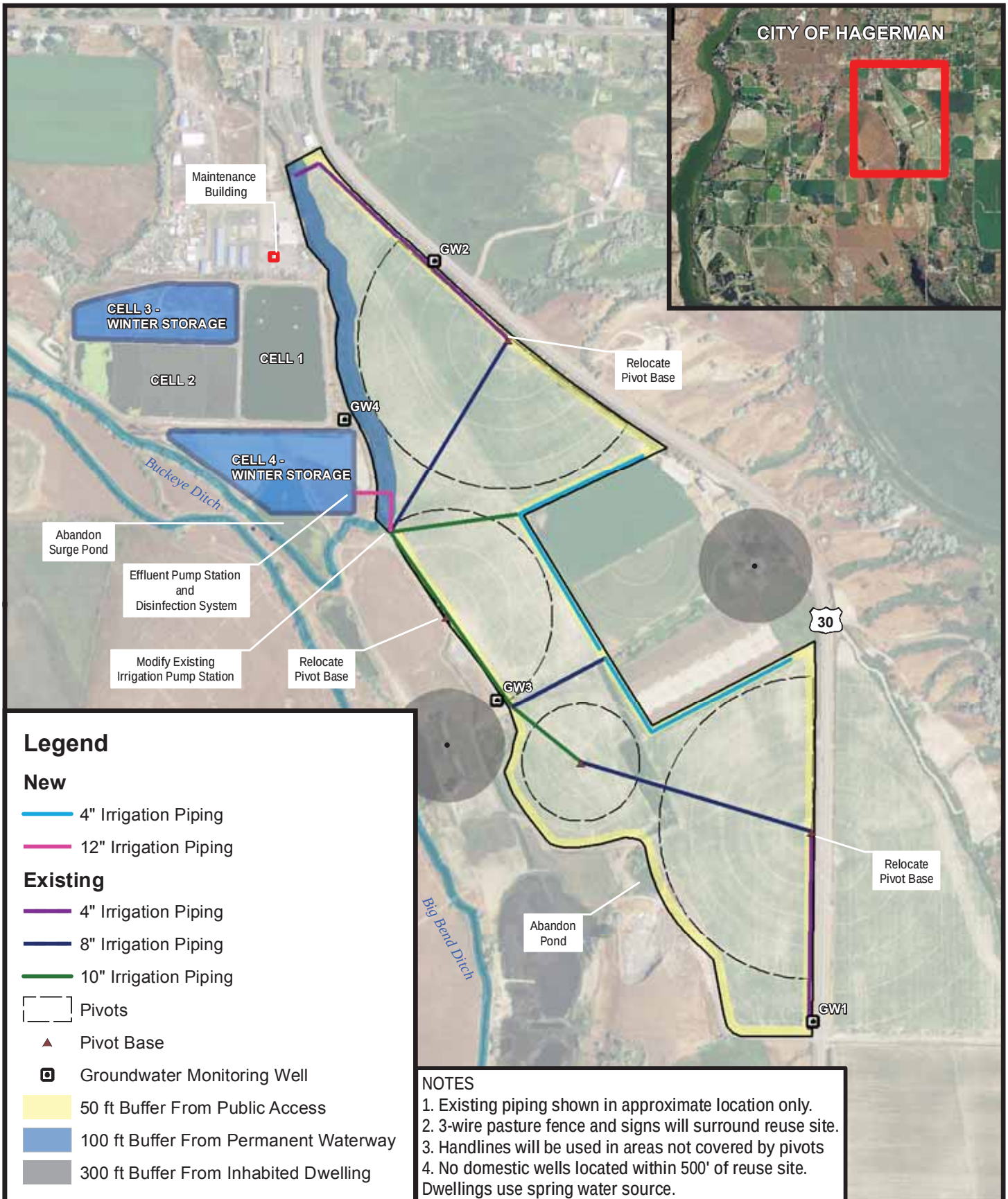
- Operational simplicity (Class I or II operator)
- Less energy intensive than activated sludge treatment
- Reuse of nutrients and water for crop production
- Retain existing lagoon treatment system
- May be able to trade existing Waste Load Allocation

Disadvantages

- Siting issues related to large land area requirements
- Public perception of environmental impacts related to land application
- May forfeit Snake River Waste Load Allocation
- Future expansion more difficult

Typical Treated Effluent Quality (to land application site)

- BOD 30-70 mg/L
- TSS 30-70 mg/L
- TN 25-45 mg/L
- TP 4-8 mg/L



J-U-B ENGINEERS, INC.

Figure 3
Proposed Treatment Facility Improvememts

Path: \\twinfiles\Public\Projects\JUB\60-16-020_City_of_Hagerman_2016_Wastewater_System\GIS\Maps\Fig 3 Lagoon Site.mxd

6/14/2016

Table 1 – Proposed Treatment Facility Improvements

Item	Description
Manually Cleaned Bar Rack	Manually cleaned coarse bar rack for influent screening
Lift Station 1 [A]	Replace or rehabilitate existing lift station
Influent Flow Meter [A]	Replace existing flow meter
Lagoon Cell #1	No improvements needed for land application
Lagoon Cell #2	No improvements needed for land application
Winter Storage Ponds	42 million gallons total, HDPE lined, winter storage lagoons (two new cells); approximately 20 acres required for two ponds
Irrigation Pump Station	Duplex vertical turbine pump station; approximately 35 to 50 hp pumps; magnetic flow meter; shed roof structure
Chlorine Disinfection	Bulk sodium hypochlorite disinfection system (e.g., pumps, piping, 55 gallon drum, etc.); 30-inch PVC pipe loop for contact chamber
Effluent Pressure Main	Approximately 500 LF of 12-inch PVC pressure main to convey effluent to a land application site (at site immediately adjacent to existing lagoons)
Land Application Site	Approximately 100 acres of farmland for effluent reuse (irrigation of crops) and buffer zones; irrigation system (handlines for buffer areas and pivots); access roads; barb-wire fencing; groundwater monitoring wells; canal water vertical turbine pump station (30 to 40 hp pumps), flow meter, and piping
Maintenance/Admin Building	Approximately 1,600 square feet; pre-engineered metal building

A. Improvements to Lift Station 1 and the influent flow meter are considered a collection system improvement and discussed in a separate section.

1.1.4 Cost Summary of Proposed Action

An opinion of the probable capital costs in 2015 dollars for the proposed improvements is summarized in **Table 2**. A summary of the annual operation and maintenance (O&M) costs is shown in **Table 3**.

Table 2 – Opinion of Probable Capital Costs for the Proposed Improvements

Item	Alternative 1 Lagoons with Winter Storage and Land Application
Capital Costs	
Replace Lift Station 1	$484,000
Replace Lift Station 2	$479,000
Flow Meter/Vault for Lift Station3	$33,000
6" Pressure Main for Lift Station 2	$443,000
8" Gravity Main for Lift Station 2	$203,000
Lagoons with Winter Storage and Land App	$8,211,500
Total Capital Costs	*$9,853,500*
Additional First Year O&M Costs	*$45,300*
20-Year Present Worth O&M Costs	*$841,000*
Total Present Worth Costs	*$10,694,500*

Table 3 – Opinion of Probable Annual O&M Costs for the Proposed Improvements

Item	Existing Facilities [A]	New Facilities	Total
Personnel	$53,600	$0	$53,600
Administrative	$2,100	$0	$2,100
Insurance	$10,000	$0	$10,000
Legal / Accounting	$5,000	$0	$5,000
Energy / Utilities	$10,000	$40,600	$50,600
Chemicals	$900	$1,900	$2,800
Monitoring and Testing	$5,000	$0	$5,000
Materials / Supplies / Maintenance	$25,300	$1,700	$27,000
Short-Lived Asset Replacement / Maintenance	$4,300	$29,600	$33,900
Professional Services	$25,000	$0	$25,000
Farm Income	$0	($28,500)	($28,500)
Miscellaneous	$9,100	$0	$9,100
Total	*$150,300*	*$45,300*	*$195,600*

Changes to the monthly user rates were estimated for the proposed improvements. For comparison purposes, two financing scenarios were considered. The two scenarios were based on the source and amount of funding procured for the project:

1. Scenario 1 – Approximately 10 percent of the project will be funded through grants and the remaining portion will be funded through low-interest loans.

2. Scenario 2 – Approximately 50 percent of the project will be funded through grants and the remaining portion will be funded through low-interest loans.

There may be other project financing combinations that should be explored by the City. These two scenarios are simply used to illustrate possible changes to the monthly user rates for the improvements. **Table 4** summarizes the results of the user charge rate analysis for the two financing alternatives.

1.2 PURPOSE AND NEED OF THE PROPOSAL

1.2.1 Background

The City of Hagerman owns and operates a municipal wastewater collection and treatment system that serves the area in and around the City. They had concerns regarding the age, condition, and capacity of their wastewater infrastructure, as well as its ability to comply with their National Pollutant Discharge Elimination System (NPDES) permit. Recently, the City received a Notice of Intent to File Administrative Compliant for Violation of the Clean Water Act (Notice of Violation) due to non-compliance with their NPDES permit. As a result of these concerns, the City authorized J-U-B ENGINEERS, Inc. (J-U-B) to prepare a Wastewater Facilities Plan to evaluate and identify deficiencies and solutions to their wastewater system. The Facilities Plan was prepared in accordance with Idaho Department of Environmental Quality (IDEQ) Water Pollution Control State Revolving Loan Fund (SRF) program requirements and with State regulations (IDAPA 58.01.16.410).

Table 4 – Monthly User Rate Analysis for the Proposed Improvements

Parameter	Financing Scenario 1 (10% Grant / 90% Loan)		Financing Scenario 2 (50% Grant / 50% Loan)	
	Cost	Monthly User Rate ($/mo) [D]	Cost	Monthly User Rate ($/mo) [D]
Capital Costs				
Total Capital Costs	$9,853,500	-	$9,853,500	-
Grant Amount	$985,000	-	$4,927,000	-
Loan Amount	$8,868,500	-	$4,926,500	-
Annual Costs				
Existing O&M Costs [A]	$146,000	$23.70	$146,000	$23.70
Existing Short-Lived Assets	$4,300	$0.70	$4,300	$0.70
New Loan Debt Service [B]	$353,288	$57.35	$196,253	$31.86
New Loan Reserve [C]	$35,330	$5.74	$19,630	$3.19
New O&M Costs	$44,200	$7.17	$44,200	$7.17
New Short-Lived Assets	$29,600	$4.80	$29,600	$4.80
New Farm Income	($28,500)	($4.63)	($28,500)	($4.63)
Total Annual Costs	$584,218	$94.83	$411,483	$66.79

A. Based on the City's 2015-2016 annual sewer budget.
B. Based on a 40 year loan at 2.5%.
C. Based on a reserve of 10% of the annual loan repayment over 10 years.
D. Monthly cost based on 513 ERUs.

1.2.2 Existing Wastewater System

Figure 4 shows the City's existing wastewater collection system, which consists of 8-inch through 12-inch PVC gravity sewer mains and 4-inch through 6-inch PVC pressure sewer mains. According to the City, there are approximately 415 and 58 existing residential and commercial service connections, respectively. **Table 5** provides a summary of the collection system.

Table 5 – Existing Collection System Summary

Pipe Diameter	Pipe Type	Total Length	
		Lineal Feet	Miles
8" Gravity Sewer Mains	PVC	34,450	6.5
10" Gravity Sewer Mains	PVC	1,200	0.2
12" Gravity Sewer Mains	PVC	3,100	0.6
4" Pressure Sewer Mains	PVC	1,000	0.2
6" Pressure Sewer Mains	PVC	1,050	0.2
Total		40,800	7.7

As shown in **Figure 4**, there are three existing lift stations in the collection system. Information on the lift stations is summarized in **Table 6**.

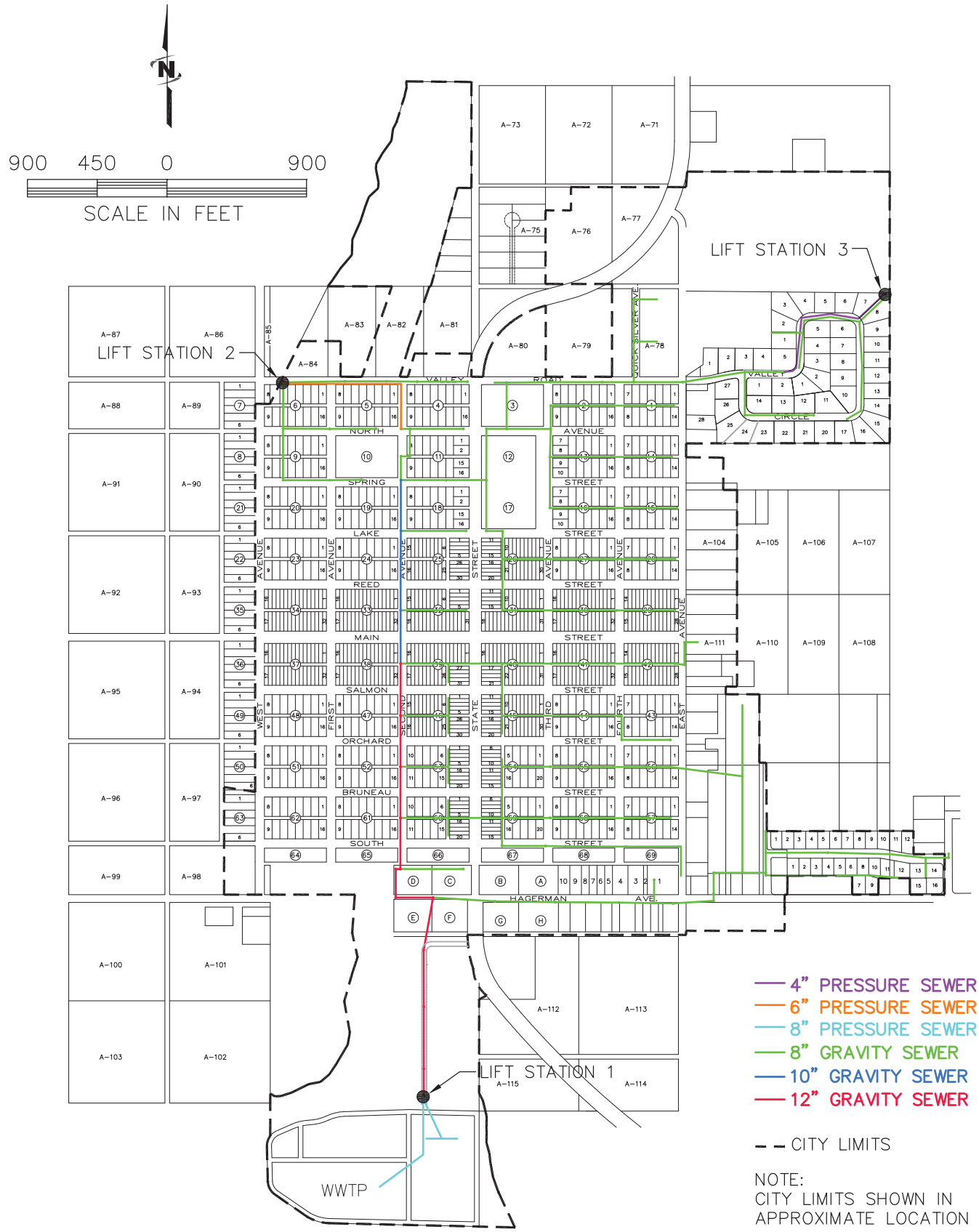


FIGURE 4
EXISTING WASTEWATER COLLECTION SYSTEM

Table 6 – Existing Lift Station Summary

Item	Lift Station 1	Lift Station 2	Lift Station 3
Construction Date	1977	1977	2008
System Manufacturer	Smith & Loveless	Smith & Loveless	Unknown
System Configuration	Wet-Pit / Dry-Pit	Wet-Pit / Dry-Pit	Submersible
Pump Type	Non-Clog Centrifugal	Non-Clog Centrifugal	Submersible
Number of Pumps	2	2	2
Pump Horsepower	2 hp / ea	5 hp / ea	2 hp / ea
Design Flow/Head per Pump	250 gpm at 19 ft TDH	100 gpm at 52 ft TDH	80 gpm at 23 ft TDH
Pump RPM	1760 rpm	1760 rpm	1150 rpm
Power Service	3-Phase, 60 Hz, 230V	3-Phase, 60 Hz, 230V	Single Phase, 60 Hz, 230 V
Wet-Well Size	7 ft Diameter, 7.5 ft Deep	7 ft Diameter, 12 ft Deep	6' Diameter, 12' Deep
Level Control	Transducer	Float Switches	Float Switches
Lead/Lag Pump	Alternating	Alternating	Alternating
Back-Up Power	Portable Generator	Portable Generator	None
Alarms	High Water Level	High Water Level	High Water Level

The existing treatment facilities were originally constructed in 1977. They are located south of the City within Section 23 of Township 7 South, Range 13 East, B.M. The system has undergone minor upgrades since its initial construction and currently consists of the following components:

- Influent flow measurement facilities.
- A partially aerated lagoon.
- A facultative lagoon.
- A rock filter (currently not used).
- Sodium hypochlorite disinfection system.
- Effluent flow measurement facilities.
- Approximately 9,300 feet of 8-inch PVC outfall piping to the Snake River.

Figures 5 and 6 show site layouts of the treatment facilities and outfall pipeline, respectively.

1.2.3 Wastewater Flows and Loads

Wastewater from the City of Hagerman consists primarily of residential and commercial discharges. Wastewater flows and waste loads are measured at the influent monitoring stations immediately prior to the lagoons. Historical flow and waste load data from January 2009 through December 2013 were used for the Facilities Plan.

Growth projections were discussed with the City to determine potential changes to flows and loads over the 20-year planning period. Based on historical growth and recent land use and development patterns, the City selected an annual growth rate of 2.5 percent per year for the planning period. It is expected that some commercial growth (e.g., banks, restaurants, office buildings, etc.) will occur within the planning period; however, a specific allocation was not included in this study. **Table 7** summarizes the existing and projected wastewater flows and waste loads.

0 75 150
SCALE IN FEET

FIGURE 5
EXISTING WASTEWATER TREATMENT FACILITIES

Figure 6 – Existing Effluent Outfall Pipeline

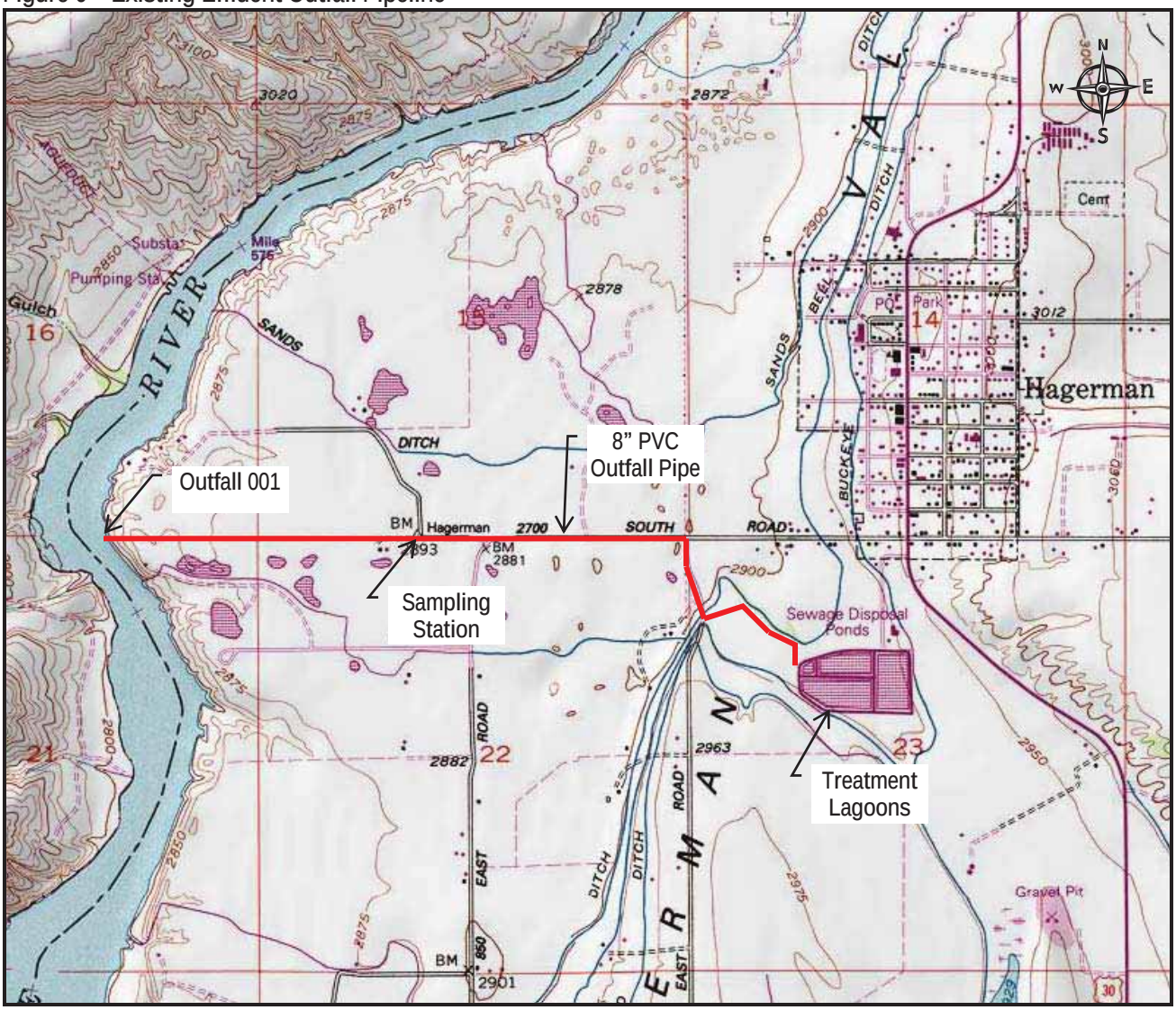


Table 7 – Existing and 20-Year Projected Flows and Waste Loads

Parameter	Units	Existing	Projected
Flow			
Average Day	gpd	127,000	213,200
Maximum Month	gpd	196,900	330,500
Peak Day	gpd	288,300	426,400
Peak Hour	gpd	485,100	780,300
BOD			
Average Day	lbs/d	184	316
Maximum Month	lbs/d	298	512
Peak Day	lbs/d	493	847
TSS			
Average Day	lbs/d	162	268
Maximum Month	lbs/d	293	485
Peak Day	lbs/d	436	721
Total-Phosphorus			
Average Day	lbs/d	5.2	8.7
Maximum Month	lbs/d	7.8	13.1
Peak Day	lbs/d	12.2	20.4
Ammonia-Nitrogen			
Average Day	lbs/d	18.5	31.6
Maximum Month	lbs/d	22.9	39.2
Peak Day	lbs/d	30.5	52.1
Total-Nitrogen			
Average Day	lbs/d	37.1	64.7
Maximum Month	lbs/d	46.0	80.2
Peak Day	lbs/d	61.2	107

1.2.4 Existing Collection System Analysis and Needs

The sewer collection system consists of gravity PVC pipe that is approximately 36 years old or newer. Gravity PVC pipe typically has a useful service life of approximately 50 to 75 years if it is properly installed and maintained. The City reports the gravity sewer mains and manholes are in relatively good condition with no significant deterioration or maintenance issues. The primary problems observed by the operators are typically small blockages that occur periodically.

There appears to be excessive I/I occurring in some areas of the collection system. Groundwater depths on the east side of the City may periodically rise to within 5 to 10 feet of the ground surface, particularly towards the end of the irrigation season. Gravity collection lines in this area of the City may be exposed to groundwater, potentially resulting in infiltration.

Figure 7 summarizes the hydraulic analysis of the collection system for the existing, 20-year, and build-out peak hour flows. It appears the existing sewer mains are adequately sized for the 20-year planning period. However, at build-out peak hour flow conditions, the 12-inch trunk line between Hagerman Avenue (Junction J6) and Lift Station 1 is undersized and will likely need to be replaced with a larger pipe at some point past the 20-year planning period.

1.2.5 Existing Lift Station Analysis and Needs

Lift Stations 1 and 2 are 36 years old and approaching their useful design life. Most of the original equipment, including pumps and panels, is still in place and being utilized. However, due to its age, the City reports that maintenance of the equipment has increased over the past few years. Most of the exposed metal (e.g., rails, chains, piping, etc.) is heavily corroded and in need of replacement. The fiberglass wet-well and dry-well structures appear to be in decent condition; although, a more thorough structural analysis should be conducted. The City also reports that clogging of the pumps at Lift Station 2 from rags and other debris is quite common. Lift Station 3 was recently constructed in 2008 and appears to be in adequate condition.

Table 8 summarizes observed deficiencies in the existing lift stations at the current and projected peak hour flows.

Table 8 – Existing Lift Station Deficiencies

Lift Station	Condition	Capacity/Redundancy			Adequate Flow Measurement Device?	Adequate Back-Up Power?
		Capacity of Each Pump (gpm)	Peak Hour Flow (gpm)	Does Each Pump Have Adequate Capacity?		
Lift Station 1	Deteriorated, approaching useful service life	285 - 330	327 (existing) 542 (20-year)	✗	✗	✓
Lift Station 2	Deteriorated, approaching useful service life	100	34 (existing) 97 (20-year)	✓	✗	✓
Lift Station 3	Acceptable	80	7 (existing) 33 (20-year)	✓	✗	✗

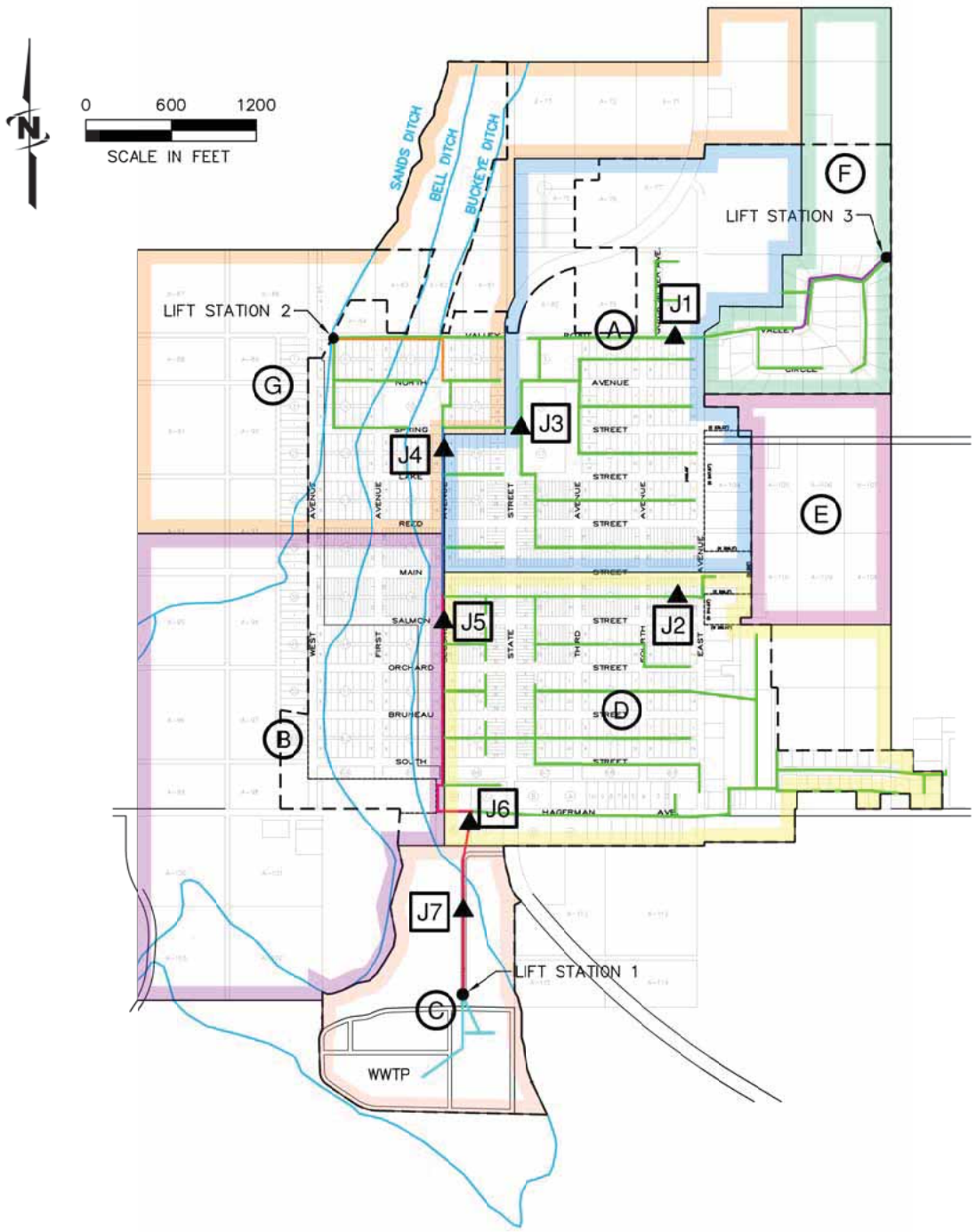
✓ Indicates existing system is adequate

✗ Indicates an observed deficiency in the existing system

✓ Indicates existing system meets regulations, but improvements are recommended

1.2.6 Existing Wastewater Treatment Facilities Analysis and Needs

Figure 8 summarizes observed deficiencies in the existing wastewater treatment facilities at the current and projected flows and loads.



JUNCTION	FLOW FROM SERVICE AREA(S)	MINIMUM DOWNSTREAM PIPE CAPACITY TO NEXT DOWNSTREAM JUNCTION (GPD)[A]	FLOW CONDITION	PREDICTED PEAK HOUR FLOW (GPD)	% OF DOWNSTREAM PIPE CAPACITY
J1	F	1,257,000 (3.10% MIN. SLOPE)	EXISTING	11,000	0.9%
			20-YEAR	47,000	4%
			BUILD-OUT	66,000	5%
J2	E	903,000 (1.60% MIN. SLOPE)	EXISTING	0	0%
			20-YEAR	40,000	4%
			BUILD-OUT	96,000	11%
J3	A+F	452,000 (0.40% MIN. SLOPE)	EXISTING	194,000	43%
			20-YEAR	244,000	54%
			BUILD-OUT	297,000	66%
J4	A+F+G	819,000 (0.40% MIN. SLOPE)	EXISTING	242,000	30%
			20-YEAR	384,000	47%
			BUILD-OUT	572,000	70%
J5	A+F+G+ E+B	1,053,000 (0.25% MIN. SLOPE)	EXISTING	278,000	26%
			20-YEAR	552,000	52%
			BUILD-OUT	933,000	89%
J6	A+F+G+ E+E+D	1,053,000 (0.25% MIN. SLOPE)	EXISTING	475,000	45%
			20-YEAR	766,000	73%
			BUILD-OUT	1,189,000	113%
J7	A+F+G+ E+B+D+C	1,053,000 (0.25% MIN. SLOPE)	EXISTING	486,000	46%
			20-YEAR	797,000	76%
			BUILD-OUT	1,242,000	118%

[A] – BASED ON A MANNING'S n = 0.013 AND d/D = 0.75

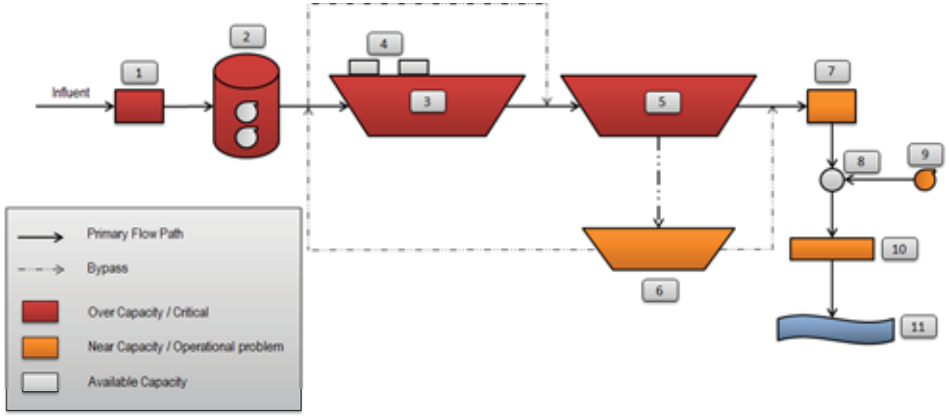
LEGEND

- 4" PRESSURE SEWER
- 6" PRESSURE SEWER
- 8" PRESSURE SEWER
- 8" GRAVITY SEWER
- 10" GRAVITY SEWER
- 12" GRAVITY SEWER
- CITY LIMITS

NOTE:
CITY LIMITS SHOWN IN APPROXIMATE LOCATION

FIGURE 7
EXISTING COLLECTION SYSTEM HYDRAULIC ANALYSIS

Figure 8 – Existing Wastewater Treatment Facility Deficiencies



Item	Description	Observed Deficiencies
1	Influent Flow Monitor	• 20-year peak hour flows exceed 8" Palmer Bowlus flume capacity. • Current pumping capacity exceeds 8" Palmer Bowlus flume capacity.
2	Lift Station 2	• Existing mechanical equipment is deteriorated. • 20-year peak hour flows exceed pump capacity. • Pumps periodically clog because there is no screening of the influent flow. • No flow measurement device. • No permanent back-up power, which is critical because this pump station receives the entirety of the city's flow.
3	Cell #1	• HRT's are approaching typical design values under projected maximum month flow conditions. • Organic loadings to facultative portions of lagoon exceed typical design values under projected maximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
4	Surface Aerators	• Aerators periodically clog because there is no screening of the influent flow.
5	Cell #2	• Organic loadings to exceed typical design values under 20-yearmaximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
6	Rock Filter	• Algae and other solids plug rock filter, rendering it unusable on a consistent basis.
7	Effluent Flow Monitor	• 20-year peak hour flows exceed 10" Palmer Bowlus flume capacity.
8	Chlorine Injection Manhole	• None.
9	Chlorine Injection Pump	• Insufficient capacity to pump the estimated maximum chlorine dose under 20-year peak flow conditions.
10	Outfall Pipeline	• Hydraulic pressures approaching typical maximum joint pressure rating, particularly at projected peak hour flows. This may result in joint leaks.
11	Snake River	• Lagoons cannot consistently and reliably meet NPDES permit conditions.

The effluent quality appears to be typical for a lagoon system in southern Idaho. This generally indicates that the lagoons are performing as expected in terms of constituent removal. However, there have been several NPDES permit non-compliance occurrences over the past four years. On April 9, 2014, the City received from the EPA a Notice of Violation that summarized the NPDES permit non-compliance events from April 2009 through February 2014. A summary of these non-compliance occurrences is summarized in **Table 9**. These non-compliance events are likely related to general limitations of lagoon treatment, especially in light of the increasingly stringent NPDES permit limits typical on the Middle Snake River. It is anticipated that these non-compliance events will continue to occur in the future without improvements to the treatment facilities.

Table 9 – NPDES Permit Non-Compliance Summary

Parameter	Units	Non-Compliance Events (2009 through 2013)			
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum
BOD_5	mg/L	*4*	*1*	-	-
	lbs/d	0	0	-	-
TSS	mg/L	*5*	*5*	-	-
	lbs/d	*12*	*9*	-	-
BOD_5 Percent Removal	%	*6*	-	-	-
TSS Percent Removal	%	*14*	-	-	-
E. Coli	cfu/100 mL	*6*	-	-	-
Total Residual Chlorine	ug/L	0	-	0	-
	lbs/d	0	-	0	-
Total Phosphorus	lbs/d	0	*1*	-	-
Total Ammonia-N	mg/L	-	-	-	-
Temperature	°C	-	-	-	-
pH	s.u.	*13*			

2.0 ALTERNATIVES TO THE PROPOSED ACTION

2.1 WASTEWATER COLLECTION SYSTEM

2.1.1 No Action Alternative

Under this alternative, no action would be taken and the existing collection system would continue to operate under the existing and projected flow conditions. As shown in **Figure 7**, it appears the existing sewer mains are adequately sized for the 20-year planning period and there are no known hydraulic deficiencies. Additionally, the City reports the existing sewer mains are in relatively good condition and there are no known structural deficiencies. As a result, the City has elected to proceed with this alternative.

However, since the existing gravity collection system has not been cleaned and video inspected, there is insufficient information available to identify whether specific improvements are required to correct deteriorated piping, reduce I/I, and/or remedy grade, depth or alignment issues, if any. As such, the City elected to clean and video inspect the entire gravity collection system. This will allow them to identify the condition of the mains, prioritize lines in need of replacement and/or rehabilitation, and identify the appropriate method for replacement and/or rehabilitation.

An opinion of the probable cost in 2015 dollars to clean and video inspect the entire gravity collection system (e.g., 40,800 linear feet) is $69,600. Costs are included for engineering support to review and prioritize the lines for repair and to identify the recommended method for replacement and/or rehabilitation, if needed. It is anticipated that this work will be funded through the City's regular budgeting of maintenance activities and is not considered as part of this improvement project.

2.2 LIFT STATIONS

2.2.1 No Action Alternative

For this alternative, no action would be taken to improve the existing lift stations. However, this does not appear to be a viable option for Lift Stations 1 and 2 over the planning period due to the condition, capacity, and regulatory deficiencies outlined in **Table 8**. Lift Station 3 is in acceptable condition and has adequate capacity for the planning period; however, it does not meet current regulatory requirements for flow measurement and back-up power.

For these reasons, the No Action Alternative was deemed infeasible and dropped from further consideration.

2.2.2 Replace Lift Stations 1 and 2

This alternative includes removing and replacing Lift Stations 1 and 2, including the following components:

- Abandon, remove, and dispose of the existing lift stations and components.
- Construct new wet-well and/or dry-well.

- Install two pumps (one duty and one standby) such that one pump has the capacity to discharge the projected peak hour influent flow (IDAPA 58.01.16.440.02.c.i).
- Install new mechanical piping and fittings.
- Install new plug and check valves within a separate vault.
- Install a magnetic flow meter within a separate vault.
- Install a permanent generator to provide a back-up power supply to the lift station (IDAPA 58.01.16.07.b).
- Install pump electrical and control panels in the metal building.

Opinions of the probable costs in 2015 dollars to replace Lift Stations 1 and 2 in both a submersible and wet/dry-well configuration are shown in **Table 10**. Annual O&M costs associated with the recommended lift station improvements are expected to remain approximately the same; although, some additional costs are anticipated for short-lived asset replacement.

Table 10 – Opinion of Probable Costs to Replace Lift Stations 1 and 2

Item	Capital Costs [A]		Additional First Year O&M Costs	20-Year Present Worth O&M Costs [B]	Total Present Worth Costs	
	Lift Station 1	Lift Station 2			Lift Station 1	Lift Station 2
Submersible Lift Station	$484,000	$479,000	$4,300	$59,000	$543,000	$538,000
Wet/Dry-Well Lift Station	$509,000	$502,000	$4,300	$59,000	$568,000	$561,000

A. Costs include contingencies (20%), prevailing wages (5%), Buy-American provisions (5%), engineering design and construction (20%), legal and administrative (1%), interim financing (4%), and land (if necessary).
B. Based on a discount rate of 4.375%.

2.2.3 Rehabilitate Existing Lift Stations

This alternative includes retaining the existing wet- and dry-wells and rehabilitating Lift Stations 1 and 2, including:

- Remove and dispose of the existing mechanical and electrical components in the lift stations. The existing wet-well and dry-well vaults would be retained and reused.
- Install two pumps (one duty and one standby; approximately 5 to 10 horsepower each) such that one pump has the capacity to discharge the projected peak hour influent flow (IDAPA 58.01.16.440.02.c.i).
- Install new mechanical piping and fittings.
- Install new plug and check valves in the dry-well.
- Install a magnetic flow meter within a separate vault.
- Install a permanent generator to provide a back-up power supply to the lift station (IDAPA 58.01.16.07.b).
- Install pump control panels in the metal building.

Because Lift Station 3 does not have a flow measurement device, a magnetic flow meter and vault would be installed for this lift station under this alternative.

Opinions of the probable costs in 2015 dollars to rehabilitate Lift Stations 1, 2 and 3 are shown in **Table 11**. Annual O&M costs associated with the recommended lift station improvements are expected to remain approximately the same; although, some additional costs are anticipated for short-lived asset replacement.

Table 11 – Opinion of Probable Costs to Rehabilitate the Existing Lift Stations

Item	Capital Costs [A]	Additional First Year O&M Costs	20-Year Present Worth O&M Costs [B]	Total Present Worth Costs
Lift Station 1	$416,000	$4,300	$59,000	$475,000
Lift Station 2	$385,000	$4,300	$59,000	$444,000
Lift Station 3	$33,000	$0	$0	$33,000

A. Costs include contingencies (20%), prevailing wages (5%), Buy-American provisions (5%), engineering design and construction (20%), legal and administrative (1%), interim financing (4%), and land (if necessary).
B. Based on a discount rate of 4.375%.

2.2.4 Sewer Mains for Lift Station 2

Lift Station 2 cannot service any of the area west of West Avenue in its current location and potentially some of the area north of Valley Road. If this lift station is replaced, it is proposed to relocate it approximately one-quarter mile west along Valley Road to capture flow from an unserviced area northwest of the city. As part of this improvement, an 8-inch gravity main will be extended along Valley Road from the intersection of West Avenue to the lift station and a 6-inch pressure main will be constructed from the lift station to an existing manhole at the intersection of Spring Street and Second Avenue.

An opinion of the probable costs in 2015 dollars to install the sewer mains for Lift Station 2 is shown in **Table 12**. No additional annual O&M costs are anticipated for this improvement.

Table 12 – Opinion of Probable Costs for the Lift Station 2 Sewer Mains

Item	Capital Costs [A]	Additional First Year O&M Costs	20-Year Present Worth O&M Costs [B]	Total Present Worth Costs
6-Inch Pressure Main	$443,000	$0	$0	$443,000
8-Inch Gravity Main	$203,000	$0	$0	$203,000

A. Costs include contingencies (20%), prevailing wages (5%), Buy-American provisions (5%), engineering design and construction (20%), legal and administrative (1%), interim financing (4%), and land (if necessary).
B. Based on a discount rate of 4.375%.

2.2.5 Selection of the Preferred Lift Station Improvements

The City has elected to replace Lift Stations 1 and 2, construct the new 8-inch gravity sewer main and 6-inch pressure sewer main for Lift Station 2, and install a new flow meter and vault for Lift Station 3 to comply with current regulations. Replacement of Lift Stations 1 and 2 has a slightly higher capital cost than rehabilitation, but results in a new lift station with a longer service life. It also allows the City to relocate Lift Station 2 one-quarter mile west of its current location, which will provide sewer service to a

larger area of the community. Both replacement and rehabilitation will have similar impacts on environmental resources.

2.3 WASTEWATER TREATMENT FACILITIES

2.3.1 Summary of Treatment Alternatives

A summary of the treatment plant alternatives considered in the Facilities Plan is shown in **Table 13**. A detailed summary of each option is presented in the following sections.

2.3.2 Alternative 1: Lagoon Treatment with Winter Storage and Land Application

This alternative involves retaining the existing treatment lagoons and discharging the effluent to a slow-rate land application site to irrigate crops. The effluent will be applied at agronomic rates such that the water and nutrients are taken up by the crops to further enhance treatment of the effluent. Since the effluent cannot be discharged during the winter months when crops are not present (e.g., the non-growing season from October through March), construction of a lined storage lagoon is required.

IDEQ will regulate this alternative under their Recycled Water Rules. A Reuse Permit will be issued that outlines effluent loading limits and monitoring and reporting requirements. It is anticipated that the effluent will likely be classified as Class C or D with the existing treatment lagoons and new chlorine disinfection system. Under this alternative, effluent will no longer be discharged to the Snake River under the NPDES Permit; however, the City should retain the right to a river discharge.

The City will be required to acquire additional land for the winter storage lagoons, land application site, buffer zones, and access roads. A property owner adjacent to the treatment lagoons (to the east and southeast) has agreed to sell some farmland to the City for winter storage and land application. For this option, two additional lagoons will ultimately be constructed for winter storage: one at the existing Cell #3 and rock filter site and one at a site immediately south of the existing treatment lagoons (Cell #4). It is anticipated that Cell #3 will be phased in over time as dictated by growth in the community. A process schematic of this alternative with relative advantages and disadvantages is shown in **Figure 2**. **Table 14** summarizes the improvements under this option.

2.3.3 Alternative 2: Lagoon Treatment with Rapid Infiltration

This alternative involves retaining the existing treatment lagoons and discharging the effluent to rapid infiltration (RI) basins. Rapid infiltration, or soil aquifer treatment (SAT), is a simple, low-cost alternative for providing effluent treatment and disposal. In an RI system, the effluent is alternatively dosed between shallow basins that are underlain by relatively deep and permeable soils. The basins are typically flooded with effluent that is allowed to percolate through the soil column for treatment. Following a flooding period, the basins are allowed to dry. By controlling the dosing cycle, further treatment of the effluent for nitrogen can be achieved. Rapid infiltration systems can typically be operated year-round.

Table 13 – Summary of Treatment Facility Improvement Alternatives

Item	Alternative 1 – Lagoons with Winter Storage and Land Application	Alternative 2 – Lagoons with Rapid Infiltration	Alternative 3 – Evaporative Lagoons	Alternative 4 – Activated Sludge Treatment with Rapid Infiltration	Alternative 5 – Activated Sludge Treatment with Tertiary Filtration and Surface Water Discharge	Alternative 6 – No Action	Alternative 7 – Regional Treatment
Description	• Coarse bar rack • Retain existing lagoons • Winter storage lagoons (42 Mgal, 20 acres±) • Irrigation pump station • Approximately 500 LF of 12" pressure main to land application site • Hypochlorite disinfection • Land application site (~100 irrigated acres±) and irrigation system • Land application site located immediately adjacent to existing lagoons • Maintenance / laboratory / administration building	• Coarse bar rack • Retain existing lagoons • Effluent pump station • Two miles (estimated) of 8" pressure main • Rapid infiltration basins (20 acres±) • Maintenance / laboratory / administration building	• Coarse bar rack • Retain existing lagoons • Effluent pump station • Approximately 3,600 LF of 8" pressure main • Evaporative/total containment lagoons (50 acres±) • Evaporative/total containment lagoons located immediately adjacent to existing lagoons • Maintenance / laboratory / administration building	• Mechanical screening and grit removal • Activated sludge process with BNR capabilities • Secondary clarifiers • RAS-WAS pump station • Biosolids handling and storage • Biosolids dewatering • Effluent pump station • Two miles (estimated) of 8" pressure main • Rapid infiltration basins (20 acres±) • Maintenance / laboratory / administration building	• Mechanical screening and grit removal • Activated sludge process with BNR capabilities • Secondary clarifiers • RAS-WAS pump station • Biosolids handling and storage • Biosolids dewatering • Filter feed pump station • Tertiary filtration (single pass) • Sodium hypochlorite disinfection • Maintenance / laboratory / administration building	• No action taken to improve treatment facilities	• Combine wastewater treatment with Wendell and Bliss
Advantages	• Operational simplicity (Class I or II operator) • Less energy intensive than activated sludge treatment • Reuse of nutrients and water for crop production • Retain existing lagoon treatment system • May be able to trade existing Waste Load Allocation	• Operational simplicity (Class I or II operator) • Less energy intensive than activated sludge treatment • Retain existing lagoon treatment system • May be able to trade existing Waste Load Allocation	• Operational simplicity (Class I or II operator) • Less energy intensive than activated sludge treatment • Retain existing lagoon treatment system • May be able to trade existing Waste Load Allocation • No NPDES or Reuse permit required	• Higher treated effluent quality • Longer solids residence time makes process less susceptible to upsets from varying influent loads • Potential to modify existing lagoons to reduce construction costs (earthen pond activated sludge system) • "Package systems" available for lower capital cost	• High level of tertiary treatment • Longer solids residence time makes process less susceptible to upsets from varying influent loads • Smaller footprint • Retain right for river discharge	• No capital costs	• One treatment facility to service several communities • Potential economy of scale cost savings
Disadvantages	• Siting issues related to large land area requirements • Public perception of environmental impacts related to land application • May forfeit Snake River Waste Load Allocation • Future expansion more difficult	• Siting issues related to large land area requirements • May forfeit Snake River Waste Load Allocation • Loading may be limited by soil and groundwater conditions • Must demonstrate conformance with Groundwater Quality Rules • Future expansion more difficult • Unable to locate a suitable site for rapid infiltration in close proximity to existing lagoons	• Siting issues related to large land area requirements • May forfeit Snake River Waste Load Allocation • Future expansion more difficult	• Greater operational complexity and involvement (Class II or III operator) • Greater energy costs associated with aeration, pumping and mixing • "Package systems" limit operational and expansion flexibility • May forfeit Snake River Waste Load Allocation • Siting issues related to large land area requirements • Loading may be limited by soil and groundwater conditions • Must demonstrate conformance with Groundwater Quality Rules • Unable to locate a suitable site for rapid infiltration in close proximity to existing lagoons	• Greater operational complexity and maintenance (Class II or III operator) • Greater energy costs associated with aeration, pumping and mixing • Requires chemical addition for phosphorus removal • Recurring costs for filtration media replacement	• Continued violations of NPDES permit • Potential fines and/or civil and criminal penalties • Potential moratorium on new growth	• Wendell and Bliss recently upgraded their facilities with no consideration of Hagerman • Extensive pumping and transmission facilities and costs • Administrative challenges between the communities
Capital Costs [A]	$8,211,500	$4,628,000	$10,018,500	$14,931,000	$14,579,000	$0	N/A
Additional First Year O&M Costs	$36,700	$16,800	$12,400	$199,500	$284,400	$0	N/A
20-Year Present Worth O&M Costs [B]	$723,000	$271,000	$192,800	$3,380,000	$4,896,000	$0	N/A
Total Present Worth Costs	$8,934,500	$4,899,000	$10,211,300	$18,311,000	$19,475,000	$0	N/A

Table 14 – Treatment Alternative 1 Summary of Improvements

Item	Description
Manually Cleaned Bar Rack	Manually cleaned coarse bar rack for influent screening
Lift Station 1 [A]	Replace or rehabilitate existing lift station
Influent Flow Meter [A]	Replace existing flow meter
Lagoon Cell #1	No improvements needed for land application
Lagoon Cell #2	No improvements needed for land application
Winter Storage Ponds	42 million gallons total, HDPE lined, winter storage lagoons (two new cells); approximately 20 acres required for two ponds
Irrigation Pump Station	Duplex vertical turbine pump station; approximately 35 to 50 hp pumps; magnetic flow meter; shed roof structure
Chlorine Disinfection	Bulk sodium hypochlorite disinfection system (e.g., pumps, piping, 55 gallon drum, etc.); 30-inch PVC pipe loop for contact chamber
Effluent Pressure Main	Approximately 500 LF of 12-inch PVC pressure main to convey effluent to a land application site (at site immediately adjacent to existing lagoons)
Land Application Site	Approximately 100 acres of farmland for effluent reuse (irrigation of crops) and buffer zones; irrigation system (handlines for buffer areas and pivots); access roads; barb-wire fencing; groundwater monitoring wells; canal water vertical turbine pump station (30 to 40 hp pumps), flow meter, and piping
Maintenance/Admin Building	Approximately 1,600 square feet; pre-engineered metal building

A. Improvements to Lift Station 1 and the influent flow meter are considered a collection system improvement and discussed in a separate section.

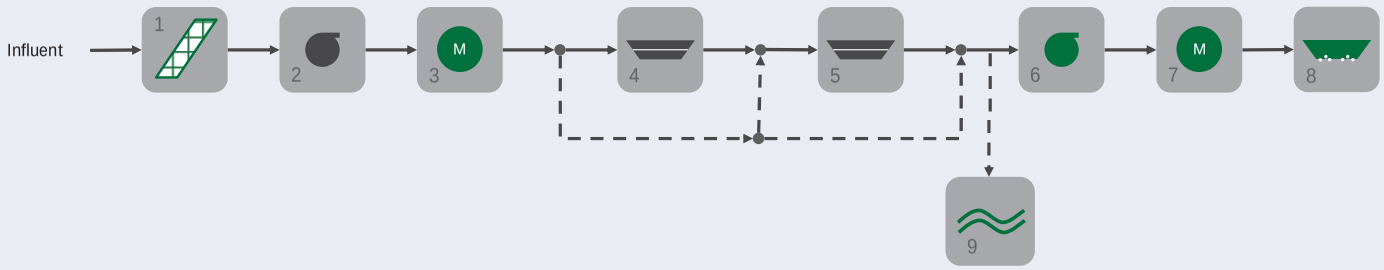
An RI system is regulated by IDEQ under the Recycled Water Rules and will require a Reuse Permit. It is anticipated that the effluent will likely be classified as Class D or E with the existing treatment lagoons. It is unknown whether the effluent quality produced from a lagoon treatment system will be adequate to meet the regulations associated with RI basins. The City will be required to perform additional site analysis (e.g., soils testing, infiltration testing, geotechnical investigation, etc.) and modeling of the RI basins for nitrogen and phosphorus removal during preliminary design to demonstrate compliance with the Recycled Water and Groundwater Quality Rules. Under this alternative, effluent will no longer be discharged to the Snake River under the NPDES Permit; however, the City should retain the right to a river discharge.

The City will be required to acquire additional land for the RI basins, buffer zones, and access roads. Rapid infiltration systems are highly dependent on site specific soil, topography and hydrogeologic conditions. Minimum soil depths of 5 to 10 feet beneath the RI basins are typically required for adequate treatment of the percolate. Level topography is typically preferred for RI systems to provide uniform infiltration of the effluent across the basins. Further analysis of specific sites will be required during preliminary design to evaluate the feasibility of RI basins and to make the final site selection.

A process schematic of this alternative with relative advantages and disadvantages is shown in **Figure 9**. **Table 15** summarizes the improvements anticipated under this option.

Figure 9 – Treatment Alternative 2 Process Schematic

Lagoon Treatment with Rapid Infiltration



Existing Process — Primary Process Flow Path
New Process — Secondary Process Flow Path

Note: Flow schematic is simplified to show only major processes and primary flow paths for clarity.

This alternative uses the existing lagoon treatment system with effluent disposal to rapid infiltration (RI) basins.

Component	Description
1	Bar Rack
2	Lift Station No. 1
3	Influent Flow Meter
4	Lagoon Cell #1
5	Lagoon Cell #2
6	Effluent Pumping
7	Effluent Flow Meter
8	RI Basin(s)
9	Snake River Discharge (Alternate)

Advantages

- Operational simplicity (Class I or II operator)
- Less energy intensive than activated sludge treatment
- Retain existing lagoon treatment system
- May be able to trade existing Waste Load Allocation

Disadvantages

- Siting issues related to large land area requirements
- May forfeit Snake River Waste Load Allocation
- Loading may be limited by soil and groundwater conditions
- Must demonstrate conformance with Groundwater Quality Rules
- Future expansion more difficult

Typical Treated Effluent Quality (to rapid infiltration basins)

- BOD 30-70 mg/L
- TSS 30-70 mg/L
- TN 25-45 mg/L
- TP 4-8 mg/L

Table 15 – Treatment Alternative 2 Summary of Improvements

Item	Description
Manually Cleaned Bar Rack	Manually cleaned coarse bar rack for influent screening
Lift Station No. 1 [A]	Replace or rehabilitate existing lift station
Influent Flow Meter [A]	Replace existing flow meter
Lagoon Cell #1	No improvements needed for RI basins
Lagoon Cell #2	No improvements needed for RI basins
Effluent Pump Station	Duplex vertical turbine pump station; approximately 10 to 20 hp pumps depending on site location and elevation; magnetic flow meter; shed roof structure
Effluent Pressure Main	Two miles (estimated) of 8-inch PVC pressure main to convey effluent to RI basins (at an unknown location)
RI Basins	Assumed infiltration rate of 3 inches per day; approximately 20 acres (including basins, dikes, access roads, buffer zones, etc.) of level ground with 5 to 10 feet of soil
Maintenance/Admin Building	Approximately 1,600 square feet; pre-engineered metal building

A. Improvements to Lift Station 1 and the influent flow meter is considered a collection system improvement and is discussed in a separate section

2.3.4 Alternative 3: Evaporative Lagoons

This alternative involves retaining the existing treatment lagoons and constructing additional lagoons for total containment of the wastewater. Effluent disposal occurs through evaporation of the wastewater. The City will be required to acquire additional land for the evaporative lagoons, buffer zones, and access roads.

Since evaporation only occurs at the water surface, it is preferable to maximize the lagoon surface area, while also balancing the cost of land purchase and annual and seasonal storage requirements. The hydraulic balance must be evaluated to account for seasonal periods when there is net negative evaporation due to precipitation or when the water surface is frozen. Sufficient storage volume must be available during these periods to accommodate the entire treated lagoon effluent plus any volume increase from rain or snow.

An important consideration with evaporation lagoon sizing is the risk of insufficient volume to meet seasonal and year-to-year storage requirements, especially if no alternative discharge option exists. If an unusually wet or cool year is experienced, the storage volume must be sized to accommodate the decrease in net evaporation. This concern is further exacerbated if two or more years of wet or cool climate occur sequentially. The evaporation lagoon site should include options for long-term expansion in the event changes to the climate reduce the effectiveness of evaporation. Likewise, unanticipated increases in I/I to the collection system due to increased precipitation or aging infrastructure could influence predicted evaporation lagoon capacity requirements. For these reasons, it may be advantageous for the City to retain its NPDES discharge permit to the Snake River, even if evaporation rates appear to be sufficient to eliminate the need for discharge in the short-term. Since future NPDES discharge permits are expected to become more stringent, particularly with regards to total phosphorus load allocation, this may require the City to discharge only small volumes throughout the year as necessary to stay within permit limits.

Since evaporation lagoons have no direct effluent discharge, a discharge permit is not required. Evaporation lagoons are, however, required to meet the allowable seepage rates for wastewater lagoons established by IDEQ (IDAPA 58.01.16-493). To meet the allowable seepage rates, the ponds would be lined with an HDPE geomembrane.

A process schematic of this alternative with relative advantages and disadvantages is shown in **Figure 10**. **Table 16** summarizes the improvements anticipated under this option.

Table 16 – Treatment Alternative 3 Summary of Improvements

Item	Description
Manually Cleaned Bar Rack	Manually cleaned coarse bar rack for influent screening
Lift Station No. 1 [A]	Replace or rehabilitate existing lift station
Influent Flow Meter [A]	Replace existing flow meter
Lagoon Cell #1	No improvements needed for RI basins
Lagoon Cell #2	No improvements needed for RI basins
Effluent Pump Station	Duplex vertical turbine pump station; approximately 7.5 to 15 hp pumps (assuming the site is located adjacent to the existing lagoons); magnetic flow meter; shed roof structure
Effluent Pressure Main	Approximately 3,600 LF of 8-inch PVC pressure main to convey effluent to total containment lagoons (at site immediately adjacent to existing lagoons)
Evaporation Lagoons	Five HDPE lined lagoons; approximately 50 acres (including lagoons, dikes, access roads, etc.); (84 million gallons total)
Maintenance/Admin Building	Approximately 1,600 square feet; pre-engineered metal building

A. Improvements to Lift Station 1 and the influent flow meter is considered a collection system improvement and is discussed in a separate section

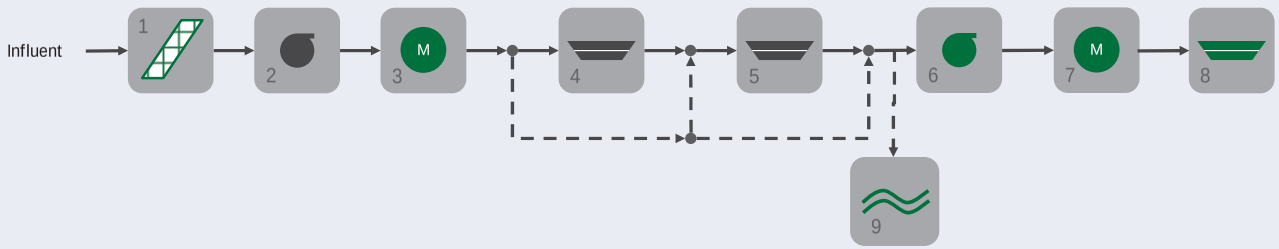
2.3.5 Alternative 4: Activated Sludge Treatment with Rapid Infiltration Basins

The effluent quality from the existing lagoons may not be sufficient to meet the expected Reuse Permit limits and conditions for disposal through RI basins (reference Alternative 2). As an alternative, this option replaces the existing lagoons with an activated sludge secondary treatment process to provide a higher quality effluent for RI basin disposal. Preliminary treatment occurs at the headworks where a mechanical screen removes rags and debris from the wastewater. The screenings are washed to remove organics and then compacted. Grit removal is provided by a grit chamber. The grit slurry is pumped to a classifier for washing and dewatering for final disposal with the screenings.

The secondary treatment process uses activated sludge in anaerobic, anoxic, and aerobic environments to biologically remove BOD, nitrogen and phosphorus. Secondary clarifiers are commonly used to separate solids from the secondary effluent by gravity settling in a quiescent condition. As an alternative, submerged membranes may be used to provide solids separation rather than clarification. The separated solids (sludge) are typically recycled back into the secondary treatment process; the recycled solids are referred to as returned activated sludge (RAS). A portion of the separated solids is wasted (waste activated sludge, or WAS) from the treatment process. The clarified effluent is typically disinfected with chlorine or by ultraviolet (UV) disinfection; although, disinfection is not anticipated for disposal through RI basins. For the alternative, it was assumed the waste solids would be pumped to a holding tank prior to dewatering through a belt filter press. The dewatered solids are then sent to a landfill for disposal.

Figure 10 – Treatment Alternative 3 Process Schematic

Evaporative Lagoons



Existing Process — Primary Process Flow Path

New Process — Secondary Process Flow Path

This alternative uses the existing lagoon treatment system with evaporative lagoons for total containment and disposal of the effluent.

Note: Flow schematic is simplified to show only major processes and primary flow paths for clarity.

Component	Description
1	Bar Rack
2	Lift Station No. 1
3	Influent Flow Meter
4	Lagoon Cell #1
5	Lagoon Cell #2
6	Effluent Pumping
7	Effluent Flow Meter
8	Evaporative Lagoons
9	Snake River Discharge (Alternative

Advantages

- Operational simplicity (Class I or II operator)
- Less energy intensive than activated sludge treatment
- Retain existing lagoon treatment system
- May be able to trade existing Waste Load Allocation

Disadvantages

- Siting issues related to large land area requirements
- May forfeit Snake River Waste Load Allocation
- Future expansion more difficult

Typical Treated Effluent Quality (to evaporative lagoon)

- N/A

Effluent from the activated sludge process will be discharged to RI basins for final treatment and disposal. As previously noted, an RI system is regulated by IDEQ under the Recycled Water Rules and will require a Reuse Permit. For this option, it is anticipated that the effluent will likely be classified as Class C or D. The City will likely be required to perform additional modeling of the RI basins for nitrogen and phosphorus removal during preliminary design to demonstrate compliance with the Groundwater Quality Rules (IDAPA 58.01.11). Under this alternative, effluent will no longer be discharged to the Snake River under the NPDES Permit; however, the City should retain the right to a river discharge.

The City will be required to acquire additional land for the RI basins, buffer zones, and access roads. As previously discussed, additional analysis of specific sites will be required during preliminary design to evaluate the feasibility of RI basins. It is anticipated that the activated sludge treatment facilities could be constructed at the existing lagoon site.

A process schematic of this alternative with relative advantages and disadvantages is shown in **Figure 11**. **Table 17** summarizes the improvements anticipated under this option.

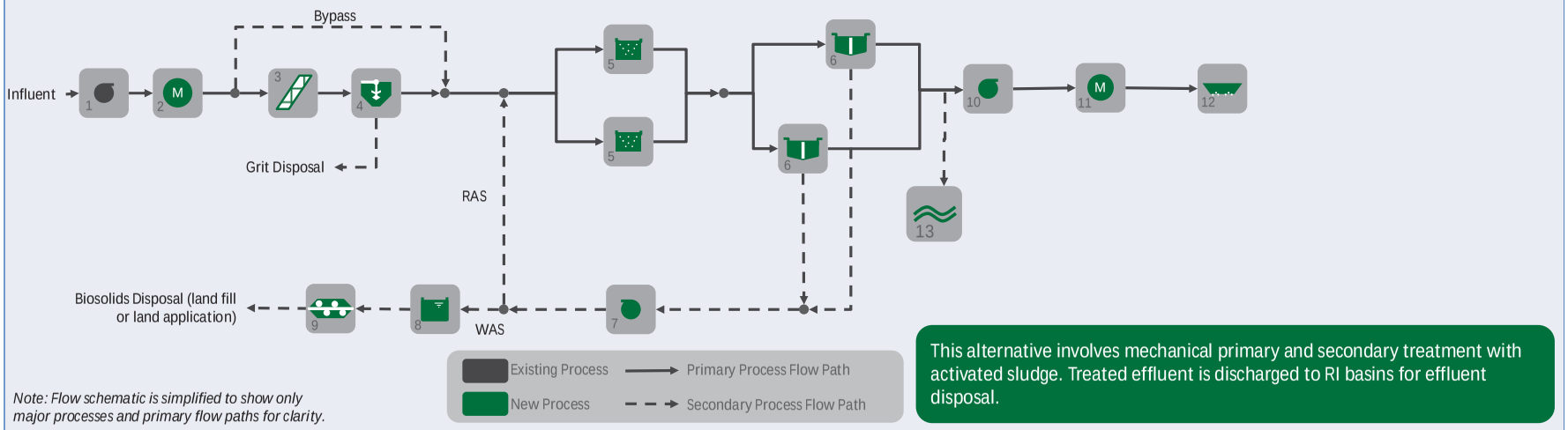
Table 17 – Treatment Alternative 4 Summary of Improvements

Item	Description
Lift Station No. 1 [A]	Replace or rehabilitate existing lift station
Influent Flow Meter [A]	Replace existing flow meter
Mechanical Screening / Grit Removal	One duty mechanical fine screen (2 mm – 6 mm) with one washer/compactor; one vortex grit chamber and classifier; bypass coarse bar rack
Activated Sludge Process	Two treatment biological trains; anaerobic and anoxic basins for biological nutrient removal of phosphorus and nitrogen; aerobic basins for BOD removal; aeration equipment and mixers; pumps; back-up generator
Secondary Clarifiers	One duty and one standby clarifier; approximately 40-foot diameter
RAS-WAS Pump Station	Two duty and one standby pumps; one scum pump; building
Biosolids Handling / Storage	One biosolids holding tank; approximately 30-foot diameter
Biosolids Dewatering	One belt filter press; building
Effluent Pump Station	Duplex vertical turbine pump station; approximately 10 to 20 hp pumps depending on site location and elevation; magnetic flow meter; shed roof structure
Effluent Pressure Main	Two miles (estimate) of 8-inch PVC pressure main to convey effluent to RI basins (at an unknown location)
RI Basins	Assumed infiltration rate of 3 inches per day; approximately 20 acres (including basins, dikes, access roads, etc.) of level ground with 5 to 10 feet of soil
Administration Building	Approximately 1,600 square feet; conference room; laboratory; restrooms; pre-engineered metal building

A. Improvements to Lift Station 1 and the influent flow meter is considered a collection system improvement and is discussed in a separate section

Figure 11 – Treatment Alternative 4 Process Schematic

Activated Sludge Treatment with Rapid Infiltration



Note: Flow schematic is simplified to show only major processes and primary flow paths for clarity.

This alternative involves mechanical primary and secondary treatment with activated sludge. Treated effluent is discharged to RI basins for effluent disposal.

Component	Description
1	Lift Station No. 1
2	Influent Flow Meter
3	Mechanical Screen
4	Grit Removal
5	Anaerobic, Anoxic & Aerobic Basins
6	Secondary Clarifier(s)
7	RAS & WAS Pumping
8	Sludge Holding Tank
9	Solids Dewatering
10	Effluent Pumping
11	Effluent Flow Meter
12	RI Basin(s)
13	Snake River (Alternate)

Advantages

- Higher treated effluent quality
- Longer solids residence time makes process less susceptible to upsets from varying influent loads
- Potential to modify existing lagoons to reduce construction costs (earthen pond activated sludge system)
- "Package systems" available for lower capital cost

Disadvantages

- Greater operational complexity and involvement (Class II or III operator)
- Greater energy costs associated with aeration, pumping and mixing
- "Package systems" limit operational and expansion flexibility
- May forfeit Snake River Waste Load Allocation
- Siting issues related to large land area requirements
- Loading may be limited by soil and groundwater conditions
- Must demonstrate conformance with Groundwater Quality Rules

Typical Treated Effluent Quality

- BOD 5-25 mg/L
- TSS 5-25 mg/L
- NH3 1-10 mg/L
- TN 10-30 mg/L
- TP 2-8 mg/L

Example Treatment Processes

- Activated Sludge (conventional or earthen pond)
- Oxidation Ditch
- Sequencing Batch Reactor
- Integrated Fixed Film Activated Sludge
- Rotating Biological Contactor
- Membrane Bioreactor

2.3.6 Alternative 5: Activated Sludge Treatment with Tertiary Filtration and Surface Water Discharge

To continue discharging effluent to the Snake River under the NPDES permit, an activated sludge secondary treatment plant with tertiary filtration is required to achieve acceptable TSS and total phosphorus effluent levels. Conventional activated sludge secondary treatment processes that include biological phosphorus reduction are typically capable of reducing effluent total phosphorus to approximately 1.0 to 2.0 mg/L. As a result, it appears biological phosphorus removal in the activated sludge process may be adequate to meet current permit conditions. However, as discussed in Chapter 6, IDEQ has indicated the State is likely to review phosphorus load allocations on the Snake River in the future and may set limits at or near the in-stream water quality goal 0.075 mg/L. Additionally, the current effluent TSS mass loading limits are restrictive and would be difficult to achieve with secondary treatment alone. To achieve lower effluent phosphorus and TSS levels, tertiary filtration must also be provided following secondary treatment.

The secondary activated sludge treatment process would be the same as described for Alternative 4. It is assumed that a single pass tertiary filtration system would be constructed initially to meet the current NPDES permit limits. The system would be designed to allow an expansion to a dual pass filtration system in the future if total phosphorus levels are reduced to at or near the in-stream water quality goals in the future. Filter units are typically installed in concrete basins or steel vessels with more than one filter unit per filter module. Modules of 2 to 4 filters are typically considered to optimize the configuration.

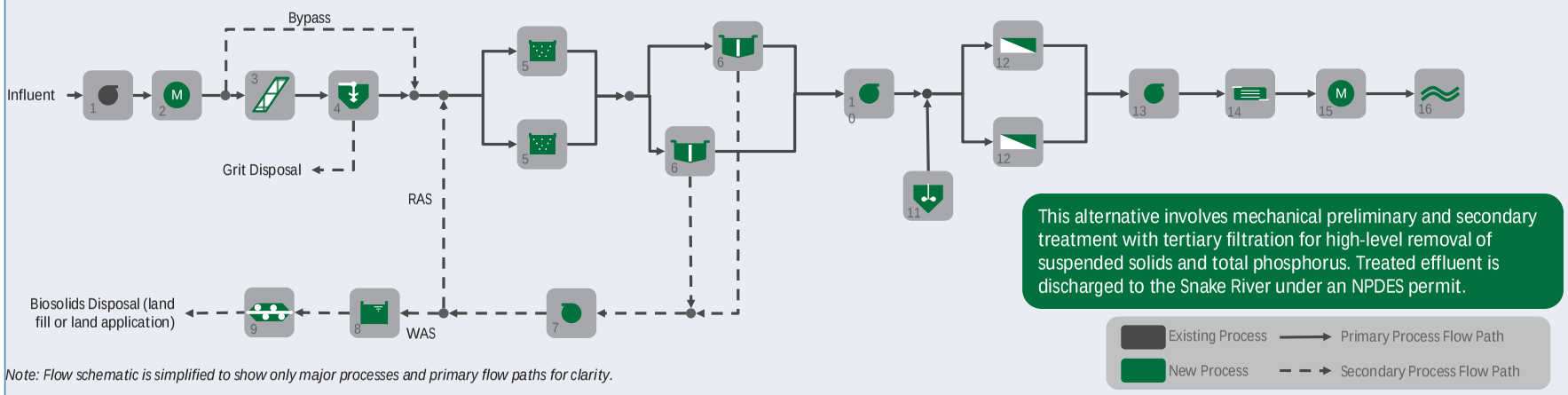
A coagulant such as ferric chloride or alum can be added to the secondary effluent in a rapid mix chamber for flocculation. The coagulant coats the media granules and the phosphorus is removed by precipitation and adsorption. Alternate coagulants could be reviewed for targeted constituent removal. Either coagulant will cause a suppression in the effluent pH and will likely require additional chemical addition, post filtration, to achieve an effluent pH within the City's permit limits. Options for pH adjustment include caustic soda, lime, soda ash, or magnesium hydroxide.

It is anticipated that the activated sludge and tertiary treatment facilities could be constructed at the existing lagoon site.

A process schematic of this alternative with relative advantages and disadvantages is shown in **Figure 12**. **Table 18** summarizes the improvements anticipated under this option.

Figure 12 – Treatment Alternative 5 Process Schematic

Activated Sludge Treatment – Tertiary Filtration – River Discharge



Note: Flow schematic is simplified to show only major processes and primary flow paths for clarity.

Component	Description
1	Lift Station No. 1
2	Influent Flow Meter
3	Mechanical Screen
4	Grit Removal
5	Aeration Basin(s)
6	Secondary Clarifier(s)
7	RAS & WAS Pumping
8	Solids Holding Tank
9	Solids Dewatering
10	Filter Feed Pumping
11	Coagulation
12	Tertiary Filtration
13	Effluent Pumping
14	Chlorine Disinfection
15	Effluent Flow Meter
16	Snake River Discharge

Advantages

- High level of tertiary treatment
- Longer solids residence time makes process less susceptible to upsets from varying influent loads
- Smaller footprint
- Retain right for river discharge

Disadvantages

- Greater operational complexity and maintenance (Class II or III operator)
- Greater energy costs associated with aeration, pumping and mixing
- Requires chemical addition for phosphorus removal
- Recurring costs for filtration media replacement

Typical Treated Effluent Quality

- BOD 5-10 mg/L
- TSS 5-10 mg/L
- NH3 1-10 mg/L
- TN 5-20 mg/L
- TP <1 mg/L

Example Filtration Processes

- Continuous Backwash Upflow Filter (CBUF)
- Tertiary Membrane Filtration (TMF)
- Cloth Media Filtration (Cloth Disk)

Table 18 – Treatment Alternative 5 Summary of Improvements

Item	Description
Lift Station No. 1 [A]	Replace or rehabilitate existing lift station
Influent Flow Meter [A]	Replace existing flow meter
Mechanical Screening / Grit Removal	One duty mechanical fine screen (2 mm – 6 mm) with one washer/compactor; one vortex grit chamber and classifier; bypass coarse bar rack
Activated Sludge Process	Two treatment biological trains; anaerobic and anoxic basins for biological nutrient removal of phosphorus and nitrogen; aerobic basins for BOD removal; aeration equipment and mixers; pumps; back-up generator
Secondary Clarifiers	One duty and one standby clarifier; approximately 40-foot diameter
RAS-WAS Pump Station	Two duty and one standby pumps; one scum pump; building
Biosolids Handling / Storage	One biosolids holding tank; approximately 30-foot diameter
Biosolids Dewatering	One belt filter press; building
Filter Feed Pump Station	One duty and one standby pump; building
Tertiary Filtration and Coagulation	Duty and standby filters (single pass); backwash pumping, coagulant storage and feed equipment; building
Chlorine Disinfection	Bulk sodium hypochlorite disinfection system (e.g., pumps, piping, 55 gallon drum, etc.); 30-inch PVC pipe loop for contact chamber
Administration Building	Approximately 1,600 square feet; conference room; laboratory; restrooms; pre-engineered metal building

A. Improvements to Lift Station 1 and the influent flow meter is considered a collection system improvement and is discussed in a separate section

2.3.7 Alternative 6: No Action Alternative

For this alternative, no action would be taken to improve treatment or operational performance of the City's existing lagoon treatment facilities. However, there are several condition and capacity deficiencies outlined in **Figure 8** that would not be addressed under this alternative.

Furthermore, the existing treatment facilities have not been able to consistently and reliably meet the current NPDES Permit limits. The recent EPA Notice of Violation reported non-compliance with most of the parameters in the NPDES Permit. The existing permit also does not allow effluent discharge from July 1 through August 31 since the City has historically not needed to discharge due to evaporation during this period. As growth continues, the City will eventually need to discharge during these non-permitted summer months. Additionally, it is anticipated that more restrictive phosphorus permit limits will be issued in the future.

Given the existing treatment deficiencies, the unlikelihood of the City receiving a relaxed discharge permit limits from EPA, and the potential for future stringent phosphorus limits, the No Action Alternative was deemed infeasible and dropped from further consideration.

2.3.8 Alternative 7: Regional Treatment

Wastewater from Hagerman could potentially be combined with wastewater from one or more surrounding communities at a centralized location for regional treatment. Communities located near Hagerman that may potentially be involved in regional treatment include the City of Wendell (10 miles to the east) and the City of Bliss (8 miles to the north). Each of these communities has existing

wastewater treatment facilities have recently been upgraded without consideration of regional treatment with Hagerman.

Wastewater from one or more of the communities could be pumped to one of the existing treatment plants or to a new regional treatment plant. This would require pump stations and transmission mains from the participating communities to the regional treatment plant, resulting in considerable capital costs and increased O&M requirements.

The existing treatment facilities within these communities are generally adequate to handle their own loads, but would likely require additional upgrades beyond those recently completed to accommodate flows and loads from Hagerman. It is more economical for Hagerman to continue upgrading and operating their own treatment facilities rather than to construct transmission infrastructure and upgrades at a neighboring treatment plant or to construct a new regional treatment plant.

There may also be administrative difficulties associated with a regional plant, such as retention of ownership in the effluent, equitable sharing of costs, and the desired quality of the effluent. Due to concerns regarding participation by neighboring communities and cost-effectiveness, this alternative was deemed infeasible and dropped from further consideration.

2.3.9 Summary of Treatment Alternatives Environmental Review

Table 19 summarizes the environmental review for each of the treatment alternatives to be considered further. Relative potential impacts are denoted by colors: green denotes no or minimal impact, yellow denotes increased impact, and red denotes significant impact.

2.3.10 Selection of Preferred Treatment Alternative

To assist with selection of the preferred wastewater treatment improvements, the City went through a pairwise comparison and ranking process. The City established economic and non-economic criteria by which each of the treatment alternatives would be ranked. As summarized in **Table 20**, a pairwise comparison was used to determine the relative weighting of each criterion.

The City then ranked each of the treatment alternatives based on the ranking criteria and weighting from the pairwise comparison. The weight established in the pairwise comparison was multiplied by the ranking factor and the score for each alternative totaled. The alternative with the highest score is generally the preferred alternative. A summary of the ranking results in shown in **Table 21**.

As shown in **Table 21**, the preferred treatment alternative is Alternative 2 - Lagoons with Rapid Infiltration (RI) based on the results of the pairwise comparison. Following identification of the preferred option, the City embarked on an investigation of sites within approximately a 2 to 3 mile radius of the existing lagoons that potentially could be used for RI basins. However, they were unsuccessful in locating a suitable site for RI basins due to inadequate soil types and/or depths, extensive rock at most sites that would require significant costs for removal, undulating topography that would require extensive earthwork, and/or property owners who were unwilling to discuss a sale of their land to the City. One potential site was identified adjacent to the existing lagoons (to the east and southeast) that had deep soils and a property owner willing to work with the City. However, a subsequent geotechnical investigation of the site found that the soils had a very high clay content and infiltrative capacities that were inadequate for RI basins.

Table 19 – Summary General Environmental Issues for Treatment Alternatives

Environmental Criteria	Alternative 1 – Lagoons with Winter Storage and Land Application	Alternative 2 – Lagoons with Rapid Infiltration	Alternative 3 – Evaporative Lagoons	Alternative 4 – Activated Sludge Treatment with Rapid Infiltration	Alternative 5 – Activated Sludge Treatment with Tertiary Filtration and Surface Water Discharge
Land Use / Important Farmland / Formally Classified Lands	• Short-term ground disturbance, likely change to land use, and potential impacts on prime farmland for storage lagoons.	• Short-term ground disturbance, likely change to land use, and potential impacts on prime farmland for RI basins.	• Short-term ground disturbance, likely change to land use, and potential impacts on prime farmland for evaporative lagoons.	• Treatment plant likely built on existing lagoon site. • Short-term ground disturbance, likely change to land use, and potential impacts on prime farmland for RI basins.	• Treatment plant likely built on existing lagoon site.
Floodplains	• No floodplains anticipated to be impacted.	• No floodplains anticipated to be impacted.	• No floodplains anticipated to be impacted.	• No floodplains anticipated to be impacted.	• No floodplains anticipated to be impacted.
Wetlands	• No wetlands anticipated to be impacted.	• No wetlands anticipated to be impacted.	• No wetlands anticipated to be impacted.	• No wetlands anticipated to be impacted.	• No wetlands anticipated to be impacted.
Historic Properties	• No historic or cultural resources anticipated to be impacted.	• No historic or cultural resources anticipated to be impacted.	• No historic or cultural resources anticipated to be impacted.	• No historic or cultural resources anticipated to be impacted.	• No historic or cultural resources anticipated to be impacted.
Biological Resources	• Moderate ground disturbance.	• Moderate ground disturbance.	• Higher ground disturbance.	• Moderate ground disturbance.	• Lower ground disturbance. • Potential impacts on aquatic life with Snake River discharge.
Water Quality Issues	• Potential short-term impacts during construction. • Improved Snake River water quality. • Buffer zones required.	• Potential short-term impacts during construction. • Potential impacts on groundwater quality. • Buffer zones required.	• Potential short-term impacts during construction. • Improved Snake River water quality. • No impacts on groundwater quality.	• Potential short-term impacts during construction. • Potential impacts on groundwater quality. • Buffer zones required.	• Potential short-term impacts during construction. • Potential impacts on Snake River Water Quality.
Coastal Resources	• No coastal resources present in project area.	• No coastal resources present in project area.	• No coastal resources present in project area.	• No coastal resources present in project area.	• No coastal resources present in project area.
Socio-Economic / Environmental Justice	• Moderate capital and annual O&M costs. • No socio-economic or environmental justice impacts.	• Lower capital and annual O&M costs. • No socio-economic or environmental justice impacts.	• Moderate capital and lower annual O&M costs. • No socio-economic or environmental justice impacts.	• Higher capital and annual O&M costs. • No socio-economic or environmental justice impacts.	• Higher capital and annual O&M costs. • No socio-economic or environmental justice impacts.
Air Quality	• Short-term impacts during construction. • Potential for odors if not properly managed.	• Short-term impacts during construction. • Potential for odors if not properly managed.	• Short-term impacts during construction. • Potential for odors if not properly managed.	• Short-term impacts during construction. • Potential for odors if not properly managed.	• Short-term impacts during construction. • Potential for odors if not properly managed.
Transportation	• Short-term impacts during construction.	• Short-term impacts during construction.	• Short-term impacts during construction.	• Short-term impacts during construction.	• Short-term impacts during construction.

Environmental Criteria	Alternative 1 – Lagoons with Winter Storage and Land Application	Alternative 2 – Lagoons with Rapid Infiltration	Alternative 3 – Evaporative Lagoons	Alternative 4 – Activated Sludge Treatment with Rapid Infiltration	Alternative 5 – Activated Sludge Treatment with Tertiary Filtration and Surface Water Discharge
Noise	• Short-term impacts during construction.	• Short-term impacts during construction.	• Short-term impacts during construction.	• Short-term impacts during construction.	• Short-term impacts during construction.

Table 20 – Pairwise Comparison of Wastewater Treatment Alternative Ranking Criteria

Criteria	A) Capital Cost	B) Annual O&M Costs	C) Present Worth Costs	D) Ease of Operation/ Maintenance	E) Process Complexity	F) Siting/ Land Area Requirements	G) Ability to Expand	H) Future Regulatory Compliance	I) Technical Feasibility	Total Score	Weight	Rank
A) Capital Cost	x	2	2	2	2	2	3	2	2	17	*7.9%*	9
B) Annual O&M Costs	4	x	4	3	3	4	5	2	3	28	*13.0%*	2
C) Present Worth Costs	4	2	x	2	2	3	3	3	3	22	*10.2%*	7
D) Ease of Operation/ Maintenance	4	3	4	x	3	3	4	3	4	28	*13.0%*	2
E) Process Complexity	4	3	4	3	x	3	4	3	4	28	*13.0%*	2
F) Siting/ Land Area Requirements	4	2	3	3	3	x	3	2	3	23	*10.6%*	5
G) Ability to Expand	3	1	3	2	2	3	x	2	2.5	18.5	*8.6%*	8
H) Future Regulatory Compliance	4	4	3	3	3	4	4	x	4	29	*13.4%*	1
I) Technical Feasibility	4	3	3	2	2	3	3.5	2	x	22.5	*10.4%*	6

1 = Lowest Priority/Importance
5 = Highest Priority/Importance

Table 21 – Wastewater Treatment Alternatives Ranking

Ranking Criteria	Alternative 1 - Lagoons with Winter Storage and Land Application		Alternative 2 - Lagoons with Rapid Infiltration		Alternative 3 - Evaporative Lagoons		Alternative 4 - Activated Sludge Treatment with Rapid Infiltration		Alternative 5 - Activated Sludge Treatment with Tertiary Filtration and Surface Water Discharge		Weight from Pairwise Comparison
	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	
A) Capital Cost	3.61	0.284	5.00	0.394	2.91	0.229	1.00	0.079	1.14	0.090	7.9%
B) Annual O&M Costs	4.64	0.601	4.94	0.640	5.00	0.648	2.25	0.292	1.00	0.130	13.0%
C) Present Worth Costs	3.89	0.396	5.00	0.509	3.54	0.361	1.32	0.134	1.00	0.102	10.2%
D) Ease of Operation/Maintenance	4.00	0.519	4.00	0.519	5.00	0.648	1.00	0.130	1.00	0.130	13.0%
E) Process Complexity	4.00	0.519	4.00	0.519	5.00	0.648	1.00	0.130	1.00	0.130	13.0%
F) Siting/Land Area Requirements	1.00	0.106	4.00	0.426	2.00	0.213	4.00	0.426	5.00	0.532	10.6%
G) Ability to Expand	1.00	0.086	4.00	0.343	2.00	0.171	4.00	0.343	5.00	0.428	8.6%
H) Future Regulatory Compliance	4.00	0.537	4.00	0.537	5.00	0.671	4.00	0.537	2.00	0.269	13.4%
I) Technical Feasibility	4.00	0.417	2.00	0.208	4.00	0.417	2.00	0.208	4.00	0.417	10.4%
Weighted Total Score		*0.385*		*0.455*		*0.445*		*0.253*		*0.247*	

1 = Lowest Rank/Score
5 = Highest Rank/Score

Given that the site investigation for RI basins was unsuccessful, the City elected to consider the next two highest ranked alternatives: Alternative 1 – Lagoon Treatment with Winter Storage and Land Application and Alternative 3 – Evaporative Lagoons. The City discussed these two options with the property owner immediately to the east and southeast of the existing lagoons due to the close proximity of this land. The City and land owner preferred Alternative 1 because this property is located along Highway 30 as it enters town and is part of the gateway to the community. Keeping the property as irrigated farmland is more aesthetically pleasing than large evaporative lagoons. This information, coupled with the lower capital costs and annual O&M costs, resulted in the City selecting Alternative 1 – Lagoon Treatment with Winter Storage and Land Application as the preferred treatment alternative.

3.0 AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES

3.1 LAND USE / IMPORTANT FARMLAND / FORMALLY CLASSIFIED LANDS

3.1.1 Affected Environment

The zoning map in **Appendix B** depicts the generalized land use designations within the City limits. As shown in the map, land use in the area is predominantly residential, with smaller areas of commercial and industrial development. Residential areas are located throughout the City, while commercial zones are primarily situated along the Highway 30 corridor and northeast of town. Industrial areas are located south of the City near the existing wastewater treatment facilities. The City park is zoned for recreational use. The area surrounding the City is predominantly used for agricultural purposes.

The topography of the Hagerman area is depicted on the U.S. Geological Survey (USGS) topographic map in **Appendix B**. As shown on the map, the Hagerman Valley is bound on the east by relatively steep slopes and on the west by the Snake River and steep bluffs. Within the Hagerman area, the ground surface generally slopes from east to west towards the Snake River and the elevation ranges from approximately 2,900 to 3,000 feet above mean sea level. Due to this sloping topography, much of the area west of Second Avenue cannot be serviced by gravity sewers and must use lift stations to pump the wastewater to the treatment lagoons.

Lift Station 1 will be located on City-owned property immediately adjacent to the existing lift station near the wastewater treatment lagoons. This area is currently used as a graveled roadway and parking area (refer to **Figure 1** and **Appendix B**).

Lift Station 2 will be located approximately one-quarter mile west of its current location along Valley Road to capture flow from the northwest portion of the City (refer to **Figure 1** and **Appendix B**). The intent is to locate the new lift station within the existing road right-of-way. If this is not possible, it may be necessary for the City to acquire a small piece of farmland or unimproved property adjacent to the road right-of-way. As part of this improvement, an 8-inch gravity main will be extended along Valley Road from the intersection of West Avenue to the lift station and a 6-inch pressure main will constructed from the lift station to an existing manhole at the intersection of Spring Street and Second Avenue. Valley Road is primarily a gravel road within the areas of improvement; although, there are some paved roadway areas that will be encountered with the 6-inch pressure main. There are existing utilities within the proposed area of improvement for the lift station, including power, irrigation pipes, water mains, and sewer mains.
The new flow meter and vault for Lift Station 3 will be located immediately adjacent to the existing lift station within a grassy area (refer to **Figure 1** and **Appendix B**).

Winter storage lagoon Cell #3 will be constructed within a partially constructed lagoon and an abandoned rock filter northwest of the existing lagoons (refer to **Figure 3** and **Appendix B**). The partially constructed lagoon is currently used as a materials storage site.

Winter storage lagoon Cell #4, the effluent pump station, and chlorine disinfection facilities will be located south of the existing lagoons on a site that is currently used as farmland, unimproved land with rock outcroppings, and an irrigation surge pond (refer to **Figure 3** and **Appendix B**).

The 100-acre parcel of land for the proposed reuse site is located east to southeast of the existing lagoons (refer to **Figure 3** and **Appendix B**). This property is currently used as farmland, which will be the continued use with the reuse system.

Formally classified lands near the City of Hagerman include:

1. The Hagerman Fossil Beds National Monument is a 4,300 acre site that is internationally significant because the old lake and river beds preserve the richest fossil and sediment deposits in the world from the late Pliocene Epoch time period. The fossil beds contain the largest concentration of Hagerman Horse fossils in North America.

2. There are two wildlife management areas in the Hagerman Valley. The Hagerman State Wildlife Management Area is located 2 miles south and one-half mile east of the City along U.S. Highway 30. This 880 acre area consists primarily of pastureland and a portion of Riley Creek, and provides natural habitat for upland game birds and waterfowl. It is also the home of the Hagerman National Fish Hatchery. The Billingsley Creek State Wildlife Management Area is located 1.5 miles northeast of Hagerman. It is a 248 acre site that supports natural habitat for upland game birds and waterfowl.

The USDA Natural Resources Conservation Service (NRCS) was consulted regarding the proposed wastewater system improvement projects (refer to **Appendix A**). However, they did not provide a response.

3.1.2 Environmental Consequences

The proposed improvements to Lift Station 1, Lift Station 2, Lift Station 3, the 8-inch gravity main, the 6-inch pressure sewer main, and winter storage lagoon Cell #3 will take place within areas that have already been disturbed from previous activities (e.g., gravel parking areas, roadways, partially constructed lagoons, etc.). The land use is not anticipated to change and there are no anticipated long-term impacts to land use for the proposed improvements.

The 20-acre parcel of land to be purchased by the City and used for winter storage lagoon Cell #4 is currently used as farmland, unimproved land with rock outcroppings, and an irrigation surge pond. As noted below, the farmland (5 acres±) to be removed for construction of Cell #4 is considered to be prime or important farmland according to the NRCS (Map Symbols 98 and 139). However, this is an ideal location for the lagoon given its close proximity to the exiting lagoons, canal water, and reuse site. Much of the property to be used for Cell #4 is unimproved land consisting of weedy areas and rock outcroppings (refer to pictures in **Appendix B**). Consultation with the existing property owner on which the irrigation surge pond resides indicates that the pond is seldom used by the irrigation company and can be removed from the system without impacts (refer to **Appendix B**).

The 100-acre reuse site to be purchased by the City is currently used for farming. This property will continue to be used for farming as a reuse site. As a result, no changes will occur to the land use for the reuse site.

Inhabited areas will not be adversely impacted by the proposed improvements, other than minor short-term disruptions to traffic patterns and ground disturbance during construction.

An NRCS soil survey map, soil type descriptions, and prime or important farmland designations within the project area are shown in **Appendix B**. As defined by the 1978 EPA Policy to Protect Environmentally Significant Agricultural Lands, prime farmland has the "…best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops, and is available for these uses". Other than the farmland (5 acres±) to be used for Cell #4, no other impacts to prime farmland are anticipated.

The proposed wastewater system improvements will not take place within or near the formally classified lands. As such, no environmental impacts to formally classified lands are anticipated.

3.1.3 Mitigation

In general, no significant impacts to land use are anticipated with the proposed improvements. Best management practices (BMPs) and stormwater management will be required during construction to minimize the potential impacts from erosion of excavated and stockpiled materials. Disturbed areas outside the improvement footprint will be returned to approximately their pre-construction condition upon project completion.

3.2 FLOODPLAINS

3.2.1 Affected Environment

The Idaho State Floodplain Coordinator for the Idaho Department of Water Resources (IDWR) noted that "*the City of Hagerman does not participate in the National Flood Insurance Program (NFIP) and does not have a published Flood Insurance Rate Map (FIRM)*" (refer to **Appendix A**).

A Federal Emergency Management Agency (FEMA) flood zone map (Community Panel Number 160227 0250 A) is included in **Appendix B**. As shown in the map, areas designated as 100-year flood zones (Zone A) are primarily located adjacent to the Snake River (to the west), Billingsley Creek (to the east and north), and Bid Bend Ditch (small areas to the south). All other areas are designated as Zone C – Areas of Minimal Flooding. None of the proposed wastewater improvements are located with the Zone A 100-year floodplain.

3.2.2 Environmental Consequences

With regards to floodplains, IDWR noted in their review of the project that "*IDWR does not have any comments regarding the City of Hagerman's wastewater improvement project*" (refer to **Appendix A**).

None of the proposed wastewater improvements are located with the Zone A 100-year floodplain. As such, no environmental impacts to floodplains are anticipated.

3.2.3 Mitigation

IDWR noted that participating communities typically follow these minimum standards when development is in or near a flood prone area (refer to **Appendix A**):

- "*Require within flood-prone areas*
    - *New or replacement sanitary sewage systems to be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters and*

- *On-site waste disposal systems to be located to avoid impairment to them or contamination from them during flooding."*

None of the proposed wastewater improvements are located with the Zone A 100-year floodplain. As such, no mitigation is anticipated.

3.3 WETLANDS

3.3.1 Affected Environment

A U.S. Fish and Wildlife Service National Wetlands Inventory map is provided in **Appendix B**. As shown on the map, the City's existing wastewater treatment lagoons are the only "wetlands" reported within the proposed project area. However, the existing treatment lagoons are not considered wetlands.

The Army Corps of Engineers was consulted regarding potential wetlands that may be affected by the proposed wastewater system improvements. The Army Corps of Engineers noted in their response that "*"…the City's proposed project site may include waters of the United States, namely Big Bend and Buckeye Ditches*" (refer to **Appendix A**).

There is a man-made irrigation surge pond in the proposed location for winter storage lagoon Cell #4. This pond can be used to divert canal water while the irrigation company removes moss or makes other repairs to their ditches. However, this surge pond is seldom used and is not required for operation of the irrigation system.

3.3.2 Environmental Consequences

It is not anticipated that any of the proposed wastewater system improvements will take place within or near the wetlands shown on the U.S. Fish and Wildlife Service Nation Wetlands Inventory map.

With regards to wetlands, the Army Corps of Engineers noted that *"…most the project area is non-wetland that can be developed without a Department of the Army (DA), Section 404 Clean Water Act Permit. However, discharge of dredge or fill material below the ordinary high water marks of the Big Bend and/or Buckeye Ditches would likely require such a permit*" (refer to **Appendix A**). It is anticipated that no dredge or fill material will be discharged below the ordinary high water marks of the Big Bend or Buckeye Ditches as part of the proposed improvements. It is anticipated that the 6-inch pressure main for Lift Station 2 will be bored beneath the Sands Ditch, Bell Ditch, and Buckeye Ditch.

With regards the irrigation surge pond on the proposed site for Cell #4, the Army Corps of Engineers noted that "w*e would not regulate the "pond" as a water of the US under Section 404 of the CWA. A Department of the Army Permit under Section 404 of the CWA would not be required to place fill in this area*" (refer to **Appendix A**).

3.3.3 Mitigation

Since the proposed wastewater system improvements are not anticipated to impact wetlands or waters of the U.S., no mitigation is anticipated.

3.4 HISTORIC PROPERTIES

3.4.1 Affected Environment

The State Historical Preservation Office (SHPO) of the Idaho State Historical Society was consulted regarding cultural resources in the Hagerman. SHPO noted in their response that "*no historic properties were identified within the project area"* (refer to **Appendix A**). The following buildings are listed on SHPO's National Register of Historic Places in Idaho: the Hagerman State Bank, Priestly's Hydraulic Ram and Morris Roberts Store.

The Shoshone-Bannock and Shoshone-Paiute Tribes were consulted regarding the proposed wastewater system improvement projects (refer to **Appendix A**). However, neither Tribe provided a response.

3.4.2 Environmental Consequences

SHPO noted in their response that "*no historic properties will be affected within the project area"* (refer to **Appendix A**). The proposed wastewater system improvements are not anticipated to impact historical or cultural properties.

It is not anticipated that visual aesthetics of the area will be impacted by the proposed improvements. The lift stations and collections system will generally be adjacent to the existing lift stations or within roadways. The lift stations will also be below grade. Winter storage lagoons Cell #3 and Cell #4 will be adjacent to the existing treatment lagoons. The reuse site will remain as farmland.

3.4.3 Mitigation

SHPO noted in their response that "*no additional investigations are recommended. Project can proceed as planned"* (refer to **Appendix A**).

In the event that historical or cultural artifacts or human remains are inadvertently encountered during project construction, work will cease and SHPO and the tribes will be notified. Mitigation measures will be conducted as SHPO and the tribe(s) direct.

3.5 BIOLOGICAL RESOURCES

3.5.1 Affected Environment

Plants and animals in the Hagerman area are typical of those found in south central Idaho. Vegetation consists of a variety of trees, shrubs, and grasses. Trees common to the area include evergreen, birch, maple, poplar, Russian olive, and willows. The dominant vegetation in the area is sagebrush, fescue, and wheatgrass.

Migratory wildlife, many of which are avian species, seasonally pass through the area. Common upland game birds in the area include pheasants, partridge, quail and sage grouse. Raptors such as hawks, eagles and owls are also found in the area. Waterbirds, such as geese and ducks, shorebirds, and songbirds are often found concentrated along the Snake River and other drainages.

Animals commonly found in the area include coyote, squirrels, rock chuck, rabbits, chipmunk, fox, and skunks. Big game habitat generally does not exist because of the significant human population and soil cultivation in the area; although, mule deer are occasionally found in the area. Fish common to the area include trout, bass, and sturgeon.

The U.S. Fish and Wildlife Service was consulted regarding biological resources and noted the following in their response (refer to **Appendix A**):

- "*Given the proximity of the action to the Snake river and numerous wetlands and canals, you should anticipate an abundance of migratory birds to occur at or near the project site. Some species may nest in the area influenced by our action.*"
- "*These wetlands are likely to be used by numerous species of wildlife, including migratory birds.*"

According to the U.S. Fish and Wildlife Service IPaC report in **Appendix B**, species listed under the Endangered Species Act (ESA) that may occur or could potentially be affected by activities in the area include the Bliss Rapids Snail (threatened) and Snake River Physa Snail (endangered). However, there is no known critical habitat for these species in the area of the proposed improvements. Other species listed under the ESA in Gooding County include the Banbury Springs Lanx (endangered) and the Greater Sage-Grouse (candidate) (refer to **Appendix B**). The U.S. Fish and Wildlife Service IPAC report also lists several migratory birds that could potentially be affected by activities in the area.

The Idaho Department of Fish and Game was consulted regarding the proposed wastewater system improvement projects (refer to **Appendix A**). However, they did not provide a response.

3.5.2 Environmental Consequences

Direct, short-term impacts will consist of ground disturbance during construction and elevated noise levels. However, no long-term impacts to biological resources are expected due to the proposed improvements.

3.5.3 Mitigation

Temporary impacts associated with site disturbance will be mitigated through the development and implementation of Best Management Practices (BMPs).

The U.S. Fish and Wildlife Service noted in their response that "*to minimize the potential for impacting protected nests, eggs, and young, we recommend scheduling ground disturbance actions to occur during the period of July 15 and January 15"* (refer to **Appendix A**).

3.6 WATER QUALITY ISSUES

3.6.1 Affected Environment

The primary surface water sources in the Hagerman area include:

- *Buckeye Ditch* – irrigation ditch located west of the City.
- *Bell Ditch* – irrigation ditch located west of the City.
- *Sands Ditch* – irrigation ditch located west of the City.
- *Snake River* – located west of the City (approximately 1.5 to 2.0 miles from the City at its closest point). This section of the river is part of the Lower Salmon Falls Reservoir, created by the Lower Salmon Falls Dam north of the City.
- *Billingsley Creek* – spring fed creek located east of the City.
- *Minor irrigation ditches*

The City currently discharges their effluent to the Snake River under an NPDES Permit, which is a State of Idaho §303(d) listed impaired water body. The Mid-Snake/Upper Snake-Rock Subbasin Total Maximum Daily Load (TMDL) has been developed to address this water quality limited segment. Beneficial uses of the Snake River in this location include cold water aquatic life, salmonid spawning, and primary and secondary contact recreation.

The source of groundwater in Hagerman is the Eastern Snake River Plain Aquifer (ESPA). This aquifer is comprised of quaternary basalt flows of varying thickness, with sedimentary interbeds consisting primarily of silt and clay, with minor gravel depositions. Water occurrence and movement in the aquifers occurs within fracture zones in the basalt flows. The groundwater level in the Hagerman area fluctuates seasonally between approximately 5 to 125 feet below the ground surface. Groundwater flow direction is generally towards the west.

The ESPA has been designated by the EPA as a Sole Source Aquifer (refer to **Appendix B** for a map of the ESPA).

Unique to the Hagerman Valley are numerous natural springs that emerge from the ESPA through the canyon walls surrounding the valley. This area of the Hagerman Valley is commonly referred to as "Thousand Springs". These springs result in increased tourism in the area, as well as providing ideal water for raising trout. As a result, there are Federal, State and private fish hatcheries located in the valley that provide a significant portion of the world's trout supply. None of these springs or fish hatcheries are located near the proposed improvements.

The proposed project improvements are not located within a groundwater nitrate priority area, as designated by IDEQ in their 2014 Nitrate Delineation and Ranking Process report (refer to **Appendix B**).

The Wild and Scenic Rivers Act, as promulgated by Congress on October 2, 1968, states that "…certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values, shall be protected for the benefit and enjoyment of present and future generations." As shown by the map in **Appendix B**, there are no Wild and Scenic Rivers near the proposed improvement sites.

The Idaho Department of Environmental Quality was consulted regarding the proposed wastewater system improvement projects (refer to **Appendix A**). However, they did not provide a response.

3.6.2 Environmental Consequences

It is anticipated that water quality in the Snake River will improve with the proposed wastewater system improvements since effluent will no longer be discharged to the river. The City may also retain their NPDES permit to provide for a secondary point of discharge to the river during emergency situations.

Impacts to groundwater are not anticipated with the proposed improvements. Effluent will be irrigated on the reuse site at agronomic rates to minimize the potential for leaching of water through the soil profile. The winter storage lagoons will be lined and seepage tested to verify conformance with IDEQ seepage requirements.

IDWR noted that "*if the existing water rights for irrigation are retained on the property proposed to be purchased for land application there likely is no issue, but if the irrigation water rights are removed then the city would need to file a notice with IDWR pursuant to Section 42-201(8) and pay a fee pursuant to*

Section 42-221(P) of Idaho Code" (refer to **Appendix A**). The existing water rights for irrigation will be retained with the property proposed for land application.

The U.S. Fish and Wildlife Service noted in their response that "*...care should be given to prevent accidental contamination of these wetlands via surface overflow, irrigation over spray, or via groundwater/subsurface transfer"* (refer to **Appendix A**).

Since there are no Wild and Scenic Rivers in the Hagerman area, there will be no impacts from the proposed improvements.

3.6.3 Mitigation

Effluent will be land applied to the crops on the reuse site at agronomic rates in accordance with the Reuse Permit issued by IDEQ. This will minimize leaching through the soil profile and reduce potential impacts to the groundwater and ESPA.

The winter storage lagoons will be lined with HDPE and seepage tested to verify conformance with IDEQ requirements.

The U.S. Fish and Wildlife Service noted in their response that "*we recommend care be given to monitoring ground water for possible contamination and to develop a contingency plan to address any unexpected groundwater effects"* (refer to **Appendix A**). Groundwater monitoring wells will be implemented at the reuse site for groundwater quality monitoring in accordance with IDEQ regulations and guidance documents.

BMPs and stormwater management will be required during construction to minimize the potential impacts from erosion of excavated and stockpiled materials into surface waters and wetlands.

The 6-inch pressure main for Lift Station 2 will cross the Sands Ditch, Bell Ditch, and Buckeye Ditch. It is anticipated that these ditch crossings will include pipe borings to minimize impacts to the ditches; however, it may be possible to open trench them during periods when there is no water in the ditches.

Lift Stations 1 and 2 will have control systems that alarm the operator if water levels in the wet-well exceed a pre-determined setpoint. These lift stations will also have back-up generators installed to keep them functional during power outages. These measures will help prevent overflows from the lift stations that may impact surface waters.

Buffer zones from surface water, residential dwellings, public and private wells, and public access areas will be maintained around the reuse site and winter storage lagoons in accordance with IDEQ regulations and guidance.

3.7 COASTAL RESOURCES

3.7.1 Affected Environment

There are no coastal resources in Idaho.

3.7.2 Environmental Consequences

Since there are no coastal resources in Idaho, there are no environmental consequences.

3.7.3 Mitigation

Since there are no coastal resources in Idaho, no mitigation is required.

3.8 SOCIO-ECONOMIC / ENVIRONMENTAL JUSTICE ISSUES

3.8.1 Affected Environment

The area's economy is based primarily on the agricultural and service industries. There are also several agricultural related businesses that meet the needs of farmers and ranchers in the area. The primary industrial development in the planning area is a fish processing facility located south of town in an industrial park near the wastewater treatment plant. Many of the City's residents also commute to larger cities, such as Twin Falls, for work.

Tourism and recreation are also significant contributors to the area's economy. The Hagerman Fossil Beds National Monument (National Park Service) draws a substantial number of tourists each year to visit the fossil beds and visitor center. The Federal and State fish hatcheries in the area not only provide a number of jobs to Hagerman residents, but also support the economy through tourism. Tourists also visit the Thousand Springs area and two national wildlife management areas that are located in the valley. The Snake River provides for various recreational opportunities, including boating, fishing, swimming and water-skiing. Other recreational activities available within the valley include hunting, camping and hiking.

A summary of the socio-economic conditions in Hagerman by Jan Roeser, Regional Economist, is provided in **Appendix A**.

3.8.2 Environmental Consequences

It is not anticipated that the proposed wastewater system improvements will affect the demographics or socio-economic make-up of the area. They will also not impose a disproportionately high and adverse human health or environmental effect on minority and low-income populations. It is not expected that any specific population segment will benefit from the project, or that residents or businesses will be displaced. The community in general will collectively benefit from improving the wastewater system. The system upgrades will allow for future growth and development, increasing employment opportunities in the area.

3.8.3 Mitigation

No mitigation is anticipated for socio-economic and environmental justice issues.

3.9 AIR QUALITY

3.9.1 Affected Environment

Residents generally consider air quality excellent and cite this as one of the area's quality of life factors. Hagerman is well removed from any major urbanized areas and there are very few sources of pollution in the immediate vicinity. Local automobile emissions and agricultural activities are the primary contributors to air quality degradation. Higher levels of particulate matter may be experienced during certain weather events or during certain times of the agricultural season due to farming practices.

EPA has developed standards for monitoring and protecting air quality. IDEQ is responsible for implementing, monitoring and enforcing the air quality standards within Idaho. An area that exceeds

the air quality standards is considered to be a "non-attainment area" (NAA) for a particular component, or total air quality. As shown by the map in **Appendix B**, there are several NAA's in Idaho. The proposed wastewater system improvements are not located within an NAA.

The Idaho Department of Environmental Quality was consulted regarding the proposed wastewater system improvement projects (refer to **Appendix A**). However, they did not provide a response.

3.9.2 Environmental Consequences

Air quality may be temporarily impacted during construction due to fugitive dust and exhaust emissions from construction equipment, which may produce some minor air pollution. Impacts to air quality are not anticipated to exceed state or federal limits.

3.9.3 Mitigation

The impacts of construction dust will be mitigated by ceasing construction activities during exceptionally windy conditions and by using watering equipment. Debris created by construction will not be burned on-site, but transported to a disposal area to avoid further air pollution.

3.10 TRANSPORTATION

3.10.1 Affected Environment

Construction of Lift Station 2, the 8-inch gravity sewer main, and the 6-inch pressure sewer main may temporarily impact traffic within the localized areas of these improvements during construction. Construction of the other project elements are not anticipated to impact traffic since these improvements are not located within roadways or other travel paths.

A list of the Designated Primary and Commercial Service Airports in Idaho is included in **Appendix B**.

The Idaho Transportation Department was consulted regarding the proposed wastewater system improvement projects (refer to **Appendix A**). However, they did not provide a response.

3.10.2 Environmental Consequences

Traffic patterns and/or travel delays may be experienced in the localized areas of Lift Station 2, the 8-inch gravity sewer main, and the 6-inch pressure sewer main during construction.
There are no designated primary or commercial service airports near Hagerman. The map in **Appendix B** shows that the nearest airport is approximately 10 miles away in the City of Gooding.

3.10.3 Mitigation

A traffic control plan will be implemented during construction of Lift Station 2, the 8-inch gravity sewer main, and the 6-inch pressure sewer main. The plan will maintain safe travel, access to residents and businesses, access for emergency vehicles, school buses, etc.

3.11 NOISE

3.11.1 Affected Environment

Noise in Hagerman is generally limited to normal traffic, commercial activities, and agricultural practices.

3.11.2 Environmental Consequences

Heavy equipment and machinery will be used during construction, resulting in temporary increases in noise levels.

3.11.3 Mitigation

Construction activity will be limited to normal working hours during the week to reduce the noise impacts on residential areas. In addition, construction noise will be temporary and will be minimized by requiring the use of well-maintained equipment and mufflers.

4.0 SUMMARY OF MITIGATION

Table 22 summarizes the environmental impact mitigation measures identified in Section 3.

Table 22 – Summary of Environmental Impact Mitigation

Affected Environment	Agency Consulted	Mitigation Measures
Land Use / Important Farmland / Formally Classified Lands	USGS, USDA NRCS	• Implement BMPs and stormwater management to minimize erosion. • Return disturbed areas outside footprint of improvements to original condition.
Floodplains	IDWR, FEMA	• Suggest that new or replacement sewer collection systems be designed to minimize or eliminate infiltration of flood waters and discharges from system to flood waters. • Suggest that on-site disposal systems be located to avoid impairment or contamination during flooding.
Wetlands	US Fish and Wildlife Service, Army Corps of Engineers	• None required since there are no impacts to wetlands.
Historic Properties	SHPO, Shoshone-Bannock Tribe, Shoshone-Paiute Tribe	• Include a stop work order and notify SHPO and Tribes for inadvertent discoveries of historic or cultural resources.
Biological Resources	US Fish and Wildlife Service, Idaho Fish and Game	• Implement BMPs to minimize site disturbance. • Recommend scheduling ground disturbance actions to occur during period of July 15 and January 15.
Water Quality Issues	IDWR, IDEQ, US Fish and Wildlife Service, Army Corps of Engineers	• Land apply effluent at agronomic rates. • Install groundwater monitoring wells. • Seepage test the winter storage lagoons. • Implement BMPs and stormwater management. • Consider borings of ditches for the pressure sewer main. • Install controls and back-up power at Lift Stations 1 and 2 to minimize the potential for overflows. • Maintain buffer zones from water sources around the reuse site and winter storage lagoons.
Coastal Resources	None	• None required since there are no coastal resources in Idaho.
Socio-Economic / Environmental Justice Issues	Jan Roeser, Regional Economist	• None anticipated.
Air Quality	IDEQ	• Cease construction during exceptionally windy conditions. • Use watering equipment to reduce fugitive dust. • Debris will not be burned on-site, but will be hauled off-site to a disposal facility.
Transportation	ITD	• Implement a traffic control plan for Lift Station 2, the 8-inch gravity main, and 6-inch pressure main.
Noise	IDEQ	• Limit construction to normal working hours during the week. • Require well-maintained equipment with mufflers.

5.0 CORRESPONDENCE

5.1 AGENCY CORRESPONDENCE

Several public agencies were sent a letters and/or emails requesting that they review the proposed project and provide a response regarding potential environmental impacts. The letters included a project description and drawings of the proposed improvements. A list of the agencies consulted and copies of the letters sent to the agencies and their responses can be found in **Appendix A**.

5.2 PUBLIC PARTICIPATION

Several opportunities for public input and participation in the facilities planning process were offered, including (see **Appendix C** for summary material presented at the meetings):

- September 18, 2013 Council Meeting Presentation
- May 14, 2014 Council Meeting Presentation
- May 28, 2014 Council Meeting Presentation
- October 6, 2014 Public Open House
- October 22, 2014 Public Open House

At each of these meetings, J-U-B ENGINEERS, Inc. presented a brief description of the Facilities Plan, a summary of the system analysis, and an outline the alternatives under consideration. Comments and questions from the public were addressed and incorporated, as necessary, into the final Facilities Plan.

6.0 LIST OF PREPARERS

This Environmental Report was prepared by J-U-B ENGINEERS, using references from several sources.

6.1 REFERENCES

Federal Emergency Management Agency (FEMA), Map Service Center.
http://msc.fema.gov/portal

Housing and Urban Development, Designated Primary and Commercial Airports in Idaho.
http://www.hud.gov/local/shared/working/r10/environment/airports.pdf

Idaho Department of Environmental Quality. *2014 Nitrate Priority Area Delineation and Ranking Process.* http://www.deq.idaho.gov/media/1117845/nitrate-priority-area-delineation-ranking-2014.pdf

Idaho Department of Environmental Quality, Sole Source Aquifer Map.
https://www.deq.idaho.gov/media/462639-sole_source_aquifers_west_map.pdf

Idaho Department of Environmental Quality, Non-Attainment Area Map.
https://www.deq.idaho.gov/media/662796-nonattainment_map.pdf

Idaho State Historical Society, National Register of Historic Places.
http://history.idaho.gov/national-register-historic-places

J-U-B ENGINEERS, Inc. *City of Hagerman Wastewater Facilities Plan*. May 2016.

Region IV Development Association, Inc. *City of Hagerman Wastewater Project Environmental Review Record*. October 2015.

USDA Natural Resources Conservation Service, Web Soil Survey.
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

U.S. Fish and Wildlife Service, Endangered Species Act.
https://ecos.fws.gov/ipac/

U.S. Fish and Wildlife Service, National Wetlands Inventory Mapper.
https://www.fws.gov/wetlands/Data/Mapper.html

Wild and Scenic Rivers.
https://rivers.gov/

Appendix A

Agency Correspondence

Environmental Assessment Contact List
City of Hagerman – Wastewater Improvements
Public Facility Project

Name	Title	Address	Phone (208)	Issues
Jamee N. Fiore, MHP Jamee.Fiore@ishs.idaho.gov	Historical Preservation Review Officer	State Historic Preservation Office 210 Main Street Boise, ID 83702	334-3847 ext. 101	- Historic Properties - Archeological Sites - Cultural Resources
Carolyn Boyer Smith csmith@sbtribes.com	Cultural Resource Coordinator	Shoshone-Bannock Tribes P.O. Box 306 Fort Hall, ID 83203	478-3707	- Tribal Lands - Historic Properties on Tribal Lands - Religious or Cultural Significance to Historic Properties
Ted Howard Howard.ted@shopai.org	Director	Cultural Resource Program Shoshone-Paiute Tribe PO Box 219 Owyhee, NV 89832	759-3100, ext. 1243	- Tribal Lands - Historic Properties on Tribal Lands - Religious or Cultural Significance to Historic Properties
James Joyner James.m.joyner@usace.army.mil	Sr. Regulatory Project Manager	U.S. Army Corps of Engineers	522-1676	- Wetlands Protection - Vegetation & Habitat
Bob Kibler Bob_Kibler@fws.gov	Biologist	U.S. Fish & Wildlife Service Boise Field Station 1387 S. Vinnell Way, Rm. 368 Boise, ID 83705	378-5243	- Endangered Species
Toby Boudreau Toby.boudreau@idfg.idaho.gov	Regional Supervisor	Idaho Dept. of Fish & Game 324 South 417 East, Suite 1 Jerome, ID 83338	324-4359	- Wetlands Protection - Endangered Species - Fish & Wildlife - Vegetation & Habitat
Brian Reed, P.E. Brian.reed@deq.idaho.gov	Technical Engineer	State of Idaho Division of Environmental Quality 650 Addison Ave W, Ste 110 Twin Falls, Idaho 83301	736-2190	- Water Supply & Quality - Air Quality - Wastewater Facilities
Keri K. Smith-Sigman, CFM Keri.sigman@idwr.idaho.gov	State Floodplain Coordinator	Idaho Department of Water Resources P.O. Box 83720 Boise, ID 83720-0003	287-4928	- Floodplain Management (FEMA map panel numbers) - Water Quality - Surface Water - Wetlands - Wild & Scenic Rivers - Water Resources
Allen Merritt, P.E. allen.merritt@idwr.idaho.gov	Southern Regional Manager	Idaho Dept. of Water Resources 650 Addison Ave W, Ste 500 Twin Falls, ID 83301-5858	736-3033	- Floodplain Management - Water Quality - Surface Water - Wetlands - Wild & Scenic Rivers - Water Resources
Steve Thompson	District Conservationist	USDA-NRCS 820 Main St. Gooding, ID 83330	934-8481	- Farmland Protection
Joel Packham jpackham@uidaho.edu	Extension Educator	University of Idaho Extension Office 1459 Overland Ave., Room 4 Burley, ID 83318	878-9461	- Wetlands Protection - Farmland Protection - Prime Farmland Designation - Slope - Erosion - Soil Suitability - Unique Natural Resources - Agricultural Lands - Natural Features

Name	Title	Address	Phone (208)	Issues
Jack Shambaugh Jack.shambaugh@idt.gov	Senior Transportation Planner	Idaho Department of Transportation 216 S. Date Street Shoshone, ID 83352	886-7800	- Transportation Impacts - Potential Safety Hazards
Jan Roeser Jan.roeser@labor.idaho.gov (SEND COPY OF PROJECT BUDGET WITH ENCLOSURES)	Area Market Analyst	Idaho Department of Labor 420 Falls Avenue Twin Falls, ID 83301	735-2049	- Employment patterns - Income patterns
Mark Holtzen	P.E.	J-U-B Engineers, Inc. 115 Northstar Ave. Twin Falls, ID 83301	733-2414	- Noise Levels (during and post construction levels) - Compatibility with Surroundings - Man-Made Hazards - Air Quality Concerns - Energy Supply Usage (prior and post construction) - Displacement of People/Business - Impacts on: Wastewater System, Storm Water Drainage System, Water Supply, Fire Protection Capabilities - Solid Waste Disposal Transportation Conditions - Mitigation of Environmental Harms - Floodplain Management (FEMA) - Airport Clearance Zone - Parks, Recreation, Open Space - Social Services
Noel "Pete" Weir Mayor.hagerman@gmail.com	Mayor	City of Hagerman P.O. Box 158 Hagerman, ID 83332	837-6636	- Conformance with Planning and Zoning - Compatibility with Neighboring Land Uses - Any adverse effects to the LMI residents of the County - Commercial Facilities - Social Services - Environmental Justice
Tim Peterson	Fire Chief	Hagerman Fire Prot. Dist. 150 Salmon St. E. P.O. Box 336 Hagerman, ID 83332	837-4552	- Toxic Chemical/Radioactive Hazards - Fire Protection - Public Safety - Emergency Services
Loren Miller	Police Chief	City of Hagerman P.O. Box 158 Hagerman, ID 83332	837-6636	- Public Safety - Emergency Services
Eric Anderson Eric.anderson@hjsd.org	Superintendent	Hagerman School District 324 N. Second Avenue Hagerman, ID 83332	837-6344	- Educational Services
Joseph Herring joe@rivda.org	President	Region IV Development P.O. Box 5079 Twin Falls, ID 83301	732-5727	- Environmental Justice - Demographic/character changes - Open space, recreation, cultural facilities

Region IV Development

Jamee N. Fiore, MHP
Historical Preservation Review Officer
Idaho State Historical Society
210 Main Street
Boise, Idaho 83702-7264

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Jamee:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. In order to determine whether historic properties will be affected by the proposed scope of work, the following information is being provided for your review and comment:

1. **The Area of Potential Effect**: The Area of Potential Effect (APE) consists of a parcel of property that is approximately one hundred (100) acres, the City's current wastewater treatment facilities, and all three of the City's lift stations. The location of these area's is listed below, and identified on the maps that are attached with this letter.

2. **Location**:
    1. The City of Hagerman is located in South Central Idaho approximately 10 miles west of the City of Wendell along U.S. Highway 30, and falls within Sections 14 and 23 of Township 7 South, Range 13 East Boise Meridian, Gooding County, Idaho.
    2. The City's municipal wastewater treatment facilities are located at 5 Lagoon Rd. South, Hagerman, ID 83332.
    3. Lift station #1 is located on the premises of the City's wastewater treatment facilities.
    4. Lift station #2 is located on the northwest corner of town located just off of Valley Road, approximately 300 feet west of 1st Ave, on the south side of the road.
    5. Lift station #3 is located on the northeast corner of town located just off of Cemetery Road, on the southeast corner of the cemetery.
    6. The property the City is looking to purchase is located in Section 23, Township 7 South, Range 13 East Boise Meridian, Gooding County Idaho. The Property is located both to the south and east of the City's wastewater lagoons, and is identified and outlined on the attached maps.

3. **Federal agencies involved**: The City will be receiving funds from the U.S. Department of Housing and Urban Development (HUD) which are administered in Idaho by the Idaho Department of Commerce. The City has also applied for and anticipates receiving funding from USDA-Rural Development, and the Idaho Department of Environmental Quality (DEQ).

4. **Project description**: Specifically, the proposed wastewater infrastructure project will include the following:

    1. The purchase of approximately 100 acres of land for the treatment of wastewater effluent through land application.

    2. Wastewater Lagoons System – Cell three of the City's current lagoon system will be rehabilitated, and an additional lagoon will be constructed. Together these lagoons will hold approximately 41 million gallons of effluent

    3. Lift Stations – All of the City's lift stations will be upgraded. This will include the installation of new pumps, mechanical piping and fittings, plugs and check valves, magnetic flow meter, and installation of a generator to provide back-up power. Lift station #2 will also be relocated approximately ¼ mile to the west of its current location. This relocation will require installation of an additional 6" pressure main, and an 8" gravity fed sewer line.

5. **Description of ground surfaces & disturbances**: All of the ground surfaces that will be disturbed during the course of this project has already been developed and disturbed. All the lift stations are located within road rights of way, and the lagoon improvements involve the rehabilitation of a current lagoon, with an additional lagoon being constructed on agricultural land that has already been disturbed through farming.

6. **Descriptions of buildings or structures that will be affected**: The construction of these improvements will not affect any buildings or structures, as the project involves replacing two wastewater lift stations, rehabilitating an existing wastewater lagoon, and constructing an additional lagoon on bare agricultural ground.

7. **Attachments**: 1. Maps depicting the location of the project area; 2. Pictures of the project site.

I understand that you have 30 days from your receipt of this letter to respond. Please contact me at (208) 732-5727, ext. 3007 or ben@rivda.org if you have any questions or concerns.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

-Enclosures

Ben Peck

From: Ben Peck
Sent: Friday, August 14, 2015 3:44 PM
To: csmith@sbtribes.com
Subject: City of Hagerman Wastewater Project

Good afternoon Ms. Smith,

I'm contacting you in regards to a letter that was mailed to you on July 13, 2015 that relates to an environmental review that we're conducting for the City of Hagerman. We're hoping to receive your comments about our proposed project to ensure that there will be no adverse effects on anything of historical or cultural importance. If you need any additional information, or if you didn't receive the letter, please let me know and I can get the information to you for your review.

Thank you for your time,

Ben Peck
Community Development Planner
Region IV Development Association, Inc.
P.O. Box 5079, Twin Falls, Idaho 83303-5079
P | (208) 732-5727 ext. 3007 F | (208) 732-5454 E | ben@rivda.org

Region IV Development

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

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Carolyn:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. In order to determine whether historic properties will be affected by the proposed scope of work, the following information is being provided for your review and comment:

1. **The Area of Potential Effect**: The Area of Potential Effect (APE) consists of a parcel of property that is approximately one hundred (100) acres, the City's current wastewater treatment facilities, and all three of the City's lift stations. The location of these area's is listed below, and identified on the maps that are attached with this letter.

2. **Location**:
    1. The City of Hagerman is located in South Central Idaho approximately 10 miles west of the City of Wendell along U.S. Highway 30, and falls within Sections 14 and 23 of Township 7 South, Range 13 East Boise Meridian, Gooding County, Idaho.
    2. The City's municipal wastewater treatment facilities are located at 5 Lagoon Rd. South, Hagerman, ID 83332.
    3. Lift station #1 is located on the premises of the City's wastewater treatment facilities.
    4. Lift station #2 is located on the northwest corner of town located just off of Valley Road, approximately 300 feet west of 1st Ave, on the south side of the road.
    5. Lift station #3 is located on the northeast corner of town located just off of Cemetery Road, on the southeast corner of the cemetery.
    6. The property the City is looking to purchase is located in Section 23, Township 7 South, Range 13 East Boise Meridian, Gooding County Idaho. The Property is located both to the south and east of the City's wastewater lagoons, and is identified and outlined on the attached maps.

3. **Federal agencies involved**: The City will be receiving funds from the U.S. Department of Housing and Urban Development (HUD) which are administered in Idaho by the Idaho Department of Commerce. The City has also applied for and anticipates receiving funding from USDA-Rural Development, and the Idaho Department of Environmental Quality (DEQ).

4. **Project description**: Specifically, the proposed wastewater infrastructure project will include the following:

    1. The purchase of approximately 100 acres of land for the treatment of wastewater effluent through land application.

    2. Wastewater Lagoons System – Cell three of the City's current lagoon system will be rehabilitated, and an additional lagoon will be constructed. Together these lagoons will hold approximately 41 million gallons of effluent

    3. Lift Stations – All of the City's lift stations will be upgraded. This will include the installation of new pumps, mechanical piping and fittings, plugs and check valves, magnetic flow meter, and installation of a generator to provide back-up power. Lift station #2 will also be relocated approximately ¼ mile to the west of its current location. This relocation will require installation of an additional 6" pressure main, and an 8" gravity fed sewer line.

5. **Description of ground surfaces & disturbances**: All of the ground surfaces that will be disturbed during the course of this project has already been developed and disturbed. All the lift stations are located within road rights of way, and the lagoon improvements involve the rehabilitation of a current lagoon, with an additional lagoon being constructed on agricultural land that has already been disturbed through farming.

6. **Descriptions of buildings or structures that will be affected**: The construction of these improvements will not affect any buildings or structures, as the project involves replacing two wastewater lift stations, rehabilitating an existing wastewater lagoon, and constructing an additional lagoon on bare agricultural ground.

7. **Attachments**: 1. Maps depicting the location of the project area; 2. Pictures of the project site.

I understand that you have 30 days from your receipt of this letter to respond. Please contact me at (208) 732-5727, ext. 3007 or ben@rivda.org if you have any questions or concerns.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

-Enclosures

Ben Peck

From: Ben Peck
Sent: Friday, August 14, 2015 3:41 PM
To: howard.ted@shopai.org
Subject: City of Hagerman - Wastewater Project

Good afternoon Mr. Howard,

I'm contacting you in regards to a letter that was mailed to you on July 13, 2015 that relates to an environmental review that we're conducting for the City of Hagerman. We're hoping to receive your comments about our proposed project to ensure that there will be no adverse effects on anything of historical or cultural importance. If you need any additional information, or if you didn't receive the letter, please let me know and I can get the information to you for your review.

Thank you for your time,

Ben Peck
Community Development Planner
Region IV Development Association, Inc.
P.O. Box 5079, Twin Falls, Idaho 83303-5079
P | (208) 732-5727 ext. 3007 F | (208) 732-5454 E | ben@rivda.org

Region IV Development

Ted Howard
Director, Cultural Resource Program
Shoshone-Paiute Tribe
P.O. Box 219
Owyhee, NV 89832

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Ted:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. In order to determine whether historic properties will be affected by the proposed scope of work, the following information is being provided for your review and comment:

1. **The Area of Potential Effect**: The Area of Potential Effect (APE) consists of a parcel of property that is approximately one hundred (100) acres, the City's current wastewater treatment facilities, and all three of the City's lift stations. The location of these area's is listed below, and identified on the maps that are attached with this letter.

2. **Location**:
    1. The City of Hagerman is located in South Central Idaho approximately 10 miles west of the City of Wendell along U.S. Highway 30, and falls within Sections 14 and 23 of Township 7 South, Range 13 East Boise Meridian, Gooding County, Idaho.
    2. The City's municipal wastewater treatment facilities are located at 5 Lagoon Rd. South, Hagerman, ID 83332.
    3. Lift station #1 is located on the premises of the City's wastewater treatment facilities.
    4. Lift station #2 is located on the northwest corner of town located just off of Valley Road, approximately 300 feet west of 1st Ave, on the south side of the road.
    5. Lift station #3 is located on the northeast corner of town located just off of Cemetery Road, on the southeast corner of the cemetery.
    6. The property the City is looking to purchase is located in Section 23, Township 7 South, Range 13 East Boise Meridian, Gooding County Idaho. The Property is located both to the south and east of the City's wastewater lagoons, and is identified and outlined on the attached maps.

3. **Federal agencies involved**: The City will be receiving funds from the U.S. Department of Housing and Urban Development (HUD) which are administered in Idaho by the Idaho Department of Commerce. The City has also applied for and anticipates receiving funding from USDA-Rural Development, and the Idaho Department of Environmental Quality (DEQ).

4. **Project description**: Specifically, the proposed wastewater infrastructure project will include the following:

    1. The purchase of approximately 100 acres of land for the treatment of wastewater effluent through land application.

    2. Wastewater Lagoons System – Cell three of the City's current lagoon system will be rehabilitated, and an additional lagoon will be constructed. Together these lagoons will hold approximately 41 million gallons of effluent

    3. Lift Stations – All of the City's lift stations will be upgraded. This will include the installation of new pumps, mechanical piping and fittings, plugs and check valves, magnetic flow meter, and installation of a generator to provide back-up power. Lift station #2 will also be relocated approximately ¼ mile to the west of its current location. This relocation will require installation of an additional 6" pressure main, and an 8" gravity fed sewer line.

5. **Description of ground surfaces & disturbances**: All of the ground surfaces that will be disturbed during the course of this project has already been developed and disturbed. All the lift stations are located within road rights of way, and the lagoon improvements involve the rehabilitation of a current lagoon, with an additional lagoon being constructed on agricultural land that has already been disturbed through farming.

6. **Descriptions of buildings or structures that will be affected**: The construction of these improvements will not affect any buildings or structures, as the project involves replacing two wastewater lift stations, rehabilitating an existing wastewater lagoon, and constructing an additional lagoon on bare agricultural ground.

7. **Attachments**: 1. Maps depicting the location of the project area; 2. Pictures of the project site.

I understand that you have 30 days from your receipt of this letter to respond. Please contact me at (208) 732-5727, ext. 3007 or ben@rivda.org if you have any questions or concerns.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

-Enclosures

Ben Peck

From:	Ben Peck
Sent:	Wednesday, September 30, 2015 1:59 PM
To:	James Joyner (James.M.Joyner@usace.army.mil)
Subject:	More information about Hagerman Wastewater System Improvements
Attachments:	Hagerman Aerial Map 1.pdf; Hagerman Aerial Map 2.pdf

Good afternoon James,

Thank you for taking the time to look at the information I sent you, and for replying so quickly. I'm sending you some new additional information that has been provided by the project engineer, and wanted to receive your comments back on this as well as it relates to this project. I have attached two aerial maps of the project site in question. The first one is a close up picture with no overlay, and the second has two overlay's that show the proposed location of the winter storage lagoon, and the location of the irrigation storage pond *(potential wetland).*

As it stands right now, the preliminary design of the winter storage pond has been designed to the size and shape as indicated on the second aerial map. This would require the northern tip of the irrigation surge pond to be removed, leaving the remaining pond as it currently stands. The engineers feel that this design and positioning of the winter storage lagoon is the most efficient as it makes the best use of this parcel of land that otherwise would not be suitable for much. Relocating the winter storage lagoon to the property to the east would only reduce the amount of area that could be used to treat the wastewater effluent through land application. In your letter dated September 25, 2015 you identified both the Big Bend and Buckeye Ditches as United States waterways under the jurisdiction of the U.S. Army Corps of Engineers (USACE), both of which we have determined will not be altered or harmed as a result of this project. However, we would like to request your additional comments specifically related to the removal of the northern portion of the irrigation surge pond to make room for the construction and placement of a wastewater winter storage pond. If you have any questions please feel free to contact me anytime, and we look forward to receiving your comments.

Thank you,

Ben Peck
Community Development Planner
Region IV Development Association, Inc.
P.O. Box 5079, Twin Falls, Idaho 83303-5079
P | (208) 732-5727 ext. 3007 F | (208) 732-5454 E | ben@rivda.org

Region IV Development

James Joyner
Sr. Regulatory Project Manager
US Army Corps of Engineers
Walla Walla District
Idaho Falls Regulatory Office
900 N Skyline Drive, Suite A
Idaho Falls, Idaho 83402

September 16, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Mr. Joyner:

1. The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. In order to determine whether wetlands will be affected by the proposed scope of work, the following information is being provided for your review and comment:

2. **The Area of Potential Effect**: The Area of Potential Effect (APE) consists of a parcel of property that is approximately one hundred (100) acres, the City's current wastewater treatment facilities, and two of the City's lift stations. The location of these area's is listed below, and identified on the maps that are attached with this letter.

3. **Location**:
    1. The City of Hagerman is located in South Central Idaho approximately 10 miles west of the City of Wendell along U.S. Highway 30, and falls within Sections 14 and 23 of Township 7 South, Range 13 East Boise Meridian, Gooding County, Idaho.
    2. The City's municipal wastewater treatment facilities are located at 5 Lagoon Rd. South, Hagerman, ID 83332.
    3. Lift station #1 is located on the premises of the City's wastewater treatment facilities.
    4. Lift station #2 is located on the northwest corner of town located just off of Valley Road, approximately 300 feet west of 1st Ave, on the south side of the road.
    5. Lift station #3 is located on the northeast corner of town located just off of Cemetery Road, on the southeast corner of the cemetery.
    6. The property the City is looking to purchase is located in Section 23, Township 7 South, Range 13 East Boise Meridian, Gooding County Idaho. The Property is located both to the south and east of the City's wastewater lagoons, and is identified and outlined on the attached maps

4. **Federal agencies involved**: The City will be receiving funds from the U.S. Department of Housing and Urban Development (HUD) which are administered in Idaho by the Idaho Department of Commerce. The City has also applied for and anticipates receiving funding from USDA-Rural Development, and the Idaho Department of Environmental Quality (DEQ).

- **Project description**: Specifically, the proposed wastewater infrastructure project will include the following:

---

1. The purchase of approximately 100 acres of land for the treatment of wastewater effluent through land application.

2. Wastewater Lagoons System – Cell three of the City's current lagoon system will be rehabilitated, and an additional lagoon will be constructed. Together these lagoons will hold approximately 41 million gallons of effluent

3. Lift Stations – All of the City's lift stations will be upgraded. This will include the installation of new pumps, mechanical piping and fittings, plugs and check valves, magnetic flow meter, and installation of a generator to provide back-up power. Lift station #2 will also be relocated approximately ¼ mile to the west of its current location. This relocation will require installation of an additional 6" pressure main, and an 8" gravity fed sewer line.

5. **Description of ground surfaces & disturbances**: All of the ground surfaces that will be disturbed during the course of this project has already been developed and disturbed. The two lift stations are located within road rights of way, and the lagoon improvements involve the rehabilitation of a current lagoon, with an additional lagoon being constructed on agricultural land that has already been disturbed through farming. However, located on the agricultural land directly south of the current wastewater lagoons is a manmade pond that is used as an overflow pond for irrigation water. This pond is only full in the summer during the irrigation season. Originally we were not aware of the existence of this pond as it is not indicated on the wetlands map provided by U.S. Fish and Wild Life.

6. **Descriptions of buildings or structures that will be affected**: The construction of these improvements will not affect any buildings or structures, as the project involves replacing two wastewater lift stations, rehabilitating an existing wastewater lagoon, and constructing an additional lagoon on bare agricultural ground.

7. **Attachments**: 1. Maps depicting the location of the project area; 2. Pictures of the project site.

We respectfully request your comments within 30 days from your receipt of this letter. Please contact me at (208) 732-5727, ext. 3007 or ben@rivda.org or Mark Holtzen, P.E. the project engineer at (208) 733-2414 or mholtzen@jub.com if you have any questions or concerns.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

-Enclosures

Region IV Development

Bob Kibler, Biologist
U.S. Fish & Wildlife Service
Boise Field Station
1387 S. Vinnell Way, Rm. 368
Boise, ID 83705

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Bob:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Endangered Species

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Toby Boudreau
Regional Supervisor
Idaho Dept. of Fish & Game
324 South 417 East, Suite 1
Jerome, ID 83338

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Toby:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Wetlands Protection
- Endangered Species
- Fish & Wildlife
- Vegetation & Habitat

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Brian Reed, P.E.
Idaho Division of Environmental Quality
650 Addison Ave. W., Ste 110
Twin Falls, ID 83301

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Brian:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Water Supply & Quality
- Air Quality
- Wastewater Facilities

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Keri K. Smith-Sigman, CFM
State Floodplain Coordinator
Idaho Department of Water Resources
P.O. Box 83720
Boise, ID 83720-0003

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Keri:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Floodplain Management (FEMA map panel numbers)
- Water Quality
- Surface Water
- Wetlands
- Wild & Scenic Rivers
- Water Resources

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Allen Merritt, P.E.
Southern Regional Manager
Idaho Dept. of Water Resources
650 Addison Ave W, Ste 500
Twin Falls, ID 83301-5858

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Allen:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Floodplain Management (FEMA map panel numbers)
- Water Quality
- Surface Water
- Wetlands
- Wild & Scenic Rivers
- Water Resources

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Steve Thompson
District Conservationist
USDA-NRCS
820 Main St.
Gooding, ID 83330

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Steve:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Farmland Protection

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Ben Peck

From: Ben Peck
Sent: Monday, August 17, 2015 10:26 AM
To: 'jpackham@uidaho.edu'
Subject: City of Hagerman Wastewater project

Good morning Mr. Packham,

I'm contacting you regarding a letter dated July 13, 2015 you should have received in regards to the City of Hagerman's municipal wastewater project. City is proposing to purchase approximately 100 acres of land in order to further treat their wastewater through land application. The ground is currently being farmed for edible crops, potatoes, corn etc. However, once the City uses the land for the treatment of wastewater through land application, this land will have to be switched over to non-edible crops.

In our efforts to prepare an environmental information document (EID) as required by the Idaho Department of Commerce, and the U.S. Department of Housing and Urban Development (HUD) I was hoping to receive your comments regarding this project in order to determine if there are going to be any negative impacts on the environment as a result of eventually switching this farmland from edible crops to non-edible crops. Please let me know if there is any additional information that I may provide you.

Thank you for your time,

Ben Peck
Community Development Planner
Region IV Development Association, Inc.
P.O. Box 5079, Twin Falls, Idaho 83303-5079
P | (208) 732-5727 ext. 3007 F | (208) 732-5454 E | ben@rivda.org

Region IV Development

Joel Packham
Extension Educator
University of Idaho Extension Office
1459 Overland Ave., Room 4
Burley, ID 83318

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Joel:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Wetlands Protection
- Farmland Protection
- Prime Farmland Designation
- Slope
- Erosion
- Soil Suitability
- Unique Natural Resources
- Agricultural Lands
- Natural Features

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Jack Shambaugh
Senior Transportation Planner
Idaho Department of Transportation
216 S. Date Street
Shoshone, ID 83352

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Jack:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Transportation Impacts
- Potential Safety Hazards

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Jan Roeser
Area Market Analyst
Idaho Department of Labor
420 Falls Avenue
Twin Falls, ID 83301

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Jan:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Employment patterns
- Income patterns

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Mark Holtzen, P.E.
J-U-B Engineers, Inc.
115 Northstar Ave.
Twin Falls, ID 83301

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Mark:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Noise Levels (during and post construction levels)
- Compatibility with Surroundings
- Man-Made Hazards
- Air Quality Concerns
- Energy Supply Usage (prior and post construction)
- Displacement of People/Business
- Impacts on: Wastewater System, Storm Water Drainage System, Water Supply, Fire Protection Capabilities
- Solid Waste Disposal Transportation Conditions
- Mitigation of Environmental Harms
- Floodplain Management (FEMA)
- Airport Clearance Zone
- Parks, Recreation, Open Space
- Social Services

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

The Honorable Noel "Pete" Weir
Mayor, City of Hagerman
P.O. Box 158
Hagerman, ID 83332

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Mayor Weir:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Conformance with Planning and Zoning
- Compatibility with Neighboring Land Uses
- Any adverse effects to the LMI residents of the County
- Commercial Facilities
- Social Services
- Environmental Justice

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Tim Peterson
Fire Chief
Hagerman Fire Prot. Dist.
150 Salmon St. E.
P.O. Box 336
Hagerman, ID 83332

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Tim:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Toxic Chemical/Radioactive
- Hazards
- Fire Protection
- Public Safety
- Emergency Services

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Loren Miller
Police Chief
City of Hagerman
P.O. Box 158
Hagerman, ID 83332

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Loren:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Public Safety
- Emergency Services

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Eric Anderson
Superintendent
Hagerman School District
324 N. Second Avenue
Hagerman, ID 83332

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Eric:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Educational Services

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

Sincerely,

Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Region IV Development

Joseph Herring
President
Region IV Development
P.O. Box 5079
Twin Falls, ID 83301

July 13, 2015

Re: City of Hagerman – Wastewater System Improvements

Dear Joseph:

The City of Hagerman is seeking federal funding to address deficiencies in their wastewater system to resolve a Notice of Violation from the EPA regarding the City's NPDES Permit. The City will rehabilitate an existing partially finished lagoon, construct an additional lagoon, and purchase approximately 100 acres of property for effluent reuse through land application. Additionally, all three of the City's lift stations will be upgraded. These lift station upgrades include completely replacing lift station #1, replacing and relocating lift station #2 about ¼ mile to the west, and the rehabilitation of lift station #3. The relocation of lift station #2 will also require the installation of an additional 6" pressure main, and 8" gravity sewer main. All of these improvements will supplement the City's current lagoon treatment system. Please see attached maps to give you an overview and location of the proposed project.

All ICDBG projects are subject to review under the National Environmental Policy Act.

Your assistance is needed in completing an environmental assessment. To assist in our review, we would appreciate your comments on any impact the proposed public improvements may have on the following items:

- Environmental Justice
- Demographic/character changes
- Open space, recreation, cultural facilities

Your attention to this matter would be greatly appreciated. If we do not receive written comments within 30 days, we will assume the project has no negative impact on the environment. If you have any questions, please contact me at 208-732-5727, ext. 3007 or ben@rivda.org.

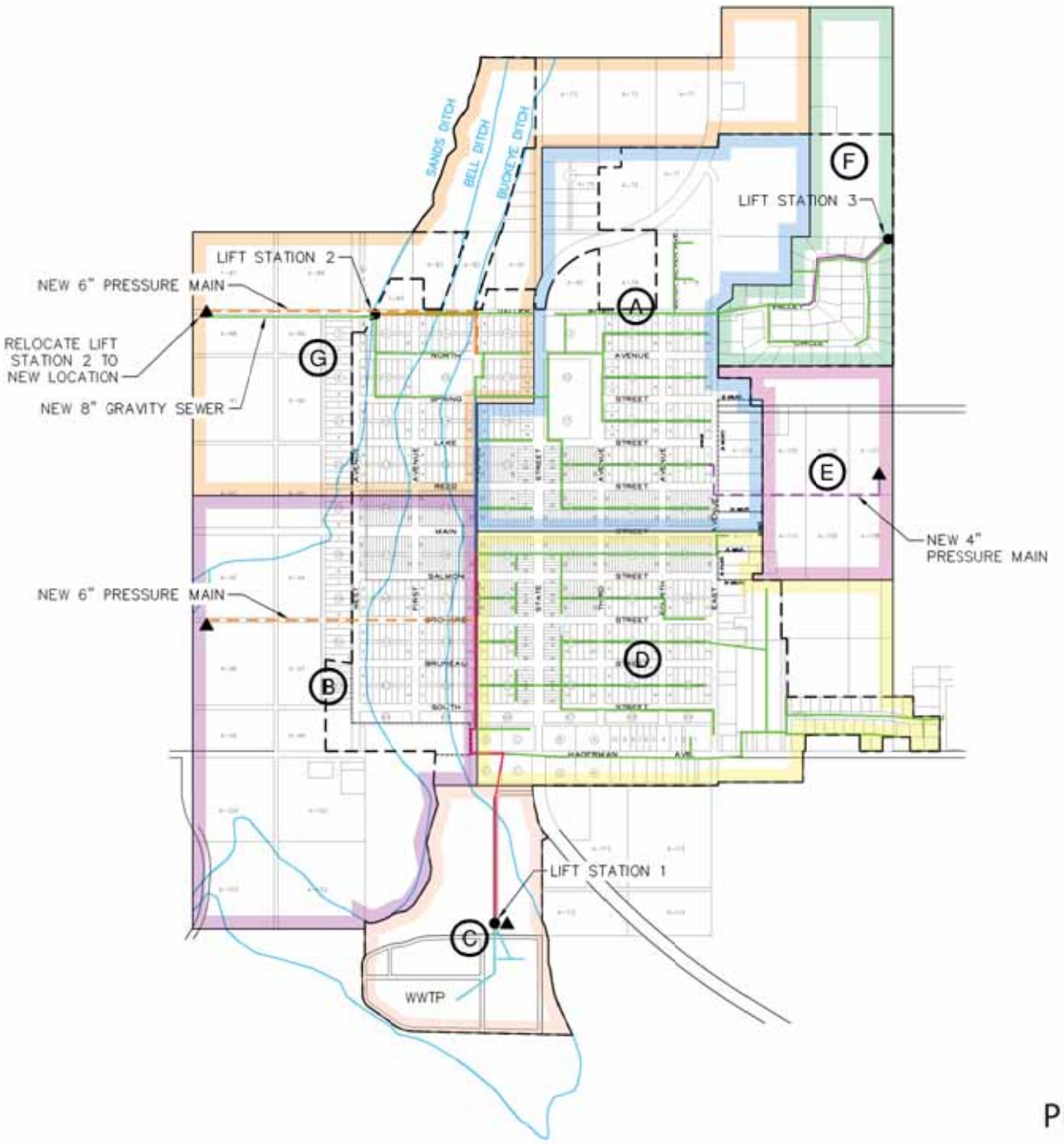
Sincerely,

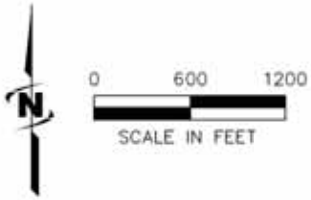
Benjamin Peck

Ben Peck
Environmental Review Officer

Encls.

Maps Showing the Location of the Project Site





LEGEND

EXISTING

- 4" PRESSURE SEWER
- 6" PRESSURE SEWER
- 8" PRESSURE SEWER
- 8" GRAVITY SEWER
- 10" GRAVITY SEWER
- 12" GRAVITY SEWER
- LIFT STATION
- CITY LIMITS

NEW

- POTENTIAL FUTURE LIFT STATIONS
- 4" PRESSURE SEWER
- 6" PRESSURE SEWER
- 8" GRAVITY SEWER

NOTE:
CITY LIMITS SHOWN IN APPROXIMATE LOCATION

SERVICE AREA	EXISTING PEAK HOUR FLOW (GPM)	20-YEAR PEAK HOUR FLOW (GPM)	BUILD-OUT PEAK HOUR FLOW (GPM)
B	25	89	184
E	0	28	66
F	7	33	46
G	34	97	191

FIGURE 28
PROPOSED FUTURE LIFT STATIONS

www.history.idaho.gov

Idaho • State Historical Society

C.L. "Butch" Otter
Governor of Idaho

Janet Gallimore
Executive Director

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

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

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

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

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

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

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

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

August 3, 2015

Ben Peck
Environmental Review Officer
Region IV Development

Project Name: City of Hagerman, Wastewater System Improvements
Idaho SHPO Review No.: 2015-818

Section 106 of the National Historic Preservation Act Recommendations:

The fieldwork and documentation presented in this report meet the Secretary of Interior's Standards.

X No additional investigations are recommended. Project can proceed as planned.

Additional information is required to complete the project review. (see comments)

Additional investigations are recommended. (see comments).

Identification of Historic Properties (36 CFR 900.4):

X No historic properties were identified within the project area.

Property is not eligible.
Reason:

Property is eligible for listing in the National Register of Historic Places.
Criterion: A B C D Context for Evaluation:

X *No historic properties* will be affected within the project area.

Comments: The project proposes to purchase 100 acres of land for treatment of wastewater, rehabilitate a portion of the existing lagoon system, construct an additional lagoon, and replace two lift stations. There are no cultural resources in the project area. The SHPO finds there will be **No Historic Properties Affected.** Please consider this letter the Idaho SHPO official Section 106 comment for this project.

If you have any questions, please contact me at jamee.fiore@ishs.idaho.gov or (208) 334-3861 x 101.

Thank you for consulting with us,

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

Historical Society is an Equal Opportunity Employer.

Ben Peck

From: Joyner, James M NWW <James.M.Joyner@usace.army.mil>
Sent: Friday, October 2, 2015 3:57 PM
To: Ben Peck
Subject: RE: City of Hagerman (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Ben,

We would not regulate the "pond" as a water of the US under Section 404 of the CWA. It sounds like the cell only holds water in the rare instance the canal company needs to clean the canals and is otherwise dry. A Department of the Army Permit under Section 404 of the CWA would not be required to place fill in this area.

James M. Joyner
Sr. Regulatory Project Manager

US Army Corps of Engineers
Walla Walla District
Idaho Falls Regulatory Office
900 N Skyline Drive, Suite A
Idaho Falls, Idaho 83402
208-522-1676 (Office)
208-522-2994 (Fax)
james.m.joyner@usace.army.mil

From: Ben Peck [mailto:BPeck@csi.edu]
Sent: Friday, October 02, 2015 2:52 PM
To: Joyner, James M NWW
Subject: [EXTERNAL] City of Hagerman

Hello James,

I just got off the phone with the property owner and real estate agent for the property in Hagerman. It turns out that my explanation of the irrigation surge pond was correct. During irrigation season a lot of moss tends to grow in the canals. When there is too much moss growth it can restrict the flow of water. This surge pond was built so that the canal company could divert the water and dry up the canal in order to remove the moss and/or make other needed repairs. Once moss removal / repairs were completed, the water in the pond could then be drained back into the canal. Apparently this pond is not used nearly as much anymore due to the use of more effective chemicals that limit the growth of moss, but it is still used from time to time for the canal company to make any needed repairs. There is generally only significant amounts of water in the pond during irrigation season. I hope this explanation helps you as you make your determination, and please let me know if you need any additional information.

Thank you,

Ben Peck
Community Development Planner

Region IV Development Association, Inc.
P.O. Box 5079, Twin Falls, Idaho 83303-5079
P | (208) 732-5727 ext. 3007 F | (208) 732-5454 E | ben@rivda.org

Classification: UNCLASSIFIED
Caveats: NONE

Ben Peck

From: Joyner, James M NWW <James.M.Joyner@usace.army.mil>
Sent: Thursday, October 1, 2015 1:06 PM
To: Ben Peck
Subject: RE: More information about Hagerman Wastewater System Improvements (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Ben,

I guess my question for you would be what is an irrigation surge pond? I don't believe we would regulate it but want to make sure I understand what its used for currently. Thanks.

James M. Joyner
Sr. Regulatory Project Manager

US Army Corps of Engineers
Walla Walla District
Idaho Falls Regulatory Office
900 N Skyline Drive, Suite A
Idaho Falls, Idaho 83402
208-522-1676 (Office)
208-522-2994 (Fax)
james.m.joyner@usace.army.mil

-----Original Message-----
From: Ben Peck [mailto:BPeck@csi.edu]
Sent: Wednesday, September 30, 2015 1:59 PM
To: Joyner, James M NWW
Subject: [EXTERNAL] More information about Hagerman Wastewater System Improvements

Good afternoon James,

Thank you for taking the time to look at the information I sent you, and for replying so quickly. I'm sending you some new additional information that has been provided by the project engineer, and wanted to receive your comments back on this as well as it relates to this project. I have attached two aerial maps of the project site in question. The first one is a close up picture with no overlay, and the second has two overlay's that show the proposed location of the winter storage lagoon, and the location of the irrigation storage pond (potential wetland).

As it stands right now, the preliminary design of the winter storage pond has been designed to the size and shape as indicated on the second aerial map. This would require the northern tip of the irrigation surge pond to be removed, leaving the remaining pond as it currently stands. The engineers feel that this design and positioning of the winter

storage lagoon is the most efficient as it makes the best use of this parcel of land that otherwise would not be suitable for much. Relocating the winter storage lagoon to the property to the east would only reduce the amount of area that could be used to treat the wastewater effluent through land application. In your letter dated September 25, 2015 you identified both the Big Bend and Buckeye Ditches as United States waterways under the jurisdiction of the U.S. Army Corps of Engineers (USACE), both of which we have determined will not be altered or harmed as a result of this project. However, we would like to request your additional comments specifically related to the removal of the northern portion of the irrigation surge pond to make room for the construction and placement of a wastewater winter storage pond. If you have any questions please feel free to contact me anytime, and we look forward to receiving your comments.

Thank you,

Ben Peck

Community Development Planner

Region IV Development Association, Inc.

P.O. Box 5079, Twin Falls, Idaho 83303-5079

P | (208) 732-5727 ext. 3007 F | (208) 732-5454 E | ben@rivda.org

Classification: UNCLASSIFIED
Caveats: NONE

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
Choose one REGULATORY OFFICE
Choose one
Choose an item

REPLY TO
ATTENTION OF

25 September 2015

Regulatory Division

SUBJECT: NWW-2015-448, City of Hagerman Wastewater System Improvments

Mr. Ben Peck
Region IV Development
PO Box 5079
Twin Falls, Idaho 93303-5079

Dear Mr. Peck:

Our preliminary jurisdictional determination (PJD) indicates that the City's proposed project site may include waters of the United States, namely Big Bend and Buckeye Ditches. The proposed project site is located at within Section 23 of Township 7 South, Range 13 East, near latitude 42.80368º N and longitude -114.89596º W, in Gooding County, in Hagerman, Idaho. Your request has been assigned file number NWW-2015-448, which should be referred to in future correspondence with our office regarding this site.

Enclosed are two copies of the Preliminary Jurisdictional Determination Form indicating that there may be waters of the U.S., on the project site, namely Big Bend and Buckeye Ditches. Our review indicates that most of the project area is non-wetland that can be developed without a Department of the Army (DA), Section 404 Clean Water Act Permit. However, discharge of dredge or fill material below the ordinary high water marks of the Big Bend and/or Buckeye Ditches would likely require such a permit. Please review the document and any attachments thereto. If your client consents to jurisdiction as set forth, please sign both copies, return one copy to the Corps at the address in the above letterhead and keep the other copy for your records. This PJD shall remain in effect unless an approved jurisdictional determination is requested or new information supporting a revision is provided to this office.

Although this determination is advisory in nature and may not be appealed under the Corps of Engineers Administrative Appeal Procedures, as defined in 33 CFR 331, the enclosed *Notification of Administrative Appeal Options and Process Fact Sheet and Request for Appeal Form* (RFA) explains your options, if you do not agree with this determination.

Section 404 of the Clean Water Act requires that a DA permit be obtained for the discharge of dredged and/or fill material into waters of the U.S., including jurisdictional wetlands (33 U.S.C. 1344). Waters of the U.S. include most perennial and intermittent rivers and streams, natural and man-made lakes and ponds, as well as irrigation and drainage canals and ditches that are tributaries to other waters, and wetlands. A Department of the Army (DA) authorization may be required if you propose to perform work or place dredged and/or fill material into waters or wetlands on the property.

Further, the Corps defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Discharges of dredged or fill material into these areas may include those associated with mechanized land-clearing involving vegetation removal with mechanized equipment such as front-end loaders, backhoes, or bulldozers with sheer blades, rakes, or discs in wetlands and excavation activities which result in the discharge of dredged material and destroy or degrade Waters of the United States.

This determination has been conducted to preliminarily identify areas subject the Corps' Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If your client or any tenants they may have are U. S. Department of Agriculture (USDA) program participants, or anticipate participation in the USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting any work.

This determination applies only to Department of the Army permitting jurisdiction and does not authorize any injury to property or excuse you from compliance with other Federal, State, or local statutes, ordinances, regulations, or requirements which may affect these areas, or work you would propose to conduct in these areas. Please obtain all required permits before starting work in the waters or wetland areas identified on this property.

We are interested in your thoughts and opinions concerning the quality of service you received from the Walla Walla District, Corps of Engineers Regulatory Division. Please visit us online at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey and complete an electronic version of our Customer Service Survey form, which will be automatically submitted to us. Alternatively, you may call and request a paper copy of the survey, which you may complete and return to us by mail. For additional information about our Regulatory program please visit us at http://www.nww.usace.army.mil/BusinessWithUs/RegulatoryDivision.aspx. Your responses are appreciated and will allow us to improve our services.

We appreciate your cooperation with the Corps of Engineers' Regulatory Program. If you have any questions, you may contact me by telephone at (208) 522-1676, by mail at the address in the above letterhead, or via email at james.m.joyner@usace.army.mil.

Sincerely,

James M. Joyner

James M. Joyner
Sr. Project Manager, Regulatory Division

Enclosures:
Preliminary Jurisdictional Determination Form
Notification of Administrative Appeal Options and Request for Appeal Form

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

I. BACKGROUND INFORMATION

A. Report completion date for Preliminary Jurisdictional Determination (PJD): 25 September 2015

B. Name/address of person requesting preliminary JD:
Ben Peck
Region IV Development
PO Box 5079
Twin Falls, Idaho 83301

C. District Office: Walla Walla District
File Name: City of Hagerman Wastewater System Improvements
File Number: NWW-2015-00448

D. Project Location(s) and Background Information:
State: Idaho County/Parish/Borough: Gooding City: Hagerman
Center Coordinates of Site (lat/long in degree decimal format): Lat.: 42.80368° North
Long.: -114.89596° West
Name of nearest waterbody(s): Big Bend and Buckeye Ditches
Identify (estimate) amount of waters in the review area:
Non-wetland waters: 1470.0 (Big Bend) and 4250.0 (Buckeye) Linear feet
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: 25 September 2015
☐ 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) Aerial and ground photographs, undated
- ☐ 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 Hagerman
☐ USDA Natural Resources Conservation Service Soil Survey, Citation:
☒ National wetlands inventory map(s): Cite name: USFWS (Wetlands Mapper - online)
☐ 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 and ORM Database Aerials OR ☐ Other (Name & Date):
☐ Previous determination(s): File no. and Date of Response Letter:
☐ Other information (please specify):

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-2015-448

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
September 25, 2015

Signature of person requesting Preliminary JD
REQUIRED (unless obtaining signature is impracticable)

_____ _____

Date Date

State of Idaho
DEPARTMENT OF WATER RESOURCES
Southern Region · 650 Addison Ave West, Suite 500 · Twin Falls, Idaho 83301
Phone: (208) 736-3033 · FAX: (208) 736-3037 · Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER GARY SPACKMAN

July 17, 2015

Ben Peck
Region IV Development Via e-mail

RE: City of Hagerman – Wastewater System Improvements

Dear Ben:

I've reviewed your letter regarding the project described above. One comment regarding the land application proposal…. If the existing water rights for irrigation are retained on the property proposed to be purchased for land application there likely is no issue but if the irrigation water rights are removed then the city would need to file a notice with IDWR pursuant to Section 42-201(8) and pay a fee pursuant to Section 42-221(P) of the Idaho Code.

Let me know if you have any questions.

Allen Merritt, PE
Southern Region Manager

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

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

Benjamin Peck
Region IV Development
P.O. Box 5079
Twin Falls, ID 83303

July 23, 2015

RE: City of Hagerman – Wastewater System Improvement Project

Dear Mr. Peck,

This is a letter in response to the development review that was received by IDWR on July 16, 2015. The City of Hagerman does not participate in the National Flood Insurance Program (NFIP) and does not have a published Flood Insurance Rate Map (FIRM). Consequently, IDWR does not have any comments regarding the City of Hagerman's wastewater improvement project. Our program is specifically related to meeting the minimum standards of the NFIP for participating communities.

Participating communities typically follow these minimum standards when development is in or near a flood prone area:

(1) Require within flood-prone areas

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

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

Please let me know if you have any additional questions. Thank you for the opportunity to comment and for giving notice of the proposed development.

Sincerely,

Keri K. Smith-Sigman, CFM
State Floodplain Coordinator
t. 208-287-4928
c. 208-830-4174
keri.sigman@idwr.idaho.gov
http://www.idwr.idaho.gov/WaterManagement/FloodPlainMgmt/default.htm

Ben Peck

From: Kibler, Bob <bob_kibler@fws.gov>
Sent: Thursday, July 23, 2015 10:34 AM
To: ben@rivda.org
Subject: City of Hagerman- Wastewater System Improvements
Attachments: wetlandsJul212015093113GMT-0600.pdf

Greetings Ben:

I have reviewed the information provided to our office dated July 13, 2015, and am providing the following technical assistance comments for your consideration during project planning.

Endangered Species
To obtain an official record of endangered species and critical habitats that may be in your action area, please visit our project planning tool the internet sitehttp://ecos/fws.gov/ipac/

Please feel free to contact me if you need assistance navigating the menus, if you have questions regarding the preparation of an assessment, or if your assessment leads to the conclusion that endangered species/habitats may be impacted by the action.

Migratory Birds
Given the proximity of the action to the Snake River and numerous wetlands and canals, you should anticipate an abundance of migratory birds to occur at or near the project site. Some of these species may nest in the area influenced by our action. To minimize the potential for impacting protected nests, eggs, and young, we recommend scheduling ground disturbance actions to occur during the the period of July 15 and January 15. If you are interested in which species may occur in the area, and the typical timing of their use of the area, I would recommend using the resources provided by the internet site http://ebird.org/content/ebird/

Surface Water and Ground Water Protection
National Wetlands Inventory indicates a number of wetlands and canals occur adjacent to the action area. These wetlands are likely to be used by numerous species of wildlife including migratory birds. The canals often discharge directly to the Snake River, which supports many species of native fish and wildlife. Care should be given to prevent accidental contamination of these wetlands via surface overflow, irrigation over spray, or via groundwater/subsurface transfer. I have attached an image indicating several of the surface water resource in the immediate area. You may also generate additional images for your project records via the internet site http://www.fws.gov/wetlands/Data/Mapper.html We recommend care be given to monitoring ground water for possible contamination and to develop a contingency plan to address any unexpected ground water effects. Given the the fractured/porous nature of the underlying substrates, ground water contaminants may spread readily. Groundwater contaminants may quickly reappear in adjacent wetlands, springs, and the Snake River.

Thank you for the opportunity to provide these technical assistance comments. Please contact me if you have any questions or require additional information.

--
Bob Kibler
U.S. Fish and Wildlife Service-Ecological Services
Idaho Fish and Wildlife Office
1387 South Vinnell Way, Room 368
Boise, Idaho 83709

(208) 378-5255 Phone
(208) 378-5262 Fax
Bob_Kibler@FWS.GOV Email

U.S. Fish & Wildlife Service

Environmental Conservation Online System
Conserving the Nature of America
Enter Search Term(s):

Search

- ECOS>
- Species Reports>
- Species occurrence by state>
- Listed species believed to or known to occur in Idaho

Listed species believed to or known to occur in Idaho

Notes:

- **As of 02/13/2015 the data in this report has been updated to use a different set of information. Results are based on where the species is believed to or known to occur. The FWS feels utilizing this data set is a better representation of species occurrence. Note: there may be other federally listed species that are not currently known or expected to occur in this state but are covered by the ESA wherever they are found; Thus if new surveys detected them in this state they are still covered by the ESA. The FWS is using the best information available on this date to generate this list.**
- This report shows listed species or populations believed to or known to occur in Idaho
- This list does not include experimental populations and similarity of appearance listings.
- This list includes species or populations under the sole jurisdiction of the National Marine Fisheries Service.
- Click on the highlighted scientific names below to view a Species Profile for each listing.

Listed species -- 15 listings

Animals -- 11 listings

Status	Species/Listing Name
T	Bear, grizzly lower 48 States, except where listed as an experimental population or delisted (*Ursus arctos horribilis*)
E	Caribou, woodland Selkirk Mountain population (*Rangifer tarandus caribou*)
T	Cuckoo, yellow-billed Western U.S. DPS (*Coccyzus americanus*)
E	Limpet, Banbury Springs Entire (*Lanx sp.*)
T	Lynx, Canada (Contiguous U.S. DPS) (*Lynx canadensis*)
T	Snail, Bliss Rapids Entire (*Taylorconcha serpenticola*)

T	Snail, Bliss Rapids Entire (*Taylorconcha serpenticola*)
E	Snail, Snake River physa Entire (*Physa natricina*)
E	Springsnail, Bruneau Hot Entire (*Pyrgulopsis bruneauensis*)
T	Squirrel, northern Idaho ground Entire (*Spermophilus brunneus brunneus*)
E	Sturgeon, white U.S.A. (ID, MT), Canada (B.C.), Kootenai R. system (*Acipenser transmontanus*)
T	Trout, bull U.S.A., conterminous, lower 48 states (*Salvelinus confluentus*)

Plants -- 4 listings

Status	Species/Listing Name
T	Catchfly, Spalding's (*Silene spaldingii*)
T	Four-o'clock, MacFarlane's (*Mirabilis macfarlanei*)
T	Howellia, water (*Howellia aquatilis*)
T	Ladies'-tresses, Ute (*Spiranthes diluvialis*)

HAGERMAN

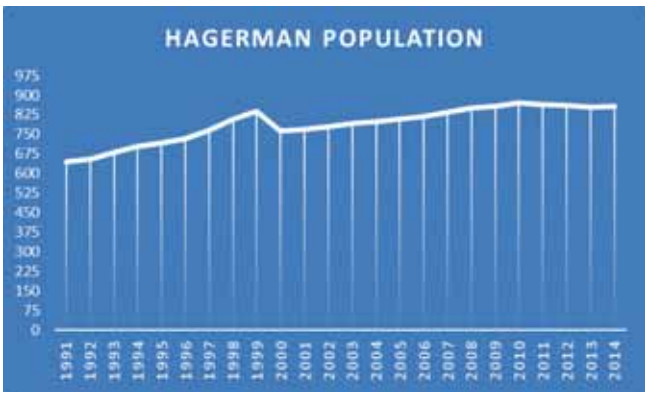
Economic background for support of $6-$7 million of wastewater infrastructure investment.

AUGUST-2015

Economy and growth summary of the jobs supporting the Hagerman township, located in Gooding County

Jan Roeser
Regional Economist

The community of Hagerman has experienced relatively steady growth over its lifetime with more positive growth trends than some rural townships. This is driven primarily by its destination status for retirees and its role in south central Idaho as a bedroom community to larger areas within a 30 minute radius. The city's most recent population is estimated at 856 with its greatest percentage growth between 1970 and 1980, growing at an average annualized rate of 3.3 percent. The second greatest- growth decade was 2000-2010 when it grew at an average annualized rate of 2.9 percent, realizing a net gain of 216 more residents. Ironically, the net gain was greater than the 166 spurt between '70 and '80 which resulted in higher percentage growth. The smaller populations show greater volatility with change because of the low base denominators.



Demographics

According to the American Community Survey, Hagerman is not a diverse community with most of the population female, white and older than the state and nation. The nation has an estimated 13.4 percent of its population aged 65 and older while the state of Idaho has an estimated 12.9 percent and the city of Hagerman is almost double the state at 22.1 percent.

Hagerman's median age is 47.3 years versus the state at 34.9 years and the nation at 37.3 years. The preponderance of the population is female at 60 percent with 40 percent male, according to the 2009-2013 American Community Survey.

The Hispanic population is estimated at 5.5 percent versus the state at 11.4 percent and the nation at 16.6 percent with less than one percent of the population reporting another race besides white.

	Q3 2007		Q3 2014	
Hagerman Industries	# Est.	# Emply	# Est.	# Emply
Agriculture	15	173	12	114
Utilities	n.r.	n.r.	3	15
Construction	13	46	6	18
Manufacturing	5	27	4	39
Trade	6	35	9	50
Transportation & Warehouse	n.r.	n.r.	n.r.	n.r.
Financial Services	4	9	4	7
Business & Professional Services	5	49	4	12
Education & Healthcare	6	75	4	72
Leisure & Hospitality	10	112	9	89
Other Services	3	10	3	5
Government	3	36	4	62
	74	590	63	487

Jobs

Job creation took a hit during the Great Recession and has since languished in key industries with other sectors stepping up to fill some of the void. Agriculture,

Construction, Business & Professional Services along with Leisure & Hospitality have taken a nose dive due to regional factors in some cases and national economic trends in others.

Agriculture has declined in the area after the buyout by Idaho Power of water rights that required high lift, power-intensive irrigation during Idaho Power's peak usage months of summer. As well, Gooding County has placed a moratorium on dairies so this industry has lost a third of its employment.

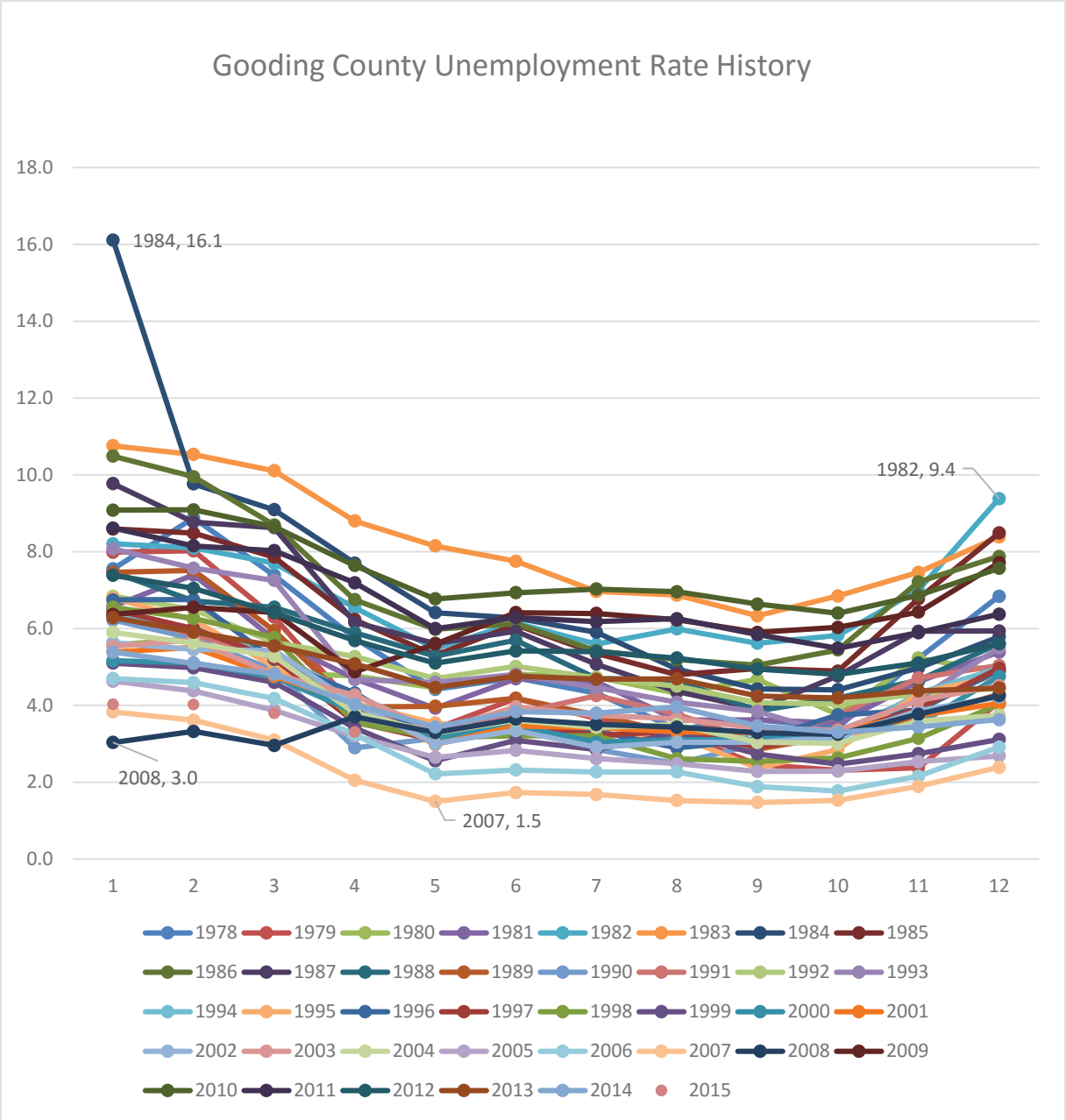
Job losses have been offset by job growth in Utilities, Manufacturing, Trades and Government sectors. Many residents travel to work in Twin Falls or Jerome counties and these jobs are not included in the industry breakout.

The area to the west of Hagerman coined Bell Rapids has transitioned from farming to wind power with close to 200 wind turbines strategically located on this bluff. Hagerman has a growing cluster of energy jobs with a wind turbine farm in place and the purchase of all its power legislated by the Idaho Public Utilities Commission. The local power company must purchase all megawatts generated by small power generators based on a federal act titled PURPA. Also, hydro-electricity jobs are located throughout the Hagerman Valley, only 8 miles from Bliss. This cluster of industry could lead to manufacturers of wind turbines relocating to the area or other advanced manufacturing facilities that will potentially utilize the ample supply of real estate and rural workforce routinely on the lookout for full-time work.

Construction has not recovered regionally, statewide or nationally—nor do forecasts show a return to pre-recession levels until 2020 or even 2025. The remaining industries fill in the gaps and many residents commute to other communities and counties for work. Hagerman lost 60 percent of its construction employment during the Great Recession—this percentage was mirrored in Blaine County where a severe real estate bubble had burst. Blaine County comprised 40 percent of the total construction industry regionally, so its job losses continue to carry a greater impact.

There has been stagnation impacting the area with either gradual closing of businesses or increased turnover within businesses over the last 30 years. Going further back, the interstate was constructed in the '70's bypassing Hagerman. Much of the area from Bliss through Buhl was on the major thoroughfare and travelers frequented eateries, lodging, gas stations, retail and drinking establishments. Now, it is mainly travelers diverging from I-84 and headed south, many making a break for warmer climates pass along these roads at peak times. The Hagerman Fossil National Monument attracts visitors as does the fishing and natural beauty. However, the southerly flow of visitors cannot make up for the loss of road travel resulting from the interstate's

construction. The movement of dairies from California to Idaho came at a time when a double dipper recession hit in the '80's and created some of the highest recorded unemployment rates as shown in the chart below with 16.1 percent



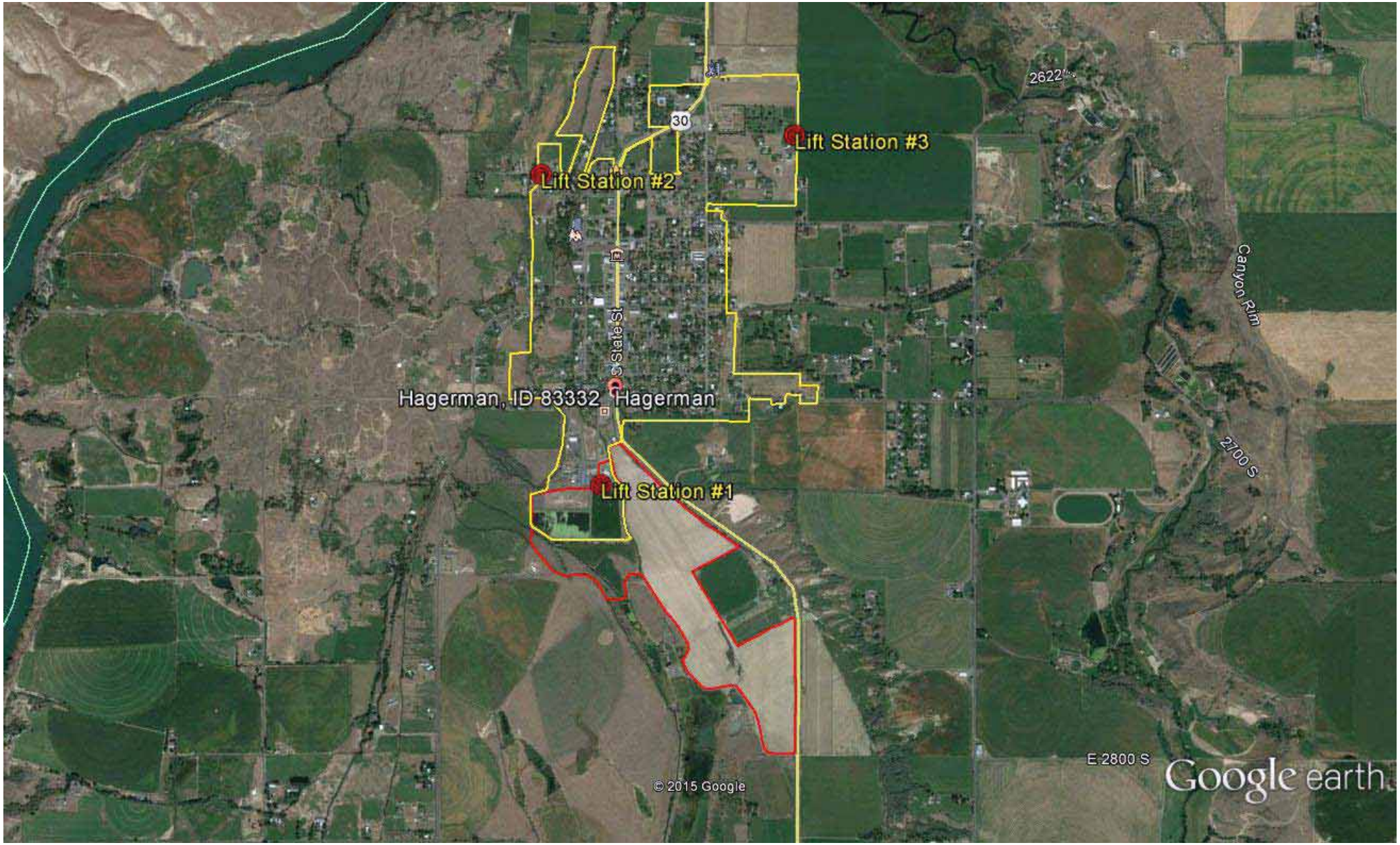
unemployment in Gooding County in 1984. The record lows of pre-recession times are getting close but still not near the 2.0 percent and 1.5 percent unemployment rates experienced in 2006 and 2007. The 'U' shape of the unemployment rate curve indicates the seasonality of most employment in the area.

The area is coveted for its myriad beauty along the winding Snake River with steep canyon walls, volcanic rock-paved pastures and foothills, periodic trout runways and breath-taking vistas. The ability to attract and market the area to workforce would be an easier task if the infrastructure supported job creation. The area is truly buoyed by a desire of its residents to live there. As a business owner, marketing to the surrounding rural towns is a way to eke out a living while others are tapping into the organic tourism attracted by the natural beauty.

There will likely be continued interest in the community of Hagerman due to the developing of its infrastructure for long-term planning purposes and to mitigate costs for future individual business owners or companies. The growth in new subdivisions and housing will dry up if city services are not available for mitigating current operations and capacity then anticipating future in-migration. Many residential builders and specialty sub-contractors will benefit from the opportunities that abound. It is a win-win situation for residents and business.

Submitted by:

Jan Roeser



Google earth

miles 2

km 4

Appendix B

Environmental Resource Figures

Lift Station 1

Lift Station 2 – Existing Location

Lift Station 2 – Proposed Location

Lift Station 3

Winter Storage Lagoon Cell #3 Location

Abandoned Rock Filter to be Converted to Winter Storage Lagoon Cell #3

Winter Storage Lagoon Cell #4 Proposed Location

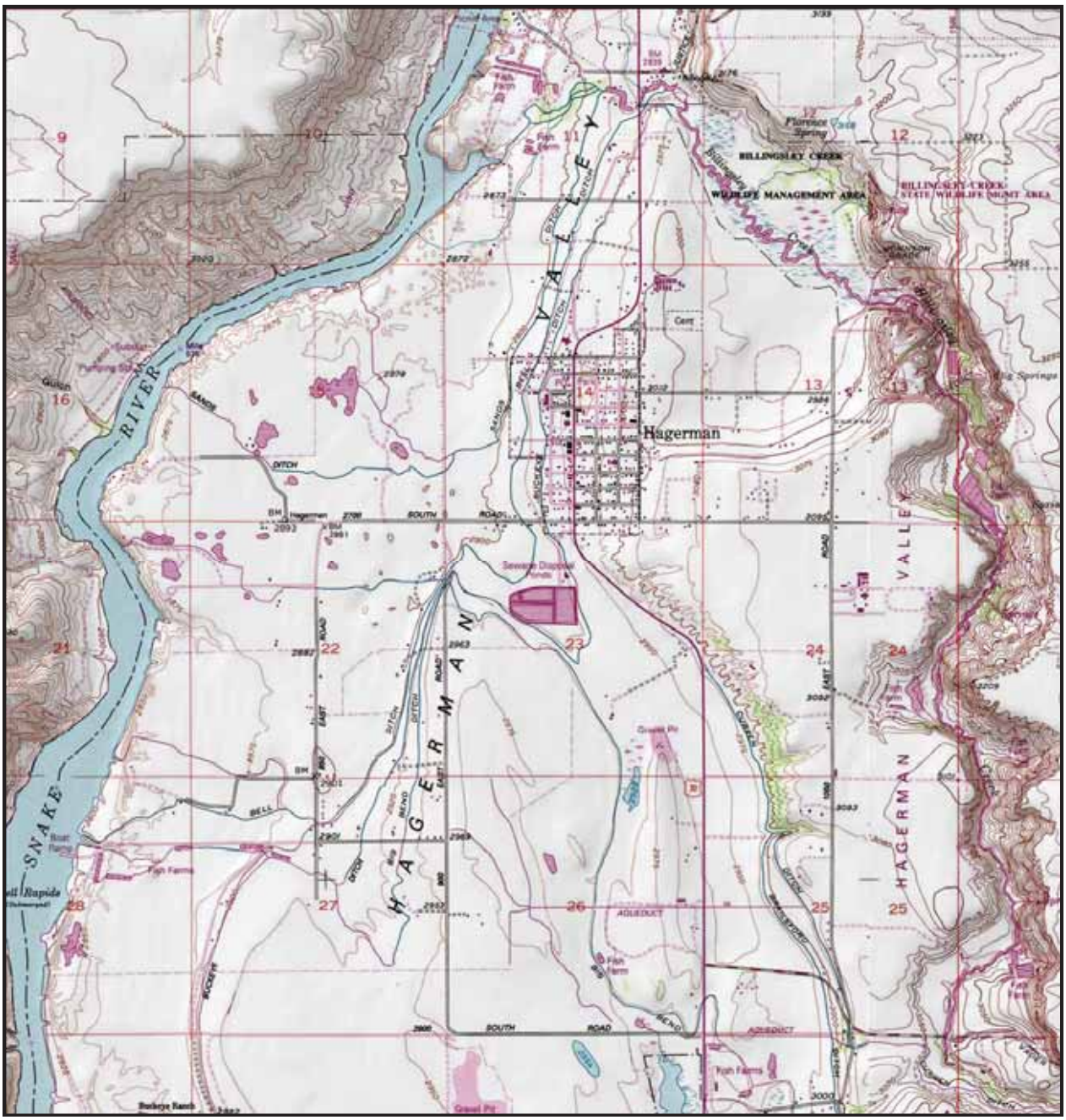
Winter Storage Lagoon Cell #4 Proposed Location

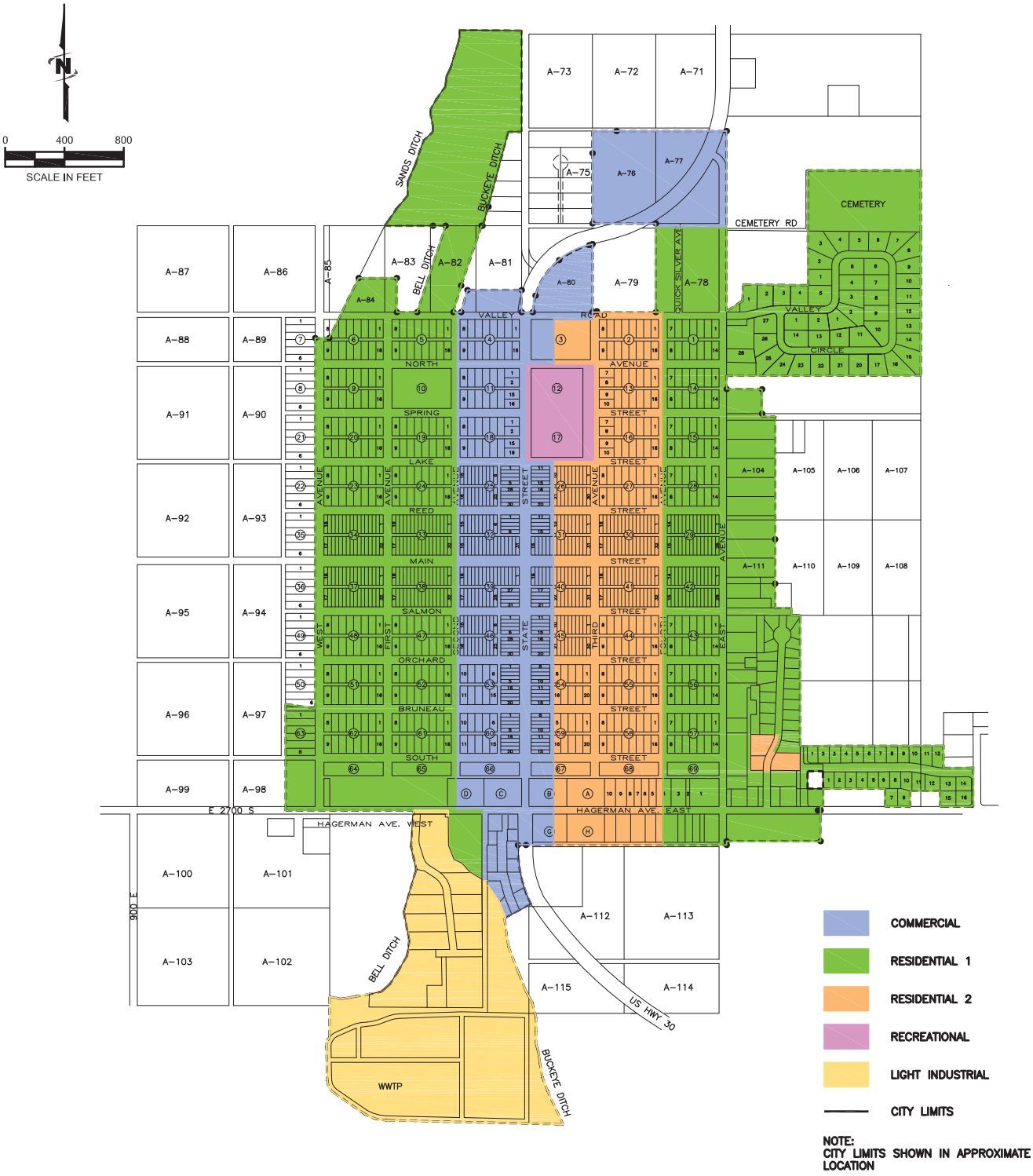
Proposed Reuse Site

Proposed Reuse Site

Proposed Reuse Site

USGS Topographic Map





NOTE:
CITY LIMITS SHOWN IN APPROXIMATE LOCATION

I CERTIFY THAT THIS IS THE OFFICIAL CITY OF HAGERMAN, ID ZONING MAP, WHICH WAS ADOPTED BY THE CITY OF HAGERMAN MAYOR AND CITY COUNCIL ON THE _____ DAY OF _____, 2016.

MAYOR: NOEL WEIR_____

ATTEST: MARY MORELAND, CITY CLERK_____

ZONING MAP
CITY OF HAGERMAN

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Wood River Area, Idaho, Gooding County and Parts of Blaine, Lincoln, and Minidoka Counties
Survey Area Data: Version 13, Sep 16, 2015

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

Date(s) aerial images were photographed: Data not available.

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

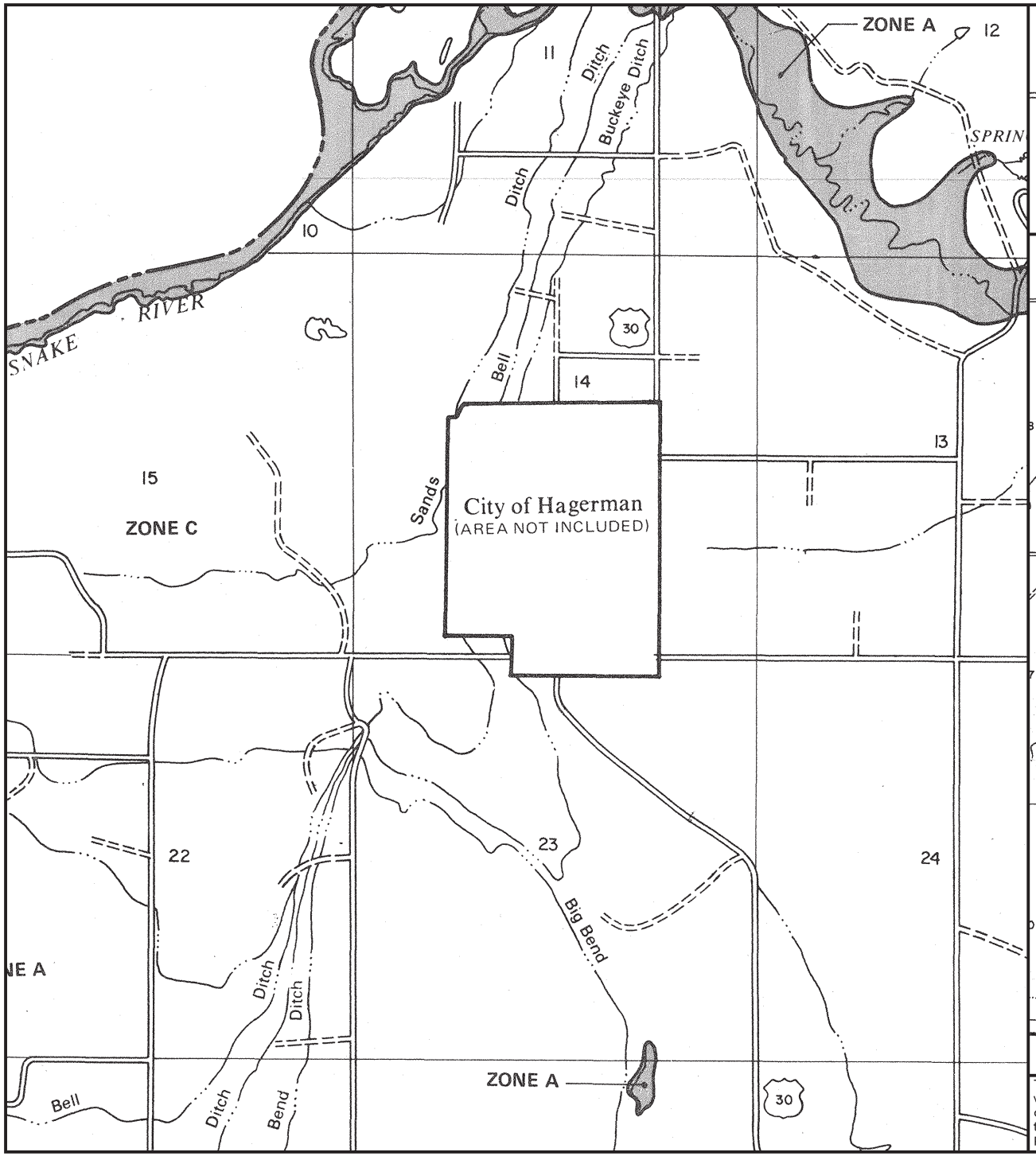
Wood River Area, Idaho, Gooding County and Parts of Blaine, Lincoln, and Minidoka Counties (ID681)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
10	Anchustequi loam, 1 to 4 percent slopes	226.5	9.2%
16	Bahem-Kudlac complex, 8 to 25 percent slopes	38.0	1.5%
53	Ephrata fine sandy loam, 1 to 6 percent slopes	341.9	13.9%
55	Fathom loamy fine sand, 1 to 4 percent slopes	81.4	3.3%
59	Fathom-Kudlac-Anchustequi complex, 8 to 35 percent slopes	220.5	8.9%
66	Fluvaquents-Histic Endoaquolls complex, 0 to 3 percent slopes	25.9	1.1%
92	Jestrick-Kecko-Rock outcrop complex, 2 to 12 percent slopes	117.7	4.8%
95	Kecko loamy fine sand, 4 to 8 percent slopes	43.2	1.8%
96	Kecko fine sandy loam, 0 to 2 percent slopes	36.4	1.5%
97	Kecko fine sandy loam, 2 to 4 percent slopes	455.5	18.5%
98	Kecko fine sandy loam, 4 to 8 percent slopes	249.1	10.1%
139	Paulville loam, 0 to 2 percent slopes	211.4	8.6%
153	Quincy fine sand, 1 to 4 percent slopes	153.9	6.2%
160	Rubble land-Typic Calciorthids complex, 20 to 65 percent slopes	0.0	0.0%
201	Tupper extremely stony fine sandy loam, 2 to 8 percent slopes	181.0	7.3%
202	Tupper extremely bouldery fine sandy loam, 2 to 8 percent slopes	82.1	3.3%
Totals for Area of Interest		**2,464.3**	**100.0%**

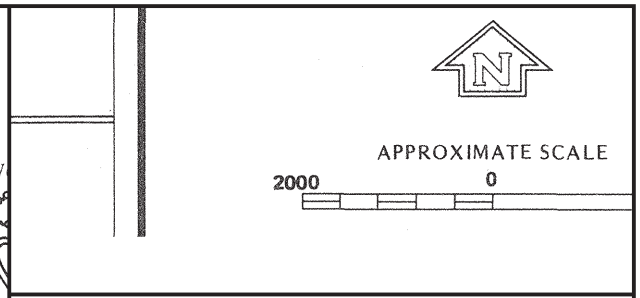
NRCS Prime or Important Farmland Designations

Report — Prime and other Important Farmlands

Wood River Area, Idaho, Gooding County and Parts of Blaine, Lincoln, and Minidoka Counties

Map Symbol	Map Unit Name	Farmland Classification
10	Anchustequi loam, 1 to 4 percent slopes	Not prime farmland
16	Bahem-Kudlac complex, 8 to 35 percent slopes	Not prime farmland
53	Ephrata fine sandy loam, 1 to 6 percent slopes	Prime farmland if irrigated
55	Fathom loamy fine sand, 1 to 4 percent slopes	Prime farmland if irrigated
59	Fathom-Kudlac-Anchustequi complex, 8 to 35 percent slopes	Not prime farmland
66	Fluvaquents-Hidric Endoaquolls complex, 0 to 3 percent slopes	Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
92	Jestrich-Kecko-Rock outcrop complex, 2 to 12 percent slopes	Not prime farmland
95	Kecko loamy fine sand, 4 to 8 percent slopes	Prime farmland if irrigated
96	Kecko fine sandy loam, 0 to 2 percent slopes	Prime farmland if irrigated
97	Kecko fine sandy loam, 2 to 4 percent slopes	Prime farmland if irrigated
98	Kecko fine sandy loam, 4 to 8 percent slopes	Prime farmland if irrigated
139	Paulville loam, 0 to 2 percent slopes	Prime farmland if irrigated
153	Quincy fine sand, 1 to 4 percent slopes	Not prime farmland
180	Rubble land-Typic Calciorthids complex, 20 to 65 percent slopes	Not prime farmland
201	Tupper extremely stony fine sandy loam, 2 to 8 percent slopes	Not prime farmland
202	Tupper extremely bouldery fine sandy loam, 2 to 8 percent slopes	Not prime farmland





NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

GOODING COUNTY, IDAHO
(UNINCORPORATED AREAS)

PANEL 250 OF 325
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
160227 0250 B

EFFECTIVE DATE:
JUNE 19, 1985

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

KEY TO MAP

500-Year Flood Boundary	ZONE B
100-Year Flood Boundary	
Zone Designations*	ZONE A1 / ZONE A2
100-Year Flood Boundary	
500-Year Flood Boundary	ZONE B
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7×
Zone D Boundary	
River Mile	•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

U.S. Fish and Wildlife Service

National Wetlands Inventory

USFWS Wetlands Inventory Map - Hagerm

June 16, 2016

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

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

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish & Wildlife Service

Hagerman

IPaC Trust Resources Report

Generated June 16, 2016 04:22 PM MDT, IPaC v3.0.7

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.

IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

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Migratory Birds 3
Refuges & Hatcheries 6
Wetlands 7

U.S. Fish & Wildlife Service

IPaC Trust Resources Report

NAME

Hagerman

LOCATION

Gooding County, Idaho

IPAC LINK

https://ecos.fws.gov/ipac/project/NXOOB-DMSRJ-BPVFN-LAL2E-DC6TQE

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

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

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Snails

Bliss Rapids Snail Taylorconcha serpenticola — Threatened

CRITICAL HABITAT
No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=G01K

Snake River Physa Snail Physa natricina — Endangered

CRITICAL HABITAT
No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=G01L

Critical Habitats

There are no critical habitats in this location

Migratory Birds

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

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

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Black Rosy-finch Leucosticte atrata — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J4

Brewer's Sparrow Spizella breweri — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HA

Burrowing Owl Athene cunicularia — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC

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

Cassin's Finch Carpodacus cassinii — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J6

Eared Grebe Podiceps nigricollis — Bird of conservation concern
Season: Breeding

Ferruginous Hawk Buteo regalis — Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06X

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

Green-tailed Towhee Pipilo chlorurus — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IO

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ

Loggerhead Shrike Lanius ludovicianus — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY

Long-billed Curlew Numenius americanus — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S

Peregrine Falcon Falco peregrinus — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU

Sage Thrasher Oreoscoptes montanus — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0ID

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

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

Western Grebe aechmophorus occidentalis — Bird of conservation concern

Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA

Willow Flycatcher Empidonax traillii — Bird of conservation concern

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

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

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

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

DATA LIMITATIONS

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

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

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

DATA EXCLUSIONS

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

DATA PRECAUTIONS

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

Wetland data is unavailable at this time.

This information is for general reference only. Please visit http://ecos.fws.gov/ipac/ to obtain an official list for purposes of Endangered Species Act section 7 consultation. Revised 08/14/2014.

U.S. Fish and Wildlife Service • Idaho Fish and Wildlife Office

LISTED, CANDIDATE, AND PROPOSED SPECIES & DESIGNATED AND PROPOSED CRITICAL HABITAT IN IDAHO

	Herps	Birds		Mammals					Fish		Mollusks				Plants							
Common Name	**Columbia Spotted Frog (Great Basin Population)**	**Greater Sage-Grouse**	**Yellow-Billed Cuckoo**	**Canada Lynx**	**Grizzly Bear**	**Northern Idaho Ground Squirrel**	**Selkirk Mountains Woodland Caribou**	**Southern Idaho Ground Squirrel**	**Bull Trout**	**Kootenai River White Sturgeon**	**Banbury Springs Lanx**	**Bliss Rapids Snail**	**Bruneau Hot Springsnail**	**Snake River Physa**	**Goose Creek Milkvetch**	**MacFarlane's Four-O'Clock**	**Packard's Milkvetch**	**Slickspot Peppergrass**	**Spalding's Catchfly**	**Ute Ladies'-Tresses**	**Water Howellia**	**Whitebark Pine**
Scientific Name	*Rana luteiventris*	*Centrocercus urophasianus*	*Coccyzus americanus*	*Lynx canadensis*	*Ursus arctos horribilis*	*Spermophilus brunneus brunneus*	*Rangifer tarandus caribou*	*Spermophilus brunneus endemicus*	*Salvelinus confluentus*	*Acipenser transmontanus*	*Lanx* sp.	*Taylorconcha serpenticola*	*Pyrgulopsis bruneauensis*	*Haitia (Physa) natricina*	*Astragalus anserinus*	*Mirabilis macfarlanei*	*Astragalus cusickii var. parkardiae*	*Lepidium papilliferum*	*Silene spaldingii*	*Spiranthes diluvialis*	*Howellia aquatilis*	*Pinus albicaulis*
Ada		C	P						T					E				P-PCH				
Adams		C		T		T		C	T-DCH													C
Bannock		C	P-PCH																			
Bear Lake		C		T																		
Benewah				T					T-DCH										T		T	
Bingham		C	P-PCH																	T		
Blaine		C	P-PCH	T					T-DCH													C
Boise			P	T					T-DCH													C
Bonner				T	T		E		T-DCH													C
Bonneville		C	P-PCH	T	T															T		C
Boundary				T-DCH	T		E-DCH		T-DCH	E-DCH												C
Butte		C		T					T-DCH													C
Camas		C	P	T					T-DCH													C
Canyon														E				P-PCH				
Caribou		C		T																		
Cassia		C	P											E	C							
Clark		C	P	T	T																	C
Clearwater				T					T-DCH													C
Custer		C	P	T					T-DCH													C
Elmore		C	P	T					T-DCH			T		E				P-PCH				C
Franklin		C		T																		
Fremont		C	P	T	T															T		C
Gem		C						C	T-DCH									P-PCH				C

Table Key: C = Candidate Species P= Proposed Species T=Threatened Species E=Endangered Species PCH= Proposed Critical Habitat DCH=Designated Critical Habitat

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Gooding		C									E	T		E								
Idaho				T					T-DCH							T			T			C
Jefferson		C	P-PCH	T																T		
Jerome		C										T		E								
Kootenai			P	T					T-DCH										T		T	
Latah				T															T		T	
Lemhi		C	P	T					T-DCH													C
Lewis									T-DCH										T			
Lincoln		C	P																			
Madison		C	P-PCH	T																T		
Minidoka		C	P											E								
Nez Perce				T					T-DCH										T			
Oneida		C																				
Owyhee	C	C	P						T-DCH				E	E				P-PCH				
Payette		C						C	T					E			C	P-PCH				
Power		C	P																			
Shoshone				T					T-DCH										T		T	C
Teton				T	T																	C
Twin Falls	C	C										T		E								
Valley				T		T			T-DCH													C
Washington		C				T		C	T-DCH					E								C

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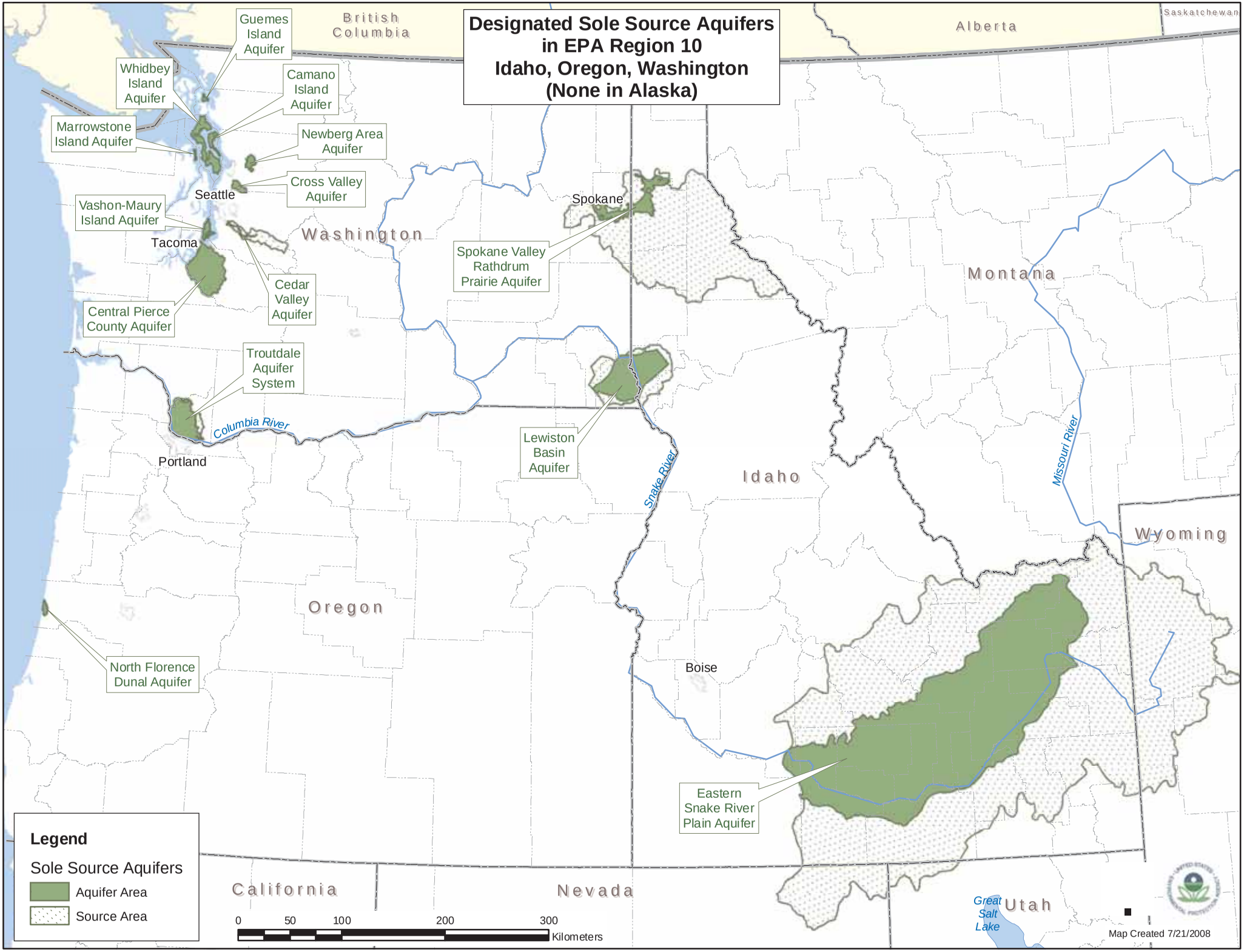
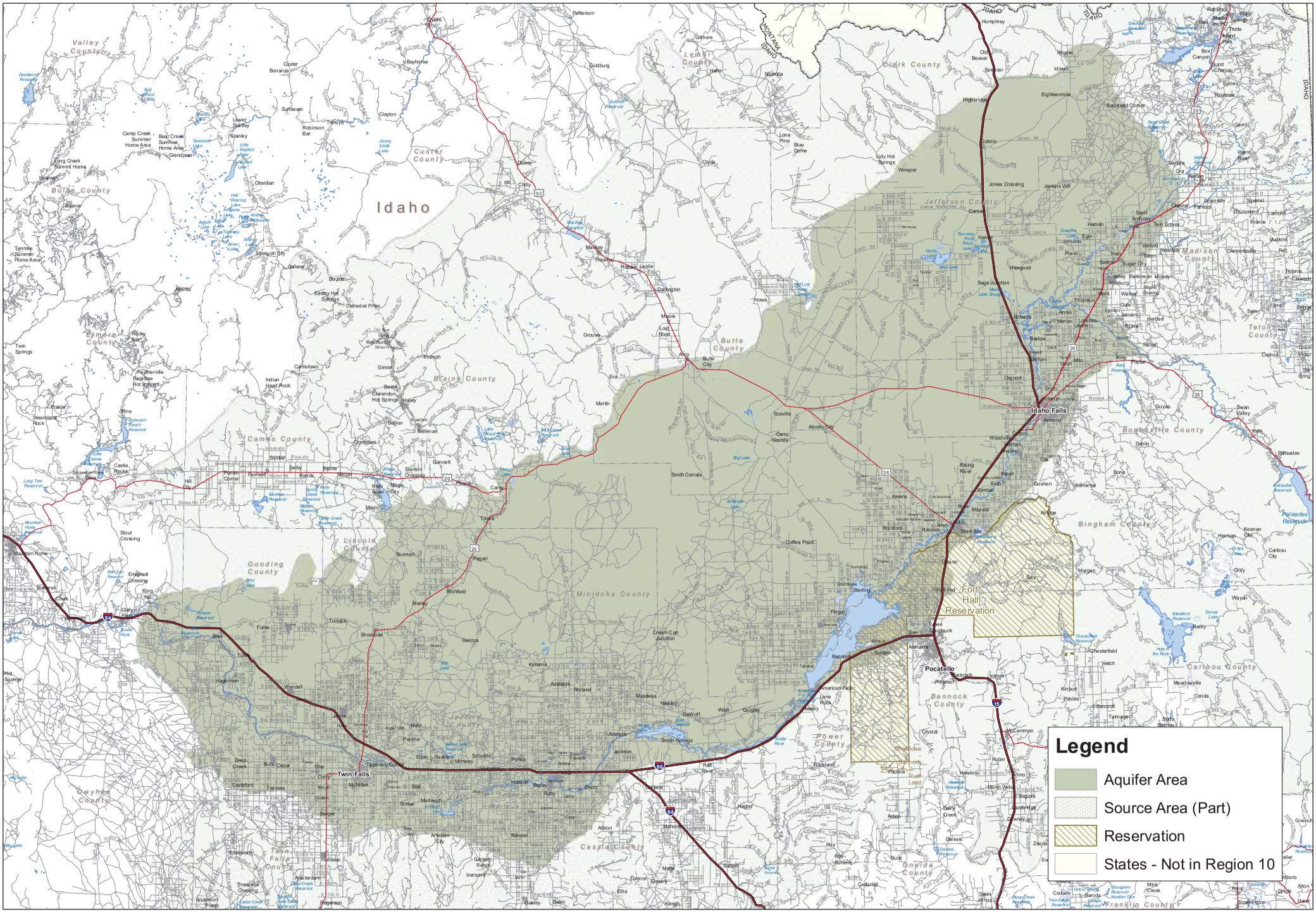

Designated Sole Source Aquifers
in EPA Region 10
Idaho, Oregon, Washington
(None in Alaska)
British Columbia
Alberta
Saskatchewan
Guemes Island Aquifer
Whidbey Island Aquifer
Camano Island Aquifer
Marrowstone Island Aquifer
Newberg Area Aquifer
Cross Valley Aquifer
Seattle
Vashon-Maury Island Aquifer
Tacoma
Washington
Spokane
Spokane Valley Rathdrum Prairie Aquifer
Montana
Cedar Valley Aquifer
Central Pierce County Aquifer
Troutdale Aquifer System
Columbia River
Portland
Lewiston Basin Aquifer
Snake River
Idaho
Missouri River
Wyoming
Oregon
North Florence Dunal Aquifer
Boise
Eastern Snake River Plain Aquifer
California
Nevada
Utah
Great Salt Lake
Legend
Sole Source Aquifers
Aquifer Area
Source Area
0 50 100 200 300
Kilometers
Map Created 7/21/2008



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Eastern Snake River Plain Sole Source Aquifer

Aquifer Area and Part of Source Area

Map Created 11/04/2008 EPA Region 10

MEMORANDUM of UNDERSTANDING
Between the
U.S. ENVIRONMENTAL PROTECTION AGENCY - REGION 10
and
U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT - NORTHWEST/ALASKA AREA
and
IDAHO DEPARTMENT OF COMMERCE
and
IDAHO HOUSING AND FINANCE ASSOCIATION

Sole Source Aquifers
State of Idaho

INTRODUCTION:

The purpose of this memorandum is to develop an understanding between the U.S. Environmental Protection Agency (EPA) Region 10, U.S. Department of Housing and Urban Development (HUD), Idaho Department of Commerce (IDOC), and the Idaho Housing and Finance Association (IHFA) in order to protect EPA designated Sole Source Aquifers (SSAs) in the State of Idaho. This Memorandum of Understanding (MOU) is the third MOU that has been signed between the two federal agencies mentioned above. The last one was signed in 1989.

This new MOU was developed by EPA, HUD, IDOC, and IHFA because of the need to create an efficient process for identifying, reviewing, modifying, and approving proposed federal financially assisted projects located over SSAs in the State of Idaho. While the SSA Protection Program is only one way to assist the State, local communities, and the private sector in protecting and managing ground water resources, it is the intention of this MOU to help ensure that: (1) federal government sponsored development projects will not have a significant adverse impact to human health and the environment; (2) public health and ground water concerns are communicated to federal and state agencies and other organizations involved with proposing federal financially assisted projects; (3) federal government sponsored development projects can serve as models for the private sector in terms of ground water protection and management.

This planned partnership approach will capitalize on the continuing efforts by local and state economic planning and development agencies and/or organizations which comply with the National Environmental Policy Act (NEPA).

GOALS:

The goals of this MOU are to (1) ensure that each project receiving federal financial assistance is designed to prevent the introduction of contaminants into the SSA in quantities that may create a significant hazard to public health, interfere with the public welfare, or otherwise contaminate the aquifer to a level which would require additional treatment facilities by a public water system in order to meet the National Primary Drinking Water Regulations, and to (2) formalize the process by which review of federal financially assisted projects are to be coordinated between the EPA, HUD, IDOC, and IHFA.

OBJECTIVES:

1. Develop an agreement for implementing Section 1424(e) of the Safe Drinking Water Act, the Sole Source Aquifer Protection Program, involving federal financially assisted projects within EPA designated SSAs in the State of Idaho.

2. Protect all EPA Region 10 SSAs in Idaho through project specific performance measures as agreed upon by EPA, HUD, IDOC, and IHFA. See attached map and EPA SSA website for up-to-date information on current and future aquifer designations.

3. Establish a working agreement between the three agencies which establishes a streamlined mechanism for identifying, reviewing, modifying, and approving federally financially assisted projects.

4. Encourage increased communication, cooperation, and coordination, through the community ground water protection programs, local health departments/districts, State, and federal governmental agencies regarding ground water protection issues within all SSAs.

AUTHORITIES:

EPA: The Sole Source Aquifer Protection Program is authorized under Section 1424(e) of the federal Safe Drinking Water Act. The provision allows EPA to declare that an aquifer is a "sole or principal drinking water source" for an area if contamination of the aquifer could create a significant hazard to public health. A sole source aquifer designation can be initiated by a petition submitted to EPA from any interested party, such as a public water purveyor, local health department, or an environmental group.

Following a designation, federal financially assisted projects proposed over the aquifer are subject to EPA review. EPA can negotiate modifications to improve a project or seek that funding be withheld for a project which poses a significant risk to public health by contamination of the sole source aquifer.

HUD: Federal financial assistance provided by HUD is subject to the National Environmental Policy Act (NEPA) of 1969, as amended, and NEPA's implementing regulations. EPA reviews under Section 1424(e) of the Safe Drinking Water Act are coordinated in the process of conducting NEPA reviews. For activities categorically excluded from NEPA, EPA reviews are coordinated as part of the process of determining the categorically excluded status of the activity. Commitment of federal financial assistance may not be provided in designated SSAs until completion of the appropriate review.

IDOC: The IDOC is the state agency which implements the federal Community Development Block Grant program. The primary mission of this department is to work with local communities to explore community and economic development needs and solutions.

IHFA: The IHFA is a not-for-profit financial services and housing organization in the State of Idaho . This organization has the primary responsibility to implement the HOME program which provides financial services to develop affordable multifamily housing within the state.

SSA REVIEW ASSUMPTIONS:

The process for EPA's review of federal projects is based on the following assumptions:

1. EPA, HUD, IDOC, and IHFA will work together cooperatively to implement the Sole Source Aquifer Protection Program.

2. Under this new agreement, HUD, IDOC, and IHFA will review projects to determine if the project proponent has met the performance measures agreed upon by the three agencies. If the project meets the performance measures (contained in this MOU), the project proponents may continue with the project as planned.

3. If the project cannot meet the agreed upon performance measures and/or if the delegated parties cannot make a determination with regards to the project's specific impact to ground water quality, the delegated parties may consult with and/or refer the project to EPA for review and approval.

4. EPA will be responsible for overseeing SSA review, will serve as the point of contact/coordination with other federal, state, and local agencies, and continue to be the focal point for any appeals.

5. For projects that were reviewed, but not referred to EPA, HUD, IDOC, and IHFA will provide EPA with an annual report on the number and type of federal financially assisted projects that were approved so that the appropriate reporting requirements can be met by EPA. The report should contain: project name, project location, type of project, federal funding agency, and amount of federal funding.

5. SSA REVIEW PROCESS & PERFORMANCE STANDARDS:

EPA approves all federal financially assisted projects which will meet or comply with the following performance measures:

1. Storm Water:

   All projects that may generate, increase, collect, or dispose of storm and surface water run off from impervious surfaces, e.g., parking lots and roof stops, must use the Division of Environmental Quality (DEQ) developed storm and surface water management manual to design all storm water treatment and disposal systems, for example, State of Idaho's Catalog of Storm Water Best Management Practices. In addition, the use of shallow injection wells, e.g., dry wells, french drains, or a drainfield system, must be avoided whenever possible.

   In those cases where treatment and disposal systems must utilize a shallow injection well, they must (1) notify and register the shallow injection well with the Department of Water Resources' (DWR) Underground Injection Control (UIC) Program to ensure that the shallow injection well(s) does not dispose any fluids that do not meet the State's Ground Water Quality Standards, and (3) pay any applicable fees for registering the shallow injection wells. For more information on protection measures for storm water treatment and disposal, please contact:

   Idaho: Department of Water Resources
   Underground Injection Control Program
   1301 N. Orchard Street
   Boise, ID 83706
   (208) 327-7900

2. Sanitary Waste:

Whenever feasible, connections to the Publicly Owned Treatment Works (POTW), i.e., the sewage treatment plant, should be made. In cases where connections to a POTW cannot be made, onsite sewage disposal systems can be utilized if (1) DEQ or local health department or district is notified and a permit is issued, and if applicable (2) DWR should be notified if the onsite sewage system (OSS) is designed to treat and dispose of equal to or more than 2000 gallons per day.

In addition, in facilities that do not have connections to a POTW, garage bay and other floor/shop drains will not be allowed to be connected to an OSS. Best Management Practices should be utilized to provide an alternative to installing garage bay and other drains, e.g., sloped garage bay and holding tanks. For more information on protection measures for onsite sanitary waste treatment and disposal, please contact DWR as listed above.

3. Potable Water:

Whenever feasible, connections to a community water supply should be made. In cases where connections to a community water system cannot be made, a private well may be used to supply potable water if (1) the appropriate State or local health department or district is notified, (2) water is tested for contaminants, such as bacteria, nitrate, (3) all applicable pollution prevention techniques are used to protect the private well from contamination. For more information on protection measures for users of private wells, please contact:

Idaho: Idaho Association of Soil Conservation Districts
Home*A*Syst Program
P.O. Box 2637
Boise, ID 83701
(208) 338-4321

4. Underground Storage Tanks:

All underground storage tank (UST) systems will meet the performance standards as specified in Volume 40 of the Code of Federal Regulations (CFR), Part 280, Subpart B of the Federal UST Regulations. These performance standards include tank and pipe design and construction, spill, and overfill equipment operating specifications, and proper installation procedures which must be followed. In

addition, all UST systems will (1) register with EPA by completing the Notification for Underground Storage Tanks Form, (2) be in accordance with Subpart D of the Federal UST Regulations where leak detection must be performed once petroleum products area added to the tanks, (3) obtain an approved financial responsibility mechanism, in accordance with Subpart H of the Federal UST regulations, prior to putting the UST system into service. This mechanism will ensure that clean-up funds will be made available if/when needed to mitigate ground and drinking water or soil contamination. For more information on protection requirements for USTs, please contact:

Idaho: EPA- Region 10
Idaho Operations Office
Underground Storage Tank Program
1401 North Orchard Street
Boise, ID 83706
(208) 378-5765

5. Community Water System Improvement:

For community water systems that are requesting federal financial assistance for new improved water systems, the community must be participating in the State of Idaho's Wellhead Protection Program as a condition of receiving funding. Since all community water systems will be receiving a complete Source Water Assessment by the State of Idaho Division of Environmental Quality, the community water system must incorporate the use of relevant non-regulatory and/or regulatory approaches to protect their drinking water supply if they want federal dollars for improvement projects. For more information on the State of Idaho's Wellhead Protection Program, please contact:

Idaho: Division of Environmental Quality
Wellhead Protection Program
1401 North Hilton Street
Boise, ID 83706
(208) 373-0542

If any of these conditions cannot be met by the project proponent, HUD, IDOC, and/or IHFA will (1) request technical and informational assistance and/or (2) request EPA to conduct an independent review of the proposed project for impacts to ground water quality and recommend alternatives, if necessary.

DEFINITIONS:

Aquifer: Geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or a spring. Aquifer in this Memorandum refers to the Spokane Valley Rathdrum Prairie, Lewiston Basin, and Eastern Snake River Plain aquifers.

Commitment of federal financial assistance: A written agreement entered into by a department, agency, or instrumentality of the Federal Government to provide financial assistance as defined under "Federal financial assistance". Renewal of a commitment which the issuing agency determines has lapsed shall not constitute a new commitment unless the Regional Administrator determines that the project's impact on the aquifer has not been previously reviewed under Section 1424(e) of the Safe Drinking Water Act. The determination of a Federal agency that a certain written agreement constitutes a commitment shall be conclusive with respect to the existence of such a commitment.

Federal financial assistance: Any financial benefits provided directly as aid to a project by a department, agency, or instrumentality of the Federal government in any form including contracts, grants, and loan guarantees. Actions or programs carried out by the Federal government itself such as dredging performed by the Army Corps of Engineers do not involve Federal financial assistance. Actions performed for the Federal government by contractors, such as construction of roads on Federal lands by a contractor under the supervision of the Bureau of Land Management, should be distinguished from the contracts entered into specifically for the purpose of providing financial assistance, and will not be considered programs or actions receiving Federal financial assistance. Federal financial assistance is limited to benefits earmarked for a specific program or action and directly awarded to the program or action. Indirect assistance, e.g., in the form of a loan to a developer by a lending institution which in turn receives Federal assistance not specifically related to the project in question is not Federal financial assistance under Section 1424(e). When in doubt, EPA will consult with EPA Region 10, Office of Regional Counsel.

Impervious area: Impermeable surfaces, such as parking lots and rooftops, that are covered with materials, such as concrete, asphalt, shingles, and tile, which prevents the infiltration of water into the soil.

Maximum Contaminant Level (MCL): The maximum permissible level of a contaminant in water which is delivered to any user of a public water system. MCLs are listed in the National Primary Drinking Water Regulations (40 CFR 141).

Significant hazard to public health: Any level of contamination which causes or may cause the aquifer to exceed any maximum contaminant level (MCL) set forth in the promulgated National Primary Drinking Water Regulations at any point where the water may be used for drinking purposes or which may otherwise adversely affect the health of persons, or which may require a public water system to install additional treatment to prevent such adverse effect.

Shallow Injection Well: Devices that are designed to emplace storm and surface water run off directly into the subsurface, also known as, french drains, trench drains, dry wells, and sumps.

Sole Source Aquifer: An aquifer or aquifer system that supplies 50% or more of the drinking water for a given service area and for which there are no reasonably available alternative sources should the aquifer become contaminated and the possibility of contamination exists. Section 1424(e) of the Safe Drinking Water Act is the statutory authority for the SSA Protection Program.

Storm Water Best Management Practices (BMPs): Structural devices that temporarily store, treat, and dispose storm and surface water run off to remove pollutants, recharge ground water, and reduce flooding.

PRIMARY PROGRAM CONTACTS:

The following agency representatives will be responsible for maintaining communications as to procedures and activities of their respective agencies. The liaison officers are:

EPA: Manager
Ground Water Protection Unit
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-137
Seattle, WA 98101
(800) 424-4372

HUD: Environmental Clearance Officer
U.S. Department of Housing and Urban Development
400 Southwest Sixth Avenue, Suite 700
Portland, OR 97204
(503) 326-2701

IDOC: Administrator, Divison of Community Development
Idaho Department of Commerce
P.O. Box 93
Boise, ID 83720-0093
(208) 345-2470

IHFA: Grant Programs Manager
Community Housing Services
P.O. Box 7899
Boise, ID 83707-1899
(208) 331-4712

MOU AMENDMENT PROCEDURES:

This Memorandum of Understanding is subject to revision upon receiving a letter from a signatory agency to modify the conditions and/or terms understood by this MOU. Upon concurrence from the signatory agencies to modify the conditions and/or terms of this MOU, the subject letter will be recognized as an Addendum to this MOU.

SIGNATURES:

U. S. EPA - Region 10

Chuck Clarke 7-5-00
Regional Administrator **Date**

U.S. HUD - Northwest/Alaska Area

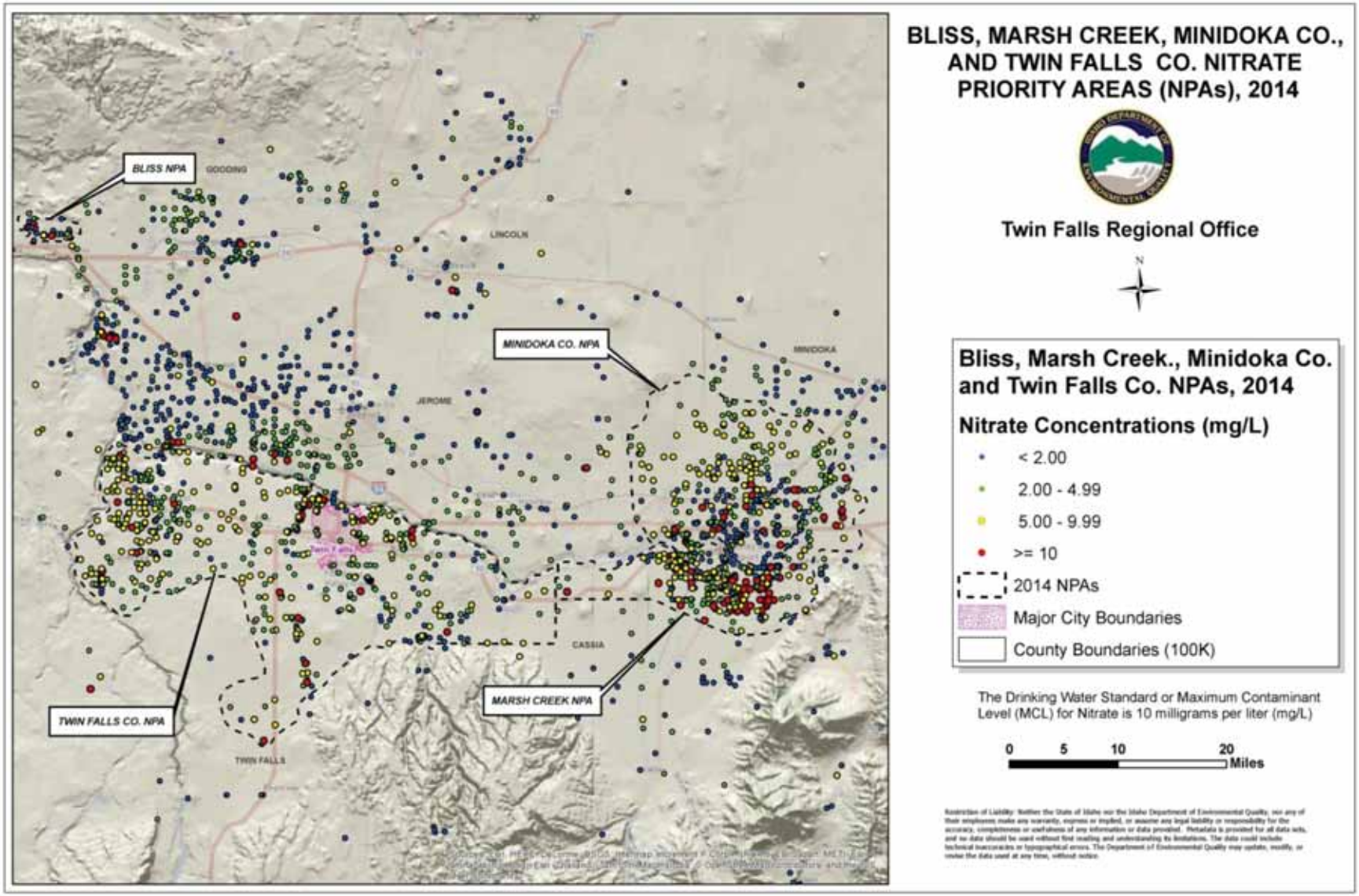
6/26/00
Date
Secretary's Representative

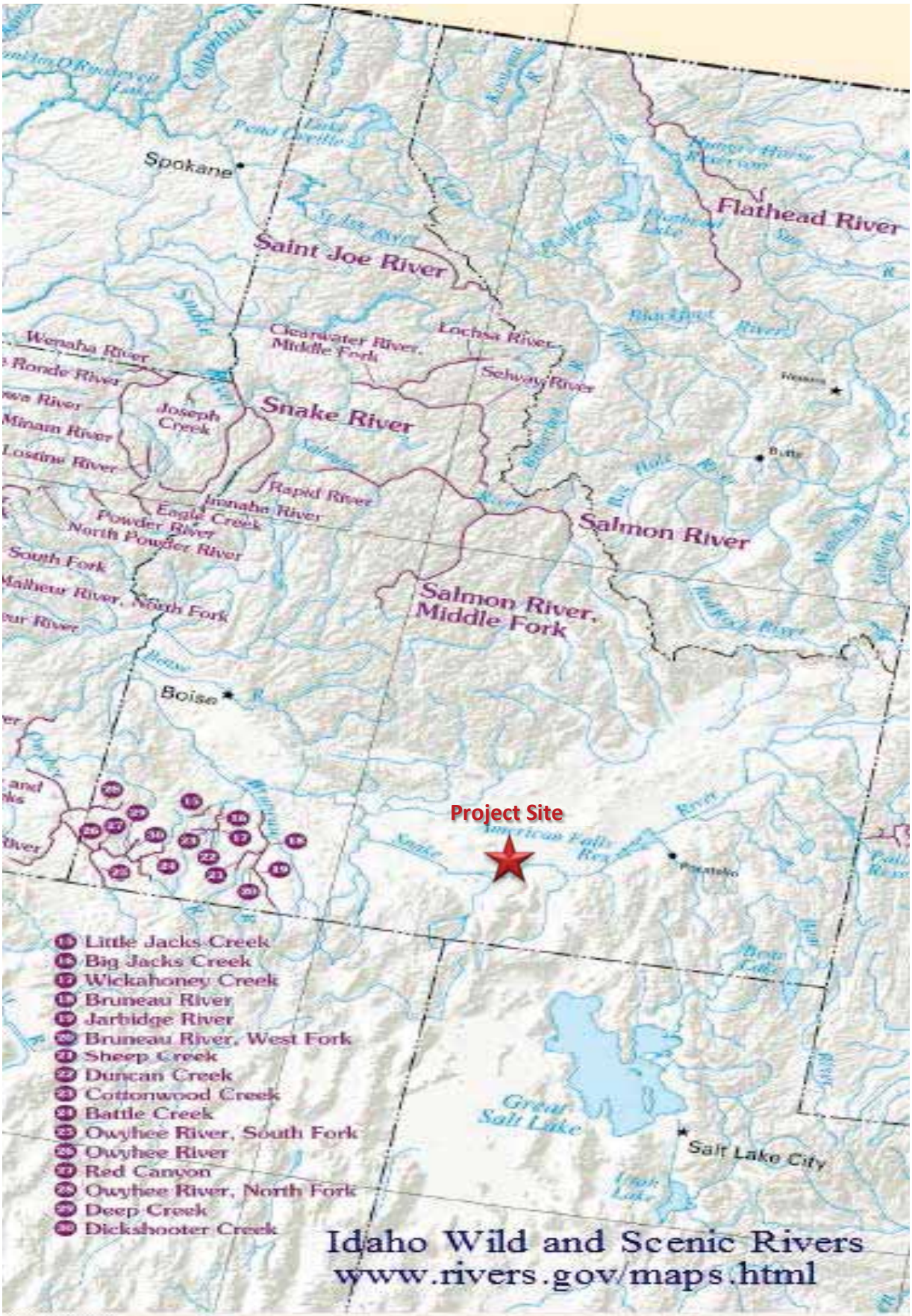
Idaho Department of Commerce

Gary Malm 5-24 2000
Director **Date**

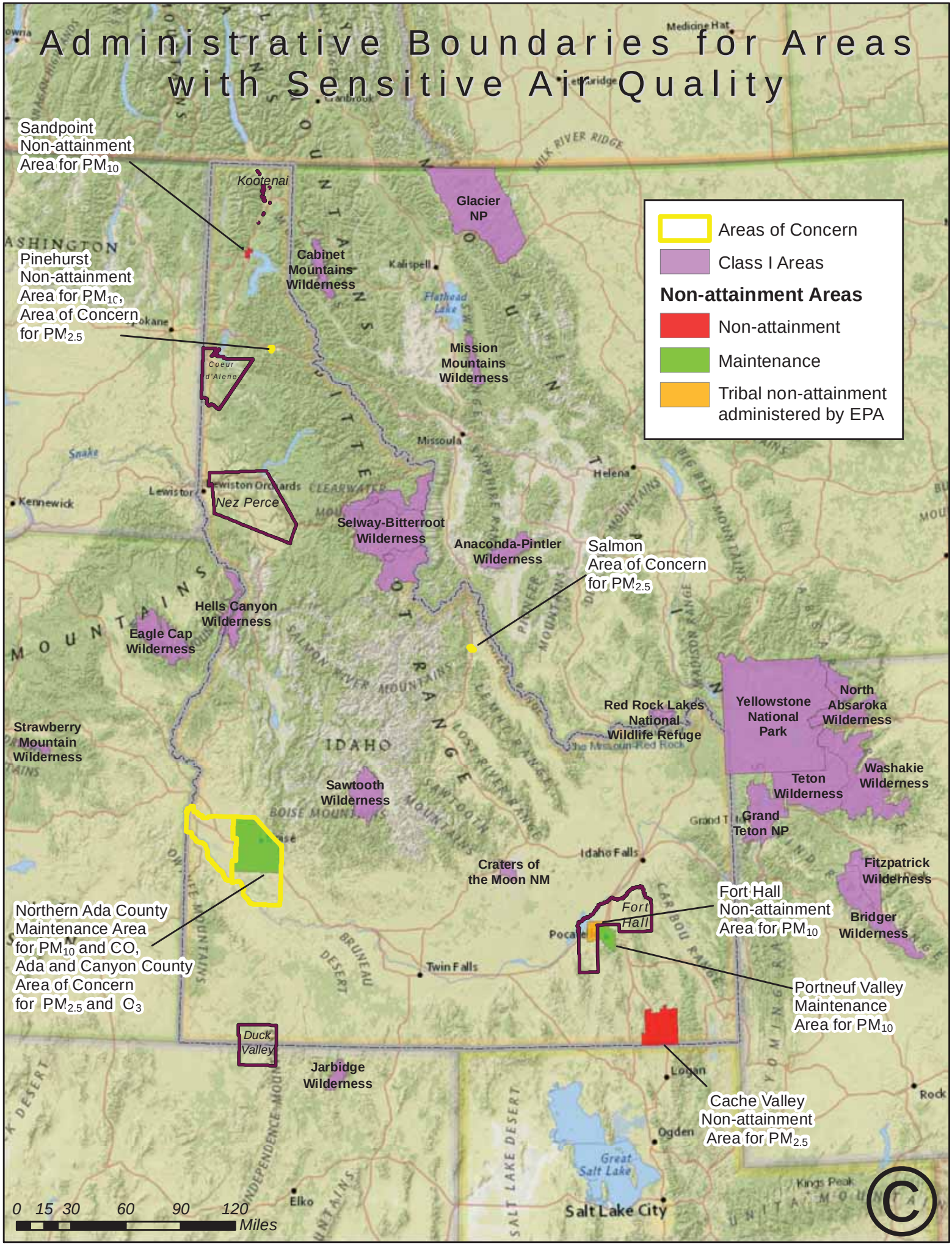
Idaho Housing and Finance Association

Julie H. Williams 3-20-00
Vice President **Date**


BLISS, MARSH CREEK, MINIDOKA CO., AND TWIN FALLS CO. NITRATE PRIORITY AREAS (NPAs), 2014
Twin Falls Regional Office
N
Bliss, Marsh Creek., Minidoka Co. and Twin Falls Co. NPAs, 2014
Nitrate Concentrations (mg/L)
< 2.00
2.00 - 4.99
5.00 - 9.99
>= 10
2014 NPAs
Major City Boundaries
County Boundaries (100K)
The Drinking Water Standard or Maximum Contaminant Level (MCL) for Nitrate is 10 milligrams per liter (mg/L)
0 5 10 20 Miles
BLISS NPA
MINIDOKA CO. NPA
MARSH CREEK NPA
TWIN FALLS CO. NPA
GOODING
LINCOLN
JEROME
MINIDOKA
CASSIA
TWIN FALLS


Spokane
Flathead River
Saint Joe River
Clearwater River, Middle Fork
Lochsa River
Selway River
Wenaha River
Ronde River
Joseph Creek
Snake River
Minam River
Lostine River
Rapid River
Imnaha River
Eagle Creek
Powder River
North Powder River
South Fork
Malheur River, South Fork
Salmon River
Salmon River, Middle Fork
Boise
Project Site
American Falls Res
Pocatello
Great Salt Lake
Salt Lake City
Little Jacks Creek
Big Jacks Creek
Wickahoney Creek
Bruneau River
Jarbidge River
Bruneau River, West Fork
Sheep Creek
Duncan Creek
Cottonwood Creek
Battle Creek
Owyhee River, South Fork
Owyhee River
Red Canyon
Owyhee River, North Fork
Deep Creek
Dickshooter Creek
Idaho Wild and Scenic Rivers
www.rivers.gov/maps.html

Administrative Boundaries for Areas with Sensitive Air Quality



Designated Primary and Commercial Service Airports in Idaho, Oregon and Washington Covered by 24 CFR Part 51D As of December 18, 2009

Attached is a revised list of designated primary and commercial service airports covered by 24 CFR Part 51D. A primary airport is one that serves at least .01 percent of all passengers enplaned at commercial service airports. Airports with scheduled service of 2,500 or more passengers enplaned are listed as 'Other Commercial Service Airports.'

For a link directly to the Federal Aviation Administration's data, please visit:
http://www.faa.gov/airports_airtraffic/airports/planning_capacity/passenger_allcargo_stats/passenger

Please note that all military airports must be considered under HUD's regulations at 24 CFR 51(D); they are not included on this list.

REGION/ STATE	AIRPORT LOCATION	AIRPORT NAME
IDAHO	**Primary Airports**	
	Location	**Name**
	Boise	Boise Air Terminal - Gowen Field
	Hailey	Friedman Memorial
	Idaho Falls	Idaho Falls Regional
	Lewiston	Lewiston-Nez Perce County
	Pocatello/Arbon Valley	Pocatello Regional
	Twin Falls	Joslin Field-Magic Valley Regional
	Other Commercial Service Airports	
	None	
OREGON	**Primary Airports**	
	Location	**Name**
	Eugene	Mahlon Sweet Field
	Klamath Falls	Klamath Falls
	Medford	Rogue Valley International
	North Bend	Southwest Oregon Regional
	Portland	Portland International
	Redmond	Roberts Field
	Salem	McNary Field
	Other Commercial Service Airports	
	Pendleton	Eastern Oregon Regional

WASHINGTON **Primary Airports**

Bellingham	Bellingham International
Friday Harbor	Friday Harbor
Pasco	Tri-Cities
Port Angeles	William R. Fairchild International
Pullman/Moscow, ID	Pullman-Moscow Regional
Seattle	Boeing Field/King County-Intl
Seattle	Seattle-Tacoma International
Spokane	Spokane International
Walla Walla	Walla Walla Regional
Wenatchee	Pangborn Memorial
Yakima	Yakima Air Terminal

WA **Other Commercial Service Airports**

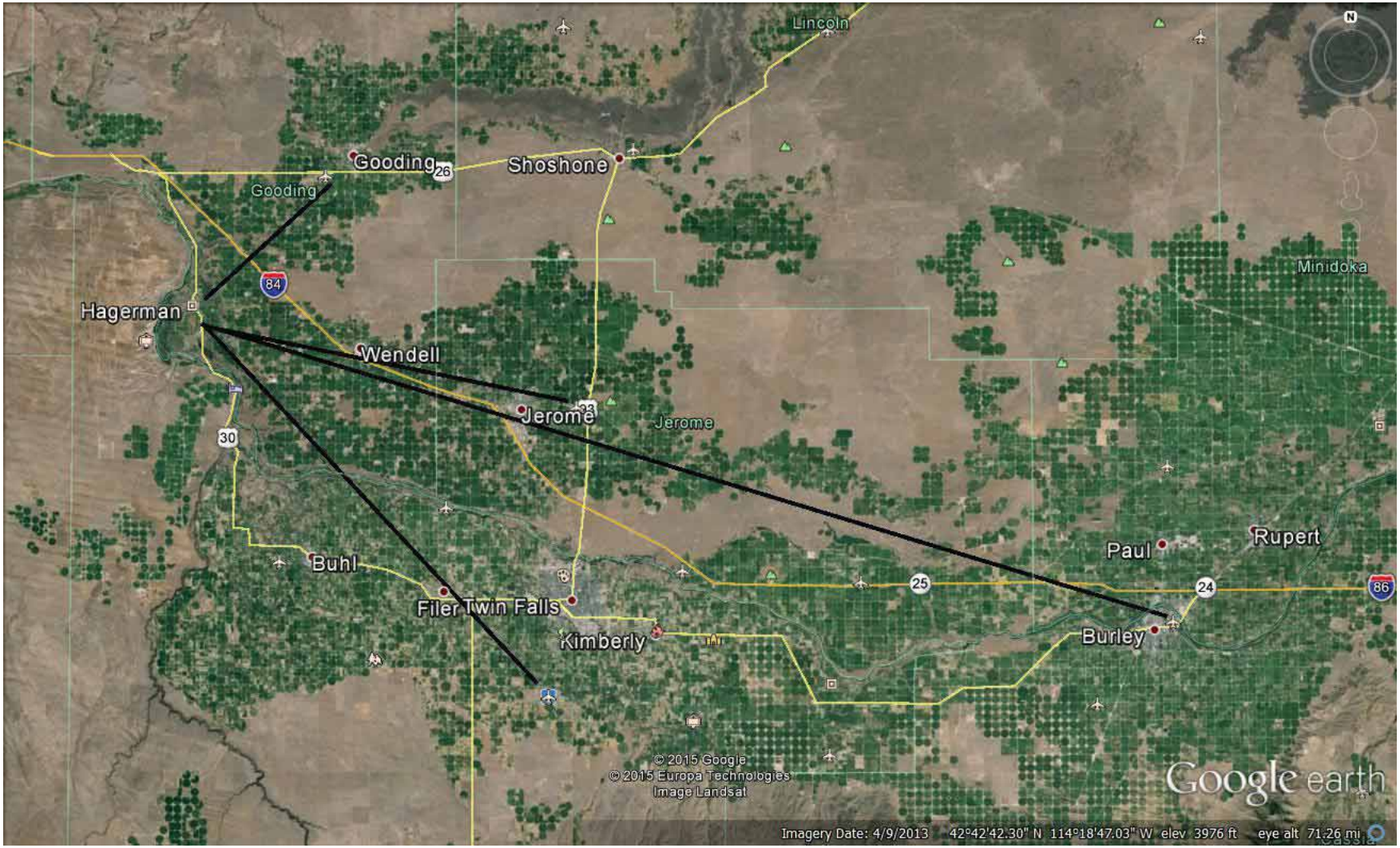
East Sound	Orcas Island

WA **General Aviation Airports with Enplanements over 2500***

Kenmore	Kenmore Air Harbor
Oak Harbor	Aj Eisenberg

*Although not required by 24 CFR 51D, HUD encourages you to consider these busy airports

Distances between the Project Site and the Nearest Airports



Hagerman is approximately 10 miles from the Gooding Airport
Hagerman is approximately 22 miles from the Jerome Airport

Hagerman is approximately 29 miles from the Twin Falls Airport
Hagerman is approximately 60 miles from the Burley Airport

Appendix C

Public Participation

CITY OF HAGERMAN
Wastewater Facilities Plan

City Council Update: September 18, 2013

J-U-B ENGINEERS, INC.

THE LANDDON GROUP

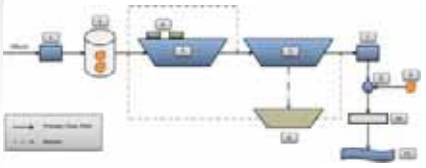
GATEWAY MAPPING INC.

Existing Collection System

J-U-B ENGINEERS, Inc.

Existing Treatment Facilities

Existing Wastewater Treatment Facilities



Item	Description
1	Influent Flow Monitor
2	Lift Station 1
3	Cell #1
4	Surface Aerators
5	Cell #2
6	Rock Filter
7	Effluent Flow Monitor
8	Chlorine Injection Manhole
9	Chlorine Injection Pump
10	Outfall Pipeline
11	Snake River

J-U-B ENGINEERS, Inc.

Existing Treatment Facilities

J U B ENGINEERS, Inc.

Effluent Discharge – NPDES Permit

Parameter	Units	Effluent Limitation				Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	Sample Location	Sample Frequency	Sample Type
Flow [A]	MGD	-	-	-	-	Effluent	Continuous	Recording
BOD_5	mg/L lbs/d	30 37.5	45 56.3	- -	- -	Influent and Effluent	2 / month	8-hr Grab Composite
TSS	mg/L lbs/d	30 7.7	45 15.5	- -	- -	Influent and Effluent	1 / week	8-hr Grab Composite
E. Coli [B]	cfu/100 mL	126	-	-	406	Effluent	5 / month	Grab
Total Residual Chlorine	ug/L lbs/d	481 0.6	- -	794 1.0	- -	Effluent	3 / week	Grab
Total Phosphorus	lbs/d	5.7	11.4	-	-	Effluent	1 / week	8-hr Grab Composite
Total Ammonia-N	mg/L	-	-	-	-	Effluent	1 / month	8-hr Grab Composite
Temperature	°C	-	-	-	-	Influent and Effluent	Continuous	Recording
pH	s.u.	6.5 – 9.0				Effluent	5 / week	Grab

A. Discharge is only permitted from September 1 through June 30 of each year.
B. Based on a geometric mean of a minimum of five samples collected every 3-7 days over a calendar month.

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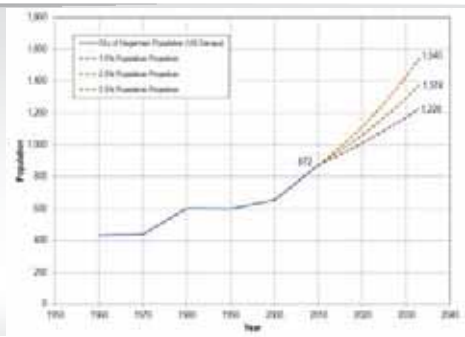
Planning Area

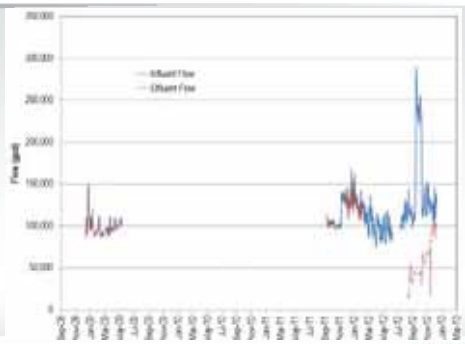
J-U-B ENGINEERS, Inc.

Population Growth



J U B ENGINEERS, Inc.

Influent Flows



J-U-B ENGINEERS, Inc.

Influent Flows

Parameter	Unit	Existing Influent Flows (2013)	Projected Influent Flows (2033)
Average Day Flow	gpd	123,300	207,900
Maximum Month Flow	gpd	191,900	322,200
Peak Day Flow	gpd	246,600	415,800
Peak Hour Flow	gpd	471,000	763,000
Average Day Per-Capita Flow	gpcd	135	135

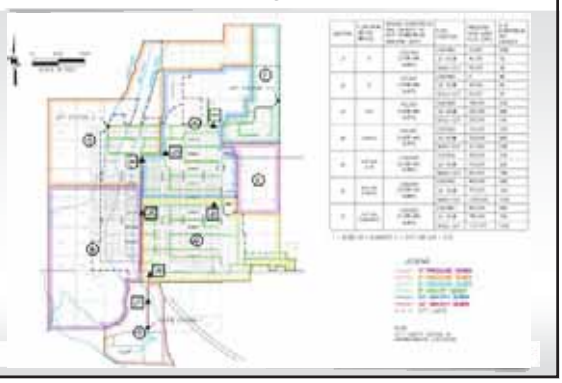
J-U-B ENGINEERS, Inc.

Influent Waste Loads

Parameter	Unit	BOD_5	TSS	Total-Phosphorus	Ammonia-N	Total-Nitrogen
Existing (2013)						
Average Day (Conc.)	mg/L	180	157	4.6	17.5	45
Average Day (Mass)	lbs/d	191	175	4.9	17.1	46.3
Maximum Month	lbs/d	302	299	7.3	21.2	57.4
Peak Day	lbs/d	493	443	11.5	29.2	79.2
Projected (2033)						
Average Day (Conc.)	mg/L	186	169	4.8	16.9	45.3
Average Day (Mass)	lbs/d	323	293	8.3	29.3	78.5
Maximum Month	lbs/d	510	501	12.3	36.3	97.3
Peak Day	lbs/d	833	741	19.3	50.1	134

J U B ENGINEERS, Inc.

Collection System Evaluation



Lift Station Evaluation

Lift Station	Condition	Capacity/Redundancy: Capacity of Each Pump (gpm)	Capacity/Redundancy: Peak Hour Flow (gpm)	Capacity/Redundancy: Does Each Pump Have Adequate Capacity?	Adequate Flow Measurement Device?	Adequate Back-Up Power?
Lift Station 1	Deteriorated, approaching useful service life	265 - 330	207 (existing) 530 (projected)	✗	✗	!
Lift Station 2	Deteriorated, approaching useful service life	100	22 (existing) 37 (projected)	✓	✗	!
Lift Station 3	Acceptable	80	21	✓	✗	✗

✓ Indicates existing system is adequate

✗ Indicates an observed deficiency in the existing system

! Indicates existing system meets regulations, but improvements are recommended

J-U-B ENGINEERS, Inc.

NPDES Permit Compliance

Parameter	Units	Non-Compliance Events (2009 through 2013)			
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum
BOD_5	mg/L	*5*	*2*	-	-
	lbs/d	0	0	-	-
TSS	mg/L	*6*	*9*	-	-
	lbs/d	*10*	*24*	-	-
BOD_5 Percent Removal	%	*5*	-	-	-
TSS Percent Removal	%	*12*	-	-	-
E. Coli	cfu/100 mL	*1*	-	-	*2*
Total Residual Chlorine	ug/L	0	-	0	-
	lbs/d	0	-	0	-
Total Phosphorus	lbs/d	0	0	-	-
Total Ammonia-N	mg/L	-	-	-	-
Temperature	°C	-	-	-	-
pH	s.u.	*39*			

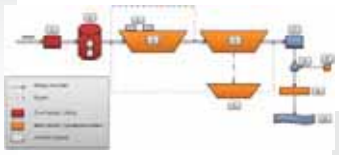
J U B ENGINEERS, Inc.

Future NPDES Permit Issues

- Year Round discharge
  - Currently Only Authorized to Discharge September 1 – June 30
- TSS → Waste Load Allocation Discrepancies in TMDLs
- Total-Phosphorus → More Restrictive Waste Load Allocations Likely
- Ammonia → Preliminary Reasonable Potential Analysis Shows Effluent Meets State Acute and Chronic Water Quality Standards
- Temperature TMDLs

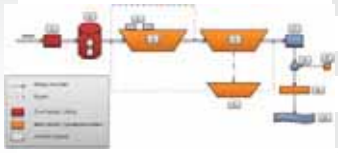
J-U-B ENGINEERS, Inc.

Treatment Facility Evaluation



Item	Description	Observed Deficiencies
1	Influent Flow Monitor	• Projected peak hour flows exceed 8" Palmer Bowlus flume capacity. • Current pumping capacity exceeds 8" Palmer Bowlus flume capacity.
2	Lift Station 2	• Existing mechanical equipment is deteriorated. • Projected peak hour flows exceed pump capacity. • Pumps periodically clog because there is no screening of the influent flow. • No flow measurement device. • No permanent back-up power, which is critical because this pump station receives the entirety of the city's flow.
3	Cell #1	• HRT's are approaching typical design values under projected maximum month flow conditions. • Organic loadings to facultative portions of lagoon exceed typical design values under projected maximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
4	Surface Aerators	• Aerators periodically clog because there is no screening of the influent flow.

Treatment Facility Evaluation



Item	Description	Observed Deficiencies
5	Cell #2	• Organic loadings to exceed typical design values under projected maximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
6	Rock Filter	• Algae and other solids plug rock filter, rendering it unusable on a consistent basis.
7	Effluent Flow Monitor	• None.
8	Chlorine Injection Manhole	• None.
9	Chlorine Injection Pump	• Insufficient capacity to pump the estimated maximum chlorine dose under projected peak flow conditions.
10	Outfall Pipeline	• Hydraulic pressures approaching typical maximum joint pressure rating, particularly at projected peak hour flows. This may result in joint leaks.
11	Snake River	• Lagoons cannot consistently and reliably meet NPDES permit conditions.

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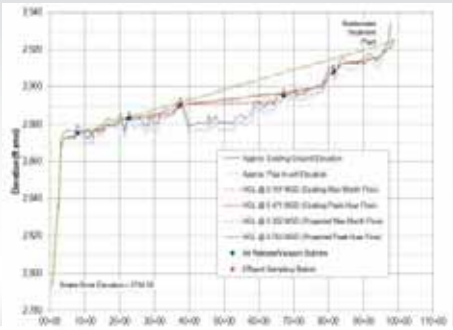
Outfall Pipe Evaluation



Approaching gravity sewer pipe joint design pressure rating (25-feet) at future peak hour flows

J-U-B ENGINEERS, Inc.

Collection System Improvements

- Clean and Video Inspect Collection System
- Address I&I through Spot Repairs

J-U-B ENGINEERS, Inc.

Lift Station Improvement Alternatives

Alternative	Description
1	Replace Lift Stations 1 and 2
2	Rehabilitate Lift Stations 1 and 2
3	"Do-Nothing"

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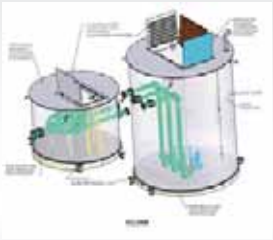
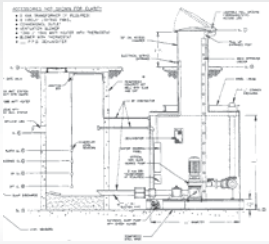
Lift Station Locations

J-U-B ENGINEERS, Inc.

Lift Station Configurations

- Submersible
- Wet-Pit/Dry-Pit





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Lift Station Configuration Comparison

Parameter	Duplex Submersible	Duplex Wet/Dry Well
Configuration	• Influent wastewater discharges to wet-well • Pumps, motors, rails, piping, and level controls located in the wet-well and submerged • Manifold piping, gate and check valves located in a separate vault • Flow meter located in a separate vault • Electrical/control panels located above grade near the vaults • Jib crane or overhead crane can be used for pump removal	• Influent wastewater discharges to wet-well • Suction piping and level controls located in wet-well • Pumps, motors, rails, piping, and valves located in a separate dry-well (no wastewater enters the dry-well) • Flow meter located either in dry-well or in a separate vault • Electrical/control panels located either in dry-well or above grade near the vaults • Jib crane or overhead crane can be used for pump removal
Pump Type and Operation	• Non-clog submersible • Chopper/grinder submersible • Vortex, recessed impeller submersible • 1 duty, 1 standby • Lead/lag operation	• Non-clog centrifugal • Chopper/grinder • Vortex, recessed impeller • 1 duty, 1 standby • Lead/lag operation
Vault Sizes and Types	• Wet-well – 6 to 10 ft diameter • Valve vault – 6 to 8 ft diameter • Flow meter vault – 4 ft diameter • Vaults can be site-built reinforced concrete or prefabricated reinforced concrete or fiberglass	• Wet-well – 6 to 8 ft diameter • Dry-well – 8 to 12 ft diameter • Flow meter vault – 4 ft diameter • Vaults can be site-built reinforced concrete or prefabricated reinforced concrete or fiberglass
Footprint	• Smaller	• Larger
Efficiency	• Lowest	• Highest
Advantages	• Most common configuration for this size of lift station • Flooding of lift station less of a concern • Less ancillary piping and equipment	• Pumps and motors easier to access, inspect, and maintain • Common configuration • Similar to existing lift station
Disadvantages	• Pumps and motors less easily accessed, inspected, and maintained	• Flooding of dry-well is a concern • More ancillary piping and equipment • Confined space requirements for dry-well

J-U-B ENGINEERS, Inc.

Lift Station Cost Summary (2013 Dollars)

		Lift Station 1	Lift Station 2
Alternative 1 (Replacement)	Submersible	$471,000	$449,000
	Wet-Pit/Dry-Pit	$499,000	$478,000
Alternative 2 (Rehabilitation)	Wet-Pit/Dry-Pit	$440,000	$403,000
6" Pressure Main		-	$385,000

Costs include estimates for contractor mobilization/demobilization and administration, bonding, Davis-Bacon wages, contingencies, engineering design/construction services, legal and administration, and interim financing.

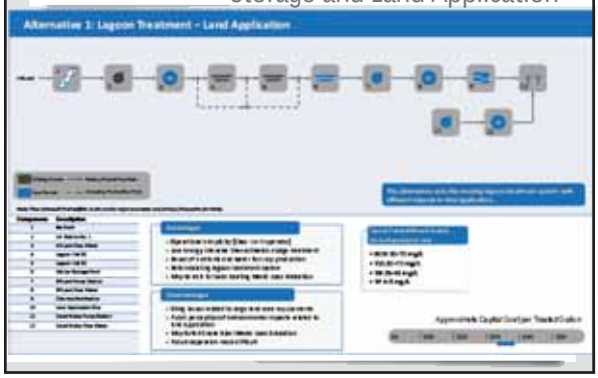
J-U-B ENGINEERS, Inc.

Treatment Facility Improvement Alternatives

Alternative	Description
1	Treatment Lagoons, Winter Storage, and Land Application
2	Treatment Lagoons and Rapid Infiltration Basins
3	Total Containment Evaporative Lagoons
4	Mechanical Treatment and Rapid Infiltration Basins
5	Mechanical Treatment and Snake River Discharge
6	"Do-Nothing"
7	Regional Treatment

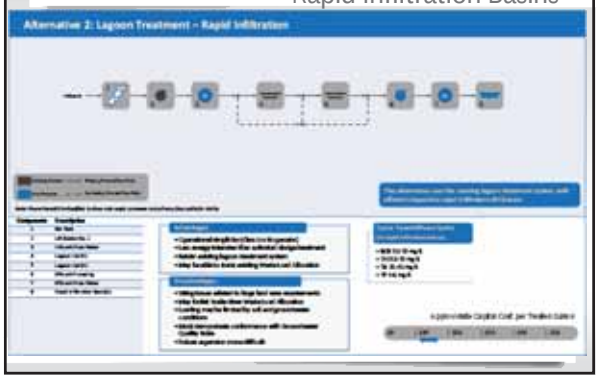
J-U-B ENGINEERS, Inc.

Alternative 1 – Treatment Lagoons, Winter Storage and Land Application



Alternative 1 – Treatment Lagoons, Winter Storage and Land Application

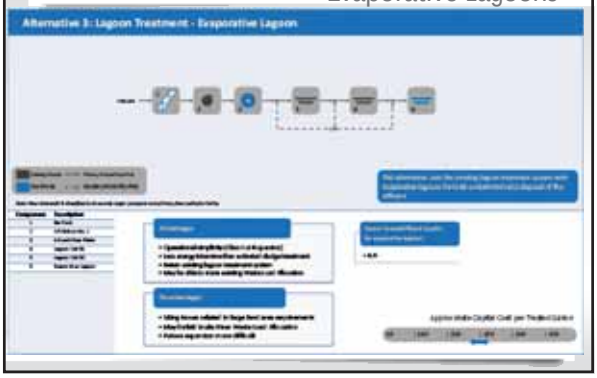
Alternative 2 – Treatment Lagoons and Rapid Infiltration Basins



Alternative 2 – Treatment Lagoons and Rapid Infiltration Basins

J U B ENGINEERS, Inc.

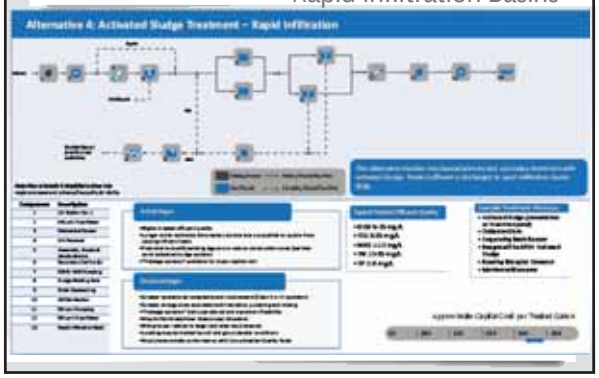
Alternative 3 – Total Containment Evaporative Lagoons



Alternative 3 – Total Containment Evaporative Lagoons

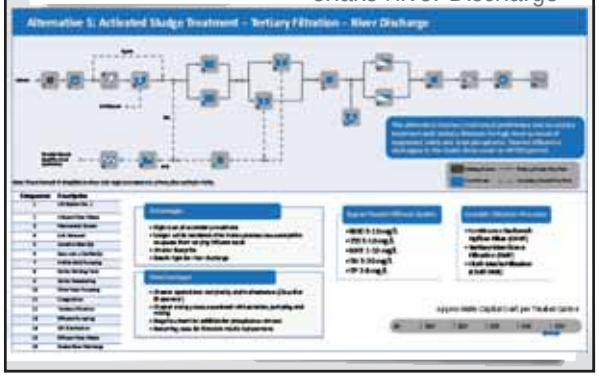
J-U-B ENGINEERS, Inc.

Alternative 4 – Mechanical Treatment and Rapid Infiltration Basins



Alternative 4 – Mechanical Treatment and Rapid Infiltration Basins

Alternative 5 – Mechanical Treatment and Snake River Discharge



Alternative 5 – Mechanical Treatment and Snake River Discharge

Alternative 6 – "Do-Nothing"

- No Improvements to Treatment Facilities
- Continued Non-Compliance with NPDES Permit is Likely
  - Possible Enforcement Action by EPA (Fines, Civil/Administrative, Criminal)
- Possible Restrictions on Future Land Development
  - Loss of Business
  - Reduced Property Values

Alternative 7 – Regional Treatment

- Regional, Centralized Treatment Plant with Bliss and/or Wendell
- Both of These Communities Recently Improved Their Treatment Facilities
  - Not Likely to Consider Regional Treatment
- Extensive Pumping and Transmission Infrastructure and Costs
- Can be Administratively Difficult

Treatment Facilities Component Summary

Item	Alt 1 – Lagoons and Land Application	Alt 2 – Lagoons and RI Basins	Alt 3 – Total Containment/ Evaporative Lagoons	Alt 4 – Mechanical Treatment and RI Basins	Alt 5 – Mechanical Treatment and River Discharge
Administration Building	-	-	-	X	X
Manually Cleaned Bar Rack	X	X	X	-	-
Mechanical Screening /Grit Removal	-	-	-	X	X
Existing Lagoons	X	X	X	-	-
Secondary Treatment	-	-	-	X	X
Secondary Clarifiers	-	-	-	X	X
RAS / WAS Pumping	-	-	-	X	X
Solids Holding	-	-	-	X	X
Solids Dewatering	-	-	-	X	X
Filter Feed Pumping	-	-	-	-	X
Tertiary Filtration & Coagulation	-	-	-	-	X
Winter Storage Lagoon	X	-	-	-	-
UV Disinfection	-	-	-	-	X
Chlorine Disinfection	X	-	-	-	-
Effluent Pump Station	-	X	X	X	X
Irrigation Pump Station	X	-	-	-	-
Effluent Pressure Main	X	X	X	X	-
Land Application Site	X	-	-	-	-
Rapid Infiltration Basins	-	X	-	X	-
Total Containment Evaporative Lagoons	-	-	X	-	-

Treatment Facilities Alternatives Cost Summary (2013 Dollars)

Item	Alt 1 – Lagoons and Land Application	Alt 2 – Lagoons and RI Basins	Alt 3 – Total Containment/ Evaporative Lagoons	Alt 4 – Mechanical Treatment and RI Basins	Alt 5 – Mechanical Treatment and River Discharge
Total Project Capital Costs	$11,695,000	$4,302,000	$8,968,000	$14,731,000	$15,904,000
Capital Cost per Treated Gallon [A]	$36	$13	$28	$46	$49

A - Based on design max month flow (0.322 mgd) and includes non-construction project costs (i.e. engineering, administrative, legal, funding, etc.).

Costs include estimates for contractor mobilization/demobilization and administration, bonding, Davis-Bacon wages, contingencies, engineering design/construction services, legal and administration, and interim financing.

What's Next?

- Selection of Preferred Lift Station Improvement(s)
- Selection of Preferred Treatment Facility Improvement(s)
- Refine Alternatives/Costs
- Preliminary User Rate Analysis
- Complete Draft Facilities Plan Report
- Public Comment Period and Hearing
- Complete Final Facilities Plan Report

QUESTIONS?

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CITY OF HAGERMAN
Wastewater Facilities Plan

City Council Update: May 14, 2014

J-U-B ENGINEERS, INC.

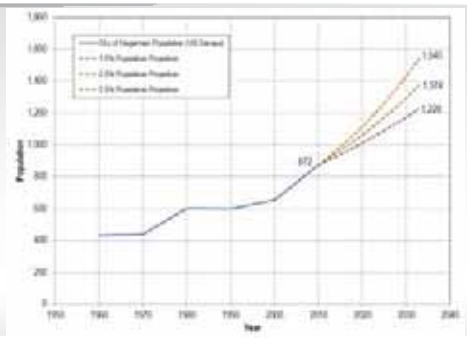
THE LANDDON GROUP

GATEWAY MAPPING INC.

Existing Treatment Facilities

J-U-B ENGINEERS, Inc.

Population Growth



J-U-B ENGINEERS, Inc.

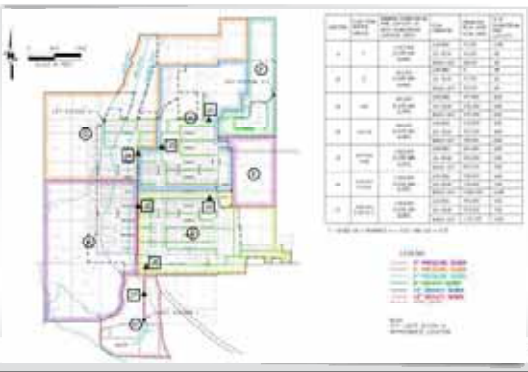
Influent Flows and Waste Loads

Parameter	Unit	Existing Influent Flows (2013)	Projected Influent Flows (2033)
Average Day Flow	gpd	123,300	207,900
Maximum Month Flow	gpd	191,900	322,200
Peak Day Flow	gpd	246,600	415,800
Peak Hour Flow	gpd	471,000	763,000
Average Day Per-Capita Flow	gpcd	135	135

Parameter	Unit	BOD_5	TSS	Total-Phosphorus	Ammonia-N	Total-Nitrogen
Existing (2013)						
Average Day (Conc.)	mg/L	180	157	4.6	17.5	45
Average Day (Mass)	lbs/d	191	175	4.9	17.1	46.3
Maximum Month	lbs/d	302	299	7.3	21.2	57.4
Peak Day	lbs/d	493	443	11.5	29.2	79.2
Projected (2033)						
Average Day (Conc.)	mg/L	186	169	4.8	16.9	45.3
Average Day (Mass)	lbs/d	323	293	8.3	29.3	78.5
Maximum Month	lbs/d	510	501	12.3	36.3	97.3
Peak Day	lbs/d	833	741	19.3	50.1	134

J U B ENGINEERS, Inc.

Collection System Evaluation



Lift Station Evaluation

Lift Station	Condition	Capacity/Redundancy: Capacity of Each Pump (gpm)	Capacity of Each Pump (gpm)	Peak Hour Flow (gpm)	Does Each Pump Have Adequate Capacity?	Adequate Flow Measurement Device?	Adequate Back-Up Power?
Lift Station 1	Deteriorated, approaching useful service life	285 - 330	285 - 330	327 (existing) 530 (20-year)	✗	✗	?
Lift Station 2	Deteriorated, approaching useful service life	100	100	32 (existing) 52 (20-year)	✓	✗	?
Lift Station 3	Acceptable	80	80	7 (existing) 31 (20-year)	✓	✗	✗

✓ Indicates existing system is adequate

✗ Indicates an observed deficiency in the existing system

? Indicates existing system meets regulations, but improvements are recommended

J-U-B ENGINEERS, Inc.

NPDES Permit Compliance

Parameter	Units	Non-Compliance Events (2009 through 2013)			
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum
BOD_5	mg/L	*4*	*1*	-	-
	lbs/d	0	0	-	-
TSS	mg/L	*5*	*5*	-	-
	lbs/d	*12*	*9*	-	-
BOD_5 Percent Removal	%	*6*	-	-	-
TSS Percent Removal	%	*14*	-	-	-
E. Coli	cfu/100 mL	*6*	-	-	-
Total Residual Chlorine	ug/L	0	-	0	-
	lbs/d	0	-	0	-
Total Phosphorus	lbs/d	0	*1*	-	-
Total Ammonia-N	mg/L	-	-	-	-
Temperature	°C	-	-	-	-
pH	s.u.	*13*			

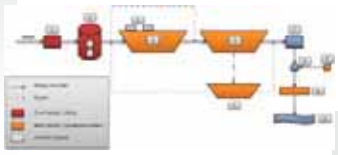
J U B ENGINEERS, Inc.

Future NPDES Permit Issues

- Year Round discharge
  - Currently Only Authorized to Discharge Sept 1–Jun 30
- TSS → Discrepancies in TMDLs
- Total-Phosphorus → More Restrictive Permit Limits Likely
- Ammonia → Preliminary Reasonable Potential Analysis Shows Effluent Meets State Acute and Chronic Water Quality Standards
  - EPA Recently Adopted NAWQS for Ammonia
- Temperature TMDLs

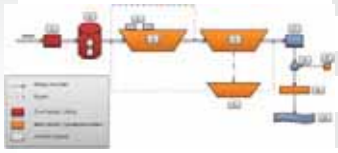
J-U-B ENGINEERS, Inc.

Treatment Facility Evaluation



Item	Description	Observed Deficiencies
1	Influent Flow Monitor	• Projected peak hour flows exceed 8" Palmer Bowlus flume capacity. • Current pumping capacity exceeds 8" Palmer Bowlus flume capacity.
2	Lift Station 1	• Existing mechanical equipment is deteriorated. • Projected peak hour flows exceed pump capacity. • Pumps periodically clog because there is no screening of the influent flow. • No flow measurement device. • No permanent back-up power, which is critical because this pump station receives the entirety of the city's flow.
3	Cell #1	• HRT's are approaching typical design values under projected maximum month flow conditions. • Organic loadings to facultative portions of lagoon exceed typical design values under projected maximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
4	Surface Aerators	• Aerators periodically clog because there is no screening of the influent flow.

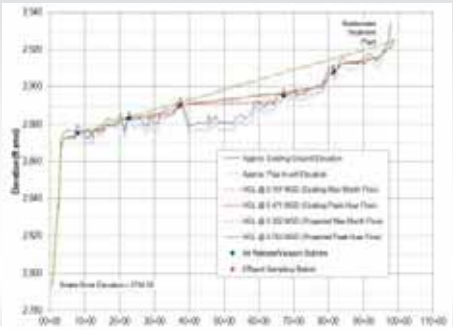
Treatment Facility Evaluation



Item	Description	Observed Deficiencies
5	Cell #2	• Organic loadings to exceed typical design values under projected maximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
6	Rock Filter	• Algae and other solids plug rock filter, rendering it unusable on a consistent basis.
7	Effluent Flow Monitor	• None.
8	Chlorine Injection Manhole	• None.
9	Chlorine Injection Pump	• Insufficient capacity to pump the estimated maximum chlorine dose under projected peak flow conditions.
10	Outfall Pipeline	• Hydraulic pressures approaching typical maximum joint pressure rating, particularly at projected peak hour flows. This may result in joint leaks.
11	Snake River	• Lagoons cannot consistently and reliably meet NPDES permit conditions.

J U B ENGINEERS, Inc.

Outfall Pipe Evaluation



Approaching gravity sewer pipe joint design pressure rating (25-feet) at future peak hour flows

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Collection System Improvements

- Clean and Video Inspect Collection System
- Address I&I through Spot Repairs

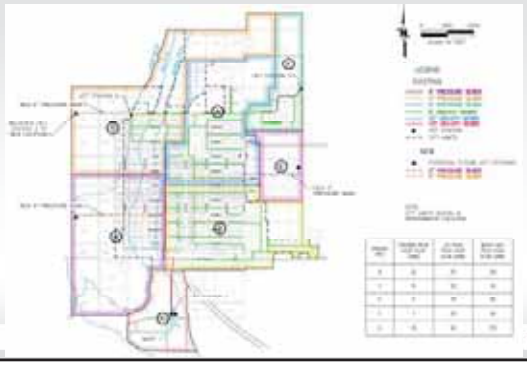
J-U-B ENGINEERS, Inc.

Lift Station Improvement Alternatives

Alternative	Description
1	Replace Lift Stations 1 and 2
2	Rehabilitate Lift Stations 1 and 2
3	"Do-Nothing"

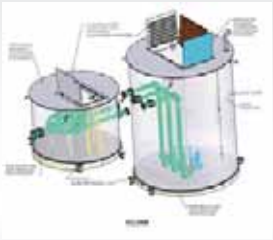
J U B ENGINEERS, Inc.

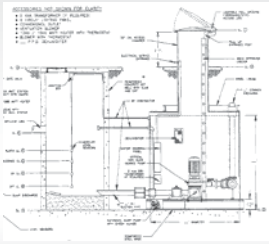
Lift Station Locations



Lift Station Configurations

- Submersible
- Wet-Pit/Dry-Pit





J-U-B ENGINEERS, Inc.

Lift Station Cost Summary (2014 Dollars)

		Lift Station 1	Lift Station 2
Alternative 1 (Replacement)	Submersible	$459,000	$437,000
	Wet-Pit/Dry-Pit	$489,000	$467,000
Alternative 2 (Rehabilitation)	Wet-Pit/Dry-Pit	$416,000	$381,000
6" Pressure Main		-	$386,000

A - Costs include estimates for contractor mobilization/demobilization and administration, bonding, Davis-Bacon wages, contingencies, engineering design/construction services, legal and administration, and interim financing.

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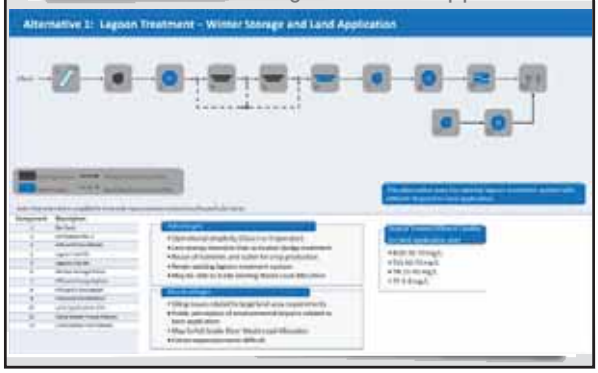
Treatment Facility Improvement Alternatives

Alternative	Description
1	Treatment Lagoons, Winter Storage, and Land Application
2	Treatment Lagoons and Rapid Infiltration Basins
3	Total Containment Evaporative Lagoons
4	Mechanical Treatment and Rapid Infiltration Basins
5	Mechanical Treatment and Snake River Discharge
6	"Do-Nothing"
7	Regional Treatment

J-U-B ENGINEERS, Inc.

Alternative 1 – Treatment Lagoons, Winter Storage and Land Application



Alternative 1 – Treatment Lagoons, Winter Storage and Land Application

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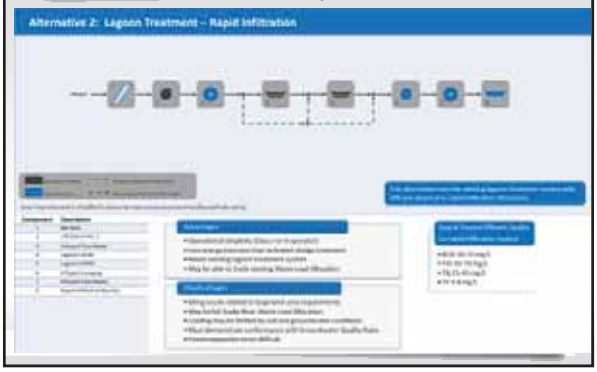
Alternative 2 – Treatment Lagoons and Rapid Infiltration Basins



Alternative 2 – Treatment Lagoons and Rapid Infiltration Basins

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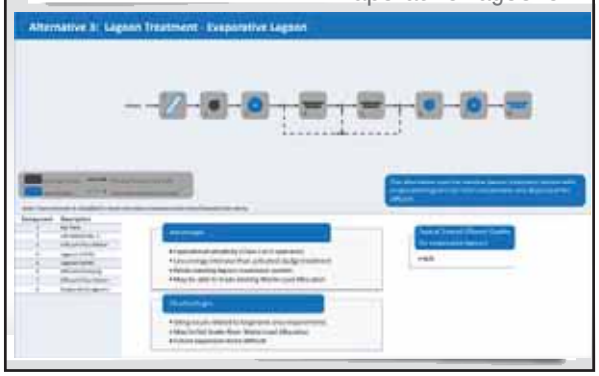
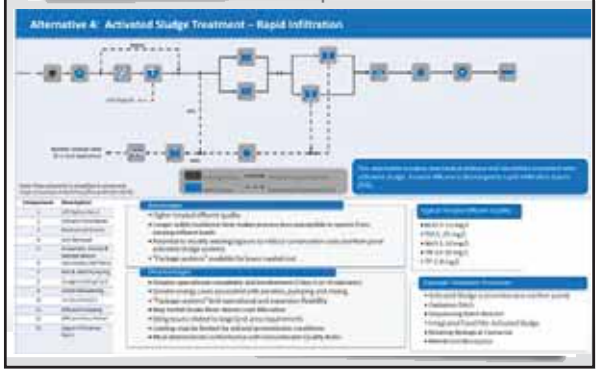
Alternative 3 – Total Containment Evaporative Lagoons



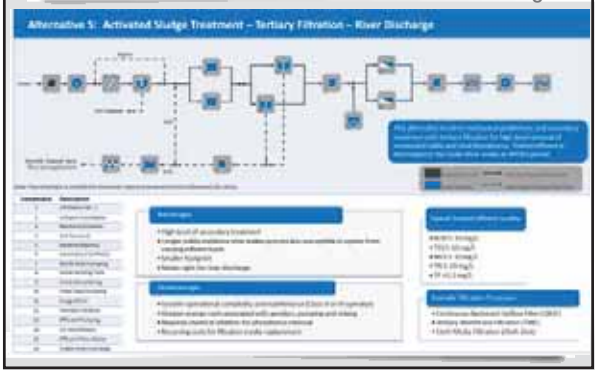
Alternative 3 – Total Containment Evaporative Lagoons

Alternative 4 – Mechanical Treatment and Rapid Infiltration Basins



Alternative 4 – Mechanical Treatment and Rapid Infiltration Basins

Alternative 5 – Mechanical Treatment and Snake River Discharge



Alternative 5 – Mechanical Treatment and Snake River Discharge

Alternative 6 – "Do-Nothing"

- No Improvements to Treatment Facilities
- Continued Non-Compliance with NPDES Permit is Likely
  - Possible Enforcement Action by EPA (Fines, Civil/Administrative, Criminal)
- Possible Restrictions on Future Land Development
  - Loss of Business
  - Reduced Property Values

J U B ENGINEERS, Inc.

Alternative 7 – Regional Treatment

- Regional, Centralized Treatment Plant with Bliss and/or Wendell
  - Both of These Communities Recently Improved Their Treatment Facilities
  - Not Likely to Consider Regional Treatment
- Extensive Pumping and Transmission Infrastructure and Costs
- Can be Administratively Difficult

J-U-B ENGINEERS, Inc.

Treatment Facilities Cost Summary (2014 Dollars)

Item	Alt 1 – Lagoons and Land Application [C]	Alt 2 – Lagoons and RI Basins [A,C]	Alt 3 – Total Containment/ Evaporative Lagoons [A,C]	Alt 4 – Mechanical Treatment and RI Basins [A,C]	Alt 5 – Mechanical Treatment and River Discharge
Total Project Capital Costs	$10.88M	$4.13M	$8.57M	$14.70M	$14.89M
20-Year Present Worth of O&M Costs	$2.09M	$0.86M	$1.44M	$3.45M	$4.54M
Total Present Worth	$12.97M	$4.99M	$10.01M	$18.15M	$19.43M
First Year O&M Costs	$115,400	$46,100	$87,500	$199,400	$262,300

A – Based on two (2) miles of piping to the disposal site.
B – Costs include estimates for contractor mobilization/demobilization and administration, bonding, Davis-Bacon wages, contingencies, engineering design/construction services, legal and administration, and interim financing.
C – Includes land costs.

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Ranking of Alternatives

- Pairwise Comparison
- Ranking

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What's Next?

- Selection of Preferred Lift Station and Treatment Facility Improvement(s)
- Complete Draft Facilities Plan Report
- Public Comment Period and Hearing
- Complete Final Facilities Plan Report
- Environmental Review
- Bond Election or Judicial Confirmation
- Grant and/or Loan Applications
- Land Acquisition (If Necessary)

J-U-B ENGINEERS, Inc.

QUESTIONS?

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J-U-B ENGINEERS, INC. | THE LANDDON GROUP | GATEWAY MAPPING INC.

CITY OF HAGERMAN
2014 WASTEWATER FACILITIES PLAN
RANKING MATRIX

5/28/2014

	Alternative 1A - Lagoons with Winter Storage and Land Application		Alternative 1B - Lagoons with Winter Storage and Land Application		Alternative 2 - Lagoons with Rapid Infiltration		Alternative 3 - Evaporative Lagoons		Alternative 4 - Activated Sludge Treatment with Rapid Infiltration		Alternative 5 - Activated Sludge Treatment with Tertiary Filtration and Surface Water Discharge		Weight from Pairwise Comparison
	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	
A) Capital Cost		0.000		0.000		0.000		0.000		0.000		0.000	
B) Annual O&M Costs		0.000		0.000		0.000		0.000		0.000		0.000	
C) Present Worth Costs		0.000		0.000		0.000		0.000		0.000		0.000	
D) Ease of Operation/Maintenance		0.000		0.000		0.000		0.000		0.000		0.000	
E) Process Complexity		0.000		0.000		0.000		0.000		0.000		0.000	
F) Siting/Land Area Requirements		0.000		0.000		0.000		0.000		0.000		0.000	
G) Ability to Expand		0.000		0.000		0.000		0.000		0.000		0.000	
H) Future Regulatory Compliance		0.000		0.000		0.000		0.000		0.000		0.000	
I) Technical Feasibility		0.000		0.000		0.000		0.000		0.000		0.000	
		0.000		0.000		0.000		0.000		0.000		0.000	

<= Highest Score is Preferred Alternative

1 = Lowest Rank
5 = Highest Rank

CITY OF HAGERMAN
2014 WASTEWATER FACILITIES PLAN
PAIRWISE COMPARISON

5/28/2014

Criteria	A) Capital Cost	B) Annual O&M Costs	C) Present Worth Costs	D) Ease of Operation/ Maintenance	E) Process Complexity	F) Siting/ Land Area Requirements	G) Ability to Expand	H) Future Regulatory Compliance	I) Technical Feasibility	Total Score	Weight	Rank
A) Capital Cost	x									0	#DIV/0!	#DIV/0!
B) Annual O&M Costs		x								0	#DIV/0!	#DIV/0!
C) Present Worth Costs			x							0	#DIV/0!	#DIV/0!
D) Ease of Operation/ Maintenance				x						0	#DIV/0!	#DIV/0!
E) Process Complexity					x					0	#DIV/0!	#DIV/0!
F) Siting/ Land Area Requirements						x				0	#DIV/0!	#DIV/0!
G) Ability to Expand							x			0	#DIV/0!	#DIV/0!
H) Future Regulatory Compliance								x		0	#DIV/0!	#DIV/0!
I) Technical Feasibility									x	0	#DIV/0!	#DIV/0!

1 = Lowest Priority/Importance
5 = Highest Priority/Importance

CITY OF HAGERMAN
Wastewater Facility Improvements

Public Open House: October 6, 2014

J-U-B ENGINEERS, INC.

THE LANDDON GROUP

GATEWAY MAPPING INC.

Existing Treatment Facilities

J-U-B ENGINEERS, Inc.

Influent Flows and Waste Loads

Parameter	Units	Existing	Projected (2014) A
Average Day	gpd	123,300	213,200
Max Month	gpd	191,900	330,500
Peak Day	gpd	246,600	426,400
Peak Hour	gpd	471,000	780,300
Avg. Per-Capita	gpd	135	135

A – Projections based on a 2.5% annual growth rate.

J-U-B ENGINEERS, Inc.

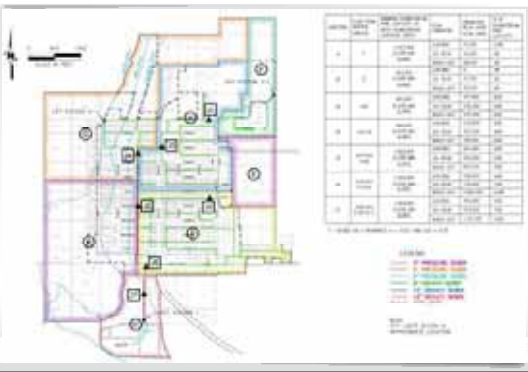
Influent Flows and Waste Loads

Parameter	Units	BOD_5	TSS	Total Phosphorus	Ammonia	Total Nitrogen [B]
Existing						
Average Day	lbs/d	191	175	4.9	17.1	46.3
Max Month	lbs/d	302	299	7.3	21.2	57.4
Peak Day	lbs/d	493	443	11.5	29.2	79.2
Projected (2034) [A]						
Average Day	lbs/d	332	300	8.5	30.0	80.5
Max Month	lbs/d	525	513	12.6	37.2	99.8
Peak Day	lbs/d	857	759	19.8	51.3	138

A – Projections based on a 2.5% annual growth rate.
B – Based on literature values.

J U B ENGINEERS, Inc.

Collection System Evaluation



Collection System Improvements

- Clean and Video Inspect Collection System
  - $69,600 for Entire Collection System
  - Can be Phased Over Time
- Address I&I through Spot Repairs

J-U-B ENGINEERS, Inc.

Lift Station Evaluation

Lift Station	Condition	Capacity/Redundancy			Adequate Flow Measurement Device?	Adequate Back-Up Power?
		Capacity of Each Pump (gpm)	Peak Hour Flow (gpm)	Does Each Pump Have Adequate Capacity?		
Lift Station 1	Deteriorated, approaching useful service life	285 - 330	327 (existing) 530 (20-year)	✗	✗	?
Lift Station 2	Deteriorated, approaching useful service life	100	32 (existing) 92 (20-year)	✓	✗	?
Lift Station 3	Acceptable	80	7 (existing) 21 (20-year)	✓	✗	✗

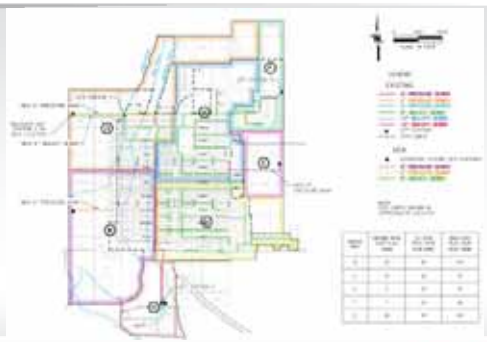
✓ Indicates existing system is adequate

✗ Indicates an observed deficiency in the existing system

? Indicates existing system meets regulations, but improvements are recommended

J U B ENGINEERS, Inc.

Lift Station Locations



JUB ENGINEERS, Inc.

Lift Station Improvement Alternatives

Alternative	Description
1	Replace Lift Stations 1 and 2
2	Rehabilitate Lift Stations 1, 2, and 3
3	"Do-Nothing"

JUB ENGINEERS, Inc.

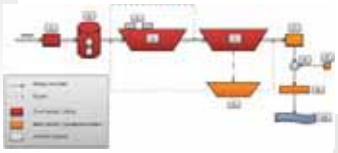
Lift Station Cost Summary (2014 Dollars)

	Lift Station 1	Lift Station 2	Lift Station 3
Alternative 1 (Replacement)	$530,000 - $535,000	$517,000 - $550,000	-
Alternative 2 (Rehabilitation)	$458,000	$423,000	$33,000
6" Pressure Main	-	$489,000	-
8" Gravity Main	-	$226,000	-

A - Costs include estimates for contractor mobilization/demobilization and administration, bonding, Davis-Bacon wages, Buy-American, contingencies, engineering design/construction services, legal and administration, and interim financing.

J U B ENGINEERS, Inc.

Treatment Facility Evaluation



Item	Description	Observed Deficiencies
1	Influent Flow Monitor	• Projected peak hour flows exceed 8" Palmer Bowlus flume capacity. • Current pumping capacity exceeds 8" Palmer Bowlus flume capacity.
2	Lift Station 1	• Existing mechanical equipment is deteriorated. • Projected peak hour flows exceed pump capacity. • Pumps periodically clog because there is no screening of the influent flow. • No flow measurement device. • No permanent back-up power, which is critical because this pump station receives the entirety of the city's flow.
3	Cell #1	• HRT's are approaching typical design values under projected maximum month flow conditions. • Organic loadings to facultative portions of lagoon exceed typical design values under projected maximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
4	Surface Aerators	• Aerators periodically clog because there is no screening of the influent flow.

Treatment Facility Evaluation

Item	Description	Observed Deficiencies
5	Cell #2	• Organic loadings to exceed typical design values under projected maximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
6	Rock Filter	• Algae and other solids plug rock filter, rendering it unusable on a consistent basis.
7	Effluent Flow Monitor	• None.
8	Chlorine Injection Manhole	• None.
9	Chlorine Injection Pump	• Insufficient capacity to pump the estimated maximum chlorine dose under projected peak flow conditions.
10	Outfall Pipeline	• Hydraulic pressures approaching typical maximum joint pressure rating, particularly at projected peak hour flows. This may result in joint leaks.
11	Snake River	• Lagoons cannot consistently and reliably meet NPDES permit conditions.

J-U-B ENGINEERS, Inc.

NPDES Permit Compliance

Parameter	Units	Non-Compliance Events (2009 through 2013)			
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum
BOD_5	mg/L	*4*	*1*	-	-
	lbs/d	0	0	-	-
TSS	mg/L	*5*	*5*	-	-
	lbs/d	*12*	*9*	-	-
BOD_5 Percent Removal	%	*6*	-	-	-
TSS Percent Removal	%	*14*	-	-	-
E. Coli	cfu/100 mL	*6*	-	-	-
Total Residual Chlorine	ug/L	0	-	0	-
	lbs/d	0	-	0	-
Total Phosphorus	lbs/d	0	*1*	-	-
Total Ammonia-N	mg/L	-	-	-	-
Temperature	°C	-	-	-	-
pH	s.u.	*13*			

City Received Notice of Violation and Fine from EPA

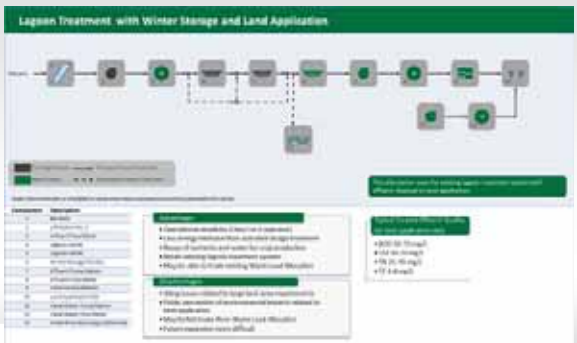
J U B ENGINEERS, Inc.

Treatment Facility Improvement Alternatives

Alternative	Description
1	Treatment Lagoons, Winter Storage, and Land Application
2	Treatment Lagoons and Rapid Infiltration Basins
3	Total Containment Evaporative Lagoons
4	Mechanical Treatment and Rapid Infiltration Basins
5	Mechanical Treatment and Snake River Discharge
6	"Do-Nothing"
7	Regional Treatment

J-U-B ENGINEERS, Inc.

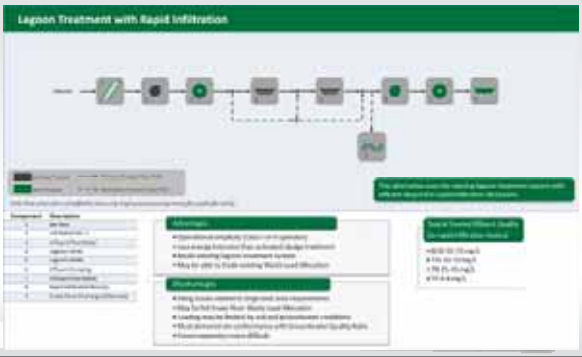
Alternative 1 – Treatment Lagoons, Winter Storage and Land Application



Alternative 1 – Treatment Lagoons, Winter Storage and Land Application

J U B ENGINEERS, Inc.

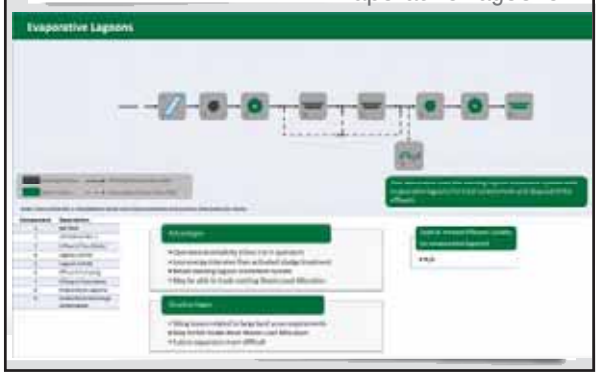
Alternative 2 – Treatment Lagoons and Rapid Infiltration Basins



Alternative 2 – Treatment Lagoons and Rapid Infiltration Basins

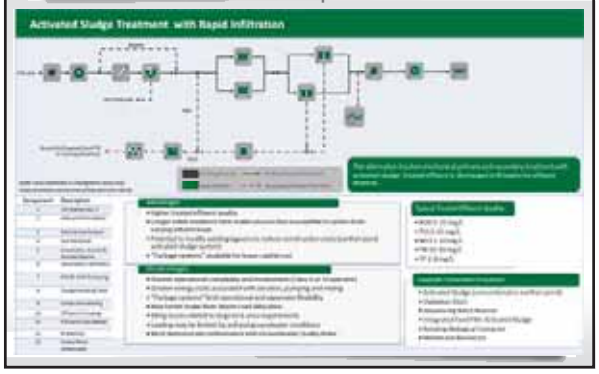
J-U-B ENGINEERS, Inc.

Alternative 3 – Total Containment Evaporative Lagoons



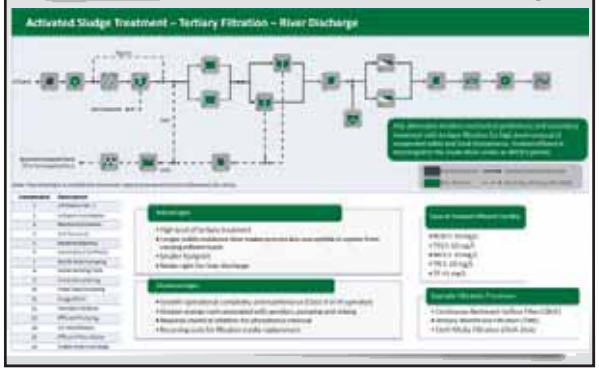
Alternative 3 – Total Containment Evaporative Lagoons

Alternative 4 – Mechanical Treatment and Rapid Infiltration Basins



Alternative 4 – Mechanical Treatment and Rapid Infiltration Basins

Alternative 5 – Mechanical Treatment and Snake River Discharge



Alternative 5 – Mechanical Treatment and Snake River Discharge

Alternatives 6 and 7

- Alt 6 – "Do-Nothing"
  - No Improvements to Treatment Facilities
  - Continued Non-Compliance with NPDES Permit is Likely
    - Possible Enforcement Action by EPA (Fines, Civil/Administrative, Criminal)
  - Possible Restrictions on Future Land Development
    - Loss of Business
    - Reduced Property Values
- Alt 7 – "Regional Treatment"
  - Regional, Centralized Treatment Plant with Bliss and/or Wendell
    - Both of These Communities Recently Improved Their Treatment Facilities
    - Not Likely to Consider Regional Treatment
  - Extensive Pumping and Transmission Infrastructure and Costs
  - Administratively Difficult

J U B ENGINEERS, Inc.

Treatment Facilities Cost Summary (2014 Dollars)

Item	Alt 1 – Lagoons and Land Application [C]	Alt 2 – Lagoons and RI Basins [A,C]	Alt 3 – Total Containment/ Evaporative Lagoons [A,C]	Alt 4 – Mechanical Treatment and RI Basins [A,C]	Alt 5 – Mechanical Treatment and River Discharge
Total Project Capital Costs	$7.6M (Alt 1A) $12.3M (Alt 1B)	$4.4M	$9.1M	$15.3M	$15.4M
20-Year Present Worth of O&M Costs	$2.0M	$0.8M	$1.4M	$3.4M	$4.4M
Total Present Worth	$9.6M (Alt 1A) $14.3M (Alt 1B)	$5.2M	$10.5M	$18.7M	$19.8M
First Year O&M Costs	$115,400	$46,100	$87,500	$196,400	$262,300

A – Based on two (2) miles of piping to the disposal site.
B – Costs include estimates for contractor mobilization/demobilization and administration, bonding, Davis-Bacon wages, contingencies, engineering design/construction services, legal and administration, and interim financing.
C – Includes land costs.

J-U-B ENGINEERS, Inc.

Cost Summary

Item	Alt 1 – Lagoons and Land Application	Alt 2 – Lagoons and RI Basins	Alt 3 – Total Containment/ Evaporative Lagoons	Alt 4 – Mechanical Treatment and RI Basins	Alt 5 – Mechanical Treatment and River Discharge
Replace Lift Station 1	$530,000	$530,000	$530,000	$530,000	$530,000
Replace Lift Station 2	$517,000	$517,000	$517,000	$517,000	$517,000
Rehabilitate Lift Station 3	$33,000	$33,000	$33,000	$33,000	$33,000
6" Pressure Main to LS 2	$489,000	$489,000	$489,000	$489,000	$489,000
8" Gravity Sewer to LS 2	$226,000	$226,000	$226,000	$226,000	$226,000
Wastewater Treatment	$7,566,000 (Alt 1A) $12,278,000 (Alt 1B)	$4,359,000	$9,095,000	$15,288,000	$15,392,000
Total Capital Costs	$9,361,000 (Alt 1A) $14,073,000 (Alt 1B)	$6,154,000	$10,890,000	$17,083,000	$17,187,000
Estimated Monthly User Rate [A]	*$78 - $105 (Alt 1A)* *$95 - $135 (Alt 1B)*	*$56 - $73*	*$79 - $110*	*$119 - $168*	*$130 - $179*

A – Based on a loan at 2.5% over 40 years and grant amounts of 10% and 50%.

J-U-B ENGINEERS, Inc.

What's Next?

- Public Comment Period
- Selection of Preferred Improvement(s)
- Complete Facilities Plan Report
- Bond Election (November 2014)
- Environmental Review
- Grant and Loan Applications
- Further Site Evaluations
- Land Acquisition

J U B ENGINEERS, Inc.

QUESTIONS?

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mholtzen@jub.com

J-U-B ENGINEERS, INC.

THE LANGDON GROUP

GATEWAY MAPPING INC.

OTHER J-U-B COMPANIES

CITY OF HAGERMAN
Wastewater Facility Improvements

Public Open House: October 22, 2014

J-U-B ENGINEERS, INC.

THE LANDDON GROUP

GATEWAY MAPPING INC.

Existing Treatment Facilities

Influent Flows and Waste Loads

Parameter	Units	Existing	Projected (2034) A
Average Day	gpd	127,000	213,200
Max Month	gpd	196,900	330,500
Peak Day	gpd	288,300	426,400
Peak Hour	gpd	485,100	780,300
Avg. Per-Capita	gpd	135	135

A – Projections based on a 2.5% annual growth rate.

J-U-B ENGINEERS, Inc.

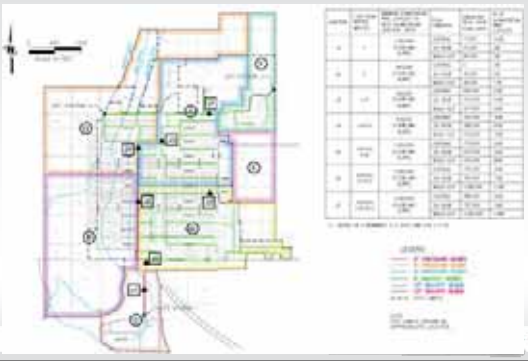
Influent Flows and Waste Loads

Parameter	Units	BOD_5	TSS	Total Phosphorus	Ammonia	Total Nitrogen [B]
Existing						
Average Day	lbs/d	184	162	5.2	18.5	37.1
Max Month	lbs/d	298	293	7.8	22.9	46.0
Peak Day	lbs/d	493	436	12.2	30.5	61.2
Projected (2034) [A]						
Average Day	lbs/d	316	268	8.7	31.6	64.7
Max Month	lbs/d	512	485	13.1	39.2	80.2
Peak Day	lbs/d	847	721	20.4	52.1	106.8

A – Projections based on a 2.5% annual growth rate.
B – Based on literature values.

J U B ENGINEERS, Inc.

Collection System Evaluation

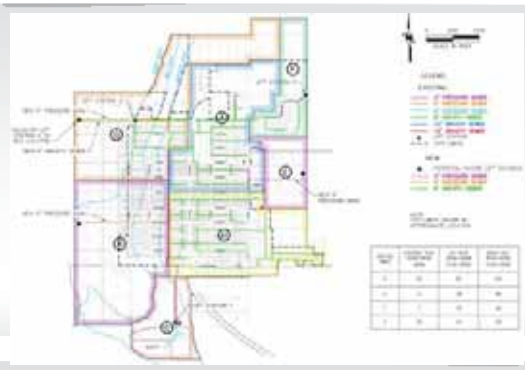


Collection System Improvements

- Clean and Video Inspect Collection System
  - $69,600 for Entire Collection System
  - Can be Phased Over Time
- Address I&I through Spot Repairs

J-U-B ENGINEERS, Inc.

Lift Station Locations



Lift Station Evaluation

Lift Station	Condition	Capacity/Redundancy				
		Capacity of Each Pump (gpm)	Peak Hour Flow (gpm)	Does Each Pump Have Adequate Capacity?	Adequate Flow Measurement Device?	Adequate Back-Up Power?
Lift Station 1	Deteriorated, approaching useful service life	285 - 330	327 (existing) 542 (20-year)	✗	✗	✓
Lift Station 2	Deteriorated, approaching useful service life	100	34 (existing) 57 (20-year)	✓	✗	✓
Lift Station 3	Acceptable	80	7 (existing) 33 (20-year)	✓	✗	✗

✓ Indicates existing system is adequate

✗ Indicates an observed deficiency in the existing system

✓ Indicates existing system meets regulations, but improvements are recommended

HDR ENGINEERS, Inc.

Lift Station Improvement Alternatives

Alternative	Description
1	Replace Lift Stations 1 and 2
2	Rehabilitate Lift Stations 1, 2, and 3
3	"Do-Nothing"

HDR ENGINEERS, Inc.

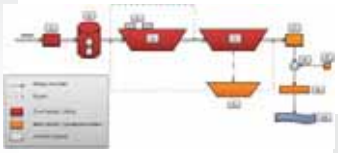
Lift Station Cost Summary (2014 Dollars)

	Lift Station 1	Lift Station 2	Lift Station 3
Alternative 1 (Replacement)	$530,000 - $559,000	$517,000 - $550,000	-
Alternative 2 (Rehabilitation)	$458,000	$423,000	$33,000
6” Pressure Main	-	$489,000	-
8” Gravity Main	-	$226,000	-

A - Costs include estimates for contractor mobilization/demobilization and administration, bonding, Davis-Bacon wages, Buy-American, contingencies, engineering design/construction services, legal and administration, and interim financing.

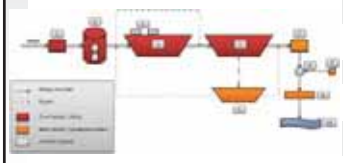
J U B ENGINEERS, Inc.

Treatment Facility Evaluation



Item	Description	Observed Deficiencies
1	Influent Flow Monitor	• Projected peak hour flows exceed 8” Palmer Bowlus flume capacity. • Current pumping capacity exceeds 8” Palmer Bowlus flume capacity.
2	Lift Station 1	• Existing mechanical equipment is deteriorated. • Projected peak hour flows exceed pump capacity. • Pumps periodically clog because there is no screening of the influent flow. • No flow measurement device. • No permanent back-up power, which is critical because this pump station receives the entirety of the city’s flow.
3	Cell #1	• HRT’s are approaching typical design values under projected maximum month flow conditions. • Organic loadings to facultative portions of lagoon exceed typical design values under projected maximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
4	Surface Aerators	• Aerators periodically clog because there is no screening of the influent flow.

Treatment Facility Evaluation



Item	Description	Observed Deficiencies
5	Cell #2	• Organic loadings to exceed typical design values under projected maximum month flow conditions in winter. • Lagoons cannot consistently and reliably meet NPDES permit conditions.
6	Rock Filter	• Algae and other solids plug rock filter, rendering it unusable on a consistent basis.
7	Effluent Flow Monitor	• None.
8	Chlorine Injection Manhole	• None.
9	Chlorine Injection Pump	• Insufficient capacity to pump the estimated maximum chlorine dose under projected peak flow conditions.
10	Outfall Pipeline	• Hydraulic pressures approaching typical maximum joint pressure rating, particularly at projected peak hour flows. This may result in joint leaks.
11	Snake River	• Lagoons cannot consistently and reliably meet NPDES permit conditions.

J-U-B ENGINEERS, Inc.

NPDES Permit Compliance

Parameter	Units	Non-Compliance Events (2009 through 2013)			
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum
BOD_5	mg/L	*4*	*1*	-	-
	lbs/d	0	0	-	-
TSS	mg/L	*5*	*5*	-	-
	lbs/d	*12*	*9*	-	-
BOD_5 Percent Removal	%	*6*	-	-	-
TSS Percent Removal	%	*14*	-	-	-
E. Coli	cfu/100 mL	*6*	-	-	-
Total Residual Chlorine	ug/L	0	-	0	-
	lbs/d	0	-	0	-
Total Phosphorus	lbs/d	0	*1*	-	-
Total Ammonia-N	mg/L	-	-	-	-
Temperature	°C	-	-	-	-
pH	s.u.	*13*			

City Received Notice of Violation and Fine from EPA

J U B ENGINEERS, Inc.

Treatment Facility Improvement Alternatives

Alternative	Description
1	Treatment Lagoons, Winter Storage, and Land Application
2	Treatment Lagoons and Rapid Infiltration Basins
3	Total Containment Evaporative Lagoons
4	Mechanical Treatment and Rapid Infiltration Basins
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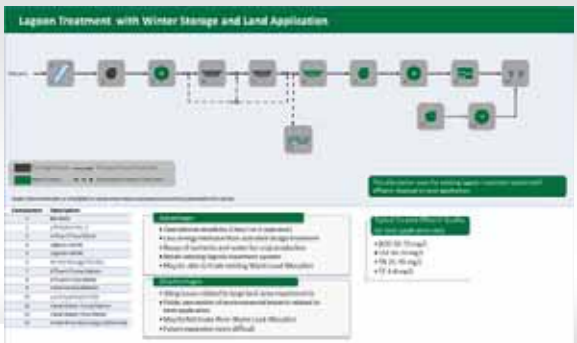
6	"Do-Nothing"
7	Regional Treatment

J-U-B ENGINEERS, Inc.

Alternative 1 – Treatment Lagoons, Winter Storage and Land Application



Alternative 1 – Treatment Lagoons, Winter Storage and Land Application

J U B ENGINEERS, Inc.

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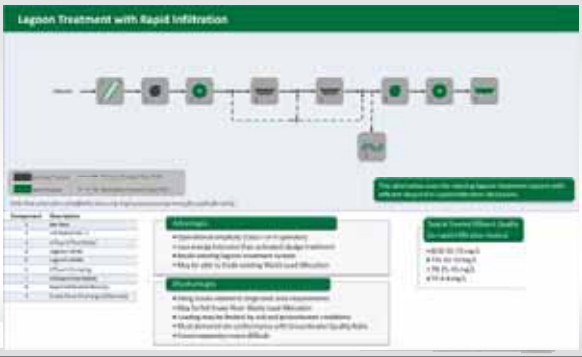
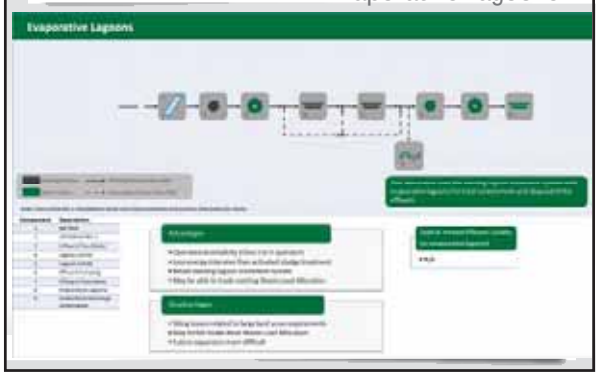


Alternative 2 – Treatment Lagoons and Rapid Infiltration Basins

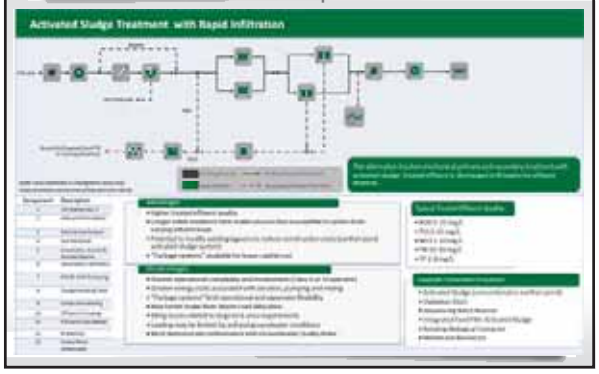
J-U-B ENGINEERS, Inc.

Alternative 3 – Total Containment Evaporative Lagoons



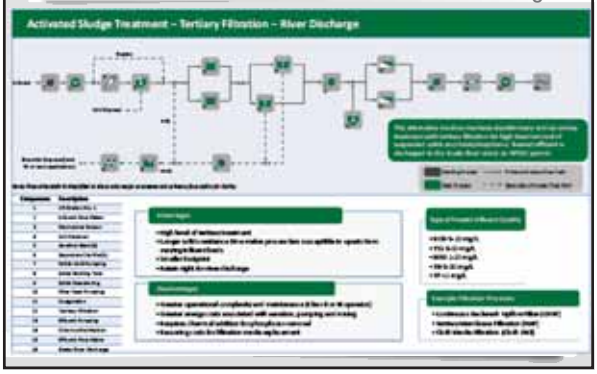
Alternative 3 – Total Containment Evaporative Lagoons

Alternative 4 – Mechanical Treatment and Rapid Infiltration Basins



Alternative 4 – Mechanical Treatment and Rapid Infiltration Basins

Alternative 5 – Mechanical Treatment and Snake River Discharge



Alternative 5 – Mechanical Treatment and Snake River Discharge

Alternatives 6 and 7

- Alt 6 – "Do-Nothing"
  - No Improvements to Treatment Facilities
  - Continued Non-Compliance with NPDES Permit is Likely
    - Possible Enforcement Action by EPA (Fines, Civil/Administrative, Criminal)
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- Alt 7 – "Regional Treatment"
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    - Both of These Communities Recently Improved Their Treatment Facilities
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J U B ENGINEERS, Inc.

Treatment Facilities Cost Summary (2014 Dollars)

Item	Alt 1 – Lagoons and Land Application [C]	Alt 2 – Lagoons and RI Basins [A,C]	Alt 3 – Total Containment/ Evaporative Lagoons [A,C]	Alt 4 – Mechanical Treatment and RI Basins [A,C]	Alt 5 – Mechanical Treatment and River Discharge
Total Project Capital Costs	$8.0M (Alt 1A) $12.5M (Alt 1B)	$4.6M	$9.4M	$16.7M	$16.0M
20-Year Present Worth of O&M Costs [D]	$2.0M	$0.8M	$1.4M	$4.1M	$4.9M
Total Present Worth	$10.0M (Alt 1A) $14.5M (Alt 1B)	$5.4M	$10.8M	$20.8M	$20.9M
First Year O&M Costs	$115,400	$46,100	$87,900	$267,650	$284,400

A – Based on two (2) miles of piping to the disposal site.
B – Costs include estimates for contractor mobilization/demobilization and administration, bonding, Davis-Bacon wages, contingencies, engineering design/construction services, legal and administration, and interim financing.
C – Includes land costs.
D – Includes equipment replacement costs.

J-U-B ENGINEERS, Inc.

Cost Summary

Item	Alt 1 – Lagoons and Land Application	Alt 2 – Lagoons and RI Basins	Alt 3 – Total Containment/ Evaporative Lagoons	Alt 4 – Mechanical Treatment and RI Basins	Alt 5 – Mechanical Treatment and River Discharge
Replace Lift Station 1	$530,000	$530,000	$530,000	$530,000	$530,000
Replace Lift Station 2	$517,000	$517,000	$517,000	$517,000	$517,000
Rehabilitate Lift Station 3	$33,000	$33,000	$33,000	$33,000	$33,000
6" Pressure Main to LS 2	$489,000	$489,000	$489,000	$489,000	$489,000
8" Gravity Sewer to LS 2	$226,000	$226,000	$226,000	$226,000	$226,000
Wastewater Treatment	$7,955,000 (Alt 1A) $12,439,000 (Alt 1B)	$4,605,000	$9,360,000	$16,719,000	$15,984,000
Total Capital Costs	*$9,750,000 (Alt 1A)* *$14,234,000 (Alt 1B)*	*$6,400,000*	*$11,155,000*	*$18,514,000*	*$17,779,000*
Estimated Monthly User Rate [A]	*$79 - $107 (Alt 1A)* *$96 - $136 (Alt 1B)*	*$56 - $74*	*$80 - $112*	*$130 - $183*	*$135 - $186*

A – Based on a loan at 2.5% over 40 years and grant amounts of 10% and 50%.

J-U-B ENGINEERS, Inc.

What's Next?

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