ENVIRONMENTAL INFORMATION DOCUMENTS

FOR THE

CITY OF POTLATCH REGIONAL WASTEWATER TREATMENT SYSTEM

REVISED AUGUST 25, 2011

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Engineering Information Documents
City of Potlatch Wastewater Treatment System
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STATE OF IDAHO
DEPARTMENT OF ENVIRONMENTAL QUALITY

WASTEWATER PLANNING GRANT

OUTLINE AND CHECKLIST FOR ENVIRONMENTAL INFORMATION DOCUMENTS (EIDs)

General Information

Name of Wastewater System City of Potlatch
Name of Project Potlatch Regional Wastewater Treatment System
Date May 13, 2011

SECTION A: COVER SHEET

✓	Is the project properly identified with the applicant's name, address, and project number? No project number	
✓	Is the project contact person named on the cover sheet, along with his address and phone number?	
✓	Are project costs and funding sources provided in such a way that it is clear what the project will cost and how it will be funded? A recommended format for showing the costs and funding follows:	
	Estimated Construction Costs	
	Collection system	$
	Treatment facility	$
	Lift stations	$
	Total Estimated Costs	$
	DEQ Share	$
	Other Share	$
	TOTAL FUNDING	$
✓	Is the EID a stand-alone chapter or appendix? Stand-alone	
✓	Does the cover sheet provide information about the estimated user costs	

	of the project? Recommended format for this section is as follows: "The existing user charge is ____ per month and the debt service charge is ____ per month. This project would increase the user charge by ____ per month and debt service charge by ____ per month. The total monthly cost per household after the project is in operation will therefore be ____ per month."
✓	Does the cover sheet provide a one-paragraph abstract of the EID?

SECTION B: PURPOSE AND NEED FOR THE PROPOSED PROJECT

✓	Does the document provide a clear discussion of the need for the proposed facility relative to public health and water quality problems and other concerns?

SECTION C: ALTERNATIVES INCLUDING THE PROPOSED ACTION

✓	Does the document briefly describe all alternatives studied in the planning document, including the "No Action" alternative?
✓	Does the document discuss low-cost alternative technologies if the project will be built in a small community?
✓	Does the document compare the alternatives with respect to relevant environmental impacts and capital and operating cost?
✓	Does the document discuss the apparent best alternative in detail? Including:
✓	• Primary treatment and collection methods.
✓	• Location of proposed new facilities.
✓	• Method of effluent and sludge disposal.
✓	• Permit requirements.
✓	If the selected alternative is not the most cost-effective one, does the document provide a justification for this?

SECTION D: AFFECTED ENVIRONMENT

✓	Is a description of the project planning area included in the document? Characterize the planning area included under the facility study effort. Describe the planning area boundaries and key topographic and geographic features of the area. Also discuss population distribution and industrial and commercial features of the planning area.

	Are the major features of the proposed project described?
✓	• Describe the length, diameter, and type of material for distribution lines.
✓	• Describe the number, size, depth, and location of the collection system and related equipment and structures.
✓	• Describe the location and type of treatment facilities.
✓	• Describe any planned new or upgrade construction.
	• If relevant, explain how the wastewater project fits into a regional plan.
✓	Are flow projections described for existing and projected (20-year) wastewater flows (40- years for collection)? Is the contribution of flow from residential, commercial, and industrial sources characterized?
✓	Are pertinent natural and manmade features relating to environmental impacts identified? This section of the EID constitutes the heart of the environmental review of any wastewater construction project. It is this information that will be most important in determining whether a full environmental impact statement (EIS) will be required. It is important at this point to identify all features of the environment that will in any way be affected by the proposed project. Both direct and indirect impacts must be considered. Also, any means of reducing or eliminating adverse impacts must be proposed for implementation during the design and construction portions of the project. Below is a listing of major manmade and natural features that should be considered for each project. Questions relevant to each feature are included. These should be answered when appropriate and additional information provided when necessary in the extra space provided. Much of the information provided in Section D of the EID can be referenced in completing the section entitled, "ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT." Alternatively, the community may wish to combine Sections D and F of the EID outline into one section in the final EID.

	a. Physical Aspects (Topography, Geology, and Soils):
✓	• Are there physical conditions (e.g., steep slopes, shrink–swell soils, etc.) that might be adversely affected by or might adversely affect construction of the facilities?
✓	• Are there similar physical conditions in the planning area that might make development unsuitable?
✓	• Are there any unusual or unique geological features that might be affected?
✓	• Are there any hazardous areas (slides, faults) that might affect construction or development?

	Discussion: No significant geologic or hazardous areas exist that will affect the construction of the land application
	b. Climate
✓	• Are there any unusual or special meteorological constraints in the planning area that might result in an air quality problem?
✓	• Are there any unusual or special meteorological constraints in the planning area that affect the feasibility of the proposed alternative?
	Discussion: N/A
	c. Population
✓	• Are the growth rates excessive (exceeding 30 % for the 20-year planning period)?
✓	• Do the plans call for sufficient extra capacity?
	Discussion: See report
	d. Economics and Social Profile
✓	• Does documentation exist that suggests that the local populace can afford to build the project?
✓	• Will certain landowners benefit substantially from the development of land due to trunk line routing or wastewater treatment plant location and size?
✓	• Will the facilities adversely affect land values?
✓	• Are any poor or disadvantaged groups adversely affected by this project?
	Discussion:
	e. Land Use
✓	• Is the location of the wastewater treatment plant or other facilities incompatible with local land use plans?
✓	• Will inhabited areas be adversely impacted by the project construction project?
✓	• Will new development stimulated by a new wastewater facility have adverse effects on older, existing land uses (agriculture, forestland,

	etc.)?
✓	• Will this project contribute to changes in land use in association with recreation, mining, or other large industrial or energy development?
	Discussion:
	f. Floodplain Development
✓	• Has the community determined if any part of the planned wastewater project will be located within the 100-year floodplain?
✓	• If some part of the planned wastewater facility will be located within the 100-year floodplain, and no practicable alternative to this exists, has the community indicated that measures will be included in the design of the facilities to minimize or avoid adverse effects to the floodplain?
✓	• Will the facility be able to fully function and operate during the 100-year flood event?
✓	• If the 100-year floodplain will be impacted by the proposed project, has the community indicated how the public will be notified of this and how public input will be recorded?
✓	• If the project or some part of it will be in the 100-year floodplain is the grantee currently participating in the National Flood Insurance Program?
	Discussion:
	g. Wetlands
✓	• Is any portion of the project planning area located within wetlands as defined and mapped by the U.S. Fish and Wildlife Service or as determined through site visits by the U.S. Corps of Engineers, the Soil Conservation Service, or a private consultant?
✓	• Will part of the proposed project be located in or affect wetlands, as determined by maps and/or site investigations?
✓	• Will a 404 dredge and fill permit be required from the U.S. Army Corps of Engineers? No
✓	• Have alternatives to keeping the project outside the identified wetlands been proposed in the EID or facility plan?
✓	• If part of the proposed project will be located in an identified wetland, and no practicable alternative exists, has a wetlands assessment of measures to minimize adverse affects been made?

	Discussion:
	h. Wild and Scenic Rivers
✓	• Does the planning area contain a designated or proposed wild and scenic river? No
	Discussion:
	i. Cultural Resources
✓	• Has the State of Idaho Historic Preservation Officer been consulted to determine if there are any properties (historic, architectural, or archaeological) in the planning area that are listed, or eligible for listing, on the National Register of Historic Places?
✓	• If cultural resources have been identified in the project area, will the project have direct or indirect adverse impacts on any listed or eligible property?
✓	• Have all Native American tribes with ancestral jurisdiction in the proposed project area been consulted about possible historic or religious properties?
✓	• Has the community developed mitigation measures to avoid or reduce adverse impacts to historic, tribal, and cultural resources identified in the proposed project area?
	Discussion: construction monitoring will occur within 100-ft of dump area as outline in CRS
	j. Flora and Fauna
✓	• Has the U.S. Fish and Wildlife Service been consulted concerning threatened and endangered species that may inhabit the proposed project site?
✓	• Are there any designated threatened or endangered species or habitats in the planning area?
✓	• Will the project have direct or indirect adverse impacts on any such designated species or habitats?
✓	• Will the project have direct or indirect adverse impacts on other fish and wildlife, or their habitats, including migratory routes, wintering, or calving areas?
✓	• Does the planning area include a sensitive habitat area designated by a local, state, or federal wildlife agency?

	Discussion: No effect
	k. Recreation and Open Space
✓	• Will the project eliminate or modify recreational open space, parks, or areas of recognized scenic or recreational value?
✓	• Is it feasible to combine the project with parks, bicycle paths, hiking trails, waterway access, and other recreational uses?
	Discussion: No effect
	l. Agricultural Lands
✓	• Does the planning area contain any environmentally significant agricultural lands (prime, unique, statewide importance, local importance, etc.) as defined in the EPA Policy to Protect Environmentally Significant Agricultural Lands, dated September 8, 1978?
✓	• If yes, will the project directly or indirectly encourage the irreversible conversion of environmentally significant agricultural lands to uses that result in the loss of these lands as an environmental or essential food production resource?
	Discussion: No effect see Land Use as well
	m. Air Quality
✓	• Will there be any direct air emissions from the project (as from construction equipment) which will <u>not</u> meet federal and state emission standards contained in the State Air Quality Implementation Plan (SIP)?
✓	• Is the project service area located in an area without an approved or conditionally approved SIP?
✓	• Does the project violate national ambient air quality standards in an attainment or unclassified area?
✓	• Will the facilities cause odor or noise nuisance problems?

	Discussion:
	n. Energy
✓	• Are there additional cost-effective measures to reduce energy consumption or increase energy recovery that could be included in the project?
✓	• Have air quality issues of energy recovery been addressed?
	Discussion:
	o. Regionalization
✓	• Are there jurisdictional disputes or controversies over the project?
✓	• Have intermunicipal agreements been signed?
✓	• Have intermunicipal agreements been discussed with surrounding communities?
	Discussion:

SECTION E: MAPS, CHARTS, AND TABLES

✓	Do maps, charts, and other graphic materials used in the EID help the reader clearly discern project features?
✓	Are all graphs, charts, tables, and other graphics clearly labeled and referenced properly in the text of the EID?

SECTION F: ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

✓	Are the direct and indirect impacts of the project upon manmade and natural features clearly identified and is mitigation provided? (Refer to Section D of this checklist.)
✓	Are additional potential or existing impacts that are worthy of discussion in the EID noted?
✓	Are there obvious areas of impact that have not been considered in this evaluation? List them below.
✓	Have unavoidable adverse impacts that cannot be fully mitigated been listed and discussed?

SECTION G: MEANS TO MITIGATE ADVERSE ENVIRONMENTAL IMPACTS

✓	Have mitigation measures been clearly listed?
✓	Have means of achieving mitigation measures and monitoring their implementation been given?

SECTION H: PUBLIC PARTICIPATION

✓	Has the public been given at least 21 days to review the proposed project and environmental impacts?
✓	Have dates and meeting locations for all public hearings and meetings concerning the facility plan and EID been described in the EID?
✓	Have all issues raised by the public in meetings and hearings and by correspondence been described in the EID?
✓	Have public concerns been addressed in the final facility plan and EID?
✓	Have significant comments received from state and federal agencies been described and considered in the final facility plan and EID?

SECTION I: REFERENCES CONSULTED

✓	Is there a list of all reference documents consulted in preparation of the EID?

SECTION J: AGENCIES CONSULTED

✓	Is there a list of all agencies consulted during the preparation of the EID?

SECTION K: MAILING LIST

✓	Has a mailing list been included in the EID?
✓	Does the mailing list include the names and addresses of all attendees of public meetings, affected local residents, relevant environmental groups, DEQ and local officials, and agencies consulted?

1. PROJECT DESCRIPTION

The proposed project is a wastewater reuse (land application) system for the City of Potlatch, Idaho. With its National Pollutant Discharge Elimination System (NPDES) Permit recently expired and the potential for more stringent discharge requirements in the next permit, the City is proposing improvements to its current wastewater treatment facility to help it meet these new regulations.

After careful analysis of many options was made in the February 2011 *Wastewater Facilities Plan Addendum* (refer to Appendix A), the choice that was best suited to the Potlatch area was River Discharge plus Land Application on Potlatch Corp. Land south of the river.

The proposed project site lies adjacent to and east of the existing sewage lagoons and south of the Palouse River. The City is in the process of acquiring 52.6 acres of land from the Potlatch Corporation. The project will disturb approximately 17 acres to install and operate a slow-rate land application / irrigation disposal of recycled water (treated effluent) from the lagoons.

Total estimated cost of this recycled water distribution project is $1,207,988, including land acquisition. Funding will come from multiple sources:

DEQ Loan #WW 0904:	$ 166,068		
DEQ Loan, 2011	591,920		
Total DEQ Share	$ 757,988	Other Share:	$450,000
		(Community Development Block Grant)	
Total Funding	$1,207,988		

The existing user charge for operation and maintenance in the City of Potlatch is $19.23 per month, and for debt service is $25.18. The new user charge for operation and maintenance in the City of Potlatch will be $21.43 per month, and the new debt service charge will be $32.25 per month, a total increase of $9.27 per month.

There are 416 sewer connections in the City of Potlatch and 100 in the Onaway Water and Sewer Association (OWASA), and user charges vary in these two communities. Potlatch residents currently pay $45.00 per month for sewer, and this project would increase the sewer rate to around $49.20 per month. Refer to Section 5.4 in the *Facilities Plan Addendum* (Appendix A) for more details on funding options and cost break down.

ABSTRACT: The following narrative satisfies the requirements of the Idaho Department of Environmental Quality (IDEQ) Environmental Information Documents (EIDs) and outlines the environmental impact of the proposed project on the surrounding areas. Discussion includes the need for the proposed facility and its impact on air, water, land, plants, and wildlife, among others. In addition, mitigation measures will be discussed.

2. PURPOSE AND NEED FOR THE PROPOSED PROJECT

Numerous discharge violations have occurred over the years from the existing lagoon discharge facility. These violations were the result of exceeding E. coli, Biochemical Oxygen Demand (BOD), and Total Suspended Solids (TSS) discharge limits. The proposed project would improve water quality and public health for the area by (1) reducing the amount of wastewater discharged into the Palouse River and (2) further treating effluent downstream of the lagoons by land application. This would result in improved compliance with the City's NPDES permit and reductions in discharges of BOD, TSS, E. coli, and residual chlorine.

The City's NPDES permit expired March 31, 2010, but was extended via a 4/7/10 letter from the EPA. It is a "30/45" permit, meaning the average monthly limit for BOD and TSS cannot exceed 30 mg/litre nor 45 mg/l, respectively. The permit includes average monthly limits for E. coli of 126/100 ml and total residual chlorine of 0.02 mg/l.

3. ALTERNATIVES INCLUDING THE PROPOSED ACTION

Alternatives that were considered in the *Facilities Plan Addendum* (Appendix A) are summarized below.

A. Hybrid System I – River Discharge plus Large Soil Absorption System (LSAS) –

This alternative consists of a combination of river discharge and a Large Soil Absorption System. The LSAS is the same type of system that the City submitted to the Health District in February 2010, but smaller. It would be constructed on 20 acres of Potlatch Corporation land south of the Palouse River and east of the lagoons, and would utilize subsurface disposal in May thru November, and possibly year-round. River discharge would continue under the current NPDES permit (discharge permitted November thru July) but at a lesser rate. This option was determined to be not feasible due to inadequate soil conditions for LSAS.

B. Hybrid System II – River Discharge plus Land Application on Potlatch Corp. Land - South of Palouse River

This alternative utilizes the lagoons for storage and treatment, but uses slow-rate land application (irrigation) to dispose of the recycled water. The land application would occur on 20 acres of land south of the Palouse River with additional acreage available for replacement area. A Water Balance concept utilizes the existing lagoons for storage in the winter months, opposite of how the City currently utilizes them. Wastewater would continue to enter the lagoons throughout the year, and the facultative lagoons will still provide treatment. Lagoon levels will peak around May, when irrigation resumes, but would be drawn down by the end of the irrigation season (i.e. October). Discharge into the river will decrease, but is still required during high flow periods, so the NPDES permit must be retained. In addition a Re-Use permit will be required from IDEQ.

C. Land Application – Potlatch Corporation Land - North Side of Palouse River

This alternative also utilizes the lagoons for storage and treatment, but uses slow-rate land application to dispose of the recycled wastewater on 27 acres of land north of the Palouse River. Land application could be in the form of spray irrigation, overland flow or constructed wetlands.

The fact that most of the land has a high water table and is within the floodplain hurts the expected disposal rate, but it also reduces the possibility that the land can be developed for commercial or industrial uses. The slopes are flat and hydraulically downgradient from the City's Ballfield Well, but the site is across the river from the lagoons (another force main may be required under the river).

D. Land Application – Beckner Property

This alternative still utilizes the lagoons for storage and treatment, but the treated wastewater would be applied to the land instead of being discharged into the river. The effluent would be pumped approximately ½ mile to the southwest of the lagoons.

The Beckner site is out-of-sight from the public eye, helping to minimize concerns over odors and aerosol drift. However, after a September 2010 meeting with the City, the Beckners did not seem inclined to part with their property. In addition, the slopes are steep (problematic for irrigating), and the site is ½-mile away (long pipe run, increased travel time for O&M) and 160 feet above (increased pumping costs) the existing lagoons.

E. Hybrid System III – River Discharge, Small LSAS, and Land Application

This alternative uses a combination of river discharge, Large Scale Absorption System, and Land Application. A small (10-acre) LSAS system and a small (10-acre) land application system constructed on 50 acres of Potlatch Corp land south of the river would dispose of wastewater in June thru October (and possibly year-round). Discharge into the Palouse River would continue in the 'winter' months but at a lesser rate.

This alternative is dismissed as "too complicated." Three disposal systems would be put into play, meaning three disposal permits and roughly 3 times the maintenance. This alternative would not be cost-effective for the City.

F. Mechanical Treatment

This would be a much smaller (no land required) but likely more expensive alternative. There are many capable manufacturers of mechanical systems and 'packaged' plants (built in modules at their factory and assembled on site). This may include aeration equipment, recirculating sand or gravel filters, or other methods to reduce ammonia and/or phosphorus. Mechanical treatment would provide a greater degree of treatment, and prove more reliable than the lagoons, but would require more intense O&M and would still discharge into the river.

This alternative cannot be fairly evaluated without knowing the effluent limits in the next NPDES permit.

G. Do Nothing Alternative

This alternative would be to do nothing to improve the existing facilities. Not feasible due to potential for future violations, including monetary penalties and inability to renew NPDES discharge permit. In addition, public health and adverse environmental impacts would result from not addressing discharge limitations.

Table 3-1 includes a brief summary of the pros and cons of each alternative. Table 3-2 gives a cost analysis for the three alternatives that were chosen for closer analysis.

Table 3-1
Pros & Cons of the Alternatives

Alternative	PROS	CONS
A. Hybrid System I: River Discharge plus LSAS	- Minimal aesthetic or visual impacts - Reduces impacts to Palouse River - Land owner is willing to sell	- Disposal permit required from Health District - Additional operator training required - Requires land acquisition - Some filter maintenance required - Very few facilities in Idaho / difficult to find operation & maintenance assistance - Steep slopes and restrictive soils require attention
B. Hybrid System II: River Discharge + Land Application on Potlatch Corp. land south of river	- Low capital cost - Reduces impacts to Palouse River - Land owner is willing to sell - Common disposal method / easy to find operation & maintenance assistance	- Re-Use permit required from DEQ - Additional operator training required - Requires land acquisition - Steep slopes and restrictive soils require attention
C. Land Application on Potlatch Corp. land north of river	- Land owner is willing to sell - Puts vacant / undesirable industrial land to beneficial use - Reduces impacts to Palouse River	- Engineering challenge to get treated wastewater to north side of river economically - Entire area within 100-year floodplain - Potential impacts on ground water - High seasonal water table and restrictive soils - Environmentally challenging site - High capital cost
D. Land Application on Beckner Property	- Minimal aesthetic or visual impacts - No wetlands or floodplain issues - Reduces impacts to Palouse River	- Land owner is not willing to negotiate - Removes farmland from typical production - Engineering challenge to pump treated wastewater to site
E. Hybrid System III: River Discharge, LSAS, and Land Application	- Land owner is willing to sell - Reduces impacts to Palouse River	- Disposal permit required from Health District and Re-Use permit required from DEQ, in addition to NPDES permit (too complicated) - Considerable operator training required - High maintenance costs
F. Mechanical Treatment	- Efficient treatment - No land acquisition necessary - Dependable & reliable - Reduces impacts to Palouse River	- High capital cost - Expensive equipment - Additional operator training required - Potentially higher maintenance costs
G. Do Nothing Alternative	- Low or no costs (compared to Alternatives A thru F) - Low maintenance	- Risk of continued permit violations - Increased City liability - Potential impacts on surface water

Table 3-2
Project Cost Matrix

	A River Discharge plus LSAS on Potlatch Land south of river	B River Discharge plus Land App on Potlatch Land south of river	C Land App on Potlatch Land north of river
Construction Costs			
Site Prep	$127,000	$116,000	$330,400
Treatment Plant Upgrades	$0	$0	$100,000
Headworks and Piping	$63,600	$63,600	$43,380
Disposal System	$542,400	$269,300	$390,400
Site Finishes	$329,700	$319,900	$322,200
Subtotal	$1,062,700	$768,800	$1,186,380
Contingency (15%)	$159,405	$115,320	$177,957
Subtotal, Construction Costs	**$1,222,105**	**$884,120**	**$1,364,337**
Land Acquisition Costs	**$157,800**	**$157,800**	**$108,000**
Engineering Costs			
Design & Bidding Services	$43,108	$43,108	$135,000
Construction Management & Inspection	$122,960	$122,960	$189,000
Total Project Costs	**$1,545,973**	**$1,207,988**	**$1,796,337**

It should be noted that the Project Cost Matrix above compares only the alternatives that were found to be viable options considered for further review. The seven alternatives in the *Facilities Plan Addendum* (Appendix A) were evaluated for feasibility and four of the seven were not feasible. Alternative D was not chosen due to the land owner's unwillingness to sell property or negotiate. Alternative E was deemed inappropriate due to complicated permitting and operating concerns. Alternative F was removed from further analysis due to the high cost of the system, maintenance and training. Alternative G would not work because of the continued risk of permit violations. The remaining three alternatives were analyzed using the Project Cost Matrix in Table 3-2.

Based on the cost analysis, pros and cons analysis, the descriptions provided above and the analysis provided in Chapter 4 of the *Facilities Plan Addendum* (Appendix A), the alternative that was chosen is Hybrid System II, designated as **Alternative B - River Discharge plus Land Application on Potlatch Corp. Land south of the river**. In addition, this option was the least expensive.

Land Application is more widely used and therefore a more proven / less risky method than LSAS. According to the analyses, **Alternative B - River Discharge plus Land Application on Potlatch Corp. Land south of the river** has lower initial cost, lower O&M costs, minimal environmental issues, and is therefore recommended. This recommendation is strengthened due to the fact that Potlatch has had numerous discharge violations over the years and a more dependable, low maintenance system is overdue and needed. A Re-Use Permit pre-application has been initiated with IDEQ and the Re-Use permit will be in place prior to land application. The current NPDES permit will be retained.

Figure 3-1 shows the schematic layout of the treatment facility and collection lines while Figure 3-2 shows the proposed geographic location of the facility. Chapter 4 of the *Facilities Plan Addendum* (Appendix A) discusses why the other alternatives are not considered viable, while Chapter 5 summarizes why the proposed option was chosen.

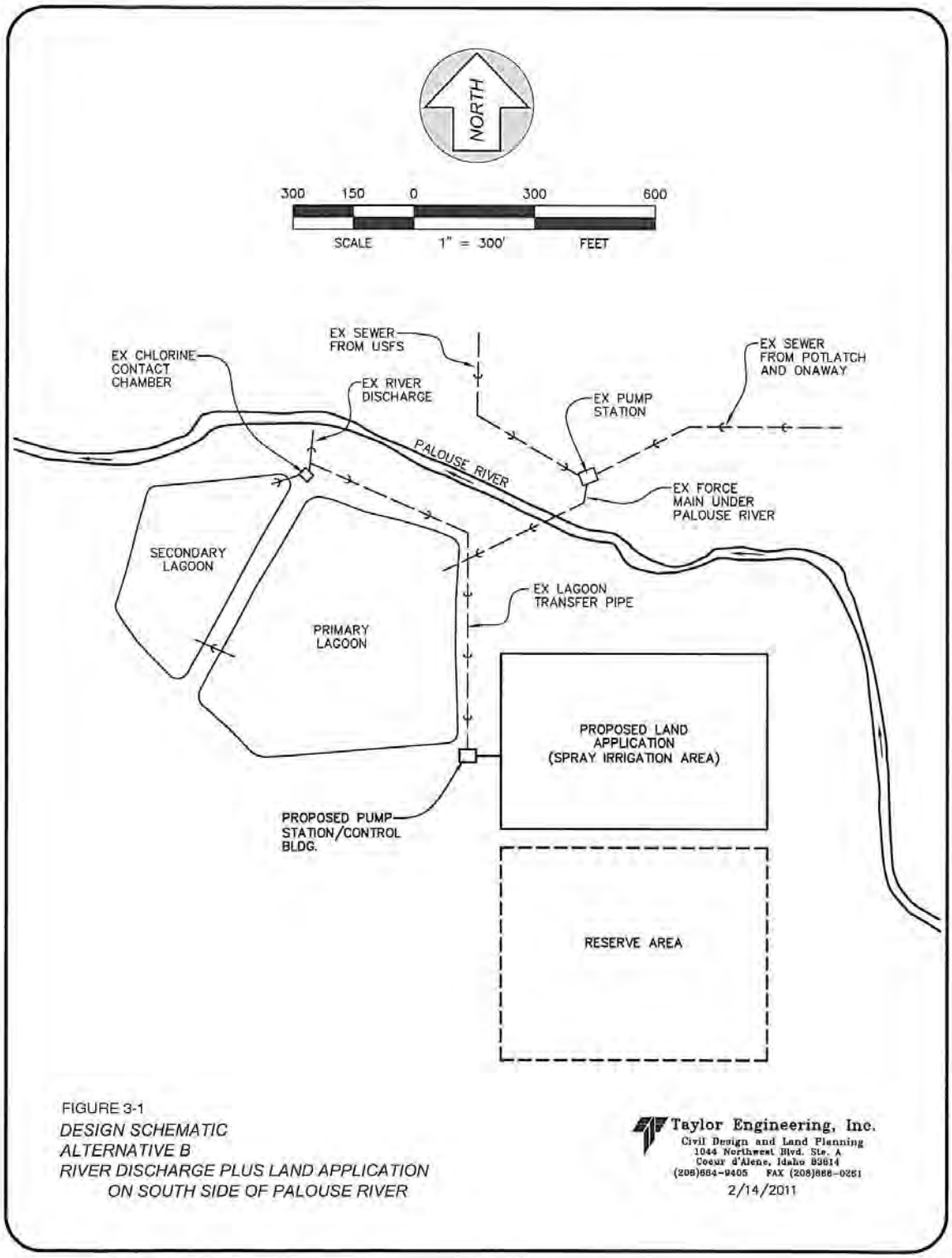
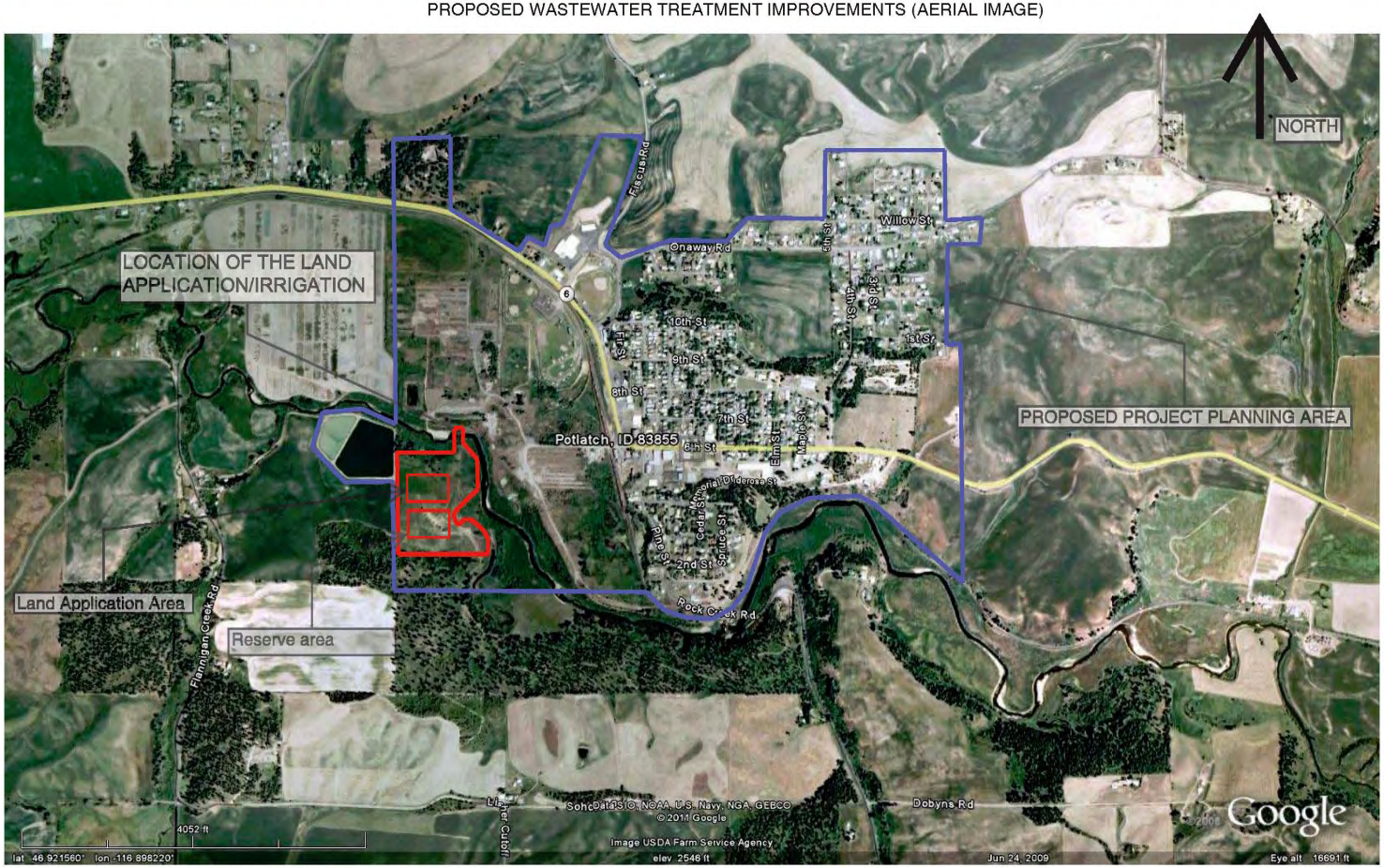


FIGURE 3-1
DESIGN SCHEMATIC
ALTERNATIVE B
RIVER DISCHARGE PLUS LAND APPLICATION ON SOUTH SIDE OF PALOUSE RIVER

PROPOSED WASTEWATER TREATMENT IMPROVEMENTS (AERIAL IMAGE)



LEGEND

PROPOSED PROJECT PLANNING AREA

LOCATION OF THE LAND APPLICATION/IRRIGATION

Figure 3-2

4. AFFECTED ENVIRONMENT

The Project Planning Area (PPA), outlined in blue on Figure 3-2, includes the incorporated areas of Potlatch and Onaway as well as the areas outside of the city limits that include the lagoons and proposed land application area. The Area of Potential Effect (APE) is the same as the PPA. The sanitary sewer system serves 100 users in Onaway and 416 users in Potlatch for a total of 516 Equivalent Dwelling Units (EDUs). Sewer users include a combination of residential, commercial and industrial sources on the system, with the majority being residential.

Sewage flows vary widely throughout the year, but have improved (decreased) since 2008 when I&I repairs to both collection systems began. Average flow was 61,800 gallons per day from 2005 to 2008, compared to only 43,000 gpd from May 2008 thru April 2010. The 20-year projected flow rate and design flow used in the analysis is 67,000 gallons per day, or 24.5 million gallons per year. This design flow was developed for the October 2009 *Design Report for Sewer Pump Station and Force Main Upgrades* and was also used in the February 2011 *Wastewater Facilities Plan Addendum.* Both of these documents were approved by IDEQ. The 67,000 gpd design flow allows for an annual growth rate of approximately 3% in flows, which is greater than the estimated population growth 0.5% listed in Section 4.C below.

The proposed land application system will include energy-efficient variable frequency drive (VFD) irrigation pumps and approximately 1800 feet of buried 4-inch HDPE pipe, 8000 feet of above-ground 3-inch aluminum irrigation laterals, and 120 sprinkler heads. Pivot pipe will consist of poly-lined 11-guage galvanized steel.

A. Physiography, Topography, Geology and Soils

i Affected Environment

Generally, the area around Potlatch is bounded by forests to the north and south, but the major landforms of the area are consistent with the Palouse rolling hills. The Palouse River cuts through the landscape as it winds its way westerly. There are no significant geologic formations or hazardous areas present within the landscape other than the predominant Palouse hills.

Soil within the city limits has a general soil classification under the name Santa-Helmer soil. Characteristics of Santa-Helmer soil are very deep, moderately well drained, gently sloping to moderately steep soil formed in loess and volcanic ash. Primary soil types within the city limits include: Larkin silt-loam, Southwick silt-loam, Bluesprin-Flybow, and Hampson silt-loam.

The city limits of Potlatch border a Hampton-Crumarine soil lying along the shores of the Palouse River. Characteristics of the soil are very deep, moderately to poorly drained soils formed in alluvium. These soil characteristics are only typical on the south edge of town.

Soils at the project site include Hampson silt loam, Taney silt loam, Klickson silt loam and Hampton-Crumarine soils in the drainage course of the Palouse River. The silt-

loam soils pass 40-100% on the No. 200 sieve, and are some of the more productive agricultural soils in the Palouse region. The Hampton-Crumarine soils along the river are good for wetland habitat.

ii Environmental Consequences

There are no physical conditions within Potlatch or the proposed project site that would adversely affect the installation or effectiveness of the proposed wastewater reuse facility. A common characteristic among the soil types is the high water erosion potential when the soils are stripped of vegetation and left exposed to precipitation.

iii Mitigation

Since the soil will be disturbed while excavating for the irrigation pipes, precautions will be taken to prevent sediment form leaving the construction site. The project specifications will require the contractor to abide by the EPA's Construction General Permit Best Management Practices, including the installation of silt fencing. Additional BMPs will be implemented as necessary to limit the amount of sediment loading that enters the Palouse River and to protect the on-site soils from erosion. Seeding will also occur after installation of the irrigation lines.

B. Climate

i Affected Environment

The climate of Potlatch is typical of the northwestern United States with approximately 27 inches of precipitation each year. There is a wide range of temperatures and four distinct seasons each year, but there are no unusual conditions that would lead to poor air quality or adversely impact the proposed wastewater facility.

ii Environmental Consequences

No climatic changes will occur as a result of the land treatment installation.

iii Mitigation

No adverse affect will occur therefore, no mitigation is necessary.

C. Population

i Affected Environment

The combined population of Onaway and Potlatch has remained fairly steady for the past 30 years, as noted on the next page. This data was obtained from the United States Census Bureau for the years of 1980, 1990, and 2000. Census data for 2010 was obtained from the City of Potlatch.

	1980	1990	2000	2010
Onaway Population	254	203	230	187
Potlatch Population	819	790	791	804
Total	1073	993	1021	991

Although population trends indicate a slow decline, wastewater facilities must be designed and constructed to accommodate at least a moderate amount of growth. Consequently, a 0.5% increase per year is used as a conservative estimate. Projections for the future, based on the 0.5% growth rate, are as follows:

	2020	2030	2040	2050
Onaway Population	200	210	220	230
Potlatch Population	840	890	930	980
Total	1040	1100	1150	1210

ii Environmental Consequences

The population would benefit from the addition of a sanitary sewer treatment facility by reducing the environmental impact associated with the present treatment method and its impact to the Palouse River.

iii Mitigation

No mitigation will be necessary.

D. Economics and Social Profile

i Affected Environment

Using the 2009 Census data published by the US Census Bureau for both Potlatch and Onaway, income and poverty levels were determined for the Proposed Project Planning Area based on population for each city. The median household income is $41,593 while the median family income is $51,400. 7.5% of families within the area are below the poverty level while 8.1% of individuals are below the poverty level.

ii Environmental Consequences

By obtaining grant funding, the City has been able to limit the increase in monthly user fees significantly. Monthly sewer rates will remain in-line with neighboring communities. The land application system will not negatively affect the economics or social profile of the Proposed Project Planning Area.

iii Mitigation

No additional mitigation is necessary.

E. Land Use

i Affected Environment

The Project Planning Area includes residential, commercial, agricultural, and industrial areas. The proposed project site is located outside of Potlatch city limits and within Latah County. The current use of the project site is agricultural, but there is no evidence that crops were ever grown. The site will be utilized for agricultural production after construction is complete, within the allowable parameters set forth in IDAPA 58.01.17, Recycled Water Rules. The site is not considered prime farmland (see Appendix I).

ii Environmental Consequences

No impacts to commercial, industrial, transportation, utilities or other land use will be adversely affected by the addition of the proposed infrastructure. The agricultural use of the site will remain after construction is complete therefore, the use will not change and the site conforms with the comprehensive plan and zoning for the area.

iii Mitigation

No adverse impact will occur as a result of this project. Therefore, no mitigation is necessary.

F. Floodplain Development

i Affected Environment

The FEMA Flood Insurance Study floodplain and floodway maps in Appendix C show the existing lagoons as outside (higher elevation than) the 100-year flood boundary. The map gives elevations in the older NGVD 29 datum, which is 3.65 feet lower than the newer NAVD 88 datum. For example, at the northeast corner of the lagoons, the 100-year flood elevation is 2484 (NGVD 29 datum), which equates to elevation 2487.65 (NAVD 88 datum). At this location, the lagoon dike elevation of 2491 (NAVD 88) is 3.35 feet above the 100-year flood crest elevation.

Since, at the lagoons, the 500-year flood elevation is only one foot higher than the 100-year flood elevation, the lagoon dike is above the 500-year flood crest as well.

The project site is adjacent to and just above the 100-year floodplain. Mary McGown, Statewide Floodplain Coordinator for the Idaho Department of Water Resources, states her concurrence with the project outside of the floodplain. She also agreed that no impact to the floodplain would occur as a result of the proposed project (See Appendix L for e-mail response from Mary McGown).

ii Environmental Consequences

No material will be imported or added in the floodplain. Therefore the proposed site will not impact the floodplain.

iii Mitigation

No mitigation necessary.

G. Wetlands

i Affected Environment

Wetlands were investigated by Tom Duebendorfer in January 2010 and again in June-July 2011 (see July 18, 2011 Wetland Determination Report in Appendix D). As seen in the report, the land application area is bounded to the north and east by wetlands. In addition, three small isolated wetlands occur toward the northwest of the site. Installation of underground irrigation lines will be excluded from the wetland areas. However, after construction is complete, recycled water may enter the wetlands by spray application.

The Wetland Determination Report was submitted to the Army Corps of Engineers for comment and concurrence. Beth Reinhart in the Coeur d'Alene regional office stated that she agreed with the findings of the wetland delineation (see Appendix L for correspondence relating to the wetlands).

ii Environmental Consequences

At the project site, minimal impacts to the wetlands will be seen, as construction will be excluded from these areas and protected during construction. Excavation will not occur within the wetlands, but spray may enter the wetland areas during irrigation times.

iii Mitigation

During construction, strategic use of BMPs such as silt fence, high visibility construction fencing, and "do not disturb" signs will preclude disturbance as well as protecting the wetlands from surface runoff. No features will be constructed within these areas. Spray from recycled water is not anticipated to adversely affect the wetlands. Therefore, no mitigation with respect to this spray will be required.

H. Wild / Scenic Rivers

i Affected Environment

There are no scenic rivers flowing near the City of Potlatch. According to the Idaho State home page the closest scenic river to Potlatch is the St. Joe River, which drains into Lake Coeur d'Alene.

ii Environmental Consequences

There will be no disturbances in or near any Scenic River location.

iii Mitigation

No mitigation will be necessary.

I. Proximity to Sole Source Aquifer, Water Quality and Quantity

i Affected Environment

Potlatch is not located above a sole source aquifer or source area defined by the EPA. The closest sole source aquifers are the Spokane-Rathdrum Sole Source Aquifer 50 miles north of Potlatch and the Lewiston Basin Aquifer to the south approximately 40 miles.

According to the EPA, the local aquifer is a streamflow data gathering zone for the Columbia Plateau aquifer in Washington. Currently the City of Potlatch has three operational wells drawing water from the local aquifer. All of these wells area located on the other side (north of) the Palouse River. (See map in Appendix F).

Groundwater generally flows from the upper elevations surrounding the area toward the Palouse River. At the land application site this groundwater flow trends from south to north along the contact surface between the surficial sedimentary units and the underlying Columbia River basalts and lower igneous bedrock units. The flow rate of the water varies depending on the underlying stratum that it is located within, but groundwater occurring in the upper sedimentary stratum has hydraulic conductivity rates around 0.03 in/hr. Flow within the basalt and igneous bedrock will generally be slower.

The Palouse River is not listed as 303d impaired water source according to either the IDEQ or the EPA. In addition, no TMDLs have been developed for the Palouse River. (IDEQ, 2009, *Department of Environmental Quality Working Principles and Policies for the 2008 Integrated (303[d]/305[b]) Report, available online at* http://www.deq.idaho.gov/water/data_reports/surface_water/monitoring/integrated_report_2008_final_entire.pdf, accessed [May 12, 2011].)

ii Environmental Consequences

The aim of this project is to improve water quality and protect the water resources of the community and surrounding areas. By further treatment of effluent via land application, water quality will be improved within this area of the Palouse River. Infiltration rates of the soils of very low and will impede vertical migration of the surface flows into the underlying aquifer. Additional water quality treatment will occur by biological uptake from plants and infiltration within the land application area.

With groundwater flows trending toward the Palouse River, the river acts to impede flows from the land application site northward past the river. Additionally, there are no wells within 1000 feet of the wastewater reuse site. Therefore, this project will not have any negative impact on aquifers, wells, or domestic groundwater usage.

iii Mitigation

No mitigation will be necessary due to no adverse effects to water quality, groundwater, or aquifers. The IDEQ regional office concurs with this assessment (see Appendix L for correspondence between Tom Moore and Taylor Engineering).

J. Environmental Justice

i Affected Environment

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," was issued by the President of the United States on February 11, 1994. This order established the requirements to address Environmental Justice as part of the environmental process. To satisfy this requirement, identification of the human health or environmental effect on minority or low-income communities with regard to the proposed construction needs to be addressed to ensure that programs receiving Federal financial assistance do not result in discrimination.

"Title VI, of the Civil Rights Act of 1964" was created to ensure that individuals were not subjected to discrimination under any program receiving Federal financial assistance.

ii Environmental Consequences

The proposed project does not disproportionately create adverse human health conditions for low income or minority groups within the community. In fact, it improves the regional environment by alleviating BOD, TSS, and ammonia loading into the Palouse River.

iii Mitigation

No mitigation will be necessary due to no adverse effect.

K. Cultural Resources

i Affected Environment

Plateau Archaeological Investigations, LLC completed a Cultural Resource Survey in April 2011 (Appendix G). The report includes discussion of a historic dump site that includes a secondary scatter area. The project site is previously undisturbed except for the dump area and no structures or structural remains are seen on the site. Potlatch Corporation historically used the lands north of the Palouse River to a greater extent and never developed the land treatment site.

ii Environmental Consequences

As excavation will generally be excluded from the dump area, the project will not adversely affect the area. No long-term effects will be seen.

iii Mitigation

Correspondence was initiated with regard to the land application site to ensure that no cultural resources would be disturbed. SHPO and THPO correspondence indicated that a Cultural Resource Survey should be completed. As a result of recommendations made in the Cultural Resource Survey, excavation monitoring will take place in excavations that are within 100 feet of the dump and scatter areas.

L. Flora and Fauna, Biological Resources

i Affected Environment

A Biological Assessment was completed by Tom Duebendorfer in January 2010. The result of that assessment was that no effect to federally-listed threatened and endangered species would occur as a result of the proposed land treatment improvements. See Appendix H for the full Biological Assessment. Additional correspondence was sent to the Idaho Fish and Game and US Fish and Wildlife officials to get concurrence on these findings (See Appendix H & L).

ii Environmental Consequences

There are no known threatened or endangered species or sensitive habitat areas within the project area and the construction will not have any adverse impacts to fish and wildlife. The construction will have a long-term benefit to fish and wildlife downstream of the treatment facility due to cleaner water entering the Palouse River.

iii Mitigation

BMPs installed during construction to limit the amount of sediment loading will be the only mitigation necessary to alleviate impacts to plants and animals within the area.

M. Recreation and Open Space

i Affected Environment

There are no recreation areas within the project site. The project will require 52.6 acres of land that are currently being used for non-food agricultural production and will continue to be used as such.

ii Environmental Consequences

The treatment facility will not impact recreation and open space uses in Potlatch.

iii Mitigation

No mitigation will be necessary as no recreation or designated open spaces are found at the project site.

N. Agricultural Lands

i Affected Environment

The project site is not listed as an environmentally significant agricultural land and will not adversely impact the surrounding agricultural lands. The USDA NRCS Soil Survey map showing prime agricultural land is found in Appendix I. After sufficient detention time in the lagoons, the recycled water is relatively free of pathogens.

ii Environmental Consequences

No adverse affects will be seen to significant agricultural lands as a result of the proposed construction. Agricultural production will still take place at the site.

iii Mitigation

No mitigation will be necessary due to no adverse effects seen from the proposed construction.

O. Air Quality

i Affected Environment

Potlatch does not fall within or adjacent to a designated non-attainment area as determined by IDEQ or the EPA. The nearest non-attainment area is located in Sandpoint approximately 115 miles north of the site. During construction some equipment related emissions may occur, but these will cease once construction is complete. No significant noise will be heard from the construction equipment as smaller vehicles will be used for the land application installation.

ii Environmental Consequences

As the project is not located within a non-attainment area, no adverse environmental consequences are anticipated. However, the aerosol spray from the land application irrigation process could drift toward Potlatch residents during high wind conditions and pose a short-term impact. The odors would be short lived and do not pose permanent health hazards to the community. Similar odors are present in the vicinity now, generated seasonally (short-term) from the lagoons. Additionally, construction emissions and noise will be short-term and cease at end of construction.

iii Mitigation

Trees will be planted along the riverbank to create a barrier between the land application site and the City. In addition, operation & maintenance guidelines will be put into place for the plant operator to follow when irrigating in windy conditions.

Construction hours will only occur during normal working hours and will extend from 7 am to 7 pm. The Contractor will be made aware of these restrictions.

P. Energy

i Affected Environment

The project will use some electric power to pump irrigation effluent, but will not be a significant energy draw. The proposed irrigation pumps and control building are the only components that require power and irrigation pumps will consist of energy-efficient VFD models to conserve resources. The pumps will only be used during irrigation months from May to October, inclusive.

ii Environmental Consequences

The proposed construction does not adversely affect the energy needs of the area. The long-term impact will be a slight increase in energy usage by the energy-efficient irrigation pumps.

iii Mitigation

No mitigation will be necessary.

Q. Public Health

i Affected Environment

The project will improve the public health of the region with respect to effluent discharge into the Palouse River. By utilizing land application for further clarification of the effluent during portions of the year, the amount of TSS, BOD, E. coli, and residual chlorine discharged to the Palouse River will be greatly reduced. The land application is not anticipated to increase vector problems such as mosquitoes as spray will infiltrate into the soils and not pool at the surface. The noise from the sprinkler application will not compete with or generate higher levels of noise than the surrounding areas.

ii Environmental Consequences

Overall, the project aims to improve public health by eliminating violations from discharges to the Palouse River. The proposed construction does not adversely affect the public health of the area.

iii Mitigation

No mitigation will be necessary.

R. Water Reuse

i Affected Environment

The project requires the City of Potlatch to obtain a Wastewater Re-Use Permit from IDEQ to allow diversion of effluent discharge from the Palouse River to land application. The City has begun the pre-application process with the Lewiston Regional IDEQ office and will complete the formal application prior to constructing

the proposed improvements. In addition, consultation with Idaho Department of Water Resources was requested to determine if water rights will be impacted by the improvements.

ii Environmental Consequences

Mr. Shelley Keen with IDWR responded to the consultation with a letter requesting that the project include obtaining water rights for land application. The City of Potlatch has completed their water rights application and is awaiting IDWR's decision. In addition, the land application area is included in the City's Area of Impact. The application for water rights and the proximity of the area within the Area of Impact will limit the impacts of the project.

Due to the fact that groundwater flows trend toward the Palouse River and infiltration of the land application will occur, it is anticipated that flow diversions will not significantly impact the overall Palouse River flows. Eventually, all flows will still enter the Palouse River; the mode of entry into the system will be the only variable from the proposed improvements. Flows will shift from direct surface discharge to groundwater discharge. Direct discharge will still occur during the wet period of each year between November and April, and possibly thru July as allowed by the City's NPDES Permit.

iii Mitigation

Water rights have been applied for and will be in place prior to any land application occurring (see Appendix L for a copy of the water rights application and correspondence relating to its submittal). No additional mitigation will be necessary as land application will only occur half of the year.

5. ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

A. Wetlands

Due to the proximity of the wetlands to the proposed project improvements, some impacts to the wetlands may occur. Construction will be excluded from wetland areas and construction stormwater BMPs will be implemented during construction. During heavy rain events, some sediment may enter these areas creating a direct short-term impact to the wetlands. No indirect, long-term or cumulative adverse impacts will be seen on this natural feature.

B. Water Quality

During construction, excavation will be minimal but some sediment may enter via stormwater runoff. Construction stormwater BMPs will be installed prior to construction, but very large runoff rates can surpass the effectiveness of some BMPs. These effects to water quality are short-term direct effects. No long-term or cumulative adverse effects will occur that would impact human or natural environments.

C. Cultural Resources

As noted in the Cultural Resource Survey (Appendix G), a dump site is present along the northeast perimeter of the site. This is a human-made feature. Excavation will be excluded from this area and the Contractor will be made aware of the area prior to construction. Monitoring will occur during initial ground disturbing activities to ensure that the site is avoided and if any archaeological remains are found, construction will be halted and the archaeologist will be contacted. There may be some indirect short-term effects due to foot traffic in the area during construction, but no long-term or cumulative direct effects will be seen with respect to this cultural site.

D. Public Health

The aim of this project is to improve the public health and natural environmental health of the area by utilizing land application in the wastewater treatment and disposal train. Both long-term and cumulative direct effects will occur as a result of this project by improving the quality of the water within the river. However, these effects are deemed positive and an improvement upon the current day environment. No short-term adverse effects will be seen upon either the human or natural made environment with respect to public health.

6. MEANS TO MITIGATE ADVERSE ENVIRONMENTAL IMPACTS

A. Water Quality / Wetland Mitigation

During construction, the Contractor will be required to maintain compliance with the EPA Construction General Permit and ensure that surface runoff is within allowable limits for turbidity. To comply with this, a Stormwater Pollution Prevention Plan (SWPPP) will be developed and adhered to during construction. In addition, BMPs will be in place prior to construction.

Wetlands will be marked or otherwise delineated prior to construction, and no work will be allowed in the wetlands.

B. Public Health Mitigation

The treatment of the effluent occurs by holding time within the lagoons and chlorinization (disinfection) prior to discharge into the irrigated wastewater reuse area. This treatment train will act to mitigate ill-effects on the environment as dictated by the NPDES permit. Trees will be planted along the edge of the irrigation boundary to buffer spray during windy weather.

C. Cultural Resource Mitigation

Archaeological monitoring will be initiated when excavations come within 100 feet of the dump and scatter areas. Excavation will be excluded from the dump and scatter area.

D. Project Cost Mitigation

The cost of the project is the most significant deterrent for the project and was the main concern of residents within Potlatch and Onaway. However, the costs will be greatly

reduced by successful DEQ loans and Community Development Block Grants for the project. This would make the user fee around $50 per month and would be more accepted by the residents.

7. PUBLIC PARTICIPATION

A public notice requesting comments and notifying the public of a meeting to be held was published in the October 30 & 31, 2010 weekend edition of the *Moscow-Pullman Daily News,* the newspaper of record for the City of Potlatch. The minutes of the November 10, 2010 public hearing and affidavit of public notice can be found in Appendix K. The minutes were drafted by Walter Steed due to the lack of a City Clerk on staff for the City of Potlatch at the time of the public meeting and the Mayor is in agreement of these minutes.

Public comment was allowed for 30 days following publication of the public notice, and this time limit was announced during the public information meeting. All environmental documents, facility plans, and plan sheets were available for the public to view at City Hall, and each alternative was presented during the public information meeting. At the expiration of the 30 day comment period on November 30, 2010, no comments had been received. In addition, no comments have been received on any part of project by a member of the community to date.

8. REFERENCE DOCUMENTS (BIBLIOGRAPHY)

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Taylor Engineering, Inc. *City of Potlatch Design Report for Sewer Pump Station and Force Main Upgrades.* Coeur d'Alene, Idaho: October 30, 2009.

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9. AGENCIES CONSULTED AND MAILING LIST

Table 9-1 lists each agency that was contacted for information pertaining to the proposed wastewater project. Appendix L includes all agency correspondence. There is no mailing list for public meeting attendees, since nobody attended the public meeting.

Table 9-1
Agency List

Name	Agency	Environmental Resource for when to Make Agency Contact	Address	Phone / E-Mail
Terry Walser	Walser Ranch (Adjacent Landowner)		1540 Flannigan Creek Rd. Potlatch, ID 83855	208-875-0262
Mayor Dave Brown	City of Potlatch	Public Meeting attendee	PO Box 525 Potlatch, ID 83855	208-875-0708
Angela Taylor	Taylor Engineering, Inc.	Public Meeting attendee	245 E Main St. Pullman, WA 99163	509-334-5115
Walter M. Steed	Walter M. Steed & Associates	Public Meeting attendee / CDBG Project Administration	1345 Ridgeview Dr. Moscow, ID 83843	208-883-0123
Duane Mitchell	US Army Corps of Engineers, Walla Walla District	Wetlands, 404 Permits, Flood plains	201 North Third Avenue Walla Walla, WA 99362-1876	
Michael Burgan	US Army Corps of Engineers	Wetlands, 404 Permits	2065 West Riverstone Dr, Ste. 201 Coeur d'Alene, ID 83814	208-277-7665
Dan Brege, Branch Chief	National Marine Fisheries Services / NOAA Fisheries	Threatened and endangered fish populations	1005 Highway 13 Grangeville, ID 83530	
Bob Kibler	US Fish and Wildlife Service	Threatened, Endangered Species, other wildlife and flora	1387 South Vinnell Way, Suite 368 Boise, ID 83709	208-378-5243
Alan Stanford	Idaho Dept. of Environmental Quality	Water Quality, Air Quality	1410 North Hilton Statehouse Mail Boise, ID 83720-9000	
Tom Moore	Idaho Dept. of Environmental Quality, Lewiston Regional Office	Water Quality, Air Quality	1118 "F" Street Lewiston, ID 83402	208-799-4370
John Cardwell	IDEQ	Water Quality		John.Cardwell@ deq.idaho.gov
Coeur d'Alene Regional Floodplain Staff	Idaho Dept. of Water Resources, Coeur d'Alene Northern Regional Office	Floodplain management, maps, general program assistance	1910 Northwest Blvd. Suite 210 Coeur d'Alene, ID 83814-2615	

Ray Hennekey	Idaho Dept. of Fish and Game, Clearwater Region	Biological resources, non game plant and animal species	1540 Warner Avenue Lewiston, ID 83501	
USDA NRCS	USDA NRCS Web Soil Survey	Prime/Important Farmland	Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/ accessed [04/25/2011].	
Paul Guenther, Environmental Health Director	Panhandle District Health Department	Solid Waste	215 10th Street Lewiston, ID 83501	208-799-0356
Suzi Pengilly, Deputy SHPO	Idaho State Historical Society	Historic and archaeological sites and sensitive areas	210 Main Street Boise, ID 83702	208-334-3847
Patrick Baird, THPO	Nez Perce Tribe	Historic and archaeological sites and sensitive areas according to tribal map.	PO Box 365 Lapwai, ID 83540	208-843-7400 Ext 2342
Jill Maria Wagner, PhD, THPO, Cultural Resource Program	Coeur d'Alene Tribe	Historic and archaeological sites and sensitive areas according to tribal map	PO Box 408 Plummer, ID 83851	208-686-1572
Shelley Keen, IDWR	Idaho Dept. of Water Resources	Reuse impacts to water rights	Via e-mail: Shelley.keen@idwr.idaho.gov	208-287-4947
Mary McGown, IDWR	Idaho Dept. of Water Resources	Statewide Floodplain Coordinator	Via e-mail: Mary.McGown@idwr.idaho.gov	208-287-4928
Brian Weber, FEMA Region 10	FEMA Region 10	Floodplain impacts in lieu of Mary McGown being out until end of May		Contacted via phone 5/12/11: 425-487-4558

10. ACRONYMS & ABBREVIATIONS

APE	Area of Potential Effect
ARRA	American Recovery and Reinvestment Act of 2009
BOD	Biochemical Oxygen Demand
BMP	Best Management Practice
CDBG	Community Development Block Grant
EDU	Equivalent Dwelling Unit
EPA	Environmental Protection Agency
gpd	Gallons per day
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
LSAS	Large Soil Absorption System
MCL	Maximum Containment Level
NPDES	National Pollutant Discharge Elimination System
OWASA	Onaway Water and Sewer Association
PPA	Proposed Planning Area
SHPO	State Historic Preservation Office
SWPPP	Stormwater Pollution Prevention Plan
THPO	Tribal Historic Preservation Office
TSS	Total Suspended Solids
VFD	Variable Frequency Drive

Appendix A

Wastewater Facilities Plan Addendum

WASTEWATER FACILITIES PLAN ADDENDUM
City of Potlatch, Idaho
February 24, 2011
Taylor Engineering Project No. 09-C011, Amendment No. 2

PROFESSIONAL ENGINEER REGISTERED 8351 STATE OF IDAHO CHRISTOPHER H MANSFIELD
2/24/2011

1. CURRENT STATUS OF FACILITIES PLAN

The current Facilities Plan for the City of Potlatch Regional Wastewater Collection and Treatment System was approved by the Idaho Department of Environment Quality (IDEQ) on November 9, 2007. Since then, nearly $7 million of the recommended improvements have been made to the collection and treatment facilities in Potlatch and Onaway.

One Amendment has been made to the Facilities Plan, a March 2010 revision to Table 9.2-2 (page 85 of 94) to update the cost of collection system improvements in Onaway.

2. SCOPE OF WORK – FACILITIES PLAN ADDENDUM

In February 2010, with its National Pollutant Discharge Elimination System (NPDES) Permit about to expire and the potential for more stringent discharge requirements in the next permit, the City submitted a design for a Large Soil Absorption System (LSAS) to the North Central District Health Department. This subsurface disposal system would have eliminated discharge to the Palouse River and the need for an NPDES Permit. Unfortunately, due to inadequate land nearby, this submittal received severe review comments from the Health Department, causing the City to consider other options.

The City reaffirmed its ongoing commitment to improve treatment and disposal of its wastewater, and retained Taylor Engineering, Inc. to study alternative methods. The City's current objective is to have a treatment facility that maximizes utilization of the existing lagoon system, with disposal (1) onto the earth, (2) into the earth, or (3) with treatment that produces a high quality of treated effluent that can be discharged into the Palouse River.

Taylor Engineering's Scope of Work includes the following tasks:

- Estimate Future NPDES Permit Limits
- Evaluate Alternate Wastewater Treatment and Disposal Methods, including:
  - Hybrid System I (River Discharge plus Large Soil Absorption System)
  - Hybrid System II (River Discharge plus Land Application on Potlatch Corp. property - South Side of Palouse River)
  - Land Application on Potlatch Corp. property - North Side of Palouse River
  - Land Application on Beckner property
  - Hybrid System III (Land App plus LSAS plus River Discharge)
  - Mechanical Treatment
  - Do Nothing Alternative
- Written Report / Facility Plan Addendum

3. FUTURE PERMIT LIMITS

The City's NPDES permit expired March 31, 2010, but was extended via a 4/7/10 letter from the EPA. It is a "30/45" permit, meaning the average monthly limit for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) cannot exceed 30 mg/litre nor 45 mg/l, respectively. The permit includes average monthly limits for E. coli of 126/100 ml and total residual chlorine of 0.02 mg/l.

For comparison, NPDES Permits for Deary, Genesee, Kendrick, Plummer, Santa-Fernwood, and Troy all have effluent limitations similar to Potlatch. None of these communities have an established ammonia limit, but all were required to monitor for ammonia during 2006. The City of Potlatch's effluent averaged 5.0 mg/l of ammonia in 2006.

Ammonia limits are being studied by EPA and IDEQ. At their September 2010 engineering retreat, the DEQ examined their role in establishing permit limits, discussing such topics as:

- EPA permit limits must ensure that Idaho water quality limits will not be violated.
- Most small wastewater systems are not ready for ammonia limits.
- Do we (DEQ) require facility plans to look at future pollution limits that are not a part of a system's current NPDES permit limits?

In a study presented at the retreat, calculations for the City of Kendrick's wastewater effluent indicated that ammonia criterions in the Potlatch River, downstream of the treatment plant, are likely being exceeded by a factor of four or more.

All waters of the State, including the Palouse River, have pollutant limits to ensure water quality. The EPA sets these limits when there is an expectation that certain pollutants could exceed quality standards. Comparing Kendrick to Potlatch, while Kendrick's population and sewage flows are smaller, its wastewater constituents are similar, as Kendrick also uses a two-cell lagoon with chlorination. Utilizing typical effluent values for pH and temperature, and given a similar dilution factor as in the Kendrick study, it is doubtful that Potlatch could meet water quality-based ammonia limits for the Palouse River.

There are no ammonia limits in the City's current NPDES permit, but "... ammonia is one of the things the EPA wants to look at when they re-issue the NPDES permit" (Reference 9/23/10 phone message from Katherine Collins of EPA-Seattle, 206-553-2108). This Addendum focuses on methods of reducing ammonia discharges into the Palouse River, in anticipation of forthcoming ammonia limits in the next NPDES permit.

Methods for reducing ammonia include improved wastewater treatment methods (reduces the concentration of ammonia in the wastewater) or discharging to an alternate location (reduces the amount of ammonia discharged into the river). These methods are discussed in Section 4.

Dilution calculations (See Exhibit B4) indicate that a significant reduction in effluent flows can yield downstream ammonia concentrations that are within acceptable levels.

4. TREATMENT AND DISCHARGE ALTERNATIVES

4.1 General Description of Disposal Methods

River Discharge

Treated wastewater is discharged into surface waters of the State. This concept is governed by the EPA in the form of an NPDES Permit, as described above. Wastewater from Potlatch and Onaway is currently treated in facultative lagoons, chlorinated, and discharged into the Palouse River. See Figures 1 and 2.

Large Soil Absorption System (LSAS)

The LSAS concept involves subsurface disposal of wastewater via buried irrigation piping, The concept is similar to a septic tank and drainfield disposal system, but on a much larger scale, and is governed by the North Central District Health Department. Details are further described in the Idaho Administrative Code, under IDAPA 58.01.03.013. A disposal permit would be required from the Health Department for an LSAS.

Land Application

This disposal concept involves the application of treated wastewater to the land. Slow-rate systems include spray irrigation or overland flow, depending on the lay of the land, and are more appropriate for the finer textured soils (silts and clays) in the Potlatch area. High-rate systems such as rapid infiltration are more appropriate for pervious (gravelly) soils.

The process is governed by the IDEQ, and is described in IDAPA 58.01.17, *Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater*. (Note: The State is adopting rule changes to IDAPA 58.01.17, including renaming it "Recycled Water Rules" and redefining the uses and classifications of recycled water. The proposed rule changes will become effective upon adjournment of the 2011 legislative session.) A Reuse Permit would be required from IDEQ for a land application system.

Hybrid System

A Hybrid System, as described in this report, involves a combination of disposal methods, such as River Discharge plus LSAS, or Land Application plus River Discharge. The City would be required to have two or more permits to operate a hybrid system.

4.2 Wastewater Flow Rates

Sewage flows vary widely throughout the year, but have improved (decreased) since 2008 when repairs to the collection system began. Average flow was 61,800 gallons per day from 2005 to 2008, compared to only 43,000 gpd from May 2008 thru April 2010.

Design flow used for this report is 67,000 gallons per day, or 24.5 million gallons per year.

4.3 Initial Screening of Alternatives

A. Hybrid System I – River Discharge plus LSAS

This alternative consists of a combination of river discharge and a Large Soil Absorption System. The LSAS is the same type of system submitted in February 2010, but smaller. It would be constructed on 20 acres of Potlatch Corporation land south of the Palouse River and east of the lagoons (See Figures 3 & 4), and would utilize subsurface disposal in May thru November, and possibly year-round. River discharge would continue under the current NPDES permit (discharge permitted November thru July) but at a lesser rate.

Only 5 out of the 20 acres are suitable for subsurface disposal, i.e. are outside of the 100-year floodplain, at least 300 feet from the river, 75 feet from adjacent property, and not located on any slope steeper than 20%. Of the 5 suitable acres, approximately 20% would be used for sundry items such as access roads, cutoff trenches, and distribution line corridors. Therefore, only 4 acres of raw land would be used for subsurface disposal.

Soils in this area are Hampson silt loam and Taney silt loam, based on USDA/SCS maps. One infiltration test was conducted in this 4-acre area in May 2010, yielding an infiltration rate of 0.7 gallons per square foot per day. Assuming the Health Department will cut this rate in half to account for long-term acceptance factor of the soil, the disposal site should be able to accept 0.35 gal/sf/day. Theoretically, the 4-acre disposal area could dispose of 61,000 gallons per day (0.35 x 4 ac x 43,560 sf/acre).

But with any alternative, the disposal site must be managed for the efficient treatment and beneficial reuse of nutrients and water; while maintaining soil productivity, minimizing nuisances, and protecting beneficial uses of ground and surface water. The Health Department requires an equal area for redundancy and another equal area for reserve, so worst case, the 4-acre disposal area could only be permitted for 20,300 gallons per day. However, the facultative lagoons will still be utilized, so it could be argued that the double and/or triple disposal areas would not be required at all. As a mid-risk approach, assume the 4-acre site can dispose of 40,000 gallons per day, 6 months per year, or 7.3 million gallons per year.

With a design flow rate of 67,000 gallons per day (24.5 million gallons per year) for Onaway and Potlatch, the existing lagoons can easily provide treatment for the remaining 17.2 million gallons per year.

The slopes on the 20-acre portion are less than 20%, the site is immediately adjacent to the lagoons, and no wells are within 1000 feet. Potlatch Corporation is willing to make the land available to the City, but has hinted that the City would have to acquire all 50 acres south of the river. The above analysis indicates that only 20 acres would be required for this disposal alternative. The additional 30 acres increases the cost of this alternative, but also provides reserve area for the future.

This alternative <u>is</u> a candidate for further study.

B. Hybrid System II – River Discharge plus Land Application on Potlatch Corp. Land - South of Palouse River

This alternative also utilizes the lagoons for storage and treatment, but uses slow-rate land application (irrigation) to dispose of the recycled water. This alternative was not included in the original scope of Amendment 2, but seemed to be an appropriate alternative to consider.

The study site is the same 20-acre site described in "Hybrid System I" above, but with twice the area suitable for disposal. See Figures 5 & 6. Of the 20 acres, 9 are outside of wetlands, at least 50 feet from adjacent property, and not located on any slope steeper than 15%. The disposal area is larger than Hybrid System I because of anticipated disposal in the 100-year floodplain and a buffer area of only 100 feet along the river, both of which would require IDEQ approval. Of the 9 suitable acres, approximately 15% would be used for sundry items such as access roads and cutoff trenches. Therefore, 7.7 acres of raw land would be used for land application.

A Water Balance Calculation spreadsheet (Exhibit B1) assumes 7.7 acres of grass hay irrigated with recycled wastewater over a 6-month irrigation season (May thru October). Data regarding Evapotranspiration and Consumptive Irrigation Water Requirements for various crops in the Potlatch area are available on the University of Idaho's Kimberly R & E Center website. The analysis can be modified for scenarios such as # of acres, months of irrigation per year, or type of crop. Using a system described by DEQ as "Type 1" (designed with applications at the agronomic rate for the crop only when there is a moisture deficit), this 7.7-acre site can dispose of 4 million gallons per year.

The Water Balance concept utilizes the existing lagoons for storage in the winter months, opposite of how the City currently utilizes them. Wastewater would continue to enter the lagoons throughout the winter, and the facultative lagoons will still provide treatment. Lagoon levels will peak around May, when irrigation resumes, but would be drawn down by the end of the irrigation season (i.e. October). Discharge into the river will decrease, but is still required during high flow periods, so the NPDES permit must be retained.

Slopes on the 20-acre portion are mild, the site is immediately adjacent to the lagoons, and no wells are within 1000 feet. Trees would be planted along the southwest riverbank within the 100-ft buffer zone to minimize aerosol drift, create a visual barrier, and help provide shade for the river. Potlatch Corporation is willing to make the land available to the City, but has hinted that the City would have to acquire all 50 acres south of the river.

The above analysis is based on 20 acres. The additional 30 acres increases the cost of this alternative, but also provides reserve area for the future. Exhibit B3 indicates that tripling the irrigated area to 22.4 acres in the future would allow the City to dispose of all its wastewater (24.5 million gallons per year) via land application.

The 7.7-acre alternative <u>is</u> a candidate for further study. The 22.4-acre alternative is a potential expansion alternative in the future.

C. Land Application – Potlatch Corporation Land - North Side of Palouse River

This alternative also utilizes the lagoons for storage and treatment, but uses slow-rate land application to dispose of the recycled wastewater.

The study site is a 36-acre portion of the old Potlatch Corp mill site (See Figures 7 & 8). Soils in this area are Hampson silt loam (0 to 3% slopes) but it is difficult to predict the site's ability to absorb recycled wastewater. The soils are highly disturbed as evidenced by abandoned building foundations, pavement, ditches, culverts, and other imported materials; most of the site is within the 100-year floodplain, and has a high water table.

Despite the site restrictions, the land is available. Since the site is flat, spray irrigation could be used. Crop alternatives include trees, hay, range grasses, soccer fields, or a golf course. If athletic / recreational fields are developed, improvements would be required at the existing lagoons to achieve Class B standards. Class B effluent can be used to irrigate golf courses, parks, playgrounds, and schoolyards; public access is not allowed while irrigating (IDAPA 58.01.17).

Other treatment & disposal methods contemplated on this site include overland flow or constructed wetlands. The overland (flood) irrigation method would be problematic because a minimum ground slope of 2% is required to convey the recycled wastewater from cell to cell. The cost of moving dirt to achieve enough terraces to handle the wastewater would be high. With constructed wetlands, cells are built and planted with reed canary grass or cattails, which help reduce ammonia concentrations through denitrification. These wetland cells would look similar to the existing "pond" 100 yards northwest of the lift station site. But again, earthmoving costs would be high, and with overland flow or constructed wetlands, the treated wastewater would still be discharged to surface water. So while the quality of effluent would be improved, the goal of eliminating the NPDES permit would not be achieved.

With spray irrigation, assuming a 5-month disposal period (June thru October) and using only 7.3 inches of irrigation during those months (a safety factor of 3.0 compared to "Potlatch South" site across the river), a 27-acre disposal site would be required. See the Water Balance Calculation spreadsheet (Exhibit C1). Using 25% of the land for existing wetlands and sundry items (roads, berms, ditches, etc.), 36 acres of land acquisition would be required for this alternative.

The old mill site is a good option because the Potlatch Corporation has expressed a desire to make the land available to the City. The fact that most of land is within the floodplain hurts the expected disposal rate, but it also reduces the possibility that the land can be developed for commercial or industrial uses. The slopes are flat and hydraulically downgradient from the City's Ballfield Well, but the site is across the river from the lagoons (another force main may be required under the river).

This alternative <u>is</u> a candidate for further study, but has its challenges.

D. Land Application – Beckner Property

This alternative still utilizes the lagoons for storage and treatment, but the treated wastewater would be applied to the land instead of being discharged into the river.

The study site is the north half of the 62-acre Beckner farm, located ½-mile south of the lagoons (See Figures 9 & 10). Soils on site are Taney silt loam (7% to 25% slopes) and Larkin silt loam (12% to 35% slopes). The Beckner farm yielded 80 bushels of wheat per acre in 2010, and has produced lentils, barley, peas, and garbanzo beans in recent years.

The recycled water would be pumped from the lagoons up over the hill and beyond Walser's timber. The existing treatment facility generally produces Class C wastewater, which can be used to irrigate orchards, vineyards, fodder, commercial timber or firewood, seed or processed food crops. Grazing is allowed with an approved grazing management plan, but public access would not be allowed while irrigating (IDAPA 58.01.17). Some treatment improvements may be required at the existing lagoons to more consistently meet Class C wastewater standards.

For this alternative, assume cannon sprinklers around the perimeter of 30 acres of grass hay, with two cuttings expected per season. A Water Balance Calculation spreadsheet (Exhibit D1) with 16 acres of irrigated area assumes 11 inches of recycled water would be applied per month for 5 months per year (June thru October). Exhibit D indicates peak storage of 45.9 inches (3.8 feet) would be required in May, when irrigation resumes. As with Alternatives B and C, the analysis can be modified for scenarios such as # of acres, months of irrigation per year, or type of crop.

Exhibit D1 provides an analysis of ideal conditions, and does not account for climate challenges such as an early freeze or a wet year when less irrigation would be required. To provide a safety factor, or system redundancy, the City can either increase the irrigated area or retain its NPDES permit to allow it to discharge during high flow events.

The Beckner site is out-of-sight from the public eye, helping to minimize concerns over odors and aerosol drift. However, after a September 2010 meeting with the City, the Beckners did not seem inclined to part with their property. In addition, the slopes are steep (problematic for irrigating), and the site is ½-mile away (long pipe run, increased travel time for O&M) and 160 feet above (increased pumping costs) the existing lagoons.

The Beckner site is <u>not</u> an alternative for further consideration.

E. Hybrid System III – River Discharge, Small LSAS, and Land Application

Combination of river discharge, small LSAS, and Land Application. A small (10-acre) LSAS system and a small (10-acre) land application system constructed on 50 acres of Potlatch Corp land south of the river would dispose of wastewater in June thru October (and possibly year-round). Discharge into the Palouse River would continue in the 'winter' months but at a lesser rate.

This alternative is dismissed as "too complicated." Three disposal systems would be put into play, meaning three disposal permits and roughly 3 times the maintenance. This alternative would not be cost-effective for the City.

F. Mechanical Treatment

This would be a much smaller (no land required) but likely more expensive alternative. There are many capable manufacturers of mechanical systems and 'packaged' plants (built in modules at their factory and assembled on site). This may include aeration equipment, recirculating sand or gravel filters, or other methods to reduce ammonia and/or phosphorus. Mechanical treatment would provide a greater degree of treatment, and prove more reliable than the lagoons, but would require more intense O&M and would still discharge into the river.

This alternative cannot be fairly evaluated without knowing the effluent limits in the next NPDES permit.

G. Do Nothing Alternative

Keep discharging into the Palouse River. The City's current NPDES discharge (expired 3/31/10 but extended by the EPA) will remain in effect until the EPA decides otherwise. The EPA is not likely to issue a new permit until after September 2013.

4.4 Alternatives for Further Consideration

Based on the above analysis, the following alternatives bear further consideration:

- Alt A: Hybrid System I: River Discharge + small LSAS
- Alt B: Hybrid System III: River Discharge + Land Application South of Palouse River
- Alt C: Land Application on North Side of Palouse River

5. ANALYSIS AND RECOMMENDATIONS

5.1 Evaluation of Alternatives

Consideration must be given to cost, reliability, and environmental impacts. The pros and cons of each alternative are shown in Table 5-1 below:

Table 5-1
Pros & Cons of the Alternatives

Alternative	PROS	CONS
A. Hybrid System I: River Discharge plus LSAS	- Minimal aesthetic or visual impacts - Reduces impacts to Palouse River - Land owner is willing to sell	- Disposal permit required from Health District - Additional operator training required - Requires land acquisition - Some filter maintenance required - Very few facilities in Idaho / difficult to find operation & maintenance assistance - Steep slopes and restrictive soils require attention
B. Hybrid System II: River Discharge + Land Application on Potlatch Corp. land south of river	- Low capital cost - Reduces impacts to Palouse River - Land owner is willing to sell - Common disposal method / easy to find operation & maintenance assistance	- Re-Use permit required from DEQ - Additional operator training required - Requires land acquisition - Steep slopes and restrictive soils require attention
C. Land Application on Potlatch Corp. land north of river	- Land owner is willing to sell - Puts vacant / undesirable industrial land to beneficial use - Reduces impacts to Palouse River	- Engineering challenge to get treated wastewater to north side of river economically - Entire area within 100-year floodplain - Potential impacts on ground water - High seasonal water table and restrictive soils - Environmentally challenging site - High capital cost
D. Land Application on Beckner Property	- Minimal aesthetic or visual impacts - No wetlands or floodplain issues - Reduces impacts to Palouse River	- Land owner is not willing to negotiate - Removes farmland from typical production - Engineering challenge to pump treated wastewater to site
E. Hybrid System III: River Discharge, LSAS, and Land Application	- Land owner is willing to sell - Reduces impacts to Palouse River	- Disposal permit required from Health District and Re-Use permit required from DEQ, in addition to NPDES permit (too complicated) - Considerable operator training required - High maintenance costs
F. Mechanical Treatment	- Efficient treatment - No land acquisition necessary - Dependable & reliable - Reduces impacts to Palouse River	- High capital cost - Expensive equipment - Additional operator training required - Potentially higher maintenance costs
G. Do Nothing Alternative	- Low or no costs (compared to Alternatives A thru F) - Low maintenance	- Risk of continued permit violations - Increased City liability - Potential impacts on surface water

5.2 Project Costs

A. Operation & Maintenance Costs

The projected annual O & M costs for each alternative are as follows:

Current Operating Costs

• Routine operation & maintenance	$96,000

Large Scale Absorption System:

• Ground water monitoring/testing	$ 300
• Filter Flush (monthly: 18 hrs/yr @ $32)	576
• Power (dosing pumps)	1,800
• 26 Weekly Inspections (52 hrs/year @ $32)	1,664
• Equipment Replacement (1% of 936k)	9,360
	$13,700 (Call it $14k)

Land Application South of Palouse River:

• Ground water monitoring/testing	$ 300
• Filter Flush (monthly: 18 hrs/yr @ $32)	576
• Power (sprinkler pumps)	1,800
• 26 Weekly Inspections (52 hrs/year @ $32)	1,664
• Equipment Replacement (1% of 653k)	6,530
	$10,870 (Call it $11k)

Land Application North of Palouse River:

• Ground water monitoring/testing	$ 300
• Filter Flush (monthly: 15 hrs/yr @ $32)	480
• Power (sprinkler pumps)	1,800
• 22 Weekly Inspections (33 hrs/year @ $32)	1,056
• Equipment Replacement (1% of 856k)	8,560
	$12,196 (Call it $12k)

Equipment Replacement Costs are based on 1% of the Capital Costs in the Construction Cost Estimates.

The salvage value of either system will likely be small and for practical purposes, will be considered zero in this report.

B. Cost Comparison

Table 5-2 summarizes the cost for the feasible alternatives:

Table 5-2
Project Cost Matrix

	A River Discharge plus LSAS on Potlatch Land south of river	B River Discharge plus Land App on Potlatch Land south of river	C Land App on Potlatch Land north of river
Construction Costs			
Site Prep	$127,000	$116,000	$330,400
Treatment Plant Upgrades	$0	$0	$100,000
Headworks and Piping	$63,600	$63,600	$43,380
Disposal System	$542,400	$269,300	$390,400
Site Finishes	$329,700	$319,900	$322,200
Subtotal	$1,062,700	$768,800	$1,186,380
Contingency (15%)	$159,405	$115,320	$177,957
Subtotal, Construction Costs	**$1,222,105**	**$884,120**	**$1,364,337**
Land Acquisition Costs	**$157,800**	**$157,800**	**$108,000**
Engineering Costs			
Design & Bidding Services	$43,108	$43,108	$135,000
Construction Management & Inspection	$122,960	$122,960	$189,000
Total Project Costs	**$1,545,973**	**$1,207,988**	**$1,796,337**

Refer to Exhibits A2, B2, and C2 for detailed cost breakdowns.

5.3 Recommendations

Regarding Alternative A, the large soil absorption system (LSAS) is not the best option for Potlatch because the marginal soils mean a significant amount of land is required to adequately dispose of the recycled wastewater. As stated in its June 2010 review letter, the North Central District Health Department concluded that "...designing the subsurface system for this loading rate ... will drastically increase the size of the disposal area".

Land Application is more widely used and therefore a more proven / less risky method than LSAS. According to the above analyses, **Alternative B - River Discharge plus Land Application on Potlatch Corp. Land south of the river** has lower initial cost, lower O&M costs, minimal environmental issues, and is therefore recommended. This recommendation is strengthened due to the fact that Potlatch has had numerous discharge violations over the years and a more dependable, low maintenance system is overdue and needed.

We also recommend that the City seek to obtain a DEQ Re-Use permit for seasonal discharge via land application. The permit application should be submitted at least six months prior to disposal.

5.4 Financial Plan

Nearly $7 million of improvements have been made to sewer facilities in Potlatch and Onaway since 2007. The City of Potlatch passed a bond allowing for higher user fees to offset costs, with projections for sewer rates to go as high as $85 per month per Equivalent Dwelling Unit (EDU). Luckily, the City has received generous funding from Rural Development (grant and loan), the Idaho Department of Commerce (Block Grants), and the American Recovery and Reinvestment Act (ARRA) of 2009, administered through the IDEQ Clean Water Loan Program. To date, the infrastructure improvements have resulted in increased sewer rates, but only to $45 per month (effective May 2010).

Current financial conditions in Potlatch for sewers are as follows:

Revenue from user rates: 416 EDUs x $45/mo x 12 mo =	$224,640
Revenue from Onaway: 100 EDUs x $12.96/mo x 12 mo =	15,552
Annual Revenue	**$240,192**
Annual Operating Costs	$ 96,000
Annual Payment, RD Loan	109,280
Additional 10% of RD Loan	10,928
Annual Payment, DEQ Loan WW0904	5,000
Additional 10% of DEQ Loan WW0904	500
Self-Imposed Capital Improvements Fund	18,484
Annual Costs	**$240,192**

For this proposed project, the primary funding options are again grants and low interest loans. The City investigated funding from RD, IDEQ, and CDBG, and determined that a combination of CDBG and IDEQ funds would be the most economical. The City has been short-listed for a 2011 CDBG grant and FY 2011 DEQ loan. Both agencies have set deadlines for the City to submit additional information before funding is confirmed.

The two cost alternatives for the proposed project are as follows:

With CDBG Funding	
Total project cost with contingency:	$1,207,988
Remaining funds, DEQ Loan WW 0904	- 166,068
Community Development Block Grant:	- 450,000
Amount of 2011 DEQ Loan needed:	**$ 591,920**
Without CDBG Funding	
Total project cost with contingency:	$1,207,988
Remaining funds, DEQ Loan WW 0904	- 166,068
Amount of 2011 DEQ Loan needed:	**$1,041,920**

The 2011 DEQ Loan estimate is for $1.2 million, with a 20-year repayment, 0% interest during design and construction and a $243,852 subsidy. If the City borrows less than $1.2 million, it is assumed the subsidy will be reduced accordingly. Further, assume DEQ will charge 1.75% interest over 20 years if the City borrows less than $956,148. The debt service fee, spread out over both Onaway and Potlatch users, can be calculated as follows:

Debt Service with CDBG Funding
$591,920 DEQ Loan @ 1.75% for 20 years = $35,300 annual payment for 20 years.
$ 35,300 / 516 Equivalent Dwelling Units / 12 months per year =
$ 5.70 per EDU monthly debt service fee

Debt Service without CDBG Funding
$ 85,772 subsidy from DEQ = No repayment required
$956,148 DEQ Loan @ 1.75% for 20 years = $57,000 annual payment for 20 years.
$ 57,000 / 516 Equivalent Dwelling Units / 12 months per year =
$ 9.20 per EDU monthly user fee

Table 5-3 summarizes the financial plan:

Table 5-3
Financial Plan

Description	Existing Conditions	Project Cost, with CDBG Funding	Project Cost, w/o CDBG Funding
Annual Operating Costs	$ 96,000	$107,000	$107,000
Annual Payment, RD Loan	$109,280	$109,280	$109,280
Additional 10% of RD Loan	$10,928	$10,928	$10,928
Annual Payment, DEQ Loan 2009	$5,000	$5,000	$5,000
Additional 10% of DEQ Loan 2009	$500	$500	$500
Annual Payment, DEQ Loan 2011	---	$35,300	$57,087
Capital Improvements Fund (Note 1)	$18,484	---	---
= Total Revenue Required	$240,192	$268,008	$289,795
Less Revenue from Onaway (Note 2)	($15,552)	($22,392)	($26,592)
= Annual Revenue Required from City of Potlatch Sewer Customers	$224,640	$245,616	$263,203
Divided by 12 = Monthly Rev. Req'd	$18,720	$20,468	$21,933
Divided by # of Potlatch EDU's	416	416	416
Monthly User Fee =	**$45.00**	**$49.20**	**$52.72**

Note 1: Capital Fund no longer needed, since the City is constructing the project they've been saving for.
Note 2: Assumes the City of Potlatch will raise Onaway's rates proportionately, i.e. the 100 users in Onaway and the 416 users in Potlatch each pay the same debt service cost for the project.

Financial resources are limited. A monthly rate of $52.72 may be too high for some families in the community. The best option is to secure CDBG funds, then raise the monthly rate to around $49.20 in 2012 or 2013 (after construction is completed).

Another viable option to keep rates low is to create a public utility district (PUD), where vacant properties are assessed impact / sewer fees until developed. If growth occurs, they will be assessed their share of the improvements through a capital improvement fee, which could potentially alter the monthly user fee and/or pay off the loans earlier.

EXCLUSIONS

This report does not include:

- Analyzing or determining water chemistry or flow direction of groundwater in the proposed disposal areas.
- Verifying property ownership at selected sites, searching for existing survey monuments, nor topographic survey of the sites
- Nutrient – Pathogen study
- Environmental Information Document (EID), Environmental Impact Statement (EIS), other environmental documents not specifically described above.
- Preliminary Engineering Report

ACRONYMS

ARRA	American Recovery and Reinvestment Act of 2009
CDBG	Community Development Block Grant
EDU	Equivalent Dwelling Unit
EPA	Environmental Protection Agency
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
LSAS	Large Soil Absorption System
NPDES	National Pollutant Discharge Elimination System

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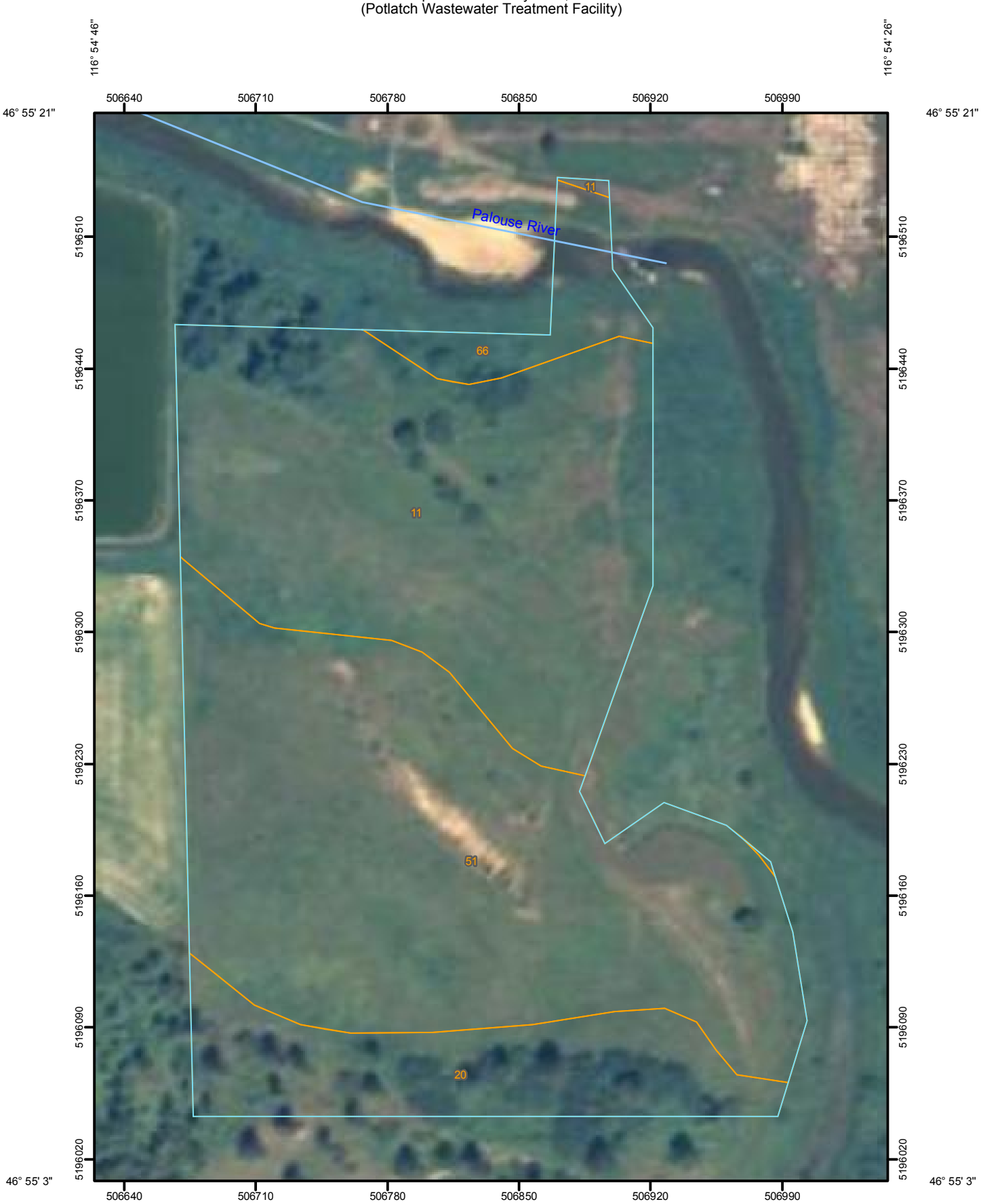
Appendix B

Soil Information

Soil Map—Latah County Area, Idaho
(Potlatch Wastewater Treatment Facility)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Gully

Short Steep Slope

Other

Political Features

Cities

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

MAP INFORMATION

Map Scale: 1:2,710 if printed on A size (8.5" × 11") sheet.

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 11N NAD83

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

Soil Survey Area: Latah County Area, Idaho
Survey Area Data: Version 6, Jan 31, 2008

Date(s) aerial images were photographed: 6/21/2004

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

Map Unit Legend

Latah County Area, Idaho (ID610)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
11	Hampson silt loam, 0 to 3 percent slopes	10.6	37.2%
20	Klickson silt loam, 25 to 35 percent slopes	3.8	13.3%
51	Taney silt loam, 7 to 25 percent slopes	12.9	45.2%
66	Water	1.2	4.3%
Totals for Area of Interest		**28.5**	**100.0%**

Latah County Area, Idaho

20—Klickson silt loam, 25 to 35 percent slopes

Map Unit Setting

Elevation: 1,500 to 5,000 feet
Mean annual precipitation: 24 to 32 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 70 to 100 days

Map Unit Composition

Klickson and similar soils: 85 percent

Description of Klickson

Setting

Landform: Canyons
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loess and/or alluvium and/or colluvium derived from basalt

Properties and qualities

Slope: 25 to 35 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.2 inches)

Interpretive groups

Land capability (nonirrigated): 6e

Typical profile

0 to 1 inches: Slightly decomposed plant material
1 to 16 inches: Silt loam
16 to 27 inches: Very cobbly loam
27 to 61 inches: Very cobbly loam
61 to 65 inches: Very cobbly silty clay loam

Data Source Information

Soil Survey Area: Latah County Area, Idaho
Survey Area Data: Version 6, Jan 31, 2008

Latah County Area, Idaho

11—Hampson silt loam, 0 to 3 percent slopes

Map Unit Setting

Elevation: 2,300 to 2,700 feet
Mean annual precipitation: 23 to 28 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 100 to 120 days

Map Unit Composition

Hampson and similar soils: 90 percent
Minor components: 5 percent

Description of Hampson

Setting

Landform: Stream terraces, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water capacity: High (about 11.3 inches)

Interpretive groups

Land capability (nonirrigated): 3w

Typical profile

0 to 28 inches: Silt loam
28 to 60 inches: Silt loam

Minor Components

Aquolls

Percent of map unit: 5 percent
Landform: Depressions

Data Source Information

Soil Survey Area: Latah County Area, Idaho
Survey Area Data: Version 6, Jan 31, 2008

Latah County Area, Idaho

51—Taney silt loam, 7 to 25 percent slopes

Map Unit Setting

Elevation: 2,300 to 3,900 feet
Mean annual precipitation: 24 to 27 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 100 to 130 days

Map Unit Composition

Taney and similar soils: 85 percent

Description of Taney

Setting

Landform: Hillslopes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Volcanic ash and/or loess

Properties and qualities

Slope: 7 to 25 percent
Depth to restrictive feature: 27 to 40 inches to abrupt textural change
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 6.0 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Typical profile

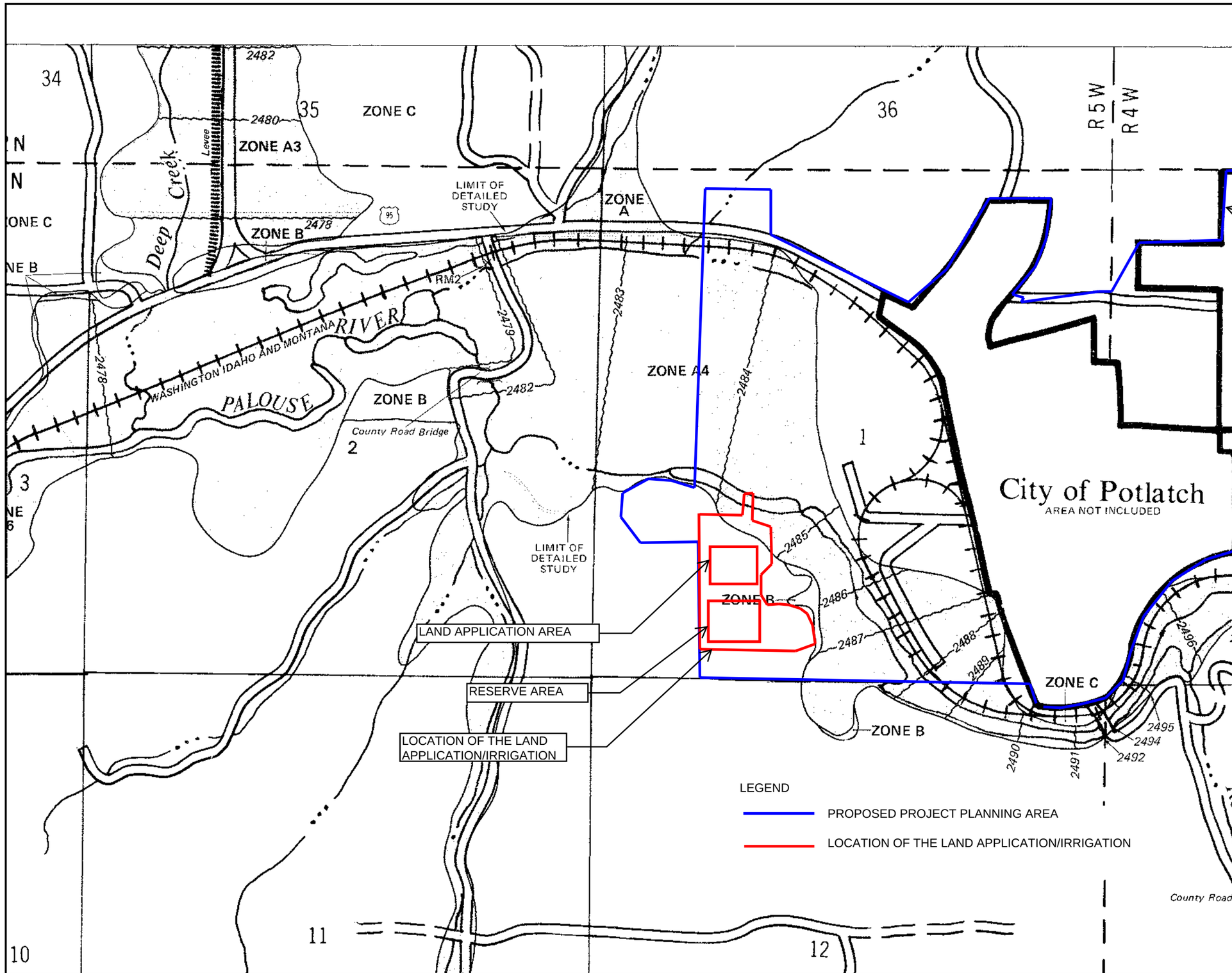
0 to 10 inches: Silt loam
10 to 27 inches: Silt loam
27 to 60 inches: Silty clay loam

Data Source Information

Soil Survey Area: Latah County Area, Idaho
Survey Area Data: Version 6, Jan 31, 2008

Appendix C

FEMA Flood Plain Map



APPROXIMATE SCALE

1000 0 1

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

LATAH COUNTY, IDAHO
(UNINCORPORATED AREAS)

PANEL 135 OF 475
(SEE MAP INDEX FOR PANELS NOT PRINTED)

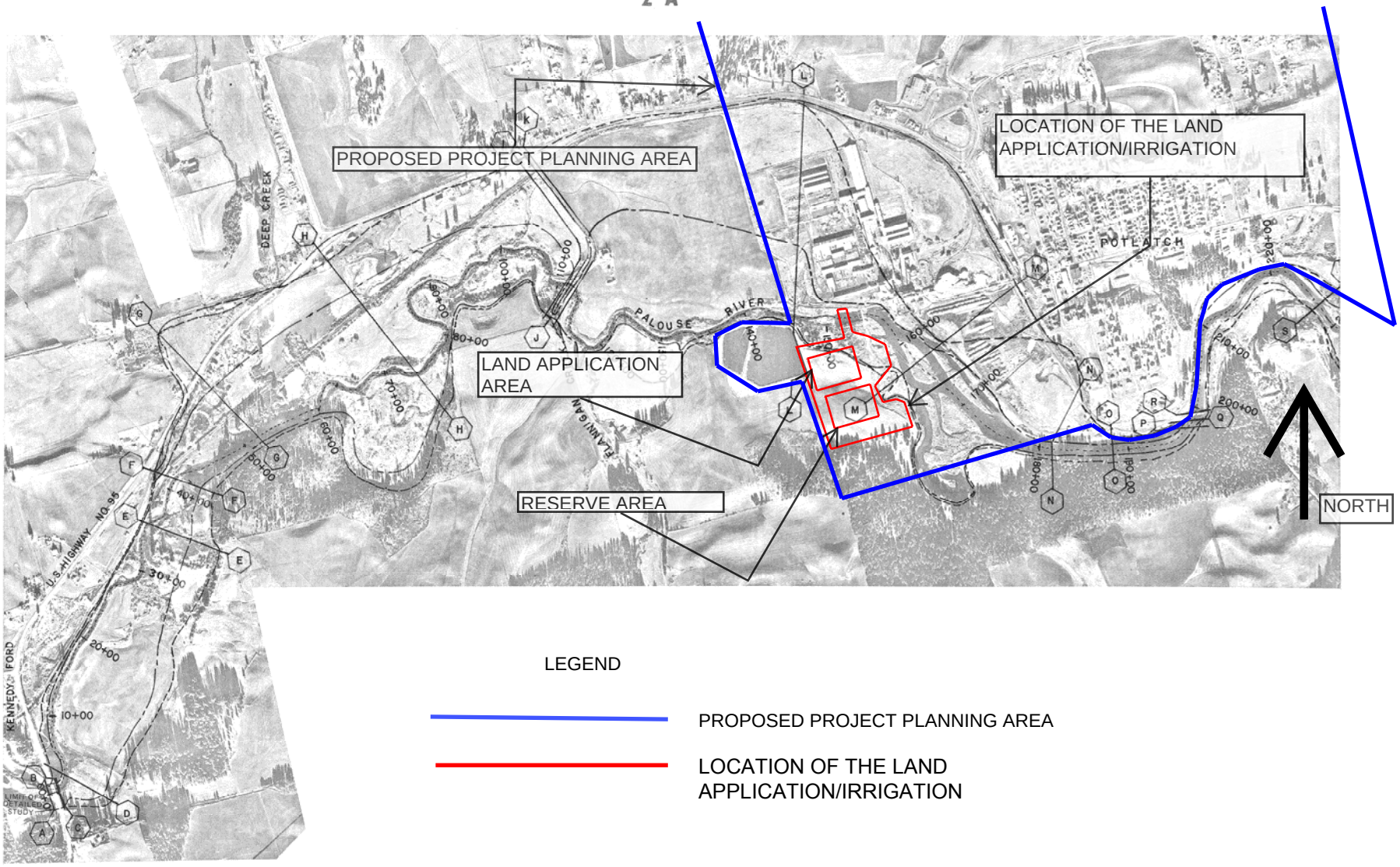
COMMUNITY-PANEL NUMBER
160086 0135 B

EFFECTIVE DATE:
AUGUST 15, 1980

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

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

2 A


PROPOSED PROJECT PLANNING AREA
LOCATION OF THE LAND APPLICATION/IRRIGATION
LAND APPLICATION AREA
RESERVE AREA
NORTH
DEEP CREEK
PALOUSE RIVER
POTLATCH
FLANNIGAN
U.S. HIGHWAY NO. 95
KENNEDY FORD
LIMIT OF DETAILED STUDY
LEGEND
PROPOSED PROJECT PLANNING AREA
LOCATION OF THE LAND APPLICATION/IRRIGATION

2 B

Taylor Engineering, Inc.
Civil Design and Land Planning

Principals:
Perry M. Taylor, P.E.
Stanley R. Stirling
Mark A. Aronson, P.E.
David C. Larsen, P.E.
Ronald G. Pace, P.E

Associates:
Scott M. Busch, P.E.
Frank R. Ide, A.S.L.A.
Chris H. Mansfield, P.E.
Thomas K. Stirling

Chief Financial Officer:
Edwin G. Wagnild

September 4, 2007

Nancy Bowser
Sr. Water Quality Analyst
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706

Re: City of Potlatch – Regional Wastewater Treatment and Collection System Facilities Planning Document, Supplement #1.

Dear Nancy:

We are writing in reference to your email dated August 15, 2007 and have the following response for each item requiring clarification. Your email is attached hereto for completeness.

1. Map of Project Footprint: per your request in our phone conversation on August 15th, a "Google" Map of the entire project area, to include: The City of Potlatch, Onaway and the Lagoons is attached hereto.
2. US Army Corps of Engineers – Project Response: please see the attached letter and email. Based on the response from the COE, it appears an Army Corps 404 Permit may be required for construction of the river crossing. Therefore as the project progresses into design, we propose additional coordination with the Corps, for the entire project, to ensure the proper permitting is obtained.

   Please refer to the attached wetland area map obtained from the US Fish and Wildlife Wetlands Mapper for this area and in particular the area between Potlatch and the lagoons where the influent line crosses under the river.
3. 100-Year Flood Plain: Please refer to the attached print from available FEMA Maps. Based on the attached map and previously referenced area map, the 100-year flood elevation within the Potlatch and Onaway Area ranges between 2483 and 2495. More specifically, related to the lower lying infrastructure to include the lagoon and lift station, the 100-year flood elevation ranges between 2483 and 2486. The lagoon top of bank and lift station is at an elevation of approximately 2492.40 and 2492.10, respectively. Therefore, not impacted by the 100-year flood plain.

Additionally, as noted in the attached response from USGS, the flood of 1996 was considered greater than the 100-Year Flood. Please refer to the attached email from USGS.

With respect to the flood of 1996, Tom Andres who is the Public Works Director for the City of Potlatch indicated to Taylor Engineering in a phone interview on 08/21/07 that the lagoon embankment was approximately 2.23-feet above the flood elevation. Tom also indicated that the Palouse River reached an elevation within 4-inches of the outfall overflow of the lagoons, elevation 2490-ft. At that time, if flood waters would have exceeded the outfall elevation of the lagoon, the City would have closed the outlet valve. This in turn would have isolated the lagoons from the river and provided an addition 2-ft of lagoon embankment height between the rivers water elevation. The top of lagoon embankment is at an elevation of 2492.40 and the outfall elevation is at 2490.50.

4. Anadromous fish listed by the National Marine Fisheries Service: Please see the attached email from Bob Ries. In Bob's email, Bob indicated that: *"it seems unlikely that effects of the project would extend downstream where listed anadromous fish and designated critical habitat are found. Consequently, consultation with NMFS is not required unless you have reason to believe that the sewage project would affect water quality downstream from Palouse Falls."*

5. Biological Assessment: Please see the attached site survey information prepared by Tom Duebendorfer.

6. Population and Growth: For clarification, during the initial development of the Facilities Plan both IDEQ-Lewiston and USDA-RD agreed that the project should analyze the project based on a 30-year design life. This was due to the City's preferred funding source and financing period, through USDA-RD and reason for the 30-year period analyzed. Since submittal of the Facilities Planning Document, the City completed and passed a bond election to fund Options 1 through 3. The City is now proceeding with funding the project through USDA-RD and their 30-year financing program.

   This clarification leads to necessary additional clarification. The analysis performed in Section 6 identifies an average 12.5% population growth over a 34-year period. Therefore, approximately 0.4% per year growth. Assuming the same growth projection for the next 30-years, the projected population is approximately 848 people ($760 \times 1.0042^{30yrs}$). This clarification revises Section 6.1 of the previously submittal Facilities Planning Document.

   With respect to your request for 20 and 40 year population growth projections, the projected growth is 826 and 898, respectively associated with the analysis in Section 6 of this report.

Nancy, we hope that the additional information provided adequately addresses your comments and provides IDEQ with sufficient information for approval of the Facilities Plan. However, if you have any questions of need additional information, please let me know.

Sincerely

PROFESSIONAL ENGINEER
REGISTERED
10979
09/10/07
STATE OF IDAHO
ERIC W. SHANLEY

Eric W. Shanley, P.E.
Coeur d'Alene Office Manager

Attachments: August 15, 2007 email from Nancy Bowser
Map of Project Footprint
US Army Corps of Engineers Project Response
Wetland Area Map
FEMA, 100-year Flood Plain Map
USGS Email Regarding Historical Flood Events
Biological Assessment, Site Survey

Cc: Mayor David Brown, City of Potlatch
Thomas Moore, P.E., IDEQ Lewiston
Jeff Beeman, USDA-RD, Coeur d'Alene
Walter Steed, Walter Steed & Assoc., Moscow
File

Appendix D

Wetland Delineation

WETLAND DETERMINATION

for the

CITY OF POTLATCH

REGIONAL WASTEWATER FACILITIES PROJECT

LAND APPLICATION/TREATMENT SITE

Latah County, Idaho

Report submitted to:

The City of Potlatch
P.O. Box 525
Potlatch, ID 83855
(208) 875-0708

Chris Mansfield, P.E.
Taylor Engineering, Inc.
1044 Northwest Blvd., Suite A
Coeur d' Alene, ID 83814
(208) 664-9405

Prepared by:

Tom Duebendorfer, MA, PWS
PO Box 167
Elmira, Idaho 83865
(208) 290-5992
tdueb@wildblue.net

Original report (January 2010)

Updated July 18, 2011
(excludes references to "Parcel 1")

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- 2.3 Site Description 2

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Appendices

A Wetland Indicator Status
B Wetland Delineation Methods
C Data Plot Forms (5 forms - 2 pages each)
D Photographs

Report Preface

This Wetland Determination has been prepared for use by the City of Potlatch, Taylor Engineering, Inc., the Idaho Department of Environmental Quality, and the US Army Corps of Engineers. I am qualified to analyze terrestrial and wetland ecosystems. I have 30 years experience in assessing Northwest province ecosystems. I have used the site information and proposed plans as referenced herein. The findings in these reports are based on information gathered in the field at the time of investigation and my understanding of the federal, state, and local regulations governing species protection. Prior to construction, all appropriate regulatory agencies should be contacted to concur with the findings of this report and to obtain appropriate approvals and permits.

The Wetland Determination is presented using thorough application of my knowledge and experience, and best professional judgment based on the circumstances and site conditions at the time of the study. The final wetland setbacks (if any) are made by the appropriate federal, state, and local jurisdiction. I have provided professional services in accordance with the degree of care and skill generally accepted in the nature of the work performed.

Tom Duebendorfer M.A., PWS
Wetland Scientist/Biologist/Botanist

1.0 INTRODUCTION

The City of Potlatch authorized me to prepare a Wetland Delineation for the Onaway Water and Sewer District proposed Land Application/Treatment project in Latah County, Idaho (located in a portion of Section 1, Township 41 North, Range 5 West, Boise Meridian, Latah County, Idaho [Figures 1 and 2]). Since the project requires compliance with the SEPA and NEPA process, an evaluation for potential impacts to wetlands is required. This document is forwarded to the agencies as a part of this compliance process.

2.0 PROPOSED ACTION, PURPOSE, AND SITE DESCRIPTION

2.1. PROPOSED ACTION

The proposed Regional Wastewater Collection Land Treatment System Project consists of two areas of land irrigation on the subject property. This project involves installation of two center pivot sprinklers with 40 sprinkler heads each, plus 60 additional heads on fixed lines. Wetland areas will not be excavated for running the subsurface water lines. The City intends to apply an average of 5.3 million gallons of treated effluent (varying between Class "B" and "C" as defined by IDAPA 58.01.17, Recycled Water Rules) annually, and the volume will vary, up to 24.5 million gallons per year if conditions are optimal. Maximum loading and seasonal irrigation periods will likely be dictated by the Wastewater Land Application Permit (WLAP). The City plans on irrigating 6 months per year (May thru October), depending on conditions. The City does not plan on irrigating while the ground is flooded or saturated (a situation generally prohibited in the WLAP). The length of time that water stays on the ground varies from year to year.

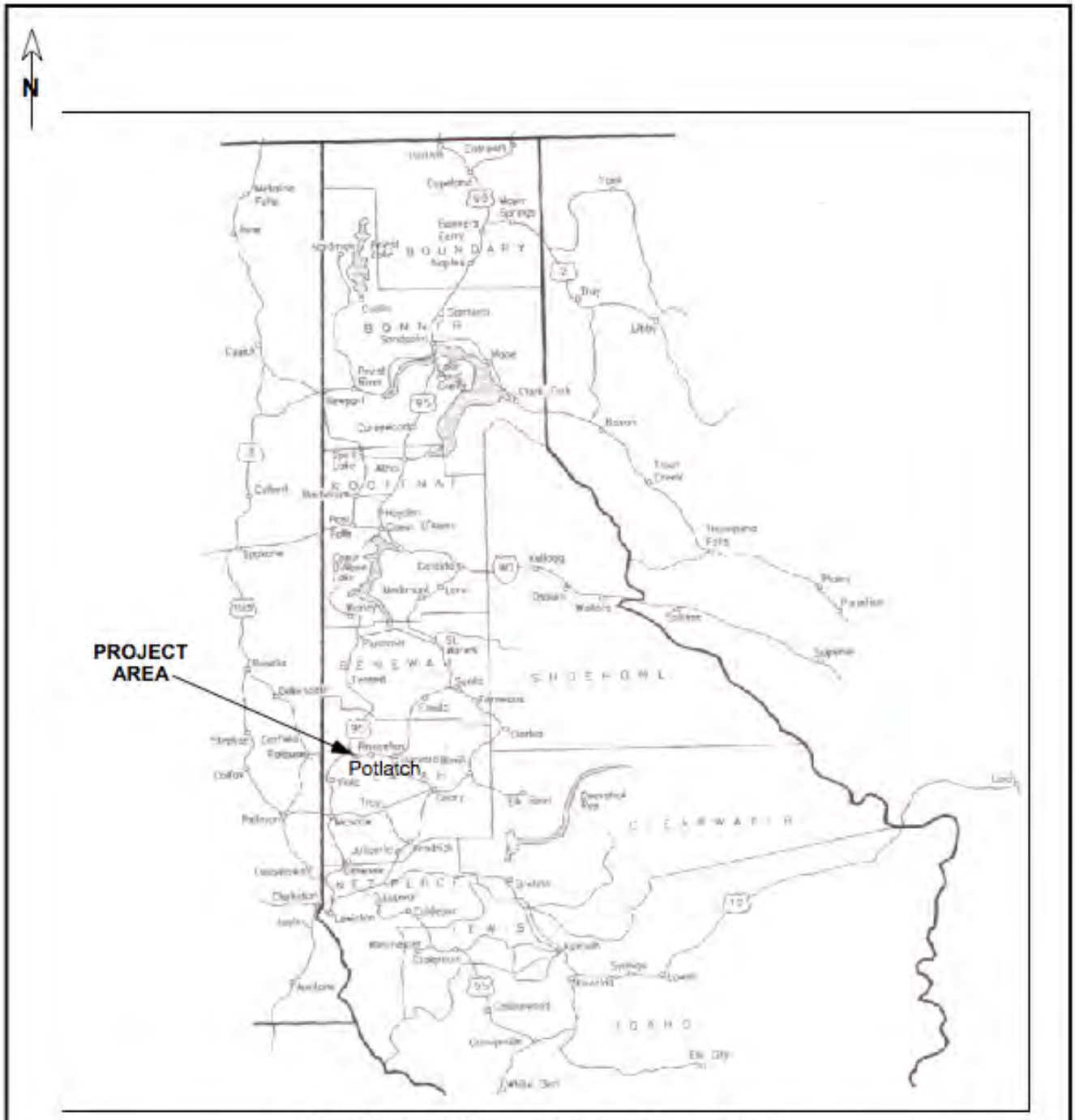
2.2 PURPOSE

The purpose of this wetland study was to review existing documents and data pertaining to the site and delineate, describe, and map the presence and extent of wetlands on the subject property per the US Army Corps of Engineers Triple Parameter Methodology and as updated (in 2010) by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region.* Details of these methodologies and site-specific methods used are given in Appendices A and B. This report, once verified by the appropriate agencies, may be used by the project proponent to determine any permit requirements associated with construction plans.

Agencies potentially maintaining jurisdiction over development of the site include the Corps of Engineers (Corps), Idaho Department of Environmental Quality, and the City of Potlatch. Compliance with these regulations requires identification of wetlands as part of the land development process.

2.3 SITE DESCRIPTION

The project area presently consists of about 51 acres of undeveloped land located south of the Palouse river, and consists of a riparian band along the river (with some cottonwoods), weedy areas (formerly used as a dump site), and ponderosa pine woodland along the southern hilly area.



City of Potlatch, Onaway Water and Sewer District
portion of Section 1, Township 41 North, Range 4 West
Latah County, Idaho

no scale

Figure 1.
Vicinity Map
City of Potlatch Wastewater Facilities Project
Land Application /Treatment Sites

Figure 2.
Aerial Photograph
City of Potlatch Wastewater Facilities Project
Land Application/Treatment

3.0 INVESTIGATION FINDINGS

I initially investigated the site in winter (January, 2010). At that time, I completed three Data Plots and produced a wetland map based on an aerial photograph and the site visit. In June 2011, I completed a formal delineation (completing two additional data plots) and identified the jurisdictional wetland boundaries, mapping them using GPS. Three wetland parameters (hydrophytic vegetation, hydric soils, and wetland hydrology) must be simultaneously present for an area to be considered a jurisdictional wetland. Where the three criteria cannot simultaneously be observed, *indicators* of the criteria are used (Appendices A and B). Site-specific information on the three wetland parameters is described in the following paragraphs. Photographic documentation is given in Appendix C.

3.1 VEGETATION

On-site vegetation in the subject project area can be generally classified into five associations (1) **emergent wetland**, (2) **ruderal (weedy)**, (3) **upland meadow**, (4) **deciduous riparian**, and (5) **Ponderosa pine woodland**. The wetland indicator status of the dominant plant species are given in [brackets] and defined in Appendix A.

The **emergent wetland** association exists in several locations within the subject property. On the aerial photograph, it is characterized by dark green shading in patches and is dominated primarily by reed canarygrass (*Phalaris arundinacea* [FACW]) with areas of common tansy (*Tanacetum vulgare* [NI]). This association is hydrophytic.

The **ruderal (weedy)** association exists throughout portions of the subject property. It consists of roadside weeds associated with neglected and/or disturbed residential and city conditions. It is mostly dominated by tansy, quackgrass (*Elytrigia repens* [FAC-]), thistle (*Cirsium vulgare* [FACU]), mullein (*Verbascum thapsus* [NL]), bentgrass (*Agrostis stolonifera* [FAC), knapweed (*Centaurea maculosa* [NL]), and tumble mustard (*Sisymbrium* sp [UPL]). Although there some facultative species, the dominant vegetation would not be considered hydrophytic.

The **upland meadow** is located mostly throughout the central portion of the subject property. It consists of quackgrass, smooth brome (*Bromus inermis* [NL]), soft chess (*Bromus mollis* [NL]), cheatgrass (*Bromus tectorum* [NL]), orchardgrass (*Dactylis glomerata* [FACU]), ventenata (*Ventenata dubia* [NL]), bentgrass, yarrow (*Achillea millefolium* [FACU]), absinth wormwood (*Artemisia absinthium* [NL]), wormwood (*Artemisia ludoviciana* [FACU]), St. John's wort (*Hypericum perforatum* [NL]), and teasel (*Dipsacus sylvestris* [FAC]). It is somewhat disturbed but not to the extent of the ruderal association. It would not be considered hydrophytic.

The **deciduous riparian** is located in the northern portion of the subject property. It is adjacent the band of canarygrass along the river and is topographically approximately at the same elevation as that association. It is characterized by cottonwood (*Populus balsamifera* [FAC]) with occasional hawthorn (*Crataegus douglasii* [FAC]), snowberry (*Symphoricarpos albus* [FACU]) over canarygrass, rose (*Rosa* sp), scouring rush (*Equisetum hyemale* [FACW]) and cow parsnip (*Heracleum lanatum* [FAC]). Its southern border trends topographically higher into the upland meadow dominating the central portion of the site. The vegetation would be considered hydrophytic.

The **Ponderosa pine woodland** forms the southern portion of the site. It is located on a considerable topographic rise and is dominated by Ponderosa pine (*Pinus ponderosa* [FACU]) over occasional hawthorn, ocean spray (*Holodiscus discolor* [NL]), snowberry, and ninebark (*Physocarpus capitatus* [FACW]—this is an odd hydrophyte to observe on a relatively steep slope away from seeps or groundwater). Groundcover is bentgrass, red fescue (*Festuca rubra* [FAC]), St. John's wort, and yarrow. This association is not hydrophytic.

3.2 SOILS

General

The NRCS (via website) mapped the area as being underlain by primarily three mapping units:

Map Unit 11—Hampson silt loam
Map Unit 20—Klickson silt loam; and
Map Unit 51—Taney silt loam.

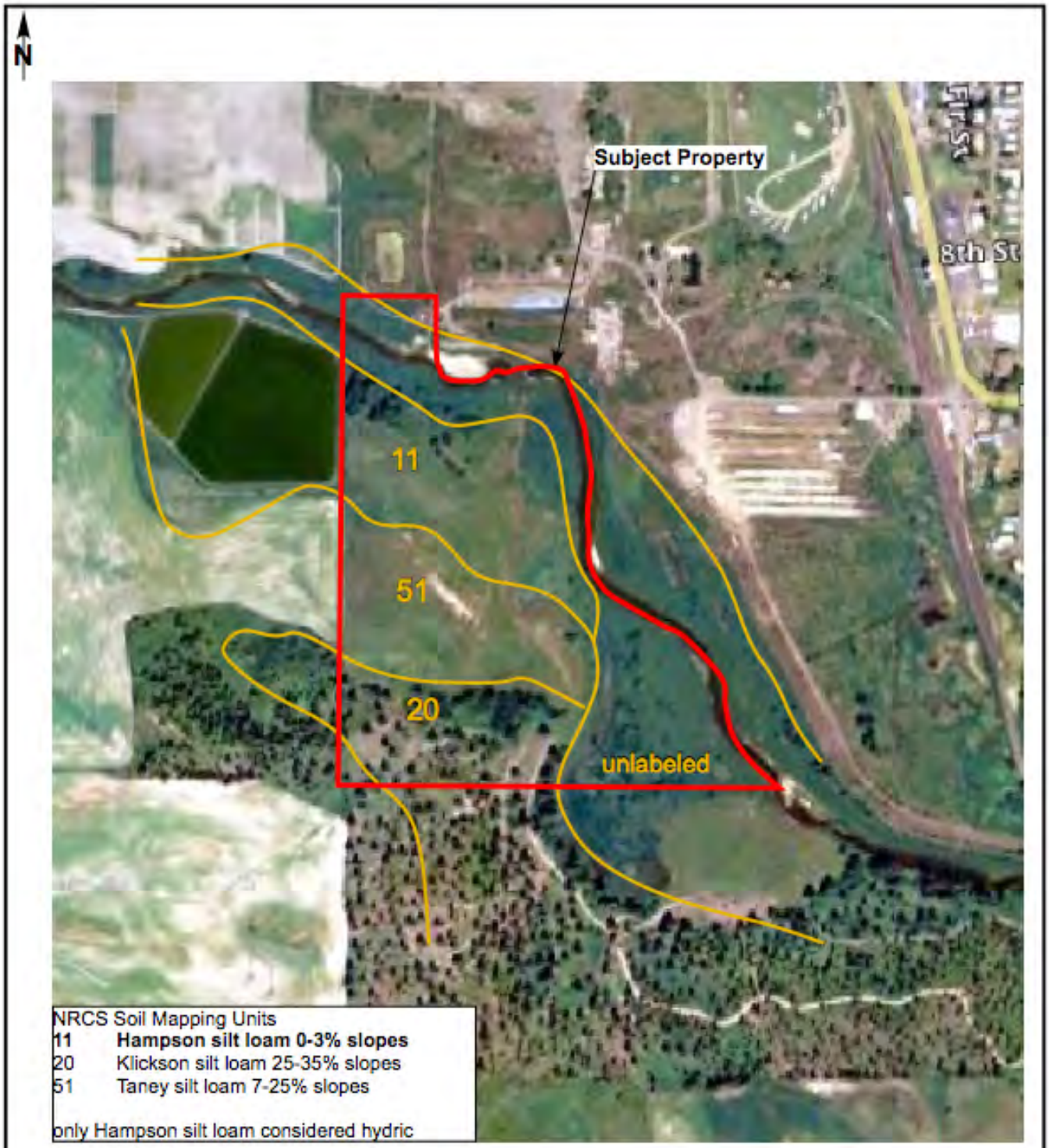
Only Hampson silt loam is considered hydric IF it lies in depressional areas (criterion 2B3 - saturation).

Specific

I completed three soil pits (DP 3, 4, 5) in January 2010 and completed two others (DP 6, 7) in June 2011. Soil pits completed in June 2011 were used to demonstrate that areas <u>between</u> observed wetlands were upland. The soils appear to be essentially consistent with the Hampson silt loam profile. Table 1 identifies characteristics of the pertinent January 2010 and the June 2011 data plots.

Table 1. Data Plots

Data Plot	Vegetation	Soils	Hydrology
DP 3	canarygrass (hydrophytic)	0-16" 10YR 2/2 not hydric	inferred
DP 4	smooth brome, red fescue, timothy, knapweed, orchardgrass (not hydrophytic)	0-16" 10YR 2/2 not hydric	absent
DP 5	smooth brome, bentgrass, timothy, knapweed, yarrow, orchardgrass (not hydrophytic)	0-16" 10YR 2/2 not hydric	absent
DP 6	Kentucky bluegrass, quackgrass, foxtail, teasel, tansy (hydrophytic)	0-4" 10YR 2/1 4-8" 10YR 3/2+ 8+" 10YR 4/2 w/ 4/6 (hydric)	present at 4"
DP 7	red fescue, Kentucky bluegrass, tansy (hydrophytic)	0-16"+ 10YR 2/2 (not hydric)	absent



no scale

July 2011

Figure 3.
NRCS Soils Map
City of Potlatch Wastewater Facilities Project
Land Application/Treatment

3.3 HYDROLOGY

The National Wetlands Inventory maps for the Potlatch area are not available digitally. Hard copies were not obtained from the USDI/USGS sources. Hydrology to the site appears to come largely from precipitation and possibly shallow groundwater. It is does not appear that the Palouse River is a significant contributor to surface water except perhaps for the river terraces and immediate floodway and floodplain of the river. The hillside could collect precipitation and shunt it downslope toward the river—however there were no obvious signs this occurs within the upper 20 inches of the soil surface (where anaerobic conditions are required for positive wetland hydrology). There were no abrupt slope breaks, seeps, or other features that indicate this would be a major contributor to observed hydrology near the river.

Since the June 2010 field investigation was performed during a very wet spring, the surface water or ponding I observed could have been the result of excessive precipitation—however, I determined that the hydrology I observed was probably a fairly accurate representation of seasonal variability.

3.4 WETLAND DETERMINATION

Figure 4 shows the locations of wetland areas as they were determined during the field investigation using a Trimble handheld GPS unit. I used a digitally enlarged NAIP aerial photograph and mapped the GPS points directly onto the maps. I used hydrophytic vegetation, coupled with soil data, topography, inferred wetland hydrology, and best professional judgment in determining the wetland boundaries.

I determined that wetlands occur on the subject property. Descriptions and locations are given below and shown on Figure 4.

Wetland A includes the area south of the Palouse River and likely serves as a intermittent floodplain. It is dominated by canarygrass and further south trends into a band of cottonwoods. Surface hydrology was observed during the site visit. From the top of bank of the river to the upland/wetland boundary, the wetland encompasses about 214,847 sf (4.93 acres)

Three small canarygrass-dominated depressions (Wetland B, C, and D) appeare to be at an elevation near the base of the lagoon berm and I noted seasonal hydrology in these areas. Wetland B is 0.4 acres, Wetland C is 0.02 acres, and Wetland D is 0.1 acres. These three small wetlands appear to be “isolated depressions” and I did not observe any surface hydrology connections to Wetland A. Wetland E encompasses an area adjacent the river in the southeast portion of the property. It is also dominated by canarygrass and extends to the top of bank of the river.

Thus total wetland area shown on Figure 4 is about 15.8 acres. The wetlands would be classified as palustrine, emergent, persistent, seasonally flooded (PEM1C) with a small portion (Wetland A) being PFO1C (forested, deciduous).

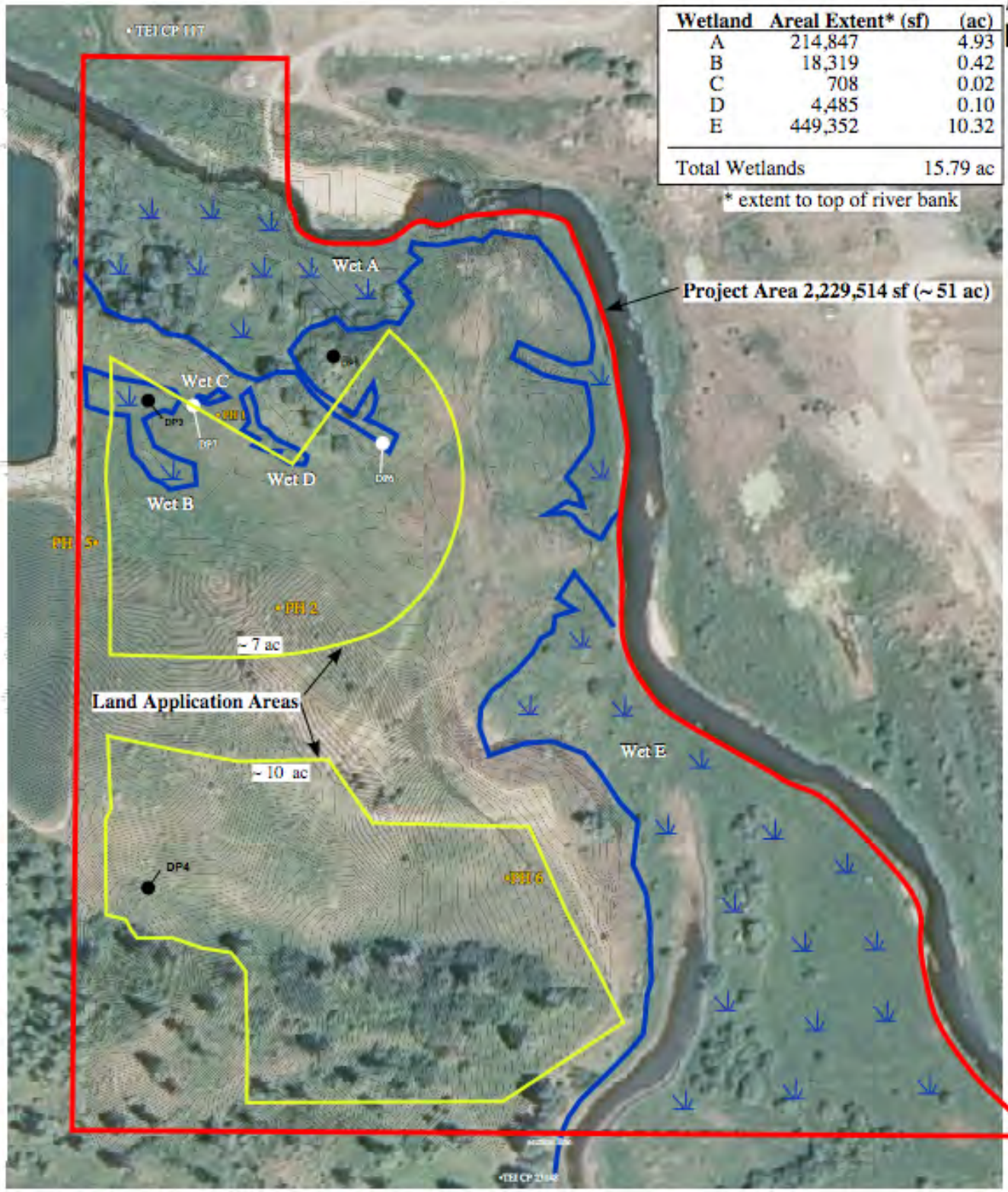


Figure 4.
Wetland Delineation, Data Plot and Photograph Location Map
City of Potlatch Wastewater Facilities Project
Land Application/Treatment

July 2011

4.0 PROJECT ACTIVITIES/WETLAND IMPACTS

As described previously, the project involves land application of sewage effluent after lagoon treatment. There will be no direct wetland impacts (fill or dredging) required. The system will be installed in upland areas—however the increased volume of water into the wetlands (as shown on Figure 4) will likely extend the periodicity of surface and subsurface moisture into Wetlands B, C, D, and a small "arm" of Wetland A (see Figure 4). Given the dominant characteristics of these wetland areas (primarily canarygrass, a non-native wetland weed), I do not expect there will be any long-term adverse effects to the wetlands. In addition, my opinion is that Wetlands B, C, and D appear "isolated" and may not be under Clean Act Water jurisdiction. Since the increased hydrology may result in a longer hydrologic cycle, it is possible that the canarygrass and low-quality wetland weeds present in these areas may be replaced by more preferred native wetland species.

5.0 REGULATORY IMPLICATIONS

General

Several federal and local regulations apply to development proposals in and near wetlands. Agencies having jurisdiction over development activities that affect wetlands may include, but are not limited to the US Army Corps of Engineers (Corps), the US Fish and Wildlife Service, the Environmental Protection Agency, the Idaho Department of Fish and Game, and the Idaho Department of Environmental Quality. The Corps regulates the discharge of fill material into wetlands and waters of the United States. ***This report and the findings contained herein are subject to verification and approval by jurisdictional agencies.***

Pursuant to the Clean Water Act, the Corps regulates the discharge of dredged and fill materials into waters of the United States including wetlands. Generally, the Corps will issue a letter of compliance describing permit conditions within two months after an application is submitted.

Specific

Because of the historical hydric soils, hydrophytic vegetation, and observed hydrology with <u>likely</u> hydrologic connections to off-site tributaries, the on-site wetlands were mapped as "jurisdictional". However, the three small depressional wetlands (Wetlands B, C, and D) may <u>not</u> be regulated if the Corps determines these pockets to be "isolated". It is the responsibility of the Corps to issue a jurisdictional letter upon review of this delineation and report.

6.0 REFERENCES

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Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1*, US Army Engineer Waterways Experiment Station, Vicksburg, Miss.; and as updated (in 2008) by the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*.

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US Army Corps of Engineers. 1994. 1993 Supplement to National List of Plant Species that occur in wetlands: Northwest (Region 9). Special Public Notice; March 31 1994.

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APPENDIX A:
Wetland Indicator Status System
(Reed 1988, revised 1994)

Indicator category	Indicator Symbol	Definition
OBLIGATE WETLAND PLANTS	OBL	Plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in non-wetlands.
FACULTATIVE WETLAND PLANTS	FACW	Plants that occur usually (estimated probability 67% to 99%) in wetlands, but also occur (estimated probability 1% to 33%) in non-wetlands.
FACULTATIVE PLANTS	FAC	Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands.
FACULTATIVE UPLAND PLANTS	FACU	Plants that occur sometimes (estimated probability 1% to <33%) in wetlands, but occur more often (estimated probability 67% to 99%) in non-wetlands.
UPLAND PLANTS	UPL	Plants that occur rarely (estimated probability <1%) in wetlands under natural conditions.
NO INDICATOR STATUS	NI	Plants which do not have sufficient data available to estimate their probability of occurrence in wetlands.
If a plant is not listed in Reed	NL	Corps manual states that these species are **obligate upland.**

APPENDIX B:
Wetland Delineation Methods

Wetland investigations were undertaken utilizing the *Corps of Engineers Wetland Delineation Manual* (Technical Report Y-87-1), and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*. This method requires that evidence of three parameters (a dominance of hydrophytic vegetation, hydric soils, and wetland hydrology) be simultaneously present for a jurisdictional wetland determination. Hydric Soils of the United States (NTCHS, NRCS, 1995, 2006) acts as an amendment to the Corps manual and is used for determining hydric soils. Analysis of wetlands on-site involves collecting preliminary data and conducting a site-specific investigation. The methods used in these approaches are described below.

Preliminary Research

Review of existing information was conducted to develop background knowledge of physical features and to identify the potential for wetland occurrence on the subject property. Information related to topography, drainage, and water features was obtained from these sources. The following resource documents were available for preliminary review of the site conditions:

- US Department of the Interior, US Geological Survey Map;
- US Department of Agriculture (NRCS soil maps - on-line @ website)
- US Department of the Interior, National Wetland Inventory Map (UNAVAILABLE)
- GoogleEarth aerial photographs

Site-Specific Investigation

Vegetation: Hydrophytic vegetation criteria for wetlands are where: (1) the total dominants of obligate (OBL) and facultative wetland (FACW) plant species exceed the total dominants of facultative upland (FACU) and upland (UPL) species; or (2) the Prevalence Index value is less than 3.0. Representative sample plots were located in areas of homogeneous vegetation. All dominant herbaceous species were identified in the 0.01-acre (11.8-foot radius) data plots. Nomenclature of plant species follows *Vascular Plants of the Pacific Northwest* (Hitchcock et al., 1977), or as modified by Reed (1988, revised 1994). For trees and shrubs, the plot size was increased to a 30-foot radius. Percent cover within the plots is determined by ocular observation. Cover is assigned to cover classes, and the species ranked according to the midpoints of their respective cover classes. The midpoints of ranked species are cumulatively summed until 50 percent of the total for all species midpoints is immediately exceeded.

All species contributing to the cumulative total plus any species having 20 percent of the total midpoint value are considered dominants. Plant indicator status is then assigned (per Reed 1988, and 1994) to each dominant to determine the percent of hydrophytes. Vegetation in areas where more than 50 percent of the dominant species are hydrophytes (plant species adapted to saturated conditions, i.e., FAC or wetter) was considered to be hydrophytic. Plant indicator status definitions and a list of vascular plant species identified during the survey are given in the Appendices.

Soils: Hydric soil is defined as *soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part*. In accordance with the methodology, soil samples were taken at all data plots as well as other points on the site. The test of this definition is met when the following indicators of hydric conditions are present, direct observation of flooding, ponding, or surface saturation, thick organic layers, and low soil matrix chromas (chroma of 1 without mottles or chroma of 2 or less and value of 4 or more with mottles). Low chroma soils are indicative of reducing conditions (typically during the growing season when soil oxygen is being utilized by soil microorganisms as well as plants). Mottling occurs in areas of fluctuating water table levels (alternating reducing and oxidizing environments). Soils were moistened during the dry season to accurately determine colors on the Munsell Color Charts. During the dry season, apparent surface indicators of wetland hydrology would be used to assess flooding or ponding. Duration of flooding, ponding, or saturation is also important. Hydric soils must be flooded or ponded for long (7 to 30 days) or very long (more than 30 days) duration during the growing season. Hydric soils must be saturated in the upper part for a significant period (usually more than one week) during the growing season.

Hydrology: Wetland hydrology is defined as *all hydrological characteristics of area that are periodically inundated or have soils saturated to the surface at some time during the growing season.* The criteria are: (1) inundation (flooding or ponding) occurs for 7 consecutive days or longer during the growing season in most years (50% chance or more); or (2) saturation at or near the surface occurs for 14 consecutive days or longer during the growing season in most years (50% chance or more). Soils may be considered to be saturated to the surface when the water table is within: (a) 0.5 ft of the surface for coarse sand, sand or fine sandy soils; or (b) 1.0 ft of the surface for all other soils.

Areas with evident characteristics of wetland hydrology are those areas where the presence of water has an overriding influence on characteristics of vegetation and soils because anaerobic and reducing conditions exist. The test of this definition is met when data plots show direct observation of wetland hydrology, or a sufficient number of apparent indicators, including indirect evidence of flooding, ponding, or saturation, water marks, drainage patterns, oxidized root rhizospheres, water-stained leaves, and sediment deposits. Duration of hydrologic conditions creating anaerobic and reducing conditions must also be satisfied.

Wetland Determination

Jurisdictional wetlands were delineated where vegetation, soils, and hydrology all reflect anaerobic conditions as defined and described above. Topography, when diagnostic of hydrologic confines, was considered in refining the wetland boundary. Wetland boundaries were mapped using a Trimble handheld GPS and mapped on a 2009 NAIP aerial photograph.

APPENDIX C:
Data Plot Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: City of Potlatch, Sewer District, Land Application sites City/County: Latah Sampling Date: 1/13/10
Applicant/Owner: City of Potlatch State: ID Sampling Point: Data Plot 3
Investigator(s): Tom Duebendorfer, PWS Section, Township, Range: S 1 T 41N, R 5W
Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): flat Slope (%): <2%
Subregion (LRR): E Lat: 46° 55' Long: -116° 54' Datum: BM
Soil Map Unit Name: Hampson silt loam NWI classification: NWI map unavailable
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ___, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: essentially all canarygrass (small depressional lobe off western property boundary. hydric soil indicators inconclusive (in a hydric mapped soil - but no obvious redox features; hydrology likely and assumed positive due to aerial photo signatures and topographic position

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	100	x 2 =	300
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: Vegetation is hydrophytic

SOIL

Sampling Point: Data Plot 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	100					silt loam	frozen (upper 3 inches)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks: soil does not show redox features; frozen in upper 3 inches as in most soils examined 1/13/10 onsite; however ponding may occur in this are rendering the soil hydric through criterion 2.B.3

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: none

Remarks: hydrology is assumed present in spring months due to signature on aerials; topographic relief; and landscape position. It is not known if seasonal hydrology IS present, but it is likely and thus assumed

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: City of Potlatch, Sewer District, Land Application sites City/County: Latah Sampling Date: 1/13/10

Applicant/Owner: City of Potlatch State: ID Sampling Point: Data Plot 4

Investigator(s): Tom Duebendorfer, PWS Section, Township, Range: S 1 T 41N, R 5W

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): flat Slope (%): <2%

Subregion (LRR): E Lat: 46° 55' Long: -116° 54' Datum: BM

Soil Map Unit Name: Hampson silt loam NWI classification: NWI map unavailable

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐
Hydric Soil Present?	Yes ☐	No ☒
Wetland Hydrology Present?	Yes ☐	No ☒

Is the Sampled Area within a Wetland? Yes ☐ No ☒

Remarks: Vegetation marginally hydrophytic - only one test met - soils do not appear to have redox features, nor is ponding likely; thus hydrology assumed not present - plot is NOT in a wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Phleum pratense	30	Y	FAC
2. Bromus inermis	50	Y	NL
3. Achillea millefolium	15	N	FACU
4. Festuca rubra	30	Y	FAC
5. Agrostis stolonifera	20	Y	FAC
6. Centaurea maculosa	20	Y	NL
7. Verbascum thapsus	10	N	NL
8. Dactylis glomerata	15	N	FACU
	190 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species	0	x 2 = 0
FAC species	80	x 3 = 240
FACU species	30	x 4 = 120
UPL species	80	x 5 = 400
Column Totals:	190 (A)	760 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: Vegetation is hydrophytic - but see other species present

SOIL

Sampling Point: Data Plot 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	100					silt loam	frozen (upper 3 inches)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks: soil does not show redox features; frozen in upper 3 inches as in most soils examined 1/13/10 onsite

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: none

Remarks: hydrology is assumed NOT present in spring months due to topographic relief and landscape position. It is not known if seasonal hydrology is present, and not considered likely and considered not present

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: City of Potlatch, Sewer District, Land Application sites City/County: Latah Sampling Date: 1/13/10

Applicant/Owner: City of Potlatch State: ID Sampling Point: Data Plot 5

Investigator(s): Tom Duebendorfer, PWS Section, Township, Range: S 1 T 41N, R 5W

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): flat Slope (%): <2%

Subregion (LRR): E Lat: 46° 55' Long: -116° 54' Datum: BM

Soil Map Unit Name: Hampson silt loam NWI classification: NWI map unavailable

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks: Plot on topographic rise - vegetation NOT hydrophytic. hydric soil indicators inconclusive (in a hydric mapped soil - but no obvious redox features; hydrology unlikely due to topographic position of "rise" above surrounding areas

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Symphoricarpos albus	25	Y	FACU
2.			
3.			
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Phleum pratense	15	N	FAC
2. Bromus inermis	30	Y	NL
3. Achillea millefolium	15	N	FACU
4. Festuca rubra	15	N	FAC
5. Agrostis stolonifera	20	Y	FAC
6. Centaurea maculosa	20	Y	NL
7. Verbascum thapsus	10	N	NL
8. Dactylis glomerata	15	N	FACU
	140	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species	0	x 2 = 0
FAC species	50	x 3 = 150
FACU species	55	x 4 = 140
UPL species	60	x 5 = 300
Column Totals:	165 (A)	590 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: Vegetation is NOT hydrophytic

SOIL

Sampling Point: Data Plot 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	100					silt loam	frozen (upper 3 inches)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks: soil does not show redox features; frozen in upper 3 inches as in most soils examined 1/13/10 onsite

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: none

Remarks: hydrology is assumed NOT present in spring months due to topographic relief and landscape position. It is not known if seasonal hydrology is present, but is not considered likely and considered not present

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: City of Potlatch, Sewer District, Land Application sites City/County: Latah Sampling Date: 6/28/11

Applicant/Owner: City of Potlatch State: ID Sampling Point: Data Plot 6

Investigator(s): Tom Duebendorfer, PWS Section, Township, Range: S 1 T 41N, R 5W

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): flat Slope (%): <2%

Subregion (LRR): E Lat: 46° 55' 247" Long: -116° 54' 605" Datum: BM

Soil Map Unit Name: Hampson silt loam NWI classification: NWI map unavailable

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: plot in small "arm" of Wetland - marginal swale-like feature. Plot at end of swale feature, vegetation, soils, and hydrology indicate wetland conditions exist - although the area is poorly defined as wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Poa pratensis	70	Y	FAC
2. Elytrigia repens	30	Y	FAC
3. Tanacetum vulgare	15	Y	NI
4. Dipsacus sylvestris	10	N	FAC
5. Alopecurus pratensis	5	N	FACW
6. Ranunculus uncinatus	5	N	FAC
7.			
8.			
	135 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species	5	x 2 = 10
FAC species	115	x 3 = 345
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	120 (A)	355 (B)

Prevalence Index = B/A = 2.96

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: Vegetation is hydrophytic

SOIL

Sampling Point: Data Plot 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					silt loam	
4-8	10YR 3/2+	100					silt loam	
8" +	10YR 4/2	80	10YR 4/6	20	C	M	silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks: soils showing redoximorphic features at 8"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (inches): _____
Water Table Present?	Yes ☒	No ☐	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (inches): 4

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: none

Remarks: hydrology observed in soil pit

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: City of Potlatch, Sewer District, Land Application sites City/County: Latah Sampling Date: 6/28/11

Applicant/Owner: City of Potlatch State: ID Sampling Point: Data Plot 7

Investigator(s): Tom Duebendorfer, PWS Section, Township, Range: S 1 T 41N, R 5W

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): flat Slope (%): <2%

Subregion (LRR): E Lat: 46° 55'.260" Long: -116° 54'.691" Datum: BM

Soil Map Unit Name: Hampson silt loam NWI classification: NWI map unavailable

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Plot located between Wetlands C and D. Soils not hydric, no hydrology observed

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Festuca rubra	80	Y	FAC
2. Poa pratensis	25	Y	FAC
3. Tanacetum vulgare	20	Y	NI
4. Alopecurus pratensis	15	N	FACW
5. Artemisia ludoviciana	15	N	FACU
6. Hypericum perforatum	5	N	NL
7.			
8.			
	160 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species	15	x 2 = 30
FAC species	105	x 3 = 315
FACU species	15	x 4 = 60
UPL species	5	x 5 = 25
Column Totals:	145 (A)	430 (B)

Prevalence Index = B/A = 2.96

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: Vegetation is hydrophytic

SOIL

Sampling Point: Data Plot 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 2/2	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks: soils do not show redoximorphic features or other hydric indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): >>18"

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): >>18"

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: none

Remarks: hydrology not observed in soil pit, nor expected

PHOTOGRAPHS
June 28, 2011

Photo 1: View west/northwest from outside Wetland C into Wetland B. Essentially all canarygrass with some red fescue, tansy. Wetland C is a small isolated depression - highly disturbed. Arrow indicates Data Plot 7 which separates Wetland B from Wetland C due to lack of hydric soils.

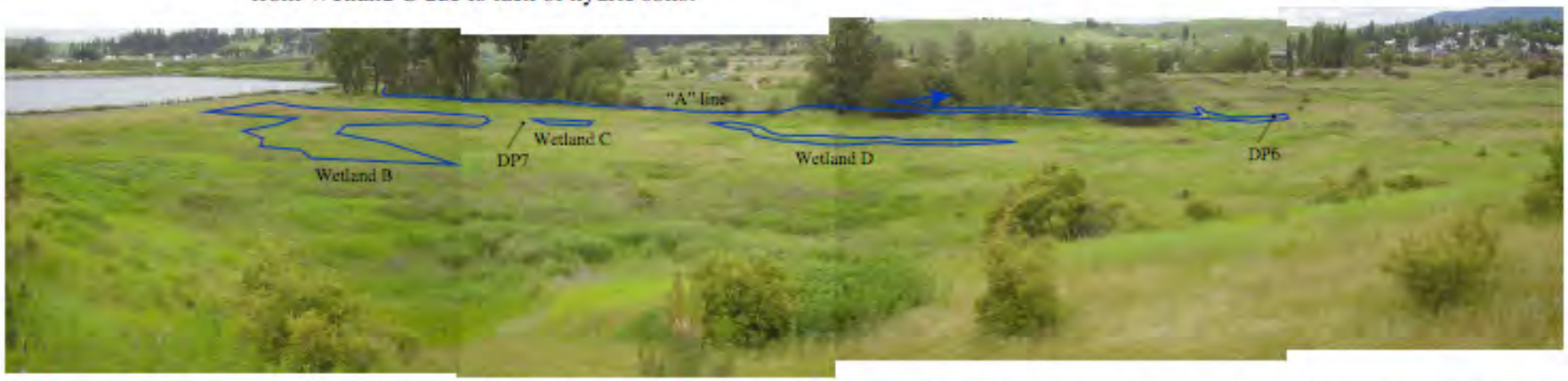

Photo 2: View northwest panning (left to right) to east. View from hillslope above west central flat area. Wetlands B, C, and D visible and indicated in this photo. "A" line indicates south edge of wetland which connects to river. I would argue Wetland B, C, and D do not have any hydrologic connectivity to "A" line wetland, and thus may well be considered "isolated".

Appendix E

Wild & Scenic River Map

Georgia

- Chattooga River (See also North Carolina, South Carolina — U.S. Forest Service Site, Chattooga Net

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Idaho

- Clearwater River (Middle Fork)
- Rapid River
- Saint Joe River
- Salmon River
- Salmon River (Middle Fork)
- Snake River (See also Oregon)

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Illinois

- Vermilion River — State of Illinois Site

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Kentucky

- Red River

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Louisiana

- Saline Bayou

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Maine

- Allagash River — State of Maine Site

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RIVER MILEAGE CLASSIFICATIONS FOR COMPONENTS OF THE NATIONAL WILD AND SCENIC RIVERS SYSTEM

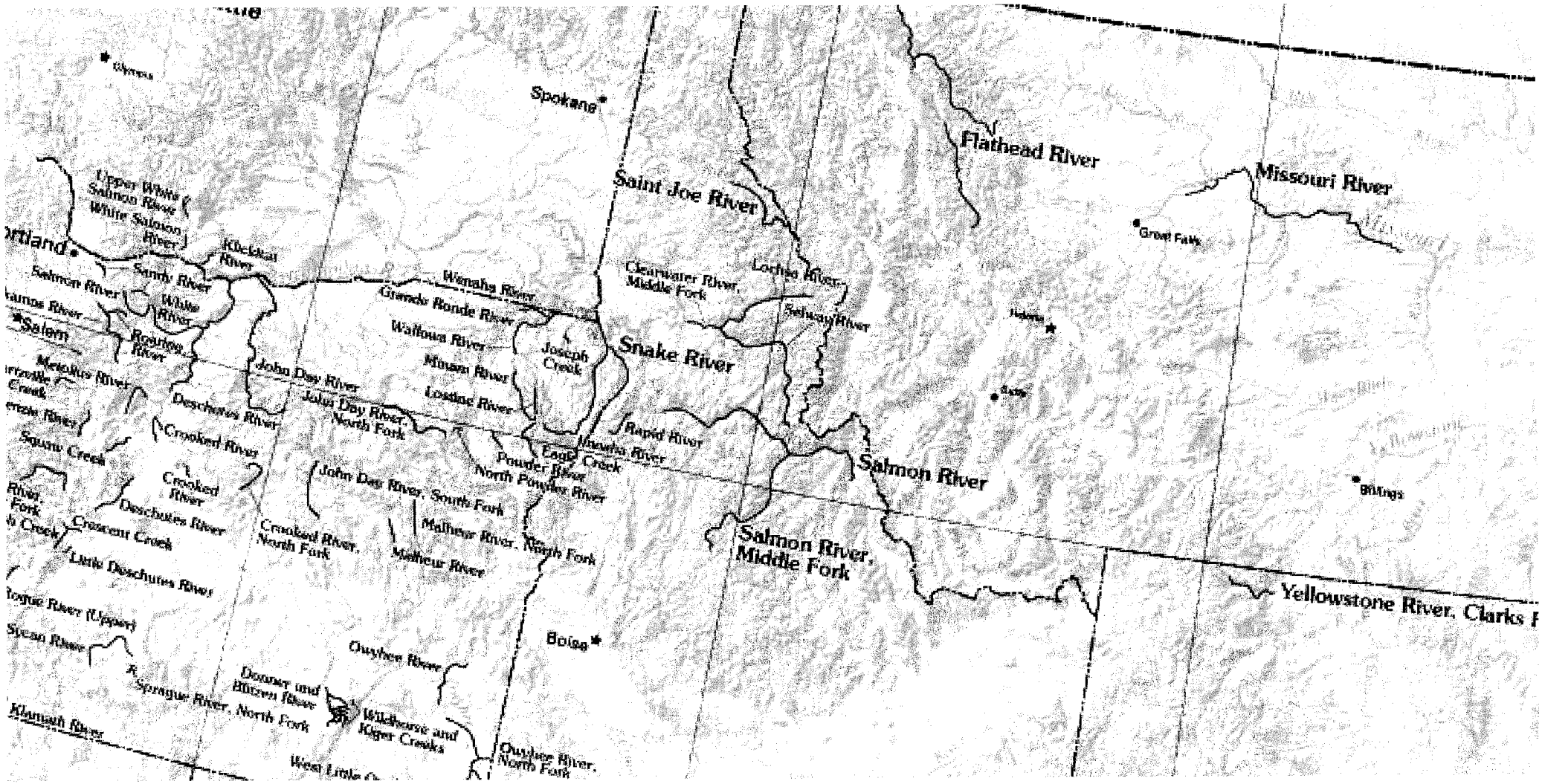
River Present Units in the National System	Administering Agency	Miles by Classification *Wild*	*Scenic*	*Rec'l*	***Total Miles***
1. Middle Fork Clearwater, Idaho (P.L. 90-542—October 2, 1968)	Forest Service	54.0	–	131.0	185.0
2. Eleven Point, Missouri (P.L. 90-542—October 2, 1968)	Forest Service	–	44.4	–	44.4
3. Feather, California (P.L. 90-542—October 2, 1968)	Forest Service	32.9	9.7	35.0	77.6
4. Rio Grande, New Mexico (P.L. 90-542—October 2, 1968)	Forest Service and Bureau of Land Management	53.2	–	2.5	55.7
Rio Grande, New Mexico (P.L. 103-242—May 4, 1994)	Bureau of Land Management	–	12.5	–	12.5
Rio Grande, Texas (P.L. 95-625—November 10, 1978)	National Park Service	95.2	96.0	–	191.2
5. Rogue, Oregon (P.L. 90-542—October 2, 1968)	Forest Service Bureau of Land Management	13.0 20.6	7.5 –	17.0 26.4	37.5 47.0
6. St. Croix, Minnesota & Wisconsin (P.L. 90-542—October 2, 1968)	National Park Service	–	181.0	19.0	200.0
St. Croix (Lower) Minnesota & Wisconsin (P.L. 92-560—October 25, 1972)	National Park Service	–	12.0	15.0	27.0
St. Croix (Lower), Minnesota & Wisconsin (Secretarial Designation—June 17, 1976)	States of Minnesota and Wisconsin	–	–	25.0	25.0

RIVER MILEAGE CLASSIFICATIONS FOR COMPONENTS OF THE NATIONAL WILD AND SCENIC RIVERS SYSTEM

River Present Units in the National System	Administering Agency	Miles by Classification *Wild*	*Scenic*	*Rec'l*	***Total Miles***
7. Middle Fork Salmon, Idaho (P.L. 90-542—October 2, 1968)	Forest Service	103.0	–		103.0
8. Salmon, Idaho (P.L. 96-312—July 23, 1980)	Forest Service	79.0	–	46.0	125.0
9. Wolf, Wisconsin (P.L. 90-542—October 2, 1968)	National Park Service	–	24.0	–	24.0
10. Allagash Wilderness Waterway, Maine (Secretarial Designation—July 19, 1970)	State of Maine	92.5	–	–	92.5
11. Little Miami, Ohio (Secretarial Designation—August 20, 1973)	State of Ohio	–	18.0	48.0	66.0
Little Miami, Ohio (Secretarial Designation—January 28, 1980)	State of Ohio	–	–	28.0	28.0
12. Chattooga, Georgia, North and South Carolina (P.L. 93-279—May 10, 1974)	Forest Service	41.6	2.5	14.6	58.7
13. Little Beaver, Ohio (Secretarial Designation—October 23, 1975)	State of Ohio	–	33.0	–	33.0
14. Snake, Idaho & Oregon (P.L. 94-199—December 31, 1975)	Forest Service	31.5	36.0	–	67.5
15. Rapid, Idaho (P.L. 94-199—December 31, 1975)	Forest Service	26.8	–	–	26.8
16. New, North Carolina (Secretarial Designation—April 13, 1976)	State of North Carolina	–	26.5	–	26.5

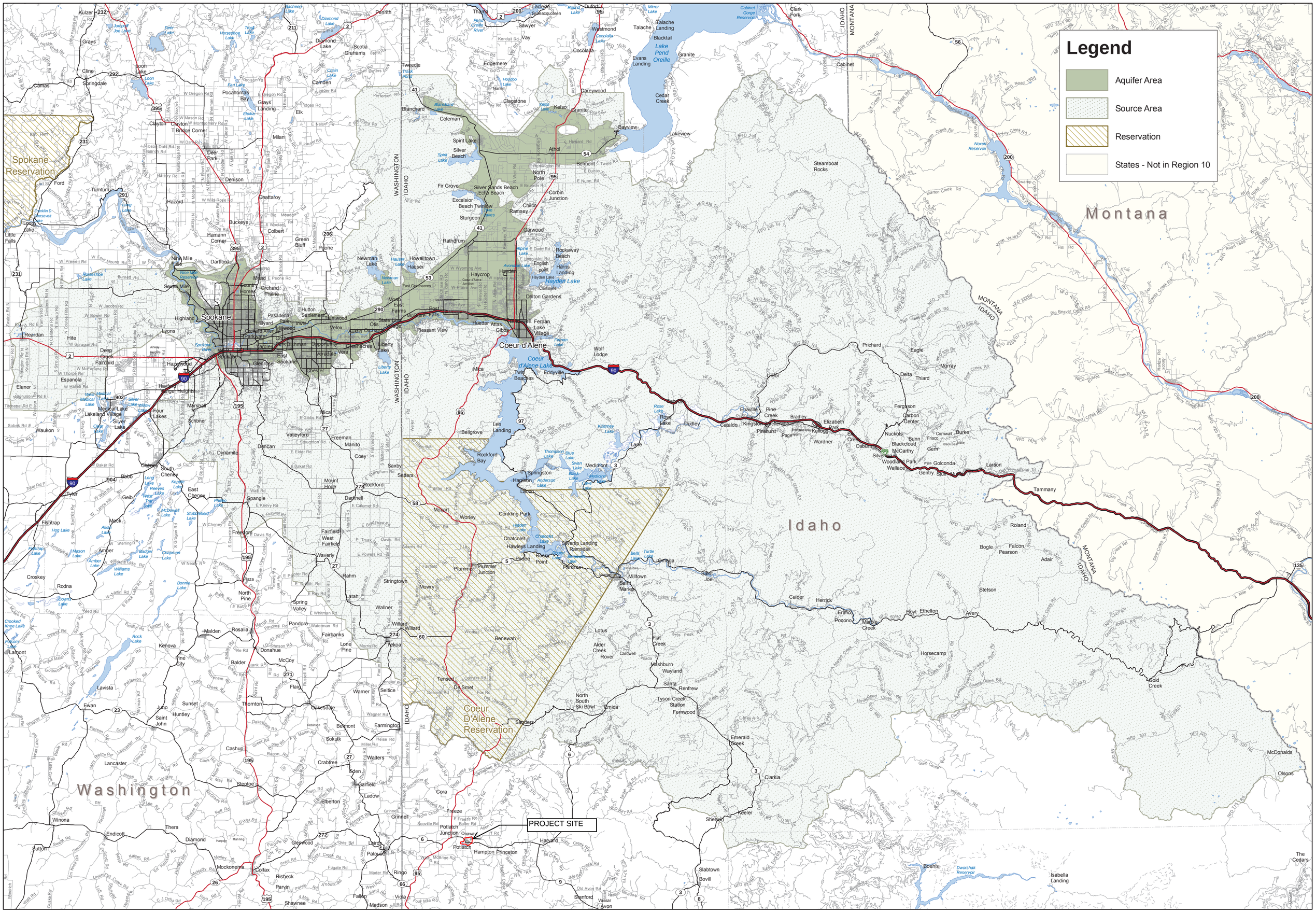
RIVER MILEAGE CLASSIFICATIONS FOR COMPONENTS OF THE NATIONAL WILD AND SCENIC RIVERS SYSTEM

River Present Units in the National System	Administering Agency	Miles by Classification *Wild*	*Scenic*	*Rec'l*	***Total Miles***
23. North Fork American, California (P.L. 95-625—November 10, 1978)	Forest Service Bureau of Land Management	26.3 12.0	– –	– –	26.3 12.0
24. American (Lower), California (Secretarial Designation—January 19, 1981)	State of California	–	–	23.0	23.0
25. Saint Joe, Idaho (P.L. 95-625—November 10, 1978)	Forest Service	26.6	–	39.7	66.3
26. Alagnak, Alaska (P.L. 96-487—December 2, 1980)	National Park Service	67.0	–	–	67.0
27. Alatna, Alaska (P.L. 96-487—December 2, 1980)	National Park Service	83.0	–	–	83.0
28. Aniakchak, Alaska (P.L. 96-487—December 2, 1980)	National Park Service	63.0	–	–	63.0
29. Charley, Alaska (P.L. 96-487—December 2, 1980)	National Park Service	208.0	–	–	208.0
30. Chilikadrotna, Alaska (P.L. 96-487—December 2, 1980)	National Park Service	11.0	–	–	11.0
31. John, Alaska (P.L. 96-487—December 2, 1980)	National Park Service	52.0	–	–	52.0
32. Kobuk, Alaska (P.L. 96-487—December 2, 1980)	National Park Service	110.0	–	–	110.0
33. Mulchatna, Alaska (P.L. 96-487—December 2, 1980)	National Park Service	24.0	–	–	24.0


Spokane
Flathead River
Missouri River
Saint Joe River
Upper White Salmon River
White Salmon River
Klickitat River
Sandy River
Salmon River
White River
Salem
Rogue River
Wenaha River
Grande Ronde River
Wallowa River
Minam River
Joseph Creek
Snake River
Clearwater River, Middle Fork
Lochsa River
Selway River
Great Falls
Helena
Butte
Billings
John Day River
John Day River, North Fork
Lostine River
Deschutes River
Crooked River
Squaw Creek
Crooked River
Deschutes River
Crescent Creek
Little Deschutes River
Rogue River (Upper)
Sprague River, North Fork
Klamath River
Crooked River, North Fork
John Day River, South Fork
Malheur River
Malheur River, North Fork
Powder River
North Powder River
Eagle Creek
Burnt River
Rapid River
Salmon River
Salmon River, Middle Fork
Owyhee River
Owyhee River, North Fork
Boise
Yellowstone River, Clarks F

Appendix F

Sole Source Aquifer Maps



The U.S. Environmental Protection Agency (EPA) has compiled this computer representation from data or information sources that may not have been verified by the EPA. This data is offered here as a general representation only, and is not to be re-used without verification by an independent professional qualified to verify such data or information. The EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any loss or injury resulting from reliance upon the information shown.

Spokane-Rathdrum Sole Source Aquifer

0 5 10 20 30 40 50 Kilometers

N W E S

Map Created 11/04/2008 EPA Region 10

Appendix G

Cultural Resource Survey

The City of Potlatch Wastewater Land Application Site Cultural Resource Survey, Latah County, Idaho

By:
Christopher D. Noll
&
David A. Harder

PLATEAU
Archaeological Investigations, LLC

May 2011

The City of Potlatch Wastewater Land Application Site Cultural Resource Survey, Latah County, Idaho

Prepared for:
City of Potlatch
Potlatch, Idaho

By:
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ABSTRACT

The City of Potlatch Wastewater Land Application Site Cultural Resource Survey, Latah County, Idaho

Plateau Archaeological Investigations conducted cultural resource survey of the proposed wastewater land application area for the City of Potlatch. The Areas of Potential Effect (APE) is located in Section 01 of Township 41 North, Range 05 West, Boise Meridian. The project will require acquisition of about 50 acres of property, construction of access roads, clearing and grubbing, subgrade preparation, burial of irrigation pipe, and planting of trees and other vegetation. The APE for which the cultural resource survey has been requested covers approximately 17 acres within the 50 acre land acquisition.

The background review for the project did not identify any previously recorded cultural materials within the Project Area. The project location, adjacent to the Palouse River, indicated that there was a high potential for both prehistoric and historic resources to be present.

Historic debris was identified along the transition from the terrace to the flood plain in the northern portion of the Project Area. The artifacts are predominately glass and metal fragments which appear to roughly date from 1950 to 1980. The debris scatter decreases in density to the north but scattered artifacts can be found along the entire length of the terrace edge. A large bandsaw blade indicates that at least some of the debris may be directly associated with the Potlatch Mill which sat on the opposite bank of the Palouse River from the Project Area. The historic debris scatter was assigned the temporary site designation PAI-1102. Considering the importance of the Potlatch Mill in the history of the City of Potlatch the dump should be considered potentially eligible for inclusion on the NRHP until it can be formally evaluated. The potential site eligibility may fall under NRHP Criterion D, which is significant due to the archaeological information potential of a site.

The site is a narrow linear scatter which can and should be avoided by ground disturbing activities during the wastewater land application project. Plateau also advises that a monitor be present for any excavation within 100 ft (30.5 m) of the documented site boundary as recorded in the PAI-1102 site form

KEY INFORMATION

PROJECT

The City of Potlatch Wastewater Land Application Site Cultural Resource Survey, Latah County, Idaho.

LOCATION

Potlatch, Latah County, Idaho

USGS QUADS

Potlatch, Idaho 7.5 minute, 1994

LEGAL LOCATION OF PROJECT

Section 01, T41N, R05W

PROJECT DATA

0 Previously recorded historic property
1 New cultural resources located and/or recorded

AUTHORS

Christopher D. Noll, M.A., and David A. Harder, M.A.

MANAGING AGENCY

Idaho Department of Environmental Quality

PROJECT UNDERTAKEN AND REPORT PREPARED FOR

The City of Potlatch, Idaho

FIELD NOTE DISPOSITION

Archived at the office of Plateau Archaeological Investigations LLC, Pullman.

PRINCIPAL INVESTIGATOR

David A. Harder, M.A.

DATE

May 2011

CERTIFICATION OF RESULTS

I certify that this investigation was conducted and documented according to Secretary of Interior's Standards and guidelines and that the report is complete and accurate to the best of my knowledge.

_____ May 11, 2011

Signature of Reporter Date

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PROJECT DESCRIPTION

The City of Potlatch (Potlatch) is proposing to upgrade its wastewater treatment facility located outside the city limits south of the Palouse River (Figure 1). Potlatch is pursuing upgrades in anticipation of changing environmental regulations that include the installation of irrigation equipment for treated wastewater land application. Since this project is partly funded by federal money through the Idaho Department of Environmental Quality, the managing agency must meet the requirements of the Section 106 of the NHPA, and consider the potential impacts to historic properties prior to project execution. To that end, Potlatch retained Plateau Archaeological Investigations, LLC (Plateau) to conduct the cultural resource survey of the project.

The Areas of Potential Effect (APE) is located in Section 01 of Township 41 North, Range 05 West, Boise Meridian (Figure 2). The project will require acquisition of about 50 acres of property, construction of access roads, clearing and grubbing, subgrade preparation, burial of irrigation pipe, and planting of trees and other vegetation. The APE for which the cultural resource survey has been requested covers approximately 17 acres within the 50 acre land acquisition. The APE will hereafter be referred to as the Project Area.

STATEMENT OF OBJECTIVES

Cultural resource survey of the City of Potlatch Wastewater Land Application Area Project is intended to identify potential archaeological resources and potential historic properties within the Project Area prior to proposed construction. The pre-field research was designed to identify any known cultural properties located in or near the Project Area. Fieldwork procedures were designed to identify areas of moderate to high probability for Native American and Euroamerican cultural resources. This report describes the pre-field research, field efforts, and results of the project.

LOCATION AND GENERAL ENVIRONMENTAL SETTING

The Project Area lies in northeast Latah County, along the south side of the Palouse River (Figure 2). The project area lies on the southwest side of Potlatch. Other nearby communities include Palouse, 8.4 mi (13.5 km) west; Hampton, 2.3 mi (3.7 km) east; Princeton, 2.9 mi (4.7 km) east; Harvard, 7.9 mi (12.7 km) east; and Moscow, 14.0 mi (22.5 km) south.

The predominant draw for Native American and Euroamerican populations in this region was, and still is, the extensive river systems. One of the most prominent environmental feature is the Columbia River, which flows for more than 1,200 mi (2,000 km) from the base of the Canadian Rockies in southeastern British Columbia to the Pacific Ocean at Astoria, Oregon. Totaled, it drains a 259,000 mi^2 (431,670 km^2) basin. Eleven major tributaries – the Cowlitz, Deschutes, Kootenay, Lewis, Okanogan, Snake, Spokane, Umatilla, Wenatchee, Willamette, and Yakima rivers – complete the drainage system.

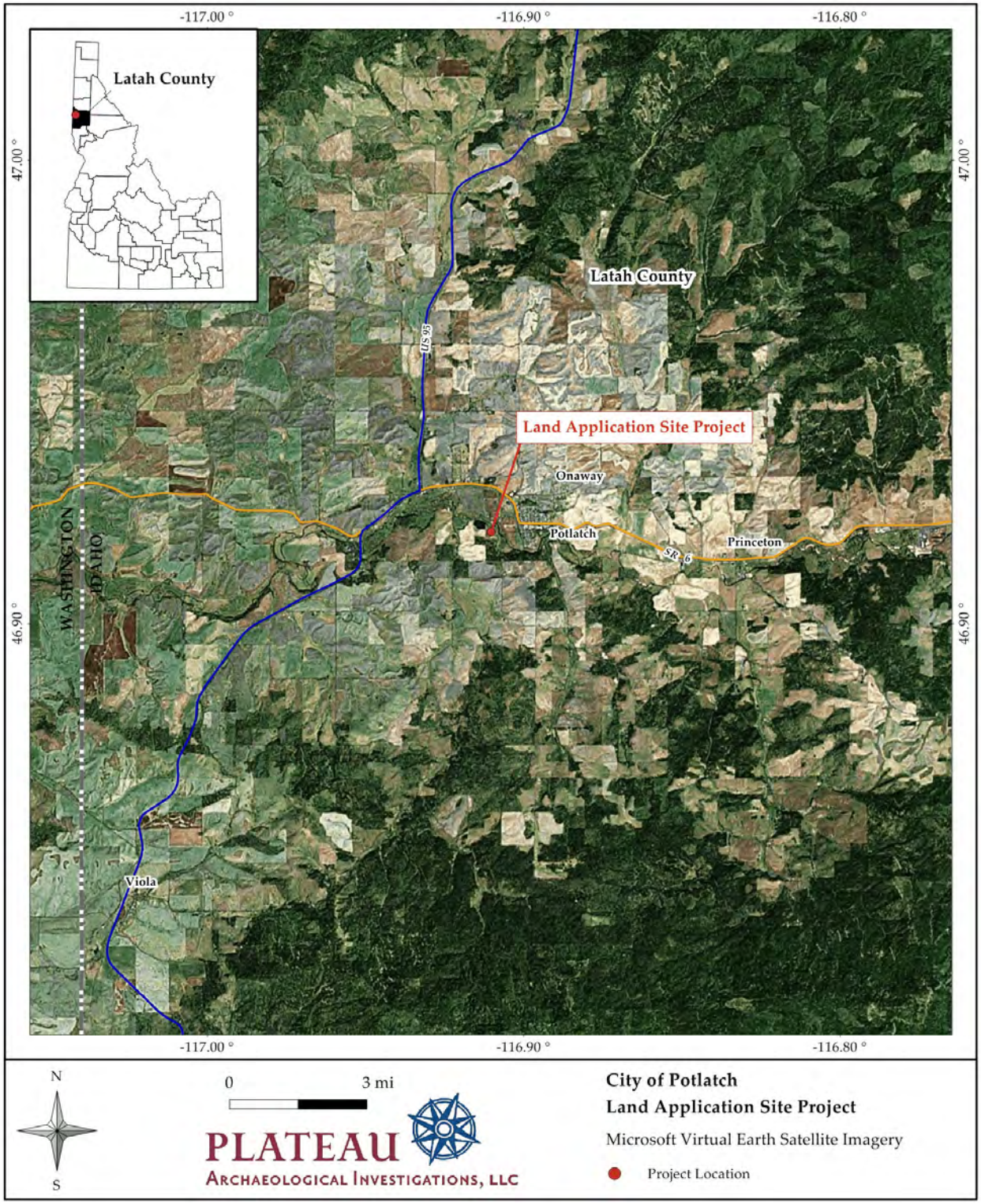

Figure 1. Approximate location of the Project Area.

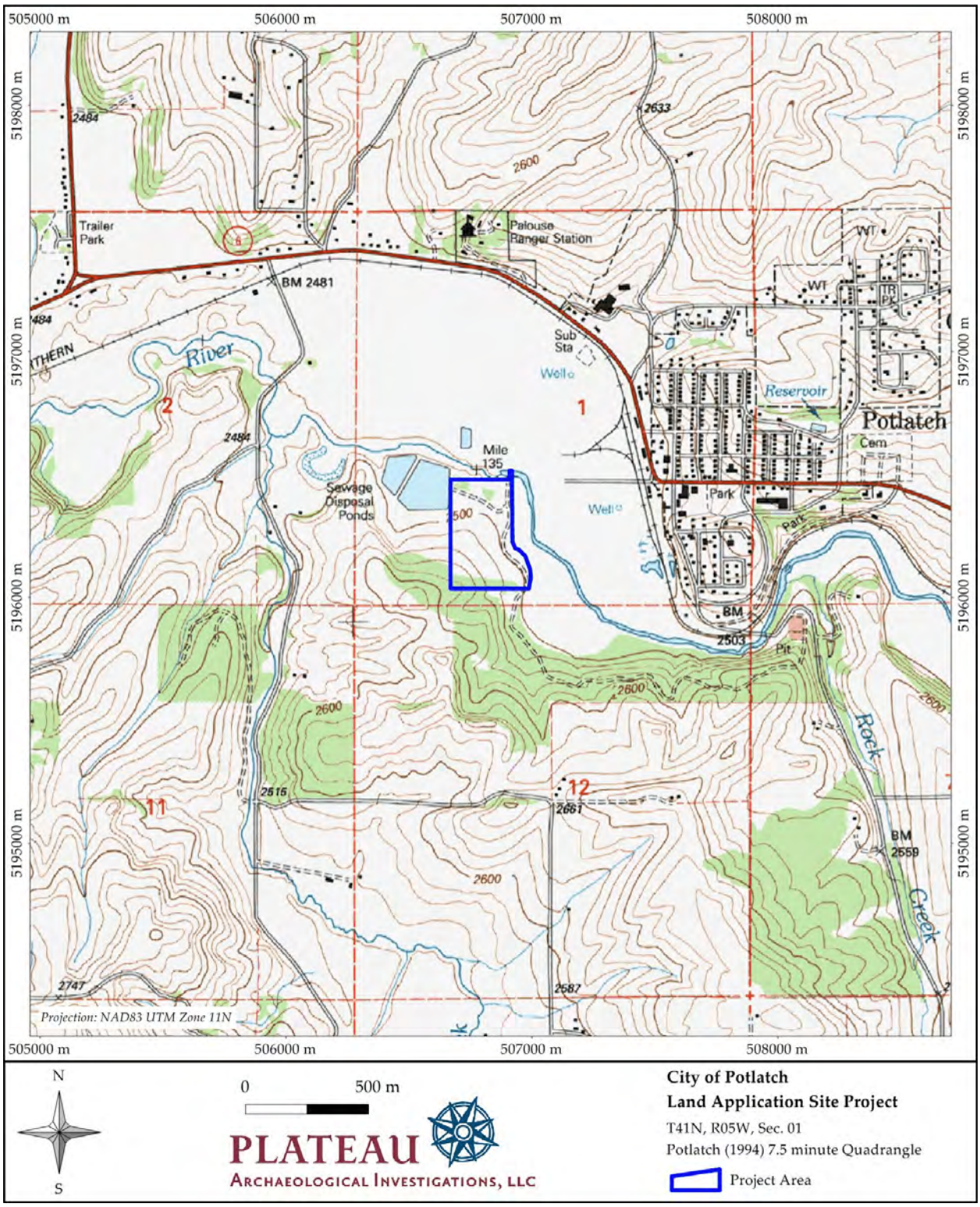

Figure 2. Topographic map of the Project Area.

The Project Area lies within the western Rocky Mountain foothills on the eastern margin of the Columbia Basin, which is characterized by flat-lying basalt flows. Structurally, the basin lies between the Rocky Mountains and the Cascade Range of Washington and Oregon. The Basin is also characterized by the Channeled Scablands with features that resulted from Pleistocene-era mega-floods ranging in size from small stream-like trenches to large coulees measuring miles wide and hundreds of feet deep (Alt and Hyndman 1984). Glacial till and outwash literally blanket the plain, while rolling hills of loess cover the unglaciated areas of the Basin to the south and east. Elevations in this region range from 200 feet (ft) (61 meters [m]) above mean sea level (AMSL) near the Columbia River to over 4,500 ft (1,371.5 m) AMSL in the area of outlying ridges and low mountains (Fenneman 1946; Hunt 1967).

The Project Area is situated on the floodplain, terrace and low hill overlooking the Palouse River, and lies between 2,485 and 2,550 ft (757.4 and 777.2 m) AMSL. Soils in the Project Area include Hampson silt loam 0-3 percent slopes which is a silt loam formed on floodplans and terraces from alluvium, and Taney silt loam 7-25 percent slopes which is a silt loam over clay loam formed on hillslopes from loess (Natural Resources Conservation Service 2011).

The climatic climax vegetation on undisturbed areas near the project falls within Daubenmire's *Pseudotsuga menziesii* zone (Daubenmire 1968:20-21). Vegetation in this zone should consist predominately of Douglas fir (*Pseudotsuga menziesii*), Ponderosa pine (*Pinus ponderosa*), Lodgepole pine (*P. contorta*), and Western larch (*Larix occidentalis*) in association with Pinegrass (*Calamagrostis rubescens*), Northwestern sedge (*Carex concinnoides*), Elk sedge (*C. Geyeri*), and Mountain arnica (*Arnica latifolia*) (Daubenmire 1968). The local vegetation was used by Native Americans for food, medicine, fuel, tools, and building material (Table 1).

Table 1. Native American Vegetation Use (after Moerman 1998; Parish et al. 1996).

Latin Name	**Common Name**	**Native American Uses**
Balsamorhiza sagittata	Arrow-leaved Balsamroot	Roots roasted and eaten, seeds ground into a flour.
Camassia quamash	Camas	Roots roasted and eaten.
Chrysothamnus spp.	Rabbit Brush	Leaves used in a tea to cure sore throats; branches were used for smoking hides.
Phlox longifolia	Long Leaved Phlox	Plant steeped to make infusion for anaemic children.
Plantago patagonica	Common Plantain	Leaves were made into a poultice for infections.
Pseudotsuga menziesii	Douglas Fir	Building material and fuel
Rosa woodsii	Wood's Rose	Flower buds were eaten.
Spiraea betulifolia	Birch Leaved Spirea	Plant was used for stomach ailments.
Stipa comata	Needle-and-Thread Grass	Children played with the seeds of this grass by throwing them like darts.

Lying where it does, the Project Area and the surrounding region contain an abundance of life. It is likely, though, that Native Americans had access to a larger variety of species during the past that played a role in aboriginal use, settlement, and travel patterns in relation to the Project Area. The following lists a few of the more discernible mammals that may have been available to aboriginal populations: mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), racoon (*Procyon lotor*), black-tailed jack rabbit (*Lepus californicus*), cottontail rabbit (*Sylvilagus nuttalli*), mink and weasel (*Mustela* spp.), marmot (*Marmota* spp.), badger (*Taxidea taxus*), beaver (*Castor canadensis*), porcupine (*Erethizon dorsatum*), and several species of ground squirrels (*Citellus* spp.) (Burt and Grossenheider 1961; Dalquest 1948).

According to Lothson (1977), several species of fish are available in the Columbia River drainage, including chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), chum salmon (*Oncorhynchus keta*), sturgeon (*Acipenser* spp.), walleye (*Sander vitreus vitreus*), shad (*Alosa* spp.), crappie (*Pomoxis* spp.), perch (*Perca flavescens*), largemouth bass (*Micropterus salmoides*), and various types of bottom fish, such as catfish, though many of these species are located below Palouse Falls which serves as a barrier to anadromous fish.

Many types of fowl and game were available in the past including: Swarth blue grouse (*Dendragapus obscurus pallidus*), Columbian ruffed grouse (*Bonasa umbellus affinis*), Columbian sharp-tailed grouse (*Pedioecetes phasianellus*), western sage grouse *(Centrocercus urophasianus phaios*), mallard duck (*Anas platyrhynchos platyrhynchos*), western harlequin duck (*Histrionicus histrionicus pacificus*), American common merganser *(Mergus merganser americanus*), the lesser snow goose (*Chen hyperborea hyperborea*), and the Great Basin Canada goose (*Branta canadensis moffitti*). Seasonally available birds such as Gadwall (*Anas strepera*), wood duck (*Aix sponsa*), redhead (*Aythya americana*), and the northern ruddy duck (*Oxjura jamaicensis rubida*) resided in the region in the summer. Winter game birds of the region include canvasback (*Aythya valisineria*) and American greater scaup *(Aythya marila nearctica*) (Lothson 1977). Ray (1942) noted that many of the mentioned fauna were ethnographically used by Native Americans in the region and continue to be an important resource.

The Palouse River flows out of the western Rocky Mountains into the rolling hills of the Palouse. The river valley around Potlatch is relatively broad and flat with small oxbow ponds that provide evidence of the rivers shifting route through the valley over time. The mean annual precipitation recorded at the Potlatch 3NNE weather recording station is 24.49 inches. The mean seasonal temperatures recorded at the weather station are 30.6º Fahrenheit (F) in winter and 61.9º F. in the summer. Extreme temperatures of -48º F and 110º F have been recorded at the same station (Western Regional Climate Center 2011).

PRE-FIELD RESEARCH

Pre-field research consisted of the review of known archaeological resources within a 1.0-mi (1.6-km) radius of the Project Area as inventoried at the Idaho State Historic Preservation Office in Boise, Idaho. This review was completed on March 9, 2011. Following this, the electronic database of National Register of Historic Places (NRHP) was consulted.

Plateau also conducted cartographic analysis of landform, topography, soils, and proximity to water using topographic maps. Secondary historic resources, on file at Washington State University (WSU) in Pullman, were consulted to identify any known cultural resources. This search allows for the identification of previously recorded historic and archaeological resources within or near the Project's Areas of potential effect.

PREVIOUS ARCHAEOLOGICAL RESEARCH

The background research conducted at the Idaho SHPO indicated that there were no previously recorded archaeological sites that intersect the Project Area. Additionally, there are no NRHP properties in or directly adjacent to the Project Area; however, several are located within Potlatch (National Park Service 2011).

One previously recorded site falls within 1.0 mi (1.6 km) of the Project Area. Site 10LT240 is the bed of the Washington, Idaho, and Montana Railway Company route from Palouse, WA to Bovill, ID (Sappington 2001). The line was constructed in 1905-1906 and was built to transport timber to the mill in Potlatch. The site is considered eligible for inclusion on the National Register of Historic Places.

Transportation and municipal improvements have resulted in four cultural resource survey projects within 1.0 mi (1.6 km) of the Project Area (Table 2).

Table 2. Previous Cultural Resource Surveys Within 1.0 mi (1.6 km) of the Project Area.

Survey Area	Distance/Direction	Citation
Potlatch Junction to Electrical Substation, State Highway 6	0.5 mi (0.8 km) north	Sappington 2000
Potlatch Waterline Project, Potlatch	0.5 mi (0.8 km) east	Sappington 2003a
Potlatch City Hall Renovation Project	0.5 mi. (0.8 km) east	Sappington 2003b
Potlatch Railroad Depot	0.5 mi (0.8 km) northeast	Munch 2006

REGIONAL PREHISTORIC BACKGROUND

The Project Area is included in the Plateau culture area, which corresponds roughly to the geographic region drained by the Fraser, Columbia, and Snake rivers. The Plateau culture area is bordered on the west by the Cascade Mountains and on the east by the Rocky Mountains. The

northern border of the culture area is in Canada where it gives way to Arctic culture patterns. The southern border of the Plateau culture area mixes gradually with the Great Basin culture area (Walker and Sprague 1998:1-3).

While the prehistory of the region, *particularly in the Project Area*, has not been adequately studied to provide a local culture chronology, several regional culture chronologies have been developed for the Plateau. By far the most popular is the chronology for the Lower Snake River first developed by Frank Leonhardy and David Rice (1970). Although this chronology was developed for the Lower Snake River, it has provided a starting point for comparisons with other aboriginal populations on the Plateau.

Paleoindian

Evidence of established Paleoindian populations dating as early as 11,500 Before Present (B.P.) (Meltzer 1993) and Clovis artifacts are found across the North American continent including Washington at East Wenatchee near the Columbia River (Gramly 1993:6-7; Mehringer and Foit 1990). Reid (1991:63) reports the existence of a fluted point base and two channel flakes from separate fluted points at the Mitchell Site (45WW62) in the Ice Harbor Reservoir. These artifacts are in a private collection. It is therefore reasonable to hypothesize that Paleoindian hunter-gatherers were present along the Snake and Columbia rivers and within the Columbia Basin.

Windust Phase

The Windust Phase dates from 10,000 to 8,000 B.P. (Leonhardy and Rice 1970) and its existence has been well established. The principal raw material used for stone tools was cryptocrystalline silicates (CCS) but andesite was also used. The typical "Windust Points" were short-bladed with shoulders of varying prominence and straight to contracting stems and bases that were straight to slightly concave (see Leonhardy and Rice 1970:4-5). They were probably used on the tips of thrusting spears. Lanceolate points were present, though rarely, and large tabular flakes and prismatic blades were also found in the assemblages. Cobble tools were utilized and include large scrapers, unifacial and bifacial choppers, and spalls. Other items recovered in small numbers included relatively large end-scrapers and single- and multi-faceted burins. Bone tools were found in Windust assemblages with good preservation such as Marmes Rockshelter (Rice 1969:40-43) and Lind Coulee (Daugherty 1956:252-255; Irwin and Moody 1978:84-106). These include composite bone tools, tips of awls, shaft fragments, atlatl spurs, needles, projectile points, and bone beads.

Several species of fauna have been found in association with Windust artifacts including elk (*Cervus canadensis*) that are larger than modern individuals, deer (*Odocoileus* spp.), pronghorn antelope (*Antilocapra americana*), rabbits (*Lepus* spp. and *Sylvilagus* spp.), and beaver (*Castor canadensis*). River mussels (*Margaritifera falcata* or *Gonidea angulata)* indicate some use of riverine resources. The Windust Phase inhabitants were foragers who relied upon a broad spectrum of plant and animal resources throughout a wide range of topographic settings (Endacott 1992:127; Sappington 1994:375).

Cascade Phase

The Cascade Phase dates from 8,000 to 5,000 B.P. and is divided into two subphases that are defined by the absence or presence of side notched projectile points (Leonhardy and Rice 1970). The primary characteristic of the Cascade Phase is the lanceolate point – called "Cascade Points," or sometimes "leaf shaped" or "foliate" – which was probably mounted on light javelins or darts that could be propelled with an atlatl (Aikens 1993:95). Aside from a difference in projectile points, Cascade Phase artifacts resemble Windust Phase artifacts that were refined over time. The same types of cobble tools were still in use as were edge ground cobbles, atlatl weights, and pounding and grinding stones. Bone artifacts include large and small needles, splinter awls, shaft fragments, and atlatl spurs. *Olivella* beads are the only shell artifacts represented.

The early and late Cascade subphases are separated stratigraphically by a volcanic ash layer from Mt. Mazama (Crater Lake) in Oregon that dates to approximately 6,850 B.P. (Bacon 1983). The late subphase – referred to as the Cold Springs horizon – contains the same artifact assemblage as the early subphase with the addition of side-notched projectile points. There is little evidence of specialized fishing techniques, although riverine resources such as river mussels became increasingly important. Deer, elk, and pronghorn antelope were important faunal resources as were smaller animals such as rabbits and beaver. The Cascade Phase hunter-gatherer-fisher settlement pattern was non-nucleated, and these foragers relied upon a broad spectrum of plant and animal resources (Bense 1972:113-114).

Tucannon Phase

The Tucannon Phase dates from 5,000 to 2,500 B.P. The material culture of this phase is distinct from the previous two phases. Several projectile point forms were present: one had a short blade with varying shoulder widths and contracting stems; another was notched low on the side or at the corners giving it an expanding stem and short barbs. A third form was side-notched with a concave base (Ames et al. 1980:69). Cobble scrapers, small side-scrapers, end scrapers, hopper mortars, pestles, pounding stones, and ground or notched net sinkers are present. Awls were made of split or splintered bone and a recovered bone shuttle is indicative of net making. Faunal resources exploited were similar to those used in the other phases with the addition of bighorn sheep (*Ovis canadensis*) to the inventory. Intensification of riverine resources is indicated by an increased variety of fishing gear (Harder 1998:120).

A dramatic change in the settlement system is the most striking difference between the Tucannon Phase and previous phases. The advent of pit house construction signals a shift in settlement patterns and indicates an increase in sedentism (Harder 1998). These people were semi-sedentary hunter-gatherer-fishers that relied upon delayed consumption of seasonally abundant resources. The shift may have been brought about by the intensification of root crops, as indicated by the addition of hopper mortar bases and digging stick handles to the archaeological record (Ames and Marshall 1980; Harder 1998). The desire to control access to critical resources may also have played a part (Lohse and Sammons-Lohse 1986; Nelson 1973). The presence of pipes, digging stick handles, carved bone, and bone beads in the archaeological record suggests an increase in social complexity, craft specialization, class structure, and social ranking (Harder 1998:124).

Harder Phase

The Harder Phase dates from 2,500 B.P. to 150 B.P. (Leonhardy and Rice 1970:17). The onset of the Harder Phase was marked by the presence of sculpted mauls, perforated net sinkers, exotic shell artifacts, dog burials, and pit house villages (Harder 1998:124). The change during the phase from large basal and corner-notched projectile points to projectile points that were smaller and more refined indicates that the bow and arrow were introduced during this time. Lanceolate and pentagonal knives as well as small end scrapers are present throughout this phase. Bison and dog remains were associated with Harder Phase sites as were bighorn sheep, deer, elk, pronghorn, and small mammals. An increase in the frequency of net sinkers and an inference that weirs and traps were utilized indicates a dependence upon fish.

Changes in feature construction and artifact types, although not firmly defined, were probably established by about 1,000 B.P. The change in pit house design from steep walled to saucer shaped, as noted on Strawberry Island, may be indicative of a shift in procurement and settlement practices (Shalk 1977). Projectile point types shifted toward small, delicate basal, and corner-notched points. Scrapers with a concave bit, possibly a specialized woodworking tool, have been recovered. Twined basketry, awls, matting needles, and composite harpoons were some of the fragile materials recovered from the latter portion of the phase. The Harder Phase materials and settlement patterns suggest a culture that was very similar to the ethnographic pattern. People lived in pit house villages in the winter months and relied upon a seasonal round that provided both immediate return and storable items for winter subsistence.

Numipu Phase

Leonhardy and Rice (1970:20) use the Numipu Phase to designate the period of time beginning when the aboriginal cultures of the Columbia Plateau were affected directly or indirectly by western expansion of the Euroamerican culture, and is sometimes called the Protohistoric period. It is marked by the introduction of the horse and historic trade goods such as beads, glass, and metal. Populations were affected dramatically through disease and changes in material culture and transportation. This was also the time from which most ethnographies begin.

The general ethnographic pattern for the Plateau specifies that people lived in an egalitarian society with little or no slavery or caste systems. Their villages were autonomous and their leaders probably influenced others through charismatic actions or persuasive speech. In winter, the people lived along major rivers in earth or mat lodges at semi-permanent villages. Their villages were situated in relatively warm locations that were protected from the harsh elements and their lodges were semi-subterranean (Ray 1939:135).

The ethnography of the Columbia Plateau is much more complex with a wider cultural diversity than can be summarized here. Ethnographic studies by Angelo Anastasio (1972), Franz Boas and James Teit (1996), Verne F. Ray (1936, 1939, 1942), Allan H. Smith (1988), Leslie Spier (1936), and others offer the reader a more thorough examination of the native culture.

REGIONAL HISTORIC BACKGROUND

Contact with peoples on the west coast of the continent was well established by the end of the eighteenth century by British, Spanish, and Russian trading vessels that made regular visits to the coastline. These trading expeditions began the first contact between aboriginal groups and outside cultures. The historic record of the area, though, really begins when Lewis and Clark journeyed through the region in 1805.

In 1809, the Oregon Territory (later Washington Territory) saw an influx of trappers and fur traders, beginning with the Canadian-owned Northwest Company. The Northwest Company made their way into the region and built Spokane House, located near the confluence of the Spokane River and Hangman Creek. Two years later, the American-owned Pacific Fur Company built Fort Okanagan. These two companies struggled against one another for fur trade business until 1812 when the Pacific Fur Company's holdings were sold to the Northwest Fur Company. Soon the London-based Hudson's Bay Company and the Northwest Fur Company were amalgamated under the British Crown. In 1816, Spokane House was abandoned as it failed to promote trade into the interior (Meinig 1968). After two years of negotiations, Fort Walla Walla (Nez Perce) was constructed in 1818 by the Hudson's Bay Company.

Due to the increasing numbers of emigrants, the Oregon Territory was officially established in 1848. By 1850, nearly 12,000 emigrants had passed through the Plateau region along the Oregon Trail (Beckham 1998; Walker and Sprague 1998). With the establishment of the Oregon Territory, federal involvement proliferated. Treaties between Indian tribes and the new state and federal governments were soon underway, but were difficult to maintain in light of the rapid influx of miners following the several "rushes" and settlers who were eager for property. The introduction of disease and other stresses introduced by the new settlers caused mistrust and, eventually, warfare. Several battles took place in the Oregon Territory between 1855 and 1858. During this period of unrest, efforts were made to limit the incursion of emigrants and others into Indian territories. Prohibition of settlement was strictly maintained, and General Wool pointed out "the army cannot furnish guards to farm houses dotted among hostile tribes" (Meinig 1968:165). The settlement prohibition was only a temporary solution to an inevitability. People settled and volunteer militias attacked indiscriminately and fueled the fire under uncertain relations. The unrest culminated with Colonel Wright's campaign in 1858 that resulted in the executions and murders of sixteen Indians, including a Yakama chief named Owhi and his son, Qualchan (Beckham 1998).

While Wright's campaign was underway, Major R.S. Garnett led approximately 300 soldiers on a sweep from Fort Simcoe up through the Yakama country, through Wenatchee, and as far as the Similkameen River. Garnett's sweep resulted in the summary executions of ten Indians suspected of having attacked miners and the loss of one private, who was lagging behind the company and was presumably shot by an Indian (Wilson 1990:62). These unfortunate turns brought about a new life for the Native American tribes of Washington—the reservation.

The first to be moved to a reservation were the Cayuse, Walla Walla, and Umatilla. This move was motivated in part by the Whitman Massacre of 1847. A small group of Cayuse attacked the Whitman Mission near Walla Walla, killing the Whitmans and twelve others. Five members of the Cayuse tribe, including their chief, Tiloukaikt, were later tried for the murders and subsequently hung in Oregon City. In 1855, the U.S. Government and the aforementioned tribes signed the Treaty Council of 1855 at Waiilatpu, which ceded more than 6.4 million acres in what is now northeastern Oregon and southeastern Washington. The tribes, in return, were given 172,000 acres of land—the Umatilla Indian Reservation—which would become their permanent homeland. The tribes reserved their right to fish, hunt, and gather traditional foods and medicines throughout the ceded lands.

In 1859, the U.S. Army moved forces from the Yakima Valley to the Colville area. A post named "Harney's Depot" was set up northeast of the present city of Colville. It quickly became known as Fort Colville. This military post was distinguished from the fur trading post by its "American" spelling. Fort Colville provided a base for boundary commissioners who surveyed the American/Canadian border and the Army, which was responsible for moving Indians onto reservation land. The post was finally abandoned in 1885 in favor of Fort Spokane (Bohm and Holstine 1983).

The Colville Reservation was first established in 1872. The tribes of the territory were originally provided with property north of Spokane on April 9, 1872. The area was bounded, generally, by the Columbia, Spokane, and Pend Oreille rivers. This property was soon "exchanged" for property west of the original reservation, which is bounded by the Columbia River on the south and east and by the Okanogan River on the west. The north boundary was the "British possession." This included 2.9 million acres of property. Twenty years later, the north half of the Colville Reservation (totaling 1.5 million acres) was "restored" to public domain and opened for settlement by non-Indians. The Moses Reservation was established in 1879 west of the Colville Reservation. In 1883, Chiefs Moses, Lot, and Sarsarpkin relinquished the reservation in favor of a move to the Colville Reservation (Miller 1998:267). An agreement was made between the U.S. Government and the people of the Moses Reservation whereby the Indians would be allowed to remain in the area as settlers or to move onto the Colville Reservation. Numerous allotments were allowed on the former Moses Reservation and those who moved were provided with farm equipment and, in some cases, cash and yearly stipends. Thus the Moses band and others moved to the Colville Reservation.

The Project Area falls within the holdings of the Potlatch Lumber Company which is reflected on maps of the area beginning with the *Ogle Atlas of Latah County* (Ogle 1914). Potlatch ownership of the parcel and use of a large portion of Section 01 for their mill site is also reflected on Latah County atlases produced in 1937 (Moscow Publishing Company 1937) and 1960 (Metsker 1960), but none of these maps provides details of the arrangement of buildings or land use.

An extensive overview of Potlatch's history can be found in *Company Town: Potlatch, Idaho, and the Potlatch Lumber Company* (Peterson 1987). Briefly, white settlement in Latah County began in the 1850s, and specifically to the Potlatch area in the early 20th century with the arrival of the Potlatch Lumber Company. In 1905 the mill was constructed along the banks of the Palouse River. Potlatch grew as homes and businesses were needed to support the community of mill workers and their families. The Washington, Idaho, and Montana Railway Company railroad was completed through the town around the time that the mill was constructed, and facilitated the transport of lumber to markets.

TRADITIONAL CULTURAL PROPERTIES

Traditional Cultural Properties (TCP) are important for the "role the property plays in a community's historically rooted beliefs, customs and practices" as stated in the *National Register Bulletin 38* (U.S. Department of the Interior 1990). Although these properties can be difficult to identify and evaluate, an initial search of pertinent publications can be helpful toward identifying the types of properties that may be expected. The *National Register Bulletin 38* goes on to state that "examples of properties possessing such significance include:

- a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity."

The Project Area falls within land traditionally occupied by the Coeur d'Alene (ˈkərdəˌlān) (Palmer 1998:313). The Coeur d'Alene language is one of seven unique Interior Salish languages. Today the Coeur d' Alene are concentrated on the Coeur d'Alene Reservation which includes the lands surrounding the southern half of Coeur d'Alene Lake and extends south to the south divide of the Hangman Creek Valley, in Idaho. Traditionally the Coeur d' Alene occupied the area encompassing the headwaters of the Spokane River, including the Coeur d'Alene River, St. Joe River, and St. Maries River drainages, as well as upper portions of the Spokane River, Palouse River, Potlatch River, and Clearwater River drainages.

A review of ethnographies was undertaken to help identify any known Traditional Cultural Properties. The works of Angelo Anastasio (1972), Verne F. Ray (1933, 1936, 1939, 1942), Gary Palmer (1998), Allan Smith (1988), Leslie Spier (1938), and James Teit (1928, 1930) were reviewed. In addition, previously completed survey reports in the area incorporating tribal ethnographic review were consulted. These resources provided no new information.

The Coeur d'Alene were bordered by the Spokane and Palouse to the west, Kalispel to the north, Flathead and Pend d'Oreille to the east, and Nez Perce to the south. It is unlikely that we would be able to draw a distinct boundary between the territory of the Coeur d'Alene and their neighbors. The Coeur d'Alene had access to abundant subsistence resources in their home territory but were known to travel to neighboring areas to collect roots, fish for salmon, and hunt bison (Palmer 1998).

Ray (1936) and Teit (1930) have recorded 40 ethnographic villages of the Coeur d'Alene. The majority of Coeur d'Alene villages and camps were affiliated with one of three divisions: Spokane River-Coeur d'Alene Lake, Coeur d'Alene River, and Saint Joe River. The City of Potlatch is located approximatley 25 mi (40 km) south of the nearest ethnographically documented occupation. The Potlatch area was a known locality for collecting camas and wild onion (Palmer 1998:316).

Numerous collections of published legends were consulted to identify points of mythological significance near the Project Area. These include publications by Franz Boas (1917), Ella Clark (1969), Richard Erdoes and Alfonso Ortiz (1984), and Verne Ray (1933). These sources did not provide any information related to the Project Area. The review provided here is not an exhaustive investigation of potential TCPs but serves to build expectations for cultural resources in the Project Area.

EXPECTED PROPERTIES

Based upon the prehistoric and historic overview of the area, it is reasonable to expect certain types of cultural resources to be potentially present on or near the Project Areas. Trails shown on the cadastral maps may represent established paths used by Native Americans making their way to the Columbia River, or trodden animal routes. Plant, animal, and material resources in the area may have attracted people for short periods when their activities would be based around small camps. It is expected that smaller campsites could be found in or near the Project Areas.

These campsites may contain low to moderate densities of stone tools which are concentrated in one or more loci, hearths, and middens. As this area was traversed by multiple bands of Native Americans participating in seasonal activities, it is also possible that exotic lithic material might be present among the artifact assemblage. Additionally, visits through this area may manifest themselves as isolated finds. Typically an item lost or discarded, an "isolate" provides important information about the types of areas exploited by past populations.

Historic period activities such as ranching, recreation, and exploration for raw materials would have been associated with short-term visits through the Project Area. These visits may have

resulted in the accidental loss of personal items and hardware, or the disposal of a small number of food and beverage vessels. The proximity of the Project Area to the Potlatch Mill presents the possibility that items related to the timber industry may be found. Some of these items may be found as isolates or small discrete sites representing ephemeral occupation of the landscape.

FIELD METHODS AND PROJECT RESULTS

Survey work was completed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716, September 29, 1983) and under the supervision of Principal Investigator, David Harder. Plateau archaeologists, Christopher Noll and Mark Bennett, completed the cultural resource survey on March 17, 2011. Survey conditions were favorable; the weather was sunny to mostly cloudy with temperatures from 35° to 50° F.

Pedestrian survey was conducted across the entire Project Area using north-south oriented transects spaced 15 to 20 m apart. The Project Area consists of three distinct land forms; the flood plain of the Palouse River, a Holocene-age terrace of the Palouse River, and a short hill. The flood plain is a low and very wet land form with several patches of standing water. The terrace dips slightly from its high point in the southeast corner of the Project Area, down to the northwest and contains slight undulations suggestive of former river channels that have been filled by flood deposits. The hill is located immediately south of the terrace and is composed of loess which was exposed by erosion along the north face. Historic debris was identified along the transition from the terrace to the flood plain (Figure 3).

The artifacts are predominately glass and metal fragments which appear to roughly date from 1950 to 1980. The highest concentration of cultural material is located along the southeast edge of the Project Area where a dirt road enters the terrace from the south. The road appears to have provided access to a small dump (Figure 4). The debris scatter decreases in density to the north but scattered artifacts can be found along the entire length of the access road within the Project Area. The primary features are rusted car and truck bodies from ca. 1930s through the 1950s. It is unknown whether or not these were placed there as rip-rapping to forestall erosion or simply dumped as refuse; the area of the automotive dump area covers approximately 600 ft (180 m) along the terrace edge and lies within 60 m (200 ft) of the main road into the project area. A large bandsaw blade indicates that at least some of the debris may be associated with the Potlatch Mill which sat on the opposite bank of the Palouse River from the Project Area. The historic debris scatter was assigned the temporary site designation PAI-1102.

Shovel probes were excavated along the terrace margin to explore the historic dump, and determine if intact subsurface deposits are present on the terrace. No probes were excavated on the flood plain because the land form appears recent and the water table was at or near the surface at the time of survey. No probes were excavated on the hill due to the moderate slope of the land form.

Figure 3. Map of the Project Area showing the location of survey efforts and cultural materials.

A total of seven shovel probes were excavated which explored areas along the Palouse River terrace margin. The probes were intended to provide an assessment of the depth and character of the deposits in specific areas. All probes encountered silt loam with little or no obvious stratigraphic division (Figure 5). The probe placed in the primary dump area encountered a steel wheel from an automobile at 42 cm BS and could not be excavated further. A tile probe was used to determine that the primary dump area contains abundant large buried objects within 50 cm of the ground surface. Each shovel probe is summarized in Table 3.

Table 3. Summary of Excavated Shovel Probes

Probe Number	**Maximum Depth**	**Summary Profile**	**Cultural Material**
101	42	Dark grayish brown (10YR 2/2) silt loam with 30-40% historic artifact debris.	Many bottle glass, ceramic, and metal fragments (not counted). Steel wheel.
201	60	Black (10YR 2/1) silt loam over dark grayish brown (10YR 4/2) silt-clay loam.	1 1/4-inch square head bolt, 2 pieces of window glass, 1 piece bottle glass, 1 brick fragment
202	50	Black silt loam over dark grayish brown silt-clay loam.	None
203	65	Black silt loam over dark grayish brown silt-clay loam.	None
301	36	Black silt loam over dark grayish brown silt-clay loam grading to very dark gray (10YR 3/1) clay loam.	None
302	40	Black silt loam over dark grayish brown silt-clay loam.	None
303	30	Black silt loam over dark grayish brown (10YR 4/2) silt-clay loam.	None

Figure 4. Photograph of site PAI-1102 (portion within the Project Area is along the row of trees.

Figure 5. Typical shovel probe profile (Probe 201).

RECOMMENDATIONS AND MANAGEMENT PLAN

No prehistoric cultural material was identified in the Project Area but an extensive historic debris scatter was recorded. The debris scatter appears to be, at least in part, related to the operation of the Potlatch Lumber Mill. The refuse is located on the periphery of the mill site and the significance of the deposit has not been fully evaluated. Given the importance of the Potlatch Mill in the history of the City of Potlatch, the dump should be considered potentially eligible for inclusion on the NRHP until it can be formally evaluated. The site is a narrow linear scatter which can and should be avoided by ground disturbing activities during the wastewater land application project. Plateau also advises that a monitor be present for any excavation within 100 ft (30.5 m) of the documented site boundary as recorded in the PAI-1102 site form.

Should ground disturbing activities of these remaining areas reveal any cultural materials (e.g., structural remains, Euroamerican artifacts, or Native American artifacts), excavations should cease and the Idaho State Historic Preservation Officer (SHPO) should be notified immediately.

If human remains, suspected human remains, or any items suspected to be related to a human burial are encountered during any aspect of the project, it is imperative that operations cease immediately within 200 ft (61 m) of the find. The area around the discovery will be secured and the Latah County Sheriff and the SHPO should be contacted at once.

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APPENDIX A:

PAI-1102 SITE INVENTORY FORM

ARCHAEOLOGICAL SURVEY OF IDAHO
SITE INVENTORY FORM
Part A – Administrative Data

1. State No._____
2. Agency No._____
3. Temporary No._PAI-1102_____
4. Site name(s)_____ **5. County**_Latah_____

6. Class:
☐ Prehistoric ☑ Historic ☐ Traditional Cultural Property ☐ Undetermined

7. Land owner_City of Potlatch_____ **8. Federal admin. unit**_____

9. Project_The City of Potlatch Wastewater Land Application Site Cultural Resource Survey, Latah County, Idaho_____ **10. Report No.**_____

11. Recorder(s)_Christopher Noll and John J. Creighton_____

12. Organization_Plateau Archaeological Investigations_____
13. Date_March 17, 2011_____

14. Attachments and associated records:
☑ Topographic map (required)
☑ Site map (required)
☑ Photos with labels/log (required)
☐ Artifact illustrations
☐ Feature drawings
☐ Stratigraphic profiles
☐ Rock art attachment
☐ Historical records
☐ Assoc. IHSI forms_____
☐ Other_____

15. Elevation (site datum)__2,490 ft / 759 m

16. Site dimensions:__440____m X _50_____m **Area**_22,000___m^2

17. UTM at site datum: Zone_11N___ _506900__m Easting _5196180_m Northing using NAD 1983.

18. UTM source:
☐ Corrected GPS/rectified survey (<5m error) ☑ Uncorrected GPS ☐ Map template ☐ Other explained under comments

19. Township_41N_____, **Range**_05W_____, **Section**_01____; __E_**1/2 of** _SW____**1/4 of** _____**1/4**
Additional legals listed on an attachment. ☐

20. USGS 7.5' map reference_Potlatch, Idaho 1994_____
Additional maps listed on an attachment. ☐

21. Access_From the intersection of SR 6 and Pine St. follow Pine St. south for approximately 0.6 mile (1.0 Kilometer) to a small quarry located south of the road. Follow a dirt road that passes along the east side of the quarry and continue along the road for approximately 1.1 miles (1.8 kilometers) to the south end of the site. The site is located between the dirt road and the terrace margin._____

22. Site description_The site is a dense scatter of historic and modern debris. Artifacts lies between a dirt access road and the Palouse River first terrace margin. The terrace surface is primarily covered in bunchgrass and small shrubs with few scattered trees. The largest size objects, including car bodies, are located along the terrace riser. Additional materials may extend across the floodplain but the floodplain was partially inundated during the survey which documented the site, and could not be fully investigated. _____

23. Site type:

- ☐ Historic building*
- ☐ Historic structure*
- ☐ Historic object*
- ☐ Prehistoric residential
- ☐ Rockshelter/cave
- ☐ Stacked/placed rocks
- ☐ Quarry/lithic source
- ☐ Linear
- ☐ Mortuary
- ☐ Rock art
- ☐ Feature(s)
- ☑ Artifact(s)
- ☐ Faunal
- ☐ Culturally modified trees
- ☐ Other_____

*Following definition for the National Register of Historic Places.

24. Specify themes and time periods:

Themes				Time Periods	
☐ Prehistoric archaeology	☐ Military			☐ Prehistoric-general	☐ Settlement: 1855-1890
☐ Agriculture	☐ Mining industry			☐ Paleoindian	☐ Phase 1 statehood: 1890-1904
☐ Architecture	☐ Native Americans			☐ Archaic-general	☐ Phase 2 statehood: 1904-1920
☐ Civilian Conservation Corps	☐ Politics/government			☐ Early Archaic	☐ Interwar: 1920-1940
☐ Commerce	☐ Public land management			☐ Middle Archaic	☐ Premodern: 1940-1958
☐ Communication	☐ Recreation/tourism			☐ Late Archaic	☐ Modern: 1958-present
☐ Culture and society	☐ Settlement			☐ Late Prehistoric-general	☑ Historic/Modern-general
☐ Ethnic heritage	☑ Timber industry			☐ Protohistoric/Contact	☐ Unknown
☐ Exploration/fur trapping	☐ Transportation			☐ Historic Native American	
☑ Industry	☐ Other _____			☐ Exploration: 1805-1860	

25. National Register of Historic Places (NRHP) evaluation: *

☐ Individually eligible ☐ Contributing in a district ☐ Not eligible ☑ Insufficient information to evaluate

*Evaluation subject to review by SHPO.

26. NRHP criteria used:

☐ A: Event ☐ B: Person ☐ C: Design and construction ☐ D: Information potential

27. Comments on significance_The site contain materials which suggest a connection to the Potlatch Lumber Mill which was located on opposite side of the Palouse River from the site. More work at the site is needed to determine the relationship of the site to the development of the mill, the City of Potlatch, and the information potential at the site._____

28. If not eligible, explain why_____

29. Condition (prehistoric component):

☐ Excellent ☐ Good ☐ Fair ☐ Poor

Condition (historic component):

☐ Excellent ☑ Good ☐ Fair ☐ Poor

30. Impact agents:

☐ Agricultural use	☐ Development project	☐ Mining/quarrying	☐ Road/highway	☐ Vandalism
☐ Building alteration	☑ Erosion	☐ No information	☐ Rodent damage	☐ Other_____
☐ Deflation	☐ Grazing	☐ Recreation use	☐ Structural decay	
☐ Demolished	☑ Looting	☐ Research excavation	☐ Timber harvest	

Comments on impact agents_Relatively fresh looking pits and sorted piles of bottles were observed at the site during recordation._____

31. Surface collection:

☑None ☐ Previously collected ☐ Grab sample ☐ Designed sample ☐ Complete

32. Sediments:

☐ Absent ☐ 0-20 cm ☑21-100 cm ☑>100 cm ☑Suspected but not tested

Explain how this was determined_Shovel probe attempted; impenetrable cultural material at 42 cm B.S. (cultural material mixed with loam)._____

33. Excavation status:

☐ Unexcavated ☐ Auger/probe ☐ Test unit ☐ Backhoe, etc.
☐ Surface scrape ☑ Shovel test ☐ Block excavation

Describe collection/testing/excavation_Shovel probes were used to attempt to determine the maximum vertical extent of the highest density portion of the site, and the horizontal extent of the low density portion of the site._____

34. Excavation volume (indicate liters or cubic meters) _0.4 cubic meters_ Screen mesh__1/4 inch_____

35. Additional comments_____

Part B – Environmental Data

36. Distance to permanent water__75_m

37. Water source:

☐ Spring, seep ☑ River/stream ☐ Lake ☐ Other_____

38. On-site vegetation (estimate percentage of total vegetation for each class and identify species):

Trees: _5___% Species:_Pine (*Pinus* sp.), Poplar/Cottonwood (*Populus* sp.)_____

Shrubs: _5___% Species:_Rose (*Rosa* sp.)_____

Forbs: _10___% Species:_Yarrow (*Achillea millefolium*), Tansy (*Tanacetum vulgare*), Mullein (*Verbascum thapsus*)_____

Grasses: _80__% Species:_unidentified_____

Lichens/mosses: _0___% Species:_____

Describe_____

39. Visible surface area:

☐ 0% ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

40. Landform (Describe, including lithology, form, and soil, using locally or regionally appropriate terms, eg. arroyo, playa, moraine, etc.)_The site is on the first terrace of the Palouse River. Artifacts appear to extend onto the floodplain. Both landforms are comprised of silt-clay loam._____

Part C – Prehistoric Sites

41. Phase/period__

42. How classified_____

43. Maximum artifact density_____m²

44. Individual artifacts:

Count	Category	Description

45. Lithic Debitage – Estimated Quantity:

☐ None ☐ 1-9 ☐ 10-25 ☐ 25-100 ☐ 100-500 ☐ 500+

Flaking Stages (not present, rare, common, or dominant):

Decortication_____ **Secondary**_____ **Tertiary**_____ **Shatter**_____

46. Material types_____

47. Additional description_____

48. Features:

Count	Category	Description

49. Additional description_____

Part D – Historic Sites

50. Cultural affiliation_20th Century lumber community_____

51. Oldest date_ca. 1945_A.D._____ **Recent Date__1980 A.D.**_____

52. How determined_Diagnostic Artifacts_____

53. Maximum artifact density_greater than 1,000__m²

54. Individual artifacts:

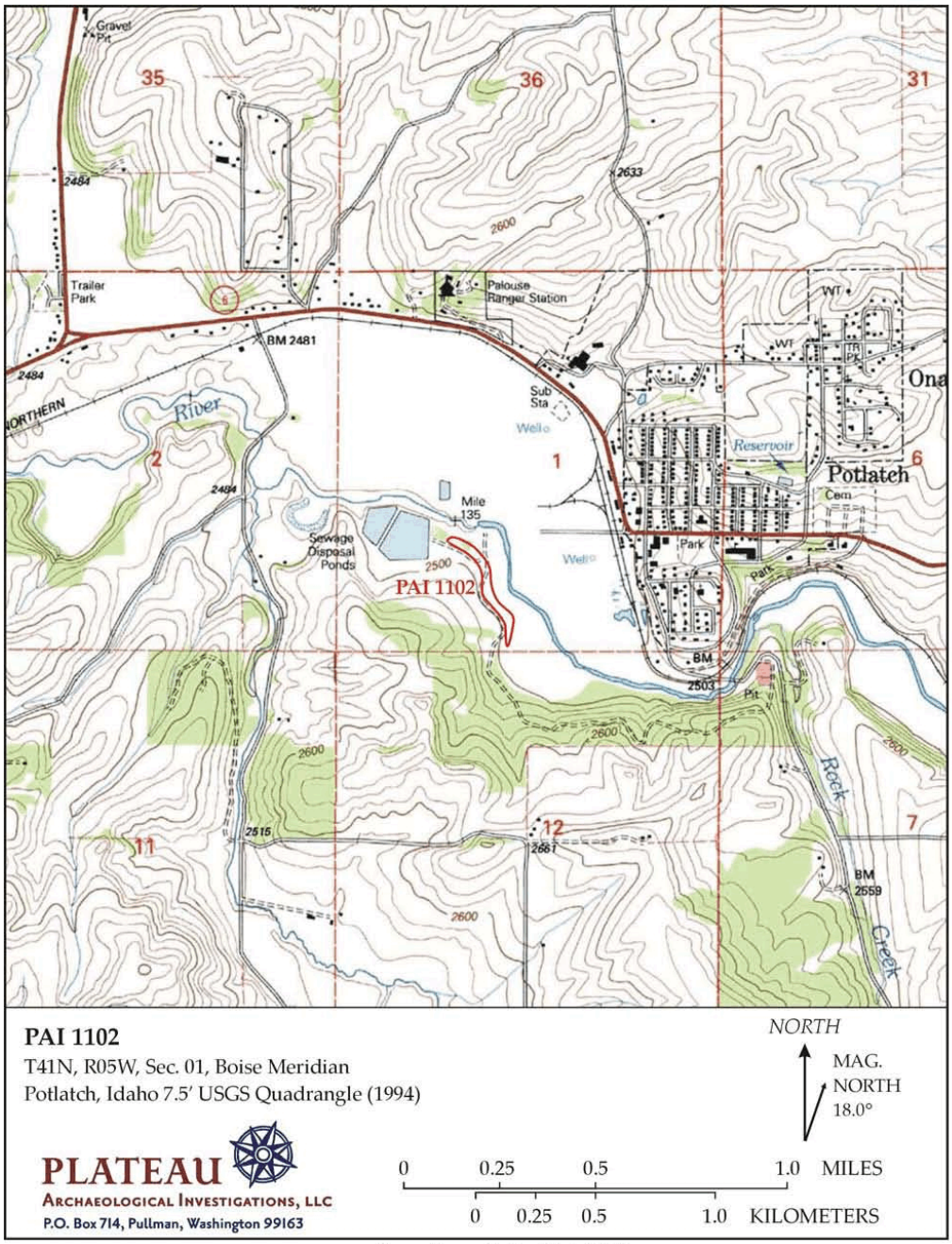
Count	Category	Description
1	machinery	Industrial band saw blade

55. Additional description_The site is a historic dump and, as such, contains thousands of fragments of glass and ceramic, hundreds of whole bottles, automotive parts, fragments of unidentified machinery, and synthetic materials. The near surface items date to the post World War II era but older materials may be present at lower levels of the deposit. The high density large objects resulted in sediments that were impenetrable below approximately 45 cm B.S. through hand excavation.

56. Features:

Count	Category	Description

57. Additional description_____



Location of site PAI 1102

Location of PAI 1102 and identification efforts along the Palouse River.

View of the high density portion of the site.

View of wooden debris at the south end of the site.

Appendix H

Biological Assessment

BIOLOGICAL ASSESSMENT:

NO EFFECT DETERMINATION

for

FEDERALLY-LISTED THREATENED AND ENDANGERED SPECIES

for the

CITY OF POTLATCH, REGIONAL

WASTEWATER FACILITIES PROJECT

LAND TREATMENT SITE

Latah County, Idaho

Report submitted to:

Angela Taylor
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Prepared by:

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tdueb@wildblue.net

January 18, 2010

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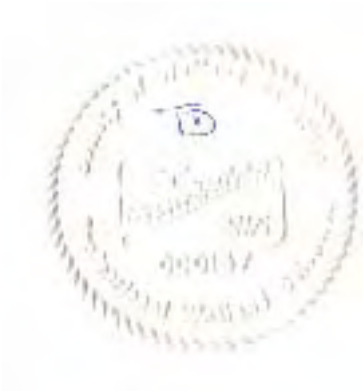
Report Preface

This Biological Assessment (BA) has been prepared for use by Angela Taylor at Taylor Engineering, Inc., and the US Fish and Wildlife Service. I am qualified to analyze terrestrial and wetland ecosystems. I have 24 years experience in assessing Northwest province ecosystems. I have used the site information and proposed plans as referenced herein. The findings in these reports are based on information gathered in the field at the time of investigation and my understanding of the federal, state, and local regulations governing species protection. Prior to construction, all appropriate regulatory agencies should be contacted to concur with the findings of this report and to obtain appropriate approvals and permits.

The BA effects determinations are presented using thorough application of my knowledge and experience, correspondence with regional experts, and best professional judgment based on the circumstances and site conditions at the time of the study. The final effects determinations are made by the appropriate federal, state, and local jurisdiction. I have provided professional services in accordance with the degree of care and skill generally accepted in the nature of the work performed.

Tom Duebendorfer M.A., PWS
Wetland Scientist/Biologist/Botanist



1.0 INTRODUCTION

Taylor Engineering authorized me to prepare a Biological Assessment for the City of Potlatch, Onaway Water and Sewer District proposed Land Treatment project in Latah County, Idaho. Since the project requires compliance with the NEPA process, an evaluation for potential impacts to federally-listed threatened and endangered species is required. This document is forwarded to the agencies as a part of this compliance process.

2.0 PROPOSED ACTION AND ACTION AREA

2.1. PROPOSED ACTION

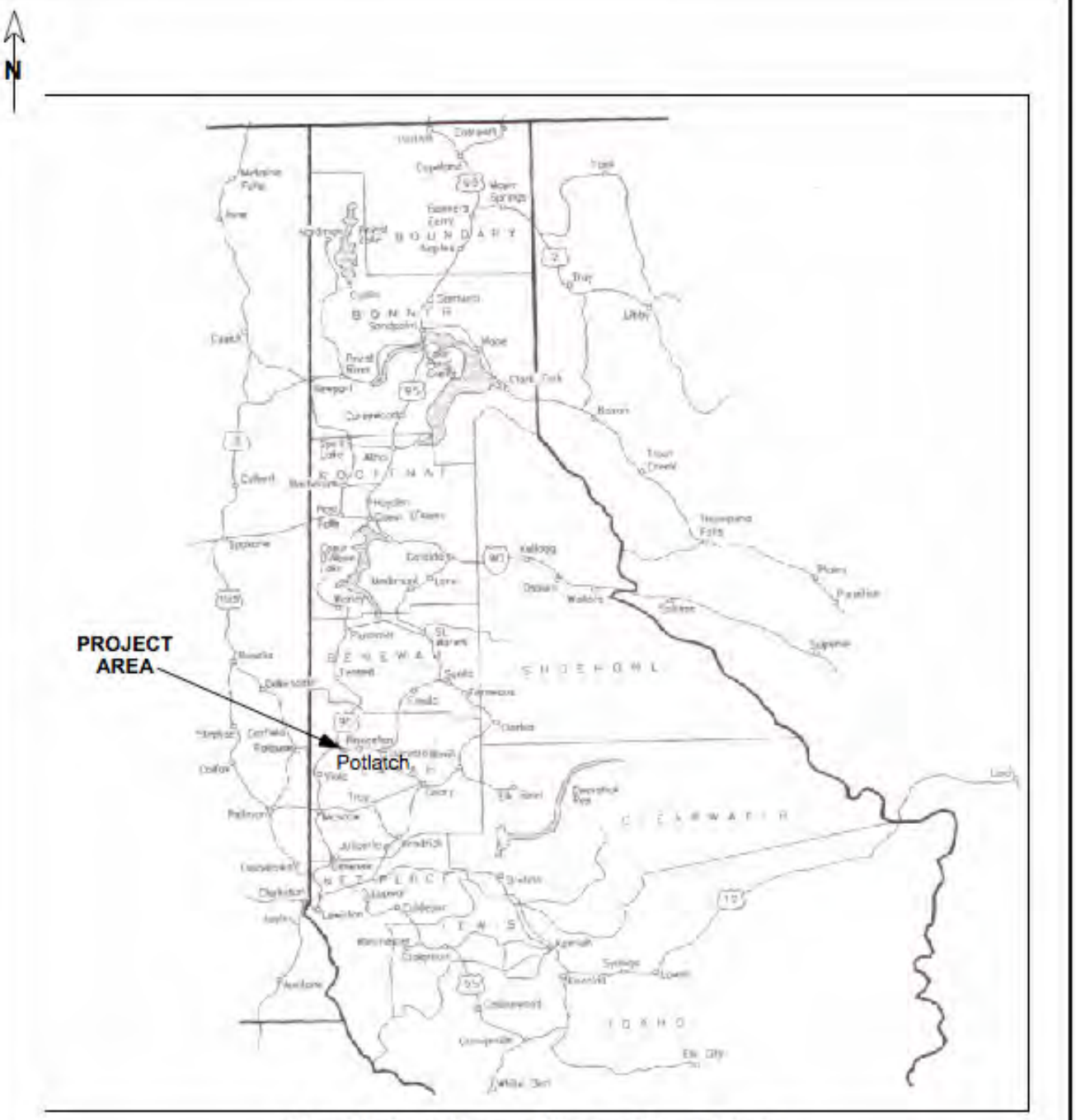
The proposed Regional Wastewater Collection Land Treatment System Project consists of subsurface drip irrigation on properties near the existing sewage lagoons near the City of Potlatch (Figures 1 and 2). An earlier project consisted of improvements to the existing facilities. This project involves installation of a reinforced concrete housed pumping station with controls, valve vault, a subsurface treated wastewater irrigation system, piping valves and appurtenances for underground disposal of effluent from the wastewater treatment plant. The surface area needed is about 200,000 sf with wastewater drip tubing buried a minimum of 18" deep. The drip lines themselves will be nominal sized 0.7-inch linear low density polyethylene tubing, with turbulent flow, drip emitters bonded to the inside wall. The emitters are impregnated with Treflan to inhibit root intrusion for a minimum period of ten years. The disposal system is designed to dose the drip field zone and then drain back to the tank. The drip line will be installed with a shank type plow or a vibratory plow. Alfalfa will be planted in the irrigation area.

The associated sewer infrastructure is located in a portion of Section 1, Township 41 North, Range 5 West, Boise Meridian, Latah County, Idaho (Figures 1 and 2).

2.2 ACTION AREA

The “action area” is defined herein as the specific project construction area (Figure 2). The project area presently consists of the undeveloped land divided into two parcels. Parcel 1 is located north of the Palouse River in an area formerly used as a mill site—it is highly disturbed with concrete, asphalt, and generally weedy vegetation in the central and south portions and an agricultural field in the northern portion. Parcel 2 is located mostly south of the river, is undeveloped, and consists of a riparian band along the river (with some cottonwoods), weedy areas (formerly used as a dump site), and ponderosa pine woodland along the southern hilly area.

The “action area” is specifically those areas where physical disruption to the environment or other disturbance could occur as well as areas potentially used as staging locations for equipment and supplies. All staging area locations will be in existing gravel or paved road rights-of-way. Since only two plants (which are stationary) are on the list, and no bird species or other species that could potentially be affected by the proposed action, the action area <u>is</u> the project area (see Table 1, Appendices 1 and 2).



City of Potlatch, Onaway Water and Sewer District
portion of Section 1, Township 41 North, Range 4 West
Latah County, Idaho

no scale

Figure 1.
Vicinity Map
City of Potlatch Wastewater Facilities Project
Land Application /Treatment Sites

Figure 2.
Aerial Photograph
City of Potlatch Wastewater Facilities Project
Land Application/Treatment

3.0 METHODS

3.1 BACKGROUND RESEARCH

Initial review of background information commenced with identification of which species are potentially occurring in the action area listed as federally threatened or endangered (from the Fish and Wildlife Service County-wide species list for Latah County, Idaho). Information on specific, known historical (recent and documented) locations of rare plants collected or observed within adjacent townships was obtained and analyzed for distance from site, habitat similarities, and elevation. Aerial photographs and 7.5 minute topographic quadrangles of the project areas were studied. Additional habitat information, associated species, and more site-specific details concerning the plants, animals, and the potential for their occurrence were obtained. Also consulted were sources available via the Internet.

3.2 SURVEY METHODS

I completed a field survey for wetlands, wildlife habitat, rare plant species, and vegetation descriptions on January 13, 2010. The method of survey involved traversing the entire area proposed for the drip irrigation system (see also Appendix 2). Observations of vegetation associations, species (age and vigor), and habitat characteristics were made. A comparison with existing on-site vegetation with that of known associated plant species and wildlife habitat was made.

4.0 RESULTS

4.1 HABITAT WITHIN THE PROJECT AREA

Topographically, the site is located in the Palouse area, a hilly area with open agricultural fields, roadsides, and the cities of Potlatch and Onaway. Most of the project area is located within two undeveloped parcels near the existing sewage lagoons. Topography is essentially flat throughout Parcels 1 and 2 with a topographic rise in the southern portion of Parcel 2. There is a slight slope to the south toward the Palouse River. The lagoons are in an area that is flat. Elevation is at the site is about 2,500 feet.

4.1.1 Vegetation (see Figure 2)

<u>Parcel 1</u>

Dominant vegetation in Parcel 1 is weedy which attests to the level of disturbance and later neglect of the former mill site. Except for the northern portion which is presently cultivated in timothy, the majority of the site can be characterized as highly disturbed open ground with weeds (tansy, knapweed, and tumble mustard, St. John's wort, mullein, horseweed, and yarrow), as well as wetland and [mostly] upland grasses (canarygrass, meadow foxtail, smooth brome, quackgrass, timothy, orchardgrass, red fescue). Some areas have patches of cattail. There is a man-made pond/lagoon structure that is surrounded by bands of cattail and canarygrass in the southwestern corner of the Parcel. A few alder, cottonwood, and ponderosa pines are scattered in the parcel, but the dominant site characteristics are relatively narrow linear features formed as a result of the mill roads and (presumably) log storage areas. The aerial shown (Figure 2) dates from several years past when the weedy vegetation had not yet re-colonized the open disturbed areas. However, as a result of the proximity of impervious surfaces (concrete and asphalt road "pads") the intervening areas are often slightly lower in topographic position and receive runoff which cannot otherwise penetrate the substrate. As a result a typical section of the area may include the asphalt "road bed" interspersed with a wider row completely dominated by tansy, with another intervening area of (largely) quackgrass, tumble mustard, mullein, knapweed, and St. John's wort. The Palouse River banks are disturbed and almost completely dominated by canarygrass.

A few areas were identified as wetland on this parcel (see Wetland Determination Report)—these are highly disturbed and dominated primarily by non-native species.

Parcel 2

Dominant vegetation in Parcel 2 is also weedy but has areas of more "native" or undisturbed vegetation. In the extreme northern portion of Parcel 2 south of the river, a band of canarygrass, nettle, cow parsnip, scouring rush, and occasional tansy forms the "banks" and first river "terrace". South of this band, a swath of cottonwood with hawthorn, snowberry, and rose run east-west almost all across the parcel (Figure 2). South of this, the topography rises and forms the central weedy open area dominated by quackgrass, smooth brome, St. John's wort, mullein, bentgrass, absinth sage, tumble mustard, and teasel. South of this the topography again rises abruptly to an open grassy area then into a Ponderosa pine forest.

The site had been formerly used as a dump site as evidenced by a pile of timbers, scattered old rusting vehicles, and 50-gallon drums.

4.1.2 Wildlife Habitat

There is essentially little native or natural wildlife habitat aside from use by rodents, and birds (including fowl). Raptor use would be limited by the general area noise and lack of feeding areas. Large mammal use is highly unlikely.

4.1.3 Water Resources and Fisheries

The proposed utility project lies near the Palouse River which does not harbor listed fish species (personal communication via e-mail from [NOAA 2007 - see Appendix 1]).

5.0 LISTED SPECIES

The following species are federally listed species that *are listed* by the US Fish and Wildlife Service for Latah County and could potentially occur in the vicinity: Canada lynx, steelhead trout, water howellia, and Spalding's catchfly. Table 1 itemizes species listed by the USFWS (14420-2010-SL-0091; December 30, 2009) with notes from IDFG and NOAA via e-mails August 24, 2007. Lynx was not considered to potentially in the project area (Appendices 1, 2) - thus it is not discussed here.

Table 1
Federally Listed Species Potentially Occurring within the Project Area

Species	Species/Habitat Present within the Project Area?
steelhead trout*	no
water howellia	no
Spalding's catchfly	no

* and designated critical habitat

5.1 Steelhead trout: Threatened

Distribution within the Project Area

These species *"occupy the lower 7 miles of the Palouse River, below Palouse Falls. The falls are located more than 100 river miles downstream from the town of Potlatch, Idaho. The Palouse River, downstream from the falls, is designated critical for spring/summer Chinook salmon, and fall Chinook salmon"*. (NOAA, e-mail communication. 2007 — see Appendix 1).

5.2 **Water howellia** (*Howellia aquatilis*): Threatened

Habitat

Water howellia occurs in freshwater ephemeral ponds with a shallow, coarse-textured organic surface horizon. Seeds require aerobic environments and cool temperatures to germinate. Thus, seed bank germination is highest immediately following seed dispersal and pond drawdown. This complete drying of the ponds is essential to germination of the seeds. Mantas (personal communication 1998) indicated that presence of high cover of sedges, reed canarygrass, cattail, or similar species, generally preclude the presence of water howellia. These aggressive rhizomatous, perennial species effectively "fill" the available substrate and thus may inhibit growth of annual species such as the water howellia.

Range

Howellia aquatilis is known from over 100 locations in northwest Montana (Swan River Drainage), one location in north-central Idaho (Latah County), about 50 occurrences in Washington (mostly Spokane County), and five (some historical, some new) locations in California (Mendocino County). The extant Latah County population was discovered around 1968 (Shelly and Gamon 1996; Isle 1997).

The single occurrence of *Howellia aquatilis* in Idaho (Latah County), consists of two small populations located in a small vernal pond and an "older" oxbow pool of a meander of the Palouse River near the junction of State Route 6 and 9, west of Harvard. It had been first sighted around 1968, and subsequently confirmed in 1988, 1995, 1996, and re-confirmed by me in 1998 and 1999.

5.3 **Spalding's catchfly** (*Silene spaldingii*): Threatened

Spalding's catchfly is a herbaceous, perennial member of the pink family (Caryophyllaceae) that can grow to 60 cm tall (occasionally to 80 cm). It occurs in northeastern Oregon, eastern Washington, and adjoining north-central Idaho, with disjunct populations in northwestern Montana and adjacent British Columbia. It inhabits bunchgrass grasslands, shrub-steppe, and open pine forests, much of which has been converted to cropland or degraded by livestock grazing (CDC 2004, USFWS 2005).

6.0 EFFECTS DETERMINATIONS

Based on the lack of presence of: Canada lynx, steelhead trout, water howellia, or Spalding's catchfly, in or near the project area, the action will have ***no effect*** on these listed species.

6.1 Cumulative Effects

Cumulative effects are effects of possible future activities undertaken by individuals or agencies. Based on the NOAA documentation (Appendix 1), the listed fish species do not occur in the project area. As well, the specific habitat requirements for Canada lynx, water howellia, or Spalding's catchfly, do not exist within the study area (Appendix 2). Thus no cumulative effects from future activities in the area could potentially affect these species because of the lack of their presence.

It is my understanding that this satisfies the responsibilities under Section 7(c) of the Endangered Species Act at this time. The project proponent will continue to remain aware of ay change in status of these species and will be prepared to re-evaluate potential project impacts if necessary.

7.0 DETERMINATION AND CONCLUSION

Based on the discussions above, it is my professional opinion that because of lack of habitat within the project area, the proposed action will have ***"no effect"*** on the federally listed species discussed in this report.

8.0 REFERENCES

CDC. 2004. Idaho Conservation Data Center. Spalding's catchfly (*Silene spaldingii*) monitoring, Craig Mountain, Idaho: 2nd year results. Karen Gray, Juanita Lichthardt

Isle, D.W. 1997. Rediscovery of water howellia for California. Fremontia Vol 25:3. July 1997.

Mantas, M. 1998. Personal communication. US Forest Service. Kalispell, Montana.

NOAA. Personal Communication. 2007. E-mail from Bob Ries (NOAA) to Eric Shanley (Taylor Engineering) 8/23/07 (for the earlier project).

Shelly, J.S. and J. Gamon. 1996. Technical Draft: *Howellia aquatilis* (Water Howellia) Recovery Plan. Document prepared for US Fish and Wildlife Service. U96FWS02IDUS. January 30, 1996.

USFWS. 2005. Draft Recovery Plan for *Silene spaldingii*. Region 1, US Fish and Wildlife Service.

Appendix 1
E-mail correspondence from NOAA

From: Bob Ries [mailto:bob.ries@noaa.gov]
Sent: Thursday, August 23, 2007 8:36 AM
To: ericshanley@taylorengr.com
Cc: Nancy.Bowser@deq.idaho.gov; Dale Brege; David Mabe
Subject: Re: FW: City of Potlatch, Wastewater Facilities Planning Document

Eric,

Listed Snake River Basin steelhead, spring/summer Chinook salmon, and fall Chinook salmon occupy the lower 7 miles of the Palouse River, below Palouse Falls. The falls are located more than 100 river miles downstream from the town of Potlatch, Idaho. The Palouse River, downstream from the falls, is designated critical for spring/summer Chinook salmon, and fall Chinook salmon.

I don't know the exact downstream extent of the sewage project effects, but it seems unlikely that effects of the project would extend downstream where listed anadromous fish and designated critical habitat are found. Consequently, consultation with NMFS is not required unless you have reason to believe that the sewage project would affect water quality downstream from Palouse Falls.

Bob

Appendix 2
E-mail correspondence from IDFG to DEQ 8/22/07

"Any area where construction equipment may be working, materials stored, or in which other activities are taking place that could harm, harass (*e.g.*, disturb) or kill species of concern should be considered in the survey/assessment, whether excavation is involved or not. ... I wouldn't consider the existing lagoons as an area to worry about – they're in an area that was previously disturbed and has been maintained in such a way that *Howellia* would not be likely to get established there (*i.e.*, it's not suitable habitat). Likewise for borrow ditches next to the highway or any of the urban portions of the project. If construction or related activities impact potentially suitable habitat and could harm or kill the plants in that habitat in any way, those activities should be considered as disturbance and those areas should be surveyed."

Appendix 3
Photographs

Photographs - page 1
(1/13/10)

Photo 1: PARCEL 1: General view of disturbed mill site area; typical concrete/asphalt "lines" with weedy vegetation. Bales of straw have been dumped in the intervening areas.

Photo 2: PARCEL 1: View east. General view of ditch, surrounding by canarygrass.

Photo 3: PARCEL 1: View east to south in northern agricultural area. All planted in timothy. Hydrology inferred in northern portion of this field.

Photo 4: PARCEL 1: View south to west in southern portion of Parcel 1. Dark brown in tansy (upland). Lighter colored (left photograph) canarygrass wetland (blue arrow); lighter colored (red arrow) is smooth brome (upland).

Photographs - page 2
(1/13/10)

Photo 4: PARCEL 2: General view north to east to south. Lagoon on left. Small canarygrass wetland in blue. Cottonwood area (red arrow). Grid of drip system in yellow. Mostly smooth brome (lighter colored) with tansy patches (dark brown).

Photo 5: PARCEL 2: General view from central-eastern portion of site. View west to north. Essentially all upland with smooth brome (lighter colored) with tansy patches (dark brown). Portion of Ponderosa pine forest on left.

Appendix I

Agricultural Lands

Farmland Classification—Latah County Area, Idaho
(Potlatch Wastewater Treatment Facility)

Map Scale: 1:2,710 if printed on A size (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 100 200 400 600

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

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

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

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

MAP INFORMATION

Map Scale: 1:2,710 if printed on A size (8.5" × 11") sheet.

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 11N NAD83

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

Soil Survey Area: Latah County Area, Idaho
Survey Area Data: Version 6, Jan 31, 2008

Date(s) aerial images were photographed: 6/21/2004

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

Farmland Classification

Farmland Classification— Summary by Map Unit — Latah County Area, Idaho (ID610)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
11	Hampson silt loam, 0 to 3 percent slopes	Not prime farmland	10.6	37.2%
20	Klickson silt loam, 25 to 35 percent slopes	Not prime farmland	3.8	13.3%
51	Taney silt loam, 7 to 25 percent slopes	Not prime farmland	12.9	45.2%
66	Water	Not prime farmland	1.2	4.3%
Totals for Area of Interest			**28.5**	**100.0%**

Description

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

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Appendix J

Air Quality

AirData Air Quality Index Chart
Generated on Monday, April 25, 2011

AirData

You are here: EPA Home Air & Radiation AirData Reports and Maps Select Geography Select Report/Map Air Quality Index Chart Criteria Air Quality Index Chart

EPA is assessing its data systems, including AirData reports and maps. Data updates are suspended while the assessment is underway. The last update included data through January 10, 2009; see database status for details. For more recent air quality data, visit the AirExplorer and Air Emission Sources sites.

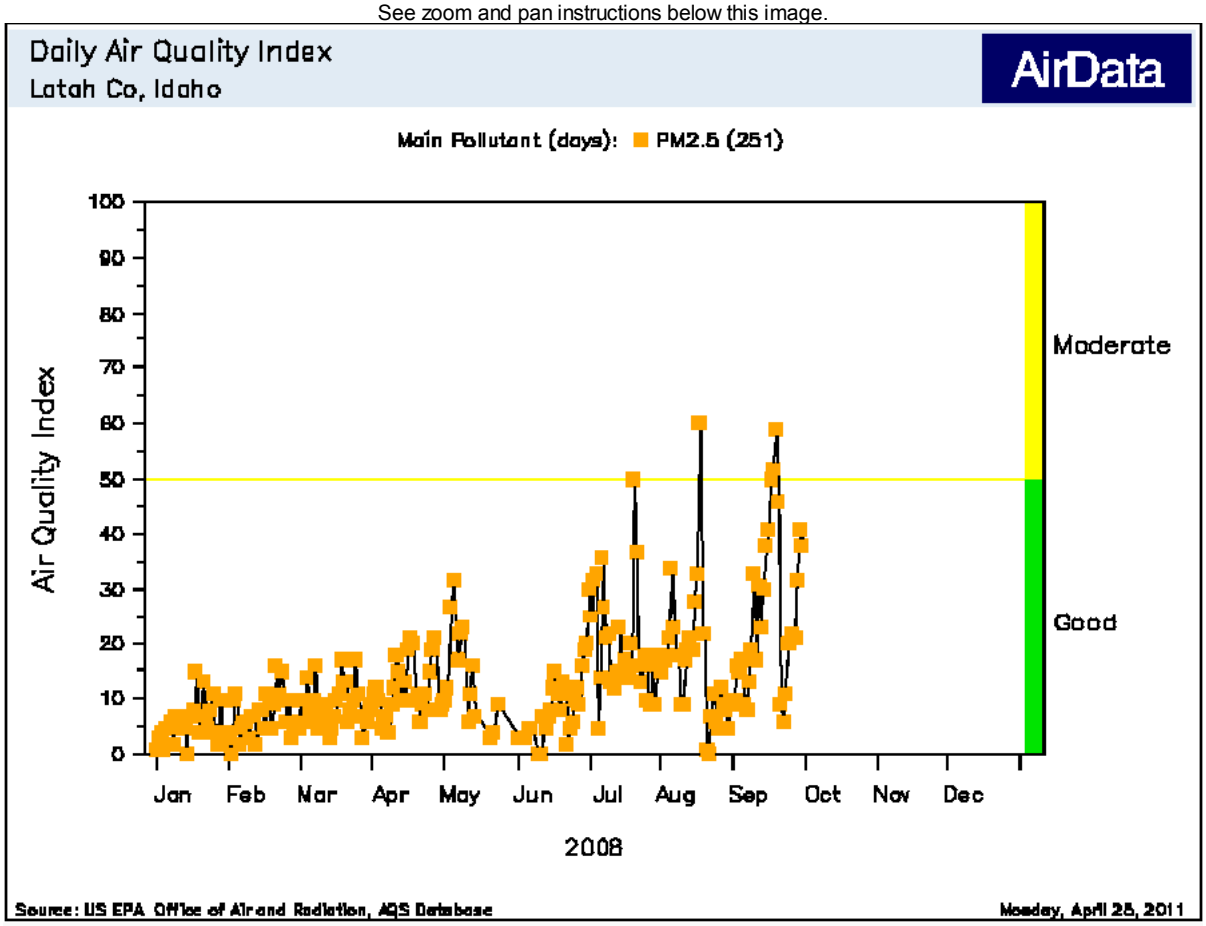
Air Quality Index Chart

Geographic Area: Latah Co, Idaho
Date Range: January - December 2008
Chart Type: Daily values (See Summary)

AQI Values: Maximum **60**, Minimum **0**, Percentiles... 90th **25**, 75th **17**, 50th **10**, 25th **6**
AQI Category: Days Good **248** (99%), Moderate **3** (1%)
Main Pollutant: Days $PM_{2.5}$ **251** (100%)

251 Days of AQI data selected
See Disclaimer

See zoom and pan instructions below this image.



100 %

To ZOOM: Click slider with mouse, type in zoom percentage number, or use keyboard Shift + arrow keys.

To PAN: Click and drag image with mouse, or use keyboard arrow keys.

Download Image CGM Go

Download Data Tab Delimited Go

View Data 25 rows per page Go

Disclaimer: Information in this chart comes from a monthly extract of EPA's Air Quality System (AQS) database. Data for this chart were extracted on January 10, 2009. They represent the best information available to EPA from state agencies on that date. However, some values may be absent due to incomplete reporting, and some values subsequently may be changed due to quality assurance activities. The AQS database is updated daily by state and local organizations who own and submit the data. Please contact the pertinent state agency to report errors.

Readers are cautioned not to infer a qualitative ranking order of geographic areas based on AirData maps, charts, or reports. Air pollution levels measured in the vicinity of a particular monitoring site may not be representative of the prevailing air quality of a county or urban area. Pollutants emitted from a particular source may have little impact on the immediate geographic area, and the amount of pollutants emitted does not indicate whether the source is complying with applicable regulations.

Appendix K

Public Participation

CITY OF POTLATCH
MINUTES OF MEETING
CDBG APPLICATION
PUBLIC HEARING
NOVEMBER 10, 2010

Mayor Dave Brown, who turned the meeting over to grant writer and administrator Walter Steed, called the public hearing to order at 5:00 p.m. Also in attendance was Angela Taylor, environmentalist for Taylor Engineering. There was no one from the public present.

Mr. Steed stated the city would be submitting a Community Development Block Grant application in the amount of $500,000 for financial assistance with the proposed construction of improvements to the City's sewer treatment plant. He went on to state a public hearing was required and the items to be covered had been stated in the advertisement, which was published in the local newspaper more than seven days previously.

Mr. Steed said the project is a continuation of work as outlined in the preliminary engineering study and which showed a definite need for sewer system improvements to correct problems which are impacting and endangering the operation and effectiveness of the City's sewer treatment lagoons. This affects the health and safety of all residents of the community.

Mr. Steed went over the CDBG funding and application process and said the $500,000 application will be submitted by November 19, 2010. Matching funds will consist of part of the $4,900,000 bond issue on which the voters of Potlatch approved in August 2007 that is unspent after Phases I and II were constructed.

Mr. Steed went over the proposed budget and the impact of the project on sewer rates in the City.

Ms. Taylor presented the four treatment alternatives with exhibits showing each area and type of treatment. A copy of the Draft Environmental Information Document was given to Mayor Brown. This document will remain at City Hall for public viewing during office hours until November 29, 2010. Any public comments received during that time will be forwarded to Taylor Engineering for review and incorporation into the final document. No comments or questions were received during the public hearing regarding the treatment options, areas, or the Environmental Information Documents.

There being no questions, the public hearing was concluded at 5:25 PM.

Walter M. Steed
Project Administrator

LEGAL NOTICES

28525

Notice of Public Hearing on Proposed Grant Activities

The City of Potlatch is submitting a proposal to the Idaho Department of Commerce for an Idaho Community Development Grant (ICDBG) in the amount of $500,000 to construct improvements to their sewer system.

The hearing will include a discussion of the application, scope of work, budget, schedule, benefits of the project, environmental impacts, how ICDBG funds will benefit low and moderate-income persons, and location of proposed project. The application, related documents, and ICDBG Application Handbook will be available for review.

The hearing has been scheduled for 5:00 p.m., Wednesday, November 10, 2010, at the Potlatch City Hall. Verbal and written comments will be accepted prior to and at the hearing.

The hearing will be held in a facility that is accessible to persons with disabilities. Special accommodation will be available, upon request, five (5) days prior to the hearing in a format that is usable to persons with disabilities. For more information, contact:

Debbie Perry, City Clerk
City of Potlatch
PO Box 525
Potlatch ID 83855

Potlatch City Council Meeting Minutes – December 13, 2010

All council members were present. Tom was present. Dave made the motion to accept the minutes from the November 22nd meeting. Vern seconded. Motion passed.

Reports:

Mayor – Dave Brown – Hygrade has been paid except for operator time. Dave will check with Clerk on that. S&L Underground has finished work at the pump station and at PS Espresso. The pump station is running fine. The City can purchase a program for the pump station for $900 in travel time or free with phone instructions.

Insurance for the City staff was discussed. It was decided to purchase the Regence Option 6 and to pay a maximum of $475.00/ month for Tomi Andres insurance. Carol made the motion to purchase this policy, Dave seconded, motion passed. This is a PPO with $30/$45 copay, $1000 deductible.

It was decided to offer Shelley Hammond the clerk/treasurer position.

Carol reported that Chad Bartlett will order windows. The Council agreed that the windows should be purchased and reimbursed through the Office of Energy Resources and Chad can install them as time permits.

Dave would like to hire life guards earlier this year and include one or more adult life guards. He would also like the Council to decide if the City will pay for training.

Vern reported that water and sewer are okay.

Marty reported that a new hydraulic pump was put on the snow plow.

Dave Cada reported that a conference call between engineers for the Scenic 6 project was due on Friday. As many as 40 engineers may take part.

Tom reported that there is a dog waste problem in town. Marty would like to see a doggie-do dispenser purchased.

Carol will check on purchase price for the dispenser and also restroom signs and coat rack at the Rebekah.

Carol made the motion to pay the bills. Dave seconded. Motion passed.

Carol made the motion to close the meeting. Vern seconded. Motion passed.

* DECEMBER 13, 2010, MEETING MINUTES WERE REVISED ON FEBRUARY 14, 2011. (SMC)

POTLATCH CITY COUNCIL MEETING

POTLATCH CITY HALL – 6TH and Main Street

February 14, 2011 – 7:00 PM

The regular meeting of the City Council was presided over by Mayor David Brown.

Council members attending: Carol Haddock, Dave Cada, Marty Anderson and Vern Johnson. Shelly Hammons was in attendance, Tom Andres was absent.

GUESTS: Angela Taylor of Taylor Engineering, Inc.; Walter Steed of Walter Steed and Associates; Susan Shaw, new District Ranger for Clearwater National Forest and Jim Haddock.

The minutes of the previous meeting of January 24, 2010, were approved in a motion by Marty Anderson and seconded by Vern Johnson, the motion was carried with "all ayes".

Mayor David Brown asked for approval of the amended agenda, Carol Haddock made a motion to amend the agenda, Dave Cada seconded the motion, the motion was approved with "all ayes".

1. **Mayor–David Brown,**
2. **Parks–Carol Haddock**, the shirts are done and the council members will each pay $26.50 for their shirts and the employees shirts will be paid by the city.
3. **Pool & Cemetery-David Cada,**
4. **Vern Johnson - Water & Sewer,**
5. **Streets-Martin Anderson**,
6. **Scenic 6 -David Cada**,
7. **Superintendent, Tom Andres,**
8. **Clerk- Shelly Hammons,**

New Business –

Angela Taylor attended the meeting to discuss the Phase 2 Sewer Improvement Project.

The Mayor noted that it had come to his attention that the minutes of the December 13, 2010, City Council meeting had not recorded the Council's action in selecting a treatment alternative for the upcoming sewer plant project.

Therefore, Carol Haddock made a motion to amend the minutes of the December 13, 2010, minutes to add a paragraph to those minutes reflecting the action of the Council. That paragraph should read:

"The Council considered the alternatives presented at the Public Hearing of November 10, 2010 and having given the public the opportunity to comment before, during and after that meeting, on a motion by Carol Haddock, seconded by Dave Cada, Alternative C (river discharge plus land application on the south side of the Palouse River) is selected as the Council's Preferred Alternative."

Dave Cada seconded the motion, the motion was approved with "all ayes".

Dave Cada made a motion to purchase 50 acres of land located at the old Potlatch Mill Site from Potlatch Corporation including the pump station, Carol Haddock seconded the motion, the motion was approved with "all ayes".

Susan Shaw is the new District Ranger for Clearwater National Forest and she came to introduce herself and present information regarding mixed-use traffic on Forest Service roads. The Forest Service would like to list some Forest Service roads as roads of concern for mixed-use. They will post signs that will notify drivers that the road they are travelling on is a mixed-use road and that the roads posted would have a slower speed limit. Ms. Shaw also let the Council know that the Forest Service has extended the time limit for discussion for the Upper Lochsa land exchange.

Dave Cade made a motion to issue a Proclamation to make April 2011 "Fair Housing" month, Carol Haddock seconded the motion and the motion was approved with "all ayes".

The council discussed adopting a smoke-free park or playground resolution from the Central Health District. ***Carol Haddock made a motion to adopt Resolution 2011-01 and that the City of Potlatch will post "Smoke Free" signs anywhere children will play - "Playground area", "Swimming Pool" and "the block where City Hall sits", Dave Cada seconded the motion, the motion was approved with "all ayes".***

The council discussed the annexation proposal from Linda Osburn and Delford Cone, they own the "New Riverview Developments" property between Potlatch and Princeton. ***Carol Haddock made a motion that the annexation proceed to the Potlatch Planning and Zoning Committee, Dave Cada seconded the motion, the motion was approved with "all ayes".***

Jim Haddock made a presentation to the Council for development of the Jim and Carol Haddock property. Jim would like to run a water line through the cemetery to their property from the water tank. The city will check and see if it will be acceptable to run the water line through the cemetery. The council agreed that Jim and Carol Haddock can proceed to the Planning and Zoning committee for their annexation proposal.

Carol Haddock made a motion that the City of Potlatch will donate $2,500 to the Steering Committee for seed money to match grant money for the Potlatch Industrial Park Plan and also that the City of Potlatch will pay $500.00 to Latah Economic Development for membership, Dave Cada seconded the motion, the motion was approved with "all ayes". Avista Corporation and Potlatch Corporation each donated another $2,500.00 for the match.

Carol let the Council know that the Latah Co. Health Department inspected the Rebekah Hall and the grease trap that was recently installed must be removed and the garbage disposal will be put back in.

The Council discussed Daniel Smith's bill for December 2010 and January 2011. The Council agreed that Daniel Smith owes $114.14 for his December 2010 and January 2011 billing.

The Council discussed the building in the park. Should be building be condemned or put sisters in the building? The Council decided to send it to ICRMP for review.

There are going to be eight people attending the CEDA Membership Dinner Meeting on February 17, 2011 in Lewiston.

Carol Haddock talked to the Potlatch Librarian and the library has wireless internet outside of the library which is used by many people. Carol said that it would be a nice idea to have wireless internet available at City Hall. Carol will call First Step to see what the cost would be to have it installed at City Hall.

The Council instructed Shelly to advertise for Summer Employment starting as soon as possible. The applicants must be 16 years of age with a valid driver's license and valid Idaho vehicle insurance and all employees for Summer employment must be certified for Life Guarding. Also include in the

advertisement that adults are welcome to apply. Lifeguard lessons will be available at the University of Idaho and Washington State University.

Carol Haddock made a motion that the City pay for Shelly's trip down and back to Boise, the registration fee for the conference and hotel fees to attend the Clerk's Conference in Boise on March 23-25, 2011 at the Doubletree Inn, Dave Cada seconded the motion, the motion was approved with "all ayes".

Old Business-Topics limited to *10 minutes* each:

Clerks Report: See Payables, State Pool Statements, US Bank Statement, **$42,022.20**

A motion was made by Dave Cada to pay the bills in the amount of $42,022.20, seconded by Carol Haddock, motion was carried with "all ayes".

Carol Haddock made a motion to adjourn the meeting, seconded by Vern Johnson, the motion was carried with "all ayes", meeting adjourned at 9:23 p.m.

David L. Brown,
Mayor

ATTEST:

Shelly M. Hammons,
Clerk/Treasurer

The next Council meeting will be February 28, 2011.

Appendix L

Agency Correspondence

Taylor Engineering, Inc.
Civil Design and Land Planning

Principals:
Stanley R. Stirling
Mark A. Aronson, P.E.
Ronald G. Pace, P.E
Chris H. Mansfield, P.E.

Associates:
Scott M. Busch, P.E.
Frank R. Ide, A.S.L.A.
Thomas K. Stirling

Chief Financial Officer:
Edwin G. Wagnild

February 17, 2010

Ray Hennekey
Idaho Fish and Game
3316 16th Street
Lewiston, Idaho 83501

Re: City of Potlatch -
Regional Wastewater Collection and Treatment System Improvement Project

Dear Mr. Hennekey:

We are writing in reference to the City of Potlatch's proposed Regional Wastewater Collection and Treatment System Improvement Project. In May 2007 we contacted you regarding this project and were sent documentation on May 8, 2007. The majority of the work described in the May 2007 correspondence has been completed with no ill effects. As this original correspondence did not include the proposed area of interest, we are again requesting your review of the potential biological affects that the project may have.

For the next phase of work we are proposing a land treatment site that is located outside of the city limits southeast of the existing sewage lagoons. This property is currently owned by Potlatch Corporation but the City is working to either buy the property outright or negotiate a long-term lease in order to install the subsurface drip irrigation proposed to treat effluent. The site is previously undeveloped and does not contain any structural elements or remnants of such. Enclosed is an overall map showing the land treatment area.

In January 2010, Tom Duebendorfer completed a Wetland Delineation and Biological Assessment specific to the land treatment area. I am enclosing a copy of the Biological Assessment for your review. The determination made in the report is that no effects to threatened or endangered species would occur as a result of the proposed land treatment construction.

In addition, on the east side of town, a sanitary sewer line will be extended from Ponderosa Drive to east of the cemetery along the north side of Highway 6. The Cemetery sewer extension line will be located within city limits and highway right-of way in previously disturbed soils. Enclosed is a second map, showing the location of the sewer extension. The manholes for this extension are labeled A1 through A7 and include approximately 1300 lineal feet of sewer main.

If you could review the attached figures and provide comments regarding this project, within 30-days, it would be greatly appreciated. If you have any questions or need additional information please let me know.

Sincerely,

Angela Taylor, P.E.
Project Engineer

Enclosure: Maps (3)
Biological Assessment

Cc: Mayor David Brown, City of Potlatch

Taylor Engineering, Inc.

Spokane, WA

245 E. Main St • Pullman, WA 99163 • (509) 334-5115
FAX (509) 334-5956 / E-MAIL pullman@taylorengr.com

Coeur d'Alene, ID

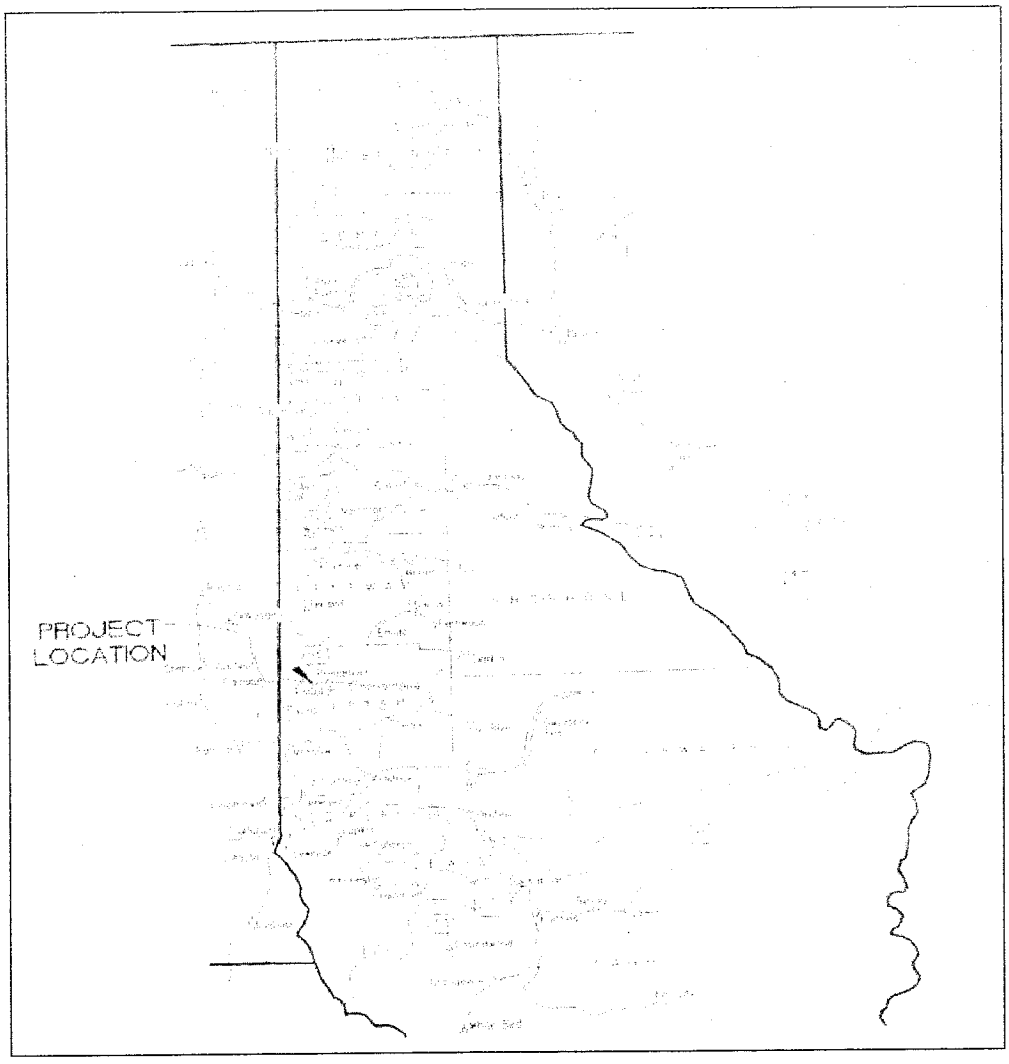


Figure 1: City of Potlatch Vicinity Map

Taylor Engineering, Inc.
Civil Design and Land Planning

Principals:
Stanley R. Stirling
Mark A. Aronson, P.E.
Ronald G. Pace, P.E
Chris H. Mansfield, P.E.

Associates:
Scott M. Busch, P.E.
Frank R. Ide, A.S.L.A.
Thomas K. Stirling

Chief Financial Officer:
Edwin G. Wagnild

February 17, 2010

Mark Robertson
Idaho Fish and Wildlife Office
1387 South Vinnell Way, Suite 368
Boise, ID 83709

Re: City of Potlatch –
Regional Wastewater Collection and Treatment System Improvement Project

Dear Mr. Robertson:

We are writing in reference to the City of Potlatch's proposed Regional Wastewater Collection and Treatment System Improvement Project. In April 2007 we contacted you regarding this project and were sent documentation on April 19, 2007 that included a Species List. The majority of the work described in the April 2007 correspondence has been completed with no ill effects. As this original correspondence did not include the proposed area of interest, we are again requesting your review of the potential biological affects that the project may have.

For the next phase of work we are proposing a land treatment site that is located outside of the city limits southeast of the existing sewage lagoons. This property is currently owned by Potlatch Corporation but the City is working to either buy the property outright or negotiate a long-term lease in order to install the subsurface drip irrigation proposed to treat effluent. The site is previously undeveloped and does not contain any structural elements or remnants of such. Enclosed is an overall map showing the land treatment area.

In January 2010, Tom Duebendorfer completed a Wetland Delineation and Biological Assessment specific to the land treatment area. I am enclosing a copy of the Biological Assessment for your review. The determination made in the report is that no effects to threatened or endangered species would occur as a result of the proposed land treatment construction.

In addition, on the east side of town, a sanitary sewer line will be extended from Ponderosa Drive to east of the cemetery along the north side of Highway 6. The Cemetery sewer extension line will be located within city limits and highway right-of way in previously disturbed soils. Enclosed is a second map, showing the location of the sewer extension. The manholes for this extension are labeled A1 through A7 and include approximately 1300 lineal feet of sewer main.

If you could review the attached figures and provide comments regarding this project, including an updated species list, within 30-days, it would be greatly appreciated. If you have any questions or need additional information please let me know.

Sincerely,

Angela Taylor, P.E.
Project Engineer

Enclosure: Maps (3)
Biological Assessment

Cc: Mayor David Brown, City of Potlatch

Taylor Engineering, Inc.
Spokane, WA
245 E. Main St • Pullman, WA 99163 • (509) 334-5115
FAX (509) 334-5956 / E-MAIL pullman@taylorengr.com
Coeur d'Alene, ID

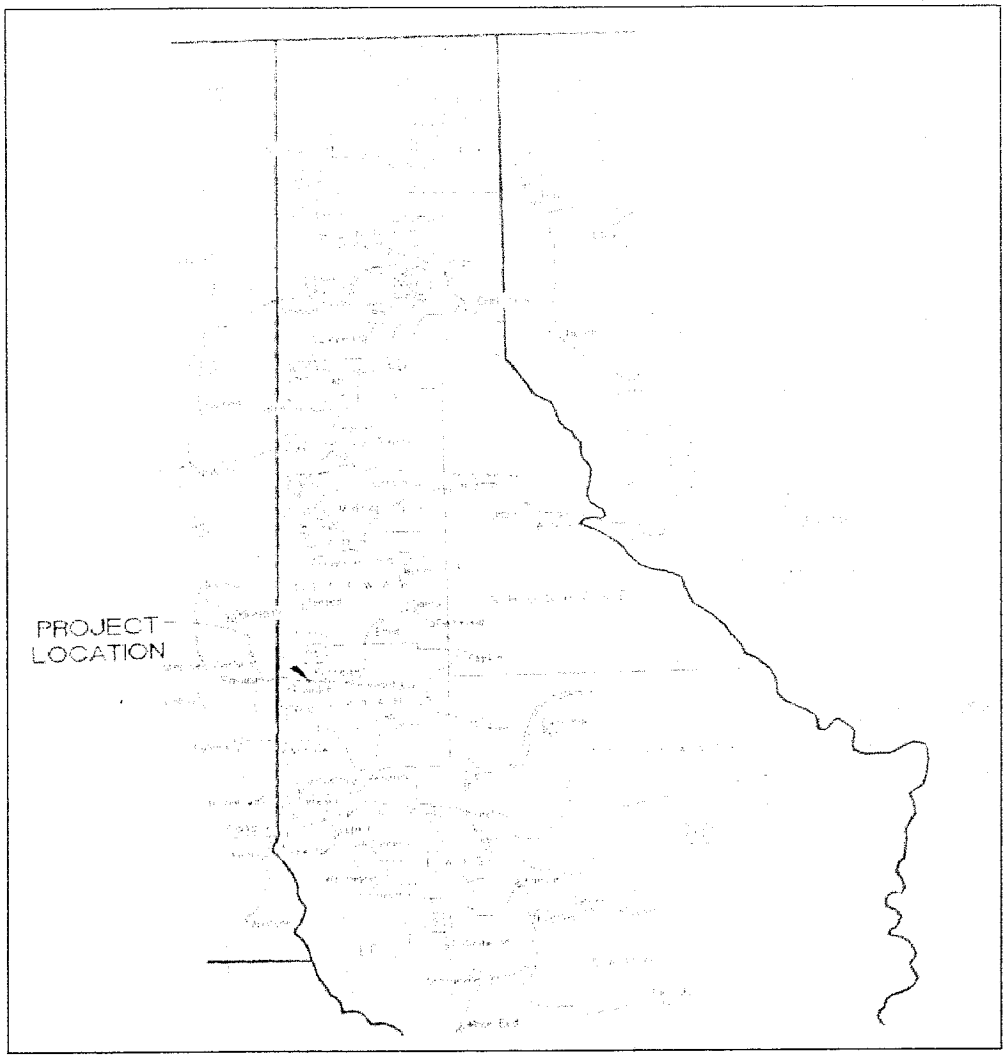


Figure 1: City of Potlatch Vicinity Map

Angela Taylor

From: Thomas.Moore@deq.idaho.gov

Sent: Thursday, November 19, 2009 2:04 PM

To: pguenthe@phd2.idaho.gov; nbecker@phd2.idaho.gov; ahelkey@phd2.idaho.gov

Cc: David.Hatt@deq.idaho.gov; MKerley@phd2.idaho.gov; sjurries@phd2.idaho.gov; AJ.Maupin@deq.idaho.gov; chris@taylorengr.com

Subject: RE: City of Potlatch wastewater

Paul, there a few items I'd clarify in the below:

*Long story short - The City of Potlatch is looking at options to dispose of their waste water from their current lagoon systems. Historically it has been disposed of in the Palouse River, but EPA/DEQ is telling the city they cannot meet the new federal Ammonia regulations for surface water discharge, and must look find different treatment options. One of the options they are considering is going LSAS, using the current lagoon effluent, and applying it subsurface with drip irrigation. Daily waste water flow is **70,000** gallons per day.*

I've told them that ammonia limits are likely in the next NPDES permit. And as ammonia is a contaminant, not a nutrient, a year-round limit will be imposed. I also said that they need to look at our rules to see what that effect will be. My brief analysis indicates that a facultative lagoon system discharging to a smaller river such as the Palouse will not be able to reliably meet probable limits. As they had already earmarked Phase 2C money for effluent treatment, I strongly recommended that the City look at ammonia treatment options, including re-use, or land application. I was aware that they were discussing drip application, but have received no engineering report or other submittal formally proposing a drip system. I assume that they are investigating the feasibility of this approach and assume it and other alternatives will be wrapped up into an engineering report with a selected alternative. The use of subsurface drip in this case seems to be a variant of re-use; I suspect they are looking at subsurface because they are hoping to use an adjacent tree farm as an application area and they would need to get the irrigation system out of way of silvaculture activities. AJ may want to look at this.

I spoke with Mike Morris at Taylor Engineering; he has indicated that the current work is exploratory. They are only investigating the feasibility of subsurface drip and are nowhere near the point where they may seek a permit from the health district.

Taylor Engineering should seriously be looking at other treatment options also, such as a treatment mechanism to reduce ammonia in the lagoon itself.

and

As I told Scott, there has got to be more effective mythologies for dealing with the ammonia issue than having a community such as Potlatch, consider subsurface sewage disposal. This is crazy, to say the least. How many other small communities are faced with this same dilemma?

Currently I'm not aware of any reasonably viable technologies that can remove ammonia from a lagoon; either biological, physical, or financial constraints prevent this. I have discussed this with both Dr. Wallace and Dr. Coates. The majority of engineers would tell you that the lagoon must be replaced with a mechanical plant, the effluent chemically treated, or the effluent removed from the surface water and land applied. Of the three, land application is usually preferred.

And finally, according to EPA all of our NPDES permit holders will be seeing ammonia limits in their next permits.

Thomas J. Moore, P.E.
Regional Engineering Manager
DEQ Lewiston Region Office
1118 F Street
Lewiston, ID 83501
Phone (208) 799-4370
Fax (208) 799-3451
Thomas.Moore@deq.idaho.gov

From: Paul Guenther [mailto:pguenthe@phd2.idaho.gov]
Sent: Thursday, November 19, 2009 12:54 PM
To: Nancy Becker; Andy Helkey
Cc: Thomas Moore; David Hatt; Mike Kerley; Sherise Jurries
Subject: City of Potlatch wastewater

Nancy and Andy -
and I will copy David Hatt and Tom Moore -
I will also copy Sherise and Mike, since they are on the on-site sewage committee

Scott Jones called me this morning. He is an on-site sewage disposal engineering specialist. Here's his handle -

Scott E. Jones, P.E., Principal Engineer
Scott E. Jones & Associates ; PO Box 13292; Spokane Valley, WA 99213
scottejones@hotmail.com ; PH 509/710-9177; FX 509/290-5809

He is currently working on two projects - assisting Taylor Engineering, Pullman, with the RGF/drip system design for Reubens, which we are currently working through (Andy, Sherise, and I), and now .....the City of Potlatch.

He called me from an 7' deep test pit near Potlatch this morning, wanting to know if "we wanted the holes left open". I said "what holes, and what are you talking about"?

Long story short - The City of Potlatch is looking at options to dispose of their waste water from their current lagoon systems. Historically it has been disposed of in the Palouse River, but EPA/DEQ is telling the city they cannot meet the new federal Ammonia regulations for surface water discharge, and must look find different treatment options. One of the options they are considering is going LSAS, using the current lagoon effluent, and applying it subsurface with drip irrigation. Daily waste water flow is **70,000** gallons per day.

They are using federal stimulus funds to get the treatment system constructed. They are in the same time frame as Reubens to get the project under way. The must be under contract to construct by February 17th. Extremely short time line. They are behind schedule to make this happen.

Scott Jones and Associates is working as a subcontractor under Taylor Engineering on this project. The first step in evaluating a drip LSAS is to do an engineering evaluation on a large acreage site (section 013.01 of the LSAS rules) He is doing that right now. At least 12 test holes are being dug, His real reason in calling me this morning was to see if the Health Department wanted the holes left open for our evaluation also. I told him YES. I told him, per the LSAS, the holes must be at least 9' deep, assuming drip lines are installed 12" deep. He did tell me the site looked real good, and the two holes he's looked at so far are B-2 to C-1 soils.

This is what I told Scott -
- Public Health would approach this proposal as a NEW on-site system, since repair of a current on-site system is NOT taking place (such as in HooDoo and Reubens). Therefore the LSAS section of the rules must be met in its entirety. At least that's my initial take.
- He must submit a site evaluation form, with the $200 site evaluation fee, along with an initial concept of what was being proposed.
- It would probably be 1 - 2 weeks before Public Health staff could look at the test holes.
- He would be working with you Nancy as this project moves forward, but that Andy would also be involved, as my lead technical person on staff.
- The LSAS allows 10,000 gallons per module. I did not know how we would approach 70,000 gallons, or whether the LSAS would even allow such large volumes. I told him we would be talking to DEQ.
- Taylor Engineering should seriously be looking at other treatment options also, such as a treatment mechanism to reduce ammonia in the lagoon itself.

Having said all this, here's my question to you David, our lead DEQ on-site person:

- What is your take on the 5th point above? Does the LSAS rule section even allow such large volumes? And if so, would there be 7 modules, each with a second LSAS installed, and each with a replacement area. Does the fact that they are going drip system make any difference?
- Would additional pre-treatment be required, since they will be proposing to use municipal lagoon effluent?

For you Tom -
As I told Scott, there has got to be more effective mythologies for dealing with the ammonia issue than having a community such as Potlatch, consider subsurface sewage disposal. This is crazy, to say the least. How many other small communities are faced with this same dilemma?

Do we need a conference call soon on this? I'm going to be gone ALL next week. Let's get everyone's feedback first, and then we can decide.

Let me hear from each of you soon.
Thanks

Paul

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor
Toni Hardesty, Director

February 10, 2011

Chairman Chief Allan
Coeur d'Alene Tribe of Idaho
P.O. Box 408
Plummer, Idaho 83851

RE: Request for Agency Consultation on Cultural Issues for the City of Potlatch Wastewater System Improvement Project

Dear Chairman Allan:

The City of Potlatch has applied for a loan through the Idaho Department of Environmental Quality's Clean Water State Revolving Fund. These are federal funds subject to the State of Idaho's State Environmental Review Process, which mirrors the National Environmental Policy Act process.

The proposed project includes a land application treatment system east of the existing sanitary sewage lagoons for the City of Potlatch. With the city's National Pollutant Discharge Elimination System (NPDES) permit recently expired and the potential for more stringent discharge requirements in the next permit, the city is proposing improvements to its current treatment mechanisms to assist with meeting these new regulations. The proposed site lies east of the existing lagoons and south of the Palouse River. The city is in the processing of acquiring the land. The project will disturb approximately 10 acres to install and run a slow-rate land application/irrigation disposal of treated effluent from the lagoons. I have attached two maps of the proposed location for your review.

I am seeking comments from the Coeur d'Alene Tribe and the Tribal Historical Preservation Officer regarding possible short term, long term, or cumulative impacts related to historical properties, cultural resources, or archaeological issues resulting from construction of the proposed project.

Please respond within 30 days, if possible, with any concerns or mitigation measures you have on the potential environmental impacts from this project. Please contact me at 208-373-0585 or by email at ester.ceja@deq.idaho.gov if you have any questions.

Sincerely,

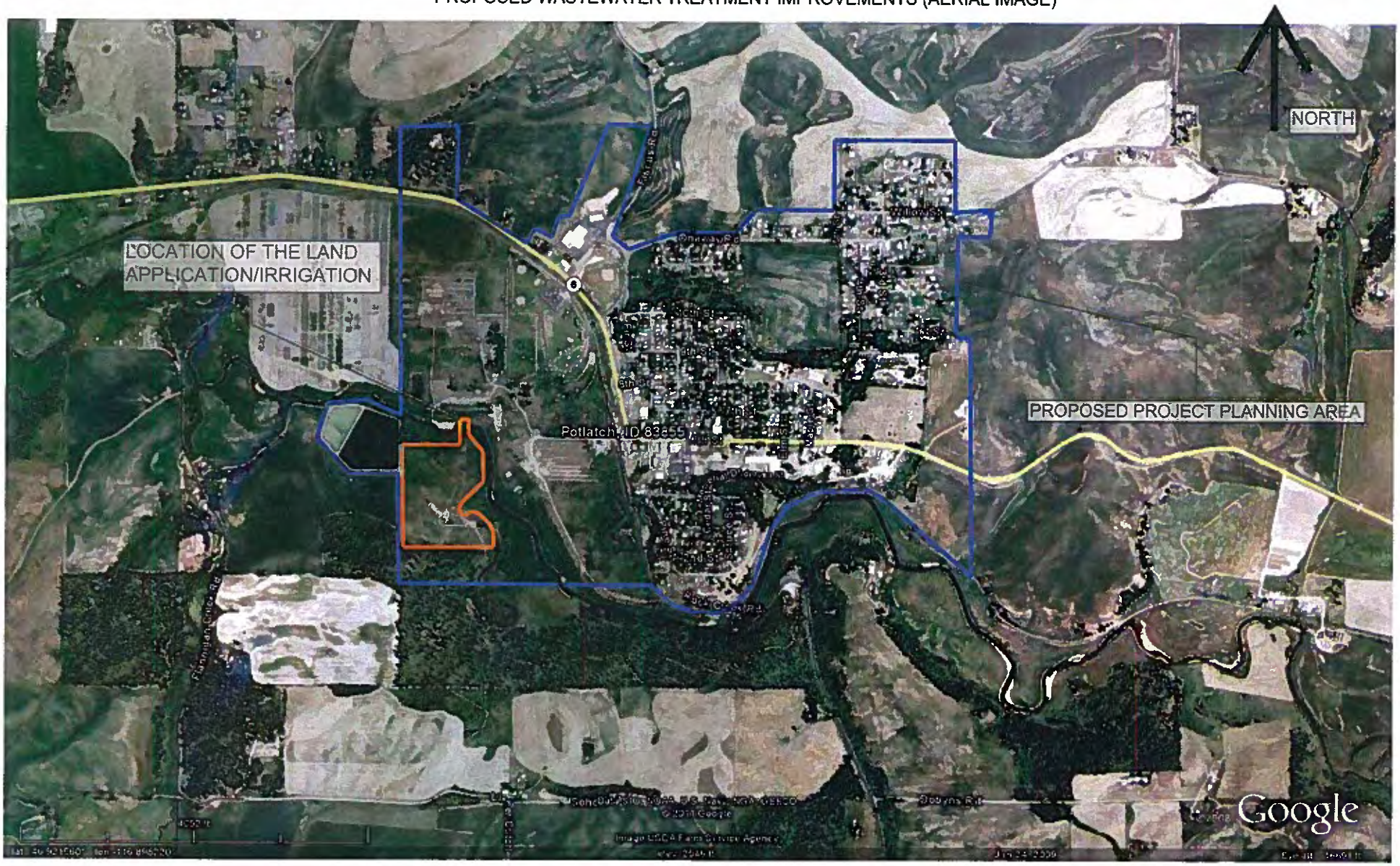
Ester Ceja
DEQ NEPA Coordinator

Enclosure

c: Jill Wagner, Coeur d'Alene THPO (P.O. Box 408, Plummer, Idaho 83851)
Thomas Moore, DEQ Lewiston Regional Office

Printed on Recycled Paper

PROPOSED WASTEWATER TREATMENT IMPROVEMENTS (AERIAL IMAGE)

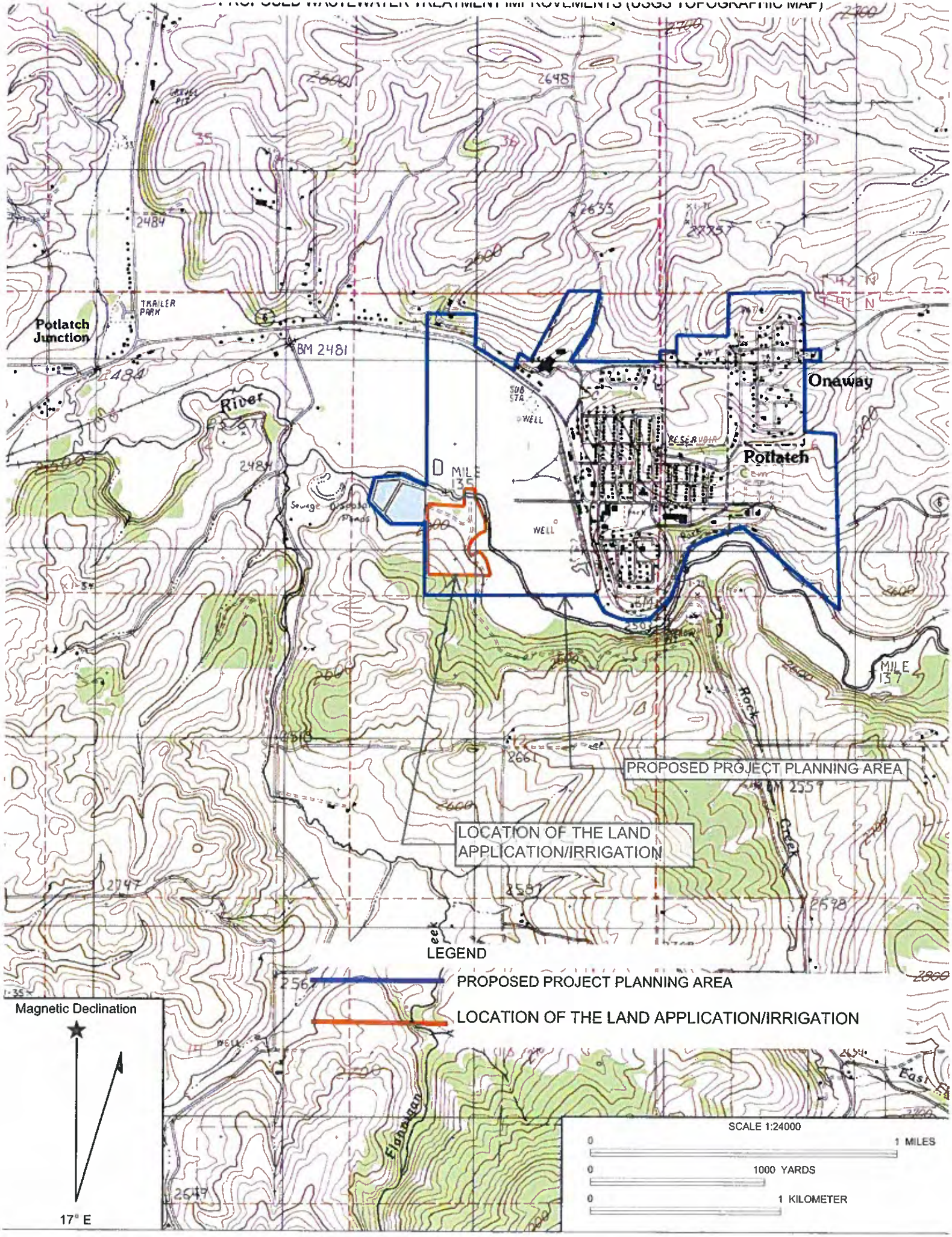


LEGEND

PROPOSED PROJECT PLANNING AREA

LOCATION OF THE LAND APPLICATION/IRRIGATION

PROPOSED WASTEWATER TREATMENT IMPROVEMENTS (USGS TOPOGRAPHIC MAP)



TAYLOR ENGINEERING, INC.
Civil Design and Land Planning
1044 Northwest Blvd.
Coeur d'Alene, ID 83814

Phone: (208) 664-9405
Fax: (208) 666-0261

LETTER OF TRANSMITTAL

To: Susan Pengilly
Idaho State Historical Society
210 Main Street
Boise, ID 83702

Date: December 21, 2010

From: Chris Mansfield

Re: Proposed Land Application Site
City of Potlatch, Idaho

Ms. Pengilly:

In response to your November 22 request to Walter Steed, we offer the following:

1. Legal Location of the project area: The proposed project is located in the South ½ of Section 1, Township 41 North, Range 5 West B.M., Latah County, Idaho. See the attached Legal Description of the 52.6-acre parcel that the City hopes to acquire from the Potlatch Corporation.

2. Eight photos of the project area are attached.

3. Description of ground-disturbing activities that will occur: The proposed project will involve excavation of test pits for a Cultural Resources survey and to gather geotechnical information, clearing and grubbing, buried piping (irrigation lines and return lines) throughout the land application area, subgrade preparation for an access road around and through the site, and vertical excavations for new trees and plantings, fenceposts, utility poles, and monitoring wells.

Please let me or Walter know if you have any additional questions about the project.

Cc: Walter Steed, via e-mail
Mayor Dave Brown, City of Potlatch

DESCRIPTION FOR
CITY OF POTLATCH

All that portion of Section 1, Township 41 North, Range 5 West, Boise Meridian, lying South of the thread of the Palouse River, described as follows:

The East Half of the Southwest Quarter together with the Southwest Quarter of the Southeast Quarter;

TOGETHER WITH that portion of the Northeast Quarter of the Southwest Quarter of said Section, described as follows:

BEGINNING AT a point on the West line of the East Half of the Southwest Quarter of said Section 1 which is located 2030.00 feet North of the Southwest corner of said East Half;
Thence East 387.00 feet;
Thence South to the Palouse River;
Thence West along the thread of the Palouse River to the West line of said East Half;
Thence North along said line to the **POINT OF BEGINNING**;

Situate in Latah County, State of Idaho.

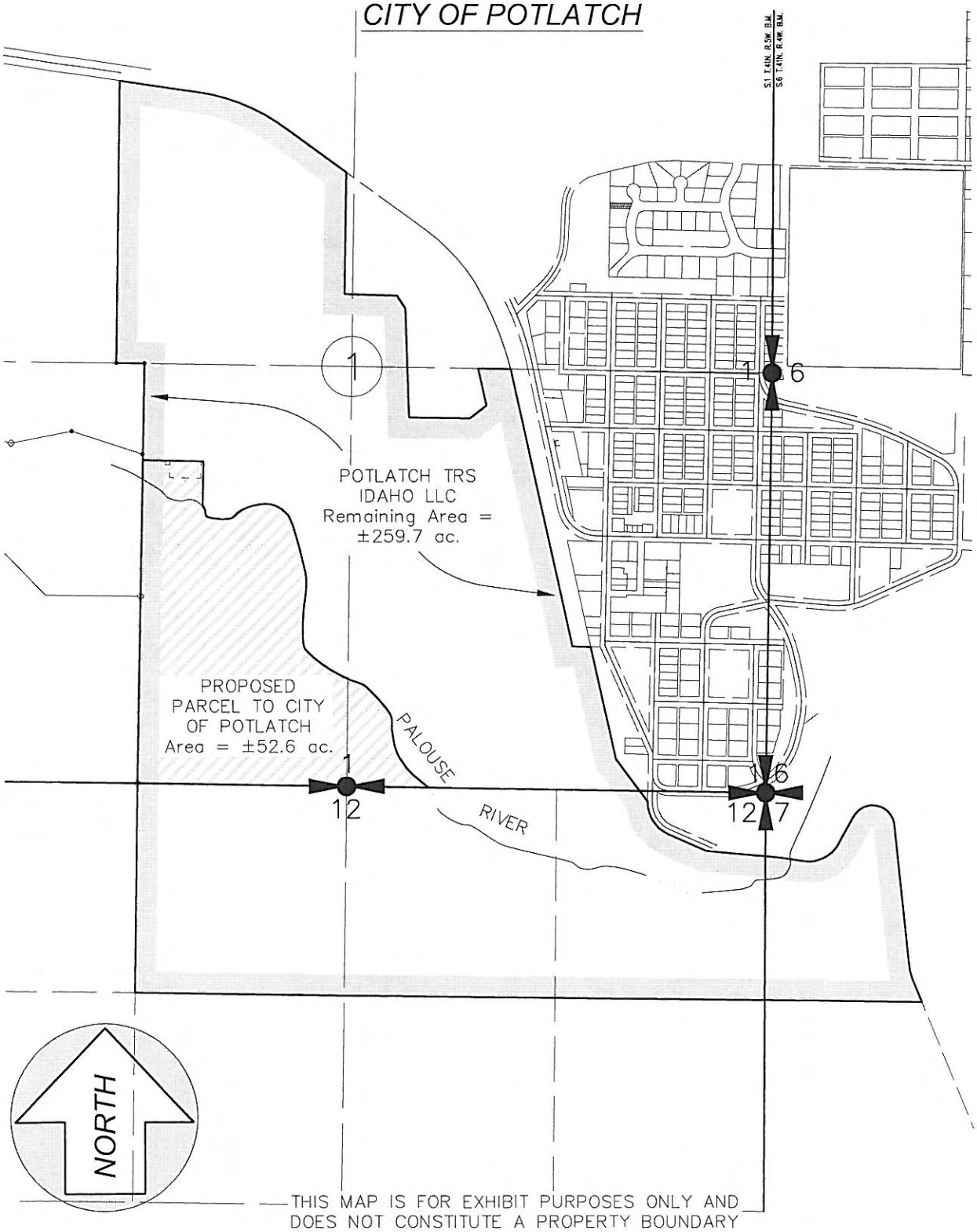
Said parcel containing approximately 52.6 acres, more or less

Prepared on December 10, 2010
Prepared for and on behalf of Taylor Engineering Inc.
Prepared by David M. Seese, PLS 13337
Project Number: 09-C020J

PROFESSIONAL LAND SURVEYOR
REGISTERED
13337
STATE OF IDAHO
DAVID M. SEESE
12/10/10

L:\00-CDA JOBS\09C020 POTLATCH WWTP SUR\SURVEY\DESCRIPTIONS\121010 POTLATCH CONVEYANCE DESC.docx

EXHIBIT FOR CITY OF POTLATCH



THIS MAP IS FOR EXHIBIT PURPOSES ONLY AND DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY

Photo 2009-11-19 Photo 107: Gate to Potlatch Corp. property on east side of Wastewater Lagoons.

2009-11-19 Photo 112: Looking West (downstream) along the Palouse River from the old Mill Pond Dam.

2009-11-19 Photo 113: Looking south onto Potlatch Corp. property, from the South side of the Palouse River.

2009-11-19 Photo 114: Old dump on east side of Potlatch Corp. property

2009-11-19: View Northwest across Potlatch Corp. property, with Wastewater Lagoons in the background. Photo 115.

2009-11-19: View Northeast across Wetlands / Dump Site toward City of Potlatch. Photo 116.

2009-11-19 Photo 120: View north from top of hill on Potlatch Corp. property. Wastewater Lagoon on left and Hash Tree Farm beyond that.

2009-11-19 Photo 124: View south from east lagoon dike. Fenceline denotes Potlatch Corp. property on left (east) and Walser Ranch cropland on right (west).

IDAHO STATE HISTORICAL SOCIETY
PRESERVING OUR HERITAGE
FOUNDED IN 1881

Preserving the past, Enriching the future

Our mission: to preserve and promote Idaho's cultural heritage.

www.idahohistory.net

C.L. "Butch" Otter
Governor of Idaho

Janet L. 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) 514-2310
Fax: (208) 334-2774

Archaeological Survey of Idaho
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3847
Fax: (208) 334-2775

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

Historic Preservation Office
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3861
Fax: (208) 334-2775

Old Penitentiary and Historic Sites
2445 Old Penitentiary Road
Boise, Idaho 83712-8254
Office: (208) 334-2844
Fax: (208) 334-3225
Statewide Sites
- Franklin Historic Site
- Pierce Courthouse
- Rock Creek Station & Stricker Homesite

Public Archives and Research Library
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-3356
Fax: (208) 334-3198
- Public Archives
- Research Library
- Oral History

North Idaho Office
112 W. Fourth Street, Suite 7
Moscow, ID 83843
Office: (208) 882-1540
Fax: (208) 882-1763

March 17, 2010

Angela Taylor
Taylor Engineering, Inc.
245 E. Main St.
Pullman, Washington 99163

RE: Wastewater and Treatment Collections System Improvements, City of Potlatch, Idaho

Dear Ms. Taylor:

Thank you for informing our office that the City of Potlatch is continuing their wastewater planning and improvement project and is now considering an area for the construction of sewage lagoons and a land application site located in T41N, R5W Sections 1,2, 11 and 12 and immediately south of the existing Wastewater Treatment Facility.

According to our records, archaeological sites may be present within the project area. Therefore, we are recommending an archaeological survey prior to any ground disturbing activities. The survey will need to include the lagoon construction areas and any other areas within the parcel where ground disturbing activities may occur, such as access roads, staging areas, pipeline corridors, and etc.

The survey should be conducted when ground visibility is good and a report sent to our office for review. The report will need to include site forms for any new archaeological sites and buildings and structures older than 45 years within the project area. The report will also need to include a determination of eligibility for the National Register of Historic Places for each of the sites recorded and an assessment of project effects on the properties that are evaluated as historically significant.

Depending upon the results of the survey and the views of the local government, we may recommend further documentation, avoiding sensitive areas, archaeological testing or monitoring, mitigation or proceeding with the project as planned.

We also recommend that you provide a copy of this letter to your consultant before starting the survey. A list of archaeological consultants (Local and Regional Archaeological Consultants) can be found on the Preservation Idaho website at www.preservationidaho.org.

The Idaho State Historical Society is an Equal Opportunity Employer.

Additional guidance on the Section 106 Review process is posted on our website at www.idahohistory.net (go to State Historic Preservation Office, then to Federal Project Review). If you have any questions, please feel free to contact me at 208-334-3847, ext. 107 or Shelby Day at ext. 109.

We look forward to receiving the report so that we can continue with the review process.

Sincerely,

for Shelby Day

Susan Pengilly
Deputy SHPO and
Compliance Coordinator

walter m. steed
& associates

PROJECT ADMINISTRATION

FAX (208) 882-7184
E-mail: wmsteed@aol.com

1345 RIDGEVIEW DRIVE
MOSCOW, IDAHO 83843
(208) 883-0123

October 31, 2010

Alan Stanford
Department of Environmental Quality
1410 North Hilton
Statehouse Mail
Boise, ID 83720-9000

Dear Mr. Stanford:

The City of Potlatch, Idaho is making application for an Idaho Community Development Block Grant (CDBG) to fund the construction of improvements to their sewer system. Enclosed is a map of the proposed work consisting of the construction of a slow-rate land application (irrigation) system, which will reduce the amount of treatment lagoon effluent presently being discharged into the Palouse River. Using fixed lines over a 6-month irrigation season, 7.7 acres of grass hay will be irrigated.

For inclusion in the required Environmental Review Record for this project, we would appreciate a letter from you within thirty (30) days stating your agency's position regarding this construction project.

Thank you for your assistance and cooperation. If you require any additional information, please do not hesitate to let us know.

Yours truly,

Walter M. Steed
Project Administrator

encl.

walter m. steed
& associates

PROJECT ADMINISTRATION

FAX (208) 882-7184
E-mail: wmsteed@aol.com

1345 RIDGEVIEW DRIVE
MOSCOW, IDAHO 83843
(208) 883-0123

October 31, 2010

Idaho Department of Water Resources
Northern Regional Office
1910 Northwest Blvd.
Suite 210
Coeur d'Alene ID 83814-2615

Dear Sirs:

The City of Potlatch, Idaho is making application for an Idaho Community Development Block Grant (CDBG) to fund the construction of improvements to their sewer system. Enclosed is a map of the proposed work consisting of the construction of a slow-rate land application (irrigation) system, which will reduce the amount of treatment lagoon effluent presently being discharged into the Palouse River. Using fixed lines over a 6-month irrigation season, 7.7 acres of grass hay will be irrigated.

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Yours truly,

Walter M. Steed
Project Administrator

encl.

walter m. steed
& associates

PROJECT ADMINISTRATION

FAX (208) 882-7184
E-mail: wmsteed@aol.com

1345 RIDGEVIEW DRIVE
MOSCOW, IDAHO 83843
(208) 883-0123

October 31, 2010

Tom Moore, P.E.
Department of Environmental Quality
1118 "F" Street
Lewiston, ID 83501

Dear Mr. Moore:

The City of Potlatch, Idaho is making application for an Idaho Community Development Block Grant (CDBG) to fund the construction of improvements to their sewer system. Enclosed is a map of the proposed work consisting of the construction of a slow-rate land application (irrigation) system, which will reduce the amount of treatment lagoon effluent presently being discharged into the Palouse River. Using fixed lines over a 6-month irrigation season, 7.7 acres of grass hay will be irrigated.

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Yours truly,

Walter M. Steed
Project Administrator

encl.

walter m. steed
& associates

PROJECT ADMINISTRATION

FAX (208) 882-7184
E-mail: wmsteed@aol.com

1345 RIDGEVIEW DRIVE
MOSCOW, IDAHO 83843
(208) 883-0123

October 31, 2010

Regional Supervisor
Idaho Fish and Game
Clearwater Region
1540 Warner Avenue
Lewiston ID 83501

Dear Sir:

The City of Potlatch, Idaho is making application for an Idaho Community Development Block Grant (CDBG) to fund the construction of improvements to their sewer system. Enclosed is a map of the proposed work consisting of the construction of a slow-rate land application (irrigation) system, which will reduce the amount of treatment lagoon effluent presently being discharged into the Palouse River. Using fixed lines over a 6-month irrigation season, 7.7 acres of grass hay will be irrigated.

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Yours truly,

Walter M. Steed
Project Administrator

encl.

walter m. steed
& associates

PROJECT ADMINISTRATION

FAX (208) 882-7184
E-mail: wmsteed@aol.com

1345 RIDGEVIEW DRIVE
MOSCOW, IDAHO 83843
(208) 883-0123

October 31, 2010

Supervisor
Snake River Basin Office
U.S. Dept. of Interior, Fish and Wildlife Service
1387 South Vinnell Way - Room 368
Boise, ID 83709

Dear Sir:

The City of Potlatch, Idaho is making application for an Idaho Community Development Block Grant (CDBG) to fund the construction of improvements to their sewer system. Enclosed is a map of the proposed work consisting of the construction of a slow-rate land application (irrigation) system, which will reduce the amount of treatment lagoon effluent presently being discharged into the Palouse River. Using fixed lines over a 6-month irrigation season, 7.7 acres of grass hay will be irrigated.

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Thank you for your assistance and cooperation. If you require any additional information, please do not hesitate to let us know.

Yours truly,

Walter M. Steed
Project Administrator

encl.

walter m. steed
& associates

PROJECT ADMINISTRATION

FAX (208) 882-7184
E-mail: wmsteed@aol.com

1345 RIDGEVIEW DRIVE
MOSCOW, IDAHO 83843
(208) 883-0123

October 31, 2010

Susan Pengilly
State Historic Preservation Office
Idaho State Historical Society
210 Main Street
Boise, ID 83702

Dear Ms. Pengilly:

The City of Potlatch, Idaho is making application for an Idaho Community Development Block Grant (CDBG) to fund the construction of improvements to their sewer system. Enclosed is a map of the proposed work consisting of the construction of a slow-rate land application (irrigation) system, which will reduce the amount of treatment lagoon effluent presently being discharged into the Palouse River. Using fixed lines over a 6-month irrigation season, 7.7 acres of grass hay will be irrigated.

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Yours truly,

Walter M. Steed
Project Administrator

encl.

walter m. steed
& associates

PROJECT ADMINISTRATION

FAX (208) 882-7184
E-mail: wmsteed@aol.com

1345 RIDGEVIEW DRIVE
MOSCOW, IDAHO 83843
(208) 883-0123

October 31, 2010

Dan Brege, Branch Chief
National Marine Fisheries Services / NOAA Fisheries
1005 Highway 13
Grangeville ID 83530

Dear Mr. Brege:

The City of Potlatch, Idaho is making application for an Idaho Community Development Block Grant (CDBG) to fund the construction of improvements to their sewer system. Enclosed is a map of the proposed work consisting of the construction of a slow-rate land application (irrigation) system, which will reduce the amount of treatment lagoon effluent presently being discharged into the Palouse River. Using fixed lines over a 6-month irrigation season, 7.7 acres of grass hay will be irrigated.

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Thank you for your assistance and cooperation. If you require any additional information, please do not hesitate to let us know.

Yours truly,

Walter M. Steed
Project Administrator

encl.

walter m. steed
& associates

PROJECT ADMINISTRATION

FAX (208) 882-7184
E-mail: wmsteed@aol.com

1345 RIDGEVIEW DRIVE
MOSCOW, IDAHO 83843
(208) 883-0123

October 31, 2010

Patrick Baird, Tribal Archaeologist
Nez Perce Tribe Cultural Resource Program
Nez Perce Tribe
P.O. Box 365
Lapwai ID 83540

Dear Mr. Cannell:

The City of Potlatch, Idaho is making application for an Idaho Community Development Block Grant (CDBG) to fund the construction of improvements to their sewer system. Enclosed is a map of the proposed work consisting of the construction of a slow-rate land application (irrigation) system, which will reduce the amount of treatment lagoon effluent presently being discharged into the Palouse River. Using fixed lines over a 6-month irrigation season, 7.7 acres of grass hay will be irrigated.

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Thank you for your assistance and cooperation. If you require any additional information, please do not hesitate to let us know.

Yours truly,

Walter M. Steed
Project Administrator

encl.

Subj: City of Potlatch Sewer System Improvements; COMM-250c
Date: Tuesday, November 16, 2010 7:46:21 AM
From: Bob_Kibler@fws.gov
To: wmsteed@aol.com

Greetings:
Per your request, a species list is being provided via the following email and attachment

Idaho's Endangered, Threatened, Proposed, and Candidate Species
(With Associated Proposed and Critical Habitats)
Under the Jurisdiction of the Fish and Wildlife Service
(This page was last updated November 9, 2010)

The Fish and Wildlife Service is developing a web-based system that will allow you to generate your own project-specific species lists. We will provide instructions when the new web-based species list system is launched. In the interim, you are requested to use the attached table in concert with the area affected by your project, to generate your project-specific species list(s).

Before starting an action, a federal action agency (or their designated representative) that is planning an activity must contact the Fish and Wildlife Service to obtain information regarding threatened, endangered, and proposed species and their habitats, which may be present in the area affected by the project. Federal agencies (or their designated representatives) are to use this information to generate their project-specific species lists, which facilitate their assessments of effect via Sections 7(a)(2), (7(a)(3), or 7(a)(4) of the Endangered Species Act, as applicable. Please note the actual affected area typically encompasses a larger area than the footprint of the construction. The affected area includes any effects of the action (direct and indirect) that may potentially affect the species or its habitat.

The information contained and attached to this email, meets the Fish and Wildlife Services' regulatory obligation under Section 7(c) of the Endangered Species Act to provide a list of species at the request of a federal agency. Please print and retain a copy of this table and email with your project records, and use this information to verify the habitats and/or species present in the area affected by the projects you are developing. Any project-specific species lists you generate from this email and attachment is valid for up to 180-days.

Because the species information provided via this email may change, you are advised

to visit our internet page (http://www.fws.gov/idaho/species/IdahoSpeciesList.pdf) frequently to ensure that your project records contain the most up-to-date species list. Should your project plans expand or change to include additional effects or counties, you will need to download an updated list and prepare a new project specific species list for your project.

If you find that you need to submit a request for Section 7 Consultation, please include with your biological assessment package, a copy of this email and the attached or updated list you used to generate your project specific species list. This information is needed to document your compliance with 50 CFR 402.12(c).

Please note that this information is only applicable for Idaho. If the area affected by the proposed project extends beyond the boundary of the State of Idaho, please contact the appropriate Fish and Wildlife Service office listed below, to obtain a species list for their area of jurisdiction.

Fish and Wildlife Service Contacts:
Idaho Idaho Fish and Wildlife Office (208) 378-5255
Montana Montana Ecological Services Field Office (406) 449-5225
Nevada Nevada Fish & Wildlife Office (775) 861-6300
Oregon La Grande Field Office (541) 962-8584
Utah Utah Ecological Service Field Office (801) 975-3330
Washington Spokane Field Office (509) 891-6839
Wyoming Wyoming Ecological Services Field Office (307) 772-2374

Candidate Species Conservation:
Although candidate species have no protection under the Act, they are included in the attached table for your early planning consideration. Candidate species could be proposed or listed during the species that may occur in the project area; this may expedite section 7 consultation under the Act should the species become listed.

Species of NOAA Fisheries Jurisdiction:
Please be advised, the attached table does not contain listed or proposed species under the National Marine Fisheries Service's (NOAA Fisheries) jurisdiction. If you need a list of species under the NOAA Fisheries' jurisdiction, please visit their internet site at (http://www.nwr.noaa.gov/Species-Lists.cfm), or call (208) 378-5696.

(See attached file: 20101109_Idaho_Species_List.pdf)

If you require additional assistance please contact Bob Kibler as described below.

Bob Kibler - Fish and Wildlife Biologist
U.S. Department of The Interior - Fish and Wildlife Service
Ecological Services Div - Idaho Fish and Wildlife Office
1387 South Vinnell Way, Room 368
Boise, Idaho USA 83709

Phone: (208) 378-5255
Fax: (208) 378-5262
EMail: BOB_KIBLER@FWS.GOV

Grouping	Amphibian	Bird	
Common Name	**Columbia spotted frog-Great Basin population**	**Greater Sage-Grouse**	**Yellow-billed cuckoo**
Scientific Name	*Rana luteiventris*	*Centrocercus urophasianus*	*Coccyzus americanus*
Status	[C]	[C]	[C]
Ada		x	x
Adams		x	
Bannock		x	x
Bear Lake		x	
Benewah			
Bingham		x	x
Blaine		x	x
Boise			x
Bonner			
Bonneville		x	x
Boundary			
Butte		x	
Camas		x	
Canyon			x
Caribou		x	
Cassia		x	x
Clark		x	x
Clearwater			
Custer		x	x
Elmore		x	x
Franklin		x	
Fremont		x	x
Gem		x	
Gooding		x	
Idaho			x
Jefferson		x	x
Jerome		x	
Kootenai			x
Latah			x
Lemhi		x	x
Lewis			x
Lincoln		x	
Madison		x	x
Minidoka		x	x
Nez Perce			
Oneida		x	
Owyhee	x	x	x
Payette		x	
Power		x	
Shoshone			
Teton			
Twin Falls	x	x	x
Valley			
Washington		x	

[C] Candidate
[P] Proposed

[T] Threatened
[E] Endangered

[CH] Designated Critical Habitat
[XN] Experimental Nonessential

Grouping	Mammal					
Common Name	Canada lynx		Grizzly bear	Northern Idaho ground squirrel	Selkirk Mountain caribou	Southern Idaho ground squirrel
Scientific Name	*Lynx canadensis*		*Ursus arctos horribilis*	*Spermophilus brunneus brunneus*	*Rangifer tarandus caribou*	*Spermophilus brunneus enemicus*
Status	[T]	[CH]	[T]	[T]	[E]	[C]
Ada						
Adams	x			x		x
Bannock						
Bear Lake	x					
Benewah	x					
Bingham						
Blaine	x					
Boise	x					
Bonner	x		x		x	
Bonneville	x		x			
Boundary	x	x	x		x	
Butte	x					
Camas	x					
Canyon						
Caribou	x					
Cassia						
Clark	x		x			
Clearwater	x					
Custer	x					
Elmore	x					
Franklin	x					
Fremont	x		x			
Gem						x
Gooding						
Idaho	x					
Jefferson	x					
Jerome						
Kootenai	x					
Latah	x					
Lemhi	x					
Lewis						
Lincoln						
Madison	x					
Minidoka						
Nez Perce	x					
Oneida						
Owyhee						
Payette						x
Power						
Shoshone	x					
Teton	x		x			
Twin Falls						
Valley	x			x		
Washington				x		x

[C] Candidate
[P] Proposed

[T] Threatened
[E] Endangered

[CH] Designated Critical Habitat
[XN] Experimental Nonessential

Grouping	Mammal	
Common Name	Gray Wolf	
Scientific Name	*Canis lupus*	
Status	[XN]	[E]
Ada	x	
Adams	x	
Bannock	x	
Bear Lake	x	
Benewah	x	
Bingham	x	
Blaine	x	
Boise	x	
Bonner		x
Bonneville	x	
Boundary		x
Butte	x	
Camas	x	
Canyon	x	
Caribou	x	
Cassia	x	
Clark	x	
Clearwater	x	
Custer	x	
Elmore	x	
Franklin	x	
Fremont	x	
Gem	x	
Gooding	x	
Idaho	x	
Jefferson	x	
Jerome	x	
Kootenai	x	x
Latah	x	
Lemhi	x	
Lewis	x	
Lincoln	x	
Madison	x	
Minidoka	x	
Nez Perce	x	
Oneida	x	
Owyhee	x	
Payette	x	
Power	x	
Shoshone	x	x
Teton	x	
Twin Falls	x	
Valley	x	
Washington	x	

Grouping	Fish				Mollusk			
Common Name	Bull trout		Kootenai River white sturgeon		Banbury Springs	Bliss Rapids snail	Bruneau hot springsnail	Snake River physa snail
Scientific Name	*Salvelinus confluentus*		*Acipenser transmontanus*		*Lanx sp .*	*Taloronconcha serpenticola*	*Pyrgolopsis bruneauensis*	*Haitia (Physa) natricinia*
Status	[T]	[CH]	[E]	[CH]	[E]	[T]	[E]	[E]
Ada	x							x
Adams	x	x						
Bannock								
Bear Lake								
Benewah	x	x						
Bingham								
Blaine	x	x						
Boise	x	x						
Bonner	x	x						
Bonneville								
Boundary	x	x	x	x				
Butte	x	x						
Camas	x	x						
Canyon								x
Caribou								
Cassia								x
Clark								
Clearwater	x	x						
Custer	x	x						
Elmore	x	x				x		x
Franklin								
Fremont								
Gem	x	x						
Gooding					x	x		x
Idaho	x	x						
Jefferson								
Jerome						x		x
Kootenai	x	x						
Latah								
Lemhi	x	x						
Lewis	x	x						
Lincoln								
Madison								
Minidoka								x
Nez Perce	x	x						
Oneida								
Owyhee	x	x					x	x
Payette	x							x
Power								
Shoshone	x	x						
Teton								
Twin Falls					x	x		x
Valley	x	x						
Washington	x	x						x

[C] Candidate
[P] Proposed
[T] Threatened
[E] Endangered
[CH] Designated Critical Habitat
[XN] Experimental Nonessential

Grouping	Plant							
Common Name	Christ's paintbrush	Goose Creek milkvetch	Macfarlane's four-o'clock	Packard's Milkvetch	Slickspot peppergrass	Spalding's catchfly	Ute ladies'-tresses	Water Howellia
Scientific Name	*Castilleja christii*	*Astragalus anserrinus*	*Mirabilis macfarlanei*	*Astragalus cusickii var. parkardiae*	*Lepidium papilliferum*	*Silene spaldingii*	*Spiranthese diluvialis*	*Howellia aquatilis*
Status	[C]	[C]	[T]	[C]	[T]	[T]	[T]	[T]
Ada					x			
Adams								
Bannock								
Bear Lake								
Benewah						x		x
Bingham							x	
Blaine								
Boise								
Bonner								
Bonneville							x	
Boundary								
Butte								
Camas								
Canyon					x			
Caribou								
Cassia	x	x						
Clark								
Clearwater								
Custer								
Elmore					x			
Franklin								
Fremont							x	
Gem					x			
Gooding								
Idaho			x			x		
Jefferson							x	
Jerome								
Kootenai						x		x
Latah						x		x
Lemhi								
Lewis						x		
Lincoln								
Madison							x	
Minidoka								
Nez Perce						x		
Oneida								
Owyhee					x			
Payette				x	x			
Power								
Shoshone						x		x
Teton								
Twin Falls								
Valley								
Washington								

[C] Candidate
[P] Proposed

[T] Threatened
[E] Endangered

[CH] Designated Critical Habitat
[XN] Experimental Nonessential

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
201 NORTH THIRD AVENUE
WALLA WALLA, WASHINGTON 99362-1876

REPLY TO
ATTENTION OF

November 10, 2010

Regulatory Division

SUBJECT: NWW-2010-622-W04

Mr. Walter M. Steed
Walter M. Steed & Associates
1345 Ridgeview Drive
Moscow, Idaho 83843

Dear Mr. Steed:

This is in response to your October 31, 2010 letter requesting our comments on the City of Potlatch's proposed improvements to their sewer system. Section 404 of the Clean Water Act (33 U.S.C. 1344) requires a Department of the Army permit be obtained for the discharge of dredged or fill material into Waters of the United States. This includes most perennial and intermittent rivers and streams, natural and man-made lakes and ponds, and wetlands, as well as irrigation and drainage canals and ditches that are tributaries to other waters. The Palouse River is a water regulated under Section 404. Activities regulated under Section 404 include excavation and mechanized landclearing activities, which result in the discharge of dredged material and destroy or degrade Waters of the United States.

Based on the information provided, we are unable to determine if the proposed project will involve any work subject to our jurisdiction. We would suggest you have the project area inspected by a qualified wetland consultant to determine if the proposed project will involve work in such areas. If it does, you should then have these areas identified and delineated and submitted for our review and approval. We would also suggest you select someone who is knowledgeable in the methods we use for delineating jurisdictional wetlands. Information on wetlands and delineation procedures can be found at http://www.nww.usace.army.mil/html/offices/op/rf/wetlands.asp.

If the proposed project will involve the discharge of dredged or fill material in Waters of the United States, including wetlands, a Department of the Army permit may be required prior to the start of construction. If so, you will need to complete and submit a permit application for processing and evaluation. Please be advised that starting work before obtaining the required Department of the Army permit constitutes a violation of Section 404 and could result in legal action. If you have any questions concerning these regulatory matters, please contact Mr. Mike Burgan at 208-765-8139 (fax 208-765-8368).

Sincerely,

Duane E. Mitchell

Duane E. Mitchell
Regulatory Project Manager

Taylor Engineering, Inc.
Civil Design and Land Planning

Principals:
Stanley R. Stirling
Mark A. Aronson, P.E.
Ronald G. Pace, P.E
Chris H. Mansfield, P.E.

Associates:
Scott M. Busch, P.E.
Frank R. Ide, A.S.L.A.
Thomas K. Stirling

Chief Financial Officer:
Edwin G. Wagnild

February 17, 2010

Suzi Neitzel
Deputy SHPO
Idaho Historical Society
210 Main Street
Boise, Idaho 83702-7264

Re: City of Potlatch –
Regional Wastewater Collection and Treatment System Improvement Project

Dear Ms. Neitzel:

We are writing in reference to the City of Potlatch's proposed Regional Wastewater Collection and Treatment System Improvement Project. In May 2007 we contacted you regarding this project and were sent documentation on May 21, 2007 that the project did not warrant further studies and would not affect any historic properties. The majority of the work described in the May 2007 correspondence has been completed and no cultural resources were encountered during those phases of work. As this original correspondence did not include the proposed area of interest, we are again requesting your review of the potential cultural resource affects that the project may have.

For the next phase of work we are proposing a land treatment site that is located outside of the city limits southeast of the existing sewage lagoons. This property is currently owned by Potlatch Corporation but the City is working to either buy the property outright or negotiate a long-term lease in order to install the subsurface drip irrigation proposed to treat effluent. The site is previously undeveloped and does not contain any structural elements or remnants of such. Enclosed is an overall map showing the land treatment area.

In addition, on the east side of town, a sanitary sewer line will be extended from Ponderosa Drive to east of the cemetery along the north side of Highway 6. The Cemetery sewer extension line will be located within city limits and highway right-of way in previously disturbed soils. Enclosed is a second map, showing the location of the sewer extension. The manholes for this extension are labeled A1 through A7 and include approximately 1300 lineal feet of sewer main.

Spokane, WA
245 E. Main St. • Pullman, WA 99163 • (509) 334-5115
FAX (509) 334-5956 • E-MAIL pullman@taylorengr.com
Coeur d'Alene, ID

If you could review the attached figures and provide comments regarding this project, as it relates to cultural and historic resources, within 30-days, it would be greatly appreciated. If you have any questions or need additional information please let me know.

Sincerely,

Angela Taylor, P.E.
Project Engineer

Enclosure: Maps (3)

Cc: Mayor David Brown, City of Potlatch

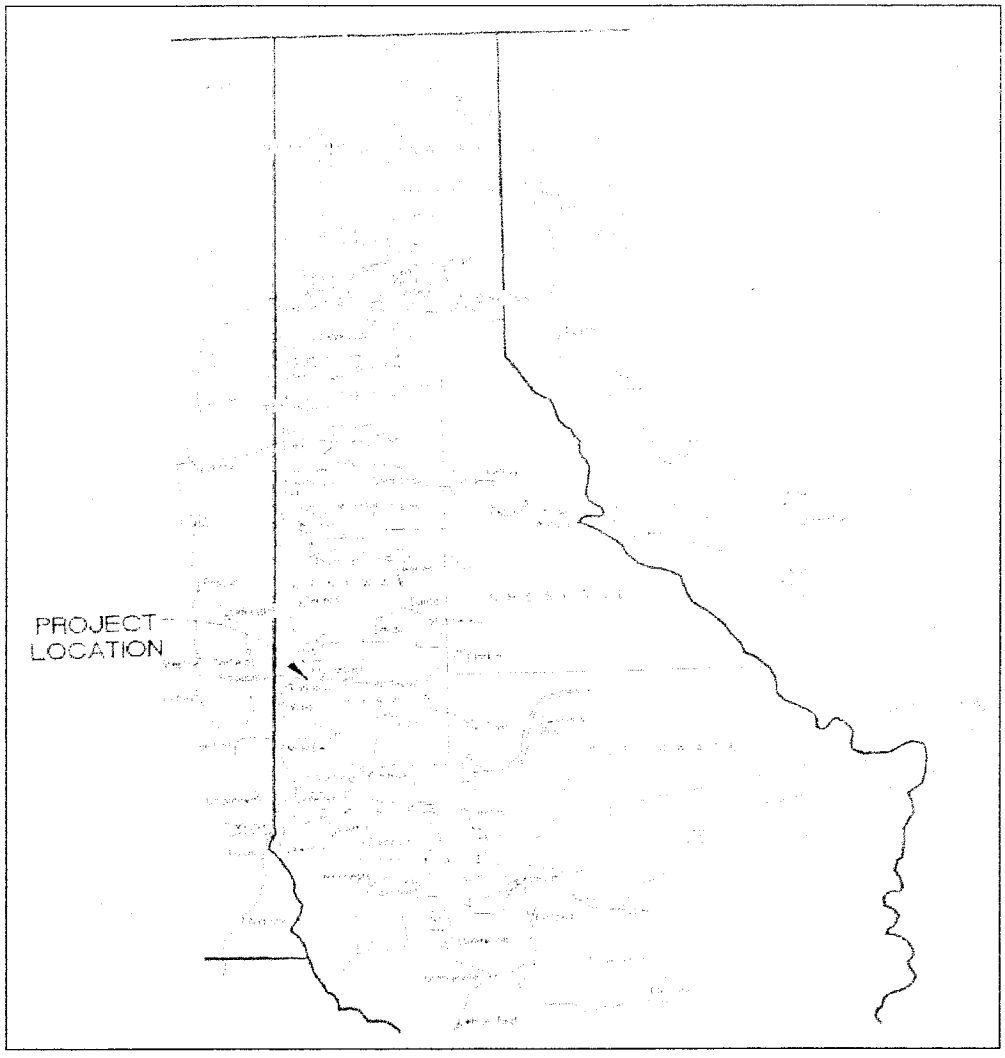


Figure 1: City of Potlatch Vicinity Map

United States Department of the Interior

IDAHO FISH AND WILDLIFE OFFICE

1387 S. Vinnell Way, Room 368
Boise, Idaho 83709
Telephone (208) 378-5243
http://www.fws.gov/idaho

MAR 16 2010

Angela Taylor
Taylor Engineering, Inc.
245 E. Main Street
Pullman, WA 99163

Subject: Potlach Wastewater Collection and Treatment System Improvement Project, Phase II—Latah County, Idaho—Technical Assistance
970.3000 14420-2010-TA-0241

Dear Mr. Taylor:

The Fish and Wildlife Service (Service) has received your request dated February 17, 2010, for a review and concurrence on Taylor Engineering Inc.'s determination of "no effect" to listed, proposed, or candidate species or designated critical habitat under section 7 of the Endangered Species Act of 1973 (Act), as amended, for the Potlach Wastewater Collection and Treatment System Improvement Project, Phase II, in Latah County, Idaho. We provide the following comments regarding your request.

The Service does not typically provide concurrence for proposed actions with "no effect" determinations. However, we do acknowledge your "no effect" determinations.

If you have any questions about your responsibilities under section 7 of the Act, or require further information, please contact Bob Kibler at the Idaho Fish and Wildlife Office at (208) 378-5255. Thank you for your continued interest in endangered species conservation.

Sincerely,

Russell R. Holder for

Gary Burton, Acting State Supervisor
Idaho Fish and Wildlife Office

TAKE PRIDE IN AMERICA

Angela Taylor

From: Angela Taylor [angela@taylorengr.com]
Sent: Tuesday, May 10, 2011 11:17 AM
To: 'Mary.McGown@idwr.idaho.gov'
Cc: 'Chris Mansfield'
Subject: Potlatch Wastewater Improvements Project

Attachments: EID - without app.pdf; APP C- Flood MapsM1600860135B-1.pdf; Floodway map.pdf

EID - without app.pdf (714 KB)... APP C- Flood apsM1600860135B- Floodway map.pdf (372 KB)

Mary,

The City of Potlatch is planning to make improvements to their wastewater effluent treatment downstream of their existing lagoons. As funding is coming from the IDEQ in the form of a SRF loan and CDBG Grant, we are required to maintain compliance with the NEPA process. As such we have drafted an Environmental Information Document and submitted it to IDEQ. In that document (draft attached without appendices) we stated that the area is outside of and above the 100-year floodplain of the Palouse River. Some of the irrigation spray may enter the floodplain, but the irrigation lines will be excluded from wetland areas and floodplain. Do you concur with our statement that the improvements will not affect the floodplain?

Let me know if you need additional information to make this decision.

Thanks,
Angela

Angela Taylor, PE, LEED AP
Taylor Engineering, Inc.
245 E. Main St.
Pullman, WA 99163
(509)334-5115
(509)334-5956 FAX
angela@taylorengr.com

Angela Taylor

From: McGown, Mary [Mary.McGown@idwr.idaho.gov]
Sent: Wednesday, May 25, 2011 12:11 PM
To: angela@taylorengr.com
Subject: RE: Potlatch Wastewater Improvements Project

Angela,

I reviewed the environmental document and maps and concur that the proposed development is outside the FEMA mapped special flood hazard area.

Mary G. McGown, Ph.D., CFM
State Floodplain Coordinator
Idaho Department of Water Resources
322 E. Front Street
P.O. Box 83720
Boise, ID 83720-0098
(208) 287-4928
(208) 287-6700 fax

-----Original Message-----
From: Angela Taylor [mailto:angela@taylorengr.com]
Sent: Tuesday, May 10, 2011 12:17 PM
To: McGown, Mary
Cc: 'Chris Mansfield'
Subject: Potlatch Wastewater Improvements Project

Mary,

The City of Potlatch is planning to make improvements to their wastewater effluent treatment downstream of their existing lagoons. As funding is coming from the IDEQ in the form of a SRF loan and CDBG Grant, we are required to maintain compliance with the NEPA process. As such we have drafted an Environmental Information Document and submitted it to IDEQ. In that document (draft attached without appendices) we stated that the area is outside of and above the 100-year floodplain of the Palouse River. Some of the irrigation spray may enter the floodplain, but the irrigation lines will be excluded from wetland areas and floodplain. Do you concur with our statement that the improvements will not affect the floodplain?

Let me know if you need additional information to make this decision.

Thanks,
Angela

Angela Taylor, PE, LEED AP
Taylor Engineering, Inc.
245 E. Main St.
Pullman, WA 99163
(509)334-5115
(509)334-5956 FAX
angela@taylorengr.com

Angela Taylor

From: Angela Taylor [angela@taylorengr.com]
Sent: Tuesday, May 10, 2011 12:00 PM
To: 'Shelley.Keen@idwr.idaho.gov'
Cc: 'Chris Mansfield'
Subject: Potlatch Wastewater improvements

Attachments: EID - without app.pdf

EID - without app.pdf (714 KB)...

Shelley,

The City of Potlatch is planning to make improvements to their wastewater effluent treatment downstream of their existing lagoons. As funding is coming from the IDEQ in the form of a SRF loan and CDBG Grant, we are required to maintain compliance with the NEPA process. As such we have drafted an Environmental Information Document (draft attached without appendices) and submitted it to IDEQ.

IDEQ has requested that we consult with IDWR regarding the impacts of this project on river flows, water rights, and impacts to water rights. As you are aware, land application requires a reuse permit, which the City has begun to obtain. Land application is only planned to occur for a portion of each year. We would appreciate your input on the effect this will have on flows within the Palouse River, if any Do you concur with our statement that the improvements will not adversely affect the river and water rights?

Let me know if you need additional information to make this decision.

Angela Taylor, PE, LEED AP
Taylor Engineering, Inc.
245 E. Main St.
Pullman, WA 99163
(509)334-5115
(509)334-5956 FAX
angela@taylorengr.com

Angela Taylor

From: Keen, Shelley [Shelley.Keen@idwr.idaho.gov]
Sent: Thursday, May 12, 2011 8:03 AM
To: angela@taylorengr.com
Subject: RE: Potlatch Wastewater improvements

Angela,

I received your request for review of the City of Potlatch's plan to land apply its treated wastewater. I will try to respond today or tomorrow. I expect my review and comments to focus mainly on water right requirements.

Shelley Keen
Idaho Department of Water Resources
P.O. Box 83720
Boise, ID 83720-0098
(208) 287-4947
shelley.keen@idwr.idaho.gov

-----Original Message-----
From: Angela Taylor [mailto:angela@taylorengr.com]
Sent: Tuesday, May 10, 2011 1:00 PM
To: Keen, Shelley
Cc: 'Chris Mansfield'
Subject: Potlatch Wastewater improvements

Shelley,

The City of Potlatch is planning to make improvements to their wastewater effluent treatment downstream of their existing lagoons. As funding is coming from the IDEQ in the form of a SRF loan and CDBG Grant, we are required to maintain compliance with the NEPA process. As such we have drafted an Environmental Information Document (draft attached without
appendices) and submitted it to IDEQ.

IDEQ has requested that we consult with IDWR regarding the impacts of this project on river flows, water rights, and impacts to water rights.
As you are aware, land application requires a reuse permit, which the City has begun to obtain. Land application is only planned to occur for a portion of each year. We would appreciate your input on the effect this will have on
flows within the Palouse River, if any Do you concur with our
statement
that the improvements will not adversely affect the river and water rights?

Let me know if you need additional information to make this decision.

Angela Taylor, PE, LEED AP
Taylor Engineering, Inc.
245 E. Main St.
Pullman, WA 99163
(509)334-5115
(509)334-5956 FAX
angela@taylorengr.com

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 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Interim Director

May 13, 2011

Angela Taylor, PE
Taylor Engineering, Inc.
245 E. Main St.
Pullman, WA 99163

RE: City of Potlatch Wastewater Improvement Project

Dear Ms. Taylor:

I have reviewed you letter requesting comment on the City of Potlatch's plan to land apply its treated wastewater. It does not appear that your selected alternative will require construction within the Palouse River. However, if your plans ultimately require an additional force main across the river or other construction in the river channel, a stream channel alteration permit from IDWR may be required. Application forms for the stream channel protection program may be obtained at:

http://www.idwr.idaho.gov/RulesStatutesForms/StreamChannel/StreamChannelForms.htm.

As for water right requirements for the project, the question is difficult to answer because the law regarding the use of wastewater by municipalities has not been fully developed in Idaho. IDWR recently received a request from an engineering firm working for Rockland Water & Sewer Association to comment on a proposal similar to your proposal for the City of Potlatch. The Rockland proposal was discussed at length by IDWR administrators and legal counsel. My comments are drawn largely from IDWR's response to Rockland.

Under current IDWR policy, a water right filing is not required if the land application of waste water is proposed on land with an existing water right for irrigation purposes. For example, a dairy does not need a water right to mix its wastewater with water from another source for land application on cropland, so long as the water from the other source is diverted pursuant to a valid water right. If the proposed land application site is not covered by a valid water right, a water right filing is required to authorize the land application. I find no record of a water right authorizing irrigation at the proposed Potlatch wastewater land application site. Therefore, IDWR will require a water right filing to cover the water use at the land application site. The primary purpose of the filing would be to enable IDWR to track the land application activity and distinguish it from unauthorized water uses. The City has a couple of filing options. It could update the service area for its existing water rights, or it could apply for a new water right.

For most water users, if the proposed land application of wastewater would occur on cultivated fields and a water right did not exist for the beneficial use at the proposed location, a water right

transfer would be required to authorize the larger place of use for the water right from which the wastewater originates. A transfer to add the location of the land application of wastewater would not be considered an enlargement of the water right, which could not be authorized, but it would have to meet other statutory criteria for approval. For a municipal water right, however, a transfer may not be required to change the location of the place of use, but IDWR must be provided an updated map of the service area of the existing municipal water right(s), including the land application area. The City of Potlatch currently has two water right claims (87-4042 and 87-4043) and two water right licenses (87-7004 and 87-7124) totaling 0.70 cfs.

The difference in approach between municipal water rights and water rights for other purposes results from the statutory definition of municipal use. Idaho Code § 42-202B defines "municipal purposes" as:

> [W]ater for residential, commercial, industrial, irrigation of parks and open space, and related purposes, excluding use of water from geothermal sources from heating, which a municipal provider is entitled or obligated to supply to all those users within a service area, including those located outside the boundaries of a municipality served by a municipal provider.

IDWR interprets "related purposes" to include land application of wastewater from the municipal system since adequate disposal of the waste is an obligation of the city. This interpretation by IDWR applies only to wastewater; it does not include the direct application of water from the municipal system to grow crops on agricultural land.

Another option for Potlatch would be to file an application to establish a new water right for the beneficial use of wastewater at the land application site. Water right application forms are available at http://www.idwr.idaho.gov/RulesStatutesForms/WaterRights/WaterRightForms.htm.

If you have questions, please call or email.

Sincerely,

Shelley W. Keen

Shelley W. Keen
Water Rights Section Manager

Angela Taylor

From: Shelly Hammons [potlcity@potlatch.com]
Sent: Friday, August 12, 2011 10:25 AM
To: angela@taylorengr.com
Subject: FW: Water Permit for Land Application Site
Attachments: 20110608095257.pdf; 20110608130615.pdf

FYI

Shelly
Shelly M. Hammons,
Clerk/Treasurer
City of Potlatch
P.O. Box 525
Potlatch, ID 83855
(208) 875-0708

From: Haynes, Bob [mailto:Bob.Haynes@idwr.idaho.gov]
Sent: Monday, June 20, 2011 2:53 PM
To: Franklin, Keith; potlcity@potlatch.com
Subject: FW: Water Permit for Land Application Site

Shelly

I have retired from IDWR. I am forwarding this to Keith Franklin, who is now in charge of the office.

Bob

From: Shelly Hammons [mailto:potlcity@potlatch.com]
Sent: Wednesday, June 08, 2011 1:00 PM
To: Haynes, Bob
Cc: potlatchmayor@potlatch.com
Subject: Water Permit for Land Application Site

Hello Bob:

Please find attached the Application for Permit and the map of the Potlatch lagoon and Land Application site. If you have any questions, please feel free to contact me at any time.

With kind regards,

Shelly
Shelly M. Hammons,
City Clerk/Treasurer
City of Potlatch
P.O. Box 525
Potlatch, ID 83855
(208) 875-0708

FORM 202 03/10 Print form as a 2 page, single-sided document

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

Ident. No. _____

APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

1. Name of applicant(s) City of Potlatch Phone 208-875-0708
   Name connector (check one): ☐ and ☐ or ☐ and/or
   Mailing address: P.O. Box 525 City Potlatch
   State ID Zip 83855 Email: potlcity@potlatch.com
2. Source of water supply Municipal which is a tributary of n/a
3. Location of point(s) of diversion:

Twp	Rge	Sec	Govt Lot	¼	¼	¼	County	Source	Local name or tag #
41N	R5W	1					Latah	WW POD - Lagoon	N/A

4. Water will be used for the following purposes:
   Amount 24.5 mg per year (cfs or acre-feet per year) for Discharge & Land App purposes from 01/01 to 12/31 (both dates inclusive)
   Amount _____ (cfs or acre-feet per year) for _____ purposes from _____ to _____ (both dates inclusive)
   Amount _____ (cfs or acre-feet per year) for _____ purposes from _____ to _____ (both dates inclusive)
   Amount _____ (cfs or acre-feet per year) for _____ purposes from _____ to _____ (both dates inclusive)
5. Total quantity to be appropriated is (a) 24.5 mg cubic feet per second (cfs) and/or (b) _____ acre-feet per year (af).
6. Proposed diverting works:
   a. Describe type and size of devices used to divert water from the source. The wastewater point-of-diversion will be from the Potlatch lagoon.
   b. Height of storage dam Lagoon feet; active reservoir capacity 21 mg acre-feet; total reservoir capacity n/a acre-feet. If the reservoir will be filled more than once each year, describe the refill plan in item 11.
   For dams 10 feet or more in height OR reservoirs with a total storage capacity of 50 acre-feet or more, submit a separate Application for Construction or Enlargement of a New or Existing Dam. Application required? ☐ Yes ☑ No
   c. Proposed well diameter is n/a inches; proposed depth of well is n/a feet.
   d. Is ground water with a temperature of greater than 85°F being sought? ☐ Yes ☑ No
   e. If well is already drilled, when? n/a; drilling firm n/a;
   Well was drilled for (well owner) n/a; Drilling Permit No. n/a.
7. Description of proposed uses (if irrigation only, go to item 8):
   a. Hydropower; show total feet of head and proposed capacity in kW. n/a
   b. Stockwatering; list number and kind of livestock. n/a
   c. Municipal; show name of municipality or the applicant's qualifications as a municipal provider. City of Potlatch Wastewater Collection and Treatment System
   d. Domestic; show number of households n/a
   e. Other; describe fully. This application is for a designed Land Appliation rate = 5.3 mg per 6 month season (May-October) or up to 24.5 million gallons per year to be applied to this land.

8. Description of place of use:

   a. If water is for irrigation, indicate acreage in each subdivision in the tabulation below.

   b. If water is used for other purposes, place a symbol of the use (example: D for Domestic) in the corresponding place of use below. See instructions for standard symbols.

TWP	RGE	SEC	NE				NW				SW				SE				TOTALS
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
41N	5W	1																	

Total number of acres to be irrigated: 52.6

9. Describe any other water rights used for the same purposes as described above. Include water delivered by a municipality, canal company, or irrigation district. If this application is for domestic purposes, do you intend to use this water, water from another source, or both, to irrigate your lawn, garden, and/or landscaping? This is going to be a Land Application site for municipal wastewater.

10. a. Who owns the property at the point of diversion? City of Potlatch

    b. Who owns the land to be irrigated or place of use? Potlatch Corporation

    c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing: The City of Potlatch has made an offer on the property for the Land App site (contingent on loan approval).

11. Describe your proposal in narrative form, and provide additional explanation for any of the items above. Attach additional pages if necessary. The City of Potlatch has applied to the Idaho Department of Environmental Quality for a loan to complete Phase 3 of the city's wastewater project. In Phase 3, a Land Application site will be purchased from the Potlatch Corporation and a Fixed Pivot, 5-span and 3-span irrigation system would be installed above ground on the 52.6 acre site.

12. Time required for completion of works and application of water to proposed beneficial use is 2 years (minimum 1 year).

13. **MAP OF PROPOSED PROJECT REQUIRED** - Attach an 8½" x 11" map clearly identifying the proposed point of diversion, place of use, section #, township & range. A photocopy of a USGS 7.5 minute topographic quadrangle map is preferred.

The information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in rejection of the application or cancellation of an approval.

David L Brown
Signature of Applicant

Signature of Applicant

Mayor David L. Brown, City of Potlatch, Idaho
Print Name (and title, if applicable)

Print Name (and title, if applicable)

For Department Use:

Received by _____ Date _____ Time _____ Preliminary check by _____

Fee $ _____ Receipted by _____ Receipt No. _____ Date _____

Taylor Engineering, Inc.
Civil Design and Land Planning
245 E Main St.
Pullman, WA 99163
PH 509-334-5115
FX 509-334-5956

April 25, 2011

Susan Pengilly, Deputy SHPO
Idaho State Historical Society
210 Main Steet
Boise, ID 83702

RE: Request for Agency Consultation on Cultural Issues for the City of Potlatch Wastewater Improvement Project

Dear Ms. Pengilly:

The City of Potlatch has applied for a loan through the Idaho Department of Environmental Quality's Clean Water State Revolving Fund. These are federal funds subject to the State of Idaho's State Environmental Review Process, which mirrors the National Environmental Policy Act process. The purpose of this letter is to request your review and response regarding any environmental impacts that your agency may identify for this proposed.

The proposed project includes a land application treatment system east of the existing sanitary sewage lagoons for the City of Potlatch. With the City's National Pollutant Discharge Elimination System (NPDES) Permit recently expired and the potential for more stringent discharge requirements in the next permit, the City is proposing improvements to its current treatment mechanism to assist with meeting these new regulations. The proposed site lies east of the existing lagoons and south of the Palouse River. The City is in the process of acquiring the land. The project will disturb approximately 10 acres to install and run a slow-rate land application/irrigation disposal of treated effluent from the lagoons.

Enclosed are maps of the proposed project planning area that depict the proposed project improvements and area of potential effect for all construction activities.

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

If you have any questions concerning this proposed project or if you need any further information, please feel free to contact me at 509-334-5115 or by e-mail at angela@taylorengr.com if you have questions.

Sincerely,

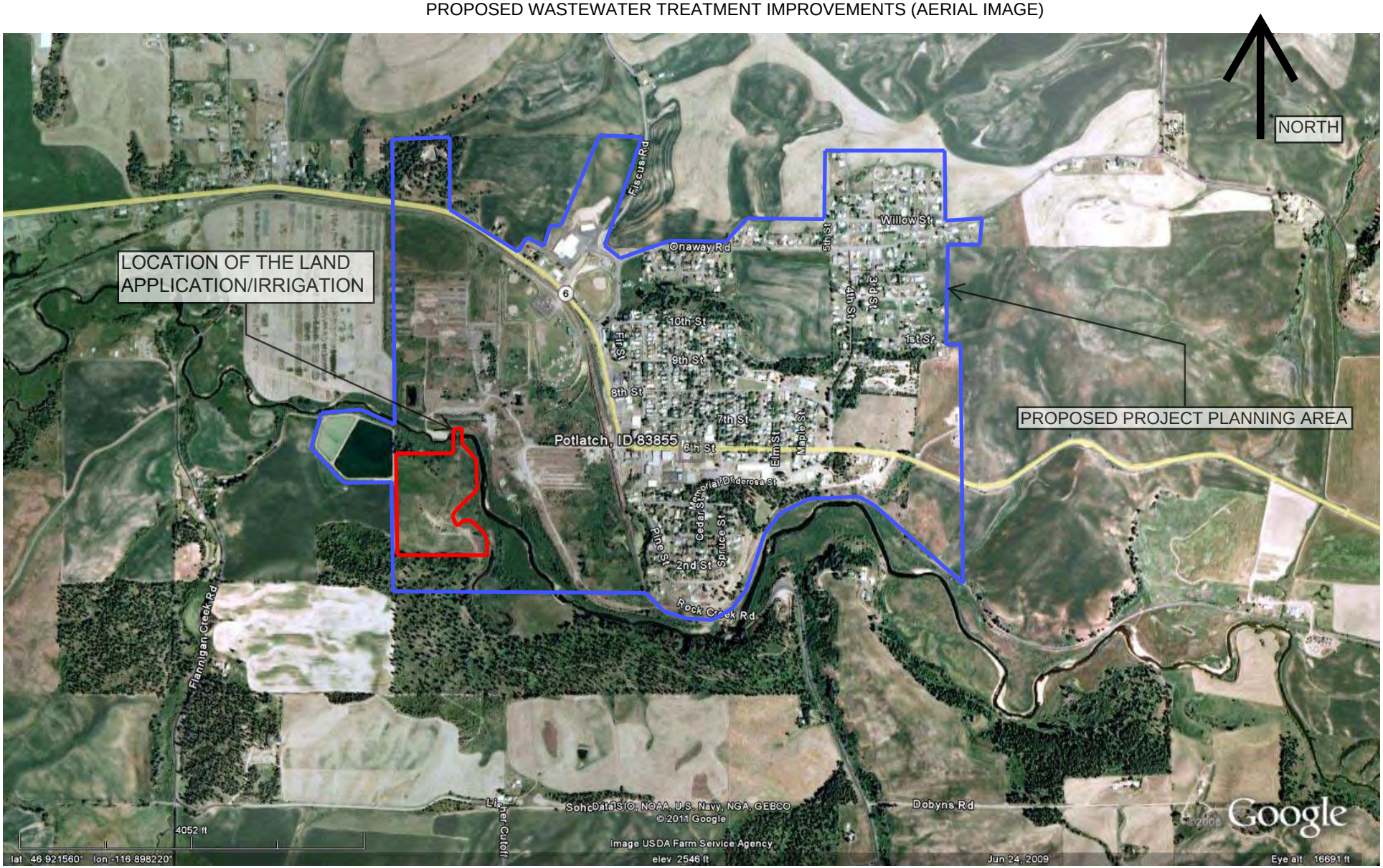
Angela Taylor

Angela Taylor, PE, LEED AP
Taylor Engineering, Inc.

Enclosure

Cc: Mayor David Brown, via e-mail
Thomas Moore, DEQ Lewiston Regional Office, via e-mail

PROPOSED WASTEWATER TREATMENT IMPROVEMENTS (AERIAL IMAGE)



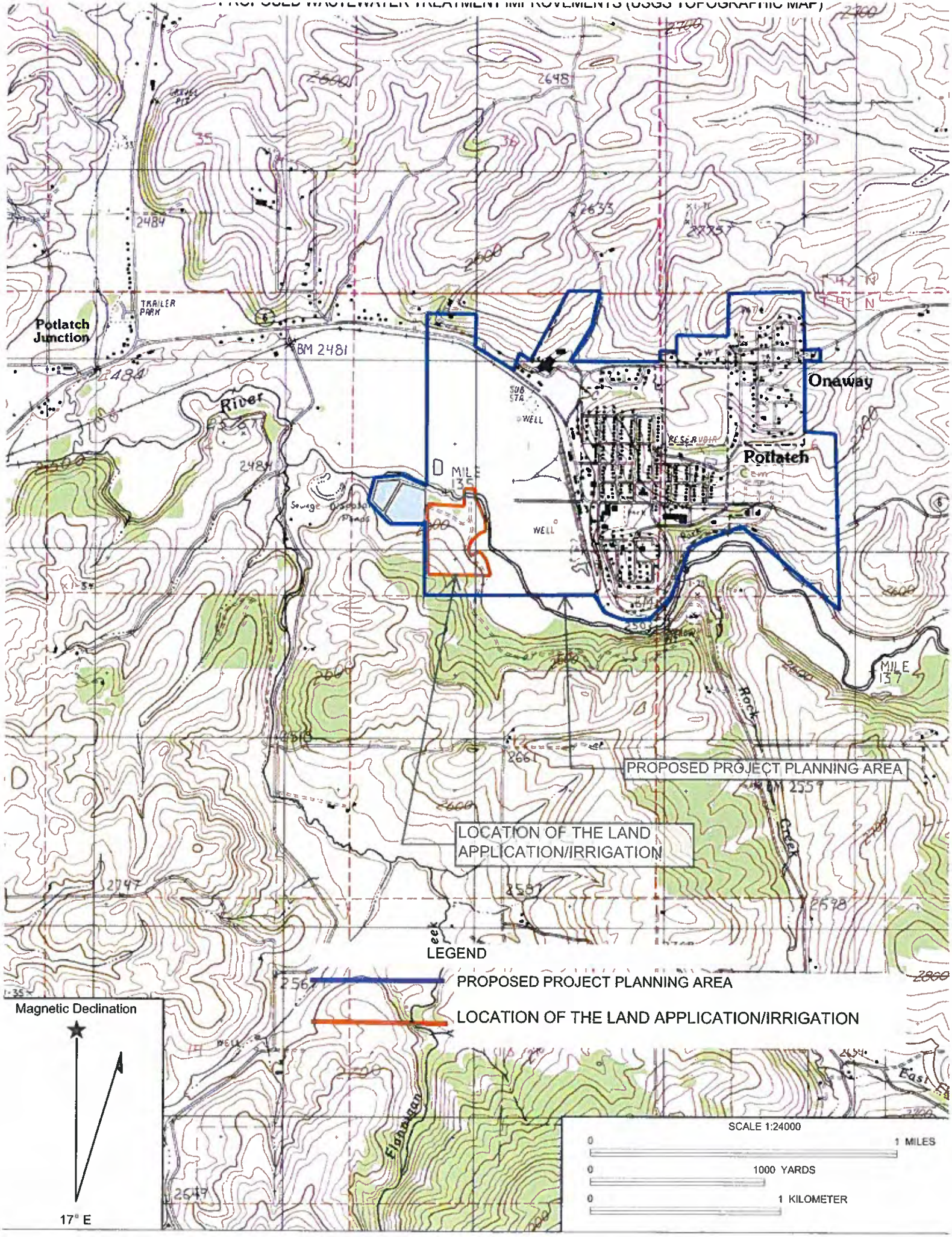
LEGEND

PROPOSED PROJECT PLANNING AREA

LOCATION OF THE LAND APPLICATION/IRRIGATION

Figure 3-2

PROPOSED WASTEWATER TREATMENT IMPROVEMENTS (USGS TOPOGRAPHIC MAP)



www.history.idaho.gov

Idaho • State Historical Society

May 18, 2011

Angela Taylor
Taylor Engineering, Inc.
245 E. Main St.
Pullman, Washington 99163

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) 514-2310
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

RE: Wastewater and Treatment Collections System Improvements, City of Potlatch, Idaho

Dear Ms. Taylor:

Thank you for supplying our office with the archaeological survey report by Plateau Archaeological Investigations and the updated project maps showing the relationship of the improvements and the archaeological site identified during the survey. We feel that the site (temporary No. PAI-1102) is eligible for inclusion in the National Register of Historic Places. You have assured us that the site can be avoided by any trenching or other ground disturbing activities however; the land application spray will hit the site. We appreciate your working with our office to develop a project plan that will minimize effects on the site. Based on our discussions, we believe the project will have *no adverse effect* provided that:

1. Your archaeological consultant monitors the initial ground disturbing activities to insure avoidance of the site during construction.
2. You consultant sends a summary of the monitoring activities to our office as a report addendum.
3. If, during construction activities, subsurface archaeological remains are found outside of the previously determined site boundary, construction activities in the immediate area of discovery will be halted and your consultant immediately.
4. If the project activities change, those changes will be sent to our office for review

We want to commend the quality of fieldwork and reporting by your consultant. The report easily meets the Secretary of the Interior's Standards. We are especially happy that they conducted shovel testing to thoroughly establish the boundary of the site.

Historical Society is an Equal Opportunity Employer.

We also appreciate you working with our office over the last couple of weeks to develop a project plan that will minimize impact to the site.

If you have any questions, please feel free to contact me at 208-334-3847, ext. 107 or Shelby Day at ext. 109.

Sincerely,

Susan Pengilly
Deputy SHPO and
Compliance Coordinator

Angela Taylor

From: Angela Taylor [angela@taylorengr.com]
Sent: Thursday, May 12, 2011 4:43 PM
To: 'Thomas.Moore@deq.idaho.gov'; 'john.cardwell@deq.idaho.gov'
Cc: 'chris@taylorengr.com'
Subject: Potlatch Wastewater improvements

Attachments: EID 2011 Rev7.pdf

EID 2011 Rev7.pdf
(672 KB)

We are completing the Environmental Information Documents for the Potlatch Wastewater Improvements. As you may be aware, this project includes land application in the form of slow-rate irrigation on a parcel of land southeast of the existing lagoons. The land application will occur from May through October at the maximum.

From my research, all groundwater in the area trends toward the Palouse River from the higher elevations. At the land application, the groundwater flows from south to north. The limiting stratum is the basalt and intrusive igneous bedrock layers depending on fracture density. As this project will occur on the south side of the river and all domestic water wells for the city occur on the north side, no impact to water quality will be seen as a part of this project. In addition, the further treatment of effluent will improve the water quality of the Palouse River. Would you agree with these assumptions.

I have attached the draft EID for your review with respect to the water quality impacts this project will have. It includes a vicinity map and schematic land application layout.

Let me know if you need additional information.

Thanks,
Angela

Angela Taylor, PE, LEED AP
Taylor Engineering, Inc.
245 E. Main St.
Pullman, WA 99163
(509)334-5115
(509)334-5956 FAX
angela@taylorengr.com

Angela Taylor

From: Thomas.Moore@deq.idaho.gov
Sent: Friday, August 26, 2011 8:05 AM
To: chris@taylorengr.com
Cc: angela@taylorengr.com; Ester.Ceja@deq.idaho.gov
Subject: RE: Potlatch Wastewater improvements

I concur.

Thomas J. Moore, P.E.
Regional Engineering Manager
DEQ Lewiston Region Office
1118 F Street
Lewiston, ID 83501
Phone (208) 799-4370
Fax (208) 799-3451
Thomas.Moore@deq.idaho.gov
-----Original Message-----
From: Chris Mansfield [mailto:chris@taylorengr.com]
Sent: Thursday, August 25, 2011 12:48 PM
To: Thomas Moore
Cc: angela@taylorengr.com
Subject: FW: Potlatch Wastewater improvements

Tom -
Angela Taylor asked me to re-send this to you. Please review and let her know if you concur for the EID.
Chris

-----Original Message-----
From: Angela Taylor [mailto:angela@taylorengr.com]
Sent: Thursday, May 12, 2011 4:43 PM
To: Thomas.Moore@deq.idaho.gov; john.cardwell@deq.idaho.gov
Cc: chris@taylorengr.com
Subject: Potlatch Wastewater improvements

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Pullman, WA 99163
(509)334-5115
(509)334-5956 FAX

angela@taylorengr.com

Angela Taylor

From: Ester.Ceja@deq.idaho.gov
Sent: Wednesday, August 24, 2011 3:05 PM
To: angela@taylorengr.com
Subject: FW: City of Potlatch wasterwater - land app site

Angela,

Below is the Corps response. At this point I would ask that you update the EID to reflect the Corps response on the wetland delineation and submit an electronic copy of the entire EID for final review.

Thank you,
Ester Ceja

-----Original Message-----
From: Reinhart, Mary E NWW [mailto:Mary.E.Reinhart@usace.army.mil]
Sent: Wednesday, August 24, 2011 4:00 PM
To: Ester Ceja
Cc: Tom Duebendorfer
Subject: City of Potlatch wasterwater - land app site

Hi Ester, I have reviewed and concur with wetland delineation report Wetland Determination for the City of Potlatch Regional Wastewater Facilities Project Land Application Treatment Site, dated July 18, 2011 prepared by Tom Duebendorfer. The proposed work is not a regulated activity under Section 404, so no permit is required.

Thank you for providing us an opportunity to comment.

Beth

Beth Reinhart
Regulatory Project Manager
Army Corps of Engineers
Coeur D'Alene Regulatory Office
2065 W Riverstone Dr., Ste 201
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208 765-8971
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