

APPENDIX H

Environmental Report

Provided under separate cover.

CITY OF NEWBERG
WASTEWATER TREATMENT PLANT
FACILITIES PLAN UPDATE
ENVIRONMENTAL REPORT

Prepared for
City of Newberg, Oregon

November 2009

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BROWN AND CALDWELL

6500 SW Macadam Avenue, Suite 200
Portland, Oregon 97239

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EXECUTIVE SUMMARY

The City of Newberg, Oregon, (City) owns and operates a secondary wastewater treatment plant (WWTP) located at 2301 Wynooski Road, in Newberg. The City currently provides wastewater collection and treatment services to its residents, commercial establishments, institutional customers, and a number of industries.

The City has developed a Repair, Renovation, and Expansion Program (RRE Program) for the Newberg WWTP that is based on the Newberg WWTP Facilities Plan Update that was completed in June 2007 and amended in September 2009. The purpose of this report is to explain the RRE Program and its potential impacts on the environment. The RRE Program and consultations with environmental agencies are summarized below.

The purpose of the RRE Program is to provide the planning for modifications needed to meet projected growth within the City's Urban Growth Boundary and the Urban Reserve Area and to maintain compliance with National Pollutant Discharge Elimination System (NPDES) Permit Number 100988 (U.S. Environmental Protection Agency [USEPA] Reference Number OR 003235-2). The RRE Program includes several projects through the 2030 planning period.

RRE PROGRAM

The City's proposed WWTP modifications consist of upgrading the influent pump station, head-works, secondary treatment-oxidation ditches, secondary treatment clarifiers, disinfection treatment, flow monitoring, outfall manhole, recycled water facilities, and biosolids processes. The work will repair, renovate, and expand the facility put in service in 1987 to increase capacity, accommodate local growth through 2025, and maintain or improve quality of the effluent discharged to the Willamette River.

The work will be implemented in phases and will involve the use of heavy equipment for ground clearing, excavation, and general construction of buildings and facilities infrastructure. All work will be contained within the City's property adjacent to Hess Creek that is 1.5 miles from its confluence with the Willamette River. Expansion onto the adjacent Baker Rock Property, east of the WWTP, will be needed for additional oxidation ditches. An increase in impervious surface of approximately 10,000 square feet will occur over time. Stormwater will be captured on site and will be treated by the WWTP.

The proposed modification will improve efficiencies in treating wastewater and increase the use of recycled water. While the population served by the WWTP will continue to increase, the upgraded facility will meet requirements of the NPDES permits. Increasing capacity of the facilities to remove solids from wastewater and improved technology to disinfect and dechlorinate effluent will maintain current concentrations of suspended solids, chemical and biological oxygen demand, and chlorine contained within the effluent discharged into the Willamette River.

As the opportunities arise, the use of recycled water will be increased from one million gallons per day (mgd) to 2 mgd during dry weather periods to reduce the quantity of effluent discharged, further reducing pollutant loads and maintaining or reducing the discharge of fecal coliform, mercury, iron, and temperature. Increasing reuse will be needed to meet total maximum daily load requirements.

During wet weather periods, the modified facilities will handle increased flow volume without exceeding currently established mass load limits.

Conservation measures include the following:

- Developing and implementing pollution and erosion control measures during construction to contain and limit the potential spill of pollutants and discharge of fine sediment to adjacent streams and wetlands.
- Treating all stormwater resulting from the proposed action to limit further degradation of water quality and changes to discharged water quantity.

ENVIRONMENTAL ASSESSMENT

The environmental analysis is based on the reasonable alternatives as summarized in Table ES-1.

Table ES-1. Reasonable Alternatives

Process	Reasonable alternative
Influent Pump Station (IPS)	Reconfigure IPS to a dual-stage pump station; reconfigure discharge pipe slope; rebuild existing wet well and install new variable-frequency drive pumps; and construct and outfit a new self-cleaning wet weather wet well.
Headworks	Construct and install new Magmeters in the influent pipes; add additional headworks channels, screens and compactors; add new grit removal equipment.
Secondary Treatment—Oxidation Ditches	Construct three additional oxidation ditches
Secondary Treatment—Secondary Clarifiers	Construct two additional secondary clarifiers
Disinfection	Improve and expand efficiency in disinfection facility
Flow Monitoring	Improve effluent flow monitoring
Outfall	Revise outfall piping
Reuse Facilities	Expand reuse filtration from 1 mgd to 2 mgd
Biosolids	Add feedstock dehydration unit; replace sludge belt presses with new sludge dewatering systems.

There are very few environmental resource concerns for the RRE Program, primarily due to the project location. The following are some key points related to the project:

- The project, and expansion area, is located on existing or zoned industrial land.
- Anticipated construction is expected to be outside the 100-year floodplain, on uplands, and is not expected to affect wetlands or waterbodies.
- Surface and subsurface archaeological investigations found no prehistoric or demonstrably historical artifacts, features or sites within the project area.
- Review by USEPA and consultation with National Oceanic and Atmospheric Administration (NOAA) Fisheries found the project is “not likely to adversely affect” threatened and endangered species or essential fish habitat.

- The project is expected to have a positive impact on Willamette River water quality.
- The project is located outside the coastal zone management area, is not associated with any designated wild and scenic rivers, and is not expected to have any negative socioeconomic impacts.

As part of the Oregon Clean Water State Revolving Fund requirements, the City has followed the Applicant Guide to the State Environmental Review Process and consulted with multiple federal, state and local agencies. The steps the City has completed and results of the consultations are summarized in Table ES-2.

Table ES-2. Regulatory Compliance Tracking Sheet

Regulation	Status
Historic/Cultural Resources	
No Section 106 consultation needed if within existing footprint	Some projects expand beyond the existing footprint. See below for consultation completed.
Review National Register of Historic Places for listed sites in project area	Done. None found. See Section 6.1.
State Historic Preservation Office consultation	Done. Received approval from Dennis Griffin, State Archaeologist. See Section 6.1.
Determine tribal nations of interest	Done. The three tribes below were contacted based on phone consultation with Karen Quigley, Executive Director of the Oregon Legislative Commission on Indian Services.
Section 206 consultation from each tribe	
Confederated Tribes of Grande Ronde - Eirik Thorsgard	Done. Received approval to proceed as shown in Section 6.1.
Confederated Tribes of Siletz - Robert Kentta	Done. Received approval to proceed as shown in Section 6.1.
Confederated Tribes of Warm Springs - Sally Bird	Done. Received approval to proceed as shown in Section 6.1.
Include Archaeological and Historic Preservation Act construction provision	The City will include provisions in construction documents.
Protection of Wetlands	
If within the existing footprint, no consultation is needed	Some projects expand beyond existing footprint. See below for consultation completed.
Wetland Determination Request form to the Oregon Department of State Lands	Done. Permit not required. See Section 6.2.
Additional investigation, if required	Not applicable (N/A)
Flood Plain Management	
If within the existing footprint, no consultation is needed	Some projects expand beyond existing footprint. See below for consultation completed.
Verify permit need with City/county	Done. See Section 6.3.

Table ES-2. Regulatory Compliance Tracking Sheet (continued)

Regulation	Status
Review Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps	Done. See Section 6.4.
Within 100-year floodplain - yes/no?	Projects not within 100-year floodplain as shown in Section 6.4.
Early public notice of project	N/A
Floodplain assessment	N/A
Explain alternatives/mitigation /modifications	N/A
Preliminary finding submittal to Oregon Department of Environmental Quality (DEQ)	N/A
DEQ recommendations via FEMA	N/A
Within 500-year floodplain - yes/no?	Projects not within 500-year floodplain as shown in Section 6.4.
If yes, confirm other requirements	N/A
Farmland Protection Policy Act	
Document location if within footprint or city limits	The existing Newberg WWTP property is within city limits. The Baker Rock Property, which will be used for expansion, is currently unincorporated city. See Figure 1-3.
Apply for ORS215 exclusion if within the urban growth boundary and in the exclusive farm use zone	N/A. See Section 6.3.
Other: Complete AD-1006 with Natural Resources Conservation Service	Done. See Section 6.3.
Confirm location with county	Done. See Section 6.3.
Coastal Zone Management Act	
Is project in Coastal Zone Management Area - yes/no?	No, N/A. See Section 6.5.
Wild and Scenic Rivers	
Within wild and scenic river basin - yes/no?	No, N/A. See Section 6.6.
Endangered Species and Habitat	
Oregon Natural Heritage Information Center plant list review	Done. Completed by Pacific Habitat Services. See Section 6.7.
U.S. Fish and Wildlife Service list review	Done. Completed by Pacific Habitat Services. See Section 6.7.
NOAA list review	Done. Completed by Pacific Habitat Services. See Section 6.7.
USEPA Determination	Done. USEPA determined the project is "not likely to adversely affect" threatened and endangered species or their habitat. See Section 6.8.
If "No Effect" no further consultation needed	N/A.
If "Not likely to adversely affect": informal consultation	Done. Informal consultation complete. See Section 6.8.
Biological evaluation	Done. See Section 6.8.
USEPA Region X concurrence	Done. See Section 6.8.
If "May adversely affect": Formal consultation (135 days)	N/A.

Table ES-2. Regulatory Compliance Tracking Sheet (continued)

Regulation	Status
Essential Fish Habitat (EFH)	
Within EFH per NOAA/National Marine Fisheries Service (NMFS)?	Construction is not within an EFH, but the discharge from the WWTP is. Consultation completed. See Section 6.8.
If yes, EFH consultation with NOAA/NMFS	Done. See Section 6.8.
Clean Air Act	
DEQ air quality staff consultation	Done. Received approval from Claudia Davis, DEQ- Western Region Air Quality. See Section 6.9.
Notice of Intent to Construct if emissions	N/A
Safe Drinking Water Act	
Discharge to groundwater - yes/no?	No discharge to groundwater. The purpose of this project is to improve treatment processes at the Newberg WWTP as discussed in the Facilities Plan. See Section 2.0.
In vicinity of sole source aquifer - yes/no?	No, N/A. See Section 6.10.

1.0 PURPOSE AND NEED FOR THE PROJECT

1.1 PROJECT DESCRIPTION

The City of Newberg (City) owns and operates a secondary Wastewater Treatment Plant (WWTP) located at 2301 Wynooski Road, Newberg, Oregon. The City currently provides wastewater collection and treatment services to its residents, commercial establishments, institutional customers, and a number of industries. Sewer service is provided only to customers within the city limits, with the exception of a few residences outside of the city and SP Newsprint Company, which discharges only domestic wastewater to the municipal system.

1.1.1 WWTP Description

The Newberg WWTP was placed into service in 1987. The facility is a Class IV oxidation-ditch type, activated sludge plant with Class A in-vessel biosolids composting. The treatment train consists of influent pumping, screening and grit removal, oxidation-ditch activated sludge, clarification, solids dewatering, composting, odor control, chlorination, dechlorination, and effluent discharge to the Willamette River. A schematic of the treatment train is shown in Figure 1-1.

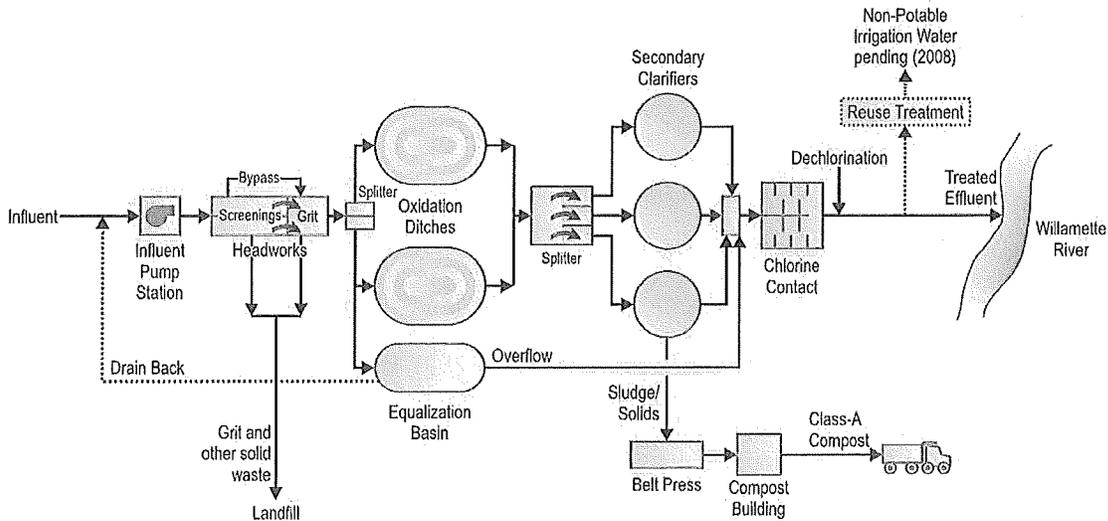


Figure 1-1. Schematic of Newberg WWTP

As shown in Figure 1-2, water and compost are the two main products that result from the City's wastewater treatment process. The WWTP discharges treated water to the Willamette River, and the City irrigates a local golf course in the summer with some of the treated product (reuse water). The City sells its NEWGROW compost product to the public throughout the year.

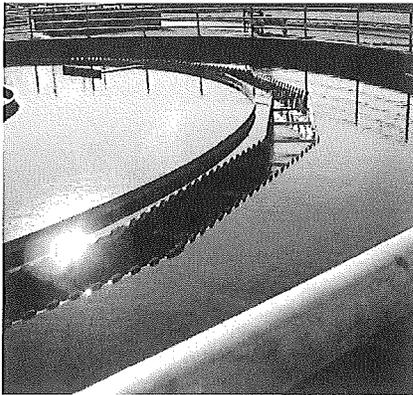


Figure 1-2. Newberg WWTP Products: Water and Compost

The last Facilities Plan was completed two decades ago as part of the Sewerage Master Plan Update (SMPU) (KCM, 1985), after which the City constructed the existing WWTP on Wynooski Road with federal grants. The Newberg WWTP Facilities Plan Update (Facilities Plan Update, dated 2007 and revised 2009), provides the planning for modifications needed to meet projected growth within the Urban Growth Boundary (UGB) and the Urban Reserve Area (URA) and to maintain compliance with its National Pollutant Discharge Elimination System (NPDES) permit and potential future regulations.

1.1.2 Factors Affecting the WWTP

Three major factors impact the wastewater service and the WWTP:

- Ability to treat the City's wastewater to the required quality
- Ability to convey and treat the quantity of wastewater (hydraulic capacity)
- Ability to handle solids and compost, and deliver the compost product to the public.

Willamette River water quality requirements dictate how the wastewater needs to be treated. Minimum technology standards require secondary biological treatment and disinfection prior to surface water discharge, and receiving water quality standards protect its beneficial uses. Changes are needed immediately to improve the reliability of the disinfection process.

The WWTP must also be able to accommodate the peak hydraulic flow. Infiltration from high groundwater and inflow from rainwater direct connections (collectively referred to as I/I), is responsible for the peak hydraulic flow at the Newberg WWTP. A schematic of I/I is shown in Figure 1-3.

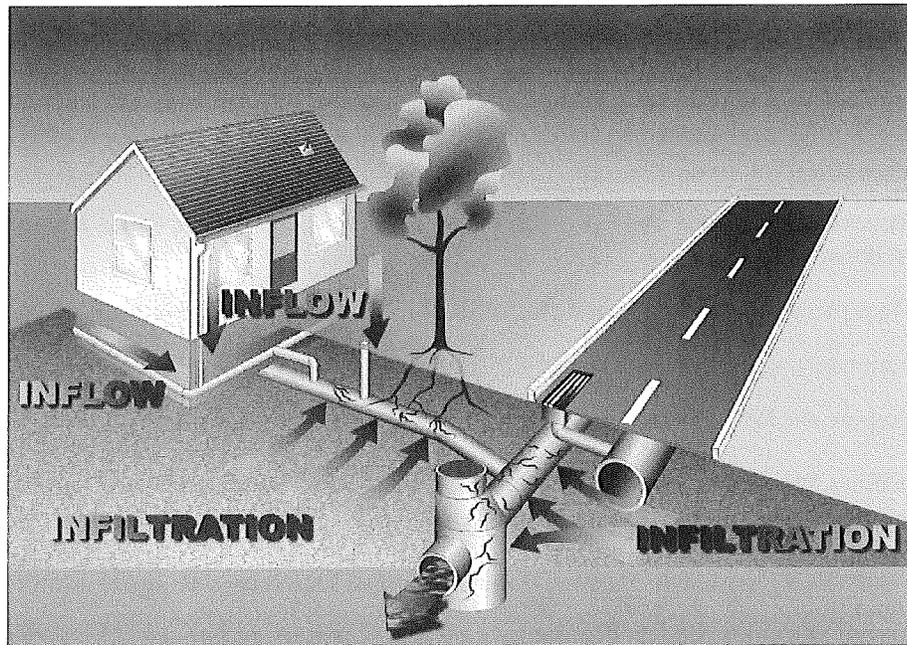


Figure 1-3. Schematic of I/I

I/I entering the collection system has a profound effect on the wastewater quantity that flows to the WWTP influent pump station (IPS). Currently the IPS cannot convey peak flows with one pump out of service for the design storm event. The Oregon Department of Environmental Quality (DEQ) design standard for wastewater pumping and the Oregon State Bacteria Standard requires that, by 2010, capacity with one pump out of service must convey the peak hour flow (PHF) for a defined storm event to prevent unauthorized overflows. All downstream treatment plants must be able to convey the pumped flows.

The impacts of the Newberg I/I elimination program will affect the capacity of the WWTP Repair, Renovation, and Expansion (RRE) projects. However, these impacts will not immediately reduce the first planned RRE project scope, but will delay, reduce, and/or postpone future project expansions. The first-phase RRE is needed to convey and treat the I/I flows until collection system improvements result in decreased I/I. Reductions in I/I are not expected until after the first-phase RRE is implemented.

Solids handling capacity is also a critical component of the WWTP. The City composts the solids and sells the compost to the public. The composting process was limited and out of capacity because the moisture content in the sawdust and solids feeding the composter was too high. Recent changes in the sawdust market have resulted in the availability of only high-moisture sawdust. New technology is available for drying the sawdust and removing more moisture from the WWTP solids. The City has purchased a dehydrator. The installation of the dehydrator was initiated in 2009.

1.2 PURPOSE AND NEED FOR THE PROJECT

The Newberg WWTP Facilities Plan Update provides the recommended modifications to the Newberg WWTP and collection system facilities. These improvements are required to achieve the following objectives:

- Increase the capacity and/or reliability of WWTP liquid stream, solids stream, and ancillary facilities
- Meet projected growth within the UGB and the URA
- Maintain compliance with its NPDES permit
- Prepare the WWTP to comply with potential future regulations

The Facilities Plan included an analysis of the capacity and useful life of the existing facilities, population and flow projections, and phasing requirements through buildout conditions.

1.2.1 NPDES Discharge Permit: Treatment and Discharge Requirements

DEQ issued an NPDES permit to the City on June 22, 2004, for its Level III collection system and Level IV treatment system that discharges to the Willamette River. The City currently directs all treated water to the Willamette River. A permit modification was obtained in July 2008 that added recycled water, excess thermal load (ETL) limits, and additional monitoring requirements to the permit—as well as acceptance of the revised Biosolids Management Plan—and this modification was made a part of Permit No. 100988.

The requirements of the 2004 permit are listed in Tables 1-1 through 1-3.

Table 1-1. Current Permit Requirements, May 1–October 31

Parameter	Limitation				
	Average concentration, milligrams per liter (mg/L)		Mass load ¹		
	Monthly	Weekly	Monthly average, pounds per day (ppd)	Weekly average, ppd	Daily maximum, pounds
5-day carbonaceous biochemical oxygen demand (CBOD ₅) ²	10	15	330	500	660
Total suspended solids (TSS)	10	15	330	500	660

¹ The daily mass load limit is suspended on any day on which the daily flow to the treatment facility exceeds 8 million gallons per day (mgd), which is twice the design average dry weather flow (ADWF).

² The CBOD₅ concentration limits are considered equivalent to the minimum design criteria for BOD₅ specified in Oregon Administrative Rules (OAR) 340-041. These limits and CBOD₅ mass limits may be adjusted (up or down) by permit action if more accurate information regarding CBOD₅/BOD₅ becomes available.

Table 1-2. Current Permit Requirements, November 1–April 30

Parameter	Limitation				
	Average concentration, mg/L		Mass load ¹		
	Monthly	Weekly	Monthly average, ppd	Weekly average, ppd	Daily maximum, pounds
CBOD ₅ ²	25	40	1,400	2,000	2,700
TSS	30	45	1,600	2,400	3,200

¹The daily mass load limit is suspended on any day on which the daily flow to the treatment facility exceeds 8 mgd, which is twice the design ADWF.

²The CBOD₅ concentration limits are considered equivalent to the minimum design criteria for BOD₅ specified in OAR 340-041. These limits and CBOD₅ mass limits may be adjusted (up or down) by permit action if more accurate information regarding CBOD₅/BOD₅ becomes available.

Table 1-3. Current Permit Requirements, Year-Round

Parameter	Permit requirement
<i>E. coli</i>	Shall not exceed 126 organisms per 100 milliliters (mL) monthly geometric mean. No single sample shall exceed 406 organisms per 100 mL. If a single sample exceeds 406 organisms per 100 mL, then five consecutive resamples may be taken at 4-hour intervals beginning within 28 hours after the original samples were taken. If the log mean of the five resamples is less than or equal to 126 organisms per 100 mL, a violation shall not be triggered.
pH	6 to 9
CBOD ₅ and TSS removal efficiency	Shall not be less than 85 percent monthly average for CBOD ₅ and 85 percent monthly for TSS.
Total residual chlorine	Shall not exceed a monthly average concentration of 0.02 mg/L and a daily maximum concentration of 0.05 mg/L. When the total residual chlorine limitation is lower than 0.10 mg/L, DEQ will use 0.10 mg/L as the compliance evaluation level (i.e., daily maximum concentrations below 0.10 mg/L will be considered in compliance with the limitation).

The permit modifications obtained in July 2008 are summarized in Table 1-4.

Table 1-4. Summary of Modifications to Permit No. 100988, Schedule A

Parameter	Limitation
Modification 1: Condition 1.a.(3) is modified to add the following effluent limits (year-round, except as noted)	
ETL (8 th): limits are calculated based on Bit Limit Options A, B or C ¹	<p>The ETL limit may be calculated on a daily basis when river flows are reported. The ETL may be calculated as follows:</p> $ETL = (((0.00006878 \times Q_R) + 0.8745) - 0.1) \times 2.94 \times 2.447 \times (24.9 - 20)$ <p>Where: Q_R = the rolling 7-day average ambient river flow (cfs) recorded at USGS Gauge 14197900 (Willamette River at Newberg)</p> <p>(C) ETL limits June 1–September 30: (when river flows and temperatures are reported)</p> <p><i>Salmon and Steelhead Migration Corridor</i></p> <p>The ETL limit may be calculated on a daily basis when both river flows and temperatures are reported. The ETL may be calculated as follows:</p> $ETL = (((0.00006878 \times Q_R) + 0.8745) - a) \times 2.94 \times 2.447 \times (24.9 - 20)$ <p>Where: Q_R = the rolling 7-day average ambient river flow (cfs) recorded at USGS Gauge 14197900 (Willamette River at Newberg)</p> <p>The value for a in the above equations is determined based on the relationship between the rolling 7-day average maximum natural thermal potential river temperature in degrees Celsius ($T_{RM,N}$), the rolling 7-day average natural thermal potential river temperature in °C ($T_{RA,N}$) and the applicable criteria in °C as follows:</p> $T_{RM,N} = (0.9982 \times \text{the daily maximum ambient river temperature in } ^\circ\text{C}) - 0.53$ $T_{RA,N} = (0.9402 \times \text{the daily average ambient river temperature in } ^\circ\text{C}) + 0.21$ <p>If $T_{RM,N}$ is less than or equal to 20°C, then $a = 0$</p> <p>If $T_{RM,N}$ is greater than 20°C and $T_{RA,N}$ is greater than or equal to 20°C, then $a = 0$</p> <p>If $T_{RM,N}$ is greater than 20°C and $T_{RA,N}$ is less than 20°C, then $a = 1 - (T_{RA,N} \text{ divided by } 20^\circ\text{C})$</p>
Modification 2: Condition 1.d. is added to read as follows:	
Recycled wastewater Outfall 101	<ol style="list-style-type: none"> (1) No discharge to state waters is permitted. All recycled water shall be distributed for an approved use in accordance with OAR 340-055-0012(1) and (2) (2) Prior to land application of the recycled water, it shall receive Class A treatment as defined in OAR 340-055 to: <ol style="list-style-type: none"> (a) Prior to disinfection, turbidity must not exceed an average of 2 nephelometric turbidity units (NTUs) within a 24-hour period, 5 NTUs more than 5% of the time within a 24-hour period, and 10 NTUs at any time. (b) After disinfection, total coliform must not exceed a median of 2.2 organisms per 100 mL based on results of the last 7 days that analyses have been completed, and 23 total coliform organisms per 100 mL in any single sample.

¹A) ETL limits June 1–September 30 (when no river information is reported): Must not exceed a rolling 7-day average of 40 million Kcals/day.
 B) ETL limits June 1–September 30 (when river flows are reported): Salmon and Steelhead Migration Corridor.

1.2.2 Projected Flows and Loads

The projected flows and loads to this facility are listed in Tables 1-5 and 1-6. The flow projections were developed by analyzing WWTP operating data from January 1996 to December 2004. The projected average annual flow for 2005 is 3.11 mgd. For comparison, the actual average annual flow for 2005 was 2.73 mgd. The projected PHF for 2005 is 20.81, but the plant has seen higher flows than that after rehabilitating the influent pumps. The projected 2005 maximum month wet weather flow (MMWWF) is 7.52 mgd. In December 2006, the maximum month flow was 8.1 mgd, and plant staff had to make significant process modifications to avoid violating the permit.

Table 1-5. Flow Projections, mgd

Year	2005	2010	2015	2020	2025	2030	2040
Population	21,132	24,497	28,712	33,683	38,352	43,600	54,097
ADWF	2.07	2.40	2.81	3.30	3.76	4.27	5.30
Maximum month dry weather flow	3.52	4.08	4.78	5.61	6.39	7.26	9.01
MMWWF	7.52	8.71	10.21	11.98	13.64	15.51	19.24
Peak hour flow (PHF) ¹	20.81	23.65	27.15	31.19	34.77	38.47	45.86

¹ PHF peaking factor (varies) decreases with time (0.2 mgd subtracted for every 5 years of population growth) because peaking factors usually decrease with increasing service area.

The City's SMPU (Brown and Caldwell, June 2007) initial results in April 2007 show that the peak flows that the collection system will currently convey to the WWTP are 17.6 mgd in 2007, 31 mgd in 2025, and 36 mgd in 2040, assuming undersized pipes are replaced. This compares well for 2007. However, the plant is projected to see peak flows of 35 mgd in 2025 using the Facilities Plan methodology rather than by 2040, using the Master Plan methodology. The Facilities Plan projections assume that I/I is not removed, while the SMPU assumes that the new pipes will not have high I/I. To help account for this difference, the recommended hydraulic improvements have been phased for incremental expansion. Should the I/I be removed by 2025, no additional hydraulic improvements are expected to be needed to serve 2040 peak flows.

The design loads for 2005 to 2040 based on the median growth rate are summarized in Table 1-6.

Table 1-6. Load Projections from 2005 to 2040 Based on Median Population Growth

Parameter	Year					
	2010	2015	2020	2025	2030	2040
CBOD ₅ , ppd						
Maximum month	5,836	6,840	8,025	9,137	9,508	12,888
Average month	3,318	3,888	4,562	5,194	5,405	7,326
TSS, ppd						
Maximum month	8,814	10,330	12,119	13,799	14,359	19,464
Average month	4,423	5,128	6,010	7,050	8,354	11,323

The projections for influent ammonia will be an average monthly ammonia concentration of 15.9 mg/L and a maximum monthly concentration of 25.4 mg/L.

1.2.3 Needed Improvements

Figure 1-3 shows the needed improvements to meet the regulatory requirements, guide the future direction of capital improvements projects, and define the land area needed for the City's wastewater treatment that will be phased through 2025.

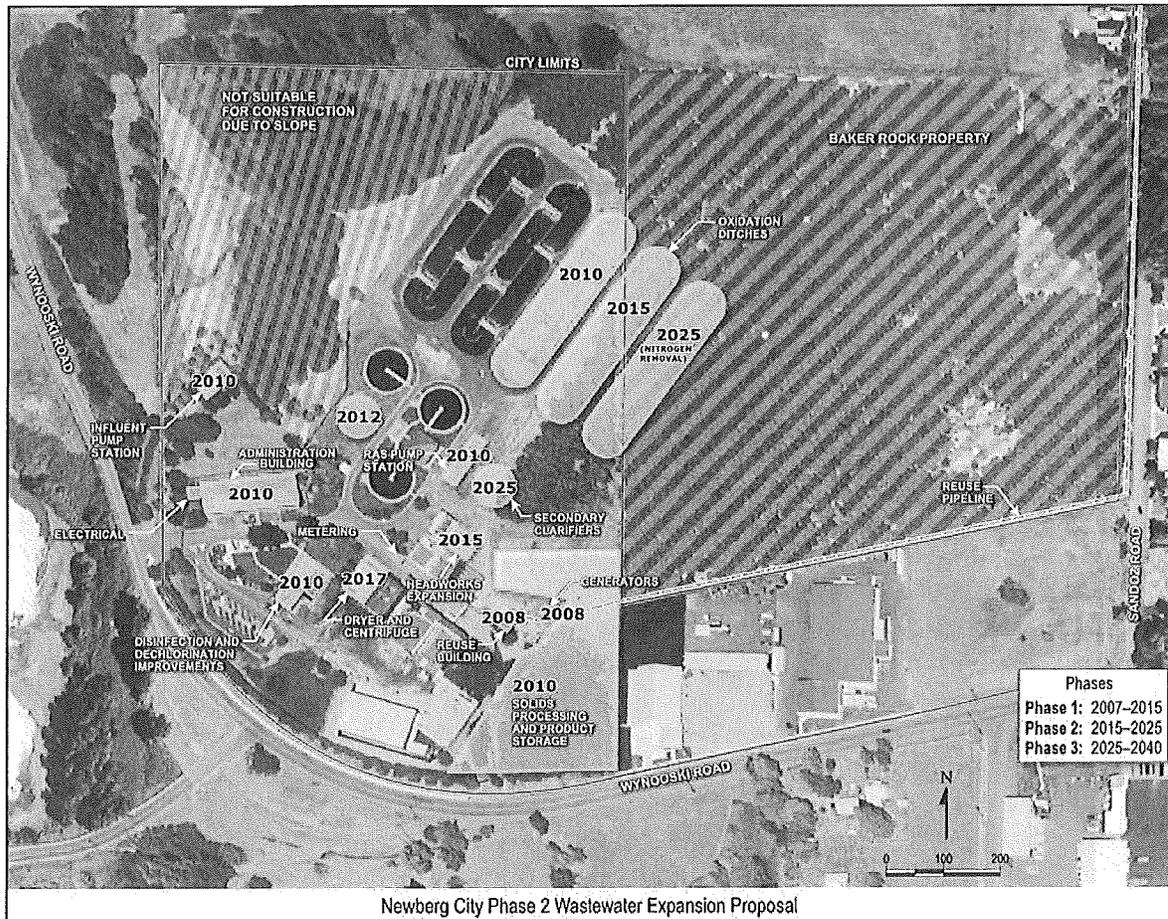


Figure 1-3. Recommended Improvements and Phasing through 2025

The unit processes that need repair, renovation, and/or expansion include the following:

- IPS
- Headworks, including screening and grit removal
- Secondary treatment, including oxidation ditches and secondary clarifiers
- Effluent disinfection and dechlorination
- Effluent conveyance and discharge to the Willamette River (outfall)

- Effluent reuse
- Solids processing and handling systems, including dewatering and composting
- Administration building
- WWTP support systems

2.0 ALTERNATIVES TO THE PROPOSED ACTIONS

The Facility Plan Update describes several potential improvement scenarios for the Newberg Wastewater Treatment Plant (WWTP) and collection system. This chapter summarizes each alternative and presents additional alternatives to the proposed actions.

2.1 NO ACTION ALTERNATIVE

The No Action alternative is not viable. The No Action alternative is presented to identify possible implications if the City of Newberg (City) elects not to, or is unable to, implement the recommended improvements to the WWTP. The implications of this option may include:

- Regulatory violations due to inability to meet National Pollutant Discharge Elimination System (NPDES) permit requirements
- Growth restrictions due to the inability to treat increased wastewater flows and loads

Ultimately, the No Action alternative would result in a significant net negative impact on the environment compared to the current approach.

2.2 PROPOSED ACTION

Several alternatives for the liquids, solids, and support systems at the Newberg WWTP were developed and evaluated during preparation of the Facilities Plan Update. The Facility Plan also examined growth for a 20-year planning horizon as well as buildout assumed at 2040. The buildout analysis provided insights into the buildout land area requirements assuming continued use of the oxidation ditch technology, which is a low-energy and efficient treatment system that meets permit requirements.

The alternatives analysis included using the screening criteria for each individual process to prioritize the alternatives to receive further investigation. Liquids treatment processes that met the regulatory requirements were included in the initial analysis. Only Class A biosolids treatment options were considered because the City has developed a market for Class A product, and the industry trend is moving toward Class A technology.

The evaluation process included two workshops conducted by Brown and Caldwell. The first workshop, held on May 23, 2006, consisted of identifying unit process deficiencies and brainstorming technologies to be included in the analysis of wastewater treatment and biosolids alternatives analyses. An initial viability evaluation and screening was used to eliminate alternatives from further consideration. The screening criteria include the following:

- Relative present-worth costs
- Energy conservation
- Regulatory compliance
- Flexibility
- Reliability
- Operation and Maintenance (O&M)
- Safety
- Viability at the Newberg WWTP

The alternatives evaluated for the major unit process and the recommendations are summarized below.

2.2.1 Influent Pump Station (IPS)

The IPS is an essential component of the WWTP. It pumps the wastewater approximately 100 feet between the lowest point in the collection system up to the headworks that provides screenings and grit removal. The pump station is currently undersized and cannot convey peak flows when one unit is out of service. Typical high influent flow events could cause permit violations. In addition, there are safety concerns with the existing pump station wet well. The wet well is inefficient and causes frequent problems from rags and debris clogging the pump impellers, which decreases the pumping capacity and requires frequent cleaning. The IPS upgrades and expansion are needed immediately.

In order for upgrade and expansion of the IPS to meet current needs and provide for future service, the alternatives being considered include the following:

- Building additional capacity at the north end of the plant
- Expanding the existing facilities
- Replacing the existing IPS with a new structure next to the existing structure
- Building additional capacity next to the existing IPS and upgrading the existing IPS

The final alternative in the above list is the recommended expansion alternative. The recommended improvements to the IPS, for safety and capacity reasons, include building additional capacity next to the existing IPS for base flows and upgrading the existing wet well for overflow capacity pumping. The range of flows expected at the IPS is best accommodated by a dual pump station; low and moderate flows would be pumped by a station with a self-cleaning wet well, while higher wet weather flows would be pumped by the overflow pump station with confined inlet pumps. The recommended IPS improvements include modifying the inlet pipe slope, wet well, and related structure for 2040 flow conditions. The pumps will be selected and installed for 2025 flow conditions. The pump station will be able to pump flows in excess of 2015 flows because of the pump sizing constraints that more ideally fit the 2025 phasing. The cost estimate includes variable-frequency drives for these pumps. The expansion to Phase 3 will only require modifications or replacement of pumps. The IPS electrical room (by others) is sized for future space requirements.

The proposed pump station layout is shown in Figure 2-1.

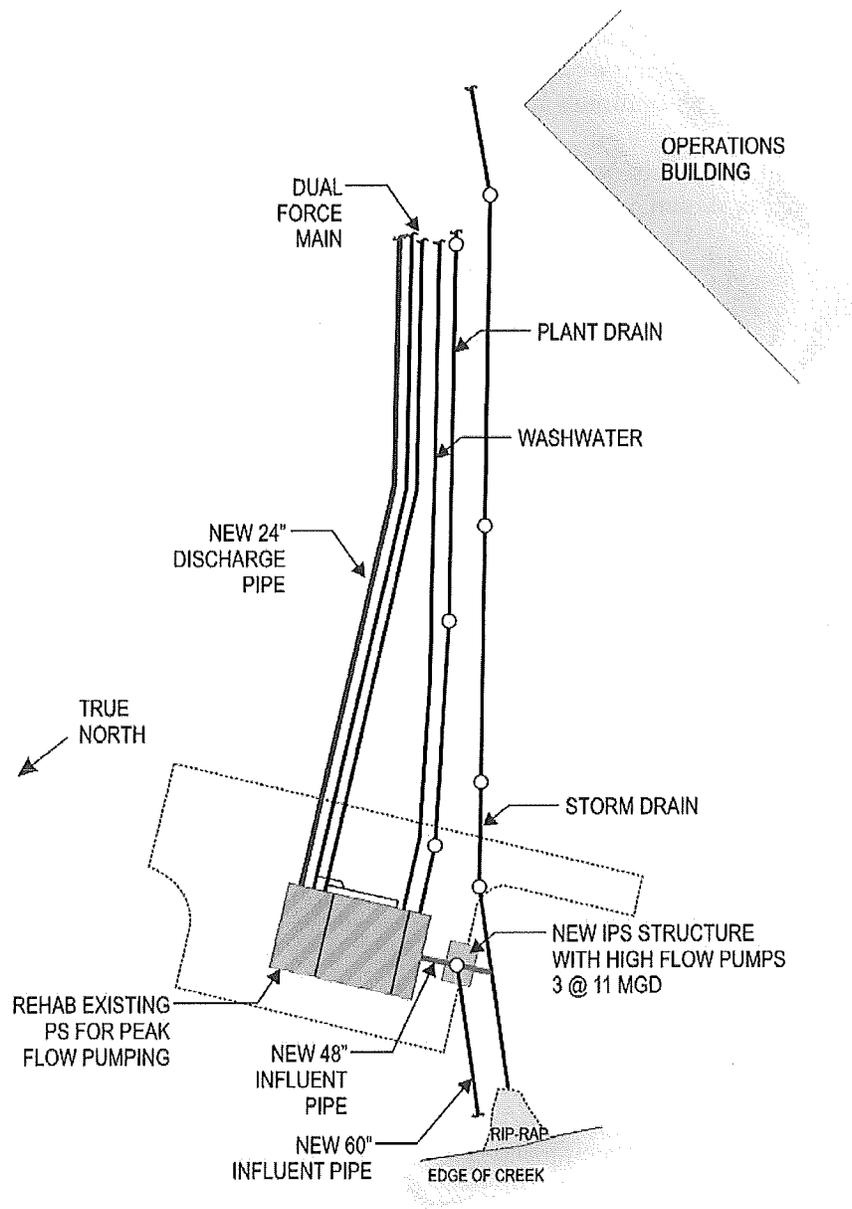


Figure 2-1. IPS Yard Piping Plan

It is also recommended that a section of the influent pipe be elevated sufficiently to remove the slope to the IPS that causes poor influent characteristics and high velocities at peak flows in the IPS. The influent pipe will be a new 60-inch-diameter pipe at a slope of 0.0007 foot per foot to limit inflow velocities to less than 4 feet per second. This size pipe is satisfactory for both current and 2040 flow rates so that replacement in the future will not be necessary. When the influent pipe is re-laid, the slope into the wet well will be improved, and the new self-cleaning wet well will be located adjacent to the existing IPS but at a higher elevation.

During the facilities planning process, the motor control center building location for the IPS was discussed as part of the reuse design process. It was determined that a location to the west of the administration building would be optimum and this has been implemented.

The phased improvements, based on peak hour flow (PHF) requirements, will provide the incremental IPS capacity, as shown in Figure 2-2.

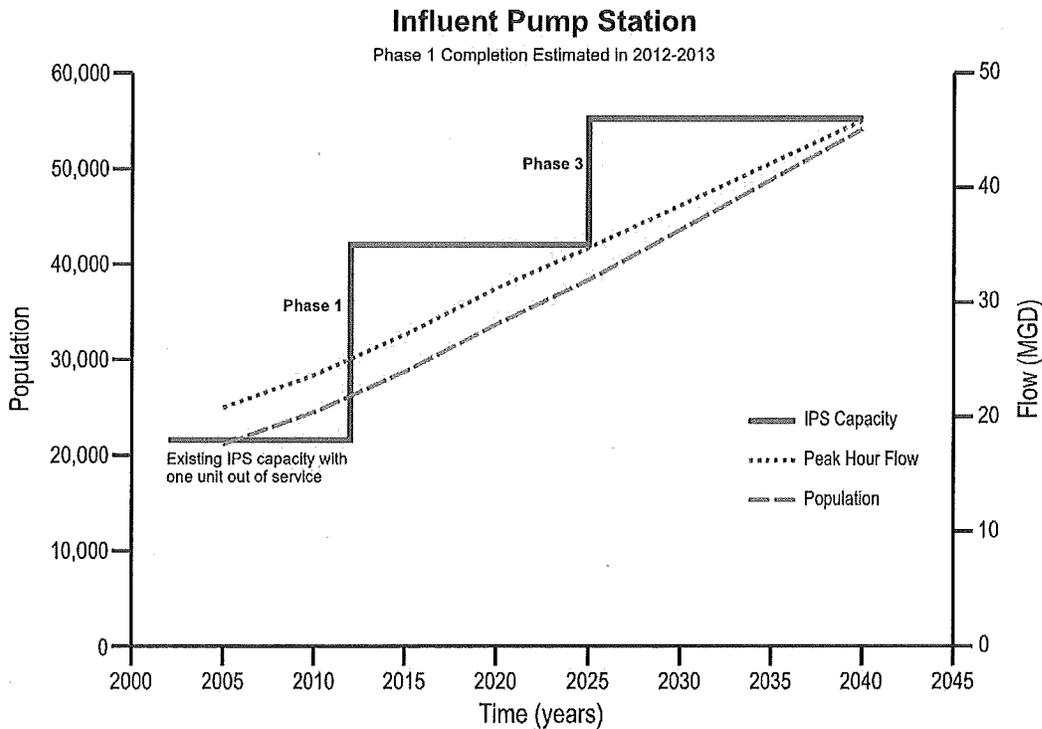


Figure 2-2. Incremental IPS Capacity

2.2.2 Headworks

The headworks processes include screening and aerated grit. The screens remove particles greater than 10 millimeters in diameter. The grit is removed with an aerated grit chamber. Although the screens were recently replaced with new, more reliable screens, the existing channel configuration does not allow conveyance and treatment of the total influent flow when one unit is out of service without bypassing the process.

It is assumed that expansion will include the same type of screens as existing for ease of O&M and because they were determined to be cost-effective in 2002 during the *Newberg Dump Station and Headworks Study* conducted by Brown and Caldwell. The most cost-effective screen was chosen at that time. Plant staff have expressed favorable opinions about these screens.

The screens will be installed in channels on the east side of the existing headworks, as shown in Figure 2-3. Emergency power should be added to ensure that critical headworks functions can continue in the event of a power outage. Odor control should be provided also as part of a good-neighbor policy and to maintain compliance with Oregon Administrative Rules 208, which prohibits nuisance conditions such as odors.

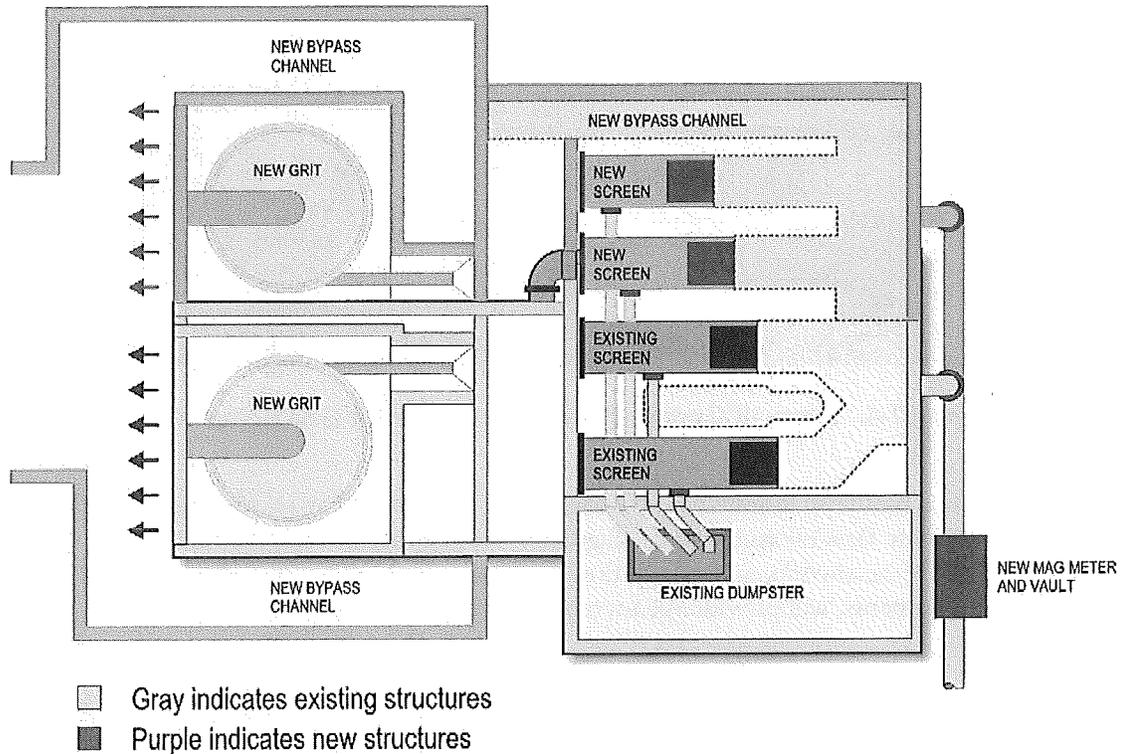


Figure 2-3. Headworks Improvements

The grit removal process is currently undersized, and the recommendation is to provide full grit removal for all flows. Therefore, additional grit removal capacity is needed immediately. The initial screening analysis for grit improvements includes the following five alternatives:

- Stacked tray separator
- Vortex grit settling with agitation
- Air vortex grit separator
- Free vortex separator
- Expand existing system

The plate gravity settling system that removes grit using a series of stacked plates is the recommended grit removal system to provide the capacity. The stacked-plate-type grit removal system is shown in Figure 2-4.

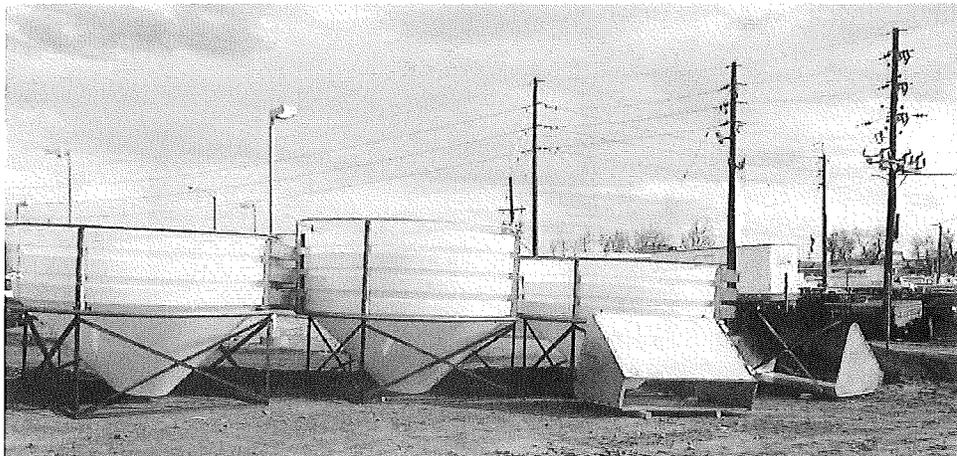


Figure 2-4. Photo of Gravity-Plate-Type Settler for Grit Removal

New flow distribution and flow monitoring will need to be provided. The existing magmeters are not installed for accurate flow measurement. Magmeters will be installed approximately 10 to 20 feet upstream of the headworks to measure flow more accurately. The phased improvements, based on PHF requirements, will provide the incremental headworks capacity, as shown in Figure 2-5.

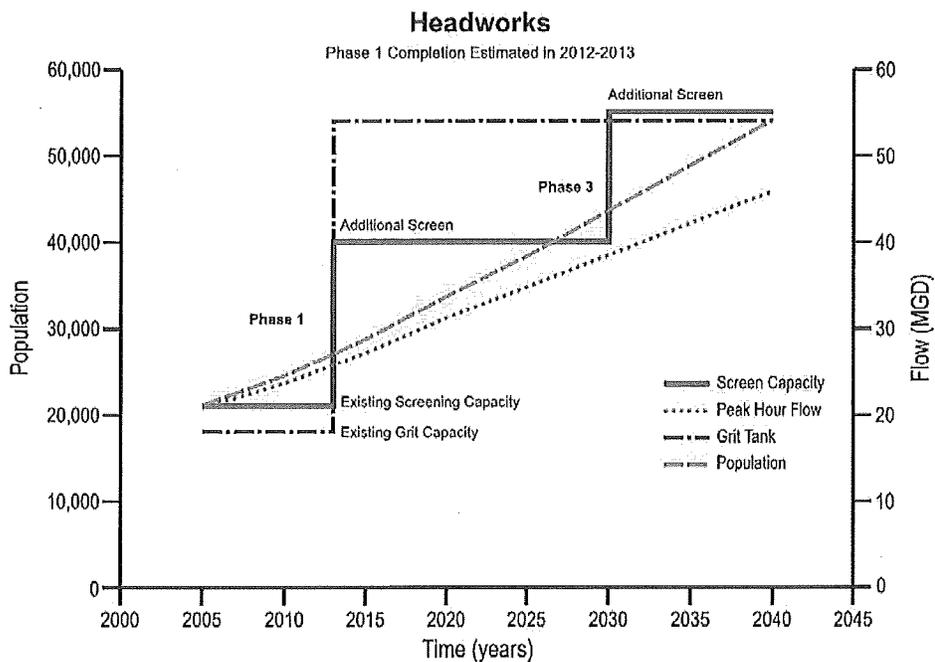


Figure 2-5. Headworks Phased Capacity

2.2.3 Secondary Treatment

The Newberg WWTP currently uses two oxidation ditches for secondary biological treatment to meet regulatory permit requirements. The secondary system is currently undersized for maximum month flow conditions. The analysis for the oxidation ditches and secondary clarifiers was conducted with a static model of both systems, as their operations are interrelated in performance capacity.

2.2.3.1 Oxidation Ditches

The recommended expansion includes continuing to use the oxidation ditch process because of its low energy and maintenance costs and its ability to treat a wide variation in flows and loads. By 2010, a third oxidation ditch is needed to provide adequate treatment to meet effluent quality requirements. A fourth oxidation ditch will be needed by 2015. The City has purchased the adjacent Baker Rock Property for expansion of the secondary system. However, in the event that this land area expansion does not take place, additional processes were considered. The initial screenings evaluation for oxidation ditches included the following alternatives:

- Conventional oxidation ditch
- Vertical loop reactor oxidation ditch
- Cannibal
- Membrane bioreactor (MBR)

Based on the results of this analysis, a present-worth cost comparison, and consensus reached at the second liquids solids workshop, expansion with the current oxidation ditch and secondary clarifier processes is the preferred alternative. Should site constraints or significantly more stringent effluent quality requirements become an issue, membrane treatment could be added either in conjunction with the oxidation ditches or by replacing the oxidation ditches and secondary clarifiers with MBRs which would significantly reduce the footprint requirements. The phased capacity expansions for the oxidation ditch process, based on maximum month flow and nitrogen reduction requirements, are shown in Figure 2-6.

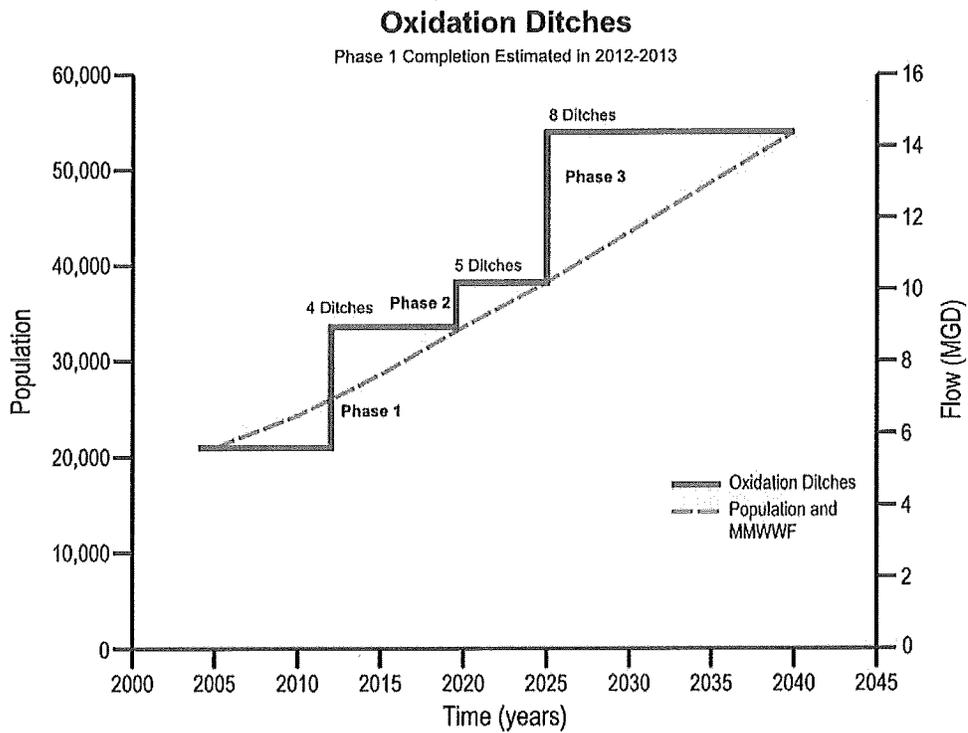


Figure 2-6. Phased Oxidation Ditch Capacity with Nitrogen Reduction Requirements

2.2.3.2 Secondary Clarification

Secondary clarifiers separate the biological organisms from the biologically treated wastewater prior to disinfection. The capacity of the secondary clarifiers is related to both hydraulic flow and the mass of biological solids from the oxidation ditches. The secondary system model of both the oxidation ditches and secondary clarifier operation predicted that the secondary clarifier process will need to be expanded with increased population and to match the additional oxidation ditch capacity. By 2012, a fourth secondary clarifier will be needed to meet effluent quality requirements. The phased capacity of the secondary clarifier system, based on maximum month flow requirements, is shown in Figure 2-7.

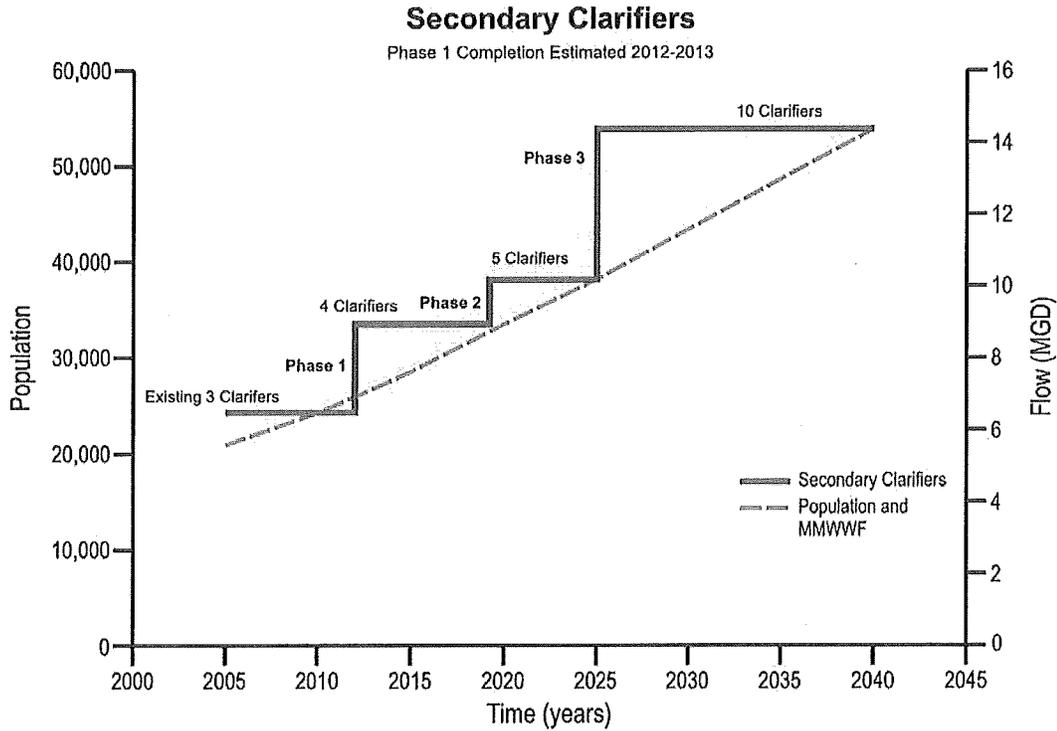


Figure 2-7. Phased Secondary Clarification Capacity with Nitrogen Reduction Requirements

2.2.4 Disinfection Process

Clarified effluent must be disinfected prior to discharge or reuse. Currently, the disinfection process consists of a chlorination system that uses 1-ton cylinders of chlorine gas. Immediate changes are needed to improve the reliability of the effluent quality to continue to meet disinfection permit requirements. These changes include chemical induction mixer(s) at the chlorine injection point, scum removal, improved effluent flow monitoring, and an automatic disinfection control strategy. Roof drainage needs to be re-routed out of the contact basin. The initial screening for expansion of the disinfection process includes the following alternatives:

- High-rate disinfection
- Additional contact basin
- Additive of onsite generation of sodium hypochlorite
- Ultraviolet (UV) disinfection

The City will continue with gas chlorine for the first 5-year permit cycle as well as the existing contact basins. The City is considering phasing in hypochlorite when the Newberg Water Treatment Plant (WTP) is constructed in closer proximity to the WWTP. High-rate disinfection can be used to increase the effectiveness of the disinfection to accommodate the limited contact time in the existing contact chamber. The City is also investigating the applicability of phasing in UV treatment at a

later date. UV disinfection may not be feasible at the WWTP because the effluent contains iron, which can inhibit UV effectiveness. Collimated beam testing would be required to determine the feasibility.

Disinfected wastewater is currently dechlorinated at the outlet of the chlorine contact basins. The dechlorination system requires complete replacement to be more effective, but currently capacity is limited by the configuration of the equipment. A new 1,050-gallon high-density polyethylene storage tank, two new feed mechanical diaphragm pumps, and a new control system are recommended for immediate implementation. The phased disinfection capacity, based on PHF requirements, is shown in Figure 2-8.

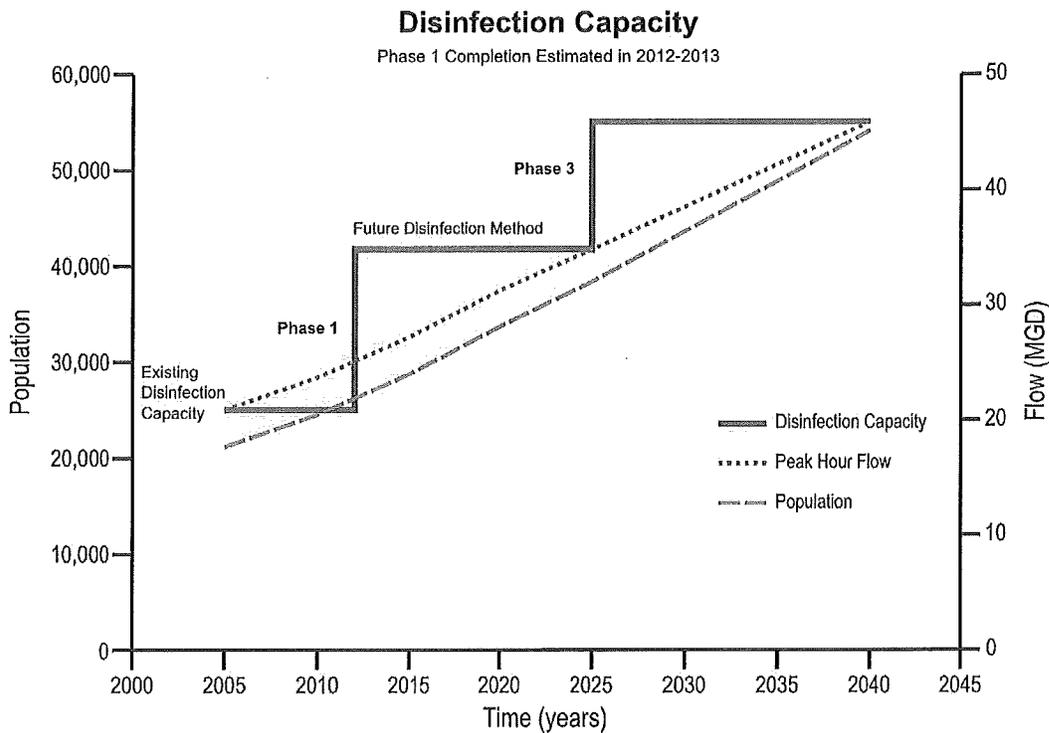


Figure 2-8. Disinfection Capacity

2.2.5 Outfall

The outfall is primarily a conveyance unit process and the capacity is needed to convey peak flows to the river discharge point. Due to hydraulic conditions caused by air entrainment at high flows that are called a hydraulic cannon, the outfall has experienced structural damage to the uphill manhole. In order to alleviate the hydraulic cannon effects, a parallel outfall down the slope is recommended to be implemented immediately for safety reasons. This outfall will prevent air entrapment and will alleviate the hydraulic effects. The phased outfall capacity increase, based on PHF requirements, is shown in Figure 2-9.

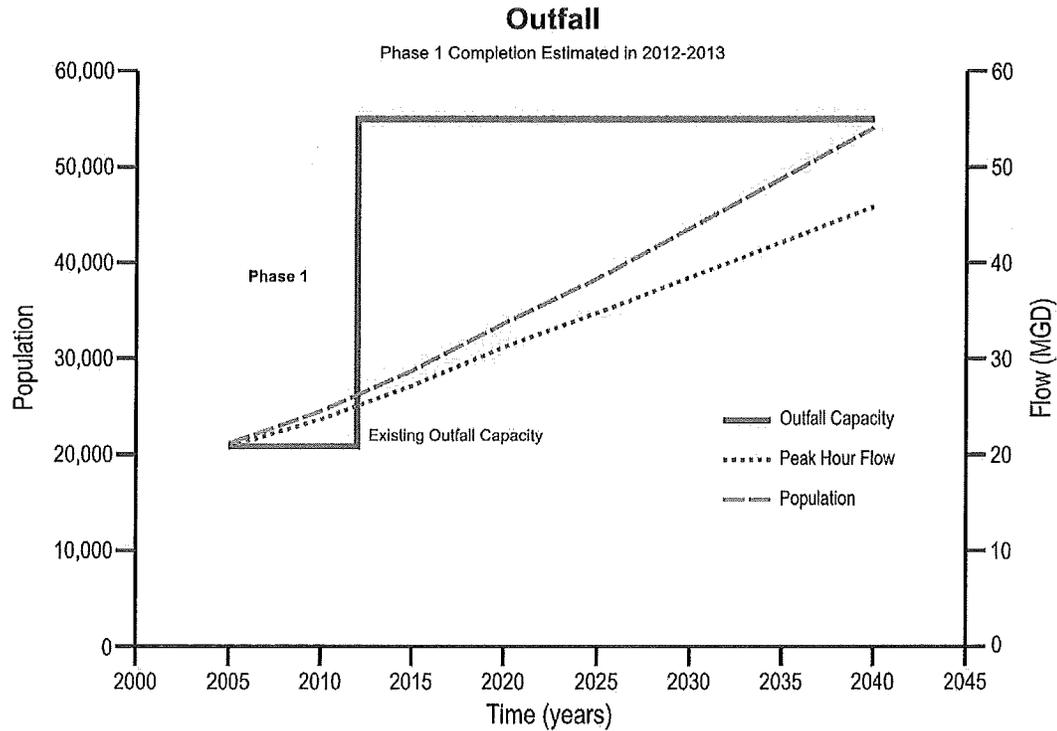


Figure 2-9. Phased Outfall Capacity

2.2.6 Effluent

Effluent from the WWTP will be handled in two ways—by irrigating at local golf courses and discharging into the Willamette River. Requirements related to proper treatment and temperature of this effluent for these purposes need to be addressed.

2.2.6.1 Irrigation

The City irrigates treated effluent at a local golf course. Tertiary treatment using membranes has been implemented by the City. Additional membrane capacity has been planned for the next expansion for reuse at additional areas at the local golf courses (by others). The City provides variable reuse water from April through October, with the lowest demand expected in April. The current peak delivery capacity for the hottest summer months is 1 million gallons per day (mgd) with expansion capability to 2 mgd by adding additional membranes.

2.2.6.2 Temperature Compliance for River Discharge

The Oregon Department of Environmental Quality implemented the Willamette total maximum daily load (TMDL) waste load allocations (WLAs) in the City’s NPDES permit by permit modification. The permit modification is included in Appendix A. The City has the opportunity to track river and effluent temperature and flow on a 7-day running average to comply. Even under the worst case scenario, the City will be able to discharge 3.5 mgd at 23 degrees Celsius (C), which was the highest 7-day average daily maximum temperature recorded in 2008. (In 2007, the highest single

day maximum temperature was 23 degrees C.) In most cases, the City will be able to discharge 4.0 mgd at 23 degrees C or 3.0 mgd and 24 degrees C. The City has implemented a reuse program to irrigate local golf courses that decreases its effluent discharge by 1 mgd during the irrigation season. As the City grows, the City will meet the WLAs with increased irrigation reuse.

A temperature management plan may be required in the future to show how the City will maintain compliance with the temperature TMDL. The City currently meets the TMDL requirements, so a plan is not included with the temperature allocations in the permit modification. Options to maintain compliance include but are not limited to the following:

- Increasing reuse and storage for peak flows
- Storing effluent using a combination of night-time discharge when the ambient air and effluent is cooler
- Cooling the effluent prior to discharge through subsurface discharge to the hyporheic zone
- Implementing best management practices (BMPs) at the WWTP to minimize heating across the treatment processes
- Treating effluent using other methods such as wetlands
- Temperature trading

The City plans to add additional reuse to address the temperature WLA in the future. Depending on the final temperature management plan, some storage may need to be provided. The golf course that uses the treated water for irrigation has 3 million gallons of storage capacity.

2.2.7 Solids Handling and Treatment

The compost process has reached capacity because the compost feed mix has a high moisture content. Compost capacity is based on peak week solids production, solids, and feed sawdust moisture content. Recent market demand for sawdust has resulted in smaller buyers (including the City) receiving wetter sawdust product. This has resulted in an immediate need to provide static compost piles in addition to the mechanized composting operation. Decreasing the moisture in the sawdust with a sawdust dehydrator would result in a capacity increase and is recommended for immediate implementation. Capital costs are substantially lower than that of mechanical dewatering, and dehydrator operation can provide the maximum immediate benefit in terms of compost system capacity. City is currently implementing the dehydrator project in 2009 to provide drier compost feedstock.

Before the dehydrator option was identified, centrifuge dewatering was considered a fundamental dewatering system that would benefit existing and future process technologies prior to the dehydrator idea. Centrifuge dewatering, the only mechanical technology that achieves the highest solids content, would improve performance of the existing compost system and increase effective capacity by approximately 30 percent by increasing dewatered solids concentration. The higher solids content that results from centrifuge dewatering requires less bulking agent and reduces materials handling requirements.

The implementation of the dehydrator will provide sufficient capacity that centrifuge dewatering is no longer the only viable alternative to consider. Operating experience will determine how much capacity will be realized and what other options should be considered if more capacity can be obtained from the existing composter.

For the Newberg WWTP, the most viable options for accommodating future growth with Class A product include the following:

- Composting
- Thermal drying

For Class A process technologies, composting and thermal drying are nearly equal in cost, while offsite energy recovery is much less. Initial evaluations favor offsite energy recovery. Plant staff have indicated that a backup strategy of using a simplified composting technology (aerated static pile) is desired.

2.2.8 Administration Building

As part of the facilities planning process, an evaluation of the administration building at the WWTP was conducted. The purpose of the administration building evaluation was to develop a concept for a functional, secure, and energy-efficient facility that will improve operations. In operation since it was built in 1987, the administration building has undergone a number of significant changes in its programmatic functions over the past 20 years. Few design changes or upgrades have occurred over this period, leading to a building that is highly inefficient in the use of its available space.

The planning considered the needs for 2025 and the potential to house the City's WTP administrative personnel and certain WTP functions (shop, laboratory, etc.). The administration building improvements are recommended to be implemented immediately. When complete, the remodeled building will be a much-improved facility with increased flexibility for growth, greater efficiency, and expanded functionality; and it will be a more productive environment for the WWTP staff—and potentially also the WTP staff—to carry out its mission to the community.

2.2.9 Wastewater Treatment Support Systems

Emergency generator needs were established as part of the administration building predesign report. The emergency generator project was completed by others as part of the reuse improvements.

Based on several meetings and a site walk-through on September 29, 2006, miscellaneous improvements were recommended to the following buildings:

- Chlorine building, chlorine scrubber, and duct
- Secondary return activated sludge/waste activated sludge pump building
- Solids building
- Compost building
- Compost building doors

Stormwater generated on site is conveyed by gravity to the IPS along with recycle streams. In-plant stormwater handling alternatives were studied and documented in a previous report titled *Final Report for the Recommended Plan City of Newberg Dump Station/Headwork Studies (Final Dump Station/Headworks Studies report)* (Brown and Caldwell, June, 2002). The pump station will be located in the vicinity of Stormwater Manhole No. 1 and will be connected to the stormwater and recycle water systems through new gravity sewers.

The current reclaimed water system filters for in-plant use are inadequate and the screening size is too large to be effective. A looped plant water system is recommended that includes adding a source of plant water at the headworks and providing more hose bibs for cleaning at the aeration basins.

New septage receiving facilities are recommended. Septage receiving was studied in the *Final Dump Station/Headworks Studies* report. The recommended improvements include modifications to the road southeast of the headworks (including a trench drain and catch basin), a Lakeside 31SAP-type septage receiving station, a buried septage receiving tank, duplex pumps in the septage receiving tank, piping to transfer the septage to the screening channel of the headworks, and a new access road around the north side of the headworks.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section of the Environmental Report describes the area under consideration, documents the environmental resources of the area that may be affected, discusses the environmental consequences of each proposal element, and establishes any mitigation measures to avoid or mitigate any adverse impacts.

On behalf of the City of Newberg (City), Brown and Caldwell and its subconsultants, Pacific Habitat Services and Heritage Research Associates, have reviewed the local resources to determine consequences of the Wastewater Treatment Plant's (WWTP) Repair, Renovation, and Expansion Program (RRE Program). The purpose of the RRE Program is to meet projected growth within the Urban Growth Boundary (UGB) and the Urban Reserve Area to maintain compliance with its National Pollutant Discharge Elimination System (NPDES) permit and potential future regulations.

The City owns and operates its WWTP located at 2301 Wynooski Road in Newberg. A site diagram with layout of the proposed reasonable alternatives is shown in Figure 1-3. Hess Creek runs along the western edge of the property. The Baker Rock Property is to the east side of the WWTP and has been purchased by the City. To the north is private property, outside of city limits, and to the south is Wynooski Road. South of Wynooski Road is private property. The WWTP discharges treated effluent to the Willamette River.

The environmental analysis is based on the reasonable alternative from Section 2.0 as summarized in Table 3-1.

Table 3-1. Reasonable Alternatives

Process	Reasonable Alternative
Influent Pump Station (IPS)	Reconfigure IPS to a dual-stage pump station, reconfigure discharge pipe slope, rebuild existing wet well and install new variable-frequency drive pumps, and construct and outfit a new self-cleaning wet weather wet well
Headworks	Construct and install new Magmeters in the influent pipes; add additional headworks channels, screens and compactors; and add new grit removal equipment
Secondary Treatment—Oxidation Ditches	Construct three additional oxidation ditches
Secondary Treatment—Secondary Clarifiers	Construct two additional secondary clarifiers
Disinfection	Improve and expand efficiency in disinfection facility
Flow Monitoring	Improve effluent flow monitoring
Outfall	Revise outfall piping
Reuse Facilities	Expand reuse filtration from 1 million gallons per day (mgd) to 2 mgd
Biosolids	Add feedstock dehydration unit; replace sludge belt presses with new sludge dewatering systems

There are very few environmental resource concerns for the RRE Program, primarily due to the project location. The following are some key points related to the project:

- The project and expansion area are located on existing or zoned industrial land.
- All construction is expected to be outside the 100-year floodplain, on uplands, and is not expected to affect wetlands or waterbodies.
- Surface and subsurface archaeological investigations found no prehistoric or demonstrably historical artifacts, features, or sites within the project area.
- Review by U.S. Environmental Protection Agency (USEPA) and consultation with National Oceanic and Atmospheric Association (NOAA) Fisheries found the project is “not likely to adversely affect” threatened and endangered species or essential fish habitat.
- The project is expected to have a positive impact on Willamette River water quality.
- The project is located outside the coastal zone management area, is not associated with any designated wild and scenic rivers, and is not expected to have any negative socioeconomic impacts.

As part of the Oregon Clean Water State Revolving Fund requirements, the City has followed the Applicant Guide to the State Environmental Review Process and consulted with multiple federal, state and local agencies. The steps the City has completed and results of the consultations are summarized in Table 3-2.

Table 3-2. Regulatory Compliance Tracking Sheet

Regulation	Status
Historic/Cultural Resources	
No Section 106 consultation needed if within existing footprint	Some projects expand beyond the existing footprint. See below for consultation completed.
Review National Register of Historic Places (NRHP) for listed sites in project area	Done. None found. See Section 6.1.
State Historic Preservation Office (SHPO) consultation	Done. Received approval from Dennis Griffin, State Archaeologist. See Section 6.1.
Determine tribal nations of interest	Done. The three tribes below were contacted based on phone consultation with Karen Quigley, Executive Director of the Oregon Legislative Commission on Indian Services.
Section 206 consultation from each tribe	
Confederated Tribes of Grande Ronde - Eirik Thorsgard	Done. Received approval to proceed as shown in Section 6.1.
Confederated Tribes of Siletz - Robert Kentta	Done. Received approval to proceed as shown in Section 6.1.
Confederated Tribes of Warm Springs - Sally Bird	Done. Received approval to proceed as shown in Section 6.1.
Include Archaeological and Historic Preservation Act construction provision	The City will include provisions in construction documents.

Regulation	Status
Protection of Wetlands	
If within the existing footprint, no consultation is needed	Some projects expand beyond existing footprint. See below for consultation completed.
Wetland Determination Request form to the Oregon Department of State Lands (ODSL)	Done. Permit not required. See Section 6.2.
Additional investigation, if required	Not applicable (N/A)
Flood Plain Management	
If within the existing footprint, no consultation is needed	Some projects expand beyond existing footprint. See below for consultation completed.
Verify permit need with City/county	Done. See Section 6.3.
Review Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps	Done. See Section 6.4.
Within 100-year floodplain - yes/no?	Projects not within 100-year floodplain as shown in Section 6.4.
Early public notice of project	N/A
Floodplain assessment	N/A
Explain alternatives/mitigation/modifications	N/A
Preliminary finding submittal to Oregon Department of Environmental Quality (DEQ)	N/A
DEQ recommendations via FEMA	N/A
Within 500-year floodplain - yes/no?	Projects not within 500-year floodplain as shown in Section 6.4.
If yes, confirm other requirements	N/A
Farmland Protection Policy Act	
Document location if within footprint or city limits	The existing Newberg WWTP property is within city limits. The Baker Rock Property, which will be used for expansion, is currently unincorporated city. See Figure 1-3.
Apply for Oregon Revised Statutes ORS215 exclusion if within the urban growth boundary and in the exclusive farm use zone	N/A. See Section 6.3.
Other: Complete AD-1006 with the Natural Resources Conservation Service (NRCS)	Done. See Section 6.3.
Confirm location with county	Done. See Section 6.3.
Coastal Zone Management Act	
Is project in Coastal Zone Management Area - yes/no?	No, N/A. See Section 6.5.
Wild and Scenic Rivers	
Within wild and scenic river basin - yes/no?	No, N/A. See Section 6.6.
Endangered Species and Habitat	
Oregon Natural Heritage Information Center plant list review	Done. Completed by Pacific Habitat Services. See Section 6.7.
U.S. Fish and Wildlife Service list review	Done. Completed by Pacific Habitat Services. See Section 6.7.
NOAA list review	Done. Completed by Pacific Habitat Services. See Section 6.7.

Regulation	Status
USEPA Determination	Done. USEPA determined the project is "not likely to adversely affect" threatened and endangered species or their habitat. See Section 6.8.
If "No Effect" no further consultation needed	N/A.
If "Not likely to adversely affect": informal consultation	Done. Informal consultation complete. See Section 6.8.
Biological evaluation	Done. See Section 6.8.
USEPA Region X concurrence	Done. See Section 6.8..
If "May adversely affect": Formal consultation (135 days)	N/A.
Essential Fish Habitat (EFH)	
Within EFH per NOAA/National Marine Fisheries Service (NMFS)?	Construction is not within an EFH, but the discharge from the WWTP is. Consultation completed. See Section 6.8.
If yes, EFH consultation with NOAA/NMFS	Done. See Section 6.8.
Clean Air Act	
DEQ air quality staff consultation	Done. Received approval from Claudia Davis, DEQ-Western Region Air Quality. See Section 6.9.
Notice of Intent to Construct if emissions	N/A
Safe Drinking Water Act	
Discharge to groundwater - yes/no?	No discharge to groundwater. The purpose of this project is to improve treatment processes at the Newberg WWTP as discussed in the Facilities Plan. See Section 2.0.
In vicinity of sole source aquifer - yes/no?	No, N/A. See Section 6.10.

As the RRE projects are implemented, the City and its consultant will continue to consider the site's resources. During construction, the project will employ BMPs to prevent erosion and control sediment, and the City or its consultant will contact the appropriate state and federal agencies and apply for additional permits as needed. For example, if the IPS influent pipe requires work below Hess Creek's ordinary high water line, ODSL and the U.S. Army Corps of Engineers (USACE) will be contacted to determine permit requirements. Work would be conducted during the in-water work windows and mitigation would be completed as necessary.

The following sections go into more detail.

3.1 LAND USE/IMPORTANT FARMLAND/FORMALLY CLASSIFIED LANDS

Brown and Caldwell reviewed the City's Comprehensive Plan and communicated with a Yamhill County Planner and the U.S. Department of Agriculture (USDA) – NRCS to determine potential impacts as discussed below. **No adverse impacts** to surrounding lands are anticipated as a result of this project. No mitigation is expected to be necessary.

3.1.1 Affected Environment

Land use surrounding the WWTP and the proposed expansion area includes Hess Creek, active farmland, heavy and light industrial, and rural residential housing. No formally classified lands (e.g., national parks, Wild and Scenic Rivers, etc.) are located within the vicinity of the expansion area and therefore will not be affected by any portion of the project. The Baker Rock Property has been purchased for the expansion. It is currently inside the UGB and is zoned both heavy and light industrial. As such, the WWTP expansion is compatible with current land use zoning.

The Baker Rock Property is currently in production for filberts, but Stephanie Armstrong, Yamhill County Planning Department, has confirmed the site is zoned industrial and is not zoned for exclusive farm use.

If federal money is received for the project, the City will complete the Farm Impact Rating Form.

E-mails with Stephanie Armstrong and Ron Raney, USDA-NRCS, are included in Section 6.3.

3.1.2 Environmental Consequences

The upgrades are consistent with current land use designations. Improvements to the WWTP are at the existing site or into an expansion area that is currently zoned industrial. Therefore there are no environmental consequences to existing land use.

3.1.3 Mitigation

Mitigation is not necessary since there are not conflicts with existing land use designations.

3.2 FLOODPLAINS

Brown and Caldwell reviewed the site's FEMA Flood Insurance Rate Map (FIRM), City maps, and contacted the County Planner regarding impacts to Hess Creek and the Willamette River. **No adverse impacts** to surrounding floodplains are anticipated as a result of this project.

3.2.1 Affected Environment

All projects are expected to stay outside the 100-year floodplain. Please see Section 6.4 for an overlay of the RRE Program project site and the 100-year floodplain taken from the FEMA FIRM for Yamhill County, Oregon, Unincorporated Areas, Community Panel Number 410249 0187 C (September 30, 1983).

The RRE Program will increase the overall impervious area of the site. The increased runoff will be mitigated through stormwater best management practices (BMPs). The project will comply with the City's stormwater design and permitting standards.

The two projects that have the highest potential to impact the floodplain are the IPS influent pipe and the WWTP outfall, as discussed below. If a design impacts environmental resources, the design/construction team will apply for the appropriate county, state, and federal permits.

IPS Influent Pipe. The existing IPS influent pipe crosses under Hess Creek, and conceptual project design has shown that there are at least two alternatives which prevent construction within Hess Creek's 100-year floodplain. The first alternative abandons the existing pipe and constructs a new pipe that skirts the edge of the 100-year floodplain. The second alternative completes the work outside the 100-year floodplain near the pump station. Both of these alternatives are shown in Section 6.11.

WWTP Outfall. Treated effluent discharges to an outfall in the Willamette River. The manhole uphill from the outfall has experienced structural damage due to a hydraulic cannon caused by air entrainment at high flows. Conceptual design has resulted in a solution which prevents impacting the area below the ordinary high water line. The manhole lid can be tied down and an air jumper pipe installed, as shown in Section 6.12.

3.2.2 Environmental Consequences

The RRE Program is not expected to have environmental consequences. The RRE Program will increase impervious area but all stormwater will be routed through the WWTP. In addition, the IPS influent pipe and WWTP outfall are not expected to have construction in the Hess Creek and Willamette River floodplains, but if they do, the appropriate permits will be acquired and mitigation completed as necessary.

3.2.3 Mitigation

Conservation measures include the following:

- Developing and implementing pollution and erosion control measures during construction to contain and limit the potential spill of pollutants and discharge of fine sediment to adjacent streams and wetlands.
- Treating all stormwater resulting from the proposed action to limit further degradation of water quality and changes to discharged water quantity.

Construction is not planned for within the Hess Creek and Willamette River floodplains, but if it becomes the only reasonable alternative, the City will apply for permits and complete mitigation as necessary.

3.3 WETLANDS

Brown and Caldwell and its subconsultant, Pacific Habitat Services, contacted the ODSL, reviewed the National Wetland Inventory (NWI), and reviewed aerial photographs of the area. Research results indicate that defined wetlands do not exist within the existing WWTP or the proposed expansion area. Low quality wetlands may be present along the banks of Hess Creek. **No adverse impacts** to surrounding wetlands are anticipated as a result of this project.

3.3.1 Affected Environment

Hess Creek runs along the western edge of the WWTP and treated effluent discharges via an outfall to the Willamette River. There are no wetlands within the footprint of the WWTP expansion based on results from ODSL and the NWI.

ODSL reviewed the project location based on a wetland determination request form submitted by Brown and Caldwell. ODSL determined, "A state permit will not be required for project because based on the City's ODSL submittal for WWTP Proposed Expansion (2009) plan, it appears that the project avoids impacts to wetlands and waters." The ODSL submittal and ODSL approval letter are included as Section 6.2.

In addition, NWI does not map wetlands within the existing WWTP or the proposed expansion area. NWI does designate Hess Creek as palustrine, scrub-shrub, emergent, broad-leaved deciduous, saturated/semi-permanent/seasonal (PSS/EM1Y), but work is not anticipated within Hess Creek. (See Section 6.7.)

Pacific Habitat Services reviewed aerial photographs and determined that lower quality wetlands dominated by reed canarygrass are likely present along the banks of Hess Creek within the expansion area. If wetland impacts are unavoidable, the project will be reviewed by the USACE and ODSL to ensure the City and its contractor comply with all state and federal regulations.

3.3.2 Environmental Consequences

No environmental consequences are expected for formally defined wetlands. If construction occurs where lower quality wetlands may be present, the City will confirm that wetlands exist and then submit a permit application to USACE and ODSL. Any adverse affects will be mitigated.

3.3.3 Mitigation

No mitigation is expected since work will is not expected within wetlands. If construction does occur within wetlands, the City will submit a permit application to USACE and ODSL. Any adverse affects will be mitigated.

3.4 CULTURAL RESOURCES

Heritage Research Associates, Inc. completed an archaeological investigation of the project site to meet federal regulations and Oregon state laws, and no prehistoric or historical artifacts, features, or sites were found within the project area. As a result of the archaeological investigations, **no adverse impacts** to cultural resources are anticipated as a result of this project.

Brown and Caldwell contacted the Oregon Legislative Commission on Indian Services who recommended we contact the Confederated Tribes of Grande Ronde, Confederated Tribes of Siletz, and Confederated Tribes of Warm Springs. Upon reviewing the report from Heritage Research Associates, all three tribes provided approval to proceed with construction.

3.4.1 Affected Environment

Heritage Research Associates, Inc. conducted surface and subsurface archaeological investigations for the RRE Program. These investigations were conducted to identify archaeological resources that might be subject to consideration and protection under Section 106 of the National Historic Preservation Act of 1966 (and amended) and applicable Oregon state laws (e.g., ORS 358.905-358.955). The archaeological investigations included a systematic surface pedestrian survey and the excavation of 39 discovery shovel probes (30-centimeter-diameter). Heritage Research Associates did not find any prehistoric or demonstrably historical artifacts, features, or sites within the project area. As a result, Heritage Research Associates does not recommend additional cultural resource investigations for this project as currently designed. See Section 6.13.

In addition, NRHP and SHPO have not identified historic and cultural resources in the project area. Please see Section 6.1 for a copy of the letter from SHPO, the national register list, and tribal approvals.

3.4.2 Environmental Consequences

No environmental consequences are expected since cultural resources in the project area were not identified. If any artifacts or skeletal materials become exposed which may be human, the City will follow the applicable laws.

3.4.3 Mitigation

Mitigation is not necessary as no impacts to cultural resources are anticipated.

If any artifacts or skeletal materials become exposed which may be human, the City will follow the applicable laws—stop work in the immediate area, protect and not disturb the resources until they can be evaluated, contact all appropriate parties, and develop a plan before resuming work.

3.5 BIOLOGICAL RESOURCES

Brown and Caldwell and Pacific Habitat Services reviewed the Oregon Natural Heritage Information Center (ORNHIC), US Fish and Wildlife Service (USFWS), and NOAA NMFS websites. We also discussed the project in depth with USEPA and the project was subject to an informal Endangered Species Act Section 7 Consultation with NMFS and the Oregon Department of Fish and Wildlife (ODFW). Consultation with USEPA, NMFS, and ODFW has found that this project is **not likely to adversely affect** federally endangered, threatened, or candidate species or essential fish habitat in Hess Creek or the Willamette River as shown in Attachment I.

3.5.1 Affected Environment

ORNHIC and USFWS identify five species listed as threatened or endangered, or candidates for listing that could potentially occur within the project area if suitable habitat is present. These include two fish—steelhead and Chinook salmon, one plant—White rock larkspur, and two reptiles—Northern Pacific Pond Turtle and the Painted Turtle.

3.5.2 Environmental Consequences

Primary impacts to Hess Creek would be sediment entering the waterway. Impacts will be prevented through erosion prevention and sediment control as mandated by the City and in the State's NPDES Stormwater Discharge Permit as discussed further in Section 3.6. Primary impact to the Willamette River would be through treated effluent entering the waterway.

Consultation with EPA, NMFS, and ODFW has found that this project is **not likely to adversely affect** federally endangered, threatened, or candidate species in Hess Creek or the Willamette River as shown in Attachment I.

A report completed by Pacific Habitat Services to review potential program impacts to wetlands and threatened and endangered species is included in Section 6.7.

3.5.3 Mitigation

Conservation measures include the following:

- Developing and implementing pollution and erosion control measures during construction to contain and limit the potential spill of pollutants and discharge of fine sediment to adjacent streams and wetlands.
- Treating all stormwater resulting from the proposed action to limit further degradation of water quality and changes to discharged water quantity.

Additional mitigation is not planned as no impacts to biological resources are anticipated.

3.6 WATER QUALITY ISSUES

Brown and Caldwell reviewed Willamette River total maximum daily loads (TMDLs) and the City's existing NPDES permit, and analyzed future permit requirements. **No adverse impacts** to water quality are anticipated as a result of this project.

3.6.1 Affected Environment

The existing plant discharges to the Willamette River, which is water quality limited for fecal coliform, mercury, temperature, and iron. TMDLs exist for temperature and bacteria.

3.6.2 Environmental Consequences

The improvements do not have a reasonable potential to negatively impact Willamette River quality via discharge or groundwater quality via irrigation. The improvements are expected to improve water quality and provide reuse water to replace well-water irrigation.

Fecal Coliform. The project will include design improvements to the WWTP disinfection system to increase reliability and efficiency, and design of Phase 2 of the effluent recycled water facility (expansion from 1.0 to 2.0 mgd) to reduce total effluent discharge volume to the Willamette River. Design of improvements to and expansion of the IPS will ensure that raw sewage overflows do not occur.

Mercury. The project design will include improvements to the wastewater treatment system that will improve capacity and efficiency, with the likelihood of increased mercury removal. Expanded effluent recycled water capacity will reduce effluent discharge and consequently the total discharge of mercury to the Willamette River.

Temperature. The project design will include temperature reduction strategies, including reduced thermal load through reduced discharge volume (increased recycled water capacity).

Iron. The project design will include improvements to the wastewater treatment system that will improve efficiency, with the likelihood of increased iron removal efficiency. Expanded effluent recycled water capacity will reduce effluent discharge and consequently the total discharge of iron to the Willamette River.

NPDES. The RRE Program complies with the City's existing wastewater NPDES permit. In 2008, the permit was modified to comply with the 2006 Willamette River TMDLs which protects the beneficial uses of the Willamette River.

The City expects to continue meeting its permit limits for all parameters under the existing and future NPDES permit. As a result of implementing reuse, average annual loads for 5-day carbonaceous biochemical oxygen demand and total suspended solids will not exceed permitted loads. Bacteria will continue to be treated by chlorine disinfection and meet permit limits. And, as the City implements effluent reuse, temperature loading will decrease, thereby meeting the permit limits. The 2009 reuse capacity is 1.0 mgd and the City plans to increase reuse as the reuse customer base expands.

As a result of implementing reuse, continuing to meet permit requirements, and decreasing thermal loading, the City's RRE project is expected to have a positive impact on the Willamette River.

3.6.3 Mitigation

Mitigation is not necessary as no impact to Willamette River water quality or groundwater are anticipated.

3.7 COASTAL RESOURCES

Brown and Caldwell reviewed the coastal zone management plan map and determined the project is not in a coastal management area. As a result, **no adverse impacts** to coastal resources are anticipated.

3.7.1 Affected Environment

The Newberg WWTP discharges to the Willamette River. This area is not part of the coastal zone management area as seen in Section 6.5.

3.7.2 Environmental Consequences

Not applicable.

3.7.3 Mitigation

Not applicable.

3.8 SOCIOECONOMIC/ENVIRONMENTAL JUSTICE ISSUES

This project is not expected to have any negative socioeconomic impacts. All improvements are confined to existing sites or industrial sites and **no adverse human health effects are anticipated.** This project will increase the capacity of the WWTP and, therefore, will allow new residential and commercial growth to enter the area.

3.8.1 Affected Environment

All improvements are confined to existing sites or industrial sites.

3.8.2 Environmental Consequences

Not applicable.

3.8.3 Mitigation

Not applicable.

3.9 MISCELLANEOUS ISSUES

A careful review of this project's potential impacts on surrounding air quality, noise levels, wild and scenic rivers, safe drinking water, and other environmental issues is an essential component of a thorough environmental report so that problems can be identified and avoided or mitigated. Brown and Caldwell discussed the project with DEQ, reviewed the national wild and scenic rivers system map, and reviewed aquifers in the area. **No adverse impacts** to any of these resources is anticipated.

3.9.1 Affected Environment

Construction of the RRE Program should not adversely impact air quality, noise levels, wild and scenic rivers, or safe drinking water.

3.9.1.1 Air Quality

Construction activities at the WWTP will cause some emissions from construction equipment and fugitive dust. The magnitude of those emissions is expected to be minimal due to the small amount of excavation that is required.

We consulted with Claudia Davis, DEQ-Western Region Air Quality Permit Manager, and a notice of intent to construct is not required as shown in Section 6.9.

3.9.1.2 Noise

The State sets forth rules and policies for regulating noise, including acceptable types and thresholds of noise. However, the State no longer enforces these rules and relies on the local governments for enforcement. City code regulates noise levels and the contractor will be required to comply with those requirements.

The WWTP improvements will not have any adverse noise impacts as no residences are near the WWTP that would be disturbed by noise generated during construction.

3.9.1.3 Wild and Scenic Rivers

Hess Creek, Spring Brook, and the Willamette River are not considered wild and scenic rivers as shown in Section 6.6.

3.9.1.4 Safe Drinking Water

There is no direct or indirect discharge to groundwater from the proposed project. The Newberg WWTP is not over a designated sole source aquifer as shown in Section 6.10.

3.9.1.5 Other Permits

As the City implements the RRE projects, the resources of the area will continue to be considered. The City will contact the appropriate state and federal agencies and apply for additional permits as needed. For example, if the IPS influent pipe requires work below Hess Creek's ordinary high water line, ODSL and the USACE will be contacted to determine permit requirements. Work would be conducted during the in-water work windows and mitigation would be completed as necessary.

3.9.2 Environmental Consequences

The improvements do not have a reasonable potential to negatively impact air quality, noise, wild and scenic rivers, or safe drinking water.

3.9.3 Mitigation

No impacts are expected that would require mitigation.

6.3 E-MAILS WITH YAMHILL COUNTY AND USDA-NRCS

**Wetland Determination Request
Wetlands Program**

**BATCH
WD#: _____**

Oregon Department of State Lands
775 Summer Street, NE, Suite 100, Salem, OR 97301-1279

The Department of State Lands (DSL) conducts *offsite* wetland determinations upon request. There is no fee for this service. An offsite determination consists of reviewing wetlands and soils maps, aerial photos and other information to determine if wetlands or other regulated water bodies (such as creeks) are present, likely to be present, or unlikely to be present. Only an *onsite* check can verify whether or not there are regulated wetlands on a site. As time allows, DSL staff may be able to conduct a site visit to verify an offsite determination. Please allow 2-3 weeks for an initial response.

If wetlands are present or likely to be present on a parcel or near a project area, a wetland delineation by a qualified wetland consultant may be needed. Wetland delineation reports and the required fee should then be submitted to DSL for review and agency approval.

Please provide the following information:

1. Vicinity map (like a city map) with the precise parcel location indicated. See Attachment A.
2. Large scale map (1" = 100' if possible) of the parcel showing existing buildings, property boundaries, any creeks and other features. An annotated tax assessor's map is fine, and a hand-drawn map is acceptable. See Attachment B.
3. City, County, and site address. Please fill in below.
City Newberg (or nearest town if outside City limits)
County Yamhill County
Site address 2301 Wynooski Road, Newberg, OR 97132 (or nearest cross streets if no address)
4. Township, Range, Section, Quarter/Quarter Section and Tax Lot number(s) (Tax Map number is equivalent). Please fill in below.
Township 3 S Range 2 W Section 29 QQ _____ Tax Lot (s) 100, 102

Property owner Legal representative Other (specify): _____

Name: Lawrence B. Fain

Firm: City of Newberg

Mailing Address: P.O. Box 970, Newberg, OR 97132

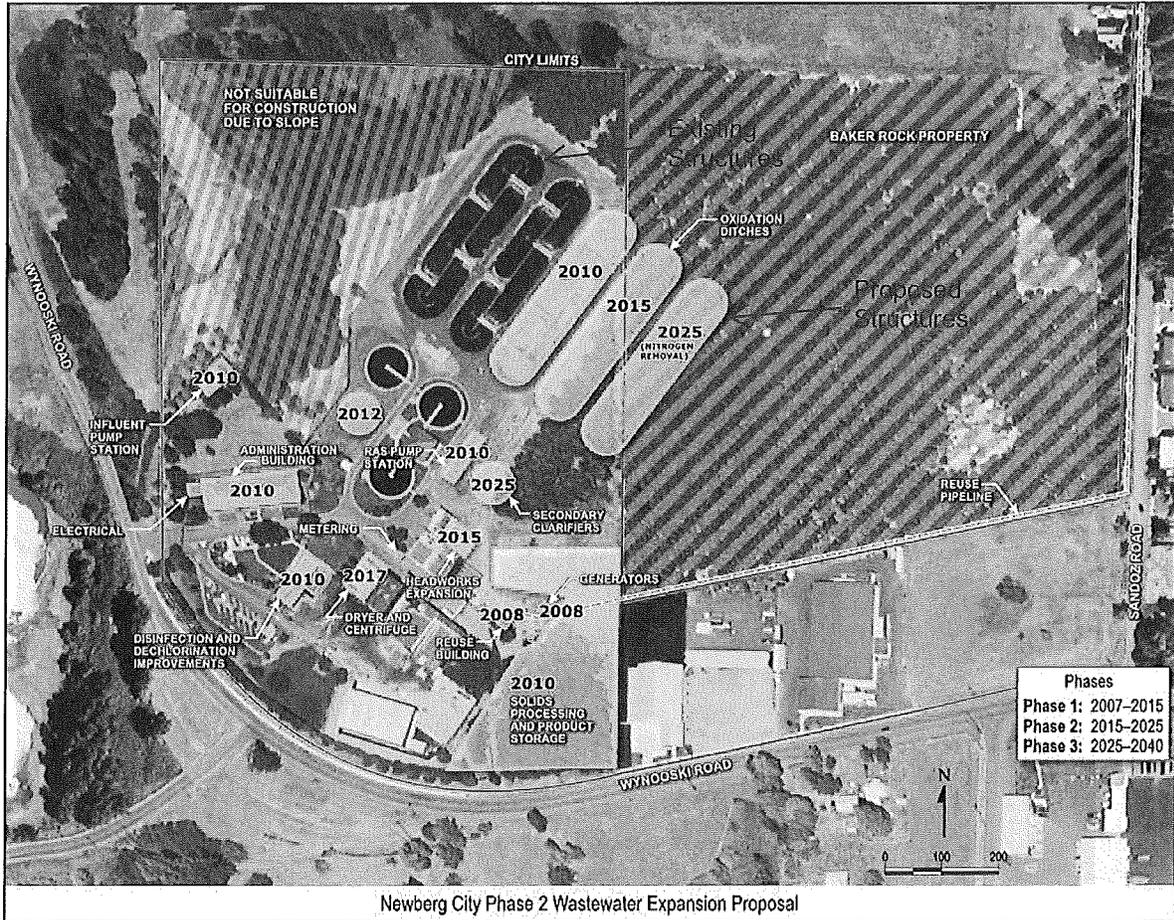
Phone: (503) 554-8881 Fax: (503) 537-1277 E-Mail lawrence.fain@ci.newberg.or.us

I either own or have legal authority to allow access to the property for which this request is made. My signature below authorizes DSL staff to conduct a wetland determination and to access the property to confirm the wetland determination, as needed. (DSL will phone prior to conducting a site visit.)

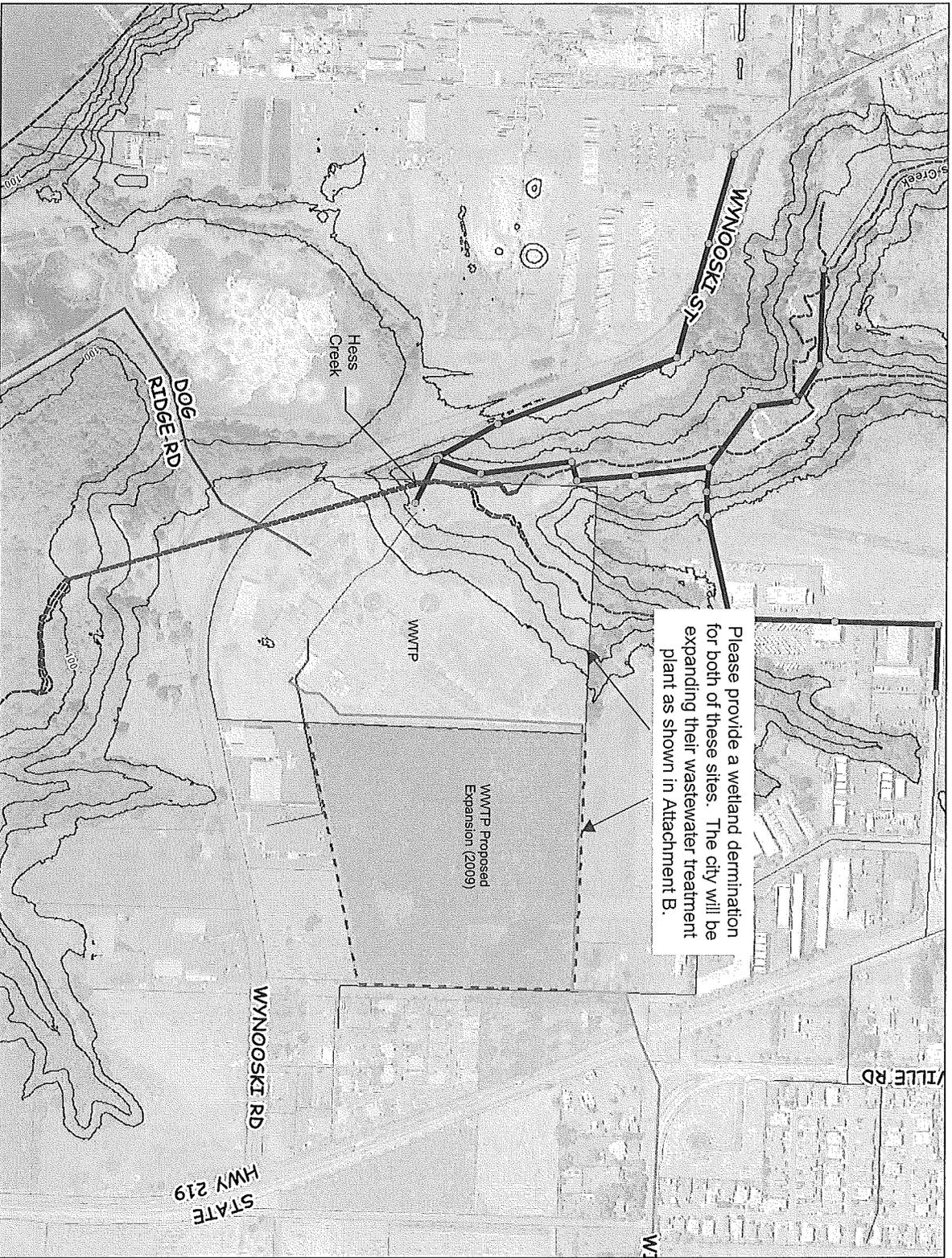
Signature: _____ Date: _____

Print Name: _____

Attachment B – Existing Buildings, Property Boundaries, Proposed Expansion



Newberg City Phase 2 Wastewater Expansion Proposal



Attachment A
NEWBERG
WASTEWATER TREATMENT
PLANT

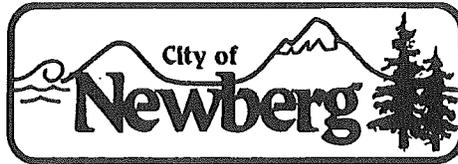
Legend

- Manholes Near WWTP
- Recycled Water Line
- Wastewater Treatment Plant Outfall Line
- Important Wastewater Pipe Lines Near WWTP
- Other Wastewater Pipe Lines
- 20' Contours (derived from bare earth Lidar data)



Printing Date: Monday, February 02, 2009 4:24:18 PM
 File Name: C:\projects\newberg\newberg\newberg.mxd
 Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 5001 UTM Feet

Newberg City Hall
503.537.1240
www.ci.newberg.or.us



Public Works Department
Engineering Division
503.554.7705

PUBLIC WORKS DEPARTMENT

P.O. Box 970 • 414 E. First Street • Newberg, Oregon 97132 • 503.554.7705 • Fax 503.537.1277

April 8, 2009

Wetlands Program
Oregon Department of State Lands
775 Summer Street, NE
Suite 100
Salem, OR 97301-1279

RE: Wetland Determination Request for the Newberg Wastewater Treatment Plant (WWTP) Expansion

Dear Wetlands Program Administrator-

Please find attached a wetland determination request for the WWTP expansion in the City of Newberg (City), Oregon. Also included are a vicinity map and large scale map.

I am requesting this information as directed by Oregon Department of Environmental Quality (DEQ) as part of an application for the Clean Water State Revolving Fund (SRF) program. DEQ requires your review and reply. Please respond by April 29, 2008.

The City is planning upgrades and expansion over the next twenty years, as shown on the attached figures, and includes several upgrades on the City's existing wastewater treatment plant site and expansion onto the adjacent Baker Rock Property.

Thank you for your review. If you have any questions, please call Lawrence Fain at (503) 554-8881 or at lawrence.fain@ci.newberg.or.us ..

Sincerely,

Lawrence B. Fain, P.E.
Senior Engineer

cc: Howard Hamilton, Public Works Director

Attachments

OFFSITE WETLAND DETERMINATION REPORT
OREGON DEPARTMENT OF STATE LANDS

BATCH
WD#: 2009-0172

775 Summer Street NE, Suite 100, Salem OR 97301-1279 Phone: (503) 986-5200

At your request, an offsite wetland determination has been conducted on the property described below.

County: Yamhill

City: Newberg

Other Name & Address: Lawrence B. Fain, Public Works Department, PO Box 970, Newberg, OR 97132

Township:03S

Range:02W

Section:29

Tax Lot(s):100

Project Name: Newberg Wastewater Treatment Plant (WWTP) Expansion

Site Address/Location: S. Sandoz Rd, Newberg

- The National Wetlands Inventory or Local Wetlands Inventory shows a wetland/waterway on the property.
- The county soil survey shows hydric (wet) soils on the property. Hydric soils indicate that there may be wetlands.
- It is unlikely that there are jurisdictional wetlands or waterways on the property based upon a review of wetlands maps, the county soil survey and other information. An onsite investigation by a qualified professional is the only way to be certain that there are no wetlands.
- There are wetlands or waterways on the property that are subject to the state Removal-Fill Law.
 - A state permit is required for ≥ 50 cubic yards of fill, removal, or ground alteration in the wetlands or waterways.
 - A state permit may be required for any amount of fill, removal, or other ground alteration in the Essential Salmonid Habitat and hydrologically associated wetlands.
- A state permit will not be required for project because based on submitted WWTP Proposed Expansion (2009) plan, it appears that the project avoids impacts to wetlands and waters.
- The proposed parcel division may create a lot that is largely wetland and thus create future development problems.
- A wetland determination or delineation may be needed prior to site development; the wetland delineation report should be submitted to the Department of State Lands for review and approval.
- A permit may be required by the Army Corps of Engineers: (503) 808-4373

Note: This report is for the state Removal-Fill Law only. City or County permits may be required for the proposed activity.

Comments:

Determination by: Caroline Stinson Date: 04/ 23/ 2009

This jurisdictional determination is valid for five years from the above date, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months from the above date.

This is a preliminary jurisdictional determination and is advisory only.

Copy To: Other Enclosures:

_____, Planning Department

FOR OFFICE USE ONLY

Entire Lot(s) Checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Waters Present <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Maybe	Request Received: 04 / 14 /2009
LWI Area:N/A	LWI Code:N/A	Latitude: 45.28795 Longitude: -122.95016
Related DSL File #:N/A N/A		
Has Wetlands? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Unk	ESH? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Wild & Scenic? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
State Scenic? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Coast Zone? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<input type="checkbox"/> Unk
Adjacent Waterbody:N/A	NWI Quad:Newberg	<input type="checkbox"/> Scanned <input type="checkbox"/> Mailings Completed <input checked="" type="checkbox"/> Data Entry Completed

6.2 ODSL WETLAND DETERMINATION

Project Name

City of Newberg Wastewater Treatment Plant – Facilities Plan Update

Brown and Caldwell Project Number: 136900

Project Location

The WWTP is located at 2301 Wynooski Road, Newberg, Oregon in Yamhill County and expansion is proposed to the east on the Baker Rock Property. The attached maps show the location of the project, a 1 mile radius around the project, a figure of where expansions would occur on the property, and taxlots. The Baker Rock Property is at the following coordinates:

Latitude: 45° 17' 16" North
Longitude: 122° 57' 00" West
Township: 03 South
Range: 02 West
Section: 29

Project Description

The city is submitting their proposed Wastewater Treatment Plant (WWTP) Facilities Plan to DEQ for review. The plan has also been submitted to DEQ for funding through SRF. As part of this process, an environmental review must be conducted on projects proposed in the plan. Projects through 2040 include several upgrades on the city's existing industrial site and expansion onto the adjacent land – Baker Rock Property, which is currently farmed for filberts.

Purpose and Need

The proposed expansion of the WWTP is designed to meet projected growth within the UGB and the urban reserve area to maintain compliance with the City's National Pollutant Discharge Elimination System permit and potential future regulations. For more detailed information on the recommended projects, the Facilities Plan is available for review at the City of Newberg website, under City Departments/Public Works/Operations (<http://ci.newberg.or.us/page.asp?id=43>).

Thank you for your review. We look forward to your response.

Respectfully,

Laura Porter, CFM, CAPM, CPESC
BROWN AND CALDWELL
6500 SW Macadam Avenue, Suite 200
Portland, OR 97239
lporter@brwnald.com
503-977-6627, 503-244-9095 fax

demonstrably historical artifacts, features, or sites were found during investigations.

Could you please review the project, complete the attached form, and return it to me? If possible, we'd appreciate your review by June 10, 2009.

If you have any questions, please contact me at 503-977-6627.

Thank you for your assistance.

Laura Porter, CFM, CAPM, CPESC
BROWN AND CALDWELL
6500 SW Macadam Avenue, Suite 200
Portland, OR 97239
lporter@brwncald.com
503-977-6627, 503-244-9095 fax

From: Sally [mailto:sbird@wstribes.org]
Sent: Friday, March 20, 2009 10:18 AM
To: Porter, Laura
Cc: Wightman, Daria; lawrence.fain@ci.newberg.or.us
Subject: RE: Section 106 Request-City of Newberg

Laura, thank you for the project maps. It looks, from the maps, like there will be a significant amount of ground disturbance. Have you had an archaeologist conduct an archaeological survey yet? Once that has been completed, please send us the report of findings for review. Otherwise, we will defer to those Tribes closer to the area, Grand Ronde and Siletz, except in the instance that human remains are encountered, at that point we would like to be notified.

Thank you,
Sally

Warm Springs Geo Visions
P.O. Box 460
Warm Springs, Oregon 97761
541-553-3555

From: Porter, Laura [mailto:lporter@brwncald.com]
Sent: Monday, March 16, 2009 11:00 AM
To: sbird@wstribes.org
Cc: Wightman, Daria; lawrence.fain@ci.newberg.or.us
Subject: Section 106 Request-City of Newberg

Ms. Bird,

Karen Quigley, Executive Director for the Legislative Commission on Indian Services directed me to contact you. On behalf of the City of Newberg, Oregon, I am submitting this request for a Section 106 consultation to determine whether the proposed project could affect cultural resources.

I am requesting this information as directed by Oregon Department of Environmental Quality (DEQ) as part of an application for the Clean Water State Revolving Fund (SRF) program, which is funded by the Environmental Protection Agency (EPA) and subject to requirements of the National Historic Preservation Act. If you have questions about the SRF program and/or federal cultural resource protection requirements related to the SRF, please contact Bob Haberman, DEQ SRF Project Officer at (541) 687-7359 or Michelle Tucker, EPA CWSRF Coordinator at (206) 553-1414.

DEQ requires your review and reply.

9/21/2009

Confederate Tribes of Warm Springs - Approval

Porter, Laura

From: Sally [sbird@wstribes.org]
Sent: Friday, June 19, 2009 3:41 PM
To: Porter, Laura
Subject: RE: Section 106 Request-City of Newberg

Laura, we are fine with the project proceeding, thank you for the HRA report.
Sally Bird

Warm Springs Geo Visions
P.O. Box 460
Warm Springs, Oregon 97761
541-553-3555

From: Porter, Laura [mailto:lporter@brwnald.com]
Sent: Monday, May 18, 2009 1:57 PM
To: Sally
Subject: RE: Section 106 Request-City of Newberg

Hi Ms. Bird,

Did you have any questions about the City's proposed treatment plant expansion and/or the archaeological review? Feel free to call me at 503-977-6627. I look forward to receiving the attached review.

Thanks for your help.

Laura Porter, CFM, CAPM, CPESC
BROWN AND CALDWELL
6500 SW Macadam Avenue, Suite 200
Portland, OR 97239
lporter@brwnald.com
503-977-6627, 503-244-9095 fax

From: Porter, Laura
Sent: Friday, May 08, 2009 3:12 PM
To: 'Sally'
Cc: Wightman, Daria; 'lawrence.fain@ci.newberg.or.us'
Subject: RE: Section 106 Request-City of Newberg

Attachments included now.

Laura

From: Porter, Laura
Sent: Friday, May 08, 2009 3:09 PM
To: 'Sally'
Cc: Wightman, Daria; lawrence.fain@ci.newberg.or.us
Subject: RE: Section 106 Request-City of Newberg

Ms. Bird,

Thank you for your review of the City of Newberg's wastewater treatment plant expansion project in March. Since then, an archaeological review of the project site has been completed and is attached. No prehistoric or

9/21/2009



> compliance with the City s National Pollutant Discharge Elimination
> System permit and potential future regulations. For more detailed
> information on the recommended projects, the Facilities Plan is
> available for review at the City of Newberg website, under City
> Departments/Public Works/Operations
> (<http://ci.newberg.or.us/page.asp?id=43>).

> Thank you for your review. We look forward to your response.

> Respectfully,

> Laura Porter, CFM, CAPM, CPESC

> **BR***OWN AND CALDWELL**

> 6500 SW Macadam Avenue, Suite 200

> Portland, OR 97239

> lporter@brwnald.com <<mailto:lporter@brwnald.com>>

> 503-977-6627, 503-244-9095 fax

>
> Mr. Kentta,
>
> Karen Quigley, Executive Director for the Legislative Commission on
> Indian Services directed me to contact you. On behalf of the City of
> Newberg, Oregon, I am submitting this request for a Section 106
> consultation to determine whether the proposed project could affect
> cultural resources.
>
> I am requesting this information as directed by Oregon Department of
> Environmental Quality (DEQ) as part of an application for the Clean
> Water State Revolving Fund (SRF) program, which is funded by the
> Environmental Protection Agency (EPA) and subject to requirements of
> the National Historic Preservation Act. If you have questions about
> the SRF program and/or federal cultural resource protection
> requirements related to the SRF, please contact Bob Haberman, DEQ SRF
> Project Officer at (541) 687-7359 or Michelle Tucker, EPA CWSRF
> Coordinator at (206) 553-1414.
>
> DEQ requires your review and reply.
>
> *Project Name*
>
> City of Newberg Wastewater Treatment Plant Facilities Plan Update
>
> * *
>
> *Brown and Caldwell Project Number: *136900
>
> * *
>
> *Project Location*
>
> The WWTP is located at 2301 Wynooski Road, Newberg, Oregon in Yamhill
> County and expansion is proposed to the east on the Baker Rock
> Property. The attached maps show the location of the project, a 1 mile
> radius around the project, a figure of where expansions would occur on
> the property, and taxlots. The Baker Rock Property is at the following
> coordinates:
>
> Latitude: 45: 17 16 North
>
> Longitude: 122: 57 00 West
>
> Township: 03 South
>
> Range: 02 West
>
> Section: 29
>
> * *
>
> *Project Description*
>
> The city is submitting their proposed Wastewater Treatment Plant
> (WWTP) Facilities Plan to DEQ for review. The plan has also been
> submitted to DEQ for funding through SRF. As part of this process, an
> environmental review must be conducted on projects proposed in the
> plan. Projects through 2040 include several upgrades on the city s
> existing industrial site and expansion onto the adjacent land Baker
> Rock Property, which is currently farmed for filberts.
>
> *Purpose and Need*
>
> The proposed expansion of the WWTP is designed to meet projected
> growth within the UGB and the urban reserve area to maintain

Confederate Tribes of the Siletz - Approval

Porter, Laura

From: Robert Kentta [rkentta@ctsi.nsn.us]
Sent: Wednesday, July 29, 2009 10:44 AM
To: Porter, Laura
Cc: Wightman, Daria; lawrence.fain@ci.newberg.or.us
Subject: Re: Section 106 Request-City of Newberg

Thanks Laura, and sorry for the late response.

Unless there is a great concern, I generally just send a brief email - such as this, saying that I have no immediate concerns, and for you to continue with your project, but the project area does seem like there would be some fair possibility of Cultural Resources being present. If any artifacts or skeletal materials become exposed which may be human, I expect the applicable laws to be followed, which call for a stop work in the immediate area, non-disturbance/protection of the resources until they can be evaluated, and then all appropriate parties contacted and a plan carried out before resuming work.

Hope all goes well.

Robert Kentta
Cultural Resources Director
Confederated Tribes of Siletz Indians

Porter, Laura wrote:

>
> Mr. Kentta,
>
> On March 16th we requested a Section 106 review as shown in the below
> e-mail. Since that time, an archaeological review of the project site
> has been completed and is attached. No prehistoric or demonstrably
> historical artifacts, features, or sites were found during investigations.
>
> Could you please review the project, complete the attached form, and
> return it to me? If possible, we d appreciate your review by June 10,
> 2009.
>
> If you have any questions, please contact me at 503-977-6627.
>
> Thank you for your assistance.
>
> Laura Porter, CFM, CAPM, CPESC
>
> **BR***OWN AND CALDWELL**
>
> 6500 SW Macadam Avenue, Suite 200
>
> Portland, OR 97239
>
> lporter@brwnald.com <mailto:lporter@brwnald.com>
>
> 503-977-6627, 503-244-9095 fax
>
> -----
> --
>
> *From:* Porter, Laura
> *Sent:* Monday, March 16, 2009 10:58 AM
> *To:* 'rkentta@ctsi.nsn.us'
> *Cc:* Wightman, Daria; 'lawrence.fain@ci.newberg.or.us'
> *Subject:* Section 106 Request-City of Newberg

return to:

Laura Porter Brown and Caldwell 6500 SW Macadam Avenue Suite 200 Portland, OR 97239 fax (503) 244-9095

Telephone No. 503-877-1630

Reviewed By: Eric Thorsgard
 Agency: CONFIDENTIAL TRBS OF THE GRAND PORTLAND GOVERNMENT OF OREGON

--

REMARKS

- It has no measurable affect.
- We have no comment.
- Affects, although measurable, would be acceptable.
- It has adverse effects. (Explain in Remarks Section.)
- We are interested, but require more information to evaluate the proposal. (Explain in Remarks Section.)
- Additional comments for project improvement. (Attach if necessary.)

We have reviewed the proposed project and have reached the following conclusions on its relationship to our plans and programs:

PROGRAM REVIEW AND COMMENT

Agency: If you cannot respond by the return date, please notify us immediately. The CWSRF State Environmental Review Process requires a written response from each agency. Please send your response by return date. DEQ cannot act on our application until we have received your documentation.

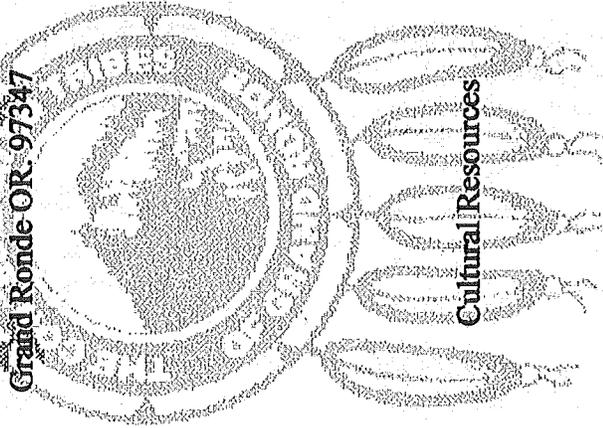
Return Date: June 10, 2009

Project Name: <u>WWTP - Upgrade and Expansion Program</u>	Project Applicant: <u>City of Newberg, Oregon</u>
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A REVIEW OF A PROPOSED OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY CLEAN WATER STATE REVOLVING FUND PROJECT

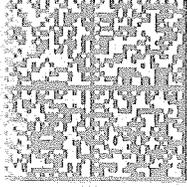
STATE/ FEDERAL AGENCY REVIEW

The Confederated Tribes of the
Grand Ronde Community of Oregon
9615 Grand Ronde Road
Grand Ronde OR 97347

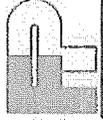


Cultural Resources

Confederate Tribes of the Grande Ronde - Approval



US POSTAGE
\$ 00.44



Mailed From 97347
05/11/2009
031A 0005180017

RECEIVED

MAY 12 2009

Laura Porter
Brown and Caldwell
6500 SW Macadam Avenue Suite 200
Portland, OR 97239

BROWN AND CALDWELL
PORTLAND, OREGON

97239\$3567 C002



Birk Thorsgard MAIS
Cultural Protection Coordinator
Cultural Resources
birk.thorsgard@grandronde.org
Phone: 503.879.1630
Cell: 971.241.2696
Fax: 503.879.2126
1.800.422.0232
9615 Grand Ronde Road
Grand Ronde, Oregon 97347-9712
www.grandronde.org



OREGON NATIONAL REGISTER LIST

HISTORIC PROPERTY NAME	STREET	CITY	CONST.	LISTED	NR NUMBER
Yamhill County Total					78
Evangelical Church Of Lafayette	605 Market St	Lafayette	1892	10/31/2002	02001278
Fletcher, Alfred P, Farmhouse	1007 3rd St	Lafayette	1905	08/25/1980	80003392
Kelly, James M & Paul R, House	675 3rd St	Lafayette	1872	09/23/1982	82003756
Fenton, Frank W, House	434 N Evans St	McMinnville	1909	09/01/1983	83002180
Mattley, Joseph, House	10221 Mattley Ln	McMinnville	1890	02/15/1977	77001118
McMinnville Downtown Historic District	[District]	McMinnville	1884	09/14/1987	87001366
Pioneer Hall, Linfield College (Pref, Not Historic)	Fellows St	McMinnville	1881	02/23/1978	78002330
Spence, Jack, House	536 E 5th St	McMinnville	1929	02/27/1986	86000295
Cate, Asa F, Farm Ensemble	16900 NW Baker Creek Rd	McMinnville vcty	1880	02/23/1990	90000285
Edwards, Jesse, House	402 S College St	Newberg	1883	08/25/1980	80003393
JC Penney Building	516 E 1st St	Newberg	c.1927	06/13/2007	07000555
Winthorn Hall	414 N Meridian	Newberg	1887	06/13/1997	97000581
Winthorn, Dr Henry John, House	115 S River St	Newberg	1881	10/29/1975	75001602
Paulson-Gregory House	509 S College St	Newberg	c.1910	03/18/1999	99000385
Smith, John T, House	414 N College St	Newberg	1904	11/15/1984	84000493
Spaulding, Charles K, House	717 E Sheridan	Newberg	c.1900	08/26/1994	94001022
Union Block	610-620 E 1st St	Newberg	1907	05/05/2000	00000450
(OR-YA-1) Young, Ewing, Site	N Valley & Stone Rds	Newberg vcty	1841	11/27/1989	89001977
Chambers, Joseph & Virginia, Farmstead	30295 N Hwy 99W	Newberg vcty	1911	03/05/1992	92000136
Fernwood Pioneer Cemetery	Everest Rd	Newberg vcty	1882	08/05/1994	94000809
Parrish, William Albert & Anna May Bristow, Farmstead	30280 NE Wilsonville Rd	Newberg vcty	1905	07/17/2000	00000803
Travelers Home	147 NE Yamhill St	Sheridan	1892	07/08/1982	82003757
Kershaw, Dr Andrew, House	472 E Main St	Williamina	1907	03/02/1989	890000122
Bunn, John Marion, House	285 SW 3rd	Yamhill	1860	10/16/1979	79002152
Laughlin, Lee, House	100 Laurel St	Yamhill	1879	03/26/1979	79002153

Total National Register Listings in Oregon: 1891

OREGON NATIONAL REGISTER LIST

HISTORIC PROPERTY NAME	TOTAL	STREET	CITY	CONST.	LISTED	NR NUMBER
Yamhill County	78					
Dayton High School		801 Ferry St	Dayton	1935	03/16/1987	87000339
Dayton Methodist Episcopal Church		302 4th St	Dayton	1862	03/16/1987	87000340
Diell-Setters House		527 Church St	Dayton	1860	03/16/1987	87000344
Evangelical United Brethren Church		302 5th St	Dayton	1833	08/03/1987	87000346
First Baptist Church		301 Main St	Dayton	1886	10/16/1979	79002151
Fischer, Carl, Meats		400 Ferry St	Dayton	1918	03/16/1987	87000348
Fletcher-Stretch House		401 Oak St	Dayton	1880	03/16/1987	87000349
Foster Oil Company		216 Ferry St	Dayton	1936	03/16/1987	87000356
Free Methodist Church		411 Oak St	Dayton	1885	03/16/1987	87000357
Gabriel-Filer House		525 Church St	Dayton	1916	03/16/1987	87000358
Gabriel-Will House		401 3rd St	Dayton	1885	03/16/1987	87000359
Harrington, Daniel, House		212 Mill St	Dayton	c.1879	03/16/1987	87000360
Harts Building		302 Ferry St	Dayton	c.1913	03/16/1987	87000363
Hash, John T. House		120 5th St	Dayton	c.1912	03/16/1987	87000395
Hibbert, W.S., House		426 5th St	Dayton	1906	11/30/1978	78002329
Hole, Frank W., House		623 Ferry St	Dayton	1910	03/16/1987	87000367
Jessen-Goodrich House		324 6th St	Dayton	c.1890	03/16/1987	87000370
Kneiz House		627 Church St	Dayton	c.1895	03/16/1987	87000372
Lewis-Shippy House		421 6th St	Dayton	1891	03/16/1987	87000373
Londershausen, Gottlieb, House		402 Main St	Dayton	c.1907	03/16/1987	87000383
Londershausen, Paul, House		309 Main St	Dayton	1921	03/16/1987	87000384
Mabee-Mayberry House		309 7th St	Dayton	c.1890	08/03/1987	87000385
McNamar Building		310-312 Ferry St	Dayton	c.1912	03/16/1987	87000386
McNish, Thomas, House		1005 Ferry St	Dayton	1910	03/16/1987	87000388
Mellinger, James E., House		414 5th St	Dayton	1904	03/16/1987	87000389
Mellinger-Ponray House		603 Palmer Ln	Dayton	1891	08/03/1987	87000390
Methodist Episcopal Parsonage		202 4th St	Dayton	c.1868	08/03/1987	87000393
Morse, Benjamin F., House		101 5th St	Dayton	1881	03/16/1987	87000396
Morse, Robert, House		409 Oak St	Dayton	c.1880	03/16/1987	87000398
Nichols, J. C., House		303 Main St	Dayton	1883	03/16/1987	87000400
Oregon Mutual Merchant Fire Insurance Association		308 Ferry St	Dayton	c.1910	03/16/1987	87000402
Palmer, Joel, House		600 Ferry St	Dayton	1857	03/16/1987	87000403
Powell, Curtis W., House		524 Ash St	Dayton	1917	03/16/1987	87000404
Rippey, O B, House		533 Ash St	Dayton	c.1890	03/16/1987	87000405
Sigler, Samuel W., House		521 Ferry St	Dayton	1904	03/16/1987	87000406
Smith, Andrew, House		306 5th St SE	Dayton	c.1859	06/23/1976	76001591
Yamhill River Lock & Dam		S Terminus Look Rd	Dayton	1898	06/21/1991	91000799
Fletcher, Francis, House		Route 2	Dayton vcty	1863	10/29/1975	75001601
Dundee Women's Club Hall		Hwy 99W	Dundee	1915	06/05/1986	86001241
Hagey, Levi, House		22750 Hwy 99	Dundee	c.1851	12/19/1974	74001727

www.oregon.gov/OPRD/HCD/NAT. 6/docs/oregon-nt-11st.pdf 2/24/200

Print-out Date: 1/5/2009

OREGON NATIONAL REGISTER LIST

HISTORIC PROPERTY NAME	TOTAL	STREET	CITY	CONST.	LISTED	NR NUMBER
Washington County	40					
Beeks, Silas Jacob N, House		Marlin Rd	Forest Grove vcty	1848	06/14/1984	84003100
Smith, Alvin T, House		S Elm St	Forest Grove vcty	1854	11/08/1974	74001721
Tualatin Academy		2043 College Way	Forest Grove vcty	1850	02/12/1974	74001722
Dundee Lodge		South Rd	Gaston vcty	c:1921	06/06/1985	85001186
Imbrie Farm		21860 NW Imbrie Dr	Hillsboro	1866	02/15/1977	77001117
Linklater, Zula, House		230 NE 2nd Ave	Hillsboro	1923	08/01/1984	84003108
Manning-Kamma Farm		29375 Evergreen Rd	Hillsboro	1887 S	10/10/2007	07001077
Old Scotch Church		Scotch Church Rd	Hillsboro	1876	11/05/1974	74001723
Rice, Richard & Helen, House		26385 NW Groveland Dr	Hillsboro	1890	11/29/2006	06001096
Rice-Gates House		308 SE Walnut St	Hillsboro	c:1915	09/08/1980	80003391
Schulmerich, Edward, House		614 E Main St	Hillsboro	c:1908	02/28/1991	91000050
Shorey, Charles, House		905 E Main St	Hillsboro	1935	06/16/1989	88000518
Ray, Harold Wess, House		5611 NE Elam Young Pkwy	Hillsboro vcty	1935	07/21/1994	93001504
Feldman, Adam & Johanna, House		8808 SW Rambler Ln	Portland	c:1890	02/11/1993	93000013
Michos, Thomas, House		4400 SW Scholls Ferry Rd	Portland	1935	10/17/1991	91001552
Schannen-Zolling House		6750 SW Oleason Rd	Portland	1922	12/10/1985	86003340
Watkins, J F, House		5419 SW Scholls Ferry Rd	Portland	c:1910	05/27/1993	93000448
Oleson, Ole & Polly, Farmhouse		5430 SW Ames Way	Portland vcty	1889	02/22/1991	91000140
Doriot/Rider Log House		14850 SW 132nd Terr	Tigard	c:1920	06/25/2008	08000554
Shaver-Blyeu House		16445 SW 92nd Ave	Tigard	c:1906	02/11/1993	93000014
Tigard, John W, House		10310 SW Canterbury Ln	Tigard	c:1880	07/20/1979	79003739
Sweek, John, House		18815 SW Boones Ferry Rd	Tualatin	1858	11/08/1974	74001724
West Union Baptist Church		W Union Rd	West Union	c:1853	07/10/1974	74001725
Wheeler County	1					
Hoover, Thomas Benton, House		1st St	Fossil	1882	04/14/1978	78002328
Yamhill County	78					
Biedwell School		11935 SW Bellevue Hwy	Amity vcty	1895	06/28/1988	88001156
Carlton State & Savings Bank		109 W Main St	Carlton	1910	02/11/1988	88000082
Avery, Edwin, House		403 Church St	Dayton	1895	03/16/1987	87000329
Baxter, John, House		407 Church St	Dayton	1890	03/16/1987	87000331
Berry-Sigler Investment Property		700 Church St	Dayton	1916	08/03/1987	87000368
Bertram, Henry Sr, House		6160 Webfoot Rd SE	Dayton	1892	02/29/1988	88000080
Brookside Cemetery		3rd St	Dayton	1846	03/16/1987	87000332
Cain, William, House		208 Alder St	Dayton	1895	03/16/1987	87000333
Carter-Goondrich House		521 Church St	Dayton	1908	03/16/1987	87000334
Commercial Club--Stuckey, S C, Bldg		304 Ferry St	Dayton	1911	03/16/1987	87000335
Cook, Amos, House		Route 2	Dayton	1853	12/31/1974	74001726
Courthouse Square		3rd, 4th, Ferry, Main Sts	Dayton	1850	03/16/1987	87000336
Dayton Common School		504 4th St	Dayton	1850	03/16/1987	87000338

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
(503) 986-0671
Fax (503) 986-0793
www.oregonheritage.org



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MAR 27 2009

**BROWN AND CALDWELL
PORTLAND, OREGON**

Oregon
Theodore R. Kulonowski, Governor



March 26, 2009

Ms. Laura Porter

Brown & Caldwell

6500 SW Macadam STE 200

Portland, OR 97239

RE: SHPO Case No. 09-0587

Newberg Wastewater Treatment Plan Proj

Facilities plan update

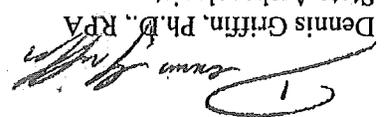
City of Newberg/DEO/BPA/Brown & Caldwell
3S 2W 29, Newberg, Yamhill County

Dear Ms. Porter:

Our office recently received a request to review the proposal for the project referenced above. In checking our statewide cultural resource database, I find that there have been no previous cultural resource surveys completed near the proposed project area. However, the project area lies within an area generally perceived to have a high probability for possessing archaeological sites and/or buried human remains.

While not having sufficient knowledge to predict the likelihood of cultural resources being within your project area, extreme caution is recommended during future ground disturbing activities. ORS 358.905 and ORS 97.740 protect archaeological sites and objects and human remains on state public and private lands in Oregon. If any cultural material is discovered during construction activities, all work should cease immediately until a professional archaeologist can assess the discovery. If your project has a federal nexus (i.e., federal funding, permitting, or oversight) please coordinate with your federal agency representative to ensure that you are in compliance with Section 106 of the NHPA.

If you have any questions about my comments or would like additional information, please feel free to contact our office at your convenience. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence.


Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@state.or.us



6.1 SHPO LETTER, NATIONAL REGISTER LIST, TRIBAL APPROVALS

6.0 EXHIBITS AND MAPS

- 6.1 SHPO Letter, National Register List, Tribal Approvals
- 6.2 ODSL Wetland Determination
- 6.3 E-mails with Yamhill County and USDA-NRCS
- 6.4 Floodplain Map
- 6.5 Coastal Zone Management Area Map
- 6.6 Wild and Scenic Rivers Map
- 6.7 Pacific Habitat Services Report
- 6.8 USEPA and NMFS Concurrence Letter
- 6.9 E-mail with DEQ Regarding Air Quality
- 6.10 Sole Source Aquifer Map
- 6.11 IPS Influent Pipe Conceptual Design
- 6.12 Outfall Conceptual Design
- 6.13 Archaeological Report

5.0 CORRESPONDENCE

Cross cutter documentation is included in Section 6.0—Exhibits and Maps.

4.0 SUMMARY OF MITIGATION

The purpose of the Newberg Wastewater Treatment Plant Repair, Renovation, and Expansion Program is to maintain compliance with the City of Newberg's (City) National Pollutant Elimination Discharge System permit and engineering design and project permitting will prevent, minimize or mitigate for resource impacts.

Conservation measures include the following:

- Developing and implementing pollution and erosion control measures during construction to contain and limit the potential spill of pollutants and discharge of fine sediment to adjacent streams and wetlands.
- Treating all stormwater resulting from the proposed action to limit further degradation of water quality and changes to discharged water quantity.

In the unlikely event that the project implementation does impact resources, the City or its consultant will apply for the necessary local, state, and federal permits.

In addition, if any cultural material is discovered during construction activities, all work will cease immediately until a professional archaeologist can assess the discovery and the City will coordinate with the Oregon Department of Environmental Quality to ensure that the City is in compliance with Section 106 of the National Historic Preservation Act.

Porter, Laura

From: Raney, Ron - Portland, OR [ron.raney@or.usda.gov]
Sent: Wednesday, March 18, 2009 11:25 AM
To: Porter, Laura
Subject: RE: AD-1006 request

Laura Porter,

The Farm Impact Rating Form (AD-1006) is to be used only when a project is using federal money to convert land available for agriculture to non-ag uses. The Farm Protection Policy Act (FPPA) requires NRCS to provide technical information to complete the evaluation. For NEPA or other planning efforts our local field offices are an appropriate place to request input on farmland issues.

The appropriate place for FPPA is the actual project that has a design with a footprint established. I do not want to evaluate areas that will to be developed until 2040. The completed AD-1006 means that acres are reported to Congress as converted with federal money this year. The purchase of property would not be a conversion until a project is designed.

The process to complete the AD-1006 is not extensive and multiple requests are not a problem.

Ron Raney
Soil Quality Specialist
USDA, Natural Resources Conservation Service
1201 NE Lloyd Blvd., Suite 900
Portland, OR 97232
ph 503-414-3263
fax 503-414-3277
ron.raney@or.usda.gov

From: Porter, Laura [mailto:lporter@brwncaled.com]
Sent: Wednesday, March 18, 2009 10:56 AM
To: Raney, Ron - Portland, OR
Subject: FW: AD-1006 request

Ron,

Here's a little more information from the City of Newberg on the Baker Rock property and the City's planned use for it. Should we complete Form AD-1006 now?

Thanks,
Laura

From: Lawrence Fain [mailto:lawrence.fain@ci.newberg.or.us]
Sent: Wednesday, March 18, 2009 10:49 AM
To: Porter, Laura
Cc: Wightman, Daria; Howard Hamilton
Subject: RE: AD-1006 request

4/7/2009

Laura-

Just to make sure that there is a clear understanding of what Newberg is planning as part of the Baker Rock parcel. The Baker Rock property is being purchased with bond funds that will be paid back by local rate payers (non-federal). Our plans after purchase of the property are to expand the WWTP using a combination of CWSRF funds (which include both state and federal dollars) plus construct other PW facilities such as the Maintenance Division Yard and a PW admin and engineering offices. Those facilities will also probably use rate payer backed bonds, unless cheap/free federal dollars are available (a low probability). We strongly hope to start using federal funded stimulus money from the CWSRF program to plan the WWTP Repair, Renovation and Expansion Project this summer. The first element of that project to be built on the actual Baker Rock property is an oxidation ditch or two beginning in mid-2010. This is a long way of saying that getting AD-1006 coordination completed now maybe wiser than latter. Please talk with Daria and let me know what you recommend.

Larry

From: Porter, Laura [mailto:lporter@brwnald.com]
Sent: Wednesday, March 18, 2009 10:21 AM
To: Raney, Ron - Portland, OR
Cc: Wightman, Daria; Lawrence Fain
Subject: RE: AD-1006 request

Mr. Raney,

Thank you for your call this morning. Could you please confirm that Form AD-1006 is not required by NRCS for the City of Newberg's Wastewater Treatment Plan Facilities Plan?

As I understand, Form AD-1006 is not applicable to planning projects or projects prior to receipt of federal funds. However, once the City receives federal funding for a project on agricultural land, they will need to complete the form prior to construction.

Thank you for your help.

Respectfully,

Laura Porter, CFM, CAPM, CPESC
BROWN AND CALDWELL
6500 SW Macadam Avenue, Suite 200
Portland, OR 97239
lporter@brwnald.com
503-977-6627, 503-244-9095 fax

From: Raney, Ron - Portland, OR [mailto:ron.raney@or.usda.gov]
Sent: Monday, March 16, 2009 2:18 PM
To: Porter, Laura
Subject: RE: AD-1006 request

Laura,

I got your maps and AD-1006.

The Farm Protection Policy Act is only concerned with lands that are currently available for agriculture, that are being irrevocably converted to non-ag uses with federal dollars. By currently available I mean, vacant (not under roads, building and may be forest, ag, or idle land) and not considering local zoning or UGBs. If you have funding

4/7/2009

to develop this entire acreage we can do the evaluation on the 20 acre tract. What I do not have is a map with the footprint outlined of the currently funded expansion project.

thanks

Ron Raney
Soil Quality Specialist
USDA, Natural Resources Conservation Service
1201 NE Lloyd Blvd., Suite 900
Portland, OR 97232
ph 503-414-3263
fax 503-414-3277
ron.raney@or.usda.gov

From: Porter, Laura [mailto:lporter@brwnald.com]
Sent: Friday, March 13, 2009 10:42 AM
To: Raney, Ron - Portland, OR
Cc: Wightman, Daria; lawrence.fain@newberg.or.us
Subject: AD-1006 request

Mr. Raney,

On behalf of the City of Newberg, Oregon, I am submitting this request for a land evaluation. Please find attached Form AD-1006 and complete Parts II, IV, and V at your earliest convenience, but no later than April 27, 2009, and return to me. The Oregon Department of Environmental Quality (DEQ) requires your review and reply.

Project Name

City of Newberg Wastewater Treatment Plant – Facilities Plan Update

Project Description

The city is submitting their proposed Wastewater Treatment Plant (WWTP) Facilities Plan to DEQ for review. The plan has also been submitted to DEQ for funding through the Clean Water State Revolving Fund. As part of this process, an environmental review must be conducted on projects proposed in the plan. Projects through 2040 include several upgrades on the city's existing industrial site and expansion onto the adjacent land – Baker Rock Property, which is currently farmed for filberts. The land is outside the incorporated city limits, within the urban growth boundary (UGB), and zoned as industrial land.

Purpose and Need

The proposed expansion of the WWTP is designed to meet projected growth within the UGB and the urban reserve area to maintain compliance with the City's National Pollutant Discharge Elimination System permit and potential future regulations. For more detailed information on the recommended projects, the Facilities Plan is available for review at the City of Newberg website, under City Departments/Public Works/Operations (<http://ci.newberg.or.us/page.asp?id=43>).

Project Location

The WWTP is located at 2301 Wyooski Road, Newberg, Oregon in Yamhill County and expansion is proposed to the east on the Baker Rock Property. The attached maps show the location of the project, a 1 mile radius around the project, a figure of where expansions would occur on the property, and taxlots. The Baker Rock Property is at the following coordinates:

Latitude: 45 degrees 17 minutes 16 seconds north
Longitude: 122 degrees 57 minutes 00 seconds west
Township: 03 South
Range: 02 West
Section: 29

Thank you for your review. We look forward to your response.

4/7/2009

Respectfully,

Laura Porter, CFM, CAPM, CPESC
BROWN AND CALDWELL
6500 SW Macadam Avenue, Suite 200
Portland, OR 97239
lporter@brwnald.com
503-977-6627, 503-244-9095 fax

Porter, Laura

From: Porter, Laura
Sent: Wednesday, March 18, 2009 11:33 AM
To: 'Stephanie Armstrong'
Subject: RE: Newberg project

Thanks!

Laura

From: Stephanie Armstrong [mailto:armstrongs@co.yamhill.or.us]
Sent: Wednesday, March 18, 2009 11:30 AM
To: Porter, Laura
Subject: RE: Newberg project

Laura:

To answer your questions:

- The property is within an urban growth boundary; - Correct
- The property is not considered Exclusive Farm Use; and - Correct
- The city does not need to apply for use of the property as "utility facilities necessary for public service" as provided in ORS 215.283(d) or 215.213(d) and does not need to meet the standards of ORS 215.275. – Correct, the majority of the parcel is zoned HI, Heavy Industrial (see attached map) and a *Community or municipal sewer system* is listed as a permitted use subject to a site design review application. A small portion of the parcel is zoned AF-10, Agriculture/Forestry. In this zone a *Community or municipal sewer system* is listed as a conditional use.

Let me know if you have any other questions.
Stephanie Armstrong
Yamhill County Planning

From: Porter, Laura [mailto:lporter@brwncald.com]
Sent: Wednesday, March 18, 2009 10:32 AM
To: Stephanie Armstrong
Cc: Wightman, Daria; Lawrence Fain
Subject: Newberg project

Hi Stephanie,

Thank you for talking with me this morning about the City of Newberg's long-range plans to expand their wastewater treatment plant onto the Baker Rock Property to the east of their existing location at 2301 Wynooski Road, Newberg, Oregon. For clarification, I've attached a map showing the existing WWTP and future proposed expansions onto the Baker Rock property.

Could you please confirm the following:

- The property is within an urban growth boundary;
- The property is not considered Exclusive Farm Use; and
- The city does not need to apply for use of the property as "utility facilities necessary for public service" as provided in ORS 215.283(d) or 215.213(d) and does not need to meet the standards of ORS 215.275.

Thank you for your help.

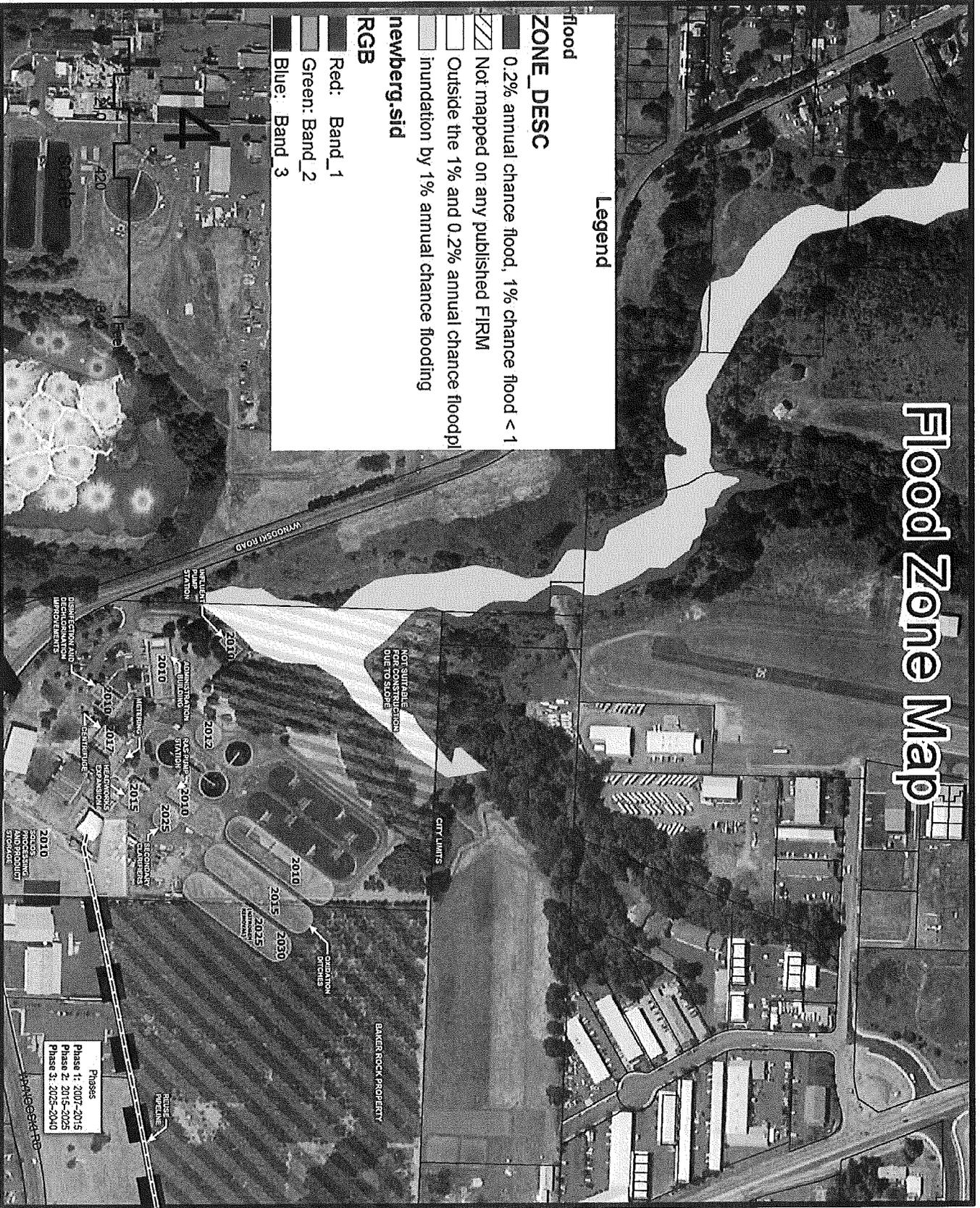
4/7/2009

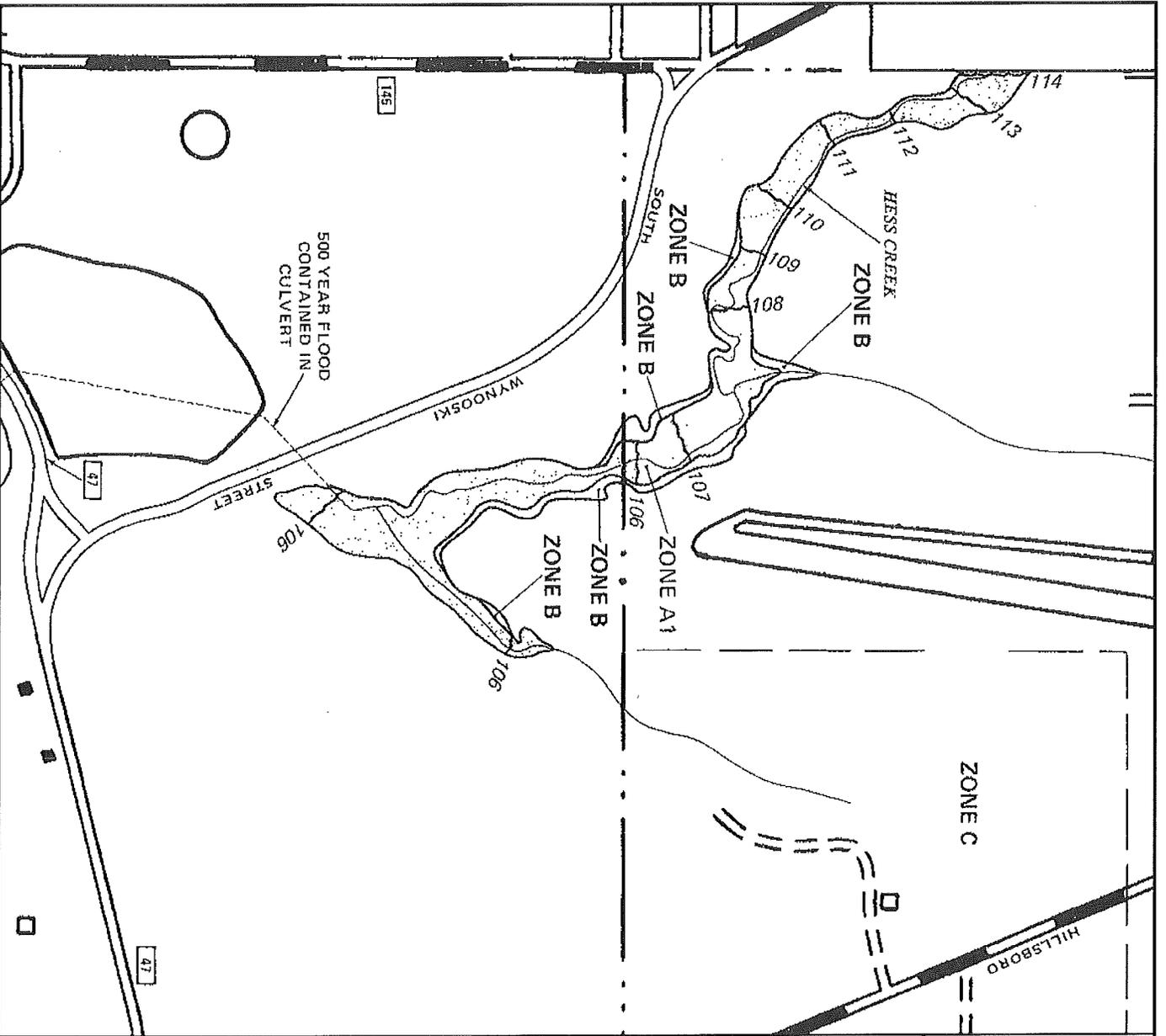
Respectfully,

Laura Porter, CFM, CAPM, CPESC
BROWN AND CALDWELL
6500 SW Macadam Avenue, Suite 200
Portland, OR 97239
lporter@brwncald.com
503-977-6627, 503-244-9095 fax

6.4 FLOODPLAIN MAP

Flood Zone Map





APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

**YAMHILL COUNTY,
OREGON**
(UNINCORPORATED AREAS)

PANEL 187 OF 525
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY PANEL NUMBER
410249 0187 C
EFFECTIVE DATE:
SEPTEMBER 30, 1983

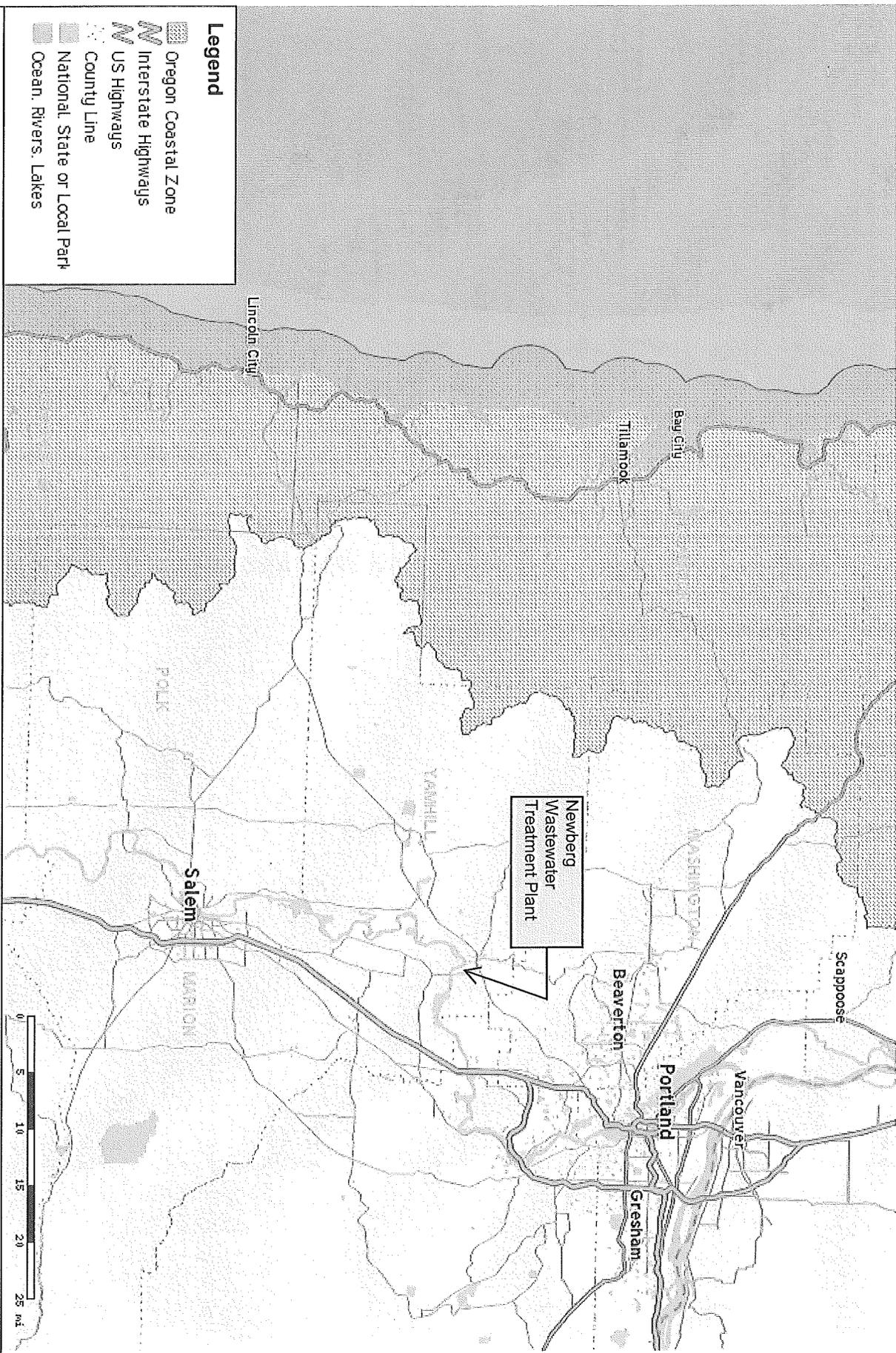


Federal Emergency Management Agency

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

6.5 COASTAL ZONE MANAGEMENT AREA MAP

Coastal Zone Management Plan Map



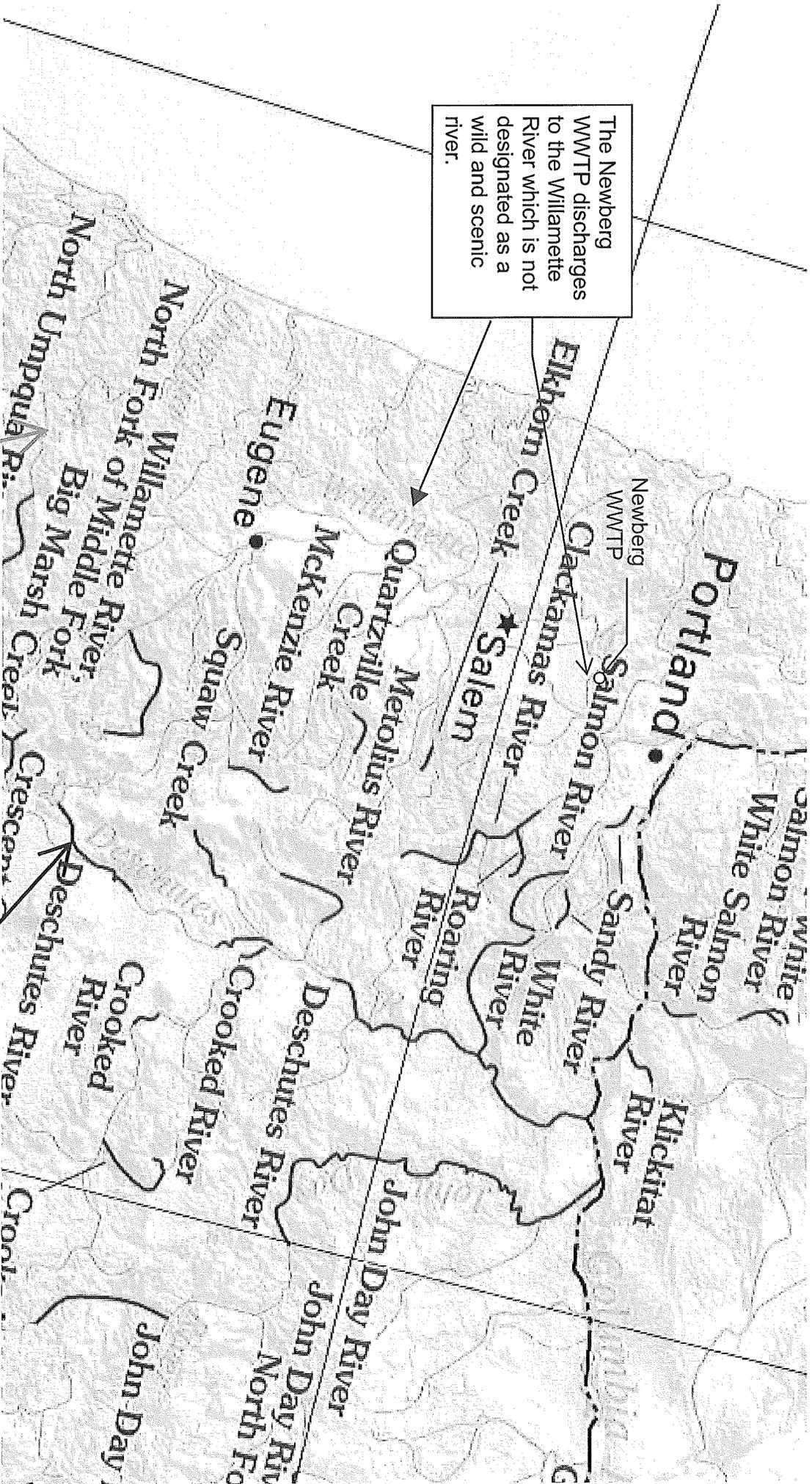
- Legend**
- Oregon Coastal Zone
 - Interstate Highways
 - US Highways
 - County Line
 - National, State or Local Park
 - Ocean, Rivers, Lakes

Coastal Atlas Disclaimer
The Oregon Coastal Atlas uses both public and private data sources, including the Dynemapp/Display product, © GDT. The data and associated data files in this map are captured here "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The risk associated with the results and performance of this map is assumed by the user. This map is not for navigational or legal purposes. <http://www.coastalatlases.net> is a project of the Oregon Coastal Management Program in collaboration with Oregon State University, and Ecotrust. Funding for the effort has been provided by the National Science Foundation, the NOAA Coastal Services Center and the Federal Geographic Data Commission.

6.6 WILD AND SCENIC RIVERS MAP

Wild and Scenic Rivers
www.rivers.gov/wildriverslist.html#or

The Newberg WWTP discharges to the Willamette River which is not designated as a wild and scenic river.



Blue indicates a river, or portion of a river without a designation.

Purple indicates a Wild, Scenic, or Recreational River.

6.7 PACIFIC HABITAT SERVICES REPORT



PACIFIC HABITAT SERVICES, INC

9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

(800) 871-9333 • (503) 570-0800 • Fax (503) 570-0855

March 25, 2009

**Laura Porter, CFM, CAPM, CPESC
Brown and Caldwell
6500 SW Macadam Avenue, Suite 200
Portland, OR 97239**

**Re: No Effect Determination for Listed and Candidate Animal and Plant Species for the
Wastewater Treatment Facility Upgrade, Newberg, Oregon
PHS # 4451**

Dear Laura:

Pacific Habitat Services, Inc. (PHS) has assessed the potential effects of the proposed Wastewater Treatment Facility Upgrade in Newberg, Oregon, on animal and plant species listed in the Federal Endangered Species Act (ESA), the Oregon ESA, as well as species proposed for listing and candidates for listing under both of these acts. This letter describes the existing conditions with the project area, the species known to be present within two miles of the project area, our assessment as to whether suitable habitat for any of these species is present, and an analysis of the potential effects of constructing the project.

INTRODUCTION

Purpose of the No Effect Determination

The purpose of this No Effect Determination is to describe existing conditions within the project area; identify animal and plant species that are federally listed, state-listed, proposed for listing, and candidates for listing that could potentially occur within the project area; determine whether these species are likely to occur within the project area; and evaluate the proposed project's potential effects on these species.

Project Location

The City of Newberg's wastewater treatment plant (WWTP) is located at 2301 Wynooski Road in the City of Newberg. The WWTP is located east of Hess Creek.

Project Description

The City of Newberg owns and operates a secondary wastewater treatment plant. The City currently provides wastewater collection and treatment services to its residents, commercial establishments, institutional customers, and a number of industries. The Newberg WWTP was placed into service in 1987. The facility is a Class IV oxidation-ditch-type, activated sludge plant with Class A in-vessel biosolids composting. Treatment consists of influent pumping, screening and grit removal, oxidation-ditch activated sludge, clarification, solids dewatering, composting, odor control,

Laura Porter, Brown and Caldwell

No Effect Determination for Listed and Candidate Animal and Plant Species for the Wastewater Treatment Facility Upgrade, Newberg, Oregon

March 25, 2009

Page 2

chlorination, dechlorination, and effluent discharge to the Willamette River. The last Facilities Plan was completed 22 years ago as part of the Sewerage Master Plan Update (SMPU) (KCM, 1985), after which the City constructed the existing WWTP on Wynooski Road with federal grants.

The purpose of the Newberg WWTP Facilities Plan Update is to provide the planning for modifications needed to meet projected growth within the Urban Growth Boundary (UGB) and the Urban Reserve Area (URA) to maintain compliance with its National Pollutant Discharge Elimination System (NPDES) permit and potential future regulations.

List of ESA Species Potentially Present within the Project Area

Table 1 lists the five species that are included in this evaluation. This list of species was compiled from the Oregon Natural Heritage Information Center (ORNHIC) database records of rare, threatened and endangered species documented within a two-mile radius of the project site and from the U.S. Fish and Wildlife Service (USWFS) list of “Federally Listed, Proposed, Candidate Species and Species of Concern which may occur within Yamhill County, Oregon.” Species listed as solely “species of concern” or “sensitive” species, (i.e. those that are not listed as threatened, endangered, proposed or candidates for listing at either the federal or state level) are not included in this evaluation.

Table 1 Species included in this Analysis

Common Name	Scientific Name	ESU or Population Segment	Federal Status*	State Status*
Fish				
Steelhead	<i>Oncorhynchus mykiss</i>	Upper Willamette River, winter run	LT/CH	SV
Chinook salmon	<i>Oncorhynchus Tshawytscha</i>	Upper Willamette River, spring run	LT/CH	SC
Plants				
White rock larkspur	<i>Delphinium leucophaeum</i>	N/A	SOC	LE
Reptiles				
Northern Pacific Pond Turtle	<i>Actinemys marmorata marmorata</i>	N/A	SOC	SC
Painted Turtle	<i>Chrysemys picta</i>	N/A	None	SC

***Key to Federal and State Status Designations:**

LE	Listed Endangered	C	Candidate
LT	Listed Threatened	SOC	Species of Concern
SV	Sensitive vulnerable	CH	Critical Habitat

Habitat Description and Setting

Land use surrounding the WWTP and the proposed expansion area includes Hess Creek, active farmland, heavy and light industrial and rural residential housing. No formally classified lands (e.g. national parks, Wild and Scenic Rivers, etc.) are located within the vicinity of the expansion area and will be affected by any portion of the project. The Baker Rock property, which will be purchased for the expansion, is currently inside the UGB and zoned both heavy and light industrial. As such, the WWTP expansion is compatible with current land use zoning.

Hess Creek is located immediately west of the existing WWTP. Hess Creek is a tributary to Spring Brook, which in turn flows into the Willamette River approximately 1.5 miles southeast of the project area. Hess Creek's riparian area, which abuts the WWTP, generally consists of a variety of non-native grasses, including reed canarygrass (*Phalaris arundinacea*), meadow foxtail (*Alopecurus pratensis*), tall fescue (*Festuca arundinacea*) and velvet grass (*Holcus lanatus*). Douglas fir (*Pseudotsuga menziesii*) and western red cedar (*Thuja plicata*) are present further from the creek's bank and closer to the influent pump station (IPS) and Wynoski Road.

The National Wetland Inventory (NWI) does not map wetlands within the existing WWTP or the proposed expansion area. However, the NWI does map Hess Creek, designated as a palustrine, scrub-shrub, emergent, broad-leaved deciduous, saturated/semi-permanent/seasonal (PSS/EM1Y).

A review of aerial photographs shows that lower quality wetlands dominated by reed canarygrass are likely present along the banks of Hess Creek within the expansion area. A small amount of fill may need to be placed within this wetland to accommodate the discharge for the new IPS Yard piping. Any wetland impacts will be unavoidable and will be reviewed by the Corps of Engineers and the Department of State Lands to ensure they comply with all state and federal regulations. Part of their review is to ensure that any permanent impacts are mitigated, which results in no net loss of wetlands.

SPECIES PRESENCE/ABSENCE WITHIN THE ACTION AREA

As noted above, ORNHIC and USFWS have identified five species which are listed as threatened or endangered, or candidates for listing that could potentially occur within the project area if suitable habitat is present. Table 2 summarizes the potential occurrence of each of the five potentially occurring species.

Table 2 Potential Occurrence of Listed and Candidate Species within the Project Area

Common Name	Scientific Name	ESU or Population Segment	Potential Occurrence
Fish			
Steelhead	<i>Oncorhynchus mykiss</i>	Upper Willamette River, winter run	Species present in the Willamette River, but not in Hess Creek.
Chinook salmon	<i>Oncorhynchus Tshawytscha</i>	Upper Willamette River, spring run	Species present in the Willamette River, but not in Hess Creek.

Laura Porter, Brown and Caldwell

No Effect Determination for Listed and Candidate Animal and Plant Species for the Wastewater Treatment Facility Upgrade, Newberg, Oregon

March 25, 2009

Page 4

Common Name	Scientific Name	ESU or Population Segment	Potential Occurrence
Plants			
White rock larkspur	<i>Delphinium leucophaeum</i>	N/A	No suitable habitat present
Reptiles			
Northern Pacific Pond Turtle	<i>Actinemys marmorata marmorata</i>	N/A	No suitable habitat present
Painted Turtle	<i>Chrysemys picta</i>	N/A	No suitable habitat present

***Key to Federal and State Status Designations:**

LE Listed Endangered C Candidate
LT Listed Threatened SOC Species of Concern

Habitat for steelhead and Chinook salmon generally includes cool, clean water; clean gravel for spawning; large woody debris or rock for resting and hiding; and an adequate food supply. Hess Creek, although perennial, consists of a narrow channel, with limited over-hanging vegetation to keep creek temperatures low. Substrate consists of silts and fines, and spawning gravel is not present. The StreamNet database does not list steelhead or Chinook as occurring within Hess Creek or Spring Brook. Due to the presence of a long culvert underneath Wynooski Road, which daylight southwest of the proposed expansion area, it is unlikely that listed fish are present in Hess Creek.

The ORNHIC database also lists northern pacific pond turtle (*Actinemys marmorata marmorata*) and white rock larkspur (*Delphinium leucophaeum*) as occurring within two miles of the existing WWTP and the proposed expansion area. Both species are listed as species of concern (SOC) at the federal level; northern pacific pond turtle is listed as a SOC at the state level, and the white rock larkspur is listed as endangered. Northern pacific pond turtles are highly aquatic, occurring in streams, ponds, lakes, and some wetlands. Though much of their lives are spent in water, they need terrestrial habitats for nesting. They also may disperse via overland routes, and often overwinter on land as well. Pond turtles may be observed basking on fallen logs, rocks, floating vegetation, or even mud or sand banks, provided escape cover is nearby. Basking generally occurs on south or west facing banks with good sun exposure.

As noted above, Hess Creek is located west of the proposed IPS expansion area. Hess Creek, although perennial, does not provide suitable turtle habitat. The banks along the creek are steep, and lack basking sites. Escape cover is also not readily available. As such, pond turtles are not expected to be in or near Hess Creek, the existing WWTP, or the proposed expansion area.

White rock larkspur is a member of the buttercup family, and is found on cliffs and ledges along the lower Willamette and Columbia Rivers. The larkspur grows from 12 to 30 inches tall, and the white flowers bloom in June. There are no cliffs or ledges within the WWTP or the expansion area. The Willamette River is not located within the project area. As such, the white rock larkspur is not expected to be in the existing WWTP or the proposed expansion area.

Laura Porter, Brown and Caldwell
No Effect Determination for Listed and Candidate Animal and Plant Species for the Wastewater Treatment Facility Upgrade, Newberg, Oregon
March 25, 2009
Page 5

FINDING OF EFFECT

As discussed above, the action area is not likely to contain any of the protected species listed in Table 2. As such, the project will have **no effect** on federally endangered, threatened, or Candidate species. In addition, the proposed action will have **no effect on Chinook salmon EFH** under the Pacific Coast Salmon Fishery Management Plan. The Pacific Fishery Management Council does not manage steelhead trout; therefore, EFH has not been designated for this species.

This letter addresses the City of Newberg's responsibilities under Section 7(c) of the Federal Endangered Species Act. PHS will remain updated in regard to any changes in the status of the wildlife or plant species listed above and will be prepared to re-evaluate potential project impacts, if requested.

If you have any questions, please feel free to call me.

Sincerely,

A handwritten signature in black ink that reads "John van Staveren". The signature is written in a cursive style with a horizontal line striking through the middle of the name.

John van Staveren
Senior Scientist

6.8 USEPA AND NMFS CONCURRENCE LETTER



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10

1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

Reply To: OWW-131

August 28, 2009

Mr. Kim Kratz, Director
Oregon State Habitat Office
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
1201 N.E. Lloyd Blvd, Suite 1100
Portland, Oregon 97232

Re: Endangered Species Act (ESA) Section 7 Consultation for the Newberg Wastewater Treatment Facility Upgrade

Dear Mr. Kratz:

In review of the Newberg Waste Water Treatment Plant's (WWTP) Repair, Renovate, and Expansion Program proposals on April 9, 2009 and May 5, 2009, and an August 5, 2009 Addendum on Comparison of Current versus Future Effluent Loads to the Receiving Stream, all submitted to the Environmental Protection Agency (EPA) by Brown and Caldwell (BC) for the City of Newberg, Oregon, the EPA has determined these proposals *may affect* and are *not likely to adversely affect (NLAA)* Endangered Species Act (ESA) listed Chinook salmon and Steelhead trout and their critical habitat, and *may adversely affect* Essential Fish Habitat (EFH) for Chinook salmon under the Magnuson-Stevens Act. EPA is requesting concurrence from the National Oceanic and Atmospheric Administration (NOAA) on these findings.

Section 7 of the 1973 ESA requires that every federal agency consult with the U.S. Fish and Wildlife Service (USFWS) and NOAA to ensure that any action it authorizes is not likely to jeopardize the continued existence of any species listed under the ESA or result in the destruction or adverse modification of critical habitat required by a listed species.

The City of Newberg is applying for \$55 million from the Clean Water State Revolving Fund (CWSRF), administered by the Oregon Department of Environmental Quality (DEQ). The scope of the action for which EPA is making a determination regarding listed ESA species and EFH includes all phases of the project through the year 2025. In Oregon, the CWSRF-State Environmental Review Process requires the EPA review and reply to ESA-related and EFH-related questions of potential impact.

Per guidance from Ben Meyer of your office, in EPA's request of concurrence from NOAA on a NLAA, the Biological Assessment (BA) for this project is enclosed as the original WWTP submittal and the August Addendum without corrections and edits. The original submittal requested a NO EFFECT determination from EPA and EPA provided an explanation, below, clarifying the *may* and *NLAA* determinations and specific project concerns. As your agency allows, EPA and BC together will provide any additional project information you need for this consultation, but EPA will be the responsible party. EPA, however, encourages collaboration directly between your agency and BC, where appropriate, to help ensure a timely consultation.

The following are the project description and EPA's ESA and EFH.

Project Description

The Newberg WWTP, placed into service in 1987, is a Class IV oxidation-ditch-type, activated sludge plant with Class A in-vessel biosolids composting. Treatment consists of influent pumping, screening and grit removal, oxidation-ditch activated sludge, clarification, solids dewatering, composting, odor control, chlorination, dechlorination, and effluent discharge to the Willamette River. The last Facilities Plan was completed 22 years ago as part of the Sewerage Master Plan Update (SMPU) (KCM, 1985), after which the City constructed the existing WWTP on Wyooski Road with federal grants.

In 2007, Brown and Caldwell completed a Newberg WWTP Facilities Plan Update to plan for modifications needed to meet projected growth within the Urban Growth Boundary (UGB) and the Urban Reserve Area (URA) to maintain compliance with its National Pollutant Discharge Elimination System (NPDES) permit and potential future regulations.

The majority of the upgrades and expansion will occur on existing City property dedicated to the Newberg WWTP located at 2301 Wyooski Road in the City of Newberg. The existing property is zoned industrial and is within city limits. The WWTP is located east of Hess Creek, a tributary to Spring Brook, which flows into the Willamette River approximately 1.5 miles southeast of the project area and at river mile 49.7, latitude 45° 16' 52", longitude 122° 57' 29". The WWTP discharges to the Willamette River which is water quality limited for fecal coliform, mercury, temperature, and iron.

The scope of action includes the influent pump station, headworks, secondary treatment-oxidation ditches, secondary treatment clarifiers, disinfection, flow monitoring, and revision of outfall piping above the ordinary high water line. The program will also provide engineering design and construction for expansion of the effluent recycled water facility from 1.0 million gallons per day (mgd) to 2.0 mgd. And, construction of a third oxidation ditch by 2010 has been recommended.

Projects described in the April 9 proposal include upgrades to the Influent Pump Station (IPS), Headworks; Secondary Treatment-Oxidation Ditches; Secondary Treatment-Secondary Clarifiers; Disinfection; Flow Monitoring; Outfall Manhole; Recycled Water Facilities; and Biosolids.

Projects described in the May 5 proposal include a copy of Newberg's NPDES wastewater permit and two additional projects not submitted for review on the April 9 realignment of the influent piping into the IPS, and revisions to the wastewater treatment plant outfall pipe above the ordinary high water line. Design options for the two additional projects were presented to avoid impacting environmental resources.

In the August 5, 2009 Addendum on Comparison of Current versus Future Effluent Loads to the Receiving Stream, the following conclusions were drawn.

As previously stated, the City will continue to meet permit requirements. Average CBOD₅ and TSS discharge loads from the RRE [Repair, Renovate, and Expand] project will not exceed currently permitted effluent loads to the receiving stream as a result of implementing reuse. Bacteria will be treated with the disinfection process to meet permit limits. And, temperature loading to the river will decrease due to implementing reuse.

Summary of ESA and EFH Effects Determinations

These EPA determinations of ESA and EFH effect are restricted to proposal information provided by BC and the City of Newberg, and are summarized in the following table and discussion.

Upper Willamette River and Hess Creek	ESA Status	Jurisdictional Agency	Critical Habitat in Area	Effects Determination for Species and Critical Habitat
Chinook Salmon (<i>Oncorhynchus tshawytscha</i>) <i>spring run</i>	Threatened	NOAA	In Willamette River and likely in Hess Creek	May affect
Steelhead Trout (<i>Oncorhynchus mykiss</i>) <i>winter run</i>	Threatened	NOAA	In Willamette River and likely in Hess Creek	May affect

Of the five species of plants and animals drawn from the Oregon Natural Heritage Information Center database and from the USFWS, only two species – Chinook salmon and Steelhead trout - were federally listed and were therefore treated in this analysis of ESA and EFH. Both species are in the Willamette River, and on the advice of Tom Murtagh of Oregon Department of Fish and Wildlife, these species are likely present also in Hess Creek adjacent to WWTP.

Project effluent has not and will not be directed into Hess Creek, but directly discharged into the Willamette River. On advice of Ben Meyer of NOAA, since WWTP discharges directly into the Willamette River and changes to discharge may impact listed ESA species, EPA has determined implementation of this project MAY AFFECT Chinook salmon and Steelhead trout. Moreover, since the Willamette River contains EFH for Chinook salmon, EFH may be adversely affected.

From review of construction plans, anticipated treatment technology improvements, and plant capacity and flow concerns, effluent mass load is expected to improve even with anticipated increased capacity and effluent flow (See August 5, 2009 Addendum and its Tables 1 and 2). By using increased reuse capacity, effluent flow in dry weather (ADWF) should stay well within the permitted 4.5 mgd, but since reuse is not likely during the wet season and because the City, like most cities, has inflow and infiltration of stormwater and groundwater during wet weather, the average wet weather flow (AWWF) is anticipated to increase from the current AWWF plant design of 6.5 mgd to 7.86 mgd by year 2025. According to BC and Bob Haberman of ODEQ, the NPDES permit is not flow-based and as long as the mass load limit is in compliance, the NPDES permit allows for increases in flow volume.

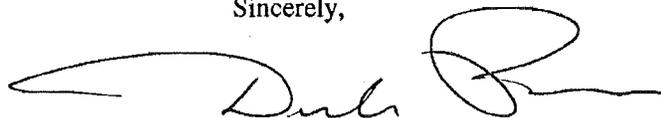
Project construction will occur over several years and the project proponent asserted that the entire project, including construction and discharge quality and quantity will strive to comply with current and future NPDES permits and any other required permits. The City's current permit already includes regulations based on the 2006 Willamette River TMDL and based on discussion with Laura Porter of BC, future permit updates and permits are expected to continue to be based on the 2006 TMDLs for the Willamette River, and subsequent updates to the TMDLs. Oregon temperature regulations have already undergone consultation with the Services on impacts to ESA species.

During my evaluation, Tom Murtagh of ODFW and Ben Meyer of NOAA both indicated that construction may be less a concern than the effluent quality and quantity. EPA's assessment is that the effluent quality will improve or be maintained for all pollutants, even with increased flow in the future. Based on this, EPA's determination on funding for this project is NLAA to listed Chinook and Steelhead Trout. NLAA to ESA critical habitat also means that EFH may be adversely affected.

Finally, a note on bald eagles: As informed by USFWS recently, the bald eagle, federally delisted under ESA (although still listed by Oregon) and not an ESA issue, remains protected under the Bald and Golden Eagle Protection Act (BGEPA, <http://www.fws.gov/pacific/ecoservices/BaldEagleDelisting.htm>). In contributing to a funding decision on the WWTP, EPA urges USFWS, ODEQ, and ODFW to work with the City of Newberg to assure there is compliance with BGEPA if bald eagles are present in the project action area. If you have questions, please contact Kevin Maurice, USFWS biologist (503-231-6179).

Both EPA and BC look forward to helping you expedite this review. If you have any questions on this concurrence request, please do not hesitate to contact me at (206) 553-4497 or poon.derek@epa.gov, or Laura Porter, BC, at (503) 244-7005 or lporter@brwnald.com.

Sincerely,



Derek Poon, Ph.D.
Regional Salmon Ecologist

Enclosures (3): April 9 and May 5 WWTP proposals (BC will provide copies to ODEQ and ODFW)
BC 8/5/09 Addendum: Comparison of Current versus Future Effluent Loads to the Receiving Stream

cc: Lawrence B. Fain, City of Newberg
Laura Porter, Brown and Caldwell
Daria Wightman, Brown and Caldwell
Bob Haberman, Oregon Department of Environmental Quality
Tom Murtagh, Oregon Department of Fish and Wildlife,
Ben Meyer, NOAA
Kevin Maurice, USFWS

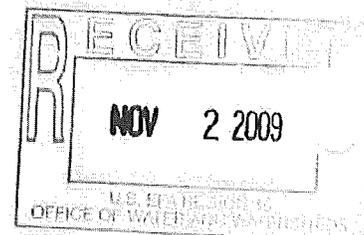


UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

October 30, 2009

Refer to NMFS No.:
2009/04712

Derek Poon
U.S. Environmental Protection Agency - Region 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140



Re: Endangered Species Act Section 7 Informal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Newberg Wastewater Treatment Plant Project, Willamette River (HUC 170900070307), near Newberg, Yamhill County, Oregon

Dear Mr. Poon:

On September 2, 2009, the National Marine Fisheries Service (NMFS) received your request for a written concurrence that the effects of the U.S. Environmental Protection Agency (EPA) funding modifications to the City of Newberg's wastewater treatment plant (WWTP) affecting the Willamette River near Newberg, Yamhill County, Oregon, under the Clean Water State Revolving Fund are not likely to adversely affect (NLAA) species listed as threatened or endangered under the Endangered Species Act (ESA) or their designated critical habitat. The request also included information necessary to complete an essential fish habitat (EFH) assessment under the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

This response to your letter was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402 and agency guidance for preparation of letters of concurrence,¹ and concludes that the action, as proposed, is NLAA Upper Willamette River (UWR) Chinook salmon (*Oncorhynchus tshawytscha*) and UWR steelhead (*O. mykiss*) or their designated critical habitats.

This letter also transmits the results of our analysis of the effects of the proposed action on EFH pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation,² and concludes that the action, as proposed, is not likely to adversely affect EFH designated for Chinook and coho salmon.

¹ Memorandum from D. Robert Lohn, Regional Administrator, to ESA Consultation Biologists (guidance on informal consultation and preparation of letters of concurrence) (January 30, 2006).

² Memorandum from William T. Hogarth, Acting Administrator for Fisheries, to Regional Administrators (national finding for use of Endangered Species Act section 7 consultation process to complete essential fish habitat consultations) (February 28, 2001).



DESCRIPTION OF THE PROPOSED ACTION

The City of Newberg's proposed WWTP modifications consist of upgrading the influent pump station, headworks, secondary treatment-oxidation ditches, secondary treatment clarifiers, disinfection treatment, flow monitoring, outfall manhole, recycled water facilities, and biosolids processes. The work will repair, renovate, and expand the facility put in service in 1987 to increase capacity, accommodating local growth through 2025, and will maintain or improve quality of the effluent discharged to the Willamette River. The work will be phased in and involves the use of heavy equipment for ground clearing, excavation, and general construction of buildings and facilities infrastructure. All work will be contained within the City's property adjacent to Hess Creek, 1.5 miles from its confluence with the Willamette River. An increase in impervious surface of approximately 10,000 square feet will occur over time. Stormwater will be captured on site and will be directed to the influent pump station.

The proposed modification will improve efficiencies in treating wastewater and increase the use of recycled water. While the population served by the WWTP will continue to increase, the upgraded facility will meet current requirements of the National Pollution Discharge Elimination System (NPDES) permits. Increasing capacity of the facilities to remove solids from wastewater and improved technology to disinfect and dechlorinate effluent will maintain current levels of suspended solids, chemical and biological oxygen demand, and chlorine contained within the effluent discharged into the Willamette River. Increasing the use of recycled water from one million gallons per day (mgd) to 2 mgd during dry weather periods will reduce the quantity of effluent discharged, further reducing pollutant loads and maintaining or reducing the discharge of fecal coliform, mercury, iron, and temperature gain to meet total maximum daily load (TMDL) requirements. During wet weather periods, the modified facilities will handle increased flow volume without exceeding currently-established mass load limits.

Conservation measures include:

1. Developing and implementing pollution and erosion control measures during construction to contain and limit the potential spill of pollutants and discharge of fine sediment to adjacent streams and wetlands.
2. Treating all stormwater resulting from the proposed action to limit further degradation of water quality and changes to discharged water quantity.

Action Area

'Action area' means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). The action area is approximately river mile 50 on the Willamette River, from 15 feet upstream of the outfall and extending 75 feet out from the west bank and 150 feet downstream.

UWR Chinook salmon and UWR steelhead occur in the action area. The action area is also designated as EFH for Chinook and coho salmon (*O. kisutch*) and is in an area where environmental effects of the proposed action may adversely affect EFH for those species (PFMC

2005). Within the action area, critical habitat has been designated for UWR Chinook salmon and UWR steelhead.

ENDANGERED SPECIES ACT

In the request for concurrence, the EPA determined that the action, as proposed, may affect UWR Chinook salmon and UWR steelhead. UWR Chinook salmon were listed as threatened under the ESA by NMFS on June 28, 2005 (70 FR 37204) and UWR steelhead were listed as threatened under the ESA by NMFS on January 5, 2006 (71 FR 834). Critical habitat for UWR Chinook salmon and steelhead was designated on September 2, 2005 (70 FR 52630) and became effective January 2, 2006.

For purposes of the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is NLAA listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial (Lohn 2006). Discountable effects cannot be reasonably expected to occur. Insignificant effects are so mild that the effect cannot be meaningfully measured, detected, or evaluated as take. Beneficial effects are contemporaneous positive effects without any adverse effect to the listed species or critical habitat, even if the long-term effects are beneficial.

The effects of approving the funding of the modifications to the City of Newberg WWTP are reasonably likely to maintain or improve water quality within the action area relative to the existing pollutant load and current discharge of effluent from the WWTP. Improved efficiencies and reduced effluent discharge during dry weather periods will maintain or reduce discharge of water quality elements of concern, including fecal coliform, mercury, temperature, and iron. All other mass load limits currently established through the NPDES will be maintained.

The NMFS has not evaluated the effects from the pollutants contained within the current effluent discharged to the Willamette River from the City of Newberg WWTP. Discharging pollutants, such as oil, toxic chemicals, radioactive materials, carcinogens, mutagens, teratogens or organic nutrient-laden water (including sewage water) into listed species' habitat in a manner that significantly impairs spawning, migration, feeding, or other essential behavioral patterns of the species listed may be a "take" of that species.³ However, NMFS considers the existing discharges to be part of the environmental baseline for the action area for purposes of the ESA. Because the EPA has no authority to prescribe the level of discharge resulting from the operation of the proposed facilities modification, NMFS has not consulted on the effects of this discharge, does not consider any take of ESA-listed species due to wastewater discharge to be incidental to the proposed action, nor does NMFS concurrence with the EPA's determination of NLAA remove the prohibition against the take of these listed species resulting from this discharge.

³ Sec. 64 FR 60727 (November 8, 1999) defining 'harm' as an element of 'take' in the ESA, and citing examples of habitat-modifying activities that may fall within the scope of harm when those activities cause death or injury to listed species, including discharging pollutants, such as oil, toxic chemicals, radioactivity, carcinogens, mutagens, teratogens or organic nutrient-laden water including sewage water into a listed species' habitat.

The NMFS reviews the status of designated critical habitat affected by the proposed action by examining the condition and trends of primary constituent elements (PCEs) throughout the designated area, a region that corresponds approximately to the geographic range of the species. PCEs consist of the physical and biological elements identified as essential to the conservation of the species in the documents that designate critical habitat. At the time that each habitat area was designated as critical habitat, that area contained one or more PCEs within the acceptable range of values required to support the biological processes for which the species use that habitat. The PCEs in the Willamette River include:

- Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility, water quality and forage supporting juvenile development, and natural cover.
- Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

The NMFS concludes that all effects of the action, as proposed, are discountable, insignificant, completely beneficial, or some combination thereof and are therefore NLAA UWR Chinook salmon and UWR steelhead and their designated critical habitats as described below.

1. The WWTP property is set back from the Willamette River by over 1,800 feet.
2. Construction activities will be contained on the WWTP property and will not affect adjacent wetlands, Hess Creek, or the Willamette River.
3. UWR Chinook salmon or UWR steelhead are absent from Hess Creek adjacent to the WWTP.
4. Resulting pollutant load contained within the effluent discharged from modified facilities and regulated by the NPDES permit will be maintained or reduced.

The proposed action will affect stream habitat exhibiting PCEs. Table 1 lists PCEs for spawning, rearing, and migration by miles of habitat and designated species.

Table 1. Miles of habitat by species for which PCEs have been identified

Species	Spawning Habitat	Rearing Habitat	Migration Habitat
UWR Chinook salmon	0	70	0
UWR steelhead	3	61	0

The proposed activity will disturb a small section of stream affecting <0.01 % rearing habitat identified in the 5th field HUC by the CHART.⁴ Therefore, the effect on critical habitat will not be significant at the 5th field HUC, the scale which critical habitat was designated.

⁴ Final Assessment of NOAA Fisheries' Critical Habitat Analytical Review Teams For 12 Evolutionarily Significant Units of West Coast Salmon and Steelhead. August 2005. <http://www.nwr.noaa.gov/Salmon-Habitat/Critical-Habitat/2005-Biological-Teams-Report.cfm>

Reinitiation of consultation is required and shall be requested by the EPA, or by the NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or (3) if a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

As part of the information provided in the request for ESA concurrence, the EPA determined that the action, as proposed, may have an adverse effect on EFH designated for Chinook and coho salmon.⁵

For purposes of MSA, "adverse effect" means any impact which reduces quality and/or quantity of EFH. Adverse effects may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions [50 CFR 600.910(a)]. Avoidance and minimization measures are analyzed by NMFS as part of the action, as proposed. However, NMFS will not consider proposed compensatory mitigation as part of the effects analysis, although completing sufficient compensatory mitigation for the effects of action may make the net effect of that action neutral or positive for EFH.

The effects of the action, as proposed, on EFH are the same as those described above in the ESA portion of this document and NMFS concurs with the findings in the EFH assessment.

EFH Conservation Recommendations

Because the properties of EFH that are necessary for the spawning, breeding, feeding or growth to maturity of managed species in the action area are the same or similar to the biological requirements of ESA-listed species as analyzed above, and because the conservation measures that the EPA included as part of the proposed action are adequate to avoid, minimize, or otherwise offset those adverse effects to designated EFH, NMFS has no conservation recommendations to make at this time and no reporting is necessary. This concludes the EFH portion of this consultation.

The EPA is required to complete a supplemental EFH consultation with NMFS if it substantially revises its plans for this action in a manner that may adversely affect EFH or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations [50 CFR 600.920(k)].

⁵ Pacific Fishery Management Council, 1999, Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon. Pacific Fishery Management Council, Portland, Oregon (March 1999). <http://www.pcouncil.org/salmon/salpinp/a14.html>.

Please direct questions regarding this letter to Jim Turner, fishery biologist in the Willamette Basin Habitat Branch of the Oregon State Habitat Office, at 503.231.6894.

Sincerely,



Barry A. Thom
Acting Regional Administrator

cc: Alex Liverman - DEQ
Tom Murtagh - ODFW
Yvonne Vallette - EPA
Joe Zisa - USFWS

6.9 E-MAIL WITH DEQ REGARDING AIR QUALITY

Porter, Laura

From: DAVIS Claudia [DAVIS.Claudia@deq.state.or.us]
Sent: Tuesday, March 24, 2009 1:56 PM
To: Porter, Laura
Subject: RE: Air Quality - Newberg Treatment Plant

Laura,

A Notice of Intent to Construct is not required for the remaining projects described below.

Claudia

From: Porter, Laura [mailto:lporter@brwncald.com]
Sent: Tuesday, March 24, 2009 11:46 AM
To: DAVIS Claudia
Cc: Lawrence Fain; Wightman, Daria
Subject: RE: Air Quality - Newberg Treatment Plant

Hi Claudia,

I spoke with Larry Fain at the City of Newberg and it ends up that the sawdust dryer was previously pulled out as a separate project and I shouldn't have included it in the below list. Larry is actually working on a notice to proceed for the contractor and, as part of that work order, the contractor will be submitting a notice of intent to construct.

Is the sawdust dryer the only concern for air quality? If so, does that mean we don't need to submit a notice of intent to construct for the remaining projects?

Thanks for your help.

Laura

From: DAVIS Claudia [mailto:DAVIS.Claudia@deq.state.or.us]
Sent: Monday, March 23, 2009 2:20 PM
To: Porter, Laura
Cc: DAVIS Claudia
Subject: RE: Air Quality - Newberg Treatment Plant

Laura,

I need more information about the proposed sawdust dryer before I can definitively answer your question. Can you send me information about the dryer, including BTU/heat input rating, fuel types and estimated annual emissions?

Thanks,
Claudia

From: Porter, Laura [mailto:lporter@brwncald.com]
Sent: Friday, March 20, 2009 4:53 PM
To: DAVIS Claudia
Cc: Wightman, Daria; Lawrence Fain
Subject: Air Quality - Newberg Treatment Plant

4/7/2009

Hi Claudia,

Could you please let me know if I should complete an air quality notice of intent to construct (NC)? The City of Newberg is seeking state funding for the below projects. All pumps will be electric. More project information is included below. If you do need us to complete the NC, what emissions should we address?

- Influent Pump Station (IPS) – All wastewater treated by the WWTP first has to be pumped from the main collection point uphill approximately 100 feet in elevation to the WWTP headworks. The IPS does not have any redundant pumping capacity and lacks an appropriately functional wet well. The project will reconfigure the IPS to a dual stage pump station for both dry and wet weather flows; reconfigure the discharge pipe slope; rebuild existing wet well and install new variable-frequency drives and pumps; and construct and outfit a new self-cleaning wet weather wet well.
- Headworks – Construct and install new Magmeters in the influent pipes to improve metering accuracy; add additional headworks channels, screens and compactors to improve hydraulics and increase screening capacity; add new more efficient plate gravity type grit removal equipment.
- Secondary Treatment—Oxidation Ditches – Construction of three additional oxidation ditches to meet population growth through 2025 (median growth) and more stringent treatment standards.
- Secondary Treatment—Secondary Clarifiers – Construction of two additional secondary clarifiers to meet population growth (median growth) and more stringent treatment standards.
- Disinfection – Expansion and efficiency improvements in disinfection facility.
- Flow Monitoring – Improvements to effluent flow monitoring.
- Reuse Facilities – Expansion of reuse filtration from 1 mgd to 2 mgd capacity.
- Biosolids – Improved composting capabilities with the addition of feedstock dehydration unit (sawdust dryer) for the composting treatment and replacement of the sludge belt presses with new sludge dewatering systems.

Project Name

City of Newberg Wastewater Treatment Plant – Facilities Plan Update

Brown and Caldwell Project Number: 136900

Project Location

The WWTP is located at 2301 Wynooski Road, Newberg, Oregon in Yamhill County and expansion is proposed to the east on the Baker Rock Property.

Project Description

The city is submitting their proposed Wastewater Treatment Plant (WWTP) Facilities Plan to DEQ for review. The plan has also been submitted to DEQ for funding through SRF. As part of this process, an environmental review must be conducted on projects proposed in the plan. Projects through 2040 include several upgrades on the city's existing industrial site and expansion onto the adjacent land.

Purpose and Need

The proposed expansion of the WWTP is designed to meet projected growth within the UGB and the urban reserve area to maintain compliance with the City's National Pollutant Discharge Elimination System permit and potential future regulations. For more detailed information on the recommended projects, the Facilities Plan is available for review at the City of Newberg website, under City Departments/Public Works/Operations (<http://ci.newberg.or.us/page.asp?id=43>).

Thank you for your review. We look forward to your response.

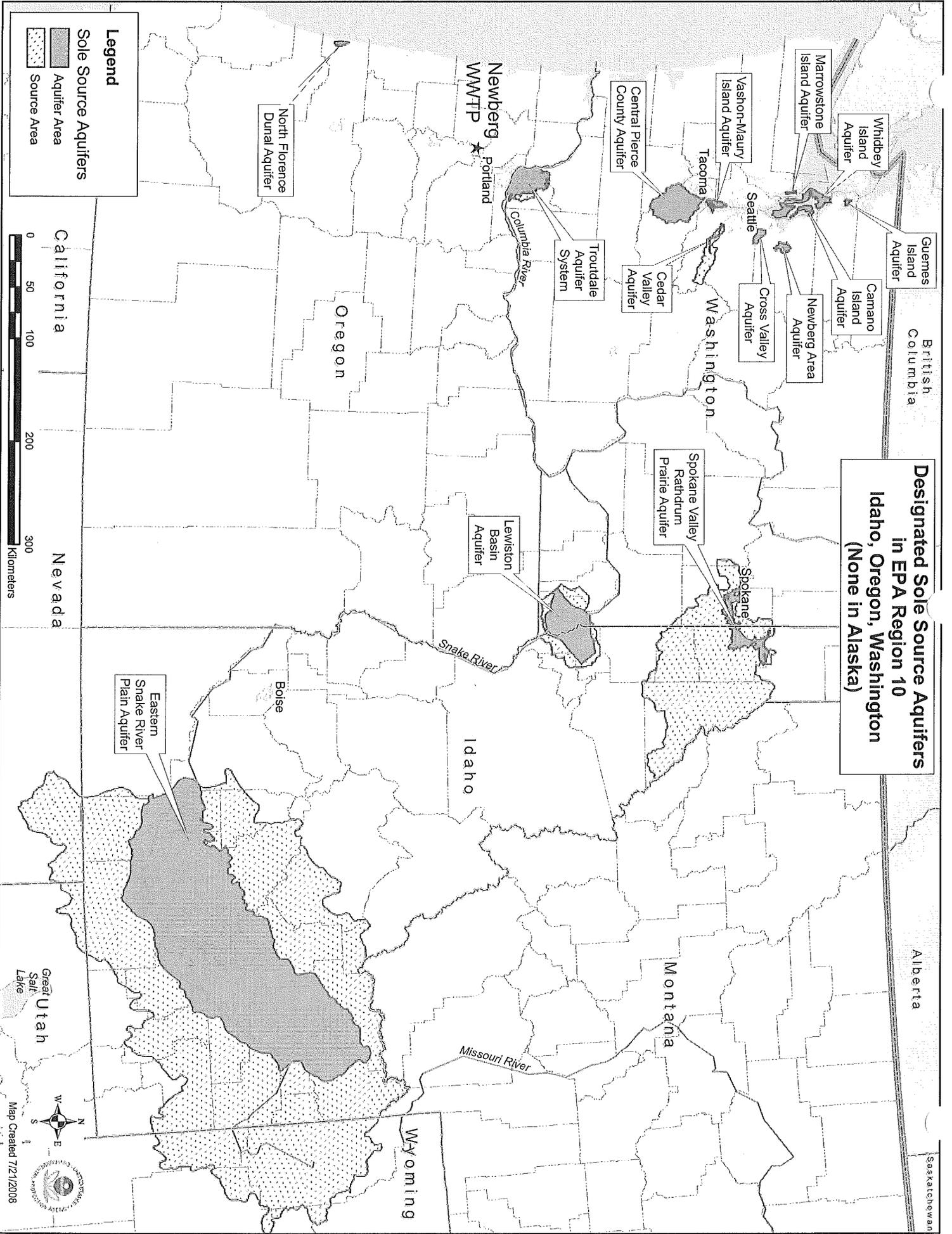
Respectfully,

Laura Porter, CFM, CAPM, CPESC
BROWN AND CALDWELL

6500 SW Macadam Avenue, Suite 200
Portland, OR 97239
lporter@brwnald.com
503-977-6627, 503-244-9095 fax

6.10 SOLE SOURCE AQUIFER

**Designated Sole Source Aquifers
in EPA Region 10
Idaho, Oregon, Washington
(None in Alaska)**



Legend

- Sole Source Aquifers
- Aquifer Area
- Source Area

California Nevada

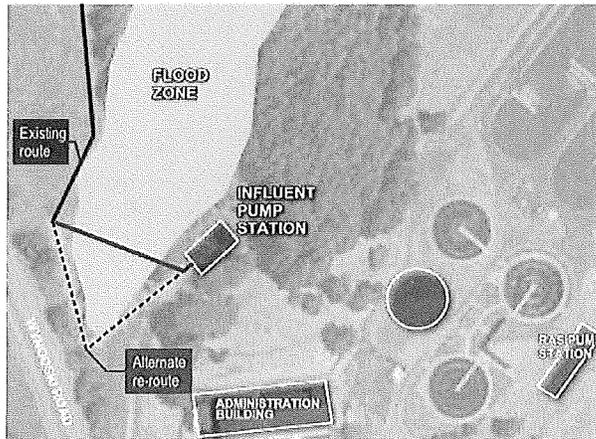
0 50 100 200 300 Kilometers

Great Salt Lake

Map Created 7/21/2008

6.11 IPS INFLUENT PIPE CONCEPTUAL DESIGN

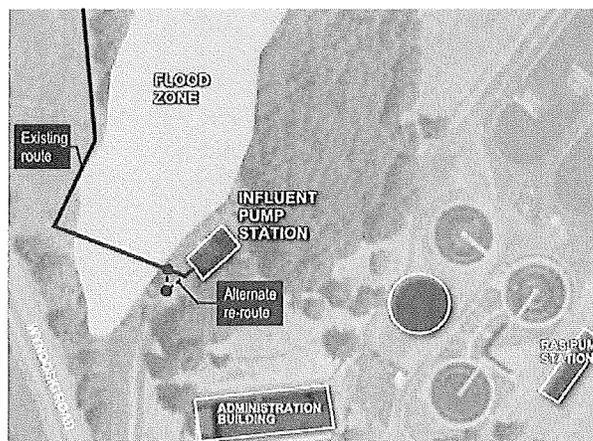
IPS Influent Pipe – Alternative 1



Alternate routing for influent piping re-alignment stays out of the Flood Zone, minimizes trash collection, and saves maintenance costs.

BROWN AND CALDWELL

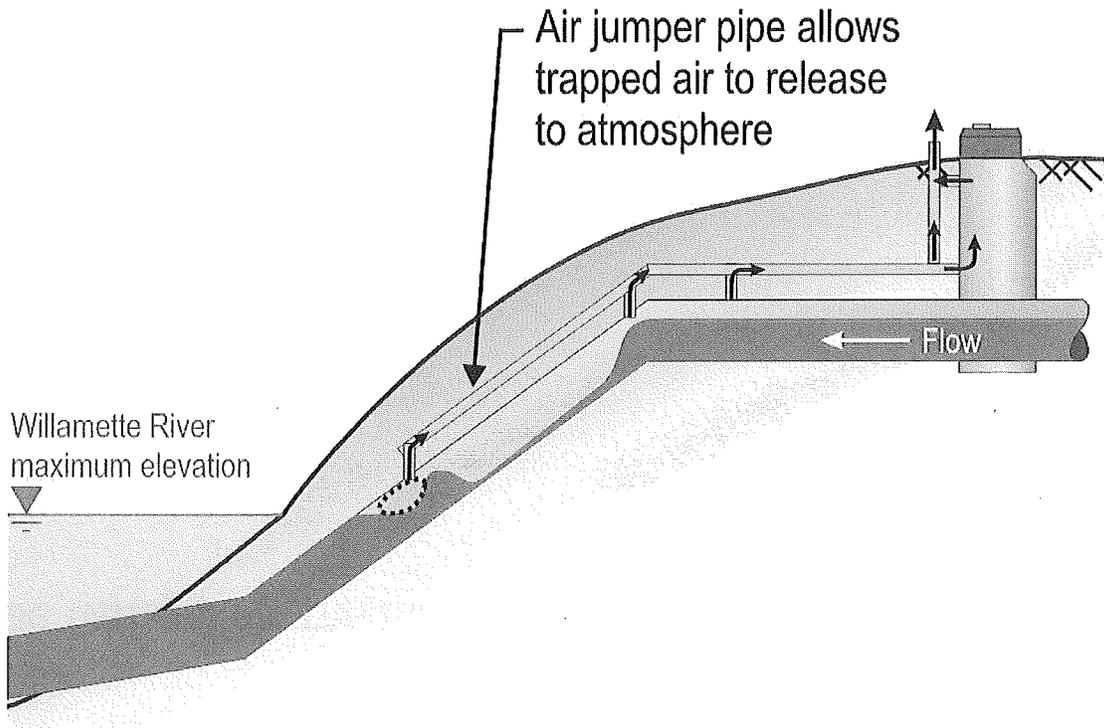
IPS Influent Pipe – Alternative 2



Stay out of flood zone by adding manholes.

BROWN AND CALDWELL

6.12 OUTFALL CONCEPTUAL DESIGN



6.13 ARCHAEOLOGICAL REPORT



**HERITAGE
RESEARCH
ASSOCIATES, INC.**

ARCHAEOLOGY
AND HISTORY

To: Lawrence B. Fain, PE
Senior Engineer, City of Newberg
PO Box 970
Newberg OR 97132

From: Albert C. Oetting, PhD, RPA
Heritage Research Associates, Inc.
1997 Garden Avenue
Eugene OR 97403

Date: May 7, 2009

**HERITAGE Letter Report 09-10: Archaeological Investigations for the
Newberg Wastewater Treatment Plant
Expansion Project, City of Newberg,
Yamhill County, Oregon**

Surface and subsurface archaeological investigations were conducted for the proposed Newberg Wastewater Treatment Plant Expansion Project in the City of Newberg, Yamhill County, Oregon, between April 20-27, 2009 by Albert Oetting and Kevin McCornack, Heritage Research Associates, Inc. (Figure 1). The city is developing plans for substantial expansion to the existing wastewater treatment plant that will be implemented in phases through the year 2040. Private property to the east of the existing facility will be acquired to accommodate these expansion plans.

These investigations were conducted to identify archaeological resources that might be subject to consideration and protection under Section 106 of the National Historic Preservation Act (NHPA) of 1966 (and amended) and applicable Oregon state laws (e.g., ORS 358.905-358.955). The archaeological investigations included a systematic surface pedestrian survey and the excavation of 39 discovery shovel probes (30-cm-diameter) (Figure 2). All of the discovery probes were excavated on the private property.

No prehistoric or demonstrably historical artifacts, features, or sites were found within the project area during these investigations. No additional cultural resources investigations are recommended for this project as currently designed.

Project Location

The Newberg wastewater treatment plant is on the south side of the City of Newberg, in T3S, R2W, section 29 (Figure 1). The plant is just north of the

Willamette River on a river terrace above the modern river floodplain. This terrace is the main valley floor in this area. Hess Creek is just west of the plant and this stream has cut a deep draw that links to the Willamette River floodplain. The current plant is bounded on the south and southwest by Wynooski Road, on the west and northwest by the Hess Creek draw, and on the north and east by private property. The proposed plant expansion will include further development and in-filling in the current plant area, as well as enlargement of the plant footprint to the east (Figure 2). The corridor for the proposed Newberg-Dundee Bypass Project highway (Oetting 2007, 2009) bounds this proposed plant expansion to the north and east. The city plans to acquire the private property parcel to the east, which currently contains a filbert orchard owned by Baker Rock (Figure 1). The planned plant development will occur in three phases, with completion anticipated in 2040.

Natural Setting

Newberg is in the northwestern corner of the Willamette Valley Physiographic Province, which is part of an elongate structural lowland that extends from Cottage Grove, Oregon on the south to Puget Sound in the north, bounded by the Coast Range to the west and the Western Cascades Mountains to the east (Orr et al. 1992). It is the largest valley in western Oregon and supports 70% of the state's population. The valley is covered with thick alluvial sediments deposited by the river as well as by the catastrophic Pleistocene Missoula Floods that flowed down the Columbia River and backed up floodwaters throughout the Willamette Valley. The successive floodplains and other surface landscapes of the valley have been identified and described as geomorphic surfaces by Balster and Parsons (1968). The Senecal geomorphic unit is the dominant surface in the Newberg area and the treatment plant is located on Aloha and Woodburn silt loam soils (Otte, et al. 1974) that are commonly associated with this surface (Balster and Parsons 1968). The Senecal surface was formed in the late Pleistocene and would have provided a stable surface available for human use and occupation throughout the Holocene (McDowell 1984).

The northern valley has a relatively mild climate, with wet cool winters and warm dry summers. Annual temperature ranges in Yamhill County are relatively small, from an average minimum temperature of 33°F in January to an average maximum of 83°F in July (WRCC 2009). Annual precipitation is about 42 inches, generally falling as rain, with nearly 70% occurring between November and March.

Modern vegetation reflects the region's intensive agricultural and urban development of the last 150 years. Natural vegetation in the region was a mosaic of prairie grasslands, oak-conifer woodlands, and coniferous forests on the bordering hills (Franklin and Dyrness 1974; Johannessen et al. 1971; Otte et al. 1974; Towle 1982). This environmental mosaic was manipulated and maintained in part by the indigenous Kalapuya Indians through annual

burning of tracts in the valley to promote food-producing plants and animals important to their economy (Boyd 1999).

Cultural Setting

The Willamette Valley was inhabited by the Kalapuya Indians when European and American trappers and explorers first entered western Oregon. The following brief sketch of Kalapuya lifeways, focusing on settlement, subsistence, and group mobility, is based on Toepel and Beckham (1981), Toepel (1987), and Zenk (1976, 1990). Little archaeological research has been conducted in the northern Willamette Valley, but data from the southern and central valley (e.g., Aikens 1975, 1993; Cheatham 1988; Minor and Toepel 1981; Minor et al. 1980; Pettigrew 1980, 1990; Toepel 1985) are likely relevant for the northern valley. These sources provide more complete discussions of regional ethnography and archaeology.

Archaeology: Willamette Valley cultural chronologies cover all of the Holocene and divide the regional archaeology into five broad periods: Paleo-Indian, Early Archaic, Middle Archaic, Late Archaic, and Historic (Minor and Toepel 1981; Pettigrew 1990). The earliest, *Paleo-Indian* (prior to 10,000 BP [Before Present]), is indicated by a few isolated fluted projectile points scattered across western Oregon. These artifacts are considered to be similar in age to the well-dated fluted point complexes of the Southwest and Great Plains, but whether the lifeways of these various groups were also similar remains to be determined.

The Archaic Stage (Willey and Phillips 1958), subdivided into early, middle, and late periods, is a broad time span characterized by groups with hunting and gathering economies that used broad resource bases obtained with increasingly complex tool kits. Hearth and oven features with radiocarbon ages between 7,700 BP (uncorrected) and 9,800 BP (O'Neill et al. 2004; Peterson 1989) indicate people were using the southern valley by the *Early Archaic* period (10,000-6,000 BP). Charred camas bulbs in similar oven features with ages greater than 7,000 BP (Cheatham 1988; O'Neill et al. 2004) demonstrate the early use of this important plant resource. Large leaf-shaped projectile points are diagnostic of this period, found in the earliest levels of Cascadia Cave in the mountains east of the central valley and in the lower levels of other sites in the region.

The number of *Middle Archaic* (6,000-2,000 BP) sites and the variety of site settings indicate an increasing population and regular use of a wide range of resources (Toepel 1985). Broad-necked projectile points are typical of this period. Ground stone tools are more common in Middle Archaic site components and reflect the importance of plant resources to regional subsistence. Hundreds of camas roasting ovens dating to this period have been documented in the southern and central valley (Connolly et al. 1998; O'Neill et al. 2004).

The only archaeological evidence for a residential structure in the Willamette Valley also dates to this period, with two radiocarbon ages of about 2,800 BP (White 1975).

The *Late Archaic* period (2,000 BP to ca. AD 1750) continued the development and refinement of Middle Archaic cultural patterns, and population continued to increase (Minor and Toepel 1981). Artifact assemblages are dominated by small, narrow-necked projectile points, reflecting bow and arrow technology. Settlement and subsistence practices typical of the ethnographic Kalapuya were clearly established during this time. A broad range of plant resources, dominated by camas, was exploited, with hunting as an important ancillary pursuit. Clusters of camas processing and occupation sites suggest long-term, cyclical use of specific locations, possibly by family-based groups (Bowden 1997). Shell ornaments and other artifacts, found at sites such as the Fuller and Fanning mounds on the South Yamhill River, suggest increasing trade and exchange with the coast and Columbia River regions.

The *Historic* period (ca. AD 1750-1855) reflects the brief, tumultuous time between the first influx of Euro-American trade goods, the spread of European epidemic diseases, and the arrival and settlement of ever-increasing numbers of Euro-Americans, culminating in the treaties of 1855. Devastated by successive epidemics, the surviving Kalapuya people were moved to reservations (primarily the Grand Ronde Reservation) as part of their treaty with the U. S. government. Few archaeological sites of this period are known, and they are generally identified by the presence of Euro-American manufactured items, such as the glass beads and brass metal items recovered at the Fuller and Fanning sites.

Ethnography: The Kalapuya consisted of several small autonomous bands who spoke dialects of three closely related Penutian languages that have been grouped together as the Kalapuyan language family. There were approximately 13 dialectally distinct Kalapuya groups. Most of the available ethnographic data was collected on the Grand Ronde Reservation in the late nineteenth and early twentieth centuries, from speakers of the northern language, Tualatin-Yamhill (Zenk 1976, 1990).

The Kalapuya were an inland people who used the varied resources of the Willamette Valley, but traded with people on the Oregon coast and on the Columbia River. Individual bands occupied sub-basins of Willamette River tributaries, each sub-basin offering a range of riverine, valley, and foothill habitats and resources. The Newberg area was in the territory of the Tualatin band of the Kalapuya in the early 1800s (Zenk 1976, 1990). This territory extended north and west of the Willamette River (downstream from the Yamhill River) into the foothills of the Coast Range, encompassing the drainages of the Tualatin River, Chehalem Creek, and the North Fork Yamhill River. The Tualatin shared linguistic and cultural traits with the other Kalapuya groups in the valley. They also shared some cultural traits with the Chinookan Indian groups of the Portland Basin and lower Columbia River.

The Kalapuyan resource base was diverse and required a scheduled pattern of movement to take advantage of particular seasonal resources as they became available in different areas. Camas was a primary staple of the Kalapuyan diet, with contributions from other vegetal resources such as hazelnuts, tarweed, lupine, cattail, and various berries. For the Tualatin Kalapuya, wapato was an extremely important crop. This marshy root crop, also a staple among Portland Basin and Lower Columbia River Chinookans, grew in profusion around Wapato Lake (now drained, in the vicinity of Gaston) at the head of Chehalem Creek. Most Kalapuyan groups pursued some fishing and hunted a variety of birds and mammals.

Kalapuyan families were generally mobile between April and November, moving as needed to acquire and process foods and other resources for immediate consumption as well as for storage. Camps during this part of the year were small and transitory, but permanent villages were returned to each winter. Winter villages featured large rectangular semi-subterranean multi-family lodges. The Tualatin Kalapuya also built gabled cedar-plank houses similar to those of the neighboring Chinookans. Structures in the summer through fall temporary camps, if used at all, were much smaller and simpler.

Locations of several winter villages were obtained by ethnographers working with Tualatin consultants on the Grand Ronde reservation in the late nineteenth and early twentieth centuries. None were located in the immediate area, but one was placed several miles northwest of Newberg on Chehalem Creek and one was located on the north side of the Yamhill River in the vicinity of Lafayette. Numerous villages were located on Wapato Lake, and Chehalem Creek would have been a natural access route from these villages to the Willamette River and Valley.

Residents of the permanent winter villages were the primary sociopolitical units of the Kalapuya. Each village was politically autonomous, with authority vested in a "chief" who adjudicated disputes among village members and assisted them in times of need (Zenk 1990). Chiefs were generally wealthy, and wealth probably also influenced social distinctions within the village.

Kalapuyan groups were part of the regional trade networks, exchanging a variety of goods and foodstuffs with other Kalapuya bands, as well as Chinookans, the Molala, the Klamath, and various coastal groups. Bands in the southern Willamette Valley were sometimes victimized by slave raids from some of these same groups. Inter-marriage among the Kalapuyan bands, and with their trading partners, occurred with some frequency.

History: Direct contact between Oregon Native Americans and Euro-Americans began in 1792, when American Robert Gray located the mouth of the Columbia River and Royal Navy parties under the command of George Vancouver sailed up the river into the Portland Basin (Dodds 1986). Most interactions were limited to coastal fur trading ships

until the Lewis and Clark expedition passed through the Portland Basin in 1805 and 1806. Fur trappers and adventurers soon followed. Astoria was founded in 1811 by American fur entrepreneur John Jacob Astor, and the British North West Company (NWC) sent overland trapping expeditions from Canada. Several parties entered the lower Willamette Valley, including Donald McKenzie, who explored the valley in 1812. NWC trading posts were first established in 1812-1813, probably near Salem, and then near Champoeg on the bank of the Willamette River in 1813 (Hussy 1967; Minor et al. 1980). The valley was soon a primary source for meat and other foods for Astoria (which was sold to NWC and renamed Fort George). Furs and meat from the valley continued to be important after Fort Vancouver was established by the Hudson's Bay Company (HBC, successor to NWC) in 1825.

Champoeg and the French Prairie region (across the river from Newberg) became the first area of Euro-American settlement outside of the Portland Basin in the early 1830s (Hussey 1967). These early settlers were French Canadians who had worked for the NWC and HBC from Ft. Vancouver. Ewing Young, an American trapper, arrived in 1834 and settled on the north bank of the Willamette River, near the mouth of Chehalem Creek and the present-day city of Newberg (Hussey 1967). He and others constructed a sawmill on the creek in 1836. As American emigrants arrived in ever-greater numbers over the Oregon Trail and by ship in the 1840s, land in the northern valley was rapidly claimed and settled. The Territory of Oregon was created in 1848 and in 1850 the U. S. Congress enacted the Donation Land Act, providing free land to Oregon emigrants. By the mid-1850s, Donation Land Claim (DLC) homesteads covered nearly all of the land in the Newberg area.

Native American groups, including the Tualatin Kalapuya, had been devastated by successive waves of European-introduced epidemic diseases. A large epidemic in the early 1830s, thought to be malaria, resulted in mortality rates in the Willamette Valley as high as 90% (Boyd 1990). Few families or larger groups remained intact as the influx of Euro-American emigrants increased steadily through the 1840s. Raiding and sporadic organized warfare flared throughout Oregon in the 1840s and 1850s, spurring the U. S. government to secure treaties. Treaties with many Willamette Valley groups were negotiated in 1851 and most of these provided for reservations in the Willamette Valley, including one surrounding Wapato Lake for the Tualatin (Beckham 1977; Gibbs and Starling 1978). These treaties, however, were not ratified by the U. S. Senate, in part due to pressure from settlers demanding that Indians be removed from the valley. In 1855, a new treaty was negotiated with the Kalapuya bands, signed in 1855 as the Dayton Treaty and ratified by the Senate. These bands ceded their lands to the United States for specified annuities and agreed to be removed to the Grand Ronde Reservation in the foothills west of the Willamette Valley.

The town of Dayton, upstream from Newberg, was settled in 1848-1849 (McArthur 1974) and was the location of the 1855 treaty negotiations with the Kalapuya (Mackey 1974). Dayton developed as a center for surrounding farms and was a shipping point on the lower

Yamhill River for transporting agricultural products to the Portland area, first by flatboat and then by steamboat. Similarly, Lewis Rogers opened a store and a shipping port at Rogers Landing on the Willamette River to serve the needs of the local farms in what became the Newberg area. The developing community was named Newberg in 1869 by Sebastian Brutscher, one of the pioneer DLC farmers in the area (McArthur 1974).

Previous Archaeological Investigations in the Project Vicinity

The archaeological site and project database files maintained by the Oregon State Historic Preservation Office (SHPO) in Salem were consulted to identify previously recorded sites in or near the Newberg Wastewater Treatment Plant project area and to locate previous archaeological investigations conducted in this vicinity. No archaeological sites are recorded in the proposed expansion project area, but one prehistoric archaeological site (35YA21) has been recorded about 0.2 miles northeast of the current plant. This low density lithic scatter site is on the valley floor east of Hess Creek, near the head of a side draw leading down to the creek (Oetting 2009).

An archaeological survey of the wastewater treatment plant vicinity was conducted prior to construction of the current facility (Wessen 1984). Four other cultural resources investigations have been conducted within one mile of the current plant (Connolly 2005; Follansbee 1979; Oetting 2007, 2009). A survey for proposed sewer improvements to the west and north of the current project yielded no archaeological materials (Follansbee 1979). Likewise, no archaeological materials were found during archaeological investigations conducted for improvements along Oregon State Highway 219 to the east of the current plant (Connolly 2005).

The survey of the current plant vicinity resulted in the discovery of one obsidian flake and several historical items (Wessen 1984). The project report provided a sketch map with the general locations of these items, suggesting they were near the terrace edge in the northern part of the current plant footprint or just north of the current plant. These isolated artifacts were assessed as not significant and no other cultural resources investigations were recommended.

The portion of the corridor for the proposed Newberg-Dundee Bypass highway project immediately north and east of the current plant was surveyed for archaeological materials at 20-m transect intervals, but no surface artifacts were observed (Oetting 2007). This survey area included all of the filbert orchard property (currently owned by Baker Rock) not included in the current project area. However, since isolated artifacts had been recorded during the earlier wastewater treatment plant survey (Wessen 1984), possibly in the bypass corridor area north of the current plant, this area was identified as having a high potential for

archaeological materials and subsurface discovery probes were excavated in this area (Oetting 2009). Twenty-five 30-cm-diameter shovel probes were excavated in the filbert orchard north of the existing plant and the planned expansion area, and another 48 round probes and one square shovel probe were excavated in the open field north of the filbert orchard. No cultural materials were found in the filbert orchard, but the prehistoric lithic scatter site mentioned above (35YA21) was found in probes excavated in the northern part of the open field. This site has not yet been evaluated to determine eligibility for the National Register of Historic Places (NRHP) (Oetting 2009).

The 1852 General Land Office (GLO) cadastral survey plat for T3S, R2W depicts several cultural features in the area that is now Newberg, including fields, roads, and some structures. No cultural features are shown in the vicinity of the current project area (GLO 1852). The 1860 GLO plat of land claims shows that the project area was in DLC No. 68, claimed by Samuel D. Snowden (GLO 1860).

Surface Survey Methods and Results

A surface inspection of the proposed wastewater treatment plant expansion project area (which covers a total of about 18 acres) was conducted to identify undeveloped areas within the current plant that should be included in the systematic pedestrian archaeological survey (Figure 1). Much of the existing plant area has been disturbed and developed with buildings, treatment facilities and ponds, roads, parking areas, and landscaping. There is a large open area immediately southeast of the existing oxidation ditches (Figure 2), but this area has been graded and graveled (Figure 3), and has been used for a variety of purposes, including equipment and materials storage (Figure 4). These developed or otherwise disturbed areas of the current plant, covering about 10 acres, were examined during the initial surface inspection of the plant. The only relatively undeveloped and undisturbed area within the existing plant property is an open field in the southeast corner of the property (Figure 5). This field and the private property in the filbert orchard (Figure 6) that will be acquired east of the existing plant, covering about 8 acres, were included in the systematic archaeological surface survey (Figure 2).

The city plans to acquire the private property parcel to the east of the plant, currently covered with a filbert orchard owned by Baker Rock (Figure 1). Most of this private parcel was previously investigated for cultural materials as part of the Newberg Dundee Bypass project (see above; Oetting 2007, 2009). The southwest portion of the orchard was outside of that project and it is this area that will be developed as part of the wastewater treatment plant expansion project (Figures 1 and 2). This portion of the filbert orchard was surveyed and probed for the current project.

A systematic pedestrian survey of the filbert orchard and the open field was conducted by two archaeologists (Figure 2). These areas were inspected by walking parallel transects at 15-m intervals. Each transect was generally straight, but somewhat meandering individual routes were chosen by each surveyor to locate and examine areas with the greatest surface visibility. The field in the southeast corner of the plant property was covered with grasses, weeds, and low bushes (Figure 5), but mineral soil was visible surrounding rodent burrows and in bare patches between clumps of vegetation. Surface visibility in this field was about 10-20%. Surface visibility in the filbert orchard was generally very good, 50-70%, with duff and low weeds obscuring areas closest to the trees (Figure 6).

No prehistoric or demonstrably historical (at least 50 years old) artifacts, features, or sites were identified during the surface survey. The open field ground surface was somewhat "lumpy" rather than flat, indicating that imported fill has been dumped over time in various places in this field (Figure 5). This fill has included soil, crushed gravel, and miscellaneous debris such as chunks of concrete, asphalt, and wood. The surface of the filbert orchard has been graded in the past and is kept clear and flat to aid in caring for the trees and harvesting the nuts (Figure 6). Overall, however, the orchard ground surface appeared relatively undisturbed.

Subsurface Discovery Methods and Results

Although no artifacts were found on the surface of the treatment plant expansion project area, and no artifacts had been found in the 25 similar shovel probes excavated in the orchard north of the current project area (Oetting 2009), subsurface discovery probes were excavated in the filbert orchard to assess whether buried cultural materials were, or were likely to be, present in the project area (Figure 2). The excavated units were shovel probes, 30 cm in diameter. These round probes are excavated in controlled levels with cylindrical, vertical sidewalls to produce reasonably comparable soil volumes in each level, facilitating direct comparisons between levels and between units. Data from these units can be used to quickly discern the presence or absence of subsurface artifacts.

Each probe was excavated using shovels and trowels, as needed. All units were excavated in 10-cm levels, using the tip of a round-nosed shovel in radial scraping movements to flatten the floor of each level. Vertical control was maintained by measuring depth from the ground surface. All excavated soil was sifted through 1/8" mesh screens. Each unit was excavated to a depth of 80 cm, the maximum depth a unit this size can be excavated using a standard round-nosed shovel. Notes documenting each unit and level were maintained using Shovel Probe Data sheets.

Thirty-nine discovery probes were excavated in the filbert orchard, the least disturbed portion of the project area (Figure 2, Table 1). The probes were excavated at 20-m intervals in the middle of the corridors between the rows of trees (Figures 7 and 8). Six lines of probes were excavated, with the lines oriented southeast-northwest to match the angle of the proposed plant improvements, thus sampling the southwest corner of the filbert orchard (Figure 2). Each line was about 30-33 m apart, to coincide with the corridors between the tree rows. The northern line contained 10 probes, line 2 had nine probes, line 3 had eight probes, line 4 had six probes, line 5 had four probes, and line 6 had two probes. Similar soil was found in each probe—a medium brown silt loam with virtually no rocks. The proportion of clay in this loam increased as depth increased.

No prehistoric or historical artifacts, features, or sites were found in these discovery probe excavations (Table 1). Each probe was excavated 80 cm deep, so a volume of 2.2 cubic meters of soil was excavated and examined. Given the lack of cultural materials in this area, it is unlikely that buried cultural materials would be found in the more disturbed soils of the open areas in the current plant facility.

Summary and Recommendations

The area of the proposed Newberg Wastewater Treatment Plant Expansion Project was inspected to determine if archaeological materials were present. The investigations included an examination of the developed areas of the plant, a systematic surface pedestrian survey of undeveloped portions of the project area, and the excavation of 39 discovery probes in the least disturbed area—the filbert orchard east of the current plant. No prehistoric or demonstrably historical artifacts, features, or sites were found on the surface or in the discovery probes excavated in this project area.

No additional archaeological investigations are recommended for this project. Although a prehistoric archaeological site is present about 0.2 miles north of the current plant, no cultural materials were found in surface or subsurface investigations conducted in the area between that site and the current plant (Oetting 2007, 2009). The existing plant area was inspected for archaeological materials prior to its construction in the 1980s, and only a few isolated artifacts were identified (Wessen 1984). Finally, no cultural materials were found during the current investigations. Therefore, the project area for the proposed plant expansion appears to have a low potential for unidentified archaeological materials. No additional investigations are recommended for the proposed plant expansion project area.

No other archaeological investigations are recommended for the rest of the Baker Rock property that will be acquired by the City of Newberg. This property has been previously surveyed to current Oregon SHPO standards (Oetting 2007) and discovery probes

have been excavated in the northern part of this property (Oetting 2009). If project designs change to include additional areas within the acquired Baker Rock property, no additional archaeological investigations will be needed. However, if project design changes incorporate new areas outside of this parcel and the existing plant, then it is recommended that archaeological investigations comparable to those completed in the existing project area be conducted in the new areas.

It should be remembered that archaeological sites and, in particular, Indian burials are protected under Oregon state law (ORS 97.740-97.760, 358.905-358.955, and 390.235), and by federal regulations where federal lands, funds or permits are involved (e.g., 36 CFR Part 800). Disturbance of graves is specifically prohibited, even through accidental discovery and even if reviewing agencies have concurred that a specific project is in compliance with applicable state and federal regulations. If archaeological resources are inadvertently encountered during the course of expanding the Newberg Wastewater Treatment Plant, all earth disturbance in the vicinity of the find should be halted immediately, in accordance with state and federal laws, and the City of Newberg should consult with a qualified archaeologist. The archaeologist will investigate and evaluate the discovery, and recommend subsequent courses of action in consultation with the Oregon SHPO, the City of Newberg, and the appropriate tribes.

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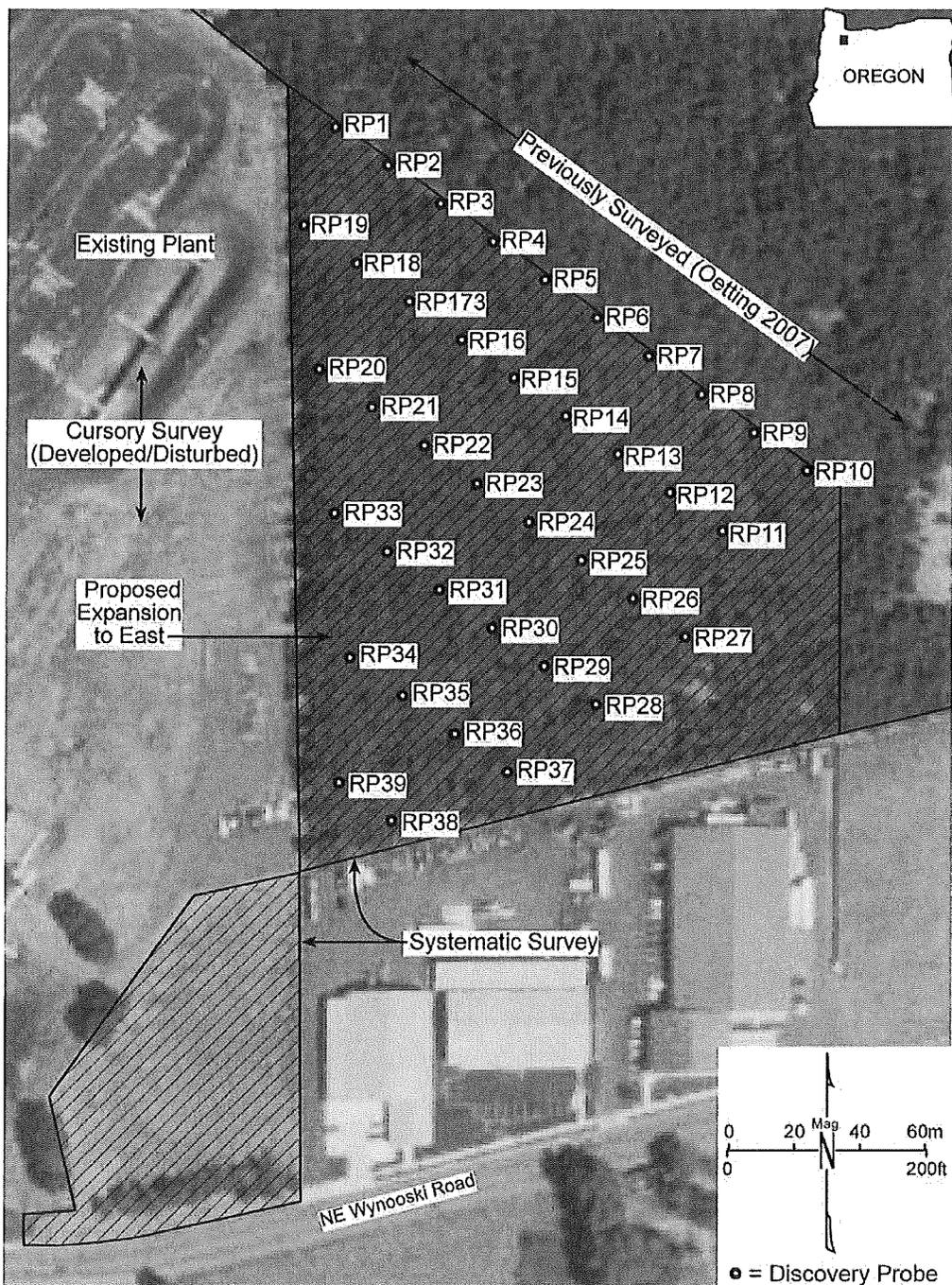


Figure 2. Location of surveyed areas and excavated units.

Table 1. Summary of discovery probes excavated on the Baker Rock property east of the treatment plant.

Probe	Level								Artifact Total	Stopped by
	1	2	3	4	5	6	7	8		
RP1	-	-	-	-	-	-	-	-	0	sterile
RP2	-	-	-	-	-	-	-	-	0	sterile
RP3	-	-	-	-	-	-	-	-	0	sterile
RP4	-	-	-	-	-	-	-	-	0	sterile
RP5	-	-	-	-	-	-	-	-	0	sterile
RP6	-	-	-	-	-	-	-	-	0	sterile
RP7	-	-	-	-	-	-	-	-	0	sterile
RP8	-	-	-	-	-	-	-	-	0	sterile
RP9	-	-	-	-	-	-	-	-	0	sterile
RP10	-	-	-	-	-	-	-	-	0	sterile
RP11	-	-	-	-	-	-	-	-	0	sterile
RP12	-	-	-	-	-	-	-	-	0	sterile
RP13	-	-	-	-	-	-	-	-	0	sterile
RP14	-	-	-	-	-	-	-	-	0	sterile
RP15	-	-	-	-	-	-	-	-	0	sterile
RP16	-	-	-	-	-	-	-	-	0	sterile
RP17	-	-	-	-	-	-	-	-	0	sterile
RP18	-	-	-	-	-	-	-	-	0	sterile
RP19	-	-	-	-	-	-	-	-	0	sterile
RP20	-	-	-	-	-	-	-	-	0	sterile
RP21	-	-	-	-	-	-	-	-	0	sterile
RP22	-	-	-	-	-	-	-	-	0	sterile

Table 1. (Continued).

Probe	Level								Artifact Total	Stopped by
	1	2	3	4	5	6	7	8		
RP23	-	-	-	-	-	-	-	-	0	sterile
RP24	-	-	-	-	-	-	-	-	0	sterile
RP25	-	-	-	-	-	-	-	-	0	sterile
RP26	-	-	-	-	-	-	-	-	0	sterile
RP27	-	-	-	-	-	-	-	-	0	sterile
RP28	-	-	-	-	-	-	-	-	0	sterile
RP29	-	-	-	-	-	-	-	-	0	sterile
RP30	-	-	-	-	-	-	-	-	0	sterile
RP31	-	-	-	-	-	-	-	-	0	sterile
RP32	-	-	-	-	-	-	-	-	0	sterile
RP33	-	-	-	-	-	-	-	-	0	sterile
RP34	-	-	-	-	-	-	-	-	0	sterile
RP35	-	-	-	-	-	-	-	-	0	sterile
RP36	-	-	-	-	-	-	-	-	0	sterile
RP37	-	-	-	-	-	-	-	-	0	sterile
RP38	-	-	-	-	-	-	-	-	0	sterile
RP39	-	-	-	-	-	-	-	-	0	sterile



Figure 3. Graded and graveled open area southeast of current oxidation ditches.



Figure 4. Materials stored on graded and graveled open area.



Figure 5. Open field in southeast corner of current wastewater treatment plant property.



Figure 6. Filbert orchard on private property to be acquired for expansion.



Figure 7. Discovery probe excavations along Line 1 in the filbert orchard.



Figure 8. Discovery probe excavations on Line 5 in orchard, next to the materials storage area.

SHPO REPORTING DATA

Findings: -
Results: Recorded: prehistoric sites 0 historical sites 0 isolates 0
County: Yamhill
Township: T3S
Range: R2W
Sections: 29
USGS quads: Newberg 7.5'
Project Area: approx. 18 acres
Area Surveyed: surface survey—approx. 18 acres, subsurface—39 discovery shovel
probes (30-cm-dia.), 2.2 cubic meters excavated
Type: pedestrian survey and subsurface discovery probes
Title: *Archaeological Investigations for the Newberg Wastewater Treatment
Plant Expansion Project, City of Newberg, Yamhill County, Oregon.*
Heritage Research Associates Letter Report 09-10
Client/Agency: City of Newberg
Consultant: Heritage Research Associates, Inc.
Author: Albert C. Oetting, PhD, RPA
Location of Notes: Heritage Research Associates, Inc., Eugene, OR