

City of Coos Bay  
Wastewater Treatment  
Plant No. 2  
Environmental Assessment

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Prepared For:

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## **1.0 PURPOSE AND NEED FOR THE PROJECT**

The City of Coos Bay (City) proposes to upgrade Wastewater Treatment Plant (WWTP) No. 2 that has been in service since 1973. The purpose of this project is to improve wastewater treatment and to increase treatment capacity for the west side of the City and the Charleston Sanitary District in the City of Coos Bay. Wastewater facility improvements are needed to meet stricter treatment standards set forth by the Oregon Department of Environmental Quality (DEQ) and to accommodate planned growth in the service area.

The facility's National Pollutant Discharge Elimination System (NPDES) waste discharge permit was renewed on August 21, 2003, and expires December 31, 2007. The new NPDES permit establishes more stringent discharge limits for bacteria, chlorine, and ammonia due to shellfish growing areas in the vicinity of the effluent outfall. Because the current facility does not meet the NPDES discharge limits for bacteria, chlorine, and ammonia, the City of Coos Bay has entered into a Mutual Agreement and Order (MAO) with DEQ dated August 21, 2003. The MAO outlines measured steps necessary for WWTP No. 2 to be in compliance with the NPDES permit.

### **1.1 Project Location and Site Description**

WWTP No. 2 is located in the southwest portion of the City of Coos Bay in the SE ¼ of Section 19, Township 25 South, Range 13 West, Willamette Meridian (Figures 1 and 2). The project site is bounded by Fulton Avenue and riparian vegetation to the east, Coos Bay to the west, and undeveloped estuarine habitat to the north and south (Figure 3). The surrounding area is a mixture of commercial and industrial uses with a few single-family residences near the WWTP. The existing WWTP is fenced and protected with riprap on the south, west, and northern sides (Photo 1, Exhibit A). The fenced area is developed and covers about 1.2 acres (Photos 2 and 3, Exhibit A). The City of Coos Bay owns an additional 3 acres adjacent to the WWTP site, including a debris stockpile area (Figure 3).

### **1.2 Proposed Action**

#### **1.2.1 Description of Existing Conditions**

##### *1.2.1.1 Existing Facilities*

WWTP No. 2 is owned by the City of Coos Bay and managed and operated by Operations Management International, Inc. (OMI). A primary treatment plant was first constructed on the project site in 1964, and secondary treatment was added in 1973. The facility was upgraded in 1990 with new headworks and a second secondary unit to meet NPDES permit requirements. The existing facility treats primarily domestic wastewater and has a design peak flow of 4.5 million gallons per day (mgd). The facility consists of influent pumping, screening and grit removal, primary sedimentation, activated biosolids secondary treatment, secondary clarification,

**Figure 1. Site Map**

**Figure 2. Vicinity Map**

**Figure 3. Aerial Map**



disinfection, dechlorination, and anaerobic digestion of biosolids (Figure 4). Dechlorinated effluent is discharged through a 27-inch-diameter gravity outfall to Coos Bay at river mile (RM) 3.8.

WWTP No. 2 was inspected by DEQ on September 10, 2002 and was found to be in compliance with the NPDES permit. Since 1994, the facility has been issued one Notice of Noncompliance for raw sewage overflows on February 19, 1999 (DEQ, 2003). The Notice of Noncompliance is an informal enforcement action and has been corrected. WWTP No. 2 does not have a record of complaints.

#### 1.2.1.2 Current Treatment Process

Wastewater enters the facility through the influent pump station that is equipped with three non-clog, variable speed, and centrifugal pumps. The influent sewer pipe crosses First Creek just outside of the existing site (Photo 4, Exhibit A). The pump station has a capacity of 4.18 mgd, which is not adequate to convey current or future peak flows. As a temporary solution, a submersible pump was added to the wet well to assist with peak demands. A magnetic flow meter with a capacity of 3.79 mgd measures influent flow, although peak flows are not adequately measured. The pumps transport raw sewage to the headworks that consist of a mechanical bar screen and a vortex grit removal unit. Material collected in the screen is removed with a screening container and placed in a dumpster for landfill disposal. During high flows, material passes through the screen to the primary clarifier. Grit that is removed downstream of the screen is also disposed of in a dumpster and ultimately trucked across town to the headworks at WWTP No. 1. According to site operators, the grit removal unit performs poorly at low and high flows and is bypassed at flows above 4 mgd.

Primary treatment occurs in a circular primary sedimentation basin or clarifier with a design capacity of 2,500 gallons per day per square foot (gpd/sf) and an estimated capacity of 4.9 mgd. The primary clarifier is 50 feet in diameter with a side water depth of 8.5 feet. According to the *Draft Facilities Plan* (West Yost & Associates, 2005) the primary clarifier sweeps are corroded. From this sedimentation basin, primary biosolids are pumped to the digesters and primary effluent flows by gravity to two aeration basins for secondary treatment. The two aeration basins have variable speed drives and can each hold 202,000 gallons. The basins can only be operated in a complete mix mode. Primary effluent is mixed with low speed mechanical surface aerators (Photo 5, Exhibit A) and is then transported to two secondary clarifiers by an intermediate lift station and flow control structure. The aerators are reportedly inadequate due to the inability to maintain dissolved oxygen (DO) concentrations above 0.5 milligrams per liter (mg/L) in the basins during the summer.

The small secondary clarifier has insufficient capacity to operate alone; therefore, the large clarifier cannot be shut down for servicing. Chlorine (sodium hypochlorite) is added to the treated effluent in a contact basin (a covered exterior ring) around the small clarifier. The hydraulic detention time in the contact basin at peak wet weather flow is 34 minutes. Two storage tanks with spill containment were added to the WWTP No. 2 in 2004 to provide sodium bisulfite dechlorination. The dechlorination tanks are metered with feed and mixing equipment.

**Figure 4. Existing Facility Layout**

Bisulfite is injected at the chlorine contact basin overflow weir. Prior to discharge into Coos Bay, the effluent is sampled for chlorine. The lined and coated concrete outfall is 1,826 feet in length and contains five diffuser ports that are 7.5 feet apart. The end of the outfall is marked with a timber pylon (Photo 6, Exhibit A).

Waste-activated sludge (WAS) is transported to the primary sedimentation basins and anaerobic digesters by the WAS pump station. The pump station is equipped with a timer that stops the loading of WAS when a preset daily limit is reached. Operators sample the WAS for total suspended solids (TSS) and modify operations accordingly. Return-activated sludge (RAS) flows by gravity back to the aeration basins. Throttling valves operated manually, control the flow rate. The RAS cannot be sampled, and during high flows, the volume of RAS returned is limited by the gravity flow hydraulics.

Anaerobic digestion of biosolids is achieved in a 32-foot-diameter primary digester and in a 30-foot-diameter secondary digester. The primary digester is mechanically mixed. No mixing or heating occurs in the secondary digester, which is used only for storage. Digested biosolids are hauled to a 4-acre facultative biosolids lagoon located south of WWTP No. 1 for storage. The storage lagoon is lined with bentonite clay and is 11 feet deep with two inlet ports. The liquid on the surface of the lagoon is aerated and returned to WWTP No. 1 after it is pumped into the City sewer system. Biosolids are annually removed from the lagoon with a floating dredge and applied to 250 acres of private farmlands and forests between June and October. The anaerobic digestion process produces Class B biosolids, which is acceptable for application onto agricultural and forest land.

### **1.2.2 Proposed Action**

A number of facility upgrades are proposed to remedy existing inadequacies, to meet NPDES requirements, and to provide increased capacity for current and future peak flows. Most improvements would occur at the existing facility, but some would occur just outside the site boundaries. Plant improvement alternatives were developed with consideration of the following factors: (1) more stringent bacteria limits in future NPDES permits; (2) optimization of existing facilities to reduce cost; (3) simplification of plant hydraulics to reduce energy and maintenance costs; and (4) optimization of space at the existing facility.

Plant improvements are designed to accommodate current and projected future flows and loads. The population of the City of Coos Bay is expected to grow 0.4 percent per year from 15,650 in 2003 to 17,220 by the year 2027 (West Yost & Associates, 2005). The WWTP No. 2 service district (a portion of Coos Bay and Charleston) is projected to grow to a population of 11,160 by 2027. Current and future flow and load projections are summarized in Table 1.

**Table 1. Current and Future Flow and Load Projections**

Wastewater Characteristic Factor	2003	2027
<b>Flows, mgd:</b>		
Average Dry Weather Flow (ADWF)	0.85	1.0
Average Wet Weather Flow (AWWF)	1.3	1.5
Maximum Month Dry Weather Flow (MMDWF)	1.2	1.4
Maximum Month Wet Weather Flow (MMWWF)	2.3	2.7
Peak Day Flow (PDF)	4.5	5.5
Peak Wet Weather Flow (PWWF)	7.0	8.6
<b>Loads:</b>		
BOD, ppd		
Average	1,800	2,000
Maximum month	2,200	2,500
Peak day	3,600	4,100
TSS, ppd		
Average	2,000	2,300
Maximum month	3,100	3,500
Peak day	5,400	6,100

**Notes:** The *average dry weather flow* (ADWF) is the average flow at the plant during the dry weather season, typically May through October.

The *average wet weather flow* (AWWF) is the average flow at the plant during the wet weather season, typically November through April.

The *maximum month dry weather flow* (MMDWF) is defined as the flow recorded at the plant when total rainfall quantities are at the 1-in-10 year probability level for the month of May.

The *maximum month wet weather flow* (MMWWF) is defined as the plant flow when total rainfall quantities are at the 1-in-5 year probability level for the month of January.

The *peak day flow* (PDF) is the flow rate that corresponds to a 24-hour storm event with a 1-in-5 year recurrence interval that occurs during a period of high groundwater and saturated soils.

The *peak wet weather flow* (PWWF) is expected to occur during the peak day flow and is the highest flow at the plant sustained for one hour. The PWWF dictates the hydraulic capacity of the treatment system.

Proposed facility upgrades are described according to three categories: (1) headworks facilities, (2) effluent treatment, and (3) biosolids treatment. Headworks include the influent sewers and force mains, influent pumping, screening, and grit removal. Effluent treatment includes primary sedimentation (primary clarifier), biological treatment, intermediate pumping, secondary clarification, and disinfection. Biosolids treatment includes processing WAS, anaerobic digestion of biosolids, and removing biosolids from the site. Modifications to the existing outfall were considered but ultimately rejected and are briefly described in Section 2.3 of this assessment.

### 1.2.2.1 Headworks

Proposed upgrades include demolishing the existing headworks facilities and constructing new headworks (Alternative H1 in the 2005 *Draft Facilities Plan*). The proposed action also includes demolishing the existing control building and constructing on new control building. The new headworks would be designed to handle peak flows of 8.6 mgd in the following flow sequence: influent sewer → influent pump station → influent metering → screens → grit removal → treatment process. Specific improvements would include:

- Removing the existing headworks that was constructed in 1990,
- Demolishing the existing control building and constructing a new one,
- Constructing a new pump station, and
- Installing new screening and grit removal.

The new pump station, control building, and headworks are proposed for construction either where the current flow monitoring station is located (Photo 7, Exhibit A) or on the debris stockpile site just outside the WWTP No. 2 boundary (Photo 8, Exhibit A). The proposed pump station would be equipped with four submersible, variable speed pumps, each with a capacity of 2,000 gallons per minute (gpm). The footprint of the new pump station would be approximately 3,250 square feet (65 feet by 50 feet). The screenings facility and grit removal unit would be approximately 500 square feet each (20 feet by 25 feet). A mechanical bar screen and a 1-inch manual bar screen are proposed. A screenings washer/compactor with a capacity of 35 cubic yards would also be added to the headworks. The grit removal process would include a paddle vortex grit removal unit with a peak capacity of 10.7 mgd, a recessed impeller grit slurry pump with a capacity of 200 gpm, and a cyclonic grit separator.

### 1.2.2.2 Effluent Treatment

Proposed effluent treatment upgrades would involve improving biological treatment, secondary clarification, and intermediate pumping and disinfection (Alternative T2 in the 2005 *Draft Facilities Plan*). Specific upgrades would include the following:

- Replacing existing aerators in the aeration basins with larger units,
- Adding channels to the aeration basins for process flexibility
- Increasing capacity of the intermediate lift station from 2,000 gpm to 3,000 gpm,
- Converting small secondary clarifier to chlorine contact basin, and
- Constructing a new secondary clarifier.

The aerators in the existing aeration basins would be replaced with larger surface units, but the volume of the basins would not change. Two additional surface aerators would be added to each basin to increase effectiveness. The aeration basins would be modified so they could be operated in multiple modes. The small secondary clarifier would be converted to a chlorine contact basin to increase contact time from 34 minutes to 60 minutes. The capacity of the new chlorine contact basin would be 7.2 mgd at 60 minutes detention time. A proposed secondary clarifier would be constructed where the existing control building is located. This new clarifier would be

70 feet in diameter, with a sidewater depth of 18 feet and a capacity of 5.7 mgd. The footprint of the new clarifier would be approximately 3,850 square feet. The existing large clarifier would be modified to improve the overflow rate.

#### 1.2.2.3 *Biosolids Treatment*

Upgrading the existing biosolids treatment would involve thickening both primary sludge and WAS (Alternative S2 in the *Draft Facilities Plan*). The existing digesters would be retained for solids storage only. Following storage, solids would be trucked to WWTP No. 1 for anaerobic digestion. With additional thickening at WWTP No. 2, the existing digesters at WWTP No. 1 would have adequate capacity to treat future solid loads from both plants. Proposed improvements would specifically include:

- Constructing a gravity thickener facility and related appurtenances for primary sludge thickening.
- Adding a gravity belt thickener or centrifuge and related appurtenances for WAS thickening.
- Removing mixing and heating equipment from Digester No. 1.
- Repairing both digester roofs.
- Replacing truck-loading pumps.
- Adding a waste gas burner to operate while digesters are in use.

Implementation of the solids improvements would be phased and would be located on City owned property. At the design year (2027), trucks would transport solids to WWTP No. 1 two to three times per day using the same route currently traveled – Ocean Boulevard to Highway 101. Currently, trucks haul biosolids to the WWTP No. 1 2.5 to 5 times per week.

#### 1.2.2.4 *General Improvements*

General improvements common to all alternatives would include the following:

- Adding standby power system to comply with U. S. Environmental Protection Agency (EPA) Class I reliability requirements.
- Installing a new roof and walkway canopy on the existing operations building.
- Replacing the influent sewer pipe across First Creek.
- Upgrading the power distribution system to serve new equipment.
- Improving the digester control building by adding a new building roof, adding an upstairs fire escape, and replacing piping.
- Using the existing anaerobic digester tanks as their intended use or as storage.
- Enhancing sludge thickening to reduce sludge volumes and maximize the use of existing treatment capacity.
- Improving or relocating the digester roof drains to prevent flooding and to ensure safe drainage.

The existing 24-inch-diameter sewer pipe across First Creek sits on the creek bed surface and is reportedly in poor condition (Photo 4, Exhibit A). A new 30-inch-diameter sewer pipe is proposed for installation about five feet under the streambed via directional boring. The proposed sewer pipe would be either high-density polyethylene (HDPE) or ductile. A pit approximately 10 feet x 10 feet x 6 feet would be excavated just east of the top of the stream bank to initiate directional boring. The excavated pit material would be stockpiled at an upland location on-site for backfilling when drilling is complete. After the new segment of sewer pipe is connected, the portion of the old sewer pipe that sits on the streambed would be removed. Buried portions of the old sewer pipe would likely be plugged on either side of the stream and left in place to minimize disturbance to the banks. The new sewer pipe from the flow monitoring station to the bore initiation pit would be trenched, resulting in a temporary disturbance to approximately 250 square feet.

## **2.0 ALTERNATIVES TO THE PROPOSED ACTION**

This section describes alternative headworks and treatment technologies considered in the 2005 *Draft Facilities Plan*.

### **2.1 No Build Alternative**

For the purpose of this assessment, the No Build Alternative would maintain the existing WWTP No. 2 as it is and no upgrades would be implemented. Under this alternative, the existing facility would be in violation of ammonia and bacteria discharge limits imposed by the DEQ and would not be able to accommodate current or future peak flows.

### **2.2 Project Alternative**

#### **2.2.1 Headworks**

As under the Proposed Action, the Project Alternative would also replace the existing headworks with new structures and equipment, but the elements would be in a different flow sequence (H2 in the 2005 *Draft Facilities Plan*). Under this alternative, screening would be located upstream of influent pumping to eliminate possible pump clogging. The flow sequence would be as follows: influent sewer → screens → influent pump station → influent metering → grit removal → treatment process.

Under this alternative, the screening unit would be constructed adjacent to the new pump station – possibly where the flow monitoring station is or on the City-owned debris stockpile site. About two-thirds or 12 feet of the screening unit would be underground, with the remaining third aboveground. Screened material would be directly discarded from the screening unit to an adjacent dumpster. The grit removal unit would likely be located near the existing headworks on the WWTP site. The types of equipment and capacities are the same as described under the Proposed Action.

#### **2.2.2 Effluent Treatment**

Effluent treatment upgrades proposed under the Project Alternative (T1 in the 2005 *Draft Facilities Plan*) would consist of the following:

- Increasing capacity and efficiency of the existing aeration basins
- Eliminating primary sedimentation
- Converting small secondary clarifier to chlorine contact basin (same as proposed action)
- Constructing a new secondary clarifier (same as proposed action but in different location)

This alternative proposes to increase the volume in each of the aeration basins from 202,000 gallons to 301,600 gallons by increasing the height of the basin walls. Adding height to the basin walls would eliminate the need for the intermediate pump station and increase treatment



capacity. A fine bubble aeration system powered by multi-stage centrifugal blowers would also be added to the aeration basins. A new blower building would be required to house the blowers. With the proposed improvements to the aeration basins, primary sedimentation would no longer be needed. The new secondary clarifier would be constructed where the existing primary sedimentation basin is located.

### **2.2.3 Biosolids**

Two alternative biosolids treatment methods under the Project Alternative are analyzed below:

#### **2.2.3.1 Biosolids Treatment Alternative 1**

Biosolids treatment Alternative 1 of the Project Alternative would consist of thickening both primary sludge and WAS, on-site anaerobic digestion, hauling Class B biosolids to the City's facultative lagoons, and land application of treated biosolids (Alternative S1 in the *Draft Facilities Plan*). Specific improvements would include:

- Constructing a gravity thickener facility and related appurtenances for primary sludge thickening
- Adding a gravity belt thickener or centrifuge and related appurtenances for WAS thickening
- Replacing mixing and heating equipment for Digester No. 1. Mechanical mixers are assumed for the purposes of this report
- Adding mixing and heating equipment for Digester No. 2
- Repairing and improving both digester roofs to ensure adequate support for mechanical mixers
- Replacing the boiler and hot water system to provide adequate heating for both digesters
- Replacing portions of the gas handling system that have reached their useful life
- Replacing and relocating the waste gas burner
- Replacing truck-loading pumps

The size and location of the proposed thickening facility is the same as described in Section 1 for the Proposed Action. This alternative would require repairing and upgrading the existing digesters on-site to provide adequate capacity.

#### **2.2.3.2 Biosolids Treatment Alternative 2**

The biosolids treatment Alternative 2 of the Project Alternative would involve storing primary sludge and WAS separately at WWTP No. 2 prior to transfer to WWTP No. 1 for thickening, anaerobic digestion, and transmission to storage facilities (Alternative S3 in the *Draft Facilities Plan*). Specific improvements to WWTP No. 2 would include:

- Removing mixing and heating equipment from Digester No. 1

- Repairing both digester roofs
- Adding a pump station and two pipelines for transmission of raw sludge to WWTP No. 1
- Replacing and relocating the waste gas burner

Two pipelines would require construction in the public right-of-way to transfer biosolids from WWTP No. 2 to WWTP No. 1. Each pipeline would be 6 inches in diameter and approximately 27,000 feet (5.1 miles) in length. The pipelines would most likely be installed via trenching because they would be located in the public right-of-way. The alignment for the pipelines would be decided during the pre-design phase.

## **2.3 Alternatives Considered but Eliminated**

Two other treatment alternatives involving blended treatment were considered in the *Draft Facilities Plan*. Blended treatment would maximize the use of the existing facilities by combining raw sewage or primary effluent with secondary effluent during peak flows. The effluent discharged from the blended treatment alternatives would not meet the bacteria limits for shellfish growing waters and would require the construction of a new outfall. Because all of Coos Bay may be subject to bacteria limits for shellfish-growing waters in the future, the blended treatment and new outfall alternatives are not practical to pursue and were eliminated from further consideration.

### **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

The following sections describe the affected environment and potential impacts from the project alternatives on the environmental factors listed below.

- Earth resources
- Land use
- Floodplains
- Wetlands
- Cultural and historical resources
- Threatened and endangered species
- Fish, wildlife and vegetation
- Water resources
- Coastal resources
- Socio-economic/environmental justice issues
- Noise
- Air quality
- Transportation
- Aesthetics

#### **3.1 Earth Resources**

This section addresses potential impacts related to slope, erosion, and soil suitability. This section also discusses general construction impacts and proposed mitigation.

##### **3.1.1 Affected Environment**

The site is flat except for the riprap slopes around the perimeter of the existing facility (Photo 1, Exhibit A). The affected environment also includes the banks of First Creek where the sewer pipe currently crosses. Soils on-site and in the project vicinity are mapped as Heceta fine sand, 0 to 3 percent slopes (Figure 5). This soil is a deep, poorly drained soil in deflation basins and depressional areas between dunes. The hazard of water erosion for Heceta fine sand is slight (Haagen, 1989). Geotechnical information has not been collected for the site.

##### **3.1.2 Regulatory Environment**

Projects affecting slopes, erosion, and soils are regulated at the local level. Development proposals are reviewed and approved by the City.

**Figure 5. Soils Map**

### **3.1.3 Environmental Consequences**

#### **3.1.3.1 No Build Alternative**

Under the No Build Alternative, earthwork would not be conducted and no potential impacts related to soils and erosion would occur. Consequently, no mitigation would be required.

#### **3.1.3.2 Proposed Action**

Construction methods for the Proposed Action would include grading, excavating, directional boring, and backfilling. Earthwork from the Proposed Action is estimated to affect 8,750 square feet or 0.2 acres. Ground-disturbing activities have the potential to result in sedimentation of adjacent waterbodies from wind and water erosion. Approximately 4,193 cubic yards (cy) would be excavated for the installation of the new headworks, control building, pump station, new secondary clarifier, and thickening facility. Excavated material would be stockpiled on-site and just outside the WWTP No. 2 boundaries. Approximately 1,080 cy of material would be backfilled. Excess soil and gravel would be hauled off-site to an approved upland location. Approximately 90 cy would be excavated to trench the new sewer pipe to First Creek and then to bore it under the stream.

#### **3.1.3.3 Project Alternative**

The Project Alternative for headworks, effluent treatment, and biosolids treatment Alternative 1 would also include grading, excavating, filling, directional boring, and backfilling. In addition to demolishing the existing headworks and control building, this alternative would also involve dismantling the existing primary sedimentation basin and constructing a new secondary clarifier in its place. Because this alternative would include constructing the new secondary clarifier where the primary sedimentation basin is located, an approximate total of 4,900 square feet of area (0.1 acres) would be impacted by this alternative. Although the screening unit would require more excavation under this alternative, the overall excavation is less (2,939 cy) than the Proposed Action. Approximately 1,129 cy would be backfilled. Earthwork related to replacing the influent sewer pipe would be the same as described under the Proposed Action.

Under biosolids treatment Alternative 2, two pipelines would be constructed to transfer primary solids and WAS to WWTP No. 1. This would require excavating a series of trenches totaling 27,000 feet, or 5.1 miles in the public right-of-way from WWTP No. 1 to WWTP No. 2. The pipeline alignment would be determined during the pre-design phase of this project.

### **3.1.4 Mitigation**

The following mitigation measures would apply to all alternatives that involve ground-disturbing activities. To avoid and/or minimize adverse impacts to the environment during construction, a number of conservation and mitigation measures would be in place. Mitigation would include developing comprehensive erosion prevention and sediment control plans prior to construction for each phase of construction. The plans would include elements for site documentation, pre-construction meetings, timing, staging, clearing, excavation, grading, and minimization.

Additionally, site stabilization, slope and drainageway protection, sediment retention, wet-weather measures, and emergency supplies would be included.

Mitigation would also include installing and maintaining all appropriate erosion prevention and sediment control best management practices (BMPs), including but not limited to:

- Establish access and staging areas with a stabilized ground surface to reduce tracking of soils onto roadways; wash vehicle wheels; and collect washwater for proper disposal.
- Maintain vegetative growth and provide adequate surface water runoff treatment and control systems.
- Minimize the area that is to be cleared and graded at one time; mark the area clearly; and schedule construction soon after clearing.
- Apply sediment control measures such as straw-bale and brush barriers, straw wattles, vegetated strips, and/or silt fences to control and filter sheet-flow and shallow runoff.
- Revegetate disturbed areas as soon as possible after completion of construction.
- Stabilize soil stockpiles with seed, sod, mulch, plastic covers, erosion control blankets, mats, and chemical binders. Between October 1 and April 30, implement wet-weather measures and stabilize exposed soils that have not been worked for more than two days. Between May 1 and September 30, stabilize exposed soils that have not been worked on for more than seven days.
- Suppress windborne movement of soils off-site by spraying the soils with water or using other dust control materials.
- Sweep the streets or use other means to remove vehicle-tracked soil near the entrances to major construction sites. Schedule project activities to minimize erosion potential; inspect and maintain structural BMPs; monitor weather and install extra measures in anticipation of severe storms; monitor compliance with the site erosion prevention and sediment control plan and local regulatory requirements; and remove gear and restore the site.

The Proposed Action and Project Alternative would comply with conditions of all required permits including the NPDES permit issued by DEQ as well as grading and building permits from the City of Coos Bay.

## **3.2 Land Use**

### **3.2.1 Affected Environment**

The affected environment includes the existing wastewater treatment plant, the City-owned debris stockpile site just outside the plant boundaries, and the existing outfall in Coos Bay at RM 3.8. The existing plant site is fully developed. The site is on the shoreline of Coos Bay, with water and sandy shoreline to the west, north, and south. To the east, the area is developed with small commercial businesses along Empire Boulevard and residences beyond. The WWTP No. 2 site is zoned Waterfront Industrial (W-I). Adjacent land to the east is zoned Commercial (C-2)

along Empire Boulevard, with Residential (R-2) zoning two blocks farther east beyond Marple Street. Coos Bay downstream of the effluent outfall is designated shellfish-growing habitat (DEQ, 2003).

### **3.2.2 Regulatory Environment**

The City of Coos Bay administers the building and mechanical inspection program. City codes are designed to ensure the safety and structural integrity of buildings and other structures. The building permit process includes a review by the planning division to ensure consistency with zoning requirements, a review by city code officials, and a review by the engineering division to ensure that adequate storm drainage and sewer service is provided.

### **3.2.3 Environmental Consequences**

#### **3.2.3.1 No Build Alternative**

The No Build Alternative would maintain existing conditions. No land use actions would be required to maintain existing conditions.

#### **3.2.3.2 Proposed Action**

Under the Proposed Action, upgrades to the wastewater system would require a building permit and grading permit from the City of Coos Bay, but would not require any significant land use actions. No land conversion or zoning changes would be required to upgrade the wastewater system.

#### **3.2.3.3 Project Alternative**

Under the Project Alternative, proposed upgrades and expansion to the wastewater system would require a building permit and a grading permit from the City of Coos Bay, but would not require any significant land use actions. No land conversion or zoning changes would be required to upgrade the wastewater system.

### **3.2.4 Mitigation**

None of the alternatives (including the No Build Alternative) would adversely affect existing land use or shoreland management. Therefore, no mitigation would be required.

## **3.3 Floodplains**

### **3.3.1 Affected Environment**

The existing WWTP No. 2 site is located in an area between the limits of the 100-year floodplain and the 500-year floodplain of Coos Bay (FEMA, 1984). This area, referred to as Zone B on the flood insurance rate map, may also be subject to 100-year flooding with average depths less than one foot. Additionally, Zone B includes areas protected by levees from the base flood and areas

where the contributing drainage area is less than one square mile (FEMA, 1984). The existing outfall and the debris stockpile site just south of Fulton Avenue (adjacent to WWTP No. 2) occur in an area mapped as Zone A2 or the 100-year floodplain of Coos Bay (FEMA, 1984). The existing flow monitoring station is located on the northeast corner of Fulton Avenue and Empire Boulevard in an area mapped as Zone C – an area of minimal flooding.

### **3.3.2 Regulatory Environment**

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program and reviews and approves changes to Flood Rate maps. The State of Oregon administers floodplain regulations through its review of local government regulations in compliance with the Statewide Planning Goals. Specifically, floodplain regulation is accomplished through State Goal 7, Areas Subject to Natural Disaster and Hazards. All local jurisdictions must adopt regulations that comply with Goal 7 and its policies and have their regulations acknowledged by the State Land Conservation and Development Commission.

The City of Coos Bay has a Flood Damage Prevention ordinance (Chapter 3.14) that applies to any development in the 100-year floodplain of Coos Bay. Grading, paving, excavation, and construction of structures in the 100-year floodplain of Coos Bay would be required to comply with the development standards of Chapter 3.14.

### **3.3.3 Environmental Consequences**

#### **3.3.3.1 No Build Alternative**

The No Build Alternative would maintain existing conditions. Treated effluent that occasionally exceeds NPDES limits would continue to be discharged to the 100-year floodplain of Coos Bay. No construction would occur within the 100-year floodplain as part of the No Build Alternative.

#### **3.3.3.2 Proposed Action**

The Proposed Action would involve constructing new equipment outside of the site boundaries either on the debris stockpile site (within the 100-year floodplain) or where the existing flow monitoring station is located (above the 100-year floodplain). If equipment is located on the debris stockpile site, the estimated total impact on the floodplain would be 4,250 square feet, which includes 3,250 square feet for the pump station and 1,000 square feet for the headworks (screening and grit removal). Construction would involve minor grading and construction of a concrete pad for the facilities. If the pump station and headworks are located where the flow monitoring station is, then no impacts to the floodplain are anticipated. The new secondary clarifier and thickening facility would most likely be constructed on the existing WWTP site that is above the 100-year floodplain of Coos Bay.

#### **3.3.3.3 Project Alternative**

The Project Alternative would also involve constructing new equipment outside of the site boundaries, either on the debris stockpile site or where the flow monitoring station is located. With this alternative, the screening unit would be constructed adjacent to the pump station. If the screening unit and pump station were constructed on the debris stockpile site, approximately



3,750 square feet of the floodplain would be impacted (3,250 sf for the pump station and 500 sf for the screening unit). Construction of the screening unit would require excavation to at least 12 feet below grade.

Under biosolids treatment Alternative 1, the proposed thickening facility would be located on the existing WWTP site. The boiler and hot water system of the existing digesters would be replaced to provide on-site anaerobic digestion of solids. No impacts to the 100-year floodplain would result from this alternative.

Under Biosolids treatment Alternative 2, two pipelines would be constructed in the public right-of-way to transfer primary solids and WAS to WWTP No. 2. Impacts to floodplains are not anticipated from this alternative, although the pipeline route has not yet been determined.

### **3.3.4 Mitigation**

Proposed equipment constructed in areas of special flood hazard (100-year floodplain of Coos Bay) would be required to comply with the development standards of the City's Flood Damage Prevention Chapter. Development standards require that non-residential structures:

- Be floodproofed so that below the base flood level, the structure is watertight with walls substantially impermeable to the passage of water;
- Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
- Have a registered engineer or architect certify that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based upon their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the City as set forth in Section 1(2)B of this Chapter; and
- If elevated and not floodproofed, meet the same standards for space below the lowest floor as described in Section 7((2)(A)(2)).

The development standards also require that applicants floodproofing non-residential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level, i.e., a building constructed to the base flood level will be rated as one foot below that level.

If structures are located within the 100-year floodplain of Coos Bay, the facilities would be protected with a concrete wall. The height of the concrete wall would be above base floodplain levels.

## **3.4 Wetlands**

### **3.4.1 Affected Environment**

Wetlands are formally defined by the U.S. Army Corps of Engineers (the Corps) (Federal Register, 1982) and the Environmental Protection Agency (Federal Register, 1988) as “... those

areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Wetlands generally include swamps, marshes, bogs, and similar areas (Federal Register, 1982). The three essential characteristics of wetlands are (1) hydrophytic vegetation; (2) hydric soils; and (3) wetland hydrology (Environmental Laboratory, 1987).

**Figure 6. National Wetlands Inventory Map**

The affected environment includes the existing WWTP No. 2 site, a cleared area just south of Fulton Avenue between the WWTP site and Empire Boulevard, and First Creek. According to the National Wetlands Inventory (NWI), tidally influenced wetlands are mapped in the project vicinity and palustrine, scrub-shrub wetlands are mapped along First Creek near the existing WWTP site (Figure 6) (USFWS, 1989). The mapped soil unit on the project site and site vicinity, Heceta fine sand, 0-3 percent slopes, is considered a hydric soil (NRCS, 1999).

The existing WWTP is built on historic fill and is protected by riprap on all sides except where accessed by Fulton Avenue. No wetlands are mapped on the existing WWTP site and no wetlands were observed at the facility during a January 2005 visit. The debris stockpile site just south of Fulton Avenue also did not contain wetland characteristics. The banks of First Creek, however, contained hydrophytic vegetation (sedges, reed canarygrass) and are possible jurisdictional wetlands.

### **3.4.2 Regulatory Environment**

In general, proposed activities within jurisdictional wetlands typically require permits from the Oregon Division of State Lands (DSL) and the U.S. Army Corps of Engineers (Corps). The Corps and DSL regulate wetlands and other waters in different ways. Under Oregon's Removal-Fill Law (ORS 196.795-990), removal or fill of more than 50 cubic yards in a wetland or other Water of the State requires a permit. Any amount of fill or removal in Essential Salmon Habitat (ESH) requires a permit from DSL; however, First Creek is not considered ESH (DSL, 2005).

The Corps regulates wetlands under Section 404 of the Clean Water Act. The Corps regulates fill or disposal of dredged material in wetlands in terms of linear feet or acreage. Depending on the area of impact (if less than 0.25 or 0.5 acres), the project may qualify for a Nationwide Permit, a programmatic permit pre-issued by the Corps. A Nationwide Permit is a categorical permit designed to streamline permitting and is often processed in about thirty days. The area of wetland impact would be determined by delineating wetland boundaries in the field according to methodology approved by the Corps, surveying the boundary, and calculating the area impacted by the proposed trail construction. The City of Coos Bay does not have its own wetland ordinance, but the City coordinates with DSL regarding proposed fill and removal in wetlands.

### **3.4.3 Environmental Consequences**

#### **3.4.3.1 No Build Alternative**

The No Build Alternative would maintain existing conditions. The sewer pipe across First Creek is in poor condition and could potentially leak into the stream and adjacent wetlands.

#### **3.4.3.2 Proposed Action**

The Proposed Action would include replacing the sewer pipe across First Creek with a new pipe. The new sewer pipe is proposed to be directionally bored approximately five feet under the streambed to avoid adverse impacts to wetlands and waterways. Removing the old sewer pipe and plugging the ends is not anticipated to result in adverse wetland impacts. The proposed action would not involve any other potential impacts to wetland resources.

#### **3.4.3.3 Project Alternative**

The Project Alternative would also include replacing the sewer pipe across First Creek with a new pipe. The environmental consequences would be the same as described under the Proposed Action.

#### **3.4.4 Mitigation**

Measures to avoid wetland impacts are incorporated into the construction methods by proposing to install the new sewer pipe via directional boring. Measures to avoid wetland impacts include avoiding clearing and grading near or on the banks of First Creek. Adverse impacts to wetland resources are not anticipated from the Proposed Action or Project Alternative; however, removal of old sewer pipe would be subject to in-water work periods recommended by the Oregon Department of Fish and Wildlife (ODFW). Refer the section on Water Resources for more details.

### **3.5 Cultural and Historical Resources**

#### **3.5.1 Affected Environment**

Cultural resources are defined as recorded archaeological sites, traditional use areas, and areas with a high probability for containing archaeological resources. Historical resources include structures designated or eligible for listing on the National Register of Historic Places (National Register). Structures that may qualify for designation as a historical resource are typically older than 50 years. The possible presence of cultural and historical resources was assessed through coordination with the State Historic Preservation Office (SHPO), a review of the National Register, and a review of existing reports related to on-site structures.

According to SHPO, the project site has a high probability for possessing archaeological sites and/or buried human remains (Exhibit B). This is most likely due to the location of the site on the shoreline of Coos Bay. Specific cultural resources have not been identified because cultural resource surveys have not been previously conducted for the project site or the vicinity.

Based on a review of the National Register, no historical resources are listed for the project site or immediate vicinity (National Park Service, 2005). Additionally, no structures proposed for demolition are fifty years or older. The primary sedimentation basin was constructed in 1964 (41 years ago) (DEQ, 2003) and all other existing structures at the WWTP site were constructed circa 1973 (32 years ago) (West Yost & Associates, 2005).

#### **3.5.2 Regulatory Environment**

Federal laws, regulations, agency-specific directives, and Executive Orders require a consideration of cultural resources in federal undertakings. Section 106 of the National Historic Preservation Act (NHPA) of 1966, its subsequent amendments, and Executive Order 11593 require that federal agencies consider the effects of a federal undertaking on any district, site,

building, structure, or object that is included in or eligible for inclusion in the National Register. Section 106 requires federal agency coordination with the SHPO and appropriate tribes. Archaeological sites, objects, and human remains are protected under Oregon Revised Statutes (ORS) 358.905 and ORS 97.740.

### **3.5.3 Environmental Consequences**

#### **3.5.3.1 No Build Alternative**

The No Build Alternative would maintain existing conditions. No ground-disturbing construction would likely occur under this alternative.

#### **3.5.3.2 Proposed Action**

The Proposed Action would involve demolition of the existing headworks and control building as well as earthwork to install new equipment. The headworks facility was constructed in 1990 and the control building was constructed in 1973. Both structures are less than 50 years old and do not meet the eligibility criteria for a historic structure. Except for the proposed sewer pipe, earthwork is proposed in areas that have been previously cleared and graded. The new pump station is proposed either where the flow monitoring station is located or on the adjacent debris stockpile site. The new control building is proposed for construction on the debris stockpile site. Installing the new sewer pipe will require construction in previously undisturbed soils. The proposed secondary clarifier and thickening facility would be constructed on-site.

#### **3.5.3.3 Project Alternative**

The Project Alternative would involve demolition of the existing headworks, control building, and the primary sedimentation basin as well as earthwork to construct new equipment. The primary sedimentation basin was built in 1964 and does not meet the eligibility criteria for a historic structure. This alternative would involve excavating a pit to accommodate the screening facility that is proposed to extend 12 feet below ground. Minor excavation is proposed to install the pump station, thickening facility, and new secondary clarifier and would occur in previously disturbed areas.

Under biosolids treatment Alternative 1 – the proposed thickening facility would be located on the existing WWTP site. The boiler and hot water system of the existing digesters would be replaced to provide on-site anaerobic digestion of solids. No adverse impacts to cultural or historical resources are anticipated.

Under biosolids treatment Alternative 2 – two pipelines would be constructed in the public right-of-way to transfer primary solids and WAS to WWTP No. 2. Because this alternative would be located in an existing public right-of-way where previous ground disturbance is likely, no adverse impacts to cultural or historical resources are anticipated.

### **3.5.4 Mitigation**

No adverse impacts to historical resources are expected and no mitigation is proposed. Mitigation related to cultural resources would be the same for the Proposed Action and the

Project Alternative. SHPO recommends extreme caution during ground-disturbing activities at the existing WWTP site and immediate vicinity (Exhibit B). If archaeological material were found during construction, all work would cease immediately until a professional archaeologist could assess the discovery. A data recovery plan would be developed by a professional archaeologist, with input from applicable Tribes regarding treatment of archaeological deposits.

### 3.6 Threatened and Endangered Species

#### 3.6.1 Affected Environment

The presence of threatened, endangered, and candidate species in the study area was assessed from correspondence with the U.S. Fish and Wildlife Service (USFWS) (Exhibit C), a review of the National Marine Fisheries Service (NOAA Fisheries) website, a review of the Oregon Natural Heritage Information Center database (ONHIC, 2005), and a site visit on January 26, 2005. Threatened, endangered, and candidate species that may occur in the project vicinity are listed in Table 2. The distribution, habitat requirements, and likely presence in the project area of each of these species are described below.

**Table 2. Threatened and Candidate Species that May Occur in the Project Vicinity**

Common Name	Scientific Name	Federal Status	Agency with Jurisdiction
<b>FISH</b>			
Coho salmon (Oregon Coast ESU)	<i>Oncorhynchus kisutch</i>	Threatened	NOAA Fisheries
Steelhead (Oregon Coast)	<i>O. mykiss</i>	Candidate	NOAA Fisheries
<b>WILDLIFE</b>			
Brown pelican	<i>Pelecanus occidentalis</i>	Endangered	USFWS
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened	USFWS
Marbled murrelet	<i>Brachyramphus marmoratus</i>	Threatened	USFWS
Northern spotted owl	<i>Strix occidentalis caurina</i>	Threatened	USFWS
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	Threatened	USFWS
Stellar sea lion	<i>Eumetopias jubatus</i>	Threatened	NOAA Fisheries
Pacific fisher	<i>Martes pennanti pacifica</i>	Candidate	USFWS
<b>PLANTS</b>			
Western lily	<i>Lilium occidentale</i>	Endangered	USFWS

Notes: ESU = Evolutionarily Significant Unit; USFWS = U.S. Fish and Wildlife Service; NOAA Fisheries = National Marine Fisheries Service

### 3.6.1.1 *Salmonids*

Coos Bay provides migration and rearing habitat for coho salmon and steelhead (ONHIC, 2005). Coho salmon (Oregon Coast ESU) is federally listed as threatened and considered a state sensitive-critical species. Critical habitat has not been designated for Oregon Coast coho salmon. Steelhead (Oregon Coast) is a candidate for listing on the Endangered Species Act (ESA) and is considered a state sensitive-vulnerable species.

Coho spawning and rearing habitat typically consists of small, low gradient tributary streams (Nickelson, 2001). Oregon coast adult coho are typically two years old when they return to their natal streams in the fall to spawn and die. Coho require clean gravel and cool temperatures for spawning and rearing (preferably 50 to 57° F). Juvenile coho typically spend one summer and one winter in freshwater, then migrate to the ocean. Although little is known about the residence time of juveniles in estuaries during out-migration, recent research indicates that juveniles may rear for extended periods in the upper ends of tidal reaches (Nickelson, 2001). During the summer, coho are found in pools in small streams. During the winter, juvenile coho may be found in off-channel alcoves (Nickelson, 2001).

Oregon coast steelhead has the most complex life history of the Pacific salmonids (Busby et al., 1996). Spawning and rearing habitat requirements of steelhead are similar to those described above for Oregon coast coho. Oregon coast steelhead are typically four years old when they return to their natal streams. Adult migration ranges from December to April with peak spawning in January and February (Busby et al., 1996).

### 3.6.1.2 *Brown Pelican*

The brown pelican was listed as endangered throughout its range on October 13, 1970 (35 FR 16047). Critical habitat is not designated for this species. Brown pelicans breed from November to March on small islands off the coast of California. During the non-breeding season, brown pelicans forage along the coast of Oregon and Washington. Typical foraging habitat includes near-shore waters and shallow estuaries. Pelicans plunge bill first into the water to catch surface-schooling fish.

Brown pelican foraging habitat occurs throughout Coos Bay and along the coast in the vicinity of the project. Specific feeding and roosting habitat for this species is noted on the north side of the bay near a sunken jetty, on North Spit, and south of the WWTP No. 2 at RM 3.4 (OHNIC, 2005).

### 3.6.1.3 *Bald Eagle*

On February 14, 1978, the bald eagle was federally listed as endangered in the conterminous United States, except for Oregon, Washington, Michigan, Minnesota, and Wisconsin, where it was listed as threatened. The bald eagle was proposed for delisting on July 6, 1999, but remains listed while the decision to delist the bald eagle is pending (64 FR 36453). Critical habitat has not been designated or proposed for bald eagles.

Bald eagles generally perch, roost, and build nests in mature trees near water bodies and available prey, usually away from intense human activity. They typically forage on open bodies of water and prey on a variety of foods, including fish, birds, mammals, carrion, and



invertebrates (Stinson et al., 2001). Bald eagle winter foraging areas are usually located near open water on rivers, lakes, reservoirs, and bays with abundant fish and waterfowl (ODFW, 2003).

No bald eagle nest sites are known to occur within one mile of the project site (Stuart Love, personal communication, 2005). No bald eagles or their nests were observed during the January 26, 2005, site visit to the existing WWTP No. 2 facility. The shoreline in the project vicinity contains patches of mature forest and may provide suitable roosting and perching habitat for bald eagles (Photo 10, Exhibit A). However, the project vicinity does not provide unique bald eagle habitat, and no large trees are proposed for removal. The proposed activities would take place on or adjacent to the existing WWTP site, where human activity is common. The proposed construction would be limited in duration and occur within a small area; therefore, it would not likely have any effect on bald eagle breeding or foraging behavior.

#### **3.6.1.4    *Marbled Murrelet***

The marbled murrelet was listed as threatened on October 1, 1992. Critical habitat was designated for this species on June 24, 1996 and typically consists of mature forests on state or federally owned lands (61 FR 26256). The marbled murrelet is a small seabird that breeds in large blocks of late successional or old growth coniferous forests (61 FR 26256). Marbled murrelets forage on small fish and invertebrates in near-shore marine environments, including estuaries. No marbled murrelet nests are recorded for the project vicinity (ONHIC, 2005), and no potential marbled murrelet habitat occurs on-site or in the vicinity due to a lack of mature forest habitat.

#### **3.6.1.5    *Northern Spotted Owl***

The northern spotted owl was listed as threatened on June 26, 1990, due to widespread habitat loss. Critical habitat was designated for this species on February 14, 1992. The northern spotted owl requires large tracts of mature coniferous or coniferous/mixed-hardwood forests (57 FR 1796). No spotted owl nests are recorded for the project vicinity (ONHIC, 2005) and no potential spotted owl habitat occurs on the project site or immediate vicinity. The project vicinity lacks large blocks of mature forest and does not provide suitable perching or nesting habitat for the northern spotted owl.

#### **3.6.1.6    *Western Snowy Plover***

The Pacific coast vertebrate population segment of the western snowy plover was listed as threatened on March 5, 1993. On January 6, 2000, the USFWS designated 28 areas along the coast of California, Oregon, and Washington as critical habitat for this small shorebird (64 FR 68507). The Pacific coast population of the western snowy plover is defined as those individuals that nest adjacent to tidal waters, and includes all nesting birds on the mainland coast, peninsulas, offshore islands, adjacent bays, estuaries, and coastal rivers (64 FR 68507). Preferred nesting habitat includes sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries. The nearest documented western snowy plover habitat is located on the North Spit across the bay and about one mile from the WWTP No. 2 (ONHIC, 2005). No

suitable nesting habitat is located on the WWTP site, or on the adjacent stockpiling area, or in First Creek just south of Fulton Avenue.

#### 3.6.1.7 *Stellar Sea Lion*

The stellar sea lion was listed as threatened in 1990. Critical habitat was designated August 27, 1993, and includes major rookeries and associated air and aquatic zones in Oregon and California. The aquatic zone includes an area extending 3,000 feet seaward from the rookery into state and federally managed waters. The nearest stellar sea lion rookery is located at Orford Reef, 40 miles south of the project site (NOAA Fisheries, 2005). Stellar sea lions are gregarious animals that congregate at rookeries and haul-outs. They have a varied diet that includes salmon, sand lance, Pacific herring, Pacific cod, mackerel, squid, and occasionally seals. According to information from ODFW, Stellar sea lions are a pelagic species and are not likely to occur in Coos Bay (Stuart Love, personal communication, 2005).

#### 3.6.1.8 *Pacific Fisher*

The Pacific fisher is a nocturnal carnivore that dens in hollow trees and rocky crevices. This shy mammal is associated with large, undisturbed tracts of forest (Ingles, 1965). As of 2001, only six fisher sightings have been confirmed in Oregon (Pacific Biodiversity Network, 2001). The project site and vicinity lack undisturbed forests and do not provide suitable habitat for the Pacific fisher.

#### 3.6.1.9 *Western Lily*

The western lily is an endangered, herbaceous plant with an extremely limited distribution. Critical habitat is not designated for the western lily. This species is known to occur at 31 sites within about two miles of the coast between Hauser in Coos County, Oregon; and Loleta in Humboldt County, California (USFWS, 1994). The western lily may reach up to 5 feet in height and have red or sometimes orange flowers that are in bloom from late June through July (Eastman, 1990). This perennial bulb occurs on the margins of sphagnum bogs and in forest or thicket openings along the periphery of seasonal ponds and small channels. The western lily also may be found in coastal prairie and scrub near the ocean where fog is common. Associated plants include *Calamagrostis nutkaensis* (Pacific reedgrass), *Carex* spp. (sedges), *Sphagnum* sp. (sphagnum moss), *Gentiana sceptrum*, and *Darlingtonia californica* (California pitcher-plant), *Myrica californica* (wax-myrtle), *Ledum glandulosum* (Labrador tea), *Spiraea douglasii* (Douglas' spiraea), *Gaultheria shallon* (salal), *Rhododendron macrophyllum* (western rhododendron), *Vaccinium ovatum* (evergreen huckleberry), and *Rubus* sp. (blackberry). Associated trees include *Pinus contorta* (coast pine), *Picea sitchensis* (sitka spruce), *Chamaecyparis lawsonia* (Port Orford cedar), and *Salix* sp. (willow).

### 3.6.2 Regulatory Environment

Threatened and endangered species are protected under the federal ESA of 1970 (16 USC 1531). The ESA prohibits the “take” of listed species without a special permit. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt any of these actions. Consultation with the USFWS or NOAA Fisheries is required for proposed actions with

a federal nexus that may affect threatened or endangered species or their habitats. Any proposed in-water work in First Creek would be subject to the Oregon Department of Fish and Wildlife (ODFW) preferred in-water work period to protect fish resources. The in-water work period for Coos Bay (including First Creek) is July 1 to September 15 (ODFW, 2002).

Fish habitat is protected under the Magnuson-Stevens Act (16 USC 1801). The purpose of this federal law is to promote protection, conservation, and enhancement of EFH. EFH includes those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. The MSA requires all federal agencies to consult with NOAA Fisheries on all actions or proposed actions that are permitted, funded, or undertaken by the federal agency that may adversely affect designated EFH.

### **3.6.3 Environmental Consequences**

#### **3.6.3.1 No Build Alternative**

The No Build Alternative would maintain existing conditions that include the discharge of treated effluent to waters containing threatened and proposed for listing fish species.

#### **3.6.3.2 Proposed Action**

The Proposed Action would consist of improving the existing WWTP site to meet more restrictive water quality standards for the discharge of treated effluent. With proposed facility upgrades, the fecal coliform, chlorine, and ammonia concentrations would be substantially reduced. Construction would occur at a site that is currently developed and no vegetation is proposed for removal. No changes are proposed to the existing outfall in Coos Bay except for higher volumes of effluent (during projected future peak flows) and lower concentrations of toxic chemicals and pathogens.

The Proposed Action is not expected to adversely affect the northern spotted owl, pacific fisher, Stellar sea lion, and western snowy plover due to a lack of suitable habitat for these species on the project site and immediate vicinity. No large tracts of forest or upper beach habitat would be impacted by the proposed upgrades. The project would improve effluent quality and therefore may indirectly benefit species that forage on aquatic organisms in Coos Bay including the marbled murrelet, bald eagle, and brown pelican. No direct impacts to the marbled murrelet, bald eagle, and brown pelican are anticipated.

The NPDES water quality standards are designed to protect beneficial uses of Coos Bay that include shellfish production and salmonid habitat. Effluent discharge limits for fecal coliform, ammonia, chlorine, and temperature were developed with consideration of salmonid habitat requirements. Consequently, the Proposed Action is not anticipated to adversely impact coho salmon and steelhead.

First Creek is not mapped as salmonid habitat (OHNIC, 2005), but it may provide refugia for juvenile salmonids. Construction-related impacts to First Creek are anticipated to be minimal. The new sewer pipe would be bored under the streambed and the old sewer pipe would be removed during the recommended in-water work period. Removal of the old sewer pipe would

improve fish habitat conditions in the stream by eliminating a partial barrier and pipe that could potentially leak.

Based on the current known distribution and habitat requirements, the banks of First Creek may be considered potential habitat for the western lily. However, no clearing or grading of the banks is proposed as part of the Proposed Action or Project Alternative and no adverse impacts to this endangered species is anticipated.

### **3.6.3.3 Project Alternative**

The Project Alternative would result in the same environmental consequences as described for the Proposed Action.

### **3.6.4 Mitigation**

Measures to minimize impacts to threatened and endangered species have been incorporated into the design of both alternatives: improving an existing facility, locating new equipment on previously disturbed land, and directionally boring the new sewer pipe under First Creek. Mitigation to reduce potential adverse impacts to First Creek include removing the old sewer pipe during the ODFW recommended in-water work period of July 1 to September 15. Compliance with the renewed NPDES permit that incorporates more restrictive water quality standards will minimize adverse impacts to listed and proposed for listing fish species in Coos Bay.

## **3.7 Fish, Wildlife and Vegetation**

### **3.7.1 Affected Environment**

The presence of fish, wildlife, and vegetation types in the study area were determined from a review of the Oregon Natural Heritage Information Center database (ONHIC, 2005), and a site visit on January 26, 2005. The affected environment includes the existing WWTP site, the debris stockpile site, First Creek in the vicinity of the existing influent sewer pipe, and Coos Bay in the vicinity of the existing effluent outfall. The existing WWTP site is developed and provides limited wildlife habitat. Gulls and crows commonly congregate at the facility and their scat is considered a nuisance by facility operators who hose-off the equipment on a daily basis (Robert Watts, personal communication, 2005). Wildlife species anticipated to occur adjacent to the WWTP include terns, osprey, thrushes, chickadees, wrens, woodpeckers, squirrel, and small rodents.

The little amount of vegetation present on the WWTP No. 2 site includes mowed grass, weedy herbaceous plants, and one or two shore pines (*Pinus contorta*) near the operations building. Vegetation on the outside of the fenced facility is also mowed grass and weedy herbaceous plants. Vegetation on the banks of First Creek includes Lyngby sedge (*Carex lyngbyei*), reed canarygrass (*Phalaris arundinacea*), red-osier dogwood (*Cornus sericea*), red alder (*Alnus rubra*), and rush species (*Juncus sp.*). Vegetation along the perimeter of the cleared stockpiling area includes Scot's broom (*Cytisus scoparius*), Himalayan blackberry (*Rubus discolor*), and a few

mature conifers (Photo 9, Exhibit A). Salt marsh habitat is located just north of the WWTP site and includes such species as the western marsh-rosemary (*Limonium californicum*), *Jaumea carnosa*, *Salicornia virginica*, and *Distichlis spicata*.

The effluent outfall is located at RM 3.8 in Coos Bay. In general, estuaries are highly productive systems that provide habitat for a multitude of resident and migratory species, including fish, marine mammals, terrestrial mammals, and birds (Johnson and O'Neil, 2001). The intertidal mudflats in Coos Bay provide habitat for oysters and clams while the salt marshes support shorebirds, juvenile fish, and other aquatic organisms. Fish and aquatic species present in Coos Bay near the outfall include: rock fish, Dungeness crab, Pacific lamprey, sturgeon, anchovy, herring, chum salmon, coho salmon, steelhead, surf perch, and lingcod (Alan Ritchey, personal communication, 2005). While salmonid habitat is not mapped for First Creek (DSL, 2005), the stream is likely to support other native fish species including coastal cutthroat trout and three-spine stickleback.

### **3.7.2 Regulatory Environment**

Fish and wildlife species that are not listed under the federal ESA are protected in a few different ways. The federal Fish and Wildlife Coordination Act (16 USC 661) requires consultation with the USFWS for water-resource development projects that may result in the loss of or damage to wildlife resources. Water-resource development projects include actions where the “waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted . . . or otherwise controlled or modified” by any agency under a federal permit or license.

The Migratory Bird Treaty Act (16 USC 703) prohibits the unauthorized “take” of all birds, including their nests, eggs, and young, with the exception of the European starling (*Sturnus vulgaris*), English sparrow (*Passer domesticus*), and domestic pigeon (*Columba ssp.*) (non-native species).

At the state level, ODFW provides guidance to federal permitting agencies regarding the potential for projects to adversely impact fish and wildlife resources. Through the application of statewide planning goals and policies, the state also requires local governments to plan for and protect natural resources. Fish, wildlife, and vegetation resources are addressed as part of State Planning Goal 5. All local jurisdictions must adopt regulations that comply with Goal 5 and its Policies and have their regulations acknowledged by the State Land Conservation and Development Commission.

### **3.7.3 Environmental Consequences**

#### **3.7.3.1 No Build Alternative**

The No Build Alternative would maintain existing conditions, including discharge of effluent that exceeds the bacterial limit required in the NPDES permit for shellfish growing waters. Partially treated waste from overflows can impair the health of fish and other aquatic organisms and reduce economic and recreational opportunities in the Coos Bay.

### **3.7.3.2 Proposed Action**

Construction of the Proposed Action would occur on previously disturbed or developed ground and is not anticipated to negatively affect fish and wildlife species or vegetation. No mature trees or native vegetation is proposed for removal. Aquatic habitat in Coos Bay may be positively affected by the proposed upgrades that are designed to meet more restrictive water quality standards for discharged effluent. Removing the old sewer pipe that is in poor condition is expected to improve habitat conditions in First Creek by reducing the possibility of raw sewage leaking into the stream and by eliminating a partial fish-barrier.

### **3.7.3.3 Project Alternative**

The Project Alternative would have similar consequences to fish, wildlife, and vegetation as described for the Proposed Action.

### **3.7.4 Mitigation**

Measures to minimize impacts to fish, wildlife, and vegetation have been incorporated into the design of both alternatives and include the following: improving an existing facility, locating new equipment on previously disturbed land, and directionally boring the new sewer pipe under First Creek. Mitigation to reduce potential adverse impacts to First Creek include removing the old sewer pipe during the ODFW recommended in-water work period of July 1 to September 15. Compliance with the renewed NPDES permit that incorporates more restrictive water quality standards will minimize adverse impacts to listed and proposed for listing fish species in Coos Bay.

## **3.8 Water Resources**

### **3.8.1 Affected Environment**

The affected environment includes the WWTP site and the effluent outfall located 0.3 miles offshore in Coos Bay at RM 3.8. The affected environment also includes First Creek in the vicinity of the project site.

The Coos Bay estuary, a sub-basin of the South Coast Watershed, covers approximately 13,348 acres and is fed by a number of creeks and rivers including Coos River, Coquille River, Willanch Creek, Kentuck Creek, Larson Creek, and Palouse Creek. The town of North Bend and the City of Coos Bay are situated on a peninsula that roughly divides Coos Bay into a western and an eastern portion. The western portion of Coos Bay is protected by North Spit - a narrow landmass with sand dunes. The tidally influenced mud flats along the shores of Coos Bay are ideal for shellfish production. Land use surrounding the bay includes agriculture, private and public timberlands, the Oregon Dunes National Recreation Area, wildlife reserves, urban centers (North Bend and the City of Coos Bay).

First Creek is a perennial tributary stream of Coos Bay that originates in the hills of the North Bend – Coos Bay peninsula. It flows northwest and is culverted under the Cape Arago Highway and Fulton Avenue before draining into a salt marsh behind the unnamed island just north of the

WWTP site. The culvert at Fulton Avenue has an approximate diameter of 2.5 feet and a length of 15 feet. The culvert at Cape Arago Highway was not observed during Adolfson's January, 2005 field visit. The influent sewer pipe crosses First Creek just south of Fulton Avenue (Photo 4, Exhibit A).

The DEQ administers and monitors water quality standards for Oregon rivers and streams per Section 303(d) of the federal Clean Water Act. Coos Bay from RM 7.8 to 12.3 exceeds water quality standards for fecal coliform (DEQ, 2002). Coos Bay is not listed for any other water quality parameters. Based on field data collected between 1991 and 2001 at DEQ's monitoring station in the vicinity of WWTP No. 2, the water temperature averages 58.8° F (14.9° C) from June to September and averages 51.9° F (11.1° C) from December to March (DEQ, 2005). Based on DEQ data collected in 1982 near Cape Arago Highway, the average winter temperature for First Creek is 46.6°F (8° C).

### **3.8.2 Regulatory Environment**

The project alternatives are subject to a variety of federal, state, and local laws related to water resources and water quality. Proposed activities affecting Waters of the United States are regulated under Sections 404, 401, and 402 of the federal Clean Water Act (CWA). Section 404 applies to the discharge of dredged or fill material into navigable waters of the United States, including jurisdictional wetlands.

The NPDES permit (Section 402 of the CWA) is a joint state and federal permit for wastewater discharges to surface waters. The NPDES program requires a plan to prevent stormwater pollution and to control erosion. Section 401 Water Quality Certification is required to ensure that a federally permitted activity resulting in discharge to a water of the State meets water quality standards. NPDES permit parameters include biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, pH, chlorine, ammonia, and thermal loading. Expected parameter limits are listed in Table 3. Both Sections 402 and 401 are administered by the DEQ.

DEQ establishes mixing zone requirements for the discharge of effluent into receiving waters as part of the NPDES permit. Two types of mixing zones are regulated – the acute mixing zone and the chronic mixing zone. The acute mixing zone is designed to prevent lethal impacts to aquatic organisms that are in the zone of initial contact and the chronic mixing zone is designed to protect the integrity of the entire receiving waterbody. The NPDES permit writer uses best professional judgment in establishing mixing zone requirements. The previous NPDES permit for WWTP No. 2 lacked an acute mixing zone but provided for a 50-foot chronic mixing zone. The renewed permit allows for the same size chronic mixing zone with the addition of a 5-foot acute mixing zone requirement.

The water quality standards for the South Coast Basin (OAR 340-041-0325) apply to the project area. Under the temperature standards for Coos Bay, no measurable increase outside the mixing zone is allowed in stream segments containing federally listed threatened and endangered species if the increase would impair the biological integrity of the population. A measurable increase is defined as greater than a 0.25° F increase at the edge of the mixing zone (OAR 340-041-0006(55)). A temperature evaluation conducted for the NPDES permit renewal concluded that

discharge to Coos Bay would not result in a measurable increase in temperature at the edge of the mixing zone (DEQ, 2003).

At the state level, removal or fill of more than 50 cy of material in a water of the state requires a permit from the Oregon DSL (ORS 196.795-990). Waters of the state include wetlands, intermittent streams, lakes, rivers, and tidal and non-tidal bays. First Creek meets the definition of a water of the state. Activity below the ordinary high water (OHW) level of streams and rivers is subject to review by the ODFW in association with removal/fill permits issued by DSL. ODFW imposes in-water work periods to minimize adverse impacts to aquatic organisms. The recommended in-water work period for Coos Bay (including First Creek) is July 1 through September 15 (ODFW, 2002).

**Table 3. Wastewater Discharge Limitations Not to be Exceeded**

<b>May 1 – October 31:</b>					
<b>Parameter</b>	<b>Average Effluent Concentrations</b>		<b>Monthly* Average lb/day</b>	<b>Weekly* Average lb/day</b>	<b>Daily* Maximum lbs</b>
	<b>Monthly</b>	<b>Weekly</b>			
BOD <sub>5</sub>	20 mg/L	30 mg/L	340	510	670
TSS	20 mg/L	30 mg/L	340	510	670
<b>November 1 – April 30:</b>					
BOD <sub>5</sub>	30 mg/L	45 mg/L	700	1100	1400
TSS	30 mg/L	45 mg/L	700	1100	1400
<b>Other parameters (year-round except as noted)</b>			<b>Limitations</b>		
Fecal Coliform Bacteria			Shall not exceed a monthly median of 14 organisms per 100 mL. Not more than 10 percent of the samples shall exceed 43 organisms per 100 mL. (See Note 2)		
pH			Shall be within the range of 6.0 – 9.0		
BOD <sub>5</sub> and TSS Removal Efficiency			Shall not be less than 85% monthly average for BOD <sub>5</sub> and TSS.		
Total Residual Chlorine			Shall not exceed a monthly average concentration of 0.02 mg/l and a daily maximum concentration of 30 mg/l.		
Ammonia-N (May 1 – October 31)			Shall not exceed a monthly average concentration of 20 mg/L and a maximum concentration of 30 mg/L. (See Note 3)		
Excess Thermal Load (May 1 – October 31)			Shall not exceed 37 Million kcals/day as a weekly average. (See Note 1)		

\* Average dry weather design flow to the facility equals 2.02 MGD. Summer mass load limits based upon average dry weather design flow to the facility. Winter mass load limits based upon average wet weather design flow to the facility equaling 2.8 MGD. The daily mass load limit is suspended on any day in which the flow to the treatment facility exceeds 4.04 MGD (twice the design average dry weather flow).

**Note 1.** The thermal load limit was calculated using the average dry weather design flow and an estimated maximum weekly effluent temperature. This permit may be reopened, and the maximum allowable thermal load modified (up or down), when more accurate effluent temperature data becomes available. In addition, if the Total Maximum Daily Load (TMDL) for temperature for



this sub-basin assigns a Waste Load Allocation (WLA) to this source, this permit may be re-opened to establish new thermal load limits and/or new temperature conditions or requirements.

**Note 2.** This permit may be reopened and modified as necessary to incorporate any Waste Load Allocation (WLA) or Best Management Practice established by the TMDL for bacteria for this sub-basin.

**Note 3.** The Department is currently in the process of revising the ammonia criteria. These limits are based upon the existing criteria and is considered “interim”. Once the ammonia criteria is revised, the Department intends to reopen this permit and add to, modify or delete the limitations and requirements relating to ammonia.

### 3.8.3 Environmental Consequences

#### 3.8.3.1 No Build Alternative

The No Build Alternative would result in continued discharge of effluent into Coos Bay that does not meet the bacteria standards for shellfish growing waters.

#### 3.8.3.2 Proposed Action

The Proposed Action would include upgrading the existing system to accommodate projected future loads and flows and to meet more restrictive NPDES water quality standards while balancing the cost of improvements. Current peak flow is estimated at 4.5 mgd and the projected peak flow for 2027 is 6.0 mgd. While the volume of effluent discharged into Coos Bay will increase as the population grows, the concentrations of toxic chemicals and pathogens will decrease. A comparison of previous and current NPDES effluent discharge requirements is presented in Table 4.

**Table 4. NPDES Effluent Discharge Limits: Previous and Renewed Permit Requirements**

Selected Parameters	Effluent Discharge Limits (end of pipe)	
	Previous NPDES Permit	Current NPDES Permit (renewed 2003)
Fecal Coliform Bacteria	Monthly average effluent concentration of <b>200 organisms per 100 milliliters</b> , and weekly average effluent concentration of 400 organisms per 100 milliliters	A median concentration of <b>14 organisms per 100 milliliters</b> , with not more than 10 percent of the samples exceeding 43 organisms per 100 milliliters.
pH	6.0 – 9.0	6.0 – 9.0
BOD and TSS Removal Efficiency	Not less than 85% monthly average	Not less than 85% monthly average
Total residual chlorine	Shall not exceed a <b>daily median value of 0.5 mg/l</b> and no single sample shall exceed 1.0 mg/l	Shall not exceed a monthly average concentration of 0.02 mg/l and a <b>daily maximum concentration of 0.05 mg/l.</b>
Ammonia-N (May 1 – October 31)	--	Shall not exceed a monthly average concentration of 20 mg/L and a daily maximum

		concentration of 30 mg/L.
Excess Thermal Load (May 1 – October 31)	--	Shall not exceed 37 Million kcals/day as a weekly average.

The Proposed Action would also include installing a new influent sewer pipe under First Creek and removing the existing pipe. The new 30-inch-diameter sewer pipe would be installed five feet under the streambed via directional boring to minimize impacts to First Creek. The visible portion of the existing sewer pipe would be removed and the remaining pipe sections plugged and left in place. Minimal disturbance to the streambanks is anticipated.

### 3.8.3.3 Project Alternative

The environmental consequences to water resources from the Project Alternative are the same as described for the Proposed Action.

### 3.8.4 Mitigation

Both the Proposed Action and Project Alternative would satisfy DEQ's effluent disposal requirements. Compliance with DEQ's NPDES permit is recommended to minimize adverse water quality impacts. The renewed permit required the permittee to monitor eleven metals and cyanide in Coos Bay semi-annually for one year. No adverse impacts to water quality are anticipated as long as compliance with DEQ's NPDES permit is achieved.

Measures to minimize impacts to First Creek are incorporated into the proposed construction methods. Removing the existing sewer pipe from First Creek is recommended between July 1 and September 15 to comply with ODFW's in-water work guidelines for the protection of aquatic resources.

## 3.9 Coastal Management Zone

### 3.9.1 Affected Environment

The project area is within the Coastal Zone Management area of Oregon that extends from the Washington border to the California border, seaward to the extent of state jurisdiction (3 nautical miles offshore), and inland to the crest of the coastal mountain range.

### 3.9.2 Regulatory Environment

The federal consistency provisions of the Coastal Zone Management Act (CZMA) require that any federal action occurring in or outside of Oregon's coastal zone that affects coastal land or water uses or natural resources must be consistent with the Oregon Ocean-Coastal Management Program (OCMP). Federal consistency potentially applies to any project having effects on land and water uses or natural resources of the Oregon coastal zone. Federal financial assistance to state and local governments or related public entities, such as Rural Economic & Community Development, Housing and Urban Development, and U.S. Forest Service grants will trigger the consistency provisions of the CZMA.

The Department of Land Conservation and Development (DLCD) is the state of Oregon's designated coastal management agency and is responsible for reviewing projects for consistency with the OCMP and issuing coastal management decisions. A project must be shown to be consistent with the various applicable components of the OCMP, with the statewide planning goals, and with coastal city and county comprehensive plans and land use regulations. The City of Coos Bay and Coos County adopted the *Coos Bay Estuary Management Plan* to provide implementation of the OCMP and statewide planning goals.

Under the *Coos Bay Estuary Management Plan*, the WWTP No. 2 site is within Shoreland Segment 55. The Management Classification within Shoreland Segment 55 for the WWTP No. 2 site is Urban Development (UD). The Management Objective for Shoreland Segment 55 states:

*This segment shall be managed to allow continuation of the existing mix of residential and commercial uses to the west of Cape Arago Highway (Empire Blvd.), since this segment is not especially suited to commercial and industrial water-dependent/related uses. This segment also contains designated mitigation Site M-1b (medium priority) which must be protected from pre-emptive uses, consistent with Policy #22.*

The WWTP use is allowed outright within this Shoreland Segment.

### **3.9.3 Environmental Consequences**

#### **3.9.3.1 No Build Alternative**

The existing WWTP is consistent with the base zoning and the *Coos Bay Estuary Management Plan*. No mitigation would be required to maintain existing conditions.

#### **3.9.3.2 Proposed Action**

The Proposed Action would consist of upgrading an existing wastewater facility located in Shoreland Segment 55 of the *Coos Bay Estuary Management Plan*. The WWTP is a permitted use within the Shoreland Segment and proposed upgrades are consistent with the Oregon Ocean-Coastal Management Program.

#### **3.9.3.3 Project Alternative**

The Project Alternative would have the same consequences to the Coastal Management Zone as described under the Proposed Action.

### **3.9.4 Mitigation**

No adverse impacts to the Coastal Management Zone are anticipated from either the Proposed Action or the Project Alternative and no mitigation is proposed.

## 3.10 Socio-Economic / Environmental Justice Issues

### 3.10.1 Affected Environment

The WWTP No. 2 is on the shoreline on the west side of the City of Coos Bay. An area of small commercial businesses along Empire Boulevard lies to the east of the treatment plant. Farther east, beyond Marple Street, the area is residential. Construction of proposed improvements at the facility may potentially affect the residential area on the west side of Coos Bay.

The median family income for the City of Coos Bay residents in the year 1999 was \$38,721 (Census 2000 Summary File 3, Series P-77, Median Family Income, U.S. Census Bureau, 2003). Approximately 90 percent of the residents of the City of Coos Bay are white, with 5 percent a mix of two or more races and the rest of the ethnic groups in the population representing 2 percent or less. In comparison, Coos County residents are 92 percent white, 4 percent a mix of other races, 3 percent American Indian, and the remaining ethnic groups in the population representing 1 percent or less (Census 2000 Summary File 3, Series P-6 Race, U.S. Census Bureau, 2003).

Low-income populations were identified using statistical poverty thresholds from the Census 2000 Summary File 3, Series P-87 Poverty Status in 1999 by Age (U.S. Census Bureau, 2003). These thresholds were derived from information collected in the Census 2000. Poverty status is defined by a set of income thresholds that vary by family size and composition. Families or individuals with income below their appropriate poverty thresholds are classified as poor. In 1999, 17 percent of City of Coos Bay residents were at or below poverty level standards compared to 15 percent of Coos County residents (Table 5). The percentage of residents at or below poverty level at the national and state level is approximately 12 percent. No readily identifiable groups of low-income persons living in geographic proximity to the project area were identified from the income data.

**Table 5. Population Comparison for the City of Coos Bay and Coos County**

	United States	Oregon	Coos County	Coos Bay
Total population	273,882,232	3,347,667	61,534	15,026
Income in 1999 below poverty level	33,899,812	388,740	9,257	2,483
Percentage below poverty level	12%	12%	15%	17%

### 3.10.2 Regulatory Environment

In February 1994, President Clinton issued Executive Order 12898, which requires each federal agency to "...make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States..." (Executive Order 12898).

### **3.10.3 Environmental Consequences**

#### **3.10.3.1 No Build Alternative**

The No Build Alternative would maintain existing conditions. Sewer rates would periodically increase to account for inflation. Socio-economic impacts could occur from this alternative due to the occasional discharge of effluent above the bacteria limits for shellfish growing waters.

#### **3.10.3.2 Proposed Action**

Under the Proposed Action, wastewater treatment upgrades would occur at an existing facility and would equally affect all the residents of Coos Bay. The project would not result in disproportionately high or adverse effects to minority or low-income populations. Information on sewer rate increases from this alternative is not available.

#### **3.10.3.3 Project Alternative**

Similar to the Proposed Action, the Project Alternative would affect all the residents of Coos Bay in a similar manner, regardless of race or income, and would not result in adverse impacts to socioeconomic resources. Information on sewer rate increases from this alternative is not available.

### **3.10.4 Mitigation**

Neither the Proposed Action nor the Project Alternative would result in disproportionately high or adverse effects to minority or low-income populations and no mitigation would be required.

## **3.11 Noise**

### **3.11.1 Affected Environment**

The affected environment includes the existing WWTP site and immediate vicinity. Three residences are located between 100 and 150 feet away from the WWTP No. 2 site and are separated from the site by trees, shrubs, and First Creek. Adolfson staff noted during the January 2005 field visit that the operating equipment at the existing facility was barely audible from perimeter of the site on Fulton Road.

The human ear responds to a wide range of sound intensities. The decibel scale used to describe sound is a logarithmic rating system that accounts for the large differences in audible sound intensities. This scale accounts for the human perception of a doubling of loudness as an increase of 10 decibels (dBA). Hence, a 70 dBA sound level will sound twice as loud as a 60 dBA sound level. People generally cannot detect differences of 1 dBA, but a 5 dBA change would likely be perceived under normal conditions.

Table 6 presents representative noise sources and corresponding noise levels produced in decibels. Factors affecting the impact that a given noise will have on a person include the frequency and duration of the noise, the absorbency of the ground and surroundings, and the

distance of the receptor from the noise source. The receptor and the usual background noise levels also determine the degree of impact.

**Table 6. Sound Levels Produced by Common Noise Sources**

Thresholds/Noise Sources	Sound Level (dBA)	Subjective Evaluations	Possible Effects on Humans
Carrier jet takeoff (50 ft)	140	Deafening	Continuous exposure can cause hearing damage
Siren (100 ft) Loud rock band	130		
Jet takeoff (200 ft) Auto horn (3 ft)	120		
Chain saw Noisy snowmobile	110		
Lawn mower (3 ft) Noisy motorcycle (50 ft)	100	Very Loud	
Heavy truck (50 ft); bulldozer or backhoe (100 ft)	90		
Pneumatic drill (50 ft); loader (100 ft) Busy urban street, daytime	80	Loud	Speech Interference
Normal automobile at 50 mph; Vacuum cleaner (3 ft)	70		
Large air conditioning unit (20 ft) Conversation (3 ft)	60	Moderate	Sleep Interference
Quiet residential area; Light auto traffic (100 ft)	50		
Library; Quiet home	40	Faint	Minimal Effects
Soft whisper (15 ft)	30		
Slight Rustling of Leaves	20	Very Faint	
Broadcasting Studio	10		
Threshold of Human Hearing	0		

Source: U.S. Environmental Protection Agency, 1971.

A noise level analysis has not been conducted for the project area. Local governments have primary responsibility for controlling noise sources and regulating outdoor noise levels in the environment.

### 3.11.2 Regulatory Environment

Local governments have primary responsibility for controlling noise sources and regulating outdoor noise levels in the environment. The City of Coos Bay regulates “unreasonable noise” under Ordinance No. 100. Restrictions on construction noise apply only to residential districts – the nearest residential district is approximately 400 feet east of the WWTP site.

The State of Oregon establishes noise standards for existing industrial and commercial facilities (OAR 340-035-0035) and exemptions for construction noise (OAR 340-035-035(5)(g)). These

standards are administered by the Oregon DEQ but are no longer enforced by DEQ due to elimination of the noise program (Rachel Sakarta, personal communication, 2004). Nevertheless, Commercial Noise Source Standards (OAR 340-35-035) are as follows:

- 7am-10pm:  $L_{50} = 55$  dBA,  $L_{10} = 60$  dBA,  $L_1 = 75$  dBA
- 10pm-7am:  $L_{50} = 50$  dBA,  $L_{10} = 55$  dBA,  $L_1 = 60$  dBA.

The  $L_{50}$  represents the allowable mean noise level that may occur in one hour. The  $L_{10}$  and  $L_1$  represent the allowable noise level for 10% and 1% of one hour, respectively.

### **3.11.3 Environmental Consequences**

#### **3.11.3.1 No Build Alternative**

The No Build Alternative would maintain existing conditions. No noise complaints have been made regarding operation of the existing wastewater system.

#### **3.11.3.2 Proposed Action**

Proposed wastewater facility upgrades would occur at an already developed site that is approximately 100 to 150 feet away from nearby residences. Noise from heavy trucks, bulldozers, or backhoes may be audible to the nearest residences during construction, but construction noise would likely be limited to daylight hours (7 a.m. to 6 p.m. Monday through Friday). Construction noise would also be attenuated by distance (100 to 150 feet) and vegetation. Additionally, construction would occur in an area with existing background noise from the Cape Arago Highway, a two-lane major thoroughfare, and existing commercial and industrial uses. No adverse noise impacts are anticipated.

#### **3.11.3.3 Project Alternative**

The Project Alternative for headworks, effluent treatment, and Biosolids treatment Alternative 1 would result in construction noise impacts similar to those described for the Proposed Action. This alternative would also involve constructing a second aeration process unit and associated blowers. The blowers would be housed in a small building and would not result in a significant noise increase.

Biosolids treatment Alternative 2 would require construction in the public right-of-way along an undetermined route. Construction noise along this route may be audible to residents in the vicinity.

### **3.11.4 Mitigation**

Temporary construction noise resulting from either the Proposed Action or the Project Alternative may be audible to nearby residences. Although not required by the City of Coos Bay, construction would likely occur during daylight hours (generally between 7 a.m. and 6 p.m.) Monday through Friday. No adverse noise impacts are anticipated from operation of the upgraded WWTP, and no additional mitigation would be required.

## **3.12 Air Quality**

### **3.12.1 Affected Environment**

The affected environment includes the existing WWTP and immediate vicinity. The climate of Coos Bay is characterized by mild summers and wet, cool winters. Temperatures range from 46 to 67° F between May and October and 39 to 57° F from November to April. The average annual precipitation is 62 inches with most of the rainfall occurring October to April (National Weather Services, 2003).

The average wind velocity for North Bend is approximately 8 miles per hour with gusting up to 29 and 38 mph (National Weather Service, 2005). Wind direction is variable. Sufficient wind is present in the project area the year to disperse air pollutants released into the atmosphere.

Existing odor and air pollutant-producing activities on the site include the primary sedimentation, aeration, and the digester. The waste gas burner is not working and digester gas (methane) is being discharged to the atmosphere. Nearby sources of odor include exhaust from vehicles on the Cape Arago Highway and exposed mud and sand at low tide.

No significant sources of air pollution are designated by the Environmental Protection Agency (EPA) for the project site or vicinity (EPA, 2004). The nearest area that exceeds ambient air quality standards is the Eugene-Springfield area (EPA, 2004). A few odor complaints have been made in the past (during the summer months), but none have been made recently (Robert Watts, personal communication, 2005).

### **3.12.2 Regulatory Environment**

Air quality is regulated under the federal Clean Air Act (CAA) and its amendments. At the federal level, the CAA is administered by the EPA. In Oregon, EPA has delegated its regulatory authority for air quality to the DEQ and to regional clean air agencies.

Several different types of air pollutants are subject to regulation. Under the CAA, EPA has set air quality standards for six principal pollutants: carbon monoxide, sulfur dioxide, lead, ozone, and two categories of particulate matter. The standards for these “criteria” pollutants are known as the National Ambient Air Quality Standards, or NAAQS. Areas of the country that persistently exceed the national ambient air quality standards for these pollutants are designated “nonattainment” areas.

EPA also has set standards for 188 hazardous air pollutants (HAPs), which are known or believed to cause human health effects when they exceed levels specified by EPA. HAP emissions in excess of certain levels are subject to National Emissions Standards for Hazardous Air Pollutants (NESHAPS). While the CAA and state and local regulations set standards for criteria pollutants and HAPs, they do not set standards for odors.



### **3.12.3 Environmental Consequences**

#### **3.12.3.1 No Build Alternative**

The No Build Alternative would maintain existing conditions. Offensive odors are occasionally detected at nearby residences due to inadequate treatment facilities.

#### **3.12.3.2 Proposed Action**

Approximately 8,750 square feet or 0.2 acres of earthwork (excavating and grading) would be required to implement the proposed upgrades at the existing WWTP No. 2 site. Construction might result in periodic, short-term increases of airborne particles on-site and in the vicinity of the project. Dust and engine exhaust generated by construction equipment (such as front-end loaders or excavators) at the existing WWTP site would be the main source of impacts to air quality. These impacts are expected to occur intermittently during construction between 7 a.m. and 6 p.m. at the existing WWTP site.

Operation of this alternative would result in trucking biosolids to WWTP No. 1 two to three times a day for anaerobic treatment. Currently, trucks haul solids off-site 2.5 to 5 times per week. Sources of exhaust would increase from more frequent truck traffic but the potential for generating offensive odors is reduced by not treating the solids on-site. By improving treatment technology, operation of the WWTP could improve air quality slightly after the proposed upgrades are in place.

#### **3.12.3.3 Project Alternative**

The footprint of impact is less (4,899 square feet or 0.1 acres) for this alternative because the proposed secondary clarifier would be constructed where the primary sedimentation basin is located. However, this alternative would involve the demolition of the primary sedimentation basin in addition to the existing headworks facility. The expected environmental consequences during construction are similar to those described for the Proposed Action.

Operation of this alternative (including headworks, effluent treatment, and Biosolids treatment 1) would result in treating biosolids on-site. Anaerobic digestion of solids currently occurs on-site, but with proposed upgrades, including a new gas burner, the generation of offensive odors and pollutants would decrease.

### **3.12.4 Mitigation**

To minimize adverse air quality impacts during construction of either the Proposed Action or Project Alternative, water would be applied to Fulton Avenue and the WWTP No. 2 site to reduce the potential for creating dust. No other adverse air quality impacts are anticipated from construction or operation of either the Proposed Action or the Project Alternative, and no additional mitigation is required or proposed.

### **3.13 Traffic and Safety**

#### **3.13.1 Affected Environment**

The affected environment includes the existing WWTP No. 2 site and the likely route to WWTP No. 1 and the facultative lagoons (Ocean Boulevard to Highway 101). The existing WWTP No. 2 site is located at the western end of Fulton Avenue, a block west of Empire Boulevard (Cape Arago Highway). Existing traffic activity at the site includes two to three employee trips per day and 2.5 to 5 truck trips per week.

Fulton Avenue is a short five-block-long local residential street that dead-ends at the treatment plant at its western end. No residences are accessed from Fulton Avenue in the block between Cape Arago Highway and the treatment plant. Cape Arago Highway, a north-south arterial, is the major through street on the west side of Coos Bay. Ocean Boulevard, also an arterial, is oriented northwest-southeast and connects Cape Arago Highway with downtown Coos Bay and Highway 101 (a principal arterial or state route). An arterial is defined as a route that goes beyond city limits (DKS Associates, 2004). Approximately 1,998 vehicles were counted, including 52 trucks, on Cape Arago Highway near Pacific Avenue (in the vicinity of the WWTP site) during a two-hour traffic survey (City of Coos Bay, 2002). The traffic count was conducted between 4 p.m. and 6 p.m. on Wednesday, August 4, 2002. During the same traffic survey and time period, 2,571 vehicles including 61 trucks were counted on Ocean Boulevard near Butler Avenue and 4,531 vehicles including 200 trucks were counted on Highway 101 near WWTP No. 1.

#### **3.13.2 Regulatory Environment**

Construction traffic is required to comply with the standards of the Oregon Department of Transportation (ODOT). The contractor would be required to submit a traffic control plan to ODOT as part of the proposed project.

#### **3.13.3 Environmental Consequences**

##### ***3.13.3.1 No Build Alternative***

The No Build Alternative would maintain existing traffic conditions that include 2 to 3 employee trips per day and 2.5 to 5 truck trips per week. No traffic or safety impacts would occur from this alternative.

##### ***3.13.3.2 Proposed Action***

Construction of the proposed action would result in an increase of 2.5 to 5 truck trips per week at the project site. No residences are accessed from Fulton Avenue in between Cape Arago Highway and the WWTP site, thereby minimizing adverse impacts to transportation and safety. Construction traffic would access the site via the Cape Arago Highway that currently receives high traffic volumes. Operation of the WWTP site under this alternative would involve hauling biosolids to WWTP No. 1 two to three times per day. The expected route for hauling biosolids

(Ocean Boulevard to Highway 101) currently experiences high traffic volumes and an additional two to five trucks per day is not anticipated to result in adverse effects. The number of employee trips would not change. Construction or operation of the Proposed Action is not anticipated to result in adverse traffic or safety impacts.

### **3.13.3.3 Project Alternative**

The Project Alternative (including Biosolids treatment Alternative 1 and 2) would have the same construction-related traffic and safety impacts as the Proposed Action. Operation of the Project Alternative (headworks, effluent treatment, and Biosolids treatment Alternative 1) would result in treating biosolids on-site and hauling digested solids two to five times per week to the existing facultative lagoons located south of WWTP No. 1. The expected route for hauling biosolids to the lagoons would likely be Ocean Boulevard to Highway 101, which currently experience high traffic volumes. An increase of 2.5 to 5 trucks per day is not anticipated to result in adverse effects. The number of employee trips would remain the same.

Operation of Biosolids treatment Alternative 2 would eliminate the number of truck trips with the installation two pipelines to transfer primary solids and WAS to WWTP No. 1. The number of employee trips would remain the same.

### **3.13.4 Mitigation**

Mitigation for construction-related traffic and safety impacts are the same for the Proposed Action and the Project Alternative. To mitigate for potential traffic impacts during construction, the contractor will be required to submit a traffic control plan to ODOT. Signage will be required near the construction site to alert passenger vehicles about lowered speed limits and merging trucks. With mitigation measures in place, 2.5 to 5 truck trips per week are not expected to result in adverse traffic impacts.

Operation of the Proposed Action would result in an increase of 2 to 3 trucks per day, whereas operation of the Project Alternative with Biosolids treatment 1 would result in an increase of 2.5 to 5 truck trips per week, and Project Alternative with Biosolids treatment 2 would eliminate truck trips. Although the Proposed Action results in more truck trips, adverse impacts to traffic on Cape Arago Highway, Ocean Boulevard, and Highway 101 are not anticipated due to existing high levels of traffic on these roads. No adverse impacts to traffic or safety are anticipated from either the Proposed Action or the Project Alternative and no mitigation is proposed.

## **3.14 Environmental Design (Aesthetics)**

This section describes the aesthetics of the project alternatives, including environmental design techniques and compatible use.

### **3.14.1 Affected Environment**

The existing WWTP No. 2 site is located at the western end of Fulton Avenue, one block west of Empire Boulevard. An existing flow monitoring station surrounded by a chain-link fence is visible from Cape Arago Highway and nearby commercial structures (Photo 7, Exhibit A). The

existing WWTP No. 2 is visible from the Bay and possible the backyards of nearby residences, but is not visible from Cape Arago Highway. The debris stockpile site is situated west of riparian vegetation of First Creek and is only partially visible from Cape Arago Highway.

### **3.14.2 Regulatory Environment**

In general, environmental design is regulated at the local level. Proposed improvements at the WWTP No. 2 site within the City of Coos Bay are subject to standards of the building permit.

### **3.14.3 Environmental Consequences**

#### **3.14.3.1 *No Build Alternative***

The No Build Alternative would maintain existing conditions.

#### **3.14.3.2 *Proposed Action***

The proposed action would involve constructing a new pump station and headworks either where the flow monitoring station is located or on the adjacent debris stockpile site. The proposed secondary clarifier and thickening facility would be constructed on the WWTP site. The pump station would be housed in a concrete building 60 feet x 50 feet with a height of 12 feet and a flat roof. The headworks would be constructed of metal and concrete and would be 40 feet by 50 feet with a height of 20 feet. At either location, the pump station and headworks would be protected with a chain-link fence.

#### **3.14.3.3 *Project Alternative***

The Project Alternative with Biosolids treatment Alternative 1 would also involve constructing a new pump station either where the flow monitoring station is located or on the adjacent debris stockpile site. The proposed secondary clarifier and thickening facility would be constructed on the WWTP site. The difference under this alternative would be the construction of only the screening unit adjacent to the pump station. The screening unit would extend 12 feet below ground and would have an approximate height of 6 feet. A dumpster would need to be located adjacent to the screening unit for disposal of screened material. At either location, the pump station and headworks would be protected with a located chain-link fence.

### **3.14.4 Mitigation**

Features incorporated into the Proposed Action to reduce potential impacts to the surrounding environment include improving a site that is currently developed. Due to the minimal impacts expected during construction, no mitigation will likely be required by the City and none is proposed.

Construction of the proposed pump station and headworks/screening unit at the corner of Fulton Avenue and Cape Arago Highway would likely diminish the visual quality of the area. However, the project vicinity is currently developed with commercial and industrial structures and would not adversely impact aesthetics.

## 4.0 SUMMARY OF MITIGATION

Table 7 summarizes the proposed mitigation measures. Mitigation would be the same for both the Proposed Action and the Project Alternative.

**Table 7. Summary of Mitigation**

<b>Environmental Factor</b>	<b>Mitigation (For the Proposed Action and Project Alternative)</b>
Land use	<ul style="list-style-type: none"> <li>No mitigation recommended or required.</li> </ul>
Floodplains	<ul style="list-style-type: none"> <li>Equipment constructed on the debris stockpile site (within the 100-year floodplain of Coos Bay) should comply with the development standards of the City's Flood Damage Prevention Chapter.</li> </ul>
Wetlands	<ul style="list-style-type: none"> <li>Avoid clearing and grading the banks of First Creek.</li> </ul>
Cultural and Historical Resources	<ul style="list-style-type: none"> <li>If cultural resources are found during construction, work would stop in the immediate vicinity and the appropriate agencies would be contacted. A data recovery plan would be developed by the professional archaeologist, with input from applicable Tribes regarding treatment of archaeological deposits.</li> </ul>
Threatened and Endangered Species	<ul style="list-style-type: none"> <li>Remove the old sewer pipe during the ODFW recommended in-water work period of July 1 to September 15.</li> <li>Comply with the water quality standards of the NPDES permit.</li> </ul>
Fish, Wildlife, and Vegetation	<ul style="list-style-type: none"> <li>Remove the old sewer pipe during the ODFW recommended in-water work period of July 1 to September 15.</li> <li>Comply with the water quality standards of the NPDES permit.</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>Comply with the NPDES permit requirements issued by DEQ</li> </ul>
Socio-Economic/Environmental Justice Issues	<ul style="list-style-type: none"> <li>No mitigation recommended or required.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>Restrict construction to daylight hours (generally 7 a.m. to 6 p.m.) Monday through Friday.</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>Dampen Fulton Avenue and the WWTP site to reduce the potential for fugitive dust to arise.</li> </ul>
Traffic and Safety	<ul style="list-style-type: none"> <li>Contractor will be required to submit a traffic control plan to ODOT.</li> <li>Signage will be required near the construction site to alert passenger vehicles about lowered speed limits and merging trucks.</li> </ul>
Aesthetics	<ul style="list-style-type: none"> <li>No mitigation recommended or required.</li> </ul>

**Notes:** DEQ = Department of Environmental Quality

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## **EXHIBITS**

## **EXHIBIT A – PHOTOGRAPHS**

**EXHIBIT B – LETTER FROM STATE HISTORIC  
PRESERVATION OFFICE**

## **EXHIBIT C – USFWS SPECIES LIST**

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
WASTE DISCHARGE PERMIT**

Department of Environmental Quality  
Western Region – Salem Office  
750 Front Street NE, Suite 120, Salem, OR 97301-1039  
Telephone: (503) 378-8240

Issued pursuant to ORS 468B.050 and The Federal Clean Water Act

**ISSUED TO:**

Coos Bay, City of  
500 Central Avenue  
Coos Bay, OR 97420

**SOURCES COVERED BY THIS PERMIT:**

Type of Waste	Outfall Number	Outfall Location
Treated Wastewater	001	R.M. 3.8
Emergency Overflows:		
Pump Station #7, 421 Morrison Street	002	Coos Bay, R.M. 6.0
P.S. #8, 1812 Newmark	003	Coos Bay, R.M. 6.0
P.S. #14, 150 Mill Street	004	Coos Bay, R.M. 5.25
P.S. #16, 999 Lakeshore Drive	005	Coos Bay, R.M. 6.0
Flow Monitoring Station, West end of Fulton Street	006	Coos Bay, R.M. 4.5

**FACILITY TYPE AND LOCATION:**

Activated Sludge  
Coos Bay STP #2  
100 Fulton Street  
Coos Bay, Oregon

**RECEIVING STREAM INFORMATION:**

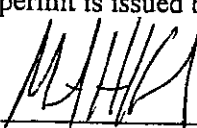
Basin: South Coast  
Sub-Basin: Coos  
Receiving Stream: Coos Bay  
Hydro Code: 14A\*COOS 3.8 D  
LLID: 1243397433543-3.8-D  
County: Coos

Treatment System Class: Level IV  
Collection System Class: Level III

EPA REFERENCE NO: OR002358-2

Issued in response to Application No. 994488 received September 11, 1995.

This permit is issued based on the land use findings in the permit record.

  
Michael H. Korten, Water Quality Manager  
Western Region

August 21, 2003  
Date

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**PERMITTED ACTIVITIES**

Until this permit expires or is modified or revoked, the permittee is authorized to construct, install, modify, or operate a wastewater collection, treatment, control and disposal system and discharge to public waters adequately treated wastewaters only from the authorized discharge point or points established in Schedule A and only in conformance with all the requirements, limitations, and conditions set forth in the attached schedules as follows:

	Page
Schedule A - Waste Discharge Limitations not to be Exceeded .....	3
Schedule B - Minimum Monitoring and Reporting Requirements.....	6
Schedule C - Compliance Conditions and Schedules.....	10
Schedule D - Special Conditions .....	11
Schedule E - Pretreatment Activities .....	15
Schedule F - General Conditions.....	17

Unless specifically authorized by this permit, by another NPDES or WPCF permit, or by Oregon Administrative Rule, any other direct or indirect discharge to waters of the state is prohibited, including discharge to an underground injection control system.

## SCHEDULE A

1. **Waste Discharge Limitations not to be exceeded after permit issuance (see Note 4).**

a. **Treated Effluent Outfall 001**

(1) **May 1 - October 31:**

Parameter	Average Effluent Concentrations		Monthly* Average lb/day	Weekly* Average lb/day	Daily* Maximum lbs
	Monthly	Weekly			
BOD <sub>5</sub>	20 mg/L	30 mg/L	340	510	670
TSS	20 mg/L	30 mg/L	340	510	670

(2) **November 1 - April 30:**

Parameter	Average Effluent Concentrations		Monthly* Average lb/day	Weekly* Average lb/day	Daily* Maximum lbs
	Monthly	Weekly			
BOD <sub>5</sub>	30 mg/L	45 mg/L	510	760	1000
TSS	30 mg/L	45 mg/L	510	760	1000

\* Average dry weather design flow to the facility equals 2.02 MGD. All mass load limits are based on design average dry weather flow to the facility.

**Waste Discharge Limitations not to be exceeded after submitting documentation that the authority to implement OAR 340-041-0120(9)(a)(G)(iv) in tributary collection systems has been obtained (See Note 4).**

a. **Treated Effluent Outfall 001**

(1) **May 1 - October 31:**

Parameter	Average Effluent Concentrations		Monthly* Average lb/day	Weekly* Average lb/day	Daily* Maximum lbs
	Monthly	Weekly			
BOD <sub>5</sub>	20 mg/L	30 mg/L	340	510	670
TSS	20 mg/L	30 mg/L	340	510	670

(2) **November 1 - April 30:**

Parameter	Average Effluent Concentrations		Monthly* Average lb/day	Weekly* Average lb/day	Daily* Maximum lbs
	Monthly	Weekly			
BOD <sub>5</sub>	30 mg/L	45 mg/L	700	1100	1400
TSS	30 mg/L	45 mg/L	700	1100	1400

\* Average dry weather design flow to the facility equals 2.02 MGD. Summer mass load limits based upon average dry weather design flow to the facility. Winter mass load limits based upon average wet weather design flow to the facility equaling 2.8 MGD. The daily mass load limit is suspended on any day in which the flow to the treatment facility exceeds 4.04 MGD (twice the design average dry weather flow).

**Other waste Discharge Limitations not to be exceeded after permit issuance.**

a. Treated Effluent Outfall 001

(1)

Other parameters (year-round except as noted)	Limitations
Fecal Coliform Bacteria	Shall not exceed a monthly median of 14 organisms per 100 mL. Not more than 10 percent of the samples shall exceed 43 organisms per 100 mL. (See Note 2)
pH	Shall be within the range of 6.0 - 9.0
BOD <sub>5</sub> and TSS Removal Efficiency	Shall not be less than 85% monthly average for BOD <sub>5</sub> and 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.
Ammonia-N (May 1 – October 31)	Shall not exceed a monthly average concentration of 20 mg/L and a daily maximum concentration of 30 mg/L (See Note 3)
Excess Thermal Load (May 1 – October 31)	Shall not exceed 37 Million kcals/day as a weekly average. (See Note 1)

- (2) Except as provided for in OAR 340-45-080, no wastes shall be discharged and no activities shall be conducted which violate Water Quality Standards as adopted in OAR 340-41-0325 except in the following defined mixing zone:

The allowable mixing zone is that portion of Coos Bay contained within a radius of fifty (50) feet from the outfall. The Zone of Immediate Dilution (ZID) shall be defined as that portion of the allowable mixing zone that is within five (5) feet of the point of discharge.

b. Emergency Overflow Outfalls 002 through 006

- (1) No wastes shall be discharged from these outfalls and no activities shall be conducted which violate water quality standards as adopted in OAR 340-041-0325, unless the cause of the discharge is due to storm events as allowed under OAR 340-41-120 (13) or (14).
- (2) Raw sewage discharges are prohibited to waters of the State from November 1 through May 21, except during a storm event greater than the one-in-five-year, 24-hour duration storm, and from May 22 through October 31, except during a storm event greater than the one-in-ten-year, 24-hour duration storm.

If an overflow occurs between May 22 and June 1, and if the permittee demonstrates to the Department's satisfaction that no increase in risk to beneficial uses occurred because of the overflow, no violation shall be triggered if the storm associated with the overflow was greater than the one-in-five-year, 24-hour duration storm.

- c. No activities shall be conducted that could cause an adverse impact on existing or potential beneficial uses of groundwater. All wastewater and process related residuals shall be managed and disposed in a manner that will prevent a violation of the Groundwater Quality Protection Rules (OAR 340-040).



**NOTES:**

1. The thermal load limit was calculated using the average dry weather design flow and an estimated maximum weekly effluent temperature. This permit may be reopened, and the maximum allowable thermal load modified (up or down), when more accurate effluent temperature data becomes available. In addition, if the Total Maximum Daily Load (TMDL) for temperature for this sub-basin assigns a Waste Load Allocation (WLA) to this source, this permit may be re-opened to establish new thermal load limits and/or new temperature conditions or requirements.
2. This permit may be reopened and modified as necessary to incorporate any Waste Load Allocation (WLA) or Best Management Practice established by the TMDL for bacteria for this sub-basin.
3. The Department is currently in the process of revising the ammonia criteria. These limits are based upon the existing criteria and is considered "interim". Once the ammonia criteria is revised, the Department intends to reopen this permit and add to, modify or delete the limitations and requirements relating to ammonia.
4. The waste discharge limits in Schedule A, Condition 2 shall automatically become effective upon submittal of documentation to the Department that the City of Coos Bay has acquired and has accepted the necessary legal authority to implement the provisions of OAR 340-041-0120(9)(a)(G)(iv).

## SCHEDULE B

1. **Minimum Monitoring and Reporting Requirements** (unless otherwise approved in writing by the Department).

The permittee shall monitor the parameters as specified below at the locations indicated. The laboratory used by the permittee to analyze samples shall have a quality assurance/quality control (QA/QC) program to verify the accuracy of sample analysis. If QA/QC requirements are not met for any analysis, the results shall be included in the report, but not used in calculations required by this permit. When possible, the permittee shall re-sample in a timely manner for parameters failing the QA/QC requirements, analyze the samples, and report the results.

a. **Influent**

The facility influent sampling locations are the following:

Influent grab and composite samples and measurements are taken from the manhole just before the influent wet well. The composite sampler is located in the motor/generator room on top of the wet well.

Item or Parameter	Minimum Frequency	Type of Sample
Total Flow (MGD)	Daily	Measurement
Flow Meter Calibration	Semi-Annual	Verification
BOD <sub>5</sub>	2/Week	Composite
TSS	2/Week	Composite
pH	3/Week	Grab
Toxics:		
Metals (Ag, As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, Zn) & Cyanide, measured as total is mg/L (See Note 1)	Semi-annually using 3 consecutive days between Monday and Friday, inclusive	24-hour daily composite (See Note 2)

b. **Treated Effluent Outfall 001**

The facility effluent sampling locations are the following:

Effluent grab and composite samples and measurements are taken just before the effluent weir of the chlorine contact chamber. The composite sampler is located on the walkway over the chlorine contact chamber.

Item or Parameter	Minimum Frequency	Type of Sample
BOD <sub>5</sub>	2/Week	Composite
TSS	2/Week	Composite
pH	3/Week	Grab
Fecal Coliform	2/Week	Grab
Quantity Chlorine Used	Daily	Measurement
Chlorine Residual	Daily	Grab
Pounds Discharged (BOD <sub>5</sub> and TSS)	2/Week	Calculation
Average Percent Removed (BOD <sub>5</sub> and TSS)	Monthly	Calculation
Toxics:		
Metals (As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, Zn) & Cyanide, measured as total in mg/l (See Note 1)	Semi-annually using 3 consecutive days between Monday and Friday, inclusive	24-hour daily composite (See Note 2)

b. Treated Effluent Outfall 001 (Continued)

Item or Parameter	Minimum Frequency	Type of Sample
Toxics (Continued):		
Whole Effluent Toxicity (See Note 3)	Semi-annually	Acute & chronic
Ammonia-N	Weekly	Composite
Silver (See Note 1)	Once per Month and Semi-annually using 3 consecutive days between Monday and Friday, inclusive	24-hour daily composite (See Note 2)
Temperature:		
Effluent Temperature, Daily Max (See Note 7)	Daily	Continuous
Effluent Temperature, Average of Daily Maximums (See Note 7)	Weekly	Calculation
Excess Thermal Load	Weekly (May 1 – October 31)	Calculation (See Note 7)

c. Biosolids Management

Item or Parameter	Minimum Frequency	Type of Sample
Biosolids analysis including: Total Solids (% dry wt.) Volatile solids (% dry wt.) Biosolids nitrogen for: NH <sub>3</sub> -N; NO <sub>3</sub> -N; & TKN (% dry wt.) Phosphorus (% dry wt.) Potassium (% dry wt.) pH (standard units)	Annually	Composite sample to be representative of the product to be land applied from the storage lagoon (See Note 4)
Biosolids metals content for: Ag, As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se & Zn, measured as total in mg/kg	Semi-Annually	Composite sample to be representative of the product to be land applied from the storage lagoon (See Note 4)
Record of locations where biosolids are applied on each DEQ approved site. (Site location maps to be maintained at treatment facility for review upon request by DEQ)	Each Occurrence	Date, volume & locations where Biosolids were applied recorded on site location map.
Record of % volatile solids reduction accomplished through stabilization	Monthly	Calculation (See Note 5)
Record of digestion days (mean cell residence time)	Monthly	Calculation (See Note 6)
Daily Minimum Sludge Temperature	Daily	Record

d. Emergency Overflow Outfalls 002 through 006

Item or Parameter	Minimum Frequency	Type of Sample
Flow	Daily (during each occurrence)	Estimate duration and volume

- e. Receiving Stream (within 500 feet of the Outfall 001 but outside the effluent plume)

Item or Parameter	Minimum Frequency	Type of Sample
Toxics:		
Metals (Ag, As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, Zn) & Cyanide, measured as total in mg/L (See Note 8)	Semi-annually (one day of the 3 consecutive days of influent and effluent testing)	Grab

2. **Reporting Procedures**

- a. Monitoring results shall be reported on approved forms. The reporting period is the calendar month. Reports must be submitted to the appropriate Department office by the 15th day of the following month.
- b. State monitoring reports shall identify the name, certificate classification and grade level of each principal operator designated by the permittee as responsible for supervising the wastewater collection and treatment systems during the reporting period. Monitoring reports shall also identify each system classification as found on page one of this permit.
- c. Monitoring reports shall also include a record of the quantity and method of use of all Biosolids and sludge removed from the treatment facility and a record of all applicable equipment breakdowns and bypassing.

3. **Report Submittals**

- a. The permittee shall have in place a program to identify and reduce inflow and infiltration into the sewage collection system. An annual report shall be submitted to the Department by June 1 each year which details sewer collection maintenance activities that reduce inflow and infiltration. The report shall state those activities that have been done in the previous year and those activities planned for the following year.
- b. For any year in which biosolids are land applied, a report shall be submitted to the Department by February 19 of the following year that describes solids handling activities for the previous year and includes, but is not limited to, the required information outlined in OAR 340-50-035(6)(a)-(e).

**NOTES:**

1. For influent and effluent cyanide samples, at least six (6) discrete grab samples shall be collected over the operating day. Each aliquot shall not be less than 100 mL and shall be collected and composited into a larger container which has been preserved with sodium hydroxide for cyanide samples to insure sample integrity. Monitoring for mercury during the first year after permit issuance shall be conducted in accordance with EPA Method 1631. Monitoring for silver during the first year after permit issuance shall be conducted using a test method with a detection limit of 0.1 µg/L or less. After the first year, mercury and silver monitoring of the effluent may be conducted according to any test procedures approved by 40 CFR Part 136, unless otherwise notified in writing by the Department. For all tests, the method detection limit shall be reported along with the sample result.
2. Daily 24-hour composite samples shall be analyzed and reported separately. Toxic monitoring results and toxics removal efficiency calculations shall be tabulated and submitted with the Pretreatment Program Annual Report as required in Schedule E. Except for effluent monitoring results for mercury and silver, submittal of toxic monitoring results with the monthly Discharge Monitoring Report is not required.

3. Beginning no later than December 31, 2003, the permittee shall conduct Whole Effluent Toxicity testing for a period of one (1) year in accordance with the frequency specified above. If the Whole Effluent Toxicity tests show that the effluent samples are not toxic at the dilutions determined to occur at the Zone of Immediate Dilution and the Mixing Zone, no further Whole Effluent Toxicity testing will be required during this permit cycle. Note that Whole Effluent Toxicity test results will be required along with the next NPDES permit renewal application.
4. Composite samples from the Storage lagoon or pond shall be taken from reference areas in the Storage lagoon or pond pursuant to the approved Biosolids Management Plan. Inorganic pollutant monitoring must be conducted according to Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Second Edition (1982) with Updates I and II and third Edition (1986) with Revision I.
5. Calculation of the % volatile solids reduction is to be based on comparison of a representative grab sample of total and volatile solids entering each digester and a representative composite sample of solids exiting each digester withdrawal line (as defined in the approved Biosolids Management Plan).
6. The days of digestion shall be calculated by dividing the effective digester volume by the average daily volume of Biosolids production.
7. Temperature monitoring and reporting shall begin no later than October 20, 2003. Excess Thermal Load shall be calculated as follows:  
(Weekly average of daily maximum effluent temperatures in °F - applicable summer stream temperature standard, 64°F) X (Weekly average of daily flow in MGD) X 2.10 conversion factor = Excess Thermal Load, in Million kcals/day.
8. For receiving stream samples, at least six (6) discrete grab samples shall be collected over the operating day. Each aliquot shall not be less than 100 mL and shall be collected and composited into a larger container which has been preserved with sodium hydroxide for cyanide samples to insure sample integrity. Monitoring for mercury shall be conducted in accordance with EPA Method 1631. Monitoring for silver shall be conducted using a test method with a detection limit of 0.1 µg/L or less. Monitoring of toxics in Coos Bay shall be conducted during the first year after permit issuance. After the first year, monitoring of Coos Bay may be eliminated unless otherwise notified in writing by the Department. For all tests, the method detection limit shall be reported along with the sample result.

## SCHEDULE C

### Compliance Schedules and Conditions

1. Within 180 days after the limits in Schedule A, Condition 2 become effective, the permittee shall submit to the Department for review and approval a proposed program and time schedule for identifying and reducing inflow. Within 60 days of receiving written Department comments, the permittee shall submit a final approvable program and time schedule. The program shall consist of the following:
  - a. Identification of all overflow points and verification that sewer system overflows are not occurring up to a 24-hour, 5-year storm event or equivalent;
  - b. Monitoring of all pump station overflow points;
  - c. A program for identifying and removing all inflow sources into the permittee's sewer system over which the permittee has legal control; and
  - d. If the permittee does not have the necessary legal authority for all portions of the sewer system or treatment facility, a program and schedule for gaining legal authority to require inflow reduction and a program and schedule for removing inflow sources.
2. By no later than November 19, 2003, the permittee shall submit to the Department a report which either identifies known sewage overflow locations and a plan for estimating the frequency, duration and quantity of sewage overflowing, or confirms that there are no overflow points. The report shall also provide a schedule to eliminate the overflow(s), if any.
3. The permittee is expected to meet the compliance dates which have been established in this schedule. Either prior to or no later than 14 days following any lapsed compliance date, the permittee shall submit to the Department a notice of compliance or noncompliance with the established schedule. The Director may revise a schedule of compliance if he determines good and valid cause resulting from events over which the permittee has little or no control.

## SCHEDULE D

### Special Conditions

1. Prior to increasing thermal load (flow or temperature) beyond the current permit limitations, the Permittee shall notify the Department and apply for and be issued a permit modification allowing the increase.
2. All biosolids shall be managed in accordance with the current, DEQ approved biosolids management plan, and the site authorization letters issued by the DEQ. Any changes in solids management activities that significantly differ from operations specified under the approved plan require the prior written approval of the DEQ.

All new biosolids application sites shall meet the site selection criteria set forth in OAR 340-50-0070 and must be located within Coos County. All currently approved sites are located in Coos County. No new public notice is required for the continued use of these currently approved sites. Property owners adjacent to any newly approved application sites shall be notified, in writing or by any method approved by DEQ, of the proposed activity prior to the start of application. For proposed new application sites that are deemed by the DEQ to be sensitive with respect to residential housing, runoff potential or threat to groundwater, an opportunity for public comment shall be provided in accordance with OAR 340-50-0030.

3. This permit may be modified to incorporate any applicable standard for biosolids use or disposal promulgated under section 405(d) of the Clean Water Act, if the standard for biosolids use or disposal is more stringent than any requirements for biosolids use or disposal in the permit, or controls a pollutant or practice not limited in this permit.

### **Whole Effluent Toxicity Testing**

- a. The permittee shall conduct whole effluent toxicity tests as specified in Schedule B of this permit.
- b. Whole Effluent Toxicity tests may be dual end-point tests, only for the fish tests, in which both acute and chronic end-points can be determined from the results of a single chronic test (the acute end-point shall be based upon a 48-hour time period).
- c. Acute Toxicity Testing - Organisms and Protocols
  - (1) The permittee shall conduct 48-hour static renewal tests with the *Ceriodaphnia dubia* (water flea) and the *Pimephales promelas* (fathead minnow).
  - (2) The presence of acute toxicity will be determined as specified in **Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms**, Fourth Edition, EPA/600/4-90/027F, August 1993.
  - (3) An acute Whole Effluent Toxicity test shall be considered to show toxicity if there is a statistically significant difference in survival between the control and 100 percent effluent, unless the permit specifically provides for a Zone of Immediate Dilution (ZID) for biotoxicity. If the permit specifies such a ZID, acute toxicity shall be indicated when a statistically significant difference in survival occurs at dilutions greater than that which is found to occur at the edge of the ZID.
- d. Chronic Toxicity Testing - Organisms and Protocols
  - (1) The permittee shall conduct tests with: the fish species *Atherinops affinis* (topsmelt) and one invertebrate species. The invertebrate species must be one of the following: *Holmesimysis*

*costata* (mysid); *Crassostrea gigas* (Pacific Oyster); *Mytilus edulis*, *M. californianus*, *M. galloprovincialis*, or *M. trossulus* (mussels).

- (2) The presence of chronic toxicity shall be estimated as specified in **Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms**, First Edition, EPA/600/R-95/136, August 1995.
- (3) A chronic Whole Effluent Toxicity test shall be considered to show toxicity if a statistically significant difference in survival, growth, or reproduction occurs at dilutions greater than that which is known to occur at the edge of the mixing zone. If there is no dilution data for the edge of the mixing zone, any chronic Whole Effluent Toxicity test that shows a statistically significant effect in 100 percent effluent as compared to the control shall be considered to show toxicity.

e. Quality Assurance

- (1) Quality assurance criteria, statistical analyses and data reporting for the Whole Effluent Toxicity tests shall be in accordance with the EPA documents stated in this condition and the Department's **Whole Effluent Toxicity Testing Guidance Document**, January 1993.

f. Evaluation of Causes and Exceedances

- (1) If toxicity is shown, as defined in sections c.(3) or d.(3) of this permit condition, another toxicity test using the same species and Department approved methodology shall be conducted within two weeks, unless otherwise approved by the Department. If the second test also indicates toxicity, the permittee shall follow the procedure described in section f.(2) of this permit condition.
- (2) If two consecutive Whole Effluent Toxicity test results indicate acute and/or chronic toxicity, as defined in sections c.(3) or d.(3) of this permit condition, the permittee shall evaluate the source of the toxicity and submit a plan and time schedule for demonstrating compliance with water quality standards. Upon approval by the Department, the permittee shall implement the plan until compliance has been achieved. Evaluations shall be completed and plans submitted to the Department within 6 months unless otherwise approved in writing by the Department.

g. Reporting

- (1) Along with the test results, the permittee shall include: 1. The dates of sample collection and initiation of each toxicity test; 2. The type of production; and 3. The flow rate at the time of sample collection. Effluent at the time of sampling for Whole Effluent Toxicity testing should include samples of required parameters stated under Schedule B, condition 1. of this permit.
- (2) The permittee shall make available to the Department, on request, the written standard operating procedures they, or the laboratory performing the Whole Effluent Toxicity tests, are using for all toxicity tests required by the Department.

h. Reopener

- (1) If Whole Effluent Toxicity testing indicates acute and/or chronic toxicity, the Department may reopen and modify this permit to include new limitations and/or conditions as determined by the Department to be appropriate, and in accordance with procedures outlined in Oregon Administrative Rules, Chapter 340, Division 45.



5. A priority pollutant scan shall be performed at least once during the term of this permit and must be submitted to the Department as part of the Permittee's NPDES permit renewal application. The permittee shall perform chemical analysis of its influent, effluent and biosolids to be beneficially used for the specific toxic pollutants listed in Tables II and III of Appendix D of 40 CFR Part 122. The influent and effluent samples shall be 24-hour daily composites, except where sampling volatile compounds. In this case, six (6) discrete samples (not less than 100 mL) collected over the operating day are acceptable. The permittee shall take special precautions in compositing the individual grab samples for the volatile organics to insure sample integrity (i.e. no exposure to the outside air). Alternately, the discrete samples collected for volatiles may be analyzed separately and averaged. For biosolids analyses, a composite of weekly grab samples for the final product shall be used.
6. The permittee shall comply with Oregon Administrative Rules (OAR), Chapter 340, Division 49, "Regulations Pertaining To Certification of Wastewater System Operator Personnel" and accordingly:
  - a. The permittee shall have its wastewater system supervised by one or more operators who are certified in a classification and grade level (equal to or greater) that corresponds with the classification (collection and/or treatment) of the system to be supervised as specified on page one of this permit.

**Note:** A "supervisor" is defined as the person exercising authority for establishing and executing the specific practice and procedures of operating the system in accordance with the policies of the permittee and requirements of the waste discharge permit. "Supervise" means responsible for the technical operation of a system, which may affect its performance or the quality of the effluent produced. Supervisors are not required to be on-site at all times.

- b. The permittee's wastewater system may not be without supervision (as required by Special Condition 6.a. above) for more than thirty (30) days. During this period, and at any time that the supervisor is not available to respond on-site (i.e. vacation, sick leave or off-call), the permittee must make available another person who is certified at no less than one grade lower than the system classification.
  - c. If the wastewater system has more than one daily shift, the permittee shall have the shift supervisor, if any, certified at no less than one grade lower than the system classification.
  - d. The permittee is responsible for ensuring the wastewater system has a properly certified supervisor available at all times to respond on-site at the request of the permittee and to any other operator.
  - e. The permittee shall notify the Department of Environmental Quality in writing within thirty (30) days of replacement or redesignation of certified operators responsible for supervising wastewater system operation. The notice shall be filed with the Water Quality Division, Operator Certification Program, 811 SW 6th Ave, Portland, OR 97204. This requirement is in addition to the reporting requirements contained under Schedule B of this permit.
  - f. Upon written request, the Department may grant the permittee reasonable time, not to exceed 120 days, to obtain the services of a qualified person to supervise the wastewater system. The written request must include justification for the time needed, a schedule for recruiting and hiring, the date the system supervisor availability ceased and the name of the alternate system supervisor(s) as required by 6.b. above.
7. The permittee shall notify the appropriate DEQ Office in accordance with the response times noted in the General Conditions of this permit, of any malfunction so that corrective action can be coordinated between the permittee and the Department.

8. Unless otherwise approved in writing from the Department, the wastewater treatment facility shall not be allowed to accept for treatment the following types of waste: Domestic Septic Tank waste from single family dwellings and Domestic Septage from septic tanks, holding tanks, chemical toilets, marine Type III privies, and vault toilets.
9. The permittee shall not be required to perform a hydrogeologic characterization or groundwater monitoring during the term of this permit provided:
  - a. The facilities are operated in accordance with the permit conditions, and;
  - b. There are no adverse groundwater quality impacts (complaints or other indirect evidence) resulting from the facility's operation.

If warranted, at permit renewal the Department may evaluate the need for a full assessment of the facilities impact on groundwater quality.

## SCHEDULE E

### Pretreatment Activities

The permittee shall implement the following pretreatment activities:

1. The permittee shall conduct and enforce its Pretreatment Program, as approved by the Department, and comply with the General Pretreatment Regulations (40 CFR Part 403). The permittee shall secure and maintain sufficient resources and qualified personnel to carry out the program implementation procedures described in this permit.
2. The permittee shall adopt all legal authority necessary to fully implement its approved pretreatment program and to comply with all applicable State and Federal pretreatment regulations. The permittee must also establish, where necessary, contracts or agreements with contributing jurisdictions to ensure compliance with pretreatment requirements by industrial users within these jurisdictions. These contracts or agreements shall identify the agency responsible for all implementation and enforcement activities to be performed in the contributing jurisdictions. Regardless of jurisdictional situation, the permittee is responsible for ensuring that all aspects of the pretreatment program are fully implemented and enforced.
3. The permittee shall update its inventory of industrial users at a frequency and diligence adequate to ensure proper identification of industrial users subject to pretreatment standards, but no less than once per year. The permittee shall notify these industrial users of applicable pretreatment standards in accordance with 40 CFR § 403.8(f)(2)(iii).
4. The permittee shall enforce categorical pretreatment standards promulgated pursuant to Section 307(b) and (c) of the Act, prohibited discharge standards as set forth in 40 CFR § 403.5(a) and (b), or local limitations developed by the permittee in accordance with 40 CFR § 403.5(c), whichever are more stringent, or are applicable to nondomestic users discharging wastewater to the collection system. Locally derived discharge limitations shall be defined as pretreatment standards under Section 307(d) of the Act.

A technical evaluation of the need to revise local limits shall be performed at least once during the term of this permit and must be submitted to the Department as part of the permittee's NPDES permit application, unless the Department requires in writing that it be submitted sooner. Limits development will be in accordance with the procedures established by the Department.

5. The permittee shall issue individual discharge permits to all Significant Industrial Users in a timely manner. The permittee shall also reissue and/or modify permits, where necessary, in a timely manner. Discharge permits must contain, at a minimum, the conditions identified in 40 CFR § 403.8(f)(1)(iii). Unless a more stringent definition has been adopted by the permittee, the definition of Significant Industrial User shall be as stated in 40 CFR § 403.3(t).
6. The permittee shall randomly sample and analyze industrial user effluents at a frequency commensurate with the character, consistency, and volume of the discharge. At a minimum, the permittee shall sample all Significant Industrial Users for all regulated pollutants twice per year. Alternatively, at a minimum, the permittee shall sample all Significant Industrial Users for all regulated pollutants once per year, if the permittee has pretreatment program criteria in its approved procedures for determining appropriate sampling levels for industrial users, and provided the sampling criteria indicate once per year sampling is adequate. At a minimum, the permittee shall conduct a complete facility inspection once per year. Additionally, at least once every two years the permittee shall evaluate the need for each Significant Industrial User to develop a slug control plan. Where a plan is deemed necessary, it shall conform to the requirements of 40 CFR § 403.8(f)(2)(v).

Where the permittee elects to conduct all industrial user monitoring in lieu of requiring self-monitoring by the user, the permittee shall gather all information which would otherwise have been submitted by the user. The permittee shall also perform the sampling and analyses in accordance with the protocols established for the user.

Sample collection and analysis, and the gathering of other compliance data, shall be performed with sufficient care to produce evidence admissible in enforcement proceedings or in judicial actions. Unless specified otherwise by the Director in writing, all sampling and analyses shall be performed in accordance with 40 CFR Part 136.

7. The permittee shall review reports submitted by industrial users and identify all violations of the user's permit or the permittee's local ordinance.
8. The permittee shall investigate all instances of industrial user noncompliance and shall take all necessary steps to return users to compliance. The permittee's enforcement actions shall track its approved Enforcement Response Plan, developed in accordance with 40 CFR § 403.8(f)(5). If the permittee has not developed an approved Enforcement Response Plan, it shall develop and submit a draft to the Department for review within 90 days of the issuance of this permit.
9. The permittee shall publish, at least annually in the largest daily newspaper published in the permittee's service area, a list of all industrial users which, at any time in the previous 12 months, were in Significant Noncompliance with applicable pretreatment requirements. For the purposes of this requirement, an industrial user is in Significant Noncompliance if it meets one or more of the criteria listed in 40 CFR 403.8(f)(2)(vii).
10. The permittee must develop and maintain a data management system designed to track the status of the industrial user inventory, discharge characteristics, and compliance. In accordance with 40 CFR § 403.12(o), the permittee shall retain all records relating to pretreatment program activities for a minimum of three years, and shall make such records available to the Department and USEPA upon request. The permittee shall also provide public access to information considered effluent data under 40 CFR Part 2.
11. The permittee shall submit by March 1 of each year, a report that describes the permittee's pretreatment program during the previous calendar year. The content and format of this report shall be as established by the Department.
12. The permittee shall submit in writing to the Department a statement of the basis for any proposed modification of its approved program and a description of the proposed modification in accordance with 40 CFR § 403.18. No substantial program modifications may be implemented by the permittee prior to receiving written authorization from the Department.

**NPDES GENERAL CONDITIONS  
(SCHEDULE F)**

**SECTION A. STANDARD CONDITIONS**

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Oregon Revised Statutes (ORS) 468B.025 and is grounds for enforcement action; for permit termination, suspension, or modification; or for denial of a permit renewal application.

2. Penalties for Water Pollution and Permit Condition Violations

Oregon Law (ORS 468.140) allows the Director to impose civil penalties up to \$10,000 per day for violation of a term, condition, or requirement of a permit.

In addition, a person who unlawfully pollutes water as specified in ORS 468.943 or ORS 468.946 is subject to criminal prosecution.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of the Department, the permittee shall correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and have the permit renewed. The application shall be submitted at least 180 days before the expiration date of this permit.

The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

5. Permit Actions

This permit may be modified, suspended, revoked and reissued, or terminated for cause including, but not limited to, the following:

- a. Violation of any term, condition, or requirement of this permit, a rule, or a statute;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts; or
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

The filing of a request by the permittee for a permit modification or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

6. Toxic Pollutants

The permittee shall comply with any applicable effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

7. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

8. Permit References

Except for effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and standards for sewage sludge use or disposal established under Section 405(d) of the Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

**SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS**

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls, and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Duty to Halt or Reduce Activity

For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Bypass of Treatment Facilities

a. Definitions

(1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The term "bypass" does not include nonuse of singular or multiple units or processes of a treatment works when the nonuse is insignificant to the quality and/or quantity of the effluent produced by the treatment works. The term "bypass" does not apply if the diversion does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities or treatment processes which causes them to become inoperable, or

substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Prohibition of bypass.

(1) Bypass is prohibited unless:

- (a) Bypass was necessary to prevent loss of life, personal injury, or severe property damage;
- (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
- (c) The permittee submitted notices and requests as required under General Condition B.3.c.

(2) The Director may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, when the Director determines that it will meet the three conditions listed above in General Condition B.3.b.(1).

c. Notice and request for bypass.

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior written notice, if possible at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in General Condition D.5.

4. Upset

- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of General Condition B.4.c are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (1) An upset occurred and that the permittee can identify the causes(s) of the upset;
  - (2) The permitted facility was at the time being properly operated;
  - (3) The permittee submitted notice of the upset as required in General Condition D.5, hereof (24-hour notice); and
  - (4) The permittee complied with any remedial measures required under General Condition A.3 hereof.
- d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

5. Treatment of Single Operational Event

For purposes of this permit, A Single Operational Event which leads to simultaneous violations of more than one pollutant parameter shall be treated as a single violation. A single operational event is an exceptional incident which causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one Clean Water Act effluent discharge pollutant parameter. A single operational event does not include Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational event is a violation.

6. Overflows from Wastewater Conveyance Systems and Associated Pump Stations

a. Definitions

- (1) "Overflow" means the diversion and discharge of waste streams from any portion of the wastewater conveyance system including pump stations, through a designed overflow device or structure, other than discharges to the wastewater treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the conveyance system or pump station which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of an overflow.
- (3) "Uncontrolled overflow" means the diversion of waste streams other than through a designed overflow device or structure, for example to overflowing manholes or overflowing into residences, commercial establishments, or industries that may be connected to a conveyance system.

b. Prohibition of overflows. Overflows are prohibited unless:

- (1) Overflows were unavoidable to prevent an uncontrolled overflow, loss of life, personal injury, or severe property damage;
- (2) There were no feasible alternatives to the overflows, such as the use of auxiliary pumping or conveyance systems, or maximization of conveyance system storage; and



(3) The overflows are the result of an upset as defined in General Condition B.4. and meeting all requirements of this condition.

- c. Uncontrolled overflows are prohibited where wastewater is likely to escape or be carried into the waters of the State by any means.
- d. Reporting required. Unless otherwise specified in writing by the Department, all overflows and uncontrolled overflows must be reported orally to the Department within 24 hours from the time the permittee becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D.5.

7. Public Notification of Effluent Violation or Overflow

If effluent limitations specified in this permit are exceeded or an overflow occurs, upon request by the Department, the permittee shall take such steps as are necessary to alert the public about the extent and nature of the discharge. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

8. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in such a manner as to prevent any pollutant from such materials from entering public waters, causing nuisance conditions, or creating a public health hazard.

**SECTION C. MONITORING AND RECORDS**

1. Representative Sampling

Sampling and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and shall be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director.

2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than  $\pm 10$  percent from true discharge rates throughout the range of expected discharge volumes.

3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

4. Penalties of Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years, or by both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than \$20,000 per day of violation, or by imprisonment of not more than four years or both.

5. Reporting of Monitoring Results

Monitoring results shall be summarized each month on a Discharge Monitoring Report form approved by the Department. The reports shall be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report. Such increased frequency shall also be indicated. For a pollutant parameter that may be sampled more than once per day (e.g., Total Chlorine Residual), only the average daily value shall be recorded unless otherwise specified in this permit.

7. Averaging of Measurements

Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean, except for bacteria which shall be averaged as specified in this permit.

8. Retention of Records

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records of all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

9. Records Contents

Records of monitoring information shall include:

- a. The date, exact place, time and methods of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;

- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

10. Inspection and Entry

The permittee shall allow the Director, or an authorized representative upon the presentation of credentials to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
- d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall comply with Oregon Administrative Rules (OAR) 340, Division 52, "Review of Plans and Specifications". Except where exempted under OAR 340-52, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers shall be commenced until the plans and specifications are submitted to and approved by the Department. The permittee shall give notice to the Department as soon as possible of any planned physical alternations or additions to the permitted facility.

2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3. Transfers

This permit may be transferred to a new permittee provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and the rules of the Commission. No permit shall be transferred to a third party without prior written approval from the Director. The permittee shall notify the Department when a transfer of property interest takes place.

4. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

5. Twenty-Four Hour Reporting

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally (by telephone) within 24 hours, unless otherwise specified in this permit, from the time the permittee becomes aware of the circumstances. During normal business hours, the Department's Regional office shall be called. Outside of normal business hours, the Department shall be contacted at 1-800-452-0311 (Oregon Emergency Response System).

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. If the permittee is establishing an affirmative defense of upset or bypass to any offense under ORS 468.922 to 468.946, and in which case if the original reporting notice was oral, delivered written notice must be made to the Department or other agency with regulatory jurisdiction within 4 (four) calendar days. The written submission shall contain:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. The estimated time noncompliance is expected to continue if it has not been corrected;
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
- e. Public notification steps taken, pursuant to General Condition B.7.

The following shall be included as information which must be reported within 24 hours under this paragraph:

- a. Any unanticipated bypass which exceeds any effluent limitation in this permit.
- b. Any upset which exceeds any effluent limitation in this permit.
- c. Violation of maximum daily discharge limitation for any of the pollutants listed by the Director in this permit.

The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

6. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under General Condition D.4 or D.5, at the time monitoring reports are submitted. The reports shall contain:

- a. A description of the noncompliance and its cause;

- b. The period of noncompliance, including exact dates and times;
- c. The estimated time noncompliance is expected to continue if it has not been corrected; and
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

7. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

Other Information: When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Department, it shall promptly submit such facts or information.

8. Signatory Requirements

All applications, reports or information submitted to the Department shall be signed and certified in accordance with 40 CFR 122.22.

9. Falsification of Information

A person who supplies the Department with false information, or omits material or required information, as specified in ORS 468.953 is subject to criminal prosecution.

10. Changes to Indirect Dischargers - [Applicable to Publicly Owned Treatment Works (POTW) only]

The permittee must provide adequate notice to the Department of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Clean Water Act if it were directly discharging those pollutants and;
- b. Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For the purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

11. Changes to Discharges of Toxic Pollutant - [Applicable to existing manufacturing, commercial, mining, and silvicultural dischargers only]

The permittee must notify the Department as soon as they know or have reason to believe of the following:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:
  - (1) One hundred micrograms per liter (100 µg/L);

- (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
  - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - (4) The level established by the Department in accordance with 40 CFR 122.44(f).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- (1) Five hundred micrograms per liter (500 µg/L);
  - (2) One milligram per liter (1 mg/L) for antimony;
  - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - (4) The level established by the Department in accordance with 40 CFR 122.44(f).

#### **SECTION E. DEFINITIONS**

1. BOD means five-day biochemical oxygen demand.
2. TSS means total suspended solids.
3. mg/L means milligrams per liter.
4. kg means kilograms.
5. m<sup>3</sup>/d means cubic meters per day.
6. MGD means million gallons per day.
7. Composite sample means a sample formed by collecting and mixing discrete samples taken periodically and based on time or flow.
8. FC means fecal coliform bacteria.
9. Technology based permit effluent limitations means technology-based treatment requirements as defined in 40 CFR 125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-41.
10. CBOD means five day carbonaceous biochemical oxygen demand.
11. Grab sample means an individual discrete sample collected over a period of time not to exceed 15 minutes.
12. Quarter means January through March, April through June, July through September, or October through December.
13. Month means calendar month.
14. Week means a calendar week of Sunday through Saturday.
15. Total residual chlorine means combined chlorine forms plus free residual chlorine.
16. The term "bacteria" includes but is not limited to fecal coliform bacteria, total coliform bacteria, and E. coli bacteria.
17. POTW means a publicly owned treatment works.

**MODIFICATION**

This Modification Shall Be Attached To and Made A Part Of Permit #100771

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
WASTE DISCHARGE PERMIT**

Department of Environmental Quality  
Western Region – Salem Office  
750 Front Street NE, Suite 120, Salem, OR 97301-1039  
Telephone: (503) 378-8240

Issued pursuant to ORS 468B.050 and The Federal Clean Water Act

**ISSUED TO:**

Coos Bay, City of  
500 Central Avenue  
Coos Bay, OR 97420

**SOURCES COVERED BY THIS PERMIT:**

Type of Waste	Outfall Number	Outfall Location
Treated Wastewater	001	R.M. 3.8
Emergency Overflows: Pump Station #7, 421 Morrison Street	002	Coos Bay, R.M. 6.0
P.S. #8, 1812 Newmark	003	Coos Bay, R.M. 6.0
P.S. #14, 150 Mill Street	004	Coos Bay, R.M. 5.25
P.S. #16, 999 Lakeshore Drive	005	Coos Bay, R.M. 6.0
Flow Monitoring Station, West end of Fulton Street	006	Coos Bay, R.M. 4.5

**FACILITY TYPE AND LOCATION:**

Activated Sludge  
Coos Bay STP #2  
100 Fulton Street  
Coos Bay, Oregon

**RECEIVING STREAM INFORMATION:**

Basin: South Coast  
Sub-Basin: Coos  
Receiving Stream: Coos Bay  
Hydro Code: 14A\*COOS 3.8 D  
LLID: 1243397433543-3.8-D  
County: Coos

**Treatment System Class:** Level IV  
**Collection System Class:** Level III

**EPA REFERENCE NO:** OR002358-2

This permit was originally issued on August 21, 2003 in response to Application No. 994488 received September 11, 1995. This is a Department initiated modification in accordance with OAR 340-045-0055, Application No. 982770. This permit was issued based on the land use findings in the permit record.

Michael H. Kortenhof, Western Region Water Quality Manager

December 15, 2004  
Date

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### ADDENDUM NO. 1

**Modification #1** – Permit No. 100771, Schedule A, Condition 3.a (1) is modified to add Note 5 to the Total Residual Chlorine limit. Note 5 shall read as follows:

5. When the total residual chlorine limitation is lower than 0.10 mg/L, the Department 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).

**Modification #2** – Permit No. 100771, Schedule B, Condition 1.a. (Influent Monitoring Requirements) is modified to delete the requirement to monitor metals and cyanide semi-annually. The Condition shall read as follows:

a. Influent

The facility influent grab and composite samples and measurements are taken from the manhole just before the influent wet well. The composite sampler is located in the motor/generator room on top of the wet well.

Item or Parameter	Minimum Frequency	Type of Sample
Total Flow (MGD)	Daily	Measurement
Flow Meter Calibration	Semi-Annual	Verification
BOD <sub>5</sub>	2/Week	Composite
TSS	2/Week	Composite
pH	3/Week	Grab

**Modification #3** – Permit No. 100771, Schedule B, Condition 1.b. (Effluent Monitoring Requirements) is modified to delete the requirement to monitor metals and cyanide semi-annually and silver monthly. In addition, Schedule B, Condition 1.b. is modified to require Whole Effluent Toxicity monitoring annually for the remainder of the permit cycle and to perform at least three “priority pollutant” scans during the remainder of the permit cycle. The Condition shall read as follows:

b. Treated Effluent Outfall 001

The facility effluent grab and composite samples and measurements are taken just before the effluent weir of the chlorine contact chamber except for the total chlorine residual sample. The total chlorine residual sample is taken from the first manhole on the outfall pipeline. The composite sampler is located on the walkway over the chlorine contact chamber.

Item or Parameter	Minimum Frequency	Type of Sample
BOD <sub>5</sub>	2/Week	Composite
TSS	2/Week	Composite
pH	3/Week	Grab
Fecal Coliform	2/Week	Grab
Ammonia-N	Weekly	Composite
Quantity Chlorine Used	Daily	Measurement
Chlorine Residual	Daily	Grab
Pounds Discharged (BOD <sub>5</sub> and TSS)	2/Week	Calculation



Average Percent Removed (BOD <sub>5</sub> and TSS)	Monthly	Calculation
Toxics:		
Whole Effluent Toxicity (See Note 3)	Annually	Acute & chronic
Priority Pollutants	(See Note 9)	24-hour Composite
Temperature:		
Effluent Temperature, Daily Max (See Note 7)	Daily	Continuous
Effluent Temperature, Average of Daily Maximums (See Note 7)	Weekly	Calculation
Excess Thermal Load	Weekly (May 1 – October 31)	Calculation (See Note 7)

**Modification #4** – Permit No. 100771, Schedule B Notes are modified to delete Notes 1, 2 and 8.

**Modification #5** – Permit No. 100771, Schedule B, Note 3 is modified to read as follows:

3. Beginning in calendar year 2005, the permittee shall conduct Whole Effluent Toxicity testing for a period of three (3) years in accordance with the frequency specified above. If the Whole Effluent Toxicity tests show that the effluent samples are not toxic at the dilutions determined to occur at the Zone of Immediate Dilution and the Mixing Zone, no further Whole Effluent Toxicity testing will be required during this permit cycle. Note that at least four Whole Effluent Toxicity test results will be required along with the next NPDES permit renewal application.

**Modification #6** – Permit No. 100771, Schedule B, Note 9 is added and shall read as follows:

9. The permittee shall perform all testing required in Part D of EPA Form 2A. The testing includes all metals (total recoverable), cyanide, phenols, hardness and the 85 pollutants included under volatile organic, acid extractable and base-neutral compounds. Three scans are required during the 4 ½ years after permit issuance. Two of the three scans must be performed no fewer than four months and no more than eight months apart. The effluent samples shall be 24-hour daily composites, except where sampling volatile compounds. In this case, six discrete samples (not less than 40 mL) collected over the operating day are acceptable. The permittee shall take special precautions in compositing the individual grab samples for the volatile organics to insure sample integrity (i.e. no exposure to the outside air). Alternately, the discrete samples collected for volatiles may be analyzed separately and averaged.

**Modification #7** – Permit No. 100771, Schedule D, Condition 5 (Priority Pollutant Scan procedures) is deleted.

**Modification #8** – Permit No. 100771, Schedule E is deleted.



1                   BEFORE THE ENVIRONMENTAL QUALITY COMMISSION  
2                   OF THE STATE OF OREGON

3   IN THE MATTER OF:

4   CITY OF COOS BAY,  
5   Wastewater Facility No. 2,

Permittee

)   MUTUAL AGREEMENT  
)   AND ORDER  
)   NO. WQ WQ/M-WR-03-022  
)   COOS COUNTY

6  
7                   WHEREAS:

8           1.   On August 21, 2003, the Department of Environmental Quality (Department or  
9   DEQ) issued National Pollutant Discharge Elimination System (NPDES) Waste Discharge  
10   Permit Number 100771 (Permit) to the City of Coos Bay (Permittee). The Permit authorizes  
11   the Permittee to construct, install, modify or operate wastewater treatment control and disposal  
12   facilities (facilities) and discharge adequately treated wastewaters into Coos Bay, waters of the  
13   state, in conformance with the requirements, limitations and conditions set forth in the Permit.  
14   The Permit expires on December 31, 2007.

15           2.   Condition 1 of Schedule A of the Permit does not allow Permittee to exceed the  
16   waste discharge limitations for fecal coliform, total residual chlorine and ammonia at Outfall  
17   001 after the Permit issuance date. The fecal coliform limitations are a monthly median of 14  
18   organisms per 100 mL with not more than 10 percent of the samples exceeding 43 organisms  
19   per 100 mL. The total residual chlorine limitations are 0.02 mg/L monthly average and 0.05  
20   mg/L daily maximum. The ammonia limitations are 20 mg/L monthly average and 30 mg/L  
21   daily maximum.

22           3.   DEQ and the Permittee recognize that until new or modified facilities are  
23   constructed and put into full operation, Permittee will likely violate the fecal coliform, total  
24   residual chlorine and ammonia effluent limitations at times.

25           4.   (a)   Permittee presently is capable of treating its effluent so as to meet effluent  
26   limitations, measured as specified in the Permit, of 200 organisms per 100 mL as a monthly

1 geometric mean and 400 organisms per 100 mL as a weekly geometric mean for fecal  
2 coliform, 1.0 mg/L monthly average for total residual chlorine and 40 mg/L monthly average  
3 and 60 mg/L daily maximum for ammonia.

4 (b) After completion of the Phase I improvements, the Permittee will be  
5 capable of treating its effluent so as to meet effluent limitations, measured as specified in the  
6 Permit, of not more than 10 percent of the samples exceeding 43 fecal coliform organisms per  
7 100 mL, 0.25 mg/L monthly average and 0.50 mg/L daily maximum for total residual chlorine  
8 and 40 mg/L monthly average and 60 mg/L daily maximum for ammonia. During the start up  
9 period in Paragraph 7.B(7), the Permittee shall operate the facilities as effectively as  
10 practicable but shall not be required to meet any specific pollutant limitation.

11 5. The Department and Permittee recognize that the Environmental Quality  
12 Commission has the power to impose a civil penalty and to issue an abatement order for  
13 violations of conditions of the Permit. Therefore, pursuant to ORS 183.415(5), the  
14 Department and Permittee wish to limit and resolve the future violations referred to in  
15 Paragraph 3 in advance by this Mutual Agreement and Order (MAO).

16 6. This MAO is not intended to settle any violation of any interim effluent  
17 limitations set forth in Paragraph 4 above. Furthermore, this MAO is not intended to limit, in  
18 any way, the Department's right to proceed against Permittee in any forum for any past or  
19 future violations not expressly settled herein.

20 NOW THEREFORE, it is stipulated and agreed that:

21 7. The Environmental Quality Commission shall issue a final order:

22 A. Requiring Permittee to comply with the following schedule for Phase I  
23 improvements:

24 (1) By no later than thirty (30) days after issuance of this MAO, the  
25 Permittee shall submit to the Department a plan for notifying the public of the potential  
26 discharge of bacteria levels exceeding the shellfish standard. The plan shall include procedures

1 to be followed by the Permittee that may include, but not be limited to, media notifications,  
2 posting of warning signs and other public notification steps. Upon approval of the  
3 Department, the Permittee shall implement the plan.

4 (2) By no later than fifteen (15) months after issuance of this MAO, the  
5 Permittee shall design, construct and initiate operation of interim dechlorination facilities. It is  
6 recognized that the facilities will be low cost and temporary in nature but must be designed to  
7 reduce the bacteria and chlorine levels in the effluent to comply with the post -Phase I interim  
8 limits in Paragraph 4(b). To the extent possible, the facilities may be used permanently as part  
9 of the Phase II improvements.

10 B. Requiring Permittee to comply with the following schedule for Phase II  
11 improvements:

12 (1) By no later than eighteen months after issuance of this MAO, the  
13 Permittee shall submit a draft Facilities Plan to the Department that evaluates alternatives for  
14 complying with all water quality standards and ensures that the Permittee can continuously  
15 comply with all effluent limitations included in Permittee's Permit.

16 (2) By no later than ninety (90) days of receiving Department comments,  
17 the Permittee shall submit a final approvable Facilities Plan for providing wastewater control  
18 facilities as needed to assure that the Permittee can continuously comply with all water quality  
19 standards and effluent limitations included in Permittee's Permit. If the Facilities Plan  
20 recommends new facilities that will result in a new or modified NPDES Permit, the Facilities  
21 Plan submittal shall include an application for a new or modified NPDES Permit.

22 (3) By no later than nine (9) months after Department approval of the  
23 Facilities Plan, the Permittee shall submit draft engineering plans and specifications for the  
24 necessary wastewater control facilities to the Department.

25 (4) By no later than sixty (60) days after of receiving Department  
26 comments, the Permittee shall submit a final approvable engineering plans and specifications

1 for the necessary wastewater control facilities to the Department.

2 (5) By no later than four (4) months after Department approval of the  
3 engineering plans and specifications, Permittee shall award a contract for the construction of  
4 the necessary wastewater control facilities.

5 (6) By no later than two (2) years after award a contract, the Permittee  
6 shall complete construction of the approved wastewater control facilities and initiate  
7 operations.

8 (7) By no later than sixty (60) days after the completion of construction,  
9 the Permittee shall attain operation level of the wastewater treatment facilities and comply with  
10 all water quality standards and all effluent limitations in Permittee's permit.

11 C. Requiring Permittee to meet the interim effluent limitations set forth in  
12 Paragraph 4(a) above from the date this MAO is executed until completion of the corrective  
13 actions required by the schedule in Paragraph 7.A. Requiring Permittee to meet the interim  
14 effluent limitations set forth in Paragraph 4(b) from the completion of the corrective actions  
15 required by Paragraph 7.A. until completion of the corrective actions required by Paragraph  
16 7.B., except, during the start up period in Paragraph 7.B(7), the Permittee is not required to  
17 meet the interim limitations in Paragraph 4(b) so long as Permittee operates the facilities as  
18 effectively as practicable.

19 D. Requiring Permittee, upon receipt of a written Penalty Demand Notice from  
20 the Department, to pay the following civil penalties:

21 (1) \$250 for each day of each violation of the compliance schedule set  
22 forth in Paragraphs 7A and 7.B.

23 (2) \$100 for each violation of each daily average waste discharge  
24 limitation set forth in Paragraph 4.

25 (3) \$500 for each violation of each monthly average waste discharge  
26 limitation set forth in Paragraph 4.

1        8. If any event occurs that is beyond Permittee's reasonable control and that causes  
2 or may cause a delay or deviation in performance of the requirements of this MAO, Permittee  
3 shall immediately notify the Department verbally of the cause of delay or deviation and its  
4 anticipated duration, the measures that have been or will be taken to prevent or minimize the  
5 delay or deviation, and the timetable by which Permittee proposes to carry out such measures.  
6 Permittee shall confirm in writing this information within five (5) working days of the onset of  
7 the event. It is Permittee's responsibility in the written notification to demonstrate to the  
8 Department's satisfaction that the delay or deviation has been or will be caused by  
9 circumstances beyond the control and despite due diligence of Permittee. If Permittee so  
10 demonstrates, the Department shall extend times of performance of related activities under this  
11 MAO as appropriate. Circumstances or events beyond Permittee's control include, but are not  
12 limited to, acts of nature, unforeseen strikes, work stoppages, fires, explosion, riot, sabotage,  
13 or war. Increased cost of performance or consultant's failure to provide timely reports may  
14 not be considered circumstances beyond Permittee's control.

15        9. Regarding the schedule set forth in Paragraphs 7A and 7B above, Permittee  
16 acknowledges that Permittee is responsible for complying with that schedule regardless of the  
17 availability of any federal or state grant monies.

18        10. The terms of this MAO may be amended by the mutual agreement of the  
19 Department and Permittee.

20        11. The Department may amend the compliance schedule and conditions in this MAO  
21 upon finding that such modification is necessary because of changed circumstances or to  
22 protect public health and the environment. The Department shall provide Permittee a  
23 minimum of thirty (30) days written notice prior to issuing an Amended Order modifying any  
24 compliance schedules or conditions. If Permittee contests the Amended Order, the applicable  
25 procedures for conduct of contested cases in such matters shall apply.

26        12. This MAO shall be binding on the parties and their respective successors, agents,

1 and assigns. The undersigned representative of each party certifies that he or she is fully  
2 authorized to execute and bind such party to this MAO. No change in ownership or corporate  
3 or partnership status relating to the facility shall in any way alter Permittee's obligations under  
4 this MAO, unless otherwise approved in writing by DEQ.

5 13. All reports, notices and other communications required under or relating to this  
6 MAO should be directed to Ruben Kretzschmar, DEQ Coos Bay Regional Office, 340 N.  
7 Front Street, Coos Bay, Oregon 97420, phone number (541) 269-2721, extension 23. The  
8 contact person for Permittee shall be the City Manager, 500 Central Ave., Coos Bay, OR  
9 97420, phone number 541-269-8912.

10 14. Permittee acknowledges that it has actual notice of the contents and requirements  
11 of the MAO and that failure to fulfill any of the requirements hereof would constitute a  
12 violation of this MAO and subject Permittee to payment of civil penalties pursuant to  
13 Paragraph 7D above.

14 15. Any stipulated civil penalty imposed pursuant to Paragraph 7D shall be due upon  
15 written demand. Stipulated civil penalties shall be paid by check or money order made payable  
16 to the "Oregon State Treasurer" and sent to: Business Office, Department of Environmental  
17 Quality, 811 S.W. Sixth Avenue, Portland, Oregon 97204. Within 21 days of receipt of a  
18 "Demand for Payment of Stipulated Civil Penalty" Notice from the Department, Permittee may  
19 request a hearing to contest the Demand Notice. At any such hearing, the issue shall be  
20 limited to Permittee's compliance or non-compliance with this MAO. The amount of each  
21 stipulated civil penalty for each violation and/or day of violation is established in advance by  
22 this MAO and shall not be a contestable issue.


23 16. Providing Permittee has paid in full all stipulated civil penalties pursuant to  
24 Paragraph 15 above, this MAO shall terminate 60 days after Permittee demonstrates full  
25 compliance with the requirements of the schedule set forth in Paragraphs 7A and 7B above.

26




PERMITTEE

08/20/03  
Date

  
City Manager, City of Coos Bay

DEPARTMENT OF ENVIRONMENTAL QUALITY

8/21/03  
Date

  
Kerri L. Nelson, Western Region Administrator

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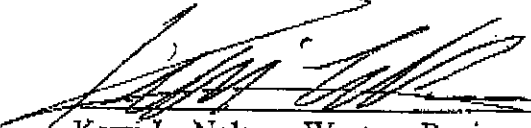
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FINAL ORDER

IT IS SO ORDERED:

ENVIRONMENTAL QUALITY COMMISSION

8/21/03  
Date

  
Kerri L. Nelson, Western Region Administrator  
Department of Environmental Quality  
Pursuant to OAR 340-11-136(1)