



Total Maximum Daily Load (TMDL) Implementation Plan Storm and Surface Water Management



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City of Woodburn
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Section 1: Introduction

Introduction

The Willamette River and numerous tributaries, such as the Molalla-Pudding River Sub-basin do not currently meet several water quality standards including bacteria, mercury and temperature established by the Federal Clean Water Act. These standards assure the beneficial uses of the river and tributaries, such as swimming, fish consumption and fish rearing, are protected. When water quality standards are not met, a Total Maximum Daily Load Implementation Plan is required to be established.

This document is the Total Maximum Daily Load (TMDL) Implementation Plan for the City of Woodburn. This plan describes the practice that the City will implement to reduce temperature, bacteria, and mercury pollution in the Molalla-Pudding Sub-basin as approved by the US Environmental Protection Agency (EPA) in December 2008. The Implementation Plan from a Designated Management Agency, such as the City of Woodburn, is required to comply with the Willamette Basin TMDL order and to help meet pollutant load allocation for the Molalla-Pudding River Sub-basin as approved by the EPA.

This Plan is organized into five sections. The first section introduces and establishes the requirements and goals of the Plan; the second section provides the background information of the Plan; the third section provides a water quality assessment and the management practices which describes each of the five major pollutants addressed in the Molalla-Pudding River Sub-basin TMDL (temperature, bacteria, mercury, pesticides and iron), and explains the region's water resources, land use and important issues related to water quality. This section also explains what the City of Woodburn is currently doing to address water quality issues. Section four outlines how the City plans to monitor/measure performance and also identifies how implementation will be funded. Section five provides the conclusion and is supplemented by Appendix A: TMDL Implantation Tracking Matrix: City of Woodburn, Oregon.

Plan Goal and Requirements

The goal of this Implementation Plan is to reduce heat, bacteria, mercury, pesticides, and iron contributions to surface waters within the jurisdictional control of the City of Woodburn. The Plan provides a multi-faceted approach of land use ordinances, public operations, partnerships, and educational opportunities to deal with specific sources of contamination within the city's jurisdiction.

The Willamette River Basin TMDL, Molalla-Pudding River Sub-basin has established the parameters for bacteria, mercury, temperature, pesticides, and iron. Oregon Department of Environmental Quality (DEQ) created a Water Quality Management Plan (WQMP) for the Willamette River Basin TMDL in 2006; The Molalla-Pudding River Sub-basin WQMP was adopted in December 2008 by DEQ and Environmental Protection Agency (EPA). This Plan is meant to provide the framework for management practices to attain and maintain water quality standards within the Willamette Basin. Per the WQMP, these practices are to be submitted by Designated Management Agencies (DMA) to DEQ as a TMDL Implementation Plan. The Plan needs to identify activities that the City is currently conducting, or planning to implement, to mitigate excess loading of TMDL pollutants. The WQMP for the Molalla-Pudding River Sub-basin which established the TMDL was adopted and released by DEQ in December of 2008; requiring the TMDL Implementation Plan by the DMA to be submitted by June of 2010.

Oregon Administrative rule (OAR 340-042-0080(3)) requires that TMDL Implementation Plan:

- 1) Prepare an implementation plan and submit the plan to the Department for review and approval according to the schedule as specified in the WQMP. The Implementation Plan must:
 - a) Identify the management strategies the DMA or other responsible person will use to achieve load allocations and reduce pollutant loading;
 - b) Provide a timeline for implementing management strategies and a schedule for completing measurable milestones;
 - c) Provide for performance monitoring with a plan for periodic review and revision of the implementation plan;
 - d) To the extent required by ORS 197.180 and OAR chapter 340, division 18. Provided evidence of compliance with applicable statewide land use requirements; and
 - e) Provide any other analyses or information specified in the WQMP.
- 2) Implement and revise the plan as needed.

This Plan addresses the requirements of Oregon Administrative Rule.

Section 2: Background

The Willamette River is a very important commercial, municipal, cultural, recreational, ecological, and aesthetic asset. Working to preserve and maintain water quality in all regions will ensure prosperity, productivity, and quality of life for the entire Willamette Basin now and in

the future. Water quality in all regions is vital in maintaining the functionality of this river system.

The Molalla-Pudding River Sub-basin is approximately 878 square miles and is located in the north-eastern portion of the middle Willamette Basin. The Molalla River flows into the Willamette River between river mile 35 and 36 and the Pudding River is a tributary to the Molalla River less than a mile upstream of the Molalla River mouth. The Sub-basin is located within Clackamas and Marion Counties and includes the communities of Woodburn, Mr. Angel, Silverton, Canby, Molalla, Hubbard, Gervais, Aurora, Brooks, Barlow, Colton and Scotts Mills and portions of Salem, Keizer, Donald, and Wilsonville. Most land in the Molalla-Pudding Sub-basin is privately owned, with U.S. Bureau of Land Management (67 square miles) administering the large portion of public land and the State managing Silver Falls Park (13 square miles). Land use in the Molalla-Pudding Sub-basin is 53% forestry and 40% agriculture, with the remaining percentage urban, residential and industrial. The TMDL indentifies 30 impaired stream reaches in the Molalla-Pudding Sub-basin. Implementation of the waste load allocations and load allocations is expected to bring these water bodies into compliance with water quality standards so the beneficial uses will be protected.

The City of Woodburn is located in the Willamette Valley in Marion County, Oregon. The City was incorporated in 1889. The population of Woodburn is 23,355. Woodburn is approximately 17 miles northeast of Salem and 35 miles South of Portland. Woodburn is located in the Molalla-Pudding River Sub-basin of the Willamette River drainage basin. Woodburn's inventory area contains two main drainage basins which are further divided into several smaller drainage basins. The two main basins are Mill Creek and Senecal Creek. Senecal Creek discharges into Mill Creek approximately 4 miles northeast of Woodburn. Mill Creek then discharges into the Pudding River 10 miles north of Woodburn, just north of Aurora, and the Pudding River joins the Molalla River at its confluence with the Willamette River. The Corps of Engineers conducted a flood study for the Federal Management Agency (FEMA) in 1973. This study provided a forecast of potential flood conditions along both Mill Creek and Senecal Creek. Both major drainage ways are now designated flood plain areas and regulated by the Federal Emergency Management Agency and City Ordinance.

Mill Creek is the main hydrologic feature and has the largest drainage basin in Woodburn. Mill Creek flows from southwest to northeast through Woodburn. Most of Mill Creek channel has been excavated and realigned in the past. The excavated channel is approximately 4 to 6 feet wide, 4 feet deep. Mill Creek is mapped by the USGS as a perennial stream for most of its length through Woodburn.

Near the southern edge of Woodburn, Mill Creek channel has been excavated to form a water feature, a pond. Near Cleveland Street in the south part of Woodburn, Mill Creek divides into two main branches. One drains the areas to the southwest, generally east of I-5; the other continues south toward Gervais where it collects drainage and runoff from farmland between the two cities. Mill Creek has several smaller tributaries extending from it; one of the largest of those is Goose Creek, a small, realigned tributary of Mill Creek about at the middle of its length through Woodburn. It is mapped by the USGS as an intermittent stream.

The other main drainage basin is Senecal Creek which drains the northwestern part of Woodburn and is a tributary of Mill Creek. The channel is approximately 4 to 6 feet wide and 2 feet deep. Senecal Creek flows southwest to northeast. The USGS has mapped Senecal Creek as a perennial stream.

A small drainage basin does discharge directly into the Pudding River; this basin is located east of State Highway, Pacific Highway 99E. A few small storm drainage facilities constructed and maintained by the City are routed to the Pudding River. These are small systems with relatively low flows.

The City also operates a Wastewater Treatment Plant located at 2815 Molalla Highway, approximately 3 miles east of Woodburn which discharges directly into the Pudding River. This facility is covered by a separate National Pollution Elimination Discharge System permit for both wastewater discharge and storm water discharge. Although the compliance is managed under the existing NPDES Wastewater Discharge Permit 101558, EPA OR00200-1 and NPDES Storm Water Discharge Permit 1200-Z, EPA ORR90-1176, this report will identify specific strategies underway for TMDL reductions for documenting progress.

Section 3: Water Quality Assessment, Gap Assessment and Management Strategies

Water Quality Assessment:

This section provides water quality assessment of the bacteria, mercury and temperature TMDL followed by the management practices. The Molalla-Pudding River Sub-basin contributes to the maintenance and restoration of water quality throughout the Willamette Basin.

Bacteria

The Molalla-Pudding River Sub-basin has established a TMDL on the Pudding River for bacteria. The TMDL was created to protect the beneficial use of water contact recreation. Untreated sewage, pet waste, or livestock waste released into the water can expose swimmers and other recreational users to bacteria and other associated pathogens. Children, the elderly, and people with weakened immune systems are most likely to develop illnesses or infections after swimming in polluted water. Most of the diseases are associated with ingestion of polluted water, although some illnesses can be transmitted through wounds exposed to water.

The City, through City Ordinance No. 2434 regulates animals within the City. The Ordinance requires that dog owners clean up waste in public rights of way. The Ordinance also prohibits the keeping of most livestock within the City limits. In addition Ordinance No 2060 regulates

animal waste specifically in City parks. The City currently uses waste pick up stations in City Parks. At present there are 5 stations in 4 parks. The Parks stations are also properly signed to inform the Public of the requirement. Park maintenance staff will continue to monitor and provide funding to sign, install, and maintain waste pick up stations.

The City of Woodburn, per Ordinance 2058 prohibits installation of a new subsurface wastewater treatment and disposal (septic tank system) within the city limits. It further requires that structures located within 300 feet of an adequate city sewer main, and experiencing septic failure must connect to the city sewer system. This regulatory requirement will reduce the bacteria loading of surface and groundwater within the City limits.

Removing sediments from reaching the waterways reduces both bacteria and mercury. The City of Woodburn has since the early 90's required developments and residential subdivisions to provide on-site detention before discharging to conveyance system. The City has also developed two regional detention areas one is located near I-5 which collects runoff from approximately 80 acres of developed and undeveloped property. The second is between Greenview Drive and Cooley Drive, its collects runoff from approximately 40 acres before it is discharged to the Pudding River. Within the City, there are approximately ten detention systems serving residential subdivisions and private developments. Although primarily designed for detention, the flood control facilities provide a limited water quality benefit by filtering pollutants in storm water. The City also has a street sweeping program. The City sweeps all the improved streets within the City jurisdiction at least once a month, the downtown core area, twice a month.

Allocation/Reduction: The City of Woodburn has been allocated an E. coli load equivalent limit in the existing NPDES point source discharge permit. Nonpoint source land uses are allocated percent reductions ranging from 75% - 87% in the summer (June 1 through September 30) and 70% - 92% in the fall-winter-spring (October 1 through May 31).

General Reduction Strategy: Reduce inputs of bacteria by various means including riparian protection, erosion control and storm water control and treatment, low impact development, and various domestic and agricultural practices.

Mercury

The Willamette River TMDL has established a TMDL for the entire Willamette Basin for mercury. The TMDL was established for the protection and beneficial use of fish consumption. The TMDL should eventually reduce the concentrations of mercury in fish tissue to levels that no longer pose an unacceptable health risk to consumers of fish. Mercury is a naturally occurring element found in cinnabar deposits and areas of geothermal activity. Mercury has been used historically in fungicide formulations and can still be found in many commercial products including fluorescent lights, thermometers, automobile switches and dental amalgam. Mercury is also naturally present in trees and fossil fuels such as coal, natural gas, diesel combustion.

The City of Woodburn through the Wastewater Pretreatment Program has been proactive for number years in reducing mercury from entering the wastewater system. In 1999, the City was the first jurisdiction in the area to initiate an extensive educational program by implementing a Mercury Reduction Plan with local dentists in the area in regard to disposal of mercury. This program continues today. The City also annually provides (free to residents in the area) a means of properly disposing of hazardous material by sponsoring (in conjunction with Marion County Public Works) a free Household Hazardous Waste Collection Event. This event emphasizes, among other hazardous items, proper disposal florescent lights and offers a free mercury thermometer trade-in program. A resident can exchange a mercury thermometer for a new digital thermometer at no cost.

Air deposition sources account for approximately 7% of the air deposition of mercury in the Willamette River. DEQ analysis of potential sources of Mercury concluded that the vast majority of mercury loading to the Willamette comes from runoff from lands receiving atmospheric deposition of mercury (via land runoff or direct deposition to water) and erosion of native soils. The City is proposing to strengthen and modify the existing plan/program to address erosion control as BMP to reduce mercury contribution through atmospheric deposition.

Allocation/Reduction: The Willamette Basin has been allocated a 27% reduction for mercury basin-wide.

General Reduction Strategy: Reduce sediment delivered to streams by various means including riparian protection, erosion control and storm water control and treatment, and low impact development.

Temperature

The Molalla-Pudding River Sub-basin has established a TMDL on the Pudding River for temperature. The Willamette River and its tributaries are, at times, too warm to provide healthy salmon and trout habitat. Some of these cold water fish, including lower Columbia Coho, Spring Chinook, Winter Steelhead, and Bull Trout are threatened with extinction and elevated stream temperatures have contributed to their decline. Water quality standards for temperature are established to protect each freshwater phase of the salmon and trout lifecycle; these include migration, spawning, and juvenile rearing. Stream temperatures are influenced by climate, elevation, geology, hydrology, stream bank vegetation and many other factors. Natural warming is greatest during late spring, summer and early autumn when solar radiation levels are high and stream flows are usually at their lowest levels.

As stated earlier in this plan the City has required private developments and residential subdivisions to provide on-site detention/retention before discharging to the conveyance system. The City has also developed two regional detention areas to collect runoff. The City of Woodburn, Woodburn Development Ordinance No. 2313, Riparian Corridor and Wetlands Overlay District, regulates and conserves significant riparian corridors, undeveloped floodplains and locally significant wetlands. The goal is to protect and enhance water quality,

prevent property damage during floods and storms, limit development activity in designated riparian corridors, protect native plant species, maintain and enhance fish and wildlife habitats, and conserve scenic and recreational values. Both Mill Creek and Senecal Creek and the major tributaries are regulated by this Ordinance.

Allocation/Reduction: Excess thermal loads have been allocated for June 1 to September 30 based on the cumulative effect from point sources (through the NPDES discharge permit) being less than equal to a heat load equivalent of 0.2C of the Human Use Allowance. Nonpoint source load allocation is system potential shade (surrogate percent-effective shade targets) and a heat load equivalent of 0.05 C of the Human Use Allowance

General Reduction Strategy: Increase effective shade through restoration and protections; restore natural stream hydrology; increase natural stream flow.

Pesticides

Two streams in the Molalla-Pudding River Sub-basin have established TMDL for pesticides. The Pudding River from the mouth to river mile 35.4 is listed due to high levels of DDT; Zollner Creek is included from its mouth to river mile 7.8 due to high levels of Chlordane and Dieldrin. Both streams are water quality limited for these pollutants year-round.

DDT, Chlordane, and Dieldrin were used for urban and agricultural insect control until 1972, 1970 and 1988, respectively. All three chemicals persist in the environment because they degrade slowly and are fat soluble, so may bioaccumulate in aquatic organisms. The source of these banned pesticides to streams is primarily sediment transported by erosion and runoff from agricultural land use. Urban storm water has not been discounted at a source, but the greater percentage of land use in the Molalla Pudding River Sub-basin is agricultural.

The beneficial uses affected by the presence of pesticides are anadromous fish passage, drinking water, fishing (Juan Health-Water and Fish Ingestion), and resident fish and aquatic life. The most sensitive beneficial use is human health – water fish ingestion.

Allocation/Reduction: The City of Woodburn Wastewater Treatment Plant has been allocated current condition for DDT and Dieldrin. Nonpoint source load allocations for DDT and Dieldrin, are percent reductions necessary to attain the human health (most conservative) criteria. 30% total DDT and 90% Dieldrin. In stream Total Suspended Solids target were also developed for the Pudding River (15mg/L).

General Reduction Strategy: Reduce sediment delivered to streams by various means including riparian protection, erosion control and storm water control and treatment, low impact development.

Iron

The Molalla-Pudding River Sub-basin has established a TMDL for iron. DEQ and other entities have identified exceedances of iron water quality criteria in the Molalla-Pudding River Sub-basin, specifically in samples collected from the Pudding River and Zollner Creek. State water quality standards (OAR 340-41—0033 Table 20) includes the criteria for iron on the table of toxins, although the occurrence of this metal may be natural.

Iron is an element that occurs naturally in geologic materials. According to EPA, iron is not considered a risk to human health, but can cause taste, odor, color and staining problems in domestically used water. Oregon Administrative Rules numeric and narrative water quality standards for iron are designed to protect the most sensitive beneficial uses. Public and Private domestic water (iron) are the most sensitive beneficial uses.

DEQ's overall conclusion from the analysis of iron concentrations in groundwater, surface water and stream flow, and precipitation is that iron, though a naturally occurring material, may be contributed in unnatural concentrations through runoff and erosion.

Allocation/Reduction: The City of Woodburn Wastewater Treatment Plant is allocated current conditions. Nonpoint source land uses are allocated a percent reduction based on stream flow, ranging from 19% to 96%.

General Reduction Strategy: Reduce sediment delivered to streams by various means including riparian protection, erosion control and storm water control and treatment, and low impact development.

Gaps

The City of Woodburn has taken a proactive approach to water quality for a number of years. There are currently many water quality efforts that have been put in place or practiced prior to being identified as DMA. The below table identifies existing Water Quality related programs and policy ordinances already in place.

| <u>Existing Program, Ordinance and Practice</u> | <u>Type</u> |
|---|-------------------------------|
| <u>Wastewater Facilities Plan Update</u> | <u>Currently a Resolution</u> |
| <u>Wastewater Facilities Plan</u> | <u>Ordinance</u> |
| <u>Comprehensive Plan</u> | <u>Ordinance</u> |
| <u>Parks Master Plan</u> | <u>Ordinance</u> |
| <u>Woodburn Development Ordinance</u> | <u>Ordinance</u> |
| <u>Woodburn Flood Plain Ordinance</u> | <u>Ordinance</u> |
| <u>Storm Water Master Plan</u> | <u>Ordinance</u> |
| <u>Water Master Plan</u> | <u>Ordinance</u> |
| <u>Sewer Use Ordinance</u> | <u>Ordinance</u> |
| <u>Public Outreach Education</u> | <u>Practice/Program</u> |
| <u>Pet Waste Pick-up</u> | <u>Ordinance/Program</u> |
| <u>Regulates Subsurface Wastewater Systems</u> | <u>Ordinance</u> |
| <u>Pretreatment Program</u> | <u>Ordinance/Program</u> |
| <u>Mercury Reduction Plan</u> | <u>Program</u> |

| | |
|---|--------------------------|
| <u>Leaf Disposal Program</u> | <u>Program</u> |
| <u>Inflow, Infiltration Program</u> | <u>Ordinance/Program</u> |
| <u>Maintenance Practices of both Storm and Sanitary Sewer Collection System</u> | <u>Policy/Program</u> |
| <u>Maintenance Practices for Street Cleaning/Sweeping</u> | <u>Program</u> |

As a result of the existing water quality programs and activities already in place, many water quality protections have been implemented. Even with this proactive effort, specific water quality gaps have been identified through the review of the related water quality materials, Willamette Basin TMDLs and Molalla Sub-basin TMDLs. Analysis of existing policies and programs indicates that the City should strengthen the mechanisms designed to minimize erosion and reduce storm water, including development and implementation of a program for low impact development.

Management Strategies

The City of Woodburn TMDL Implementation Plan management practices are displayed in a matrix format in Appendix A. The City’s adopted practices are intended to reduce heat loads, reduce bacteria loading, minimize mercury, pesticides and Iron contributions. The City’s overall approach will focus on following: riparian protection and restoration, public education, animal waste management, erosion control, and illicit discharge.

Riparian Protection and Restoration

The City will continue to regulate property through the Woodburn Development Ordinance No. 2313, specifically the Riparian Corridor and Wetlands Overlay District. The general location of the Riparian Corridor and Wetlands Overlay District is shown on the Woodburn Comprehensive Plan Map and the Woodburn Zoning Map. This area includes Mill Creek, Senecal Creek and their major tributaries. The district also includes significant wetlands identified on the Woodburn Wetlands Inventory Map. The Riparian Corridor extends upland 50 feet from the top of bank on Mill Creek, Senecal Creek and their tributaries. The ordinance prohibits new residential, commercial, industrial or public construction; prohibits expansion of existing buildings or structures; expansion of areas of pre-existing non-native ornamental landscaping such as lawn, gardens, etc.; and lastly prohibits dumping, piling or disposal of refuse, yard debris or other material. The Riparian Corridor also includes vacant or partly vacant property on the 2005 Woodburn Buildable Lands Inventory.

The City has been awarded by the DEQ, through the Clean Water State Revolving Fund Loan program, funds for future wastewater upgrades; the award also includes a Water Resources Activity Improvement element. The funds allocated for the water resources element is approximately \$430,000. The area identified for enhancement is in the Mill Creek drainage basin in the Pudding River watershed. The water resources activity enhancement project will be located near flood plains of Mill Creek; the city will reforest and reestablish riparian areas on property owned by the City. The original site for this water resource activity was identified as the enhancement Hermanson pond area, but staff would like to reevaluate that decision and

relocate the project based on a better need in the area of Mill Creek that has substantially been degraded in the more urban areas of the City. The extent of the water resource activity and location of the project has not been decided, but the goal will be to mitigate the degradation impacts by providing wetlands, riparian forest, riparian restoration, and riparian ponds. The wetlands provide shade and cooling along with nutrient and toxics removal. Reestablishing riparian forests allow organic accumulations on the forest floor that provide attachments for bacteria and remove oxygen-demanding pollutants and toxics for the water and soil.

Urban/Residential Storm Water Control Measures

Minimum Control Measure #1: Pollution Prevention in Municipal Operations

According to the Willamette River TMDL, the DMA must:

1. The DMA must develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations; and
2. Using training materials that are available from ODEQ, USEPA, or other organizations, the DMA's program must include employee training to prevent and reduce storm water pollution from activities including, but not limited to, park and open space maintenance, fleet and building maintenance, new municipal facility construction and related land disturbances, design and construction of street and storm drain systems, and storm water system maintenance.

The City will continue to develop and implement training and education opportunities for Public Works Staff. The goal of this education will be to identify practices that maintenance crews can reduce and prevent sediment or polluted runoff from entering the storm sewer and/or waterways. Educate staff how everyday maintenance practices, such as street cleaning and equipment washing can have a negative impact on storm water quality. The BMP's to address this control measure are identified in various approaches in Appendix A matrix.

Minimum Control Measure #2: Public Outreach and Education

According to the Willamette River TMDL, the DMA must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

The city will continue to provide and enhance public outreach and education activities. The City currently sponsors and participates in the following public outreach programs:

1) River Ranger Program: The River Ranger Program is a comprehensive watershed education program that the City of Woodburn Water Resources Division has been providing to local schools. It is designed to teach kids and their families about wastewater treatment, surface water runoff and water conservation. This interactive program reaches out to the community, teaching the value of watershed protection.

2) Public Works Week: During Public Works week the department holds a community event in which the public is invited to interact with Public Works staff. The Water Resources Division provides educational material on wastewater treatment, drinking water, and surface water. We provide color books and crayons to children which provide information and education activities to provide a better understanding of the value and why protecting the watershed is so important. We also provide an activity book, which is labeled Stormwater Activity Book, Dump No Waste Drains to Stream.

3) Earth Day Celebration: Water Resources Division participates annually in the Earth Day celebration at the Oregon Gardens in Silverton, Oregon. We provide educational material on wastewater treatment, drinking water, and surface water. We provide color books and crayons to children as it relates to each area. We also provide an activity book, which is labeled Stormwater Activity Book, Dump No Waste Drains to Stream to provide the children an understanding of the value, why and how they can protect the watershed.

4) Household Hazardous Waste Collection: The City annually sponsors with Marion County Public Works, a Household Hazardous Waste Collection Event. The events allow citizens to properly dispose of hazardous waste for free during the event. The event also has a program for a free mercury thermometer trade-in. Citizens can bring in and exchange their old mercury thermometer for a new digital thermometer for free. Water Resources Division will continue this practice for as long as it is available.

5) Water and Wastewater Plant Tours: The City provides tours to the public of City facilities. Staff not only provides technical data of the toured facility but provide educational material of protecting the watershed. Just within the last couple of months we had approximately 75 students from the local middle school that toured both the Drinking Water Treatment Plant and the Wastewater Treatment Plant. Each student is provided the Stormwater Activity book which provides information on how they can contribute and protect the watershed.

6) Partnering with the High School and Community Service Organizations: The City will solicit, involving students and local service organizations, in providing volunteers educational opportunities and participation in implementing some matrix best management practices. An example of this would be marking inlets, educating volunteers in the value of why and how they can protect the watershed and then have them participate in marking the inlets.

The BMP's to address this control measure are identified in various approaches in Appendix A matrix.

Minimum Control Measure #3: Public Participation/Involvement

According to the Willamette River TMDL, the DMA must at minimum, comply with State, Tribal, and local public notice requirements when implementing a public involvement/participation program.

The city will continue to develop and enhance public involvement activities. The City currently sponsors and participates in the following public involvement programs:

Public Participation/Involvement

- 1) **Animal Waste Management:** The City of Woodburn will continue with efforts of the existing pet waste clean-up ordinance by encouraging compliance. The City will install waste pick-up stations in all public parks. The station will include signs and be stocked with bags.
- 2) **Woodburn Proud Clean Up:** The City participates, provides logistic and waste removal for the annual Woodburn Proud Clean day held in early spring. The event organized by Woodburn Proud, utilizes volunteers for a community clean-up along local roadways, drainage ways.
- 3) **Storm Inlet Marking:** The City of Woodburn will work with various community service groups, schools citizens and other organizations to place permanent inlet storm water markers within the City storm water collection system. The markers identify the inlet as Clean Water Only, Drains to River with a phone number to contact to report pollution, dumping into the inlet.
- 4) **TMDL Implementation Plan:** The City considers the TMDL Implementation plan as a base line plan for meeting and phasing in all six of the required control measures, the City will revisit the plan and phasing ever two years to evaluate phasing priorities but will complete all elements of the 6 control measures by the end of the fifth year.

The BMP's to address this control measure are identified in various approaches in Appendix A matrix.

Minimum Control Measure #4: Illicit Discharge Detection and Elimination

According to the Willamette River TMDL, the DMA must:

3. Develop, implement and enforce a program to detect and eliminate illicit discharges [as defined in 40 CFR,122.26(b)(2)] into the DMA's system.

4. Develop, if not already completed, a storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States and/or the State of Oregon that receive discharges from those outfalls.
5. To the extent allowable under State or Local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the DMA's storm sewer system and implement appropriate enforcement procedures and actions. Possible sanctions include non-monetary penalties (such as stop work orders), fines, bonding requirements, and /or permit denials for non-compliance.
6. Develop and implement a plan to detect and address non-stormwater discharges, including illegal dumping, to the DMA's system.
7. Inform the public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
8. Address the following categories of non-storm water discharges or flows (illicit discharges) if the DMA identifies them as substantial contributors of pollutants to the DMA's system: water line flushing, landscape irrigation, diverted stream flows, rising groundwater's, uncontaminated groundwater infiltration (as defined at 40 CFR, 35.2005(20)), uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, de-chlorinated swimming pool discharges, and street wash water. Discharges or flows from fire fighting activities are excluded from the effective prohibition against non-stormwater and need only be addressed where they are identified as substantial sources of pollutants to water of the United States and the State of Oregon.
9. The DMA must develop a process to respond to and document complaints relating to illicit discharges.

Illicit Discharge

The City will continue administration of City Ordinance No. 2176, which regulates discharge of wastes to the sanitary and storm sewer system of the City. This ordinance sets forth uniform requirements for direct and indirect discharges of pollutants into the wastewater collection and storm water collection system. The objectives are to prevent the introduction of pollutants into the municipal wastewater and storm sewer collection system. The ordinance provides for the issuance of permits to certain non-domestic users, and through enforcement of general requirements for other users, authorizes monitoring and enforcement.

One of the most common potentials to a direct illicit discharge in an urban watershed is a broken cross connection or unpermitted sanitary sewer overflows to the storm sewer collection system. The City has a very aggressive Inflow and Infiltration program for the wastewater collection system. The program has been in place for a number of years, eliminating cross connection unpermitted sanitary sewer overflows.

To address illicit discharge and control measures 1, 3, 4, 6 and 7 above the city will either update Ordinance No 2176 or develop another regulatory mechanism to Develop, Implement

and Enforce a program to eliminate illicit discharges into the DMA's system. The BMP is identified as ID-4 in the Appendix A matrix.

The City will continue partnering with a Marion County Public Works and hold annually the Household Hazardous Waste Collection Event. This event, in addition to collecting hazardous waste, incorporates educational materials on proper disposal of hazardous waste.

The City has taken on an extensive effort of accurately locating the existing storm sewer collection system using Global Position System technology. The information has allowed staff to prepare an accurate inventory and map of the storm water conveyance system. The map identifies the location of the collection system and all outfalls discharging to both Senecal and Mill Creek. The map and information is currently in CAD format, one BMP identified in the matrix is to import this data into a Graphic Information System (GIS) and annually update data.

The matrix identifies updating the City web site with educational material to reduce, heat, bacteria, mercury, pesticides, and iron. Included with that information, we will address illicit discharge. The section will provide information on what to look for, the penalties associated with an illicit discharge and phone number to report an illicit discharge.

The BMP's to address this control measure are identified in various approaches in Appendix A matrix.

Minimum Control Measure #5: Construction Site Storm Water Runoff Control

According to the Willamette River TMDL, the DMA must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the DMA's system from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in the DMA's program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The DMA's program must include the development and implementation of, at a minimum:

1. An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State or local law;
2. Requirements for construction site operators to implement appropriate erosion and sediment control best management practices;
3. Requirements for construction site operators to prevent or control waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site;
4. Procedures for site plan review that incorporate measures to prevent or control potential water quality impacts;
5. Procedures for receipt and consideration of information submitted by the public; and
6. Procedures for site inspection and enforcement of control measures.

Erosion Control

The Woodburn Development Ordinance No. 2313 requires, per Section 5.101.03 Grading Permit, that a Permit must be obtained for any fill, removal or grading of land in the regulatory floodplain, Riparian Corridor and Wetlands Overlay District, or if the Oregon Department of State Lands requires a permit, or if the area is equal to or exceeds one acre. The permit is reviewed by Public Works staff and the purpose is to insure the adequacy of storm drainage in compliance with the Woodburn Storm Management Plan, Woodburn Flood Plain Ordinance, Public Works Department standards, and the State Building Code. One of the gaps in the existing pollution control polices is existing programs do not specifically address erosion control for area below and one acre in area. The City of Woodburn will develop and implement an ordinance or other regulatory mechanism to require erosion and sediment controls for area's under one acre.. The BMP is identified as CS-3 in the Appendix A matrix.

All city Capital Improvement Projects, if applicable, require erosion control practices to be in place regardless of size of area being disturbed. The erosion control BMP are prepared and implemented by the contractor, reviewed and inspected during the project by City staff. Erosion control normally is not an incidental item to the contract cost but is a separate contract bid unit item.

In addition to the grading permit and the requirement for Erosion control on CIP projects, for development and construction activities that disturb one acre or more, the City does and will ensure that these activities have an approved erosion control (1200-series) permit issued by the DEQ. Although not regulated by the City, owners of construction sites that are larger than one acre are currently required to obtain an NPDES 1200-C permit from DEQ. This permit requires an erosion prevention and sediment control plan to be developed and implemented. When issuing new building permits on private property or construction permits in the public rights of way, Public Works staff require evidence that the permit has been obtained. If the permit has not been obtained, then Public Works staff, in the case of a building permit, will not sign off on the permit; in the case of a permit in the public right of way, staff will not issue the permit.

As identified earlier in this report, regulation through the Woodburn Development Ordinance of the Riparian Corridor and Wetland Overlay District will reduce the amount of land vulnerable to excessive erosion by future development. This will have a direct impact on water quality.

The BMP's to address this control measure are identified in various approaches in Appendix A matrix.

Minimum Control Measure #6: Post-Construction Storm Water Management in New Development and Redevelopment

According to the Willamette River TMDL, the DMA must:

1. Develop, implement and enforce a program to ensure reduction of pollutants in storm water runoff from new development and redevelopment projects that disturb one acre or more, or less than one acre if they are part of a larger common plan of development or sale, and discharge into the DMA's system. The DMA's program must ensure that controls are in place that would prevent or minimize water quality impacts.
2. Develop and implement strategies that include a combination of structural or non-structural BMP's appropriate for the DMA's community, and
 - a. Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State or local law;
 - b. Ensure adequate long-term operation and maintenance of BMP'; and
 - c. Ensure adequate enforcement of ordinance or alternative regulatory program.

Post-Construction

Currently, developers, owners and engineers attend a pre-application conference with members of the City of Woodburn Planning and Public Works Departments. At these conferences City staff generally discuss stormwater issues as they relate to the Woodburn Development Ordinance, City design Standards and the Storm Water Master Plan. Staff typically discuss stormwater issues and encourage the use of design and structures to enhance water quality. However they do not specifically address post-construction stormwater runoff control or formal development or redevelopment requirements for water quality since the City does not currently have a regulatory mechanism requiring them.

The City of Woodburn will develop and implement an ordinance or other regulatory mechanism to address post-construction runoff, control from new development and redevelopment projects. This will include review of existing ordinances. The BMP is identified as DS-1 in Appendix A matrix.

Section 4: Performance Monitoring and Funding

Performance Monitoring

Each practice in the Implementation Plan, and specifically identified in the matrix will be reviewed annually. The City will monitor and track efforts based on performance and effectiveness. With an emphasis on public outreach, maintenance activities and proper tracking will establish a baseline for making internal changes, expanding successful projects and/or programs.

Funding

The City of Woodburn budget contains a separate operations section for Sanitary, Storm, and Surface Water Collection Section to provide for enhanced maintenance of the sanitary, storm surface water collection systems. A separate fund for Storm/Surface Water Fund was created for the operational needs of the section. This Section operates under the Water Resources Division of Public Works.

The City of Woodburn in 1994 established a Storm Water Drainage System Development Charge on all new development. The Implementation Plan will be funded through various funding sources. Street Maintenance funds are used for street sweeping, System Developments Charge funds may be used for Capacity Improvements, which include water quality improvements. The Street/Storm CIP fund will also be used to fund the program. The City operates on annual budgetary process. As the economy improves, the City may explore the validity of the Storm Water/ Surface Runoff User Fee to fund the program.

Plan Review, Revision, and Reporting Requirements

The City of Woodburn is required to establish a process whereby the TMDL Implementation Plan is reviewed. The City will provide an annual status report and for those projects, practices or plans listed in Appendix A.

The City will review and evaluate the Plan every five years following DEQ approval of the final version of the Implementation Plan. Submittal of the attached matrix during annual review will include updates and progress in the status column. During this review the City will evaluate the successes of the storm water management strategies and BMPs based on the results that are tracked. Successful strategies will continue to be implemented. Adaptive management processes of adjusting strategies and BMPs that are not working will be implemented. Adaptive management processes will be used to address any proposed TMDL revisions or reevaluations in the future.

Section 5: Conclusion, Implementation Matrix

Conclusion

The content of this plan and attached matrix is intended to meet the requirements for the TMDL Implementation Plan. All of the practices outlined are consistent with the City of Woodburn regulations. The TMDL Implementation Plan is established to function in concert with the Storm Drainage Master Plan (adopted as a component of the Periodic Review in December 2006), the Woodburn Flood Plain Ordinance No. 2018 and land use regulated by the Woodburn Comprehensive Plan and the Woodburn Development Ordinance No 2313.

Implementation Matrix

The following Matrix, Appendix A, provides details of the practices that have been or will be implemented within the next five years. The matrix displays the pollutant being addressed, the practice to address it, when the practice will be implemented, and how to measure progress and successful implementation. This matrix will also serve as the tracking tool for annual reporting to DEQ.

Appendix A

Matrix 1 Bacteria

| POLLUTANT: Bacteria | | | | | | | | |
|----------------------------|--|--|---|--------------------------------|--|--|--|---------------|
| SWMP BMP | SOURCE <i>What source of this pollutant is being addressed</i> | PRACTICE <i>What is being done, or what will be done, to reduce and/or control pollution from this source?</i> | HOW <i>Specifically, how will this be done?</i> | FISCAL ANALYSIS | MEASURE <i>How successful implementation or completion of this practice be measured?</i> | TIMELINE <i>When will the practice be completed?</i> | MILESTONE <i>What intermediate goals will be achieved and by when, how to know what progress is being made</i> | STATUS |
| PE-1 | Reduce inputs of bacteria | a. Educate homeowners on requirements and how to detect failures | i. Provide information on Website | Funded, Staff Time | | Once every year for one/two months | Complete practice | |
| PE-2 | | | ii. Provide info at city's booth at Public Works Week | No additional resources needed | Number of contacts | Once each year | Scheduled for Spring of 2010 | |
| PE-3 | | | iii. Provide information in Water Newsletter | No additional resources needed | Number of contacts and follow up response | Once in 2010 | Jan/Feb 2010 Newsletter | |
| PE-4 | | a. Continue River Ranger Program | i Animal waste topic is part educational program this has a back yard focus | Funded | Track contract numbers | Ongoing | Expand to other jurisdictions in Pudding River Watershed, 2011 | |
| PE-5 | | a. Public Outreach covering bacteria issues and concerns | i Prepare resource list for the public. Storm water links to include local educational and regulatory resources | Funded, Staff time | Post on Website, Provide as handouts at community events | ongoing | Modify webpage by end of 2010 | |
| PE-6 | | | ii Provide TMDL Implementation | Funded, Staff time | Post on Website after | June 2010 | Upon DEQ approval post | |

| | | | | | | | | |
|-------|--|--|--|---|---|---|---|--|
| | | | Plan for Public Review and Education | | DEQ approval. Mail electronic version to residents, RSS feed | | plan | |
| PE-7 | | | iii Earth Day Event, Provide education material on Protecting the Watershed | Funded, Staff time | Track Contact Numbers | Ongoing | Complete Task | |
| PE-8 | | | iv Plant Tours, Provide education information in protecting the Watershed during Plant tours to Public | Funded, Staff time | Track Contact Numbers | Ongoing | Complete Task | |
| PI-1 | 1. Failing septic systems | a. Ensure repair of failing systems; City Ordinance prohibits the installation permits for new systems | i. Respond to reports of failing systems; work with homeowner to set a timeline for repair and connection to city wastewater | Funded, Staff time | Track # of reports, outcome of inspection (failing or not) and date of follow-up that confirmed repairs were made | Ongoing | Enforce practice | |
| PI 2 | 2. Bacteria carried to waterways in storm runoff | a. Prevent pet waste from reaching waterways | ii. Continue installation and maintenance of pet Waste Stations | Funded | Maintain stations and monitor bag supply | Ongoing thru end of 2010; evaluate effectiveness based upon rate of use | Have stations in all parks by end of 2010 | |
| PI-3 | | | iii Partnering with Schools and Community Organization in partnering in BMP execution | Funding depends on activity, Staff Time | Track Implementation of BMP | Ongoing | Complete BMP | |
| PI-4 | | b. Prevent dumping into storm drains | iv Storm inlet Marking (Do Not Dump Waste) | Budget for fiscal year 2010/11 | Number of Markers installed | 2010, Ongoing | Determine type of marker, Mark 20% of system 2010 | |
| CS -1 | Reduce Sediment from reaching | Prevent material from reaching waterways | i Conduct Staff Training in regard to current Regulatory | Funded | Track Meeting and findings | 2010 | Coordinate with stakeholders | |

| | water ways | | requirement | | | | | |
|-------|------------|--|--|--------------------|--------------------------|---------------|--|--|
| CS -2 | | | ii Continue requiring DEQ 1200 Series Permits on construction sites. | Funded, Staff time | Track staff progress | 2010, | Coordinate with Public Works Engineering Division | |
| CS-3 | | Erosion Control | iii Develop and implement program to address erosion control for sites under one acre | Funded, Staff | Complete | 2014 | Complete task | |
| DS-1 | | Post Construction Flow Control | Modify/ develop plan/programs to incorporate Low Impact Development | Funded, Staff | Complete | 2015 | Complete task | |
| ID 1 | | c. Prevent human waste (from cross connections), oil, grease, paint, and other pollutants from entering the storm system | i Continue Administration and public education of existing Sewer Use Ordinance No 2176 | Funded, Staff time | Track issues and results | Ongoing | Quantify incidents, action, results and inquiries. | |
| ID 2 | | | ii Internal Training | Funded, Staff time | Conduct Training | 2010 | Complete Task | |
| ID 3 | | Reinforce, Develop and implement Illicit discharge Program | Develop Regulatory Mechanism illicit discharge | Staff time | Implementation | 2013 | Complete Task | |
| OM-1 | | | iii Inlet Cleaning | Funded, Staff time | Track Progress | 2010, Ongoing | Clean 15% of City system Annually | |
| OM-2 | | | iv Storm Drain Pipe and Culvert Cleaning | Funded, Staff time | Track Progress | 2010, Ongoing | Clean 15% of City system annually | |
| OM-3 | | | v Street Sweeping | Funded | Track Progress | 2010, Ongoing | Clean all Streets within City Jurisdiction monthly | |

| | | | | | | | | |
|------|--|--|---|--------------------|--------------------------------------|---------------|--|--|
| OM-4 | | Map/GIS System | vi Continue Efforts in Mapping and GIS Effort of existing Storm Water System | Funded, Staff time | Complete new system mapping annually | 2010, Ongoing | Complete Mapping and entering into GIS format 2015 | |
| OM-5 | | Continue I & I program as required by the Current NPDES permit | vii Continue efforts to identify cross connections between the Sanitary and Storm sewer collection system | Funded, Staff time | Corrections, inflow removal | 2010, Ongoing | Annual program | |
| OM-6 | | Public Works Staff Training | viii Implement Internal Training in preventing/reducing Bacteria | Funded, Staff time | Conduct Training | 2010, Ongoing | Complete Task | |

Matrix 2 Mercury

| POLLUTANT: Mercury | | | | | | | | |
|---------------------------|--|--|---|------------------------|--|--|--|---------------|
| SWMP BMP | SOURCE <i>What source of this pollutant is being addressed</i> | PRACTICE <i>What is being done, or what will be done, to reduce and/or control pollution from this source?</i> | HOW <i>Specifically, how will this be done?</i> | FISCAL ANALYSIS | MEASURE <i>How successful implementation or completion of this practice be measured?</i> | TIMELINE <i>When will the practice be completed?</i> | MILESTONE <i>What intermediate goals will be achieved and by when, how to know what progress is being made</i> | STATUS |
| PE-1 | Reduce Sediments delivered to waterways | a. Public Outreach covering mercury issues and concerns | i Prepare resource list for the public. Storm water links to include local educational and regulatory resources | Funded, Staff time | Post on Website, Provide as handouts at community events | ongoing | Modify webpage by end of 2010 | |
| PE-2 | | | ii Continue River Ranger Program | Funded | Track contract numbers | Ongoing | Expand to other jurisdictions in Pudding River Watershed, 2011 | |
| PE-3 | | | iii Provide TMDL Implementation Plan for Public Review and Education | Funded, Staff time | Post on Website after DEQ approval. Mail electronic version to residents, RSS feed | 2010 | DEQ approval and posting/mailing | |
| PE-4 | | | iv Earth Day Event, Provide education material on Protecting the Watershed | Funded, Staff time | Track Contact Numbers | Ongoing | Complete Task | |
| PE-5 | | | v Plant Tours, Provide | Funded, Staff time | Track Contact Numbers | Ongoing | Complete Task | |

| | | | | | | | | |
|-------|--|--|--|---|---|-------------------------------|---|--|
| | | | education information in protecting the Watershed during Plant tours to Public | | | | | |
| PI-1 | | | i Partnering with Schools and Community Organization in partnering in BMP execution | Funding depends on activity, Staff Time | Track Implementation of BMP | Ongoing | Complete BMP | |
| PI-2 | | | ii Storm inlet Marking (Do Not Dump Waste) | Budget for fiscal year 2010/11 | Number of Markers installed | 2010, Ongoing | Determine type of marker, Mark 20% of system 2010 | |
| ID-1 | | a. Illicit Discharge Detection | i Continue Education of local Dentistry offices through the Pre-treatment Program | Funded, Staff time | Continue Public Education, Contact new and dentist office at start up | Ongoing | Number contacts | |
| ID-2 | | | ii Continue providing Hazardous Household Waste Event through the Pretreatment Program | Funded, Staff time | Continue participation and coordinating event with Marion County Public Works | Event held in Spring, Ongoing | Hold Event | |
| ID-3 | | | iii Continue administration and public education of exiting Sewer Use Ordinance No. 2176 | Funded, Staff time | Track issues and results | Ongoing | Quantify incidents, actions, results | |
| ID-4 | | Reinforce, Develop and implement Illicit discharge Program | Develop Regulatory Mechanism illicit discharge | Staff time | Implementation | 2013 | Complete Task | |
| CS -1 | | Prevent material from reaching waterways | i Conduct Staff Training in regard to | Funded | Track Meeting and findings | 2010 | Coordinate with stakeholders | |

| | | | | | | | | |
|-------|--|--------------------------------|---|--------------------|--------------------------------------|---------------|--|--|
| | | | current Regulatory requirement | | | | | |
| CS -2 | | | ii Continue requiring DEQ 1200 Series Permits on construction sites. | Funded, Staff time | Track staff progress | 2010, | Coordinate with Public Works Engineering Division | |
| CS-3 | | Erosion Control | iii Develop and implement program to address erosion control for sites under one acre | Funded, Staff | Complete | 2014 | Complete task | |
| DS-1 | | Post Construction Flow Control | i v Modify Develop plan/programs to incorporate Low Impact Development | Funded, Staff | Complete | 2015 | Complete task | |
| OM-1 | | Map/GIS System | v Continue Efforts in Mapping and GIS Effort of existing Storm Water System | Funded, Staff time | Complete new system mapping annually | 2010, Ongoing | Complete Mapping and entering into GIS format 2015 | |
| OM-2 | | Public Works Staff Training | vi Implement Internal Training in preventing/reducing Mercury | Funded, Staff time | Conduct Training | 2010, Ongoing | Complete Task | |

Matrix 3 Temperature

| POLLUTANT: Temperature | | | | | | | | |
|-------------------------------|--|--|---|--------------------------------|--|--|--|---------------|
| SWMP BMP | SOURCE <i>What source of this pollutant is being addressed</i> | PRACTICE <i>What is being done, or what will be done, to reduce and/or control pollution from this source?</i> | HOW <i>Specifically, how will this be done?</i> | FISCAL ANALYSIS | MEASURE <i>How successful implementation or completion of this practice be measured?</i> | TIMELINE <i>When will the practice be completed?</i> | MILESTONE <i>What intermediate goals will be achieved and by when, how to know what progress is being made</i> | STATUS |
| PE-1 | Increase effective shade through restoration, protections and natural stream hydrology | a. Public Education | i. Provide information on Website | Funded, Staff Time | | Once every year for one/two months | Complete Task | |
| PE-2 | | | ii. Provide info at city's booth at Public Works Week | No additional resources needed | Number of contacts | Once each year | Scheduled for Spring of 2010 | |
| PE-3 | | | iii. Provide information in Water Newsletter | No additional resources needed | Number of contacts and follow up response | Once in 2010 | Complete Task | |
| PE-4 | | | iv. Continue River Ranger Program | Funded | Track contract numbers | Ongoing | Expand to other jurisdictions in Pudding River Watershed, 2011 | |
| PE-5 | | | v. Earth Day Event, Provide education material on temperature reduction | Funded, Staff time | Track Contact Numbers | Ongoing | Complete Task | |
| PE-6 | | | vi. Wastewater | Funded, Staff | Track Contact | Ongoing | Complete Task | |

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|------|-----------------------------|--|--|------------------------------|---|---------------|--|--|
| | | | Treatment Plant Tours, Provide education on City efforts on reducing temperature | time | Numbers | | | |
| CS-1 | 1. Water Resources Activity | a. Enhance degraded riparian area along Mill Creek | i. Mitigate degraded riparian areas, provide riparian restoration, wetlands | \$430,000 Funded, Staff time | Degraded Areas will be restored to provide cooling along with nutrient Removal and toxics removal | 2014 | Begin pre-design, 2010 | |
| DS-2 | Solar Radiation | a. Administer Woodburn Development Ordinance 2313 | i Continue implementation of the Riparian Corridor and Wetlands Overlay District | Funded, Staff time | Number of Applications and enforcement | Ongoing | Protection of existing Riparian areas, ongoing | |
| OM-1 | | Public Works Staff Training | i Implement Internal Training in preventing/reducing Temperature | Funded, Staff time | Conduct Training | 2010, Ongoing | Complete Task, | |

Matrix 4 Pesticides

| POLLUTANT: Pesticides | | | | | | | | |
|------------------------------|--|--|---|------------------------|--|--|--|---------------|
| SWMP BMP | SOURCE <i>What source of this pollutant is being addressed</i> | PRACTICE <i>What is being done, or what will be done, to reduce and/or control pollution from this source?</i> | HOW <i>Specifically, how will this be done?</i> | FISCAL ANALYSIS | MEASURE <i>How successful implementation or completion of this practice be measured?</i> | TIMELINE <i>When will the practice be completed?</i> | MILESTONE <i>What intermediate goals will be achieved and by when, how to know what progress is being made</i> | STATUS |
| PE-1 | Pesticides associated with precipitation, higher stream flows and pipe systems and erosion | a. Public Outreach covering Iron issues and concerns | i Prepare resource list for the public. Storm water links to include local educational and regulatory resources | Funded, Staff time | Post on Website, Provide as handouts at community events | ongoing | Modify webpage by end of 2010 | |
| PE-2 | | | ii Continue River Ranger Program | Funded | Track contract numbers | Ongoing | Expand to other jurisdictions in Pudding River Watershed, 2011 | |
| PE-3 | | | iii Provide TMDL Implementation Plan for Public Review and Education | Funded, Staff time | Post on Website after DEQ approval. Mail electronic version to residents, RSS feed | 2010 | DEQ approval and posting/mailing | |
| PE-4 | | | iv. Earth Day Event, Provide education material on Protecting the Watershed | Funded, Staff time | Track Contact Numbers | Ongoing | Complete Task | |
| PE-5 | | | v. Provide | Funded, Staff | Track Contact | Ongoing | Complete Task | |

| | | | | | | | | |
|-------|--|--|--|---|-----------------------------|---------------|---|--|
| | | | education information in protecting the Watershed during Plant tours to Public | time | Numbers | | | |
| PI-1 | | | vi Partnering with Schools and Community Organization in BMP execution | Funding depends on activity, Staff Time | Track Implementation of BMP | Ongoing | Complete BMP | |
| PI-2 | | | vii Storm inlet Marking (Do Not Dump Waste) | Budget for fiscal year 2010/11 | Number of Markers installed | 2010, Ongoing | Determine type of marker, Mark 20% of system 2010 | |
| ID-1 | | a. Illicit Discharge Detection | i Continue administration and public education of exiting Sewer Use Ordinance No. 2176 | Funded, Staff time | Track issues and results | Ongoing | Quantify incidents, actions, results | |
| ID-2 | | Reinforce, Develop and implement Illicit discharge Program | Develop Regulatory Mechanism illicit discharge | Staff time | Implementation | 2013 | Complete Task | |
| CS -1 | | Prevent material from reaching waterways | i Conduct Staff Training in regard to current Regulatory requirement | Funded | Track Meeting and findings | 2010 | Coordinate with stakeholders | |
| CS -2 | | | ii Continue requiring DEQ 1200 Series Permits on construction sites. | Funded, Staff time | Track staff progress | 2010, | Coordinate with Public Works Engineering Division | |
| CS-3 | | Erosion Control | iii Develop and implement program to address erosion control for sites under one acre | Funded, Staff | Complete | 2014 | Complete task | |

| | | | | | | | | |
|------|--|--------------------------------|---|--------------------|--------------------------------------|---------------|--|--|
| DS-1 | | Post Construction Flow Control | iv Modify Develop plan/programs to incorporate Low Impact Development | Funded, Staff | Complete | 2015 | Complete task | |
| OM-1 | | Map/GIS System | v Continue Efforts in Mapping and GIS Effort of existing Storm Water System | Funded, Staff time | Complete new system mapping annually | 2010, Ongoing | Complete Mapping and entering into GIS format 2015 | |
| OM-2 | | Public Works Staff Training | vi Implement Internal Training in preventing/reducing Pesticides | Funded, Staff time | Conduct Training | 2010, Ongoing | Complete Task | |

Matrix 5 Iron

| POLLUTANT: Iron | | | | | | | | |
|------------------------|--|--|---|------------------------|--|--|--|---------------|
| SWMP BMP | SOURCE <i>What source of this pollutant is being addressed</i> | PRACTICE <i>What is being done, or what will be done, to reduce and/or control pollution from this source?</i> | HOW <i>Specifically, how will this be done?</i> | FISCAL ANALYSIS | MEASURE <i>How successful implementation or completion of this practice be measured?</i> | TIMELINE <i>When will the practice be completed?</i> | MILESTONE <i>What intermediate goals will be achieved and by when, how to know what progress is being made</i> | STATUS |
| PE-1 | Iron associated with precipitation, higher stream flows and pipe systems and erosion | a. Public Outreach covering Iron issues and concerns | i Prepare resource list for the public. Storm water links to include local educational and regulatory resources | Funded, Staff time | Post on Website, Provide as handouts at community events | ongoing | Modify webpage by end of 2010 | |
| PE-2 | | | ii Continue River Ranger Program | Funded | Track contract numbers | Ongoing | Expand to other jurisdictions in Pudding River Watershed, 2011 | |
| PE-3 | | | iii Provide TMDL Implementation Plan for Public Review and Education | Funded, Staff time | Post on Website after DEQ approval. Mail electronic version to residents, RSS feed | 2010 | DEQ approval and posting/ mailing | |
| PE-4 | | | iv. Earth Day Event, Provide education material on Protecting the Watershed | Funded, Staff time | Track Contact Numbers | Ongoing | Complete Task | |
| PE-5 | | | v. Plant Tours, | Funded, Staff | Track Contact | Ongoing | Complete Task | |

| | | | | | | | | |
|-------|--|--|---|---|-----------------------------|---------------|---|--|
| | | | Provide education information in protecting the Watershed during Plant tours to Public | time | Numbers | | | |
| PI-1 | | | vi Partnering with Schools and Community Organization in partnering in BMP execution | Funding depends on activity, Staff Time | Track Implementation of BMP | Ongoing | Complete BMP | |
| PI-2 | | | vii Storm inlet Marking (Do Not Dump Waste) | Budget for fiscal year 2010/11 | Number of Markers installed | 2010, Ongoing | Determine type of marker, Mark 20% of system 2010 | |
| ID-1 | | a. Illicit Discharge Detection | i Continue administration and public education of existing Sewer Use Ordinance No. 2176 | Funded, Staff time | Track issues and results | Ongoing | Quantify incidents, actions, results | |
| ID-2 | | Reinforce, Develop and implement Illicit discharge Program | Develop Regulatory Mechanism illicit discharge | Staff time | Implementation | 2013 | Complete Task | |
| CS -1 | | Prevent material from reaching waterways | i Conduct Staff Training in regard to current Regulatory requirement | Funded | Track Meeting and findings | 2010 | Coordinate with stakeholders | |
| CS -2 | | | ii Continue requiring DEQ 1200 Series Permits on construction sites. | Funded, Staff time | Track staff progress | 2010, | Coordinate with Public Works Engineering Division | |
| CS-3 | | Erosion Control | iii Develop and implement program to address erosion control for sites under | Funded, Staff | Complete | 2014 | Complete task | |

| | | | | | | | | |
|------|--|---------------------------------|---|--------------------|--------------------------------------|---------------|--|--|
| | | | one acre | | | | | |
| DS-1 | | Post Constructiton Flow Control | iv Modify Develop plan/programs to incorporate Low Impact Development | Funded, Staff | Complete | 2015 | Complete task | |
| OM-1 | | Map/GIS System | v Continue Efforts in Mapping and GIS Effort of existing Storm Water System | Funded, Staff time | Complete new system mapping annually | 2010, Ongoing | Complete Mapping and entering into GIS format 2015 | |
| OM-2 | | Public Works Staff Training | vi Implement Internal Training in preventing/reducing Iron | Funded, Staff time | Conduct Training | 2010, Ongoing | Complete Task | |

Six Minimum Control Measures

PE – Public Education
 PI – Public Involvement/Participation
 ID – Illicit Discharge
 CS – Construction Site Runoff Control
 DS – Development Standards
 OM – Operations and Maintenance