



City of Eugene, Oregon



**Total Maximum
Daily Load
(TMDL)
Implementation
Plan**

*Submitted to
Oregon Department of
Environmental Quality*

Updated June 2014

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EXECUTIVE SUMMARY

The Willamette River and numerous tributaries do not meet several water quality standards including, variously, bacteria, mercury, temperature, dissolved oxygen and turbidity. These standards assure that beneficial uses of the river and tributaries, such as water contact recreation, fish consumption, resident aquatic life, and fish rearing, are protected. When water quality standards are not met, the federal Clean Water Act requires a Total Maximum Daily Load (TMDL) to be established. A TMDL determines how much pollution can be added to the waterbody without exceeding water quality standards. On September 21, 2006, the Oregon Department of Environmental Quality (DEQ) issued the Willamette Basin TMDL as an Order, and submitted the TMDL to the Environmental Protection Agency (EPA) for approval. EPA approved the Willamette Basin TMDL on September 29, 2006.

Along with other cities and agencies in the Willamette Basin, the City of Eugene has been named by DEQ as a Designated Management Agency (DMA). Eugene was named as a DMA because it has legal authority over sectors or sources contributing pollutants within its jurisdictional authority, in that it operates the regional Eugene-Springfield Water Pollution Control Facility (a sewage treatment plant with a permit to discharge treated effluent and stormwater into the Willamette River), in that it operates a municipal stormwater system with a permit to discharge stormwater, and in that it operates other regional facilities within the basin including the Eugene Airport.

The City of Eugene's first TMDL Implementation Plan, approved by DEQ on December 23, 2008, identified strategies that the City would undertake to minimize TMDL pollutant contributions from within its jurisdictional authority. TMDL Plan rules, described in OAR 340-042-0080, include requirements to submit annual reports of progress on the implementation of each management strategy as well as well as a 5th year report to evaluate TMDL Plan implementation and effectiveness in the first five years from 2008 to 2013. On March 21, 2014, the City submitted its TMDL Fifth Annual Report and Review, utilizing a template provided by DEQ for City and County DMAs.

This document comprises the City's Updated TMDL Implementation Plan, identifying strategies the City will undertake to minimize TMDL pollutant contributions to surface waters within the jurisdictional authority of the city, for the next five years of implementation, through December 2018. It references specific elements of existing programs that are conducted under point discharge permits and distinguishes those efforts from other efforts uniquely responsive to the Willamette TMDL.

1. BACKGROUND AND TMDL IMPLEMENTATION PLAN GOALS

The Willamette River and numerous tributaries do not currently meet several water quality standards including, variously, bacteria, mercury, temperature, dissolved oxygen and turbidity. These standards assure that beneficial uses of the river and tributaries, such as water contact recreation, fish consumption, resident aquatic life, and fish rearing, are protected. When water quality standards are not met, the federal Clean Water Act requires that a Total Maximum Daily Load (TMDL) be established. A TMDL determines how much pollution can be added to the river without exceeding water quality standards.

On September 21, 2006, the Oregon Department of Environmental Quality (DEQ) issued the Willamette Basin TMDL as an Order, and submitted the TMDL to the Environmental Protection Agency (EPA) for approval. The TMDL was approved by the EPA on September 29, 2006. As part of the Willamette TMDL, DEQ developed a Water Quality Management Plan (WQMP) to describe the overall framework for implementing the Willamette Basin TMDL. The WQMP includes a description of activities, programs, legal authorities and other measures for which DEQ and other designated management agencies (DMAs) have regulatory responsibility.

A DMA is “a federal, state or local governmental agency that has legal authority of a sector or source contributing pollutants, and is identified as such by the DEQ in a TMDL.” TMDL implementation activities will be carried out under existing regulatory authorities, programs and water quality restoration plans as well as by TMDL implementation plans that certain DMAs will develop in fulfillment of requirements of the TMDL.

Along with other cities and agencies in the Willamette Basin, the City of Eugene has been named by DEQ as a DMA in that it has legal authority over sectors or sources contributing pollutants within its jurisdictional authority, in that it operates the regional Eugene-Springfield Water Pollution Control Facility, a sewage treatment plant with permits to discharge treated effluent and stormwater into the Willamette River, in that it operates a municipal stormwater system with a permit to discharge stormwater, and in that it operates other regional facilities including the Eugene Airport.

Eugene lies at the upper end of the Willamette watershed. The Willamette River flows for about 6 miles, from River Mile 184 to River Mile 178 through the City. The Willamette River is currently listed as a water quality limited river due to elevated water temperatures, elevated mercury concentration in fish tissues, and elevated bacteria levels all of which at various points on the River may exceed State water quality standards. Other water bodies in the Eugene area that are tributary to the Willamette are water quality limited due to elevated bacteria levels, low dissolved oxygen levels, and elevated turbidity. These waterbodies include Amazon Creek, Amazon Diversion Channel and Fern Ridge Reservoir. As such, the City of Eugene is required to develop a TMDL implementation plan for review and approval by DEQ. The City of Eugene is not responsible for pollution arising from land management activities that occur outside of its jurisdictional authority.

The required components of a TMDL implementation plan are described in OAR 340-042-0080(3) excerpted below.

Persons, including DMAs other than the Oregon Department of Forestry or the Oregon Department of Agriculture¹, identified in a WQMP as responsible for developing and revising sector-specific or source-specific implementation plans must:

- (a) Prepare an implementation plan and submit the plan to the Department for review and approval according to the schedule 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, provide evidence of compliance with applicable statewide land use requirements; and*
 - (E) Provide any other analyses or information specified in the WQMP.**
- (b) Implement and revise the plan as needed.*

The City of Eugene's first TMDL Implementation Plan was approved by DEQ on December 23, 2008 and guided the first five years of TMDL implementation. The City submitted its TMDL Fifth Annual Report and Review on March 21, 2014, utilizing the template for City and County DMAs provided by DEQ. This document comprises the City of Eugene's Updated TMDL Implementation Plan, designed to guide the second five years of TMDL implementation through December 2018.

TMDLs, the WQMP, and associated implementation plans and activities are designed to restore water quality to comply with water quality standards. In this way designated beneficial uses, such as water contact recreation, fish consumption, resident aquatic life, and fish rearing, will be protected. When implemented, the TMDL will result in a cleaner, healthier Willamette river for current and future generations.

¹ It is explained in the *DEQ TMDL Implementation Plan Guidance for State and Local Government Designated Management Agencies* (May 2007) that the Oregon Departments of Agriculture and Forestry (ODA and ODF, respectively) are exempt from submitting implementation plans because their activities are regulated under other state statutes and rules. Water quality improvements related to agricultural practices (i.e., erosion control, siltation control, animal waste management, and riparian area management) are regulated by Oregon Senate Bill 1010 plans developed under oversight by ODA. Forest practices and timber harvest activities are regulated for sound management of soil, air, water, and fish and wildlife resources by ODF under the Oregon Forest Practices Act (FPA) for private commercial operations, state forest management plans and FPA for state forests, and federal forest plans, resource management plans, and water quality restoration plans for federal forests.

2. CITY OF EUGENE

a. Regional Drainage Context

Eugene is located in the western third of the Upper Willamette Drainage Basin as shown on Figure 2-1. Drainage in the southern Willamette Valley is a combination of natural and built systems that have evolved over time. The natural system is composed of rivers, waterways, and a series of interconnected and isolated ponds and wetlands. Historically, the natural system had an extensive floodplain that frequently experienced over-bank flooding. The built drainage system includes a series of dams, pipes, and waterways that were constructed to contain over-bank flooding, and to retain water for recreational and irrigation purposes. The primary drainage features of the Upper Willamette Drainage Basin are: Main Stem of the Willamette River, Middle Fork of the Willamette River, Coast Fork of the Willamette River, McKenzie River, Amazon Creek, Amazon Diversion Channel, Coyote Creek, and the Long Tom River. From 1940 to 1960, the U.S. Army Corps of Engineers built nine dams on this system, including the Fern Ridge Reservoir which receives runoff from the City of Eugene via the Amazon Diversion Channel.

The cities of Cottage Grove, Creswell, and Springfield are all upstream from the City of Eugene and contribute urban runoff to the regional drainage system. Runoff from Cottage Grove, Creswell, and South Springfield flows through Eugene via the Willamette River. A significant portion of West Springfield's drainage area, approximately 4,800 acres, discharges urban runoff into the Q Street Floodway which is within Eugene's public drainage system. Refer to Figure 2-2.

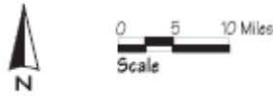
In the City of Eugene, seven major stormwater drainage basins have been delineated (Figure 2-2): 1) *Amazon Creek*, 2) *Bethel-Danebo*, 3) *Laurel Hill*, 4) *River Road-Santa Clara*, 5) *Willakenzie*, 6) *Willamette River*, and 7) *Willow Creek*. Note that the area depicted on Figure 2-2 is the 2002 stormwater basin planning study area which includes the Eugene city limits and the unincorporated area west of Interstate Highway 5 (I-5) and within the metropolitan plan boundary. The unincorporated portion includes land both within and outside the UGB. The City's responsibilities as a DMA apply only to the limits of its jurisdictional authority.



Drainage Basin Key

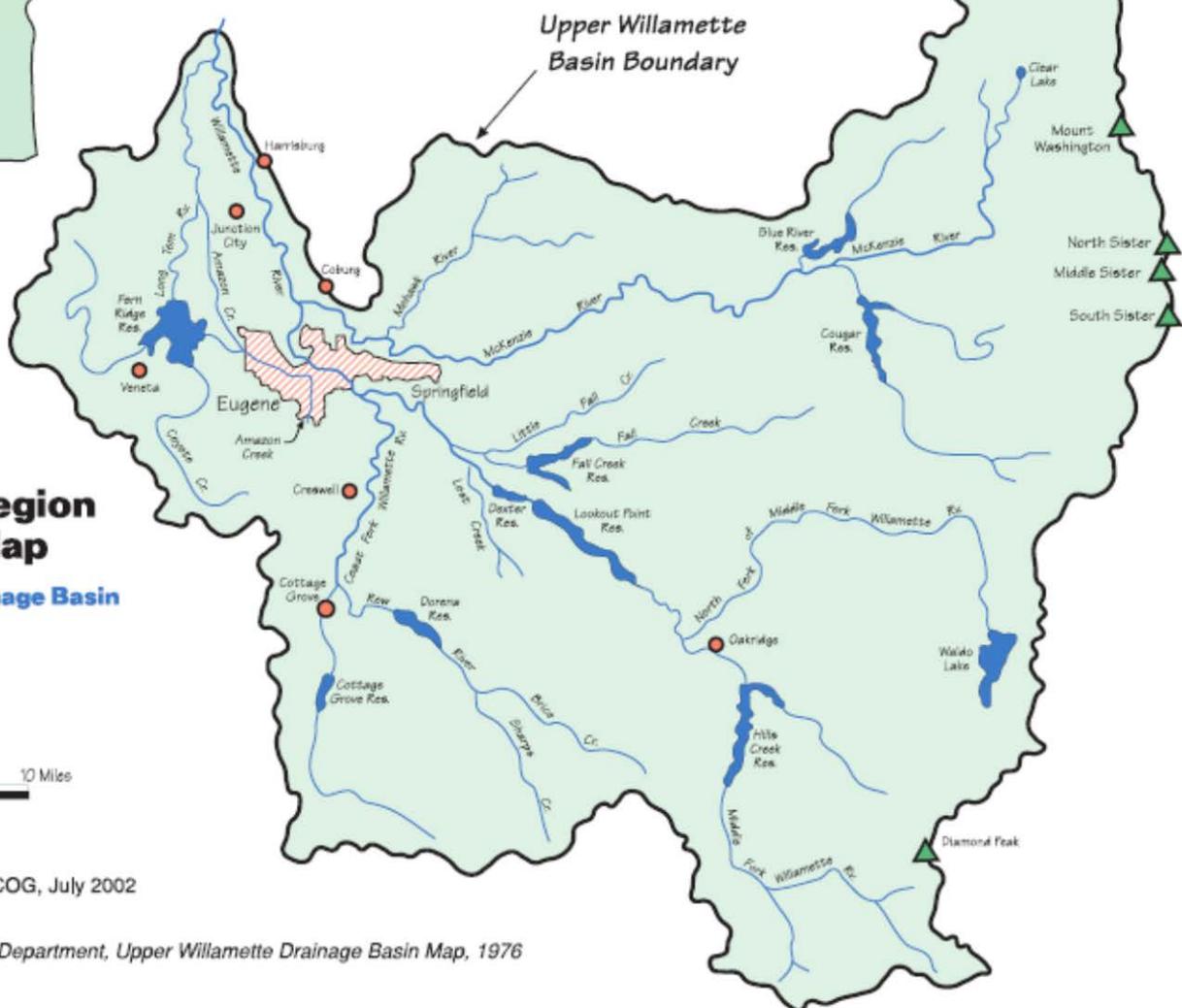
**Willamette Region
Location Map**
Upper Willamette Drainage Basin

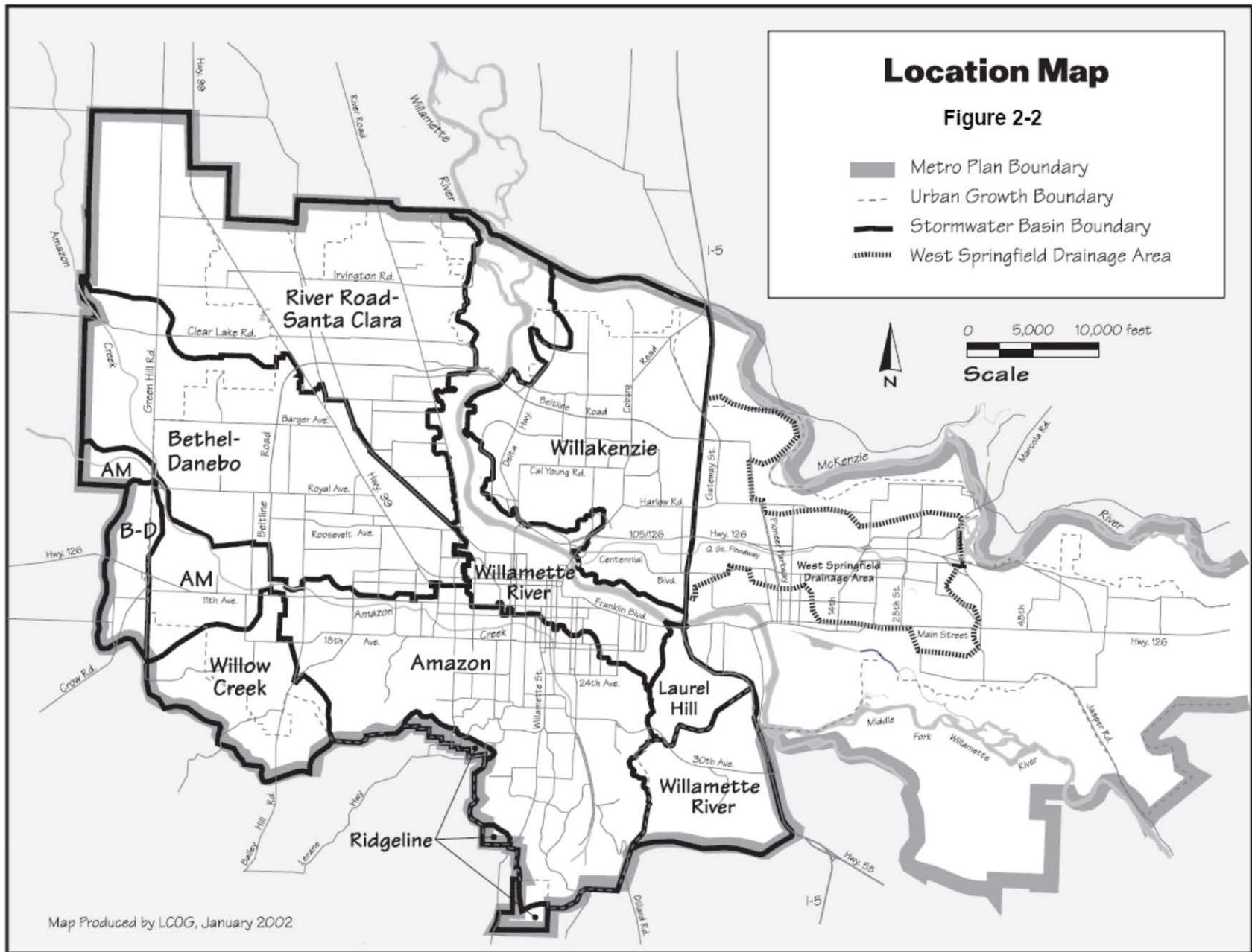
Figure 2-1



Map Produced by LCOG, July 2002

Source: Water Resources Department, Upper Willamette Drainage Basin Map, 1976





b. City of Eugene Organizational Structure

The City of Eugene permits and oversees a number of activities that can affect the quality of surface waters. The main activities include: urbanization, sanitary waste collection and treatment, control of stormwater runoff from public and private lands, and support for Lane County's solid waste recycling and disposal programs. These activities are under the jurisdiction of different Departments and Divisions (see Figure 2-3 for City organization chart) within the City, primarily the Public Works and Planning & Development departments.

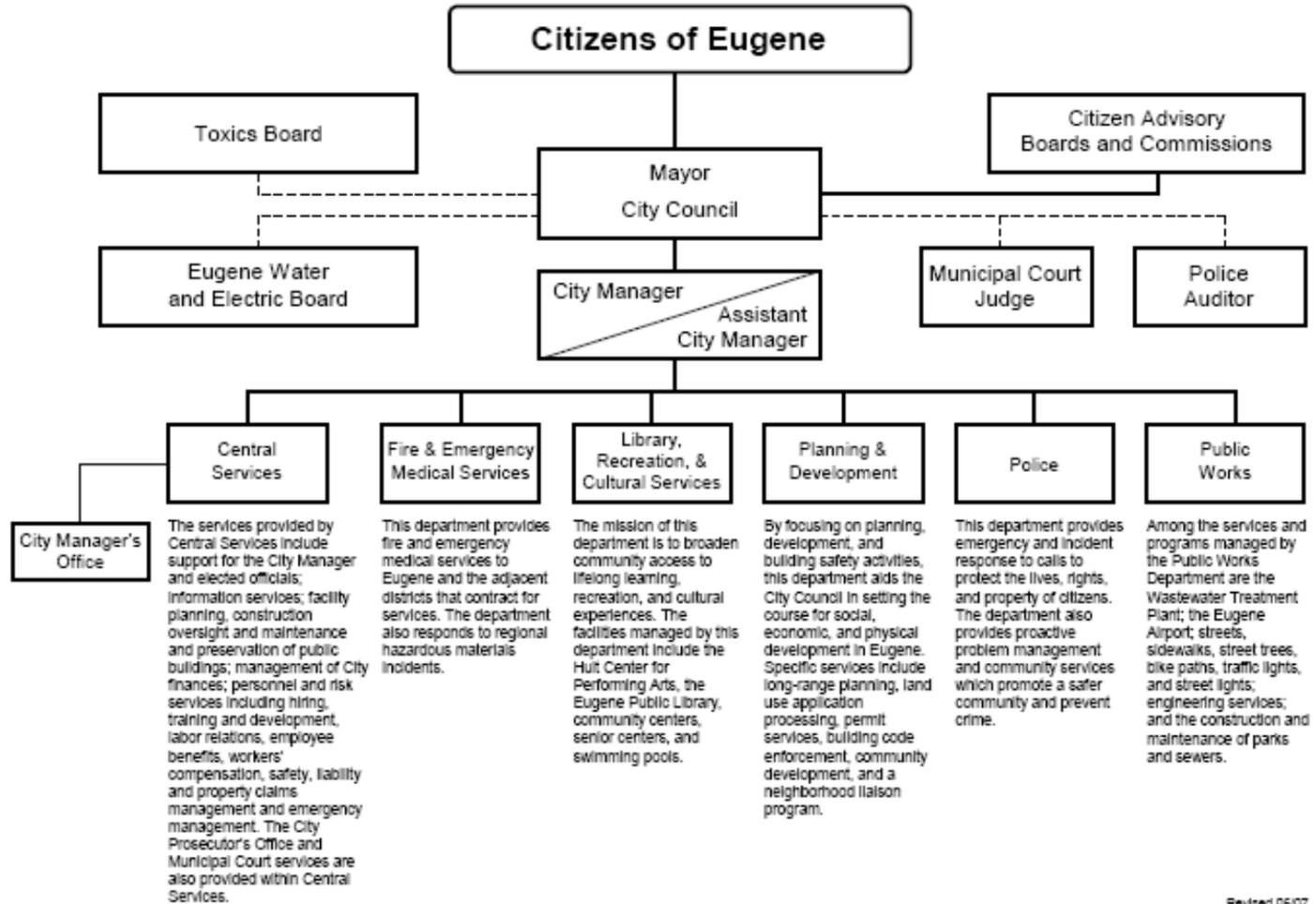
The City of Eugene provides stormwater management services for the City including water quality monitoring, stormwater capital improvements, operations and maintenance of the natural and constructed stormwater system, street sweeping, erosion prevention, illicit discharge investigation and enforcement, tree planting, and stormwater education. The Eugene Public Works Department has overall responsibility to implement the elements of the City's Stormwater Management Plan (SWMP), primarily the following five divisions: Administration, Engineering, Maintenance, Parks & Open Space, and Wastewater. The Eugene Planning & Development Department has responsibility for solid waste management, hazardous waste reduction, and implementation of Goal 5 natural resource and Goal 6 water quality waterway protections.

The City of Eugene provides operations and maintenance services for the regional wastewater treatment facilities owned by the Metropolitan Wastewater Management Commission. The WPCF is the second-largest treatment facility in the state. (Portland's Columbia River Road Plant is the largest). The cities of Eugene and Springfield each separately maintain their own local sanitary sewer systems. The separate sewer systems come together into a regional system which includes trunk lines, interceptor lines, force mains, pump stations and the Water Pollution Control Facility (WPCF, i.e., the treatment plant) where the wastewater is treated before being discharged into the Willamette River. The regional system also includes the Biosolids Management Facility, Biocycle Farm and Seasonal Industrial Waste Facility. The City of Eugene's industrial pretreatment program regulates potentially contaminated wastewater discharges from commercial and industrial activities to protect the environment and the regional wastewater collection and treatment facilities.

The City of Eugene owns and operates the Eugene Airport, which is located in west Eugene, outside of Eugene city limits and outside of the urban growth boundary.

Figure 2-3

City of Eugene Organizational Chart



Revised 05/07

c. Relevant Water Quality Permits and Programs

Discharges of surface water pollutants come from both “point” and “nonpoint” sources. Generally speaking, point sources enter surface waters via a pipe or other conveyances, whereas nonpoint sources discharge to surface waters directly or through overland flow (not via pipes or other conveyances). Discharge of industrial wastewater, municipal wastewater, and stormwater into waters of the United States are all regulated through the National Pollution Discharge Elimination System (NPDES) permitting program. The NPDES permitting program is authorized by Section 402 of the Clean Water Act and, in Oregon, the program is administered by the DEQ. The City of Eugene has obtained permits from DEQ under the NPDES program for its point source discharges to surface waters, including:

- Municipal Separate Storm Sewer System (MS4) permit #101244 (a permit issued to the City of Eugene for the municipal stormwater system discharges)
- Water Pollution Control Facility (WPCF) permit #102486 (a permit issued to the Metropolitan Wastewater Commission and the cities of Eugene and Springfield for the regional wastewater treatment plant discharges)
- General 1200Z Industrial Stormwater Permit for WPCF sites (a permit issued to the Metropolitan Wastewater Commission for the wastewater treatment plant located in and operated by the City of Eugene)
- General 1200Z Industrial Stormwater Permit for Eugene Airport (a permit issued to the City of Eugene for the regional airport located outside of the Eugene Urban Growth Boundary but operated by the City of Eugene)

These permits serve as the TMDL Implementation Plans for the discharges they cover. Modifications to activities governed by these permits to address the Willamette TMDLs will occur within the individual permit processes. This TMDL Implementation Plan incorporates relevant activities (i.e. activities that address TMDL-pollutants) so that an overall perspective is achieved. The TMDL Implementation Matrix in Appendix A reflects the current status of these permitted programs. As these permitted programs are adaptively managed to incorporate TMDL considerations, the TMDL Implementation Plan will be updated through the annual reporting process.

Municipal Separate Storm Sewer System (MS4) permit #101244

The City of Eugene holds a Phase I NPDES permit ²for the municipal stormwater it discharges directly into the Willamette River and indirectly into the Willamette River through other local waterways, including Amazon Creek. The City received its first MS4 permit in November 1994, its second-term MS4 permit in March 2004, and its third-term permit in December 2010. The permit includes requirements for stormwater and ambient water quality monitoring, annual reporting, adaptive management, and implementation of best management practices to reduce the discharge of pollutants from the municipal stormwater system to the maximum extent practicable. The 24 best management practices comprise the City’s Stormwater Management Plan (SWMP), most recently updated in December 2012. The 2010 MS4 Permit also includes specific TMDL-related requirements including conducting a TMDL wasteload allocation attainment assessment, a TMDL pollutant load reduction evaluation, and establishment of

² The full name of the permit is National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Discharge Permit. It is referred to as the municipal stormwater permit, NPDES permit, or MS4 permit.

TMDL pollutant reduction benchmarks. The City's 2010 MS4 Permit and current SWMP are available from the City's web site: <http://www.eugene-or.gov/PW> (Services > Stormwater > Planning, Permits & Regulations > NPDES). The 2012 SWMP is also included in this document as Appendix B.

National Pollutant Discharge Elimination System (NPDES) Wastewater Discharge Permit #102486 and General 1200Z Industrial Stormwater Permit for WPCF sites

The Metropolitan Wastewater Management Commission (MWMC) and the cities of Eugene and Springfield hold a NPDES permit for the discharge of treated wastewater to the Willamette River from the Eugene-Springfield Water Pollution Control Facility (WPCF). The MWMC also holds a permit for stormwater discharges from the WPCF and related Biosolids Management Facility site.

General 1200Z Industrial Stormwater Permit for Eugene Airport

The City of Eugene holds a General 1200Z permit for discharges of stormwater runoff from the Eugene Airport site to Amazon Creek and the A1 Channel, both of which eventually flow into the Long Tom River.

Administration of NPDES 1200-Z and 1700-A General Permits

The City currently acts as an agent for DEQ in the administration of 1200-Z (Industrial Stormwater) and 1700-A (Vehicle and Equipment Wash Water) General Permits inside Eugene city limits. The current Memorandum of Agreement (MOA) outlining the City and DEQ's respective responsibilities is attached as Appendix C of this document.

Administration of NPDES 1200-C General Permits

The City currently acts as an agent for DEQ in the administration of 1200-C (Construction Activities) General Permits inside city limits. The City also administers the Erosion Program outside city limits but inside the Eugene urban growth boundary under the City of Eugene/Lane County Stormwater Intergovernmental Agreement described in Section 2(e) of this Plan. The current MOA (effective July 7, 1997), outlining the City and DEQ's respective responsibilities, is attached as Appendix D-1 of this document. The 1997 MOA is in the process of being revised and updated.

d. Other Related Programs

Goal 5

Oregon's statewide planning goals provide the framework for land use planning within the state. Statewide Planning Goal 5 requires all Oregon cities and counties "to conserve open space and protect natural and scenic resources." The Goal itself, plus Oregon Administrative Rules establish specific procedures and criteria for Goal 5 compliance. The City of Eugene was required by the Oregon Department of Land Conservation and Development (DLCD), through the Metropolitan periodic review work program, to address Goal 5 requirements for wetlands, riparian corridors, and wildlife habitat sites. In November 2005, the Eugene City Council adopted regulations to protect many of the riparian areas, upland wildlife habitat areas, and wetlands on the city's natural resources inventory maps. The Goal 5 study area included all of the Eugene Urban Growth Boundary area, excluding sites that were previously considered for

protection in the West Eugene Wetlands Plan (WEWP) area. The Lane County Board of Commissioners followed with adoption of similar regulations for protected habitats in the area between city limits and the urban growth boundary in December 2006. Designated Goal 5 sites are depicted on the adopted map provided in Appendix E and Land Use Code regulations that apply to the designated Goal 5 sites can be found in Chapter 9 of the Eugene City Code (see Appendix G for Table of Contents; full text of the City Code can be found at the City's web site: <http://www.eugene-or.gov> and follow link to "Eugene Code").

Goal 6

In addition to the federal Clean Water Act regulations, Oregon Statewide Planning Goal 6 requires the City to maintain and improve water quality. As one mechanism for helping to address the Willamette TMDL and for implementing Goal 6, the Eugene City Council established a Water Quality (/WQ) Overlay Zone in 2009 that regulates uses and activities within and adjacent to the approximately 13.6 miles of waterways that have a significant relationship to 303(d)-listed water quality impaired waterways that would not be otherwise protected (e.g. by Goal 5 natural resource protections). Designated water quality protected waterways are depicted on the adopted map provided in Appendix F and Land Use Code regulations that apply to the designated Goal 6 waterways can be found in Chapter 9 of the Eugene City Code (see Appendix G for Table of Contents; full text of the City Code can be found at the City's web site: <http://www.eugene-or.gov> and follow link to "Eugene Code").

Sustainability

The City is committed to promoting a sustainable future that meets today's needs without compromising the ability of future generations to meet their needs. The City's sustainability efforts cover three broad areas: Social Equity, Environment, and Economy. Many of the community focused and internal initiatives the City undertakes have a component of all three aspects of sustainability.

The City established a Sustainability Commission in March 2007 following a recommendation from the Mayor's Sustainable Business Initiative taskforce. The Mission Statement of the Sustainability Commission is: to create a healthy community now and in the future by proposing measurable solutions to pressing environmental, social and economic concerns to the City of Eugene, its partners and its people.

The Commission acts as a policy advisory body to the Eugene City Council and City Manager in the initiation or development of programs that will create or enhance sustainable practices within the community. The commission advises on policy matters related to:

- Sustainable practices;
- Businesses that produce sustainable products and services;
- City building design and infrastructure; and
- Related issues that directly affect sustainability efforts considered by the city council.

More information on the City's Sustainability Program can be found on the City's web site at: <http://www.eugene-or.gov> and follow links to "Sustainable Eugene."

Low Impact Development

In early 2007 the City conducted a comprehensive review of its implementation of low impact development (LID) practices. The focus of the review was to identify barriers and regulatory or incentive-based approaches to increase the use of LID practices for stormwater management. The review team identified areas of regulation and programs with strong relevance to LID objectives and elements, identified the extent to which existing regulations and programs already implemented LID practices, and then identified the potential opportunities and barriers to increase use of LID practices. Key findings included:

- The City has adopted and implemented a broad spectrum of policies, plans, regulations, standards and programs which promote to the use of LID practices.
- While the degree of the City’s existing LID implementation is substantial, a variety of potential opportunities exist to increase use of LID. Primary options for increasing the use of LID practices for stormwater management include:
 - Potential land use code amendments in the areas of stormwater development standards, lot coverage with impervious areas, existing landscape & tree preservation, and waterway protection;
 - Continued implementation of green building and stormwater education programs;
 - Modifications to public improvement design standards and manuals;
 - Development and enhancement of incentive programs.
- Modest incentives for increasing LID practices currently exist; more substantive incentives may be feasible with commitment of additional resources.
- Barriers to increasing use of LID practices include competing demands for resources, complexities of implementing changes to regulations and existing programs, and challenges to balancing and integrating LID objectives with other City initiatives and priorities.

The results of the assessment were presented to the Eugene City Council in September 2008 for consideration of options to increase the use of LID practices in the community. The City Council decided to move forward with efforts to increase implementation of LID practices through administrative adjustments, additional integration of LID practices with other initiatives, development of proposals for land use code amendments, and development of proposals for other program enhancements.

A significant accomplishment in the area of implementing LID was the revision of City Code in 2014 to incorporate a hierarchy of best management practices emphasizing LID/green infrastructure facilities over mechanical facilities for water quality and flow control from developing properties. Stormwater Development Standards for new development and significant re-development can be found in Chapter 9 of the Eugene City Code (see Appendix G for Table of Contents; full text of the City Code can be found at the City’s web site: <http://www.eugene-or.gov> and follow link to “Eugene Code”).

e. Regional Partnerships

Stormwater Management

EPA adopted rules to implement “Phase II” of the municipal stormwater permitting program in December 1999. Phase II expanded the MS4 permitting program to include smaller communities located in United States census-defined urban areas, thus incorporating Springfield and Lane County Oregon. Phase II rules require communities to develop, implement and enforce stormwater management programs that address six minimum measures:

- Public education and outreach
- Public participation/involvement
- Unlawful discharge detention and elimination
- Construction site runoff control
- Post-construction site runoff control
- Pollution prevention/good housekeeping

The City of Springfield and Lane County Phase II MS4 permits were first issued in 2007. These permits which were scheduled to expire in 2012 have been administratively extended pending action by DEQ on second-term Phase II permits.

For the mutual benefit of both agencies, in 2004, Lane County and the City of Eugene entered into an intergovernmental agreement (IGA) to collaborate on stormwater program activities in the jurisdictional area outside of the Eugene city limits and within the Eugene urban growth boundary. The IGA, updated in 2011, is attached as Appendix H to this document. Under the current IGA, the City and County define shared responsibilities in the areas of stormwater education, erosion prevention, illicit discharge detection and elimination, and stormwater development standards for new/re-development.

In addition to informal communication and collaboration on a variety of topics related to water quality, the cities of Eugene and Springfield also partner on issue-specific public outreach and education efforts, such as pressure washing BMPs and the proper disposal of pet waste.

Long Tom Watershed Council

The City of Eugene and the Long Tom Watershed Council continue to partner on watershed restoration efforts, on an on-going basis. A recent example is partnering to incentivize the construction of stormwater retrofits on private developed property through the Council’s Amazon Initiative. On a pilot project basis, the City is contributing match funds to assist interested property owners with the cost to construct low impact development stormwater retrofits, and is providing technical assistance to the Council and property owners along the way. Other partnership efforts include collaborating on stormwater education activities and exploring potential new partnerships to promote riparian planting on private property along the City’s creeks and streams.

f. Public Involvement

There are many opportunities for public involvement in the City of Eugene's TMDL strategies. Recent new initiatives in the stormwater program are examples of the nature and extent of public outreach conducted by the City. One example is the public outreach leading up to proposed City Code changes aimed at incorporating a hierarchy of best management practices in the stormwater development standards to emphasize low impact development practices. Prior to City Council adoption in early 2014, City staff reached out to a broad set of interested groups and citizens to ensure a proposal that balanced various interests and still met the City's MS4 permit requirements. Outreach to a range of interests including the professional design and development communities was also conducted in advance of finalizing updates to the City's Stormwater Management Manual, also adopted in 2014.

The City of Eugene's various program internet web pages are updated frequently, to keep the community informed of new developments and how to access City services. In May 2012, the City launched its new web site designed to improve the on-line experience, provide easier access to information, and provide more ways to connect with the City. The new web site benefits all of the City's programs, including TMDL-related programs. At the outset of the web site upgrade project, the focus was on the user's perspective and creating a simple, easy-to-use site that allowed for better interaction and engagement between the City and residents, businesses and visitors. The City's web site features a new look that was created to feel fresh and welcoming, making it easier for the community members to stay connected, find information or request services. The website also provides more integration with social media programs like Facebook and Twitter. The new web site includes a main Stormwater page with links to a wide variety of stormwater program information and services: www.eugene-or.gov/stormwater..

3. WATER QUALITY ASSESSMENT

a. Water Quality Limited 303(d) Listings Addressed by TMDLs

Table 2-1 below identifies waterbodies addressed by the 2006 Willamette TMDLs that lie within or near the City of Eugene and may be affected by activities within the City of Eugene’s jurisdiction. The table also indicates the river miles affected, the TMDL parameter, and the season affected by the listing.

Table 2-1. Water Bodies and TMDL Pollutants

Subbasin	Waterbody Name	River Miles	Parameter	Season
Upper Willamette	Willamette River	50.6 to 186.5	Temperature	Year Round
Upper Willamette	Willamette River	0 to 186.4	Bacteria	Fall/Winter/ Spring
Upper Willamette	Willamette River	174.5 to 186.4	Mercury	Year Round
Upper Willamette	A3 Channel	mouth to headwaters	Bacteria	Year Round
Upper Willamette	Amazon Creek	0 to 22.6	Bacteria	Year Round
Upper Willamette	Amazon Creek Diversion Channel	0 to 3.5	Bacteria	Year Round
Upper Willamette	Amazon Creek Diversion Channel	0 to 3.5	Mercury	Year Round
Upper Willamette	Amazon Diversion Channel	0 to 1.8	Dissolved Oxygen	Spring/Summer/ Fall
Upper Willamette	Fern Ridge Reservoir /Long Tom River	0 to 24.2	Bacteria	Fall/Winter/ Spring
Upper Willamette	Fern Ridge Reservoir /Long Tom River	24.2 to 31.8	Turbidity	Year Round
Upper Willamette	Long Tom River	0 to 24.2	Temperature	Summer

b. TMDL Pollutants and Potential Sources of Pollutants within the City of Eugene’s Jurisdiction

TMDL pollutants in the vicinity of the City of Eugene’s jurisdiction include bacteria, mercury, turbidity, dissolved oxygen, and thermal loading (heat). The potential sources of these pollutants, as well as why these pollutants are of concern, are provided below. More detailed

information about sources and impacts of these pollutants can be found in Chapters 2 (Willamette Basin Bacteria TMDL), 3 (Willamette Basin Mercury TMDL), 4 (Temperature-Mainstem TMDL and Subbasin Summary) and 10 (Upper Willamette Subbasin TMDL) of the *Willamette Basin TMDL* (DEQ, 2006).

Thermal Loading (Heat)

Potential sources of thermal loading or heating of receiving waters include the removal or disturbance of shade-producing riparian vegetation along streams, channel modification and loss of channel complexity, treated wastewater and industrial discharges to surface waters, warming of urban runoff across unshaded impervious surfaces, water extraction, and dam and reservoir operations.

Concerns Associated with Increased Temperatures

At times, the Willamette River and its tributaries are too warm to support healthy salmon and trout populations. 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. Warm water interferes with adult salmon and trout migration and spawning. Warm water also decreases chances of juvenile survival, affects egg and embryo development, alters juvenile fish growth rates, and decreases their ability to compete with temperature-tolerant fish species for habitat and food. Salmon and trout are also more susceptible to disease when water temperatures are elevated.

Bacteria

Potential sources of bacteria in Eugene's waterways include:

- Wildlife animal waste (nutria, mice, squirrels), bird waste, domestic pet waste, and human waste carried in stormwater runoff.
- Sediment (bacteria tend to associate with soil particles and settle out of the water, but can accumulate and concentrate in deposited sediments, presenting a threat to health and safety if the sediments are stirred up.)
- Illicit cross connections between stormwater and wastewater systems.

Other common sources of bacteria not believed to be an issue for the City of Eugene include:

- Wastewater discharges (e.g. failing septic systems; leaky pipes; sewer overflows), where existing programs, city code, and enforcement are in place to address these potential sources.
- Illegal dumping of sanitary waste (RVs, septic haulers), where existing programs at the regional Water Pollution Control Facility are well established and utilized.
- Livestock waste, not applicable within Eugene city limits. Lane County fairgrounds stormwater system has been upgraded to include diversions to sanitary wastewater system for times when such diversion is necessary.

Concerns Associated with Bacteria

Bacteria is a concern because people can be affected by bacteria present in water when engaging in water activities such as swimming, wading, wind surfing, water skiing, boating, or fishing. Ingestion or contact with water contaminated with bacteria may cause skin and respiratory ailments, gastroenteritis and other illnesses in humans.

Mercury

Mercury is naturally occurring in soils; one likely source is erosion from construction sites. Contributions may also come from organic detritus (e.g., tree leaves and needles), and airborne deposition. Anthropogenic activities also affect mercury concentrations in receiving waters. Further study is necessary to characterize relative mercury contributions to receiving waters.

Potential sources of mercury in Eugene's waterways include:

- Household items containing mercury: thermometers; thermostats (non-electronic); fluorescent and other mercury vapor lighting (metal halide, high-pressure sodium and neon bulbs); automotive headlamps – (blue tint when lit); pilot light sensors (in some gas appliances: stoves, ovens, clothes dryers, water heaters, furnaces, space heaters); gauges (barometers, manometers, blood pressure and vacuum gauges); switches and relays (in some chest freezers, pre-1972 washing machines, sump and bilge pumps, electric space heaters, silent light switches, vehicles and farm equipment); clothes irons (automatic or tilt shut-offs); elemental mercury; vintage toys (toy drawing screens and mercury maze games); LA Gear® athletic shoes (made before 1997 with flashing lights in soles); batteries (mercuric oxide and some alkaline batteries); paint (latex manufactured before 1990, and some oil base-paints); Thimerosal or merbromin (in some antibacterial products).
- Mercury is naturally occurring in soil and water within the southern Willamette Basin. A significant source of mercury in the MS4 is likely from stormwater overland flow and erosion of disturbed soils. Sediments containing mercury may also be remobilized through re-suspension.
- Wetlands are significant sources of methyl mercury.
- Leaf litter
- Off-site vehicle tracking of construction soil onto paved surfaces.
- Stormwater mobilization of airborne particulate deposited onto impermeable surfaces.
- Geothermal springs are significant sources of Hg in the Willamette Basin.
- Mercury thermometers, manometers, and barometers in use by the public and school systems
- Mercury amalgam and associated dental wastes
- Automobile scrap yards
- Trace quantities of mercury are found in pesticides and fertilizers.
- Gold mining within the Willamette Basin
- Legacy site activities – Historical surface and subsurface activities have the potential to mobilize mercury via overland flow of stormwater or through subsurface interaction with groundwater. The A-3 Channel and Willamette River traverses industrial land use areas with confirmed or suspected hazardous substance releases.

Concerns Associated with Mercury

The accumulation of mercury in fish is a well recognized environmental problem throughout the United States. Mercury is a potent toxin that can cause damage to the brain and nervous system. Small children and the developing fetus are most sensitive to mercury's toxic effects. The primary way that humans are exposed to mercury is through the consumption of fish or seafood containing elevated levels of mercury.

Dissolved Oxygen

Pollutants such as nutrients, metals, and organic materials, deplete dissolved oxygen in the stream which directly affects its ability to support aquatic life. In this regard, dissolved oxygen can be used to assess overall water quality in terms of pollutants in that low dissolved oxygen concentrations can be indicative of high pollutant concentrations. An important factor controlling water's ability to retain dissolved oxygen is water temperature; high stream temperatures inhibit the ability of water to retain dissolved oxygen within the spaces between water molecules. During dry summer months water temperature may be the predominant factor in depleting dissolved oxygen, while during wet winter months pollutants transported by stormwater may be the predominant factor.

Potential sources of oxygen consuming pollutant and thermal loading in Eugene's waterways include:

- Loss of riparian vegetation and resultant increases in temperatures. The increased molecular activity of the warm water pushes the oxygen molecules out of the spaces between the moving water molecules.
- Bacteria and an excess amount of biological oxygen demand – BOD (untreated sewage, partially treated sewage, organic discharges, anoxic discharges) which use up dissolved oxygen.
- Fertilizer runoff from lawns and gardens. Fertilizer meant for land plants will also promote aquatic plant growth. If the weather becomes cloudy for several days, respiring plants will use much of the dissolved oxygen while failing to photosynthesize. When the increased numbers of aquatic plants eventually die, they support increasing amounts of bacteria which use large amounts of dissolved oxygen.
- Loss of channel complexity through widening, straightening and smoothing out of channel roughness for capacity enhancements.
- Backwater conditions from Fern Ridge during certain times of the year may also be a contributing factor.

Concerns Associated with Low Dissolved Oxygen

Amazon Creek and the Amazon Diversion Channel experience excessive algal growth due to excessive solar radiation levels, high temperatures, high nutrient concentrations, and low flows. Excessive growth of algae and other autotrophs in natural waters can result in significant diel fluctuations in DO and pH which may adversely impact aquatic life. Low oxygen levels can suffocate aquatic organisms, while excessively high or low pH levels can cause toxic effects ranging from growth and reproduction limitations to death.

Turbidity

Turbidity is directly related to Total Suspended Solids. Fine clay soils in the Amazon watershed are easily suspended when disturbed, and do not settle out easily or quickly. Potential sources of turbidity in Eugene's waterways include:

- Construction-related activities
- Erosion caused by increased runoff volumes and peak flows caused by urbanization
- Erosion caused by the removal or reduction of streamside vegetation

Concerns Associated with Turbidity

Excessive fine particulate material in streams can have a number of undesirable effects on the stream biota (Mulvey and Hamel, 1998). It can decrease primary productivity by smothering, abrading or shading photosynthesizing organisms. Excessive fine particulate material can deposit and adversely impact macroinvertebrate assemblages by filling in habitat space and reducing oxygen supply. Excessive fine particulate material may also harm fish and amphibian communities by covering respiratory surfaces, smothering eggs laid in spawning gravel, trapping emerging newly hatched fry in spawning gravel, decreasing food availability and visual feeding efficiency, and by filling in pools and interstitial habitat spaces.

4. TMDL MANAGEMENT STRATEGIES

This section includes a general description of the management strategies for each TMDL pollutant. Appendix A includes a detailed list of activities implemented or planned by the City of Eugene for each TMDL pollutant to carry out the strategy described below. The Appendix A matrix includes all of the City of Eugene’s activities that address the Willamette Basin TMDL pollutants, and indicate for each strategy:

- The TMDL pollutant(s) addressed (the strategy either “clearly addresses the TMDL” or “possibly addresses the TMDL”)
- The watershed(s) within which the strategy is conducted (Amazon watershed or the Willamette River watershed, or both), and
- Whether the primary driver for the strategy is another permit or program (“x”) or the Willamette Basin TMDL (“X”).

As expressed in Section 2c, the discharge of industrial wastewater, municipal wastewater, and stormwater into waters of the United States are all regulated through the National Pollution Discharge Elimination System (NPDES) permitting program. The City of Eugene’s permits under the NPDES program for its point source discharges to surface waters, including the Municipal Separate Storm Sewer System (MS4) permit, the MWMC NPDES wastewater discharge permit (a permit issued to the Metropolitan Wastewater Commission and the cities of Eugene and Springfield), the General 1200Z Industrial Stormwater Permit for WPCF sites (a permit issued to the Metropolitan Wastewater Commission), and the General 1200Z Industrial Stormwater Permit for Eugene Airport all serve as the TMDL Implementation Plans for the discharges they cover. In order to provide an overall perspective on the City’s efforts to address the Willamette TMDL, however, this plan describes strategies from these other permits. As a consequence, where this plan includes a description of a strategy from another permit, that description may change from what is included in this Plan as the strategy evolves under the other permit (for example, through adaptive management).

Temperature Management Strategy

Eugene’s temperature management strategy is combination of meeting wastewater treatment facility discharge permit conditions and permitted industrial discharges with respect to temperature, implementing streamside buffers to protect existing riparian vegetation and other water quality attributes, enhancing streamside shading on public property through existing planting programs, fostering partnerships to potentially enhance streamside shading on private property, seeking additional funding for large environmental restoration projects, and targeted educational outreach.

Table 4-1. Temperature Strategy Elements

Temperature Strategy Element	Governing Permit/Program
1. Meet wastewater treatment facility NPDES permit conditions as they relate to temperature.	NPDES – Wastewater permit
2. Document riparian area tree and willow planting. Utilize the Amazon Basin Streamside Shading Assessment to direct tree and willow planting activities in the next five years. Areas within Amazon Creek and its tributaries that do not have riparian vegetation that promotes shading will be emphasized. (BMP P3)	NPDES MS4 permit, TMDL
3. Coordinate with partners such as watershed councils and other local non-profits to generate interest and address gaps in riparian plantings on private property along Amazon Creek and its tributaries.	TMDL
4. Continue to track and document the implementation of local Statewide Planning Goal 5 (natural resources) and 6 (water quality) waterway setback protections.	Goal 5, Goal 6, TMDL
5. As part of existing programs, actively seek external sources of funding including grants and loans for implementing large environmental restoration projects. (BMP E1)	NPDES MS4 permit , TMDL
6. In coordination with the City's MS4 Permit stormwater program, seek and try out new ways of educating and informing citizens about water quality issues including for TMDL parameters, the impacts of individual actions, and the progress we have made so far in our community. (BMPs A1, P1)	NPDES MS4 permit , TMDL

Bacteria Management Strategy

Eugene’s bacteria management strategy is a combination of targeted education, existing systematic field screening and investigation, existing maintenance practices, stormwater development standards, continuation of a study to identify bacteria source(s), water quality monitoring, waterway protection measures, proactively lining existing wastewater siphons, and identifying remaining septic systems as part of the Wastewater Master Plan update.

Table 4-2. Bacteria Strategy Elements

Bacteria Strategy Element	Governing Permit/Program
1. In coordination with the City's MS4 Permit stormwater program, seek and try out new ways of educating and informing citizens about water quality issues including for TMDL parameters, the impacts of individual actions, and the progress we have made so far in our community. (BMPs A1, P1).	NPDES MS4 permit, TMDL
2. Support existing systematic field screening and investigation program and illicit discharge programs (BMPs M1, M2, M7).	NPDES MS4 permit
3. Support existing system maintenance programs (BMPs M3, M5, P5) to remove sediment from the system including pollutants, such as bacteria, attached to the sediment.	NPDES MS4 permit
4. Administer stormwater development standards (BMPs E4, M6, P6).	NPDES MS4 permit
5. Continue implementation of bacteria pilot study (P2) in a strategically selected study area to focus efforts to identify source(s) of bacteria, apply various BMPs (e.g. targeted education, riparian vegetation enhancements) to reduce bacteria, and evaluate the effectiveness of the BMPs. Coordinate water quality monitoring with storm event monitoring.	NPDES MS4 permit
6. Include in the Stormwater Monitoring Program sampling location(s) representative of natural background conditions.	NPDES MS4 permit
7. Comply with MS4 permit conditions related to TMDLs, including updating TMDL benchmarks and estimating bacteria pollutant load reductions, as part of the 2015 MS4 permit renewal process	NPDES MS4 permit
8. Meet NPDES WPCF permit conditions as they relate to bacteria.	NPDES – WPCF permit
9. Meet NPDES WPCF 1200-Z permit conditions as they relate to bacteria.	NPDES – WPCF 1200Z permit
10. Continue to track and document the implementation of local Goal 5 (natural resources) and 6 (water quality) waterway setback protections.	Goal 5, Goal 6, TMDL
11. Continue efforts to proactively line existing wastewater siphons.	Wastewater Program
12. As part of the Wastewater Master Plan update, identify remaining septic systems within the master planning area.	Wastewater Program

Mercury Management Strategy

Eugene’s proposed mercury management strategy is a combination of the existing erosion control program and other programs that include activities to address soil erosion and bank stabilization, existing maintenance practices, existing household hazardous waste disposal program, targeted education and outreach, stormwater development standards, waterway protection measures, water quality monitoring, and continuing to develop an evaluation mechanism to establish a Pollution Management Program for dental wastes and the implementation of dental waste BMPs.

Additional mercury reductions may be realized by the State of Oregon’s efforts to address legacy contributions. The state’s Environmental Cleanup Site Information database lists all sites having known or potential contamination from hazardous substances; of those listed over 50 sites in Eugene have confirmed or suspected pollutant releases. The state’s environmental cleanup-site information database includes cases whereby surface or subsurface confirmed or suspected pollutant releases occurred prior to implementation of hazardous substances regulatory controls. Investigation of many of these cases by state authorities is ongoing and in the long term should result in site remediation, however based upon input from DEQ staff³, it is expected that only a small fraction of these sites represent potential sources of mercury.

Table 4-3. Mercury Strategy Elements

Mercury Strategy Element	Governing Permit/Program
1. Support the existing erosion control program, tree planting program, and vegetation management programs (BMPs E2, P3, P4, P5) to keep disturbed soils and associated naturally occurring trace metals such as mercury out of Eugene’s stormwater system.	NPDES MS4 permit
2. Support existing system maintenance efforts, including system cleaning, leaf pick up and street sweeping (BMPs M3, M5, P5) which are effective means of preventing leaf litter and road particulate that may contain mercury from entering the MS4 system.	NPDES MS4 permit
3. Support Lane County’s existing Household Hazardous Waste disposal program (BMP B1) to ensure proper disposal of household items that may contain mercury.	NPDES MS4 permit
4. In coordination with the City’s MS4 Permit stormwater program, seek and try out new ways of educating and informing citizens about water quality issues including for TMDL parameters, the impacts of individual actions, and the progress we have made so far in our community. (BMPs A1, P1).	NPDES MS4 permit, TMCL
5. Administer stormwater development standards (BMP E4, M6, P6).	NPDES MS4 permit
6. Continue to track and document the implementation of local Goal 5 (natural resources) and 6 (water quality) waterway setback protections.	Goal 5, Goal 6, TMDL
7. Include in Eugene’s Stormwater Monitoring Plan storm-event sampling and analysis for mercury to characterize MS4 runoff.	NPDES MS4 permit

³ E-mail entitled “Comments on Eugene’s TMDL Implementation Plan” dated May 29, 2008 from DEQ staff.

<p>8. Comply with MS4 permit renewal conditions related to TMDLs. Implementation of the Willamette Mercury TMDL will take a phased approach, with monitoring requirements expected for the first phase to support DEQ's development of Wasteload Allocations for the second phase.</p>	<p>NPDES MS4 permit</p>
<p>9. Meet WPCF NPDES permit conditions as they relate to mercury.</p>	<p>NPDES – WPCF permit</p>
<p>10. Meet NPDES WPCF 1200-Z permit conditions as they relate to mercury.</p>	<p>NPDES – WPCF 1200Z permit</p>
<p>11. Continue to develop an evaluation mechanism to establish a pollution management practices (PMP) program for dental wastes and the implementation of dental waste best management practices (BMPs). Further data will be gathered using a key point monitoring program combined with on-going influent, effluent and biosolids monitoring. This monitoring will help to ensure the effectiveness of the best management practices as they relate to compliance with currently established effluent limitations for discharge to Eugene and/or Springfield's sanitary sewer collection systems. Upon completion of the evaluation (assuming the desired results are observed) and issuance of a new MWMC NPDES waste discharge permit, a PMP for dental wastes will be formally adopted and implemented.</p>	<p>Wastewater Program, TMDL</p>

Dissolved Oxygen Management Strategy

Eugene’s proposed dissolved oxygen management strategy is a combination of targeted educational outreach, existing maintenance practices, existing erosion control program, riparian tree planting and vegetation management programs, stormwater development standards, waterway restoration capital projects, and waterway protection measures.

Table 4-4. Dissolved Oxygen Strategy Elements

Dissolved Oxygen Strategy Element	Governing Permit/Program
1. In coordination with the City's MS4 Permit stormwater program, seek and try out new ways of educating and informing citizens about water quality issues including for TMDL parameters, the impacts of individual actions, and the progress we have made so far in our community. (BMPs A1, P1).	NPDES MS4 permit, TMDL
2. Support existing system maintenance efforts related to system cleaning, open waterway maintenance, street sweeping, leaf pick up, and vegetation management (BMPs M3, M5, P5), to minimize the introduction of oxygen consumers from entering the MS4 system.	NPDES MS4 permit
3. Support the Erosion Control program (BMP E2) to keep sediment and associated oxygen consumers out of the MS4 system.	NPDES MS4 permit
4. Support existing planting programs (P3) and public lands and vegetation management programs (P4) for enhanced shading and improved DO.	NPDES MS4 permit
5. Administer stormwater development standards, including source controls for high pollutant source land uses (BMP E4).	NPDES MS4 permit
7. Comply with MS4 permit conditions related to TMDLs, including establishing benchmarks for dissolved oxygen as part of the 2015 permit renewal process	NPDES MS4 permit
8. As part of existing programs, actively seek external sources of funding including grants and loans for implementing large environmental restoration projects. (BMP E1).	NPDES MS4 permit, TMDL
9. Continue to track and document the implementation of local Goal 5 (natural resources) and 6 (water quality) waterway setback protections.	Goal 5, Goal 6, TMDL

Turbidity Management Strategy

Eugene’s proposed turbidity management strategy is combination of existing erosion control program and other programs that include activities to address soil erosion and bank stabilization, existing maintenance practices, stormwater development standards, targeted outreach and education, and waterway protection measures.

Table 4-5. Turbidity Strategy Elements

Turbidity Strategy Element	Governing Permit/Program
1. Support the erosion control program, tree planting program, and vegetation management program (BMPs E2, P3, P4, P5) to keep disturbed soils and associated naturally occurring trace metals such as lead out of Eugene's stormwater system.	NPDES MS4 permit
2. Support existing system maintenance efforts, including system cleaning and street sweeping (BMPs M3, M5, P5) which are effective means of preventing sediment from entering the MS4 system.	NPDES MS4 permit
3. Administer stormwater development standards including headwater flow controls (BMP E4).	NPDES MS4 permit
4. In coordination with the City's MS4 Permit stormwater program, seek and try out new ways of educating and informing citizens about water quality issues including for TMDL parameters, the impacts of individual actions, and the progress we have made so far in our community. (BMPs A1, P1).	NPDES MS4 permit
6. Continue to track and document the implementation of local Goal 5 (natural resources) and 6 (water quality) waterway setback protections.	Goal 5, Goal 6, TMDL

5. PERFORMANCE MONITORING, PLAN REVIEW, REVISION, AND REPORTING

The City of Eugene will continue to report to DEQ annually on the status of management strategies implemented in response to the TMDL. The City would like to work with DEQ to coordinate timelines and reporting format if appropriate, for other related regulatory reports, in particular the MS4 annual report. The City will continue to perform the stormwater and ambient water quality monitoring required under its MS4 permit and will report those results in the annual MS4 report.

The City conducted a review of its first five years of TMDL implementation and submitted the review report to DEQ in March 2014. The City will again evaluate Implementation Plan progress and effectiveness at the end of the 10-year TMDL cycle, in 2018. The evaluation will include a review of existing water quality data, performance measures data, and other information to evaluate the effectiveness of the Plan. The evaluation report will include any modifications to the plan including additional efforts to achieve the goals of the TMDL and a timeline for accomplishing them.

6. EVIDENCE OF COMPLIANCE WITH LAND USE REQUIREMENTS

All of the strategies outlined within and listed in the matrix in Appendix A that constitute land use decisions for purposes of ORS Chapter 197 are activities that previously have been determined as consistent with statewide land use requirements. For example, as part of the adoption processes for the /WQ overlay zone ordinance and the /WR overlay zone ordinance, findings were developed which showed consistency with state land use requirements.

7. ADDITIONAL REQUIREMENTS AS INDICATED IN THE WQMP

Funding

The majority of the TMDL implementation plan measures are being conducted under existing programs, most notably the stormwater management program and the wastewater management program. The primary funding sources for these programs are stormwater user fees, wetland mitigation bank fees, wastewater user fees, and systems development fees. Stormwater user fees and wetland mitigation bank fees pay for the operation, construction and maintenance of the stormwater drainage system and the wetland resource protection and enhancement program. Wastewater user fees pay for the construction, operation and maintenance of the wastewater collection and treatment system. Systems development fees fund capacity-enhancing projects including for stormwater, wastewater and parks systems. The City's proposed Fiscal Year 2015 Budget is available on the City's web site at: <http://www.eugene-or.gov/> (and select Departments > Central Services > Finance > Budget).

Legal Authorities

The City Attorneys' Office has determined that the City has legal authority to implement the management strategies. The City is a home-rule city. Section 4 of the Eugene Charter grants to the City all powers that the constitution or laws of the United States or Oregon allow cities. The Oregon appellate courts recently confirmed that such a grant of power within a city charter means that the city has the authority to undertake any activity that is not prohibited by federal or

state constitutions or statutes. Under the Eugene Charter, that power rests primarily with the City Council (which exercises that power principally through adoption of ordinances and resolutions), and with the City Manager (who exercises regulatory power primarily through adoption of administrative rules). The Eugene City Council has adopted a number of ordinances related to implementation of strategies referenced in the City's TMDL implementation plan, and the City Manager has adopted administrative regulations to implement many of those ordinances. The ordinances are codified in the Eugene Code. A copy of the Table of Contents for Chapters 6 (Environment & Health), 7 (Public Improvements) and 9 (Land Use) of the Eugene Code is provided as Appendix G. The complete Eugene City Code is available on the internet at: <http://www.eugene-or.gov>

MS4 SWMP BMP ID (if applicable) ⁽¹⁾	BMP or Activity	Appendix A - City of Eugene TMDL Implementation Plan Matrix (Updated 6-30-14)				TMDL Pollutants Addressed ⁽²⁾					Water-shed ⁽³⁾		Regulatory Program(s) ⁽⁴⁾							
		Description of BMP or Activity	Measurable Goals & Timeline	Tracking Measures What is being tracked to show progress towards meeting measurable goals	Milestone Intermediate goals to know progress is being made	Bacteria	Temperature	Hg	DO	Turbidity	Amazon	Willamette	NPDES MS4	NPDES 1200Z - WPCF	NPDES 1200Z - Airport	NPDES - Wastewater	Underground Injection Control	Goal 5	Goal 6	Willamette TMDLs
WATERWAY PROTECTION, RESTORATION & SHADING																				
Related to BMP P3	Enhance streamside shading on public property with an emphasis on Amazon Creek	Document riparian area tree and willow planting. Utilize the Amazon Basin Streamside Shading Assessment to direct tree and willow planting activities in the next five years. Areas within Amazon Creek and its tributaries that do not have riparian vegetation that promotes shading will be emphasized.	Plant trees (goal=200 trees/year, on average) along Amazon Creek and its tributaries. Plant willows (goal=2,000 lineal ft/year, on average) along Amazon Creek and its tributaries.	<ul style="list-style-type: none"> Number/type of trees planted along Amazon Creek and its tributaries annually Number/lineal miles of willow plantings along Amazon Creek and its tributaries annually Number/type of trees planted along other waterways annually Number of willow plantings along other waterways annually Map all new plantings 	Annual review	P	√	P	√	P			x							X
	Enhance streamside shading on private property with an emphasis on Amazon Creek	Coordinate with partners such as watershed councils and other local non-profits to generate interest and address gaps in riparian plantings on private property along Amazon Creek and its tributaries.	Meet one time per year with watershed councils or other non-profits to identify opportunities on private property for potentially incorporating streamside shading.	<ul style="list-style-type: none"> Number of meetings with local watershed councils and other non-profits per year to identify potential shading opportunities on private property in riparian areas 	Annual review	P	√	P	√	P										X
	Stream buffers/riparian protection	Continue to track and document the implementation of local Goal 5 (natural resources) and 6 (water quality) waterway setback protections.	Track implementation of /WR (Water Resources) and /WQ (Water Quality) Overlay Zones	<ul style="list-style-type: none"> Number of land use and development permit applications involving /WR and /WQ Overlay Zones Number of applications for adjustments to the /WR and /WQ Overlay Zones 	Annual review	√	√	√	√	√								X	X	X
Related to BMP E1	Funding for environmental restoration capital projects	As part of existing programs, actively seek external sources of funding including grants and loans for implementing large environmental restoration projects.	Maintain updated list of environmental restoration capital projects and associated planning-level cost estimates.	<ul style="list-style-type: none"> Number of environmental restoration capital projects and planning-level cost estimates 	Annual review								X			X				x
BACTERIA REDUCTION STRATEGIES (NOT ASSOCIATED WITH EXISTING PERMITS)																				
	Siphon lining	Continue efforts to proactively line existing wastewater siphons.	Complete approximately 1 to 3 wastewater siphon lining projects per year.	<ul style="list-style-type: none"> Number and location of wastewater siphon lining projects completed. 	Quarterly updates of wastewater rehabilitation projects via PWE major projects list	√														x
	Septic systems	As part of the Wastewater Master Plan update, identify remaining septic systems within the master planning area.	Wastewater Master Plan Update coordinated with Envision Eugene process and timeline	<ul style="list-style-type: none"> Wastewater Master Plan included in Public Works Engineering (PWE) Major Projects List. 	Quarterly updates of WWMP via PWE major projects list	√														x

Appendix A - City of Eugene TMDL Implementation Plan Matrix (Updated 6-30-14)						TMDL Pollutants Addressed ⁽²⁾					Water-shed ⁽³⁾		Regulatory Program(s) ⁽⁴⁾							
MS4 SWMP BMP ID (if applicable) ⁽¹⁾	BMP or Activity	Description of BMP or Activity	Measurable Goals & Timeline	Tracking Measures What is being tracked to show progress towards meeting measurable goals	Milestone Intermediate goals to know progress is being made	Bacteria	Temperature	Hg	DO	Turbidity	Amazon	Willamette	NPDES MS4	NPDES 1200Z - WPCF	NPDES 1200Z - Airport	NPDES - Wastewater	Underground Injection Control	Goal 5	Goal 6	Willamette TMDLs
						MERCURY REDUCTION STRATEGIES (NOT ASSOCIATED WITH EXISTING PERMITS)														
	Dental waste	Continue to develop an evaluation mechanism to establish a pollution management practices (PMP) program for dental wastes and the implementation of dental waste best management practices (BMPs). Further data will be gathered using a key point monitoring program combined with on-going influent, effluent and biosolids monitoring. This monitoring will help to ensure the effectiveness of the BMPs as they relate to compliance with currently established effluent limitations for discharge to Eugene and/or Springfield's sanitary sewer collection systems. Upon completion of the evaluation (assuming the desired results are observed) and issuance of a new MWMC NPDES waste discharge permit, a PMP program for dental wastes will be formally adopted and implemented.	Continued evaluation of the ten areas previously outlined in the MOA between ODA, MWMC and the cities of Eugene and Springfield as they correlate to data gathered from key point monitoring and POTW influent/effluent/biosolids monitoring.	• Evaluate effectiveness of compliance with ODA BMPs, for dental offices in Eugene as they relate to existing effluent limitation for discharge to the City's sanitary sewer system.	Evaluate the effectiveness of implementing the 2006 MOA ten specific services as they relate to compliance with existing limitations for discharge to the City's sanitary sewer system.			√							X					x
OUTREACH AND EDUCATION																				
Related to A1, P1	Outreach and education	In coordination with the City's MS4 Permit stormwater program, seek and try out new ways of educating and informing citizens about water quality issues including for TMDL parameters, the impacts of individual actions, and the progress we have made so far in our community.	See MS4 BMPs A1 and P1 below	See BMPs A1 and P1	Annual review	√	√	√	√	√			X							x

		Appendix A - City of Eugene TMDL Implementation Plan Matrix (Updated 6-30-14)					TMDL Pollutants Addressed ⁽²⁾					Water-shed ⁽³⁾		Regulatory Program(s) ⁽⁴⁾									
MS4 SWMP BMP ID (if applicable) ⁽¹⁾	BMP or Activity	Description of BMP or Activity	Measurable Goals & Timeline	Tracking Measures		Milestone	Bacteria	Temperature	Hg	DO	Turbidity	Amazon	Willamette	NPDES MS4	NPDES 1200Z - WPCF	NPDES 1200Z - Airport	NPDES - Wastewater	Underground Injection Control	Goal 5	Goal 6	Willamette TMDLs		
				What is being tracked to show progress towards meeting measurable goals	Intermediate goals to know progress is being made																		
MUNICIPAL SEPARATE STORMWATER SEWER SYSTEM (MS4) NPDES PERMIT																							
Public Education																							
A1	Stormwater Education	<p>Plan, develop, implement and revise as necessary a program to provide stormwater information and education to homeowners, school children, City and other agency staff and the general public about the impacts to stormwater quality and natural resource values from both point and non-point sources of pollution.</p> <p>In addition, educate professional, commercial, and industrial businesses about best management practices that can help prevent and reduce stormwater quality impacts to the public stormwater system and local receiving waters.</p>	<ul style="list-style-type: none"> Conduct surveys every two years with Eugene residents to determine attitudes and opinions of residents about the stormwater management program. Provide SPLASH educational curriculum to teachers and administrators in local school districts. Develop and implement internal stormwater education to city staff through new employee orientation, "green team" presentations, work group presentations and audio/visual presentation. Increase catch basin markers with "dump no waste" messages and storm drain covers installed on public improvement projects. Work collaboratively on education campaigns with other local agencies. 	<ul style="list-style-type: none"> Number of information materials (all media) prepared and distributed to the public. Number of students and teachers who use SPLASH curriculum annually. Number of attendees at public outreach events. Number of employees attending stormwater education sessions. Track quantity of installed catch basin markers and storm drain covers. Identify collaborative campaigns, target audience and summary of campaign. Documentation of stormwater survey responses. 			√	√	√	√	√			X								X	
P1	Educational Volunteer Program	<p>Manage and support the City's Eugene Park Stewards volunteer program that promotes stormwater education. Provide opportunities to involve citizens of all ages and socio-economic backgrounds in meaningful, hands-on and educationally oriented stormwater related projects. Such projects are aimed at providing both physical benefits and participant awareness related to protecting stormwater quality, fostering citizen stewardship of the City's water resources, promoting the use of native-vegetation, and enhancing fish and wildlife habitat within the local urban watershed.</p>	<ul style="list-style-type: none"> As attrition occurs continue to recruit replacement adoption groups to maintain current levels of participation. Conduct one volunteer work party annually that will address maintenance needs at publicly owned vegetated stormwater facilities with developed parks or the right of way. On average, conduct 12 volunteer work parties per year. Conduct at least one partnership based large-scale water resource clean-up or enhancement volunteer project per year. Correspond with the city's stormwater education program coordinator on a regular basis to determine if there are opportunities to better inform the public regarding the challenges and benefits of stormwater management. 	<ul style="list-style-type: none"> Number of adoption groups that are retained and continue to participate in the volunteer program. Track number of new adoption groups brought into the program. Number of volunteer work parties conducted that involve maintenance of publicly owned vegetated stormwater facilities and number of volunteer participants. Number of work parties conducted and number of volunteer participants. Document annual large-scale project(s), participating partners and number of volunteer participants. Document annually efforts to educate the public about the city's volunteer programs and the protection of water quality as it relates to stormwater. 			√	√	√	√	√			X									X

Appendix A - City of Eugene TMDL Implementation Plan Matrix (Updated 6-30-14)						TMDL Pollutants Addressed ⁽²⁾					Water-shed ⁽³⁾		Regulatory Program(s) ⁽⁴⁾								
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Planning, Capital Improvements, and Data Management																					
E1	Stormwater Capital Improvement Projects	<p>Implement the Stormwater capital improvement program (CIP), including projects identified in the City's Stormwater Basin Master Plans (Basin Plans) for Amazon, Willow Creek, Bethel-Danebo, Willakenzie, Laurel Hill, Willamette River, and River Road – Santa Clara basins.</p> <p>The Basin Plans describe a multiple-objective strategy for managing stormwater that addresses water quality protection and improvement, conveyance and flood control, and waterway protection and restoration. The basin strategies reflect the unique characteristics, problems and opportunities in each basin. Volume I contains a prioritized city-wide capital projects list including: water quality facilities in high pollutant source areas, streambank stabilization, stream restoration, and capacity enhancement projects.</p> <p>The Basin Plan capital projects are one of the main sources of capital projects that comprise the City's CIP. In addition to the Basin Plans, CIP projects also originate from a list of maintenance and rehabilitation needs, from focused planning studies such as the Metro Waterways Restoration Study, and other partnership opportunities. The prioritized Basin Plan capital projects are combined with projects from these other sources, re-ranked, and incorporated into the CIP in a timeframe in-line with available budget.</p>	<ul style="list-style-type: none"> Incorporate into the CIP projects list the projects identified in the recently completed 2010 River Road-Santa Clara Basin Plan, by September 2010. Implement Stormwater CIP projects including at least one "water quality facilities in high source areas" project over the five-year permit term, and other retrofits as opportunities arise. 	<ul style="list-style-type: none"> Document completion of River Road-Santa Clara Basin Plan. Track the number, type, watershed location and total drainage area of capital improvement projects constructed for water quality. 		√	√	P	√	√			X					X			x
E3	Stormwater System Mapping and Data Management	<p>Keep up-to-date inventories and maps of the public and private, natural and constructed, stormwater system. Include mapping of public and private water quality and flow control facilities such as grassy swales and detention basins. Develop and integrate asset inventory data and geographic information system (GIS) systems which describe the conveyance system, water quality attributes and related natural resource information. Integrate information generated through BMPs such as E1 (Capital Improvement Projects) and E4 (Development Standards) which create or modify system components and/or change the attributes of the stormwater system.</p>	<ul style="list-style-type: none"> Enter 95% of all newly constructed stormwater system features into inventory databases and GIS within six months of final construction approval. Ensure that 90% of GIS and data application users surveyed rate the GIS/data systems as satisfactory or better. 	<ul style="list-style-type: none"> Report on map and database update activities annually. Survey map and data system users bi-annually. 	NA								X				X			x	

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P2	Bacteria Pilot Study	<p>Amazon Creek is water quality limited for bacteria and load reductions of 84% are necessary as specified in the 2006 Willamette Basin Bacteria TMDL.</p> <p>The Bacteria Pilot Study includes three phases: Phase I focuses on efforts to identify source(s) of bacteria, followed by Phase II which focuses on the application of Bacteria Pilot Study BMPs ("BMPs") aimed at reducing bacteria, and followed by Phase III which focuses on evaluating the effectiveness of BMPs that are implemented.</p> <p>Based on monitoring and site assessment work initiated with the 2005 Stormwater Management Plan the overall strategy for continuation of the Bacteria Pilot Study will be a more targeted approach that will narrow down the number of probable sources for investigation of the root of bacterial pollution within a selected study area. This more targeted approach will lead the City towards implementing Phase II and Phase III of the study.</p>	<ul style="list-style-type: none"> Collect and analyze stormwater samples within the study area during at least three (3) significant wet weather storm events per year for the duration of the permit cycle. Report on all field condition assessments completed during the permit year. Show how collected field data is used to confirm or eliminate bacteria sources. Initiate at least two (2) new BMPs by December 2011 that will either identify or rule out specific sources of bacterial contributions to the MS4 within the study area. Starting in July 2012, initiate at least one new BMP per year that will address identified specific sources of bacteria with the study area. Develop an electronic case history file by February 2011 that contains documentation of findings and results that can be utilized by staff to evaluate overall success of study. Report on results of stormwater sampling and analysis in association with implemented BMPs with emphasis on showing the effectiveness of the BMP selected. 	<ul style="list-style-type: none"> Track the number of sampling events, samples collected, and resulting bacteria analysis results. Track the number of field condition surveys conducted, the weather and antecedent weather patterns, and correlate noted conditions with results of sampling analysis. Document additional source identification BMPs, BMP activity and any conclusions derived as a result of conducting the BMP. Document additional bacteria reduction BMPs and BMP activity. Document all follow up sampling and analysis and conclusions derived regarding BMP effectiveness. 		√							X								X
Construction and New Development																					
E2	Erosion Prevention and Construction Site Management Program	Administer and monitor an Erosion Prevention and Construction Site Management Program in compliance with Eugene Code 6.625-6.645, preventing and mitigating pollutant and sediment discharges into the city's stormwater system due to construction activities and land disturbance.	<ul style="list-style-type: none"> Conduct one inspection prior to the commencement of work for all erosion permitted sites. Inspect non-erosion-permitted sites at least twice during the life of the building/construction permit or as necessary to assure compliance with the program. Inspect permitted sites monthly or as necessary to assure compliance with the program. Conduct one annual erosion prevention training event. 	<ul style="list-style-type: none"> Number of compliance orders issued. Number of permits issued. Number of inspections. Number of training/outreach events. 	NA	√		√	√	√			X								x

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E4	Stormwater Development Standards	Administer and monitor a program that implements the city's Stormwater Development Standards, Eugene Code 9.6790-9.6796, Eugene Code 7.143 (3), and associated Stormwater Management Manual. The Stormwater Development Standards regulate the location, design, construction and maintenance of private and public stormwater facilities for flood control, water quality, and natural resource protection.	<ul style="list-style-type: none"> Review stormwater management proposals at the land use and/or development permit stage (i.e. earliest level of review). Review and approve construction plans for stormwater management facilities for all development sites which create 1000 square feet or more impervious surface. Update Eugene's Stormwater Management Manual every two years or as needed to provide new information or practices for post-construction stormwater management. 	<ul style="list-style-type: none"> Number of private water quality facilities permitted with building permits. Number of land use applications reviewed. Number and type of public water quality facilities constructed. Number of training/outreach events held. 	NA	√	P	√	√	√			X								x
P6	Compliance Program for Maintenance of Privately Owned Vegetated Stormwater Facilities	Develop, implement and manage a program to ensure that privately owned and operated vegetated stormwater treatment facilities are maintained so that they function as designed and constructed. The program will employ a combination of rules, protocols and procedures to require: that each private vegetated facility is routinely inspected; that routine and corrective maintenance actions are performed in a timely manner; and that completion of both such activities are regularly reported to City staff. Based on Eugene Municipal Code requirements, penalties and/or other legal remedies will be employed to enforce compliance with these requirements when necessary.	<ul style="list-style-type: none"> Inspect all new vegetated private stormwater facilities at the time of construction and log pertinent information into the stormwater facility tracking database system. Adopt and implement an administrative rule to enforce the maintenance of private stormwater facilities by February 2011. Ensure the inspection of each vegetated private stormwater facility is conducted at least once per year by the owner/operator and an inspection and maintenance log documenting the necessary corrective actions is submitted to City staff annually. Review annual reports for privately-owned vegetated stormwater facilities. 	<ul style="list-style-type: none"> Number of private vegetated stormwater facility inspections completed at time of construction. Number of owner/operator inspection and maintenance logs received and reviewed annually. Number of notices of non-compliance and subsequent enforcement. 	NA	√	P	√	√	√			X								x
M6	Regulation of Inspection, Maintenance and Reporting of Private Underground Stormwater Structures	Develop, implement and manage a program to ensure that privately owned and operated underground stormwater treatment structures are properly maintained. The program will employ the guidance provided by the required individual Operations and Maintenance (O&M) plan for each structure.	<ul style="list-style-type: none"> Inspect all new private underground stormwater structures at the time of construction and log pertinent information into a database. Establish a correspondence file for each structure/operator. Ensure that each private underground stormwater structure is inspected, maintained and reported on as required by the O&M plan for the specific device. Review annual reports for privately-owned underground stormwater facilities. 	<ul style="list-style-type: none"> Track the number of O&M plans obtained. Track the number of private inspection, maintenance and reporting activities conducted. Track any enforcement activities related to the individual structures. 	NA	√	P	√	√	√			X								x

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Operations and Maintenance																					
M3	Street Sweeping Program and Leaf Pick-up	Undertake both mechanical brush and vacuum sweeping of publicly maintained roads, bike paths, and parking lots in accordance with the Stormwater Operations and Maintenance Manual. Monitor and evaluate new technology and methods related to street sweeping, and make appropriate adjustments to the current sweeping program when feasible to maximize water quality benefits. +C39	Follow sweeping frequencies as outlined in the Stormwater Operation and Maintenance Manual, more specifically described as follows: <ul style="list-style-type: none"> Sweep downtown core twice per week. Sweep university and industrial areas once per week. Sweep arterial streets every 2 weeks. Sweep residential streets every 6-8 weeks. Sweep bike paths and improved alleys twice per year. Coordinate and manage two seasonal opportunities for the citizen's leaves to be picked up and managed by the SW operations crew. 	<ul style="list-style-type: none"> Lane miles swept. Amount of debris collected. Amount of leaves picked up. 	NA	√		√	√	√			X								x
M4	Prevent Leaks and Spills from Municipal Vehicles and Equipment	Undertake preventive maintenance program for all municipal vehicles and equipment in order to prevent or correct sources of vehicle fluid leaks. Implement employee education practices and field operations procedures to detect and report leaks and to prevent incidences of fluid and material spills from municipal vehicles. Equip municipal trucks and large mechanized equipment with renewable spill response kits.	<ul style="list-style-type: none"> Include a spill procedure card in all City vehicles and equipment by December 1, 2011. Perform preventative maintenance service on all City vehicles and equipment annually, at a minimum. During the repair/clean-up process, analyze the type and cause of the spills associated with the repairs conducted by Fleet staff, and evaluate whether operator training maybe helpful with spill minimization. 	<ul style="list-style-type: none"> Track the number of spill procedure cards issued annually. Track the number of vehicle related leaks repaired annually. Track the percentage of vehicles which receive preventative maintenance service annually. 									X								
M5	Public Stormwater System Cleaning Programs - Piped System	Undertake frequent, systematic cleaning of the components of the public stormwater system such as catch basins, pipes, culverts, inlets, and stormwater quality devices in accordance with the adopted Stormwater Operations and Maintenance (O&M) Manual. Document quantities of material removed from each structure. Using the maintenance management system, refine the regular cleaning schedule for pipes, catch basins and stormwater quality devices. Research and monitor developments in maintenance technology and operations and maintenance methods for the closed systems which will further increase the effectiveness of our cleaning practices and water quality improvement practices.	<ul style="list-style-type: none"> Clean 50% of the all of the public catch basins and inlet structures annually unless increased efficiencies are shown through adaptive management. Clean all of the public underground stormwater quality structures as outlined in the Stormwater O&M Manual. 	<ul style="list-style-type: none"> Track the number of structures cleaned. Track the amount of debris recovered. Track the lineal footage of stormwater lines cleaned. 	NA	√		√	√	√			X				X				x

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M8	Winter Road Sanding and De-icing Program	Apply and clean up winter traction sand on publicly maintained roads and parking areas in conjunction with the application of a pre-wetting agent designed to reduce the need for repeat sanding. Conduct research efforts to identify and evaluate new technology and strategies for application of environmentally friendly chemical anti-icing and de-icing agents. Conduct research into new methods, practices, and efficiencies which may further limit the runoff of sanding related pollutants to the storm system. Conduct preseason staff training on the proper application methods of sand and chemical agents.	<ul style="list-style-type: none"> Minimize the use of abrasive materials for snow and ice control through adaptive management practices. Begin clean-up of abrasive materials when streets become free of ice and snow, and the forecast does not call for more ice and snow within the next 24 hours. 	<ul style="list-style-type: none"> Document the quantities of sanding materials applied and collected during each storm event. Document the volume used for deicing/anti-icing operations. 					√			X									
P3	Tree Planting and Information Programs	Manage and support both governmental and community tree planting programs. Provide information to the public about the multiple benefits that trees provide for protecting and enhancing stormwater quality.	<ul style="list-style-type: none"> On average, conduct 12 Eugene Park Stewards volunteer program tree planting projects per year. Include the planting of street trees with all new private developments and with all new public street improvement projects as opportunities arise. Plant 600 trees per year through the Eugene Park Stewards program and the City's regulatory tree planting program. Provide information about the stormwater benefits of trees at major publicly attended events at least 4 times per year. 	<ul style="list-style-type: none"> Track the number of Eugene Park Stewards volunteer program planting projects and the resulting number of trees planted. Track the number of trees planted through new development tree planting requirements and through City-engineered street improvements. Track the number and type of publicly attended events where stormwater related tree information was provided or where a presentation was made. 	NA	√	√	√	√			X								x	
P4	Public Stormwater System Maintenance - Developed Parks and Rights-of-Way	Evaluate and, as necessary, adapt or revise turf, landscape and natural area vegetation management programs for public lands under the City's jurisdiction. Such areas include developed parkland and public right-of-way. The focus of this BMP is to minimize and further limit the discharge of pollutant laden runoff from these areas.	<ul style="list-style-type: none"> Review IPM manual at least once during the permit term, and update and refine the IPM policy document and operations manual in accordance with integrated pest management principles. Conduct periodic inspection of each publicly maintained vegetated stormwater management facility within the right-of-way and developed parks. Populate the stormwater facility tracking system database with current information for each facility that is inspected. Continue to provide services to existing Pesticide Free Parks. All newly developed playgrounds, pools, sprayplay features, recreational areas and other park areas will be evaluated during design or within one year of initial public use for addition into the Pesticide Free Zone program. 	<ul style="list-style-type: none"> Document updates of IPM policy document and operations manual. Document new techniques and practices that are incorporated into park and landscape design. Document the number of publicly maintained vegetated stormwater facilities inspected and information entered into the stormwater facility tracking system database annually. Track the condition of existing parks that are currently maintained using the Pesticide Free Parks protocol. Calculate the total acreage that has been placed in the Pesticide Free Zone Program per year. Utilize Chem Track program to track how much chemical (pound per acre) were used each year and determine total reduction of chemicals used annually. 	NA	√	√	√	√	√			X								x

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P5	Public Stormwater System Maintenance – Open Waterways	Maintain and manage open waterways consistent with adopted Open Waterway Maintenance Plans. These plans are intended to protect and enhance stormwater quality and natural resources values while continuing to maintain sufficient conveyance capacity in the waterways.	<ul style="list-style-type: none"> Implement “green piping” (i.e., pruning woody vegetation within active channel zone) on 5 miles of open waterway annually to maintain conveyance. Establish native trees and shrubs on 5000 lineal feet of waterway annually to help shade streams, lower water temperatures, and increase slope stability. Revise all Open Waterway Maintenance Plans by December, 2012. Conduct periodic inspections for publicly-maintained vegetated stormwater facilities (e.g., detention ponds, wetlands, bioswales). Populate the stormwater facility tracking system database with current information for each facility. 	<ul style="list-style-type: none"> Miles of open waterways that are green-piped each year. Track the number of riparian vegetation planting projects, including the number of lineal feet planted, and the number and general type of native species planted (i.e. trees, shrubs, grasses, etc.). Number of channel bank repair projects (e.g., to reduce erosion or slumping) completed each year. Number of times each year that the storm event monitoring program for open waterways is activated. Number of publicly maintained vegetated stormwater facilities inspected and information entered into the stormwater facility tracking system database annually. 	NA	√	√	P	√	√			X								x
Illicit Discharge Controls																					
M1	Management of Illicit Discharges to the Municipal Stormwater System	Discourage and reduce improper discharges into the stormwater system through operation of a stormwater discharge compliance enforcement program. The primary goals of this program are to protect the quality of the receiving waters of the City's stormwater system and to ensure that discharges to the City's stormwater system are in compliance with local, state, and federal regulations to the maximum extent practicable. The City will conduct periodic review of enforcement program practices and procedures and make revisions as deemed necessary.	<ul style="list-style-type: none"> Work to reduce the number of improper discharges into the municipal stormwater system through public outreach and a reasonable enforcement of regulations. 	<ul style="list-style-type: none"> Track the number of stormwater pollution complaints received by the City. Track the number of outfalls inspected annually. Track the number of requests-for-service (RFS) related to illicit discharges to the municipal stormwater system which required enforcement. 	NA	P	P	P	P	P			X				X				x
M2	Spill Response	Maintain an on-call team trained in spill response procedures involving environmentally hazardous materials and a vehicle equipped for such spill mitigation. Coordinate efforts with other local response teams such as the City of Eugene Fire and Police Departments, Lane County, and state agencies.	<ul style="list-style-type: none"> Maintain a list of HAZWOPER trained personnel that are available for 24-hour emergency response. Maintain and update, as necessary, the City's On-Call Emergency Roster for Environmental Spills. 	<ul style="list-style-type: none"> Up-to-date list of employees trained for spill response. Track number of spills and follow-up details. 	NA	P	P	P	P	P			X				X				x

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M7	Systematic Stormwater Field Screening and Investigation	The Stormwater Field Screening and Investigation program inspects the public stormwater system for condition assessment and the private stormwater system to assess water quality impacts to the municipal stormwater system. Where illicit discharges are found, attempt to identify the source and eliminate the discharge.	<ul style="list-style-type: none"> Improve accuracy of the Stormwater System layer in our Geographic Information Systems (GIS) through map update requests. Identify and remove illicit discharges to the municipal stormwater system through the dry-weather field screening process. Utilize interaction with the public as an educational opportunity to increase stormwater user awareness. Develop "map update" requests based on field inspections and forward this information to the GIS manager for inclusion into the citywide GIS system. 	<ul style="list-style-type: none"> Track the number of map update requests forwarded to the GIS team. Track and create work orders for the system repairs discovered through the inspection process. Track the number of dry-weather field screening inspections and follow-up details. 	NA	√		P	P	√			X								x
P7	Litter and Illegal Dumping Control	<p>Manage and support efforts to reduce impacts to stormwater runoff and local receiving waters by controlling litter and debris in public spaces and by removing illegally dumped refuse and debris as well as garbage and trash from illegal camp sites.</p> <p>There are two primary focal points of this BMP. The first is to provide opportunities for proper disposal of litter and trash at strategic publicly owned sites to prevent it from being washed into the public stormwater system. The second is to clean-up illegal dump sites and illegal camp sites prior to pollutants from the trash and debris being washed into the public storm system or the local receiving waters.</p>	<ul style="list-style-type: none"> Ensure all parks, all public space areas managed by the City and all venues for outdoor public events on City lands have adequate trash receptacles. Empty trash receptacles frequently enough to prevent spillage due to being over filled. Ensure at least 75% of all rentals of parks, park shelters, and other City operated outdoor facilities will result in no loose litter and debris left behind. Inspect all major waterways and riverbanks weekly for dumped or discarded debris and illegal campsites. When found, remove dumped materials within two working days. When found, dismantle illegal campsites and clean-up as soon as is physically and legally possible. Monitor all identified historic dumping sites in the public right-of-way and clean-up as necessary at least twice per month. 	<ul style="list-style-type: none"> Track the collection frequency for trash receptacles in City parks and other public space areas managed by the City. Document the number or percentage of rentals of parks, park shelters, and other outdoor venues held on City managed land that forfeit all or part of their clean-up deposit due to excessive litter left behind. Track the number of illegal campsites cleaned-up along riverbanks, waterways, or other public space areas managed by the City. Track the frequency of collection and the amount of debris collected from waterways and from the public right-of-way. 	NA	√		P	P	√			X								x

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Waste Management																					
B1	Household Hazardous Waste Disposal	<p>Support existing efforts and programs within the Eugene metro area to inform citizens of local opportunities for the proper discard and disposal of their household hazardous waste materials. Support and promote facilities and programs that provide such opportunities.</p> <p>The improper disposal of household hazardous waste poses a serious threat to local stormwater quality. Old paint, solvents and thinners, pesticides, bleach, drain cleaners, antifreeze, gasoline, used motor oil and other motor vehicle fluids can easily be flushed into the stormwater system if disposed of in yards, left uncovered in the rain, or poured down driveways or into the street. Supporting efforts to inform homeowners and tenants about where they can properly dispose of these products as well as supporting local household hazardous waste management facilities and efforts is an effective way to reduce the amount of these products that inadvertently make their way into the stormwater system and local receiving waters.</p>	<ul style="list-style-type: none"> • Work with Lane County and City of Springfield to annually update "Brown Pages" in the US Dex directory to include new electronics requirements. • Update the City's web site periodically to direct residents to the latest information about recycling and waste prevention news, resources, and local events. 	<ul style="list-style-type: none"> • Document completion of "Brown Pages" update. • Document materials disbursed about household hazardous materials. 	NA			√	P				X								x
B2	Solid Waste Management	<p>Evaluate and revise, as necessary, existing solid waste and recycling collection rules to address stormwater quality.</p> <p>Improper and/or unregulated collection and recycling of solid waste has a serious potential for creating negative impacts to stormwater quality. High collection fees, infrequent or spotty collection service may lead to illegal dumping activity. Unregulated waste containers may be prone to leaking or spilling allowing pollutants to wash into the storm system. By continuing to monitor and evaluate local solid waste management collection efforts, the City will be better able to improve local regulations so that stormwater quality is taken into account.</p>	<ul style="list-style-type: none"> • Review Administrative Rule to ensure regulations are up to date and include requirements to support appropriate waste management and prevention. • Contract with Oregon DEQ for a waste composition study. 	<ul style="list-style-type: none"> • Document total tons of yard debris collected through the curbside program. • Document the number of compost demonstration workshops and participants. • Document number of enforcement cases related to inappropriate garbage handling. • Compare waste composition study with the prior one. 	NA	√		√	√	P			X								x

Appendix A - City of Eugene TMDL Implementation Plan Matrix (Updated 6-30-14)						TMDL Pollutants Addressed ⁽²⁾					Water-shed ⁽³⁾		Regulatory Program(s) ⁽⁴⁾									
MS4 SWMP BMP ID (if applicable) ⁽¹⁾	BMP or Activity	Description of BMP or Activity	Measurable Goals & Timeline	Tracking Measures What is being tracked to show progress towards meeting measurable goals	Milestone Intermediate goals to know progress is being made	Bacteria	Temperature	Hg	DO	Turbidity	Amazon	Willamette	NPDES MS4	NPDES 1200Z - WPCF	NPDES 1200Z - Airport	NPDES - Wastewater	Underground Injection Control	Goal 5	Goal 6	Willamette TMDLs		
Industrial Facilities																						
W1	Industrial Stormwater Management Program	Provide oversight of stormwater discharges and washing activities from industrial facilities, screening new businesses for those that may require NPDES Permits, conducting inspections and providing technical assistance to industries with NPDES Permits, and responding to spills at facilities with permits.	<ul style="list-style-type: none"> Conduct site inspections on 20% of permitted facilities annually. 	<ul style="list-style-type: none"> Percentage of permitted facilities inspected. Number of corrective action letters sent and follow up responses. Number of Action Plans prepared by permit registrants. 	NA	√		P	P	√			X								x	
Permit Management																						
E5	Permit Management and Reporting	Administration of the overall NPDES permit compliance effort, including permit renewals, annual reports, program evaluations and documentation of the City's adaptive management processes, and updates to the City's TMDL benchmark assessment.	<ul style="list-style-type: none"> Submit Annual Reports to DEQ, that summarize implementation of the requirements as described in the City's MS4 permit, Schedule B. Evaluate progress towards meeting TMDL pollution reduction benchmarks for each five year renewal submittal. Conduct public involvement within an appropriate time to meet legal requirements for the five year renewal submittals, and for on-going adaptive management as appropriate. 	<ul style="list-style-type: none"> Track public involvement events and number of people reached. Post Annual Reports on City's web site. 	NA	Pollutants are not directly addressed by this BMP, but it is an essential support function for the other program activities							X									X
Monitoring & Reporting																						
Related to E5	Stormwater & Receiving Water Quality Monitoring	Conduct stormwater and receiving water (ambient) monitoring in accordance with Monitoring Plan. Continue to update TMDL management strategies based upon new stormwater and ambient monitoring data.	Analyze and report results to DEQ	Submit Monitoring Report Annually	NA	Pollutants are not directly addressed by this BMP, but it is an essential support function for the other program activities							X									X
WATER POLLUTION CONTROL FACILITY (WPCF) NPDES WASTEWATER DISCHARGE PERMIT																						
		Meet WPCF NPDES permit effluent limits as they relate to TMDL pollutants	Meet permit effluent limits, as required under NPDES permit	on-going under existing permit; permit renewal in progress	NA	√	√	√								X					x	
		Conduct pretreatment program as required under WPCF NPDES permit	Meet permit requirements to track number of inspections and outcomes	on-going under existing permit; permit renewal in progress	NA	√	√	√								X					x	
		Prevent overflows, as required under WPCF NPDES permit	Document and report to DEQ overflow-related information (e.g. number of emergency overflows from pump stations and reason for overflow; number of plant upsets and reason), as required under WPCF NPDES permit.	on-going under existing permit; permit renewal in progress	NA	√	√	√								X					x	

MS4 SWMP BMP ID (if applicable) ⁽¹⁾	BMP or Activity	Appendix A - City of Eugene TMDL Implementation Plan Matrix (Updated 6-30-14)				TMDL Pollutants Addressed ⁽²⁾					Water-shed ⁽³⁾		Regulatory Program(s) ⁽⁴⁾							
		Description of BMP or Activity	Measurable Goals & Timeline	Tracking Measures What is being tracked to show progress towards meeting measurable goals	Milestone Intermediate goals to know progress is being made	Bacteria	Temperature	Hg	DO	Turbidity	Amazon	Willamette	NPDES MS4	NPDES 1200Z - WPCF	NPDES 1200Z - Airport	NPDES - Wastewater	Underground Injection Control	Goal 5	Goal 6	Willamette TMDLs
		Conduct monitoring as required under WPCF NPDES permit	Number of samples taken and parameters analyzed; report results to DEQ	on-going under existing permit; permit renewal in progress	NA										X					x
STORMWATER PERMIT (1200Z) FOR WASTEWATER TREATMENT PLANT																				
		Implement best management practices for wastewater treatment facility under its 1200Z, as they relate to TMDL pollutants.	As required under WPCF NPDES 1200Z permit	on-going	NA	√				√			X							x
		Conduct annual stormwater pollution control training for wastewater treatment plant staff.	As required under WPCF NPDES 1200Z permit	on-going	NA	√				√			X							x
		Conduct monitoring as required under WPCF's NPDES 1200Z permit as it relates to TMDL pollutants.	As required under WPCF NPDES 1200Z permit	on-going	NA								X							x
STORMWATER PERMIT (1200Z) FOR EUGENE AIRPORT																				
		Implement best management practices for Eugene Airport as required under its NPDES 1200Z permit, as they relate to TMDL pollutants.	As required under Airports' NPDES 1200Z permit	on-going	NA	√				√	por.			X						x
		Conduct annual stormwater pollution control training for airport employees.	As required under Airports' NPDES 1200Z permit	on-going	NA	√				√	por.			X						x
		Conduct monitoring as required under Eugene Airports' NPDES 1200Z permit as it relates to TMDL pollutants	As required under Airports' NPDES 1200Z permit	on-going	NA						por.			X						x
⁽¹⁾ MS4 SWMP BMP ID" refers to the MS4 Stormwater Management Plan best management practice identification number as shown in the City of Eugene's SWMP, Updated December 2012. ⁽²⁾ √ = Clearly addresses pollutant; P = Possibly addresses pollutant ⁽³⁾ Shading indicates that BMP/Program applies within the watershed; no shading indicates that it does not apply within the watershed ⁽⁴⁾ X = the TMDL is the primary driver for the management strategy; x = another permit or program is the primary driver, however the strategy addresses one or more TMDL pollutants.																				