Lane County Willamette Basin

Total Maximum Daily Load (TMDL)

5-Year Implementation Plan

July 2014

Lane County Department of Public Works

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Acknowledgement

This plan includes elements from partner cities' stormwater management plans. Lane County extends its appreciations for the cooperation received from the City of Eugene and the City of Springfield during the preparation of this plan.

Table of Contents

Executive Summary 1
1 0 Introduction 2
1.1 Purpose 2
1.2 Background 3
2.0 Geographic and Landscape Setting 4
2.1 Lane County 4
2.2 Headwaters Region of the Willamette Basin 5
2.2.1 Coast Fork Willamette River Subbasin 8
2.2.2 Middle Fork Willamette River Subbasin 9
2.2.3 McKenzie River Subbasin 10
2.2.4 Upper Willamette River Subbasin 12
3.0 Overview of TMDL Requirements 14
3.1 TMDL Parameters 15
3.1.1. Temperature 15
3.2.2 Bacteria 17
3.3.3 Mercury 18
4.0 Water Resource Assets and Gaps 19
4.1 Assets 20
4.2 Gaps 21
5.0 Implementation Strategies 23
5.1 Riparian Protection and Restoration 24
5.2 Animal Waste Management 25
5.3 Stormwater Planning and Management 26
5.3.1 Low Impact Development by Lane County 26
5.3.2 Low Impact Development by the Cities 27
5.4 Erosion Control 27
5.5 Septic System Management 27
5.6 Illicit Discharge and Illegal Dumping 28
5.6.1 Household and Non-Household Hazardous Waste Collection 29

5.7 Education/Training 30
5.8 Cost Analysis 31
6.0 Implementation Matrix 32
6.1 Measuring and Monitoring the TMDL Plan 41
6.2 Compliance with Statewide Planning Goals 41
6.3 Consistency with the Metro Plan 49
6.4 Partnership Opportunities 53
7.0 Appendices ..... a
Appendix 1: Lane County Willamette Basin TMDL Area Maps ..... a
Appendix 2: Glossary ..... b
Appendix 3: Relevant Lane Code ..... f
Appendix 4: City of Eugene BMPs ..... s
Appendix 5: City of Springfield BMPs ..... dd

Table 1: Lane County Subbasin Land Area vs. County TMDL Area 5
Table 2: Willamette Basin Mercury TMDL Sources and Reductions Needs 19
Table 3: Lane County Water Quality Related Programs and Policy 20
Table 4: Focus Areas for Pollutant Reduction 21
Table 5: Gaps in Existing Water Quality Efforts for Temperature 21
Table 6: Gaps in Existing Water Quality Efforts for Bacteria 22
Table 7: Gaps in Existing Water Quality Efforts for Mercury 22
Table 8: Gaps in Existing Water Quality Efforts for All Pollutants 23
Table 9: Implementation Matrix 33
Table 10: Other Jurisdiction DMAs in Lane County 54

Figure i: Lane County TMDL Planning Area 6
Figure ii: Lane County Watersheds 7

Executive Summary

Lane County has been monitoring the Total Maximum Daily Load (TMDL) Implementation Plan (Plan) for the Willamette Basin as required by the Oregon Department of Environmental Quality (DEQ). The overarching goal of the TMDL Plan is to minimize or where possible eliminate identified pollutants affecting the Willamette River. As part of the basin-wide TMDL implementation plan, DEQ identified a portion of the County jurisdiction land of about 148 square miles sprawling over four sub-basins in Lane County jurisdiction as a designated management area (DMA). Lane County DMA is one of the twenty-two DMAs identified in Lane County for addressing pollution in the Willamette Basin. The DMA is tasked to control temperature, bacteria, and mercury pollutants to the sections of the Willamette River. As per the DEQ prepared Water Quality Management Plan (WQMP) for the basin, each DMA is required to prepare a DMA-specific implementation plan. This document is prepared to fulfill the requirement.

Lane County has been involved in pollution control activities for the Willamette River as early as 2004. The County's formal first 5-year TMDL Implementation Plan was approved in 2008. This submittal is the second 5-year Implementation Plan prepared for continuing TMDL strategies for the next five years. In this Plan update, forty effective strategies have been developed for reducing temperature, bacteria, and mercury loads in the Willamette River. Table 9 in Section 6 of the Plan summarizes the envisioned strategies, pollution sources, measurable goals, and monitoring plan in six distinct implementation categories.

These strategies have been developed considering the County's existing programs, financial basis, and local needs. They are based on a gaps and opportunities analysis of existing programs, as well as the six minimum control measures required for the County's NPDES Phase II Stormwater Management Plan. The region-wide gaps and opportunities analysis prepared by the Lane Council of Governments (LCOG) performed during the last implementation plan in coordination with other DMAs in Lane County was used. The analysis indicated three high priority areas: 1) septic system management 2) stormwater planning and management, and 3) public education and training. Riparian protection and restoration, erosion control, illegal discharge, and animal waste management were also identified as medium priority areas, and each focus area represents an implementation category in this plan.

This implementation plan is evolving in scope, building off the previous five-year plan. While some strategies can be implemented easily, others need additional funding. This expanded plan includes those strategies that can be reasonably accomplished and meet local needs. Notable additions to this Plan include TMDL strategies for the County DMA inside the Urban Growth Boundaries (UGBs) of the cities of Eugene and Springfield. The County has been implementing several strategies in partnership with the Cities of Eugene and Springfield in connection with the implementation of the County's National Pollution Discharge Elimination System (NPDES) Phase II permit requirements. A majority of these activities inside the NPDES permit area also contribute toward TMDL efforts. This TMDL Implementation Plan also incorporates city-county partnership implemented Best Management Practices (BMPs) in urbanized areas for pollution control in the Willamette Basin.

1 0 Introduction

This Second 5-Year Lane County Willamette Basin Total Maximum Daily Load Implementation Plan (TMDL 2013) is prepared to document the County's pollution reduction strategies for waterbodies in Lane County. Lane County has been officially working to control these pollutants in the Willamette Basin since July 2008 as part of first Lane County TMDL Implementation Plan. Lane County has been involved in establishing TMDL limits for the Willamette River and its tributaries as early as 2004 under the Oregon Department of Environmental Quality (DEQ) initiative. After the Environmental Protection Agency (EPA) approved the DEQ's TDML allocation plan for the Willamette Basin in September 2006, the Environmental Quality Commission adopted Oregon Administrative Rule (OAR) Chapter 340 Division 42, commonly referred to as the TMDL rule. OAR 340-042-0080(4)) required Designated Management Areas (DMAs) to prepare an implementation plan and oversee TMDL pollution reduction strategies. A DMA is a federal, state, or local government agency that has legal authority of a sector or source contributing pollutants. Lane County DMA is one of the twenty-two DMAs identified for TMDL implementation in the Willamette Basin. The County submitted its first 5-year Willamette Basin TMDL Plan in April 2008.

The County completed its 5th year monitoring report for the first 5-year TMDL Implementation Plan in November 2013. As the scheduled monitoring under the first 5-year plan concluded, DEQ began coordination with DMAs to submit a second 5-Year TMDL Implementation Plan for the Willamette Basin. DEQ sent survey questionnaires to Lane County requesting information about its existing and future TMDL strategies. The County responded with a report summarizing existing (ongoing) and completed strategies. This plan is a formal presentation of County's strategies as proposed. This plan continues to address the three priority pollutants –Temperature, Bacteria, and Mercury-- found in the four major Willamette subbasins within the County DMA.

This plan is organized into seven sections. The first section introduces TMDL background in general. The second section gives a brief overview of the TMDL setting in Lane County. Section 3 identifies common pollutants in the County DMA. The fourth section summarizes a gaps and opportunities analysis prepared during the previous implementation period which identified potential strategies for Temperature, Bacteria, and Mercury parameters. This section also describes the region's water resources, land use, and other important issues related to water quality. Section 5 discusses implementation strategies in detail. Section 6 is the "core" of this Implementation Plan where the County's implementation strategies are presented in a matrix format. The Implementation Matrix is a snapshot of implementation strategies planned for the next five years of TMDL Implementation Plan. This section also identifies the monitoring and reporting needs. The final section provides maps and a glossary of terms used in this document.

1.1 Purpose

As a DMA, Lane County is required to comply with the Oregon Department of Environmental Quality (DEQ) Willamette Basin TMDL order and to meet pollutant load allocations for the Willamette River basin as approved by the US Environmental Protection Agency (EPA) in September 2006. As part of the Willamette Basin TMDL Plan, DEQ developed the Water Quality Management Plan (WQMP) to describe

the overall framework for implementing the Willamette Basin TMDL. The plan identified activities, programs, legal authorities, and other measures to assist DMAs with TMDL implementation. Lane County DMA's legal authority encompasses four watersheds draining to the Middle Fork Willamette River, Coast Fork Willamette River, McKenzie River, and Upper Willamette River (including the Long Tom River). The County is tasked with developing a TMDL Implementation Plan for the impacted waterbodies consistent with the WQMP. As the County's first 5-year Implementation Plan expired in 2013, this updated plan is intended to carry forward the County's TMDL efforts into the next five-year planning and monitoring period.

This second Lane County Willamette Basin TMDL Plan 2013 (Plan) continues the County's strategies for reducing stormwater pollution to waterbodies in the Lane County portion of the Willamette Basin. Like its predecessor, the Plan identifies actions planned for the next five years to comply with the DEQ specified TMDL standards in Lane County DMA. This second 5-year plan builds on the experiences gained from the implementation of the first five-year plan, which applied numerous strategies for addressing temperature, bacteria, and mercury pollutions. These strategies were redefined where needed following an adaptive management process.

1.2 Background

The Willamette River is a very important commercial, municipal, cultural, recreational, ecological, and aesthetic asset. Working to preserve and maintain water quality will ensure prosperity, productivity, and quality of life for the entire Willamette Region now and in the future. Water quality in the headwaters region is especially vital in maintaining the functionality of this versatile river system.

The Willamette River is a major tributary originating from the Willamette Basin and flowing northward to the Columbia River. The southernmost area of the Willamette Basin contains many forest streams that begin as spring-fed rivulets, snowmelt drainages, or small mountain lakes. Lane County hosts four of the 12 sub-basins of the Willamette Basin which eventually contribute to the Willamette River. Each sub-basin has a unique watershed which drains to tributaries of the main stem Willamette River, including the Middle Fork Willamette River, Coast Fork Willamette River, McKenzie River, and Long Tom River. Lane County encompasses the headwaters region of the Willamette River Basin.

On its way to the Columbia River, the Willamette passes the state's three largest cities and through a valley population totaling nearly 2.7 million people, which accounts for 70% of Oregon's population. By 2050, an additional 1.7 million people are expected to be living on the land near the Willamette River and its tributaries[1]. Current and future generations of Oregonians depend on the Willamette and its tributaries to provide water for drinking, industrial uses, sanitary functions, recreation, aesthetic enjoyment, fish and wildlife habitat, and many other purposes.

Functional water resources are essential to protecting the future health and prosperity of the Willamette Valley. The Oregon DEQ has set water quality standards for the waterways in the region to protect beneficial uses such as drinking, fishing, swimming, fish spawning, and irrigation. Streams, lakes,

[1] Source: Willamette Valley Livability Forum

and rivers that do not meet these standards are included on the statewide 303(d) list of impaired waterbodies. 303(d) refers to a section of the Federal Clean Water Act Section 303(d) that requires states to identify and list waterbodies that do not meet the State's water quality standards.

2.0 Geographic and Landscape Setting

2.1 Lane County

Lane County extends from the Pacific Ocean to the Cascade Mountains. Lane County's population continues to grow, although rates have slowed in recent years. The county's population grew at an average of 1.4 percent per year over the 30 year period from 1970 to 2000, and at approximately 0.8 percent per year from 2000 through 2012, to 354,542 persons.[2] Averaging past growth rates to assume a 1.1 percent rate of growth for the future, by 2030 the population is projected to increase by 21.7 percent or 431,706 people in Lane County.[3] While Lane County's population as a whole is growing, its unincorporated areas are shrinking both in size and number of people, as cities annex more land that is inside their Urban Growth Boundaries (UGBs) and more people move to cities. This trend has been happening since the mid 1980's. In 1960, there were roughly equal numbers of people living in Lane County's unincorporated areas as in its cities, and population growth continued in both rural and urban areas for the next 20 years. From 1980 to 2000, Lane County's unincorporated area population decreased by 0.2 percent. In addition, due to local economic prosperity during the 1990's, and to a lesser extent during this decade, more people began moving here from outside the state and from other counties. From 2000 to 2006, there was a net 5.2 percent population increase in Lane County cities[4] with a 3 percent decrease in the County's unincorporated area population.

Without proper management of stormwater runoff, population increases can have an adverse impact on water quality. Continuing urban development results in an increase in impervious surface areas, which creates a loss of infiltration capacity and associated increases in runoff carrying pollutants. Development within the floodplain may also impact wetlands that provide critical ecological functions needed for filtering pollutants out of surface water prior to discharging into waterbodies. By implementing the strategies contained in this Plan, Lane County strives to achieve a reduction in adverse impacts to water quality within its jurisdiction. This Plan will be reviewed periodically to ensure that the protective mechanisms suggested are indeed addressing the water-quality concerns in Lane County.

Please refer to the maps of the Willamette Basin TMDL areas within Lane County provided in Appendix 1. The maps highlight streams/water resources within the County area.

[2] State and County QuickFacts, US Department of Commerce
[3] Oregon Office of Economic Analysis, Department of Administrative Services, April 2004
[4] U.S. Census

2.2 Headwaters Region of the Willamette Basin

The majority of the Lane County portion of the Willamette Basin can be considered the Headwaters region of the entire basin because it is the furthest upstream area of the Basin. The four subbasin have unique land use characteristics. Understanding the characteristics and unique issues in each subbasin assists in identifying opportunities for the region as a whole.

The Headwaters region encompasses 3,769 square miles and is home to over 350,000 people. There are eight incorporated cities outside the Eugene-Springfield metropolitan area in the Lane County Headwaters Region. There are approximately 220,715 people living in the Eugene-Springfield Metro area, approximately 29,520 people living in the other seven urban incorporated areas[5], and 92,630 rural residents living in unincorporated areas outside of Urban Growth Boundaries[6].

The McKenzie, Middle Fork Willamette, Coast Fork Willamette, and the Long Tom River subbasin contain thousands of waterways that can be impacted by adjacent land uses. There are many different types of waterways in this region, including a network of higher elevation rushing forest streams, channelized urban stormwater conduits, agricultural irrigation ditches, rural roadside ditches, mid-sized tributary rivers, and the beginnings of the broad, meandering Willamette River. The surrounding land uses are also very diverse. Table 1 shows the approximate land area for each of the subbasin.

Table 1: Lane County Subbasin Land Area vs. County TMDL Area

Subbasin	Area (square miles)	Lane County Willamette Basin TMDL Management Area (square miles)
Coast Fork	666	39
Middle Fork	1,355	17
McKenzie	1,338	26
Long Tom portion of the Upper Willamette	410 (includes some land outside Lane County)	66
Total	*3,769*	*148*

Sources: Willamette Basin TMDL Chapters 10,11,12,13, Long Tom Watershed Council, & Lane County GIS Department

The Headwaters region is a patchwork of ownership and land use. The higher elevations on the western slopes of the Cascades are mostly federally managed forestland. Rural residential settlements are located in the river valleys of the Mohawk, McKenzie, Middle Fork, Coast Fork, Long Tom, and other smaller valleys. The Eugene-Springfield Metro Area urban area is located near the Middle Fork River and Coast Fork River confluence and the main stem Willamette River and McKenzie River confluence.

The next sections describe individual sub-basins in detail.

[5] Lane Council of Governments & PSU Population Research Center, 2013
[6] Lane Council of Governments, 2007 data countywide

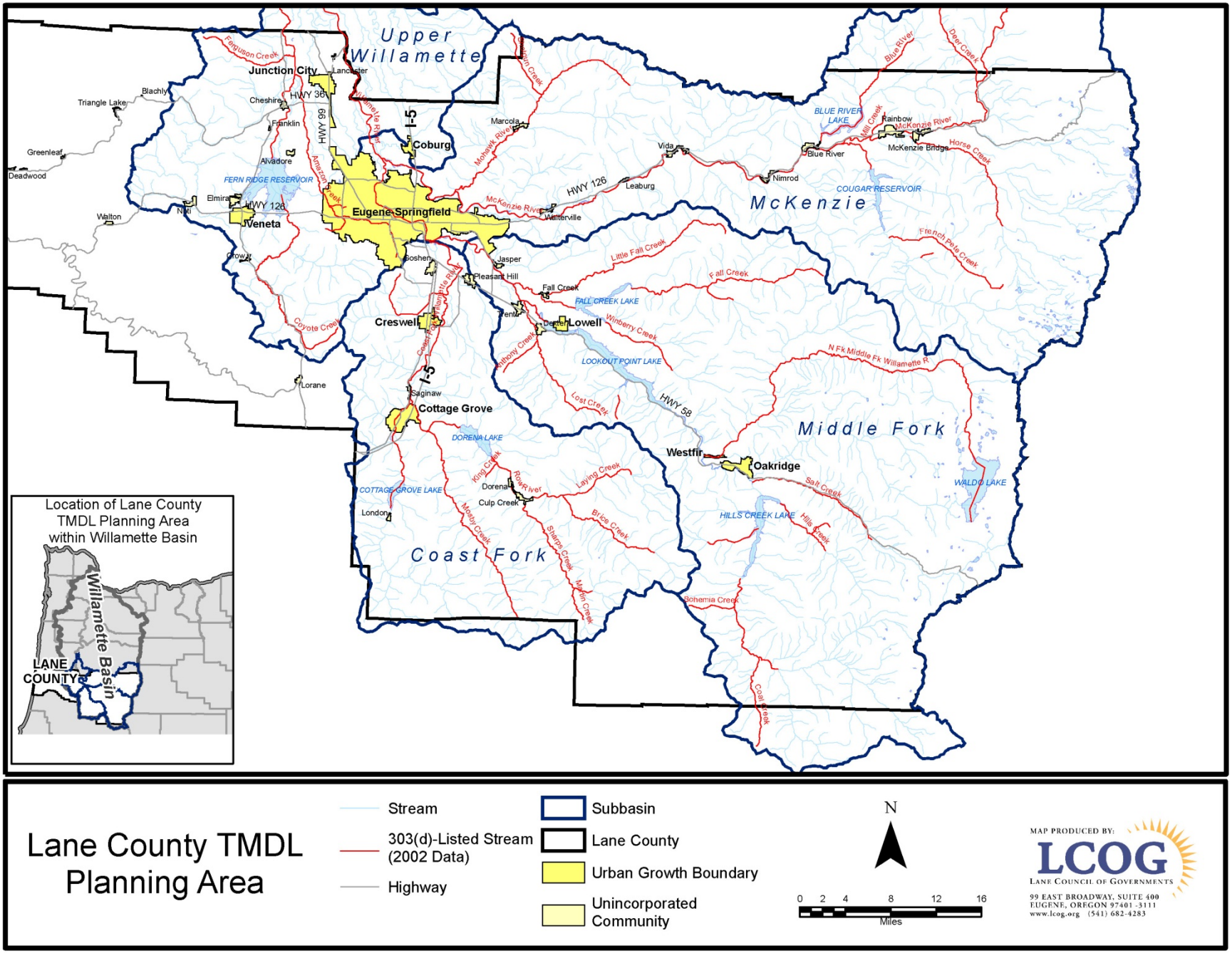


Figure i: Lane County TMDL Planning Area

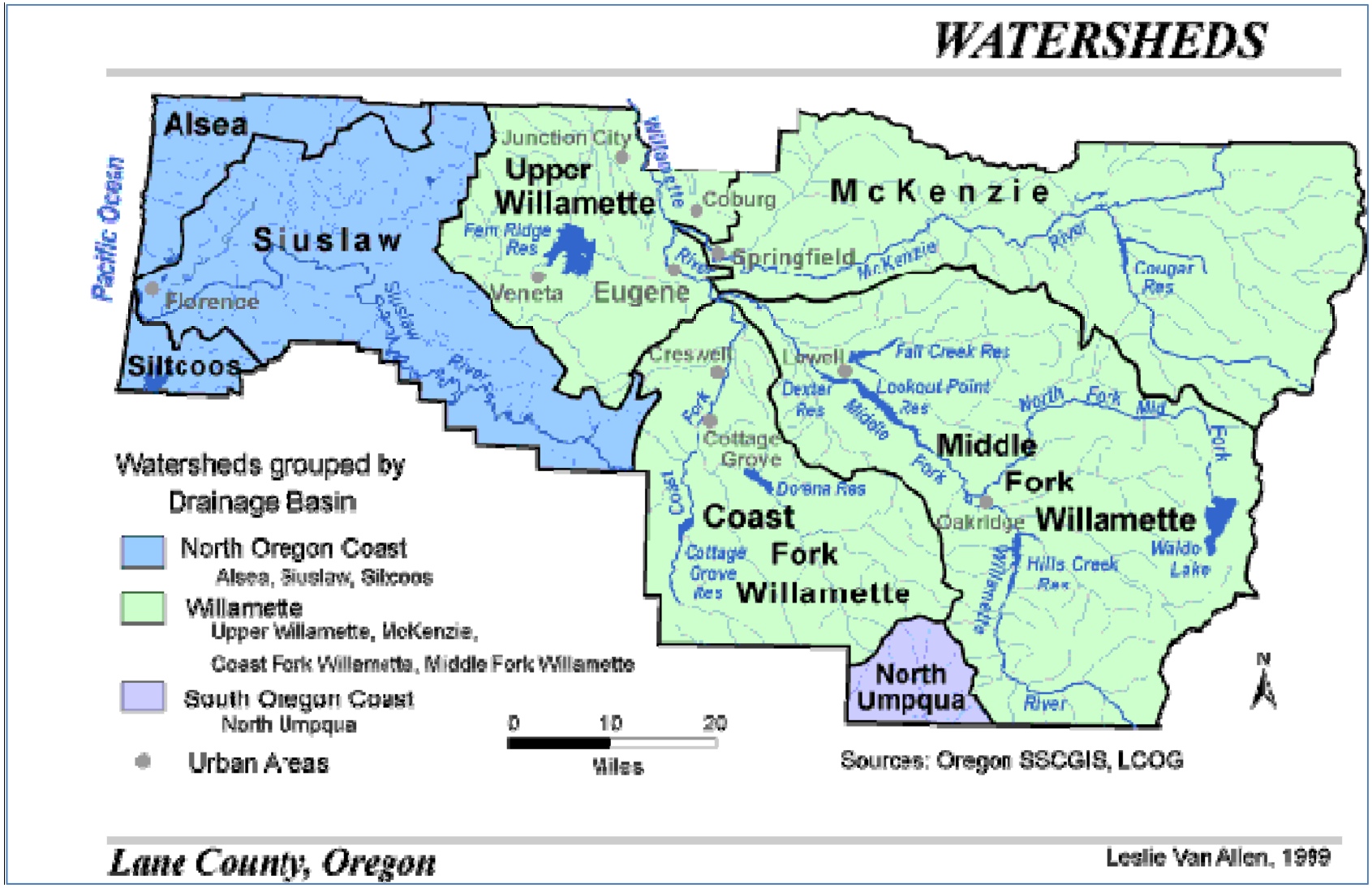
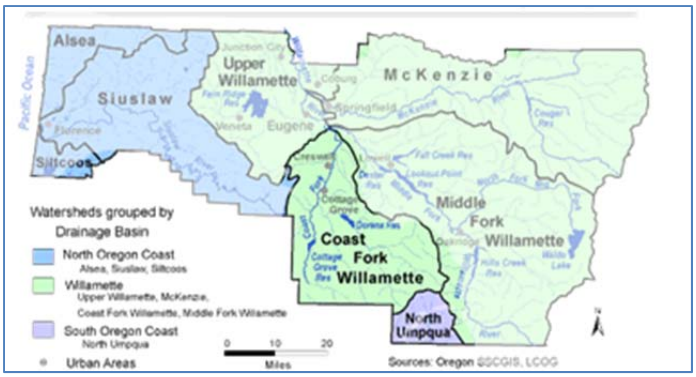


Figure ii: Lane County Watersheds

2.2.1 Coast Fork Willamette River Subbasin



The Coast Fork subbasin is the southernmost portion of the Willamette Basin located within portions of Lane and Douglas Counties, and includes the cities of Creswell and Cottage Grove. BLM and USFS administer 666 square miles of the subbasin, although a significant portion of the land in the subbasin is privately owned. The land use is primarily forestry, with agriculture and urban land uses near the mainstem Coast Fork Willamette River. The Coast Fork Willamette River is a source of drinking water for the City of Cottage Grove.

The Coast Fork subbasin contains eight waterbodies that have been listed on DEQ's 303(d) list because the quality of the water does not meet temperature standards. These waterbodies include Brice Creek, King Creek, Layng Creek, Martin Creek, Mosby Creek, Row River, Sharps Creek, and the Coast Fork Willamette River. The Row River and Coast Fork segments below Cottage Grove and Dorena Reservoirs exceed temperature criteria year round, and they are dealt with separately as sections of the Mainstem Willamette River system.

Heat loads in waterways come from natural background sources, point sources, and non-point sources. There are many causes for elevated summer stream temperatures. These include:

- increase in solar radiation due to lack of mature riparian vegetation;
- water withdrawals, which reduce streamflow volume, increase the rate of warming, and reduce the amount of riparian vegetation the stream can support;
- lack of side channel and wetland habitat, which sustain summer streamflows and provide cool water inputs; and
- changes in natural sediment loads contributes to bank erosion and stream channel widening

Currently, the following percentages of the thermal load in these rivers are from non-point sources (DEQ, 2006), as follows:

Coast Fork: 25 percent
Mosby Creek: 28 percent
Row River: 37 percent

DEQ monitors temperature reductions by the amount of streamside vegetation restored to system potential levels. Although the Coast Fork Willamette is likely to be removed from the 303 (d) list for bacteria, jurisdictions within the subbasin still intend to meet planning targets for the reduction of temperature and mercury contributions.

Key Watershed Descriptions

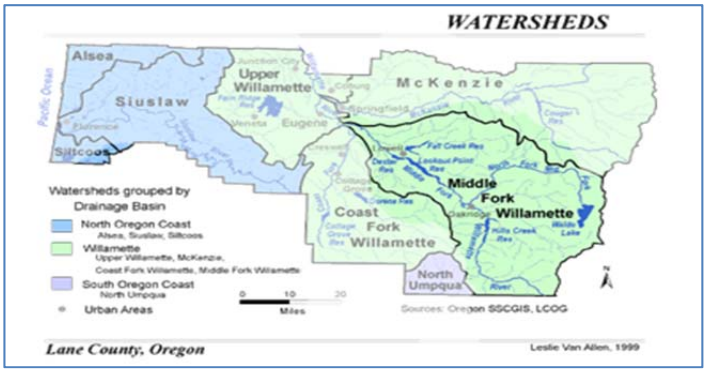
2.2.1.1Row River Watershed

The Row River Watershed is located approximately 20 miles southeast of Eugene and is the principal tributary of the Coast Fork Willamette River. The Row River watershed drains a 375 square mile (239,999 acres) area. The Dorena Dam impounds the river at river mile (RM) 7.5, forming Dorena Reservoir. Several major tributaries flow directly into Row River including Layng, Brice, Sharps, and Mosby Creeks. Mosby Creek is the only major tributary to flow into Row River below the Dorena Reservoir spillway. Three small-unincorporated communities Disston, Culp Creek, and Dorena are within the watershed boundaries with part of the City of Cottage Grove stretching into the western portion of the watershed.

2.2.1.2 Coast Fork Watershed

The Coast Fork Watershed is located in portions of Lane and Douglas counties. Most of the city of Cottage Grove is also located within this watershed. The watershed covers 152 square miles (97,420 acres), of which approximately one-third is managed by BLM. Cottage Grove Dam is operated by the U.S. Army Corps of Engineers (USACE) and is located on the Coast Fork Willamette River at RM 28. Elevations in the watershed vary from a low of 720 feet above sea level in the city of Cottage Grove to a high of 4,347 feet at Burnt Mountain.

2.2.2 Middle Fork Willamette River Subbasin



The Middle Fork Willamette subbasin is located in the southeastern portion of the Willamette Basin, spanning Lane and Douglas Counties. Approximately 1312 square miles of the 1,355 square mile (867,110 acres) subbasin are located within Lane County encompassing the cities of Lowell, Westfir, Oakridge, and a portion of Springfield. The subbasin includes 10 watersheds that contribute to the Middle Fork Willamette River, which has a confluence with the Willamette River at its mouth at RM 186.

The subbasin is dominated by forestland use with some agriculture and residential land use near the downstream portions of the subbasin. About 85% land is federal land managed by the Willamette National Forest (USFS) and the Eugene Bureau of Land Management (BLM). Small private landholders and industrial timber companies own the remainder of the land in the subbasin.

The Middle Fork Willamette subbasin's stream segments exceed water quality criteria for temperature and dissolved oxygen, and are therefore listed under section 303(d). Seventeen waterbodies have been listed on DEQ's 303(d) list for temperature impacts. These waterbodies include Anthony Creek, Bohemia

Creek, Coal Creek, Fall Creek, Hills Creek, Little Fall Creek, Lost Creek, Middle Fork Willamette River, Mike Creek, North Fork Middle Fork Willamette River, Packard Creek, Portland Creek, Salt Creek, South Fork Winberry Creek, two Unnamed Waterbodies, and Winberry Creek. Segments of Anthony Creek and Lost Creek are listed as water quality limited for dissolved oxygen, a parameter that is not addressed under the Willamette TMDL.

This description of the Middle Fork Willamette River subbasin only includes TMDLs for river and stream segments upstream of Dexter Reservoir and Fall Creek Reservoir. For the portion of the Middle Fork Willamette River from the mouth to river mile (RM) 15.6 (Dexter Reservoir) and Fall Creek from the mouth to RM 7.0 (Fall Creek Reservoir), the temperature analysis is included in the mainstem Willamette River TMDLs, see Chapter 4 of the Willamette Basin study.

The Middle Fork Willamette subbasin has four USACE reservoirs: Fall Creek Reservoir, Dexter Reservoir, Lookout Point Lake, and Hills Creek Lake. Waldo Lake is located in the North Fork of the Middle Fork Willamette watershed, and is the largest natural lake in the Lane County portion of the subbasin. The subbasin provides habitat for bull trout, spring Chinook, summer steelhead and winter steelhead. There are two real-time USGS flow-monitoring stations on the Middle Fork Willamette River, one near Dexter and the other at Jasper.

The Oregon Department of Agriculture (ODA) reported that there were no confined animal feeding operations (CAFO's) in the Middle Fork Willamette subbasin. As of April 2003, the Oregon DEQ NPDES database identified 14 general NPDES permits and 5 individual NPDES permittee. Oakridge and Westfir Waste Water Treatment Plant and the CRS Corporation permittee have the potential to affect temperature in the streams. Eight NPDES point sources discharge to the lower Middle Fork and are within the geographic scope of the Willamette mainstem temperature TMDL[7]. The remaining eight point sources were determined non-concern per a study entitled "Waste Load Allocations in Small Streams."

Both Fall Creek and the North Fork Middle Fork Willamette River show signs of low riparian density that could be affecting temperature. These subbasin streams provide opportunities for riparian vegetation restoration, particularly with participation of willing landowners and as standalone projects on County-owned lands, such as tax foreclosed properties, parks, and surplus road right-of-way.

2.2.3 McKenzie River Subbasin

The McKenzie subbasin is located in the southeast portion of the Willamette Basin. The subbasin is approximately 1,338 square miles (856,466 acres) in area and extends from the Cascade Mountains on the east to the Willamette River. Tributaries from the subbasin merge with the Willamette River at river mile (RM) 171.8. The subbasin includes Blue River

[7] See Chapter 4 of the Willamette Headwater Water Quality Assets, Gaps, and Opportunities Study

Watershed, Horse Creek Watershed, Lower McKenzie River Watershed, McKenzie River / Quartz Creek Watershed, Mohawk River Watershed, South Fork McKenzie River Watershed, and Upper McKenzie River Watershed.

Nine stream segments belonging to this subbasin are listed in section 303(d) list of the federal Clean Water Act (CWA). The nine waterbodies namely Blue River, Deer Creek, French Pete Creek, Horse Creek, McKenzie River, Mill Creek, Mohawk River, Shotgun Creek, and an Unnamed Tributary to Rebel Creek, are listed as impaired due to non-conforming temperature and dissolved oxygen parameters. Additionally, a segment of the Mohawk River (RM 0 to RM 25.4) is listed as water quality limited for dissolved oxygen, which again is not addressed under the Willamette TMDL.

TMDLs for the McKenzie River downstream of the South Fork McKenzie, lower Blue River, and lower South Fork McKenzie are found in Chapter 4 of the Willamette Basin TMDL document.

Lane and Linn Counties share the subbasin's political jurisdiction. The City of Springfield (largest city in the subbasin) and many smaller unincorporated communities-- Walterville, Deerhorn, Nimrod, Leaburg, Rainbow, Marcola, Vida, and McKenzie Bridge-- reside in the McKenzie subbasin. The land use at the higher elevation is primarily forestry lands owned and managed by the Bureau of Land Management (downstream of Cougar and Blue River reservoirs) and the United States Forest Service (land upstream of Cougar Reservoir and Blue River Reservoir). The lower watershed valley floodplain is owned by private landowners; and agricultural, commercial, and residential development is dominant.

The following is the non-point source thermal loading data in these rivers (DEQ, 2004).

- Blue River: 40 percent
- McKenzie River 15 percent
- Mohawk River: 40 percent
- South Fork McKenzie: 36 percent
- Upper McKenzie: 19 percent

McKenzie River Subbasin Watershed Descriptions

2.2.3.1 Mohawk Watershed

The Mohawk Watershed is about 165 square miles (106,135 acres) of mostly rural areas of Lane County on the west slope of the Cascade Mountain Range. The unincorporated communities of Donna, Marcola, Wendling, and Mable are located within the watershed. While rural development and agricultural areas consisting of pasture, hay, and small woodlot operations dominate the lower watershed, uplands of the watershed is owned and managed by industrial timber companies. The Mohawk Watershed Partnership (2000), BLM and Weyerhaeuser Company (1994) have completed Watershed Analyses specific to the Mohawk Watershed. The Lower Mohawk is identified as a key sub-watershed for aquatic habitat restoration priorities in the McKenzie River Subbasin Assessment[8].

[8] McKenzie Watershed Council, 2001

2.2.3.2 Blue River Watershed

The Blue River Watershed drains a total of 87 square miles (55,851 acres) of land. Most of the area is administered by the U.S. Forest Service. Only about 3% of the watershed is within private ownership (Willamette Headwaters: Water Quality Assets, Gaps, and Opportunities Study, *Working Draft, October 2007, LCOG*). The Blue River Dam and Reservoir on Blue River have degraded riparian conditions in this watershed due to road related failures, timber harvest within riparian areas, and past forestry practices of yarding logs down channels. The Blue River and South Fork McKenzie Watershed Analysis prepared by the Blue River Ranger District has documented management related debris slides in the area. This translates to continual loss of shade. In some sub-watersheds, riparian areas that were once dominated by conifers are now extensive hardwood stands.

2.2.3.3 South Fork McKenzie Watershed

The South Fork McKenzie Watershed, having approximately 213 square miles (136,523 acres), drains to the South Fork McKenzie River. The USFS manages 94% of the land, and 3% is managed by USACE. Riparian vegetation and channel morphology have been degraded on the South Fork McKenzie much like Blue River.

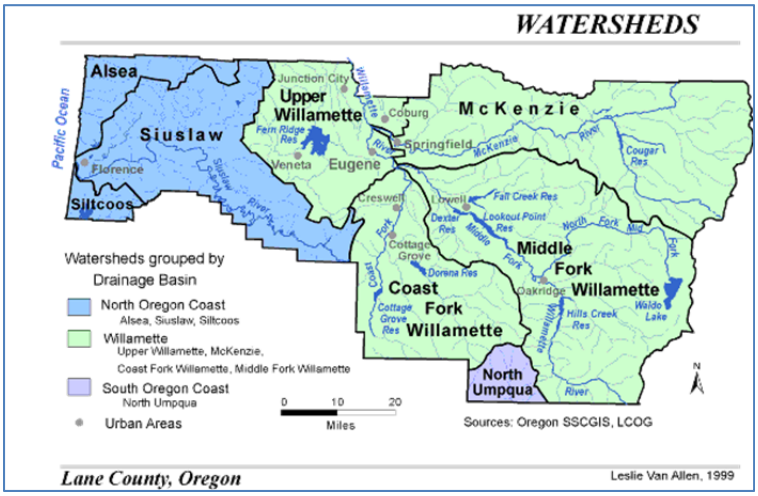
2.2.3.4 Upper McKenzie Watershed

The Upper McKenzie Watershed encompasses 348 square miles (222,728 acres). McKenzie Bridge is the largest unincorporated community in the Upper McKenzie Watershed.

2.2.3.5 Horse Creek Watershed

The Horse Creek Watershed encompasses 156 square miles (100,357 acres). Horse Creek's headwaters are in a wilderness area. Much of the watershed is managed by the USFS but the lower portion is rural residential.

2.2.4 Upper Willamette River Subbasin



The Upper Willamette subbasin is located in the southwest portion of the Willamette Basin. This subbasin is 1,861 square miles (1,190,770 acres) in area extending from the Coburg foothills of the Cascade Mountains on the east to the Coast Range foothills on the west. The subbasin includes six watersheds spanning across four counties. The Lane County boundary covers the

southernmost third of the subbasin with the rest of the land extending northward into Linn, Benton, and Polk counties. Veneta, Coburg, and Junction City are the other cities in the Lane County portion of this subbasin. Land use within the Basin is primarily agriculture in the lowland valley, scattered urban developments in the valley, and forestry in the upper subbasin. Forested land is predominant from the foothills to the crest of the Coast Range along the western edge of the subbasin. A number of small farms exist in the areas where foothills give way to the valley floor.

The Upper Willamette subbasin has stream segments listed under section 303(d)1 of the federal Clean Water Act (CWA) for exceeding temperature, bacteria, dissolved oxygen, turbidity and toxics water quality criteria. Total Maximum Daily Loads (TMDLs) for the applicable TMDLs is available in the DEQ's Water Quality Plan for the Willamette Basin.

Tributaries originating from the Calapooia River Watershed, Long Tom River Watershed, Luckiamute River Watershed, Marys River Watershed, Muddy Creek Watershed, and Oak Creek Watershed flow to the Willamette River. The majority of the land in the Lane County portion of the Upper Willamette subbasin is within the Long Tom Watershed, and the eastern edge of the subbasin contains the urban fringe of west Eugene. Amazon Creek and its associated channels drain this urban area into Fern Ridge Reservoir and the Long Tom River.

Key Watershed Descriptions

2.2.4.1 Long Tom Watershed

The Long Tom Watershed accounts for 410 square miles (262,000 acres) located on the eastern side of the Coast Range at the southwestern end of the Willamette Valley (Thieman, 2000). Land use in the watershed includes a mixture of forestland, small farms, and small-incorporated communities. The upper and lower Long Tom watersheds are divided by the Fern Ridge Reservoir. Coyote and Amazon Creek drain the southern and eastern portions of the upper basin which also drain into Fern Ridge Reservoir. The lower Long Tom River is approximately 25 miles long with flows regulated by Fern Ridge Reservoir. It joins the Willamette River at two locations outside Lane County-- the original northern confluence and the channelized southern confluence at Norwood Island. Upper Amazon Creek is diverted to Fern Ridge Reservoir via the Amazon Creek Diversion channel. The Lower Amazon Creek does not enter the lake.

2.2.4.2 Coyote Creek Watershed

Coyote Creek Watershed drains 104 square miles (66,600 acres) of land. Although the majority of land in this drainage is zoned forest, agricultural and rural residential lands coexist (Thieman, 2000). The watershed also has many impoundments used for livestock watering, fishponds or unspecified domestic use aside from the significantly large Fern Ridge Reservoir. Coyote Creek Watershed is in the degraded state primarily due to the loss of trees in riparian areas that once were densely forested. The deforestation has resulted in the reduced shade and large woody debris (LWD) available in this watershed. Some trees remain along the streams in the Coyote Creek Watershed, but they have been greatly reduced.

2.2.4.3 Muddy Creek Watershed

Muddy Creek is a 125-square mile watershed located within western Oregon's Willamette River Basin in between Corvallis and Eugene, Oregon. Forestry and agriculture are the dominant uses of land within the area. Upland areas are primarily forested; the midlands are largely Christmas tree farms; and the lowlands contain a mix of grass seed farming and urban development.

2.2.4.4 Marys River Watershed

A very small portion of the Marys River Watershed extends into northern Lane County. The Marys River Watershed is located along the east side of the Coast Range in western Oregon. The watershed encompasses 310 square miles (198,000 acres) with land uses consisting of upland forest area, a valley agriculture area, and a downstream urban area. The headwaters of the watershed drain the highest point in the Coast Range, Marys Peak at 4,200 feet elevation, and flows into the Willamette River in the city of Corvallis at 250 feet elevation.

3.0 Overview of TMDL Requirements

The Clean Water Act of 1972 “authorizes the U.S. Environmental Protection Agency (EPA) to ‘restore and maintain the physical, chemical, and biological integrity of all waters of the nation’” (DEQ, 2004). In response to the Clean Water Act, the EPA designated state agencies to develop water quality standards, perform water quality monitoring to understand current conditions, determine sources of pollution, and develop TMDLs as a tool to improve water quality. As a component of the overall effort to protect and restore the beneficial uses of Oregon’s waterbodies, DEQ issued TMDLs for the entire Willamette Basin.

When a stream, lake, or river does not meet water-quality standards, it is classified as water-quality impaired waterbodies and is listed on the state’s 303(d) list. The TMDL process identifies the maximum amount of a specific pollutant that can be present in a water body without violating water quality standards. This is known as the loading capacity. After extensive water quality monitoring and modeling efforts, TMDLs establish the difference between the loading capacity and the current pollutant load. TMDLs are expressed as numeric standards or percent pollutant reductions needed to bring water bodies into compliance with water quality standards. The difference between the current load and the loading capacity is known as excess load (DEQ, 2004).

The excess load is split up between the different sources of pollution according to their contribution to the overall pollution load. Any excess load must be mitigated by pollution reduction activities. DEQ develops wasteload allocations for point sources such as wastewater treatment plants and industrial discharges as well as for non-point pollution from agricultural, urban, and forestlands. Point sources, such as wastewater treatment facilities are implementing TMDL through their individual NPDES permitting processes.

Oregon Administrative Rule (OAR 340-042-0080) requires able local governments and other agencies, also known as DMAs, to develop TMDL Implementation Plans for non-point sources. In the Willamette

Basin, DMAs include federal agencies such as the Bureau of Land Management, state agencies such as the Department of Forestry and the Department of Agriculture, counties, cities, and others.

The Oregon Department of Agriculture (ODA) is working with farmers to address contributions from farmland. Likewise, the Oregon Department of Forestry (ODF) is addressing contributions from forestland, and federal land management agencies including the Bureau of Land Management (BLM) and US Forest Service (USFS) are implementing TMDLs according to their internal procedures.

3.1 TMDL Parameters

The Water Quality Management Plan developed by DEQ identified temperature, bacteria, and mercury as the three main pollutants common to the all subbasins within the Willamette Basin. Although other parameters such as dissolved oxygen, arsenic, and lead are present in specific waterbodies of some of the subbasin TMDLs, they are addressed by subbasin specific TMDL plans. The three major pollutants identified above are widespread throughout the entire Willamette Basin, including the County DMA. These three pollutants are addressed by this Implementation Plan.

A brief summary of these three TMDL parameters is provided in the following subsections. In-depth information on these parameters and the processes used to develop the TMDLs can be found in Chapters 2, 3, and 4 of the Willamette Basin TMDL (DEQ, 2006). The summaries below include basic information about the characteristics of the parameter, the potential sources of each pollutant, identification of non-compliant waterways, and a brief list of potential strategies to address each parameter.

3.1.1. Temperature

The problem with temperature in the Willamette Basin is that the water is too warm at certain times of the year thereby posing a threat to cold-water fish species such as salmon. This excess temperature is known as thermal pollution. Removal or disturbance of streamside vegetation is the primary activity that negatively impacts stream temperature due to the loss of shade cover. In addition, water temperature is also affected by erosion, loss of channel complexity, low streamflows, the operation of dams, and heated discharges from industrial or municipal operations.

The DEQ's analysis identifies wastewater treatment facilities, dam and reservoir operations, and the loss of streamside vegetation as the major sources of thermal pollution for the Willamette Basin temperature TMDLs. While point sources, such as wastewater treatment facilities and large industrial facilities are site specific and are individually regulated by a permit system, many TMDL strategies focus on the loss of streamside vegetation. Sewage-treatment plants, as well as large industrial permitted dischargers, are allocated heat loads in their National Pollutant Discharge and Elimination System (NPDES) permits.

The most effective way to minimize thermal pollution in the case of non-point source is to reduce the amount of solar radiation that reaches waterbodies. This is accomplished by protecting and reestablishing overstory vegetation along waterways to provide shade cover. The County's non-point

source temperature TMDL goal is to reduce disturbance of shade-providing streamside vegetation, and/or find opportunities to mitigate for losses that have already occurred. Temperature benefits can also be realized through stream restoration projects such as stabilizing streambanks, increasing stream flows, and restoring channel complexity.

Temperature TMDLs have been developed for the Willamette subbasin and mainstem Willamette River within Lane County. DEQ used two different criteria assessment methods in developing the temperature TMDLs. One TMDL focused on the mainstem Willamette River and its major tributaries up to the location of the first dam on the tributary. The other is a more localized assessment for stream segments upriver from dams.

There are 46 stream segments and nearly 380 miles of waterways (DEQ, 2002) listed as impaired for temperature in the Willamette Basin areas of Lane County. Stream segments considered as a part of the Mainstem Willamette temperature TMDL in Lane County include the McKenzie River, Middle Fork, Fall Creek, Row River, Blue River, Coast Fork, and the Long Tom River up to the lowest reservoir on each river. All other 303(d) listed stream segments are assessed through sub-basin TMDLs.

Subbasin TMDLs for waterways above dams express temperature load allocations in terms of effective shade targets. Effective shade targets are related to the amount of potential vegetation in the system, which is a simulation of the natural stream system and the amount of riparian vegetation that would be present under natural conditions. Excess heat in waterways is expressed as the difference between system potential shade and current effective shade levels. Effective shade targets translate TMDL load data and shade curves. DEQ provides DMAs, land managers, and landowners with the information to approximate the amount of shade needed at a specific site to attain effective shade targets.

Oregon Administrative Rule (OAR) 340-041-0028 sets the maximum temperature increase in Waters of the State from all human activities at no more than 0.3 degrees Celsius (C). This allowance is known as the Human Use Allowance and is split up between various sources of human-caused thermal pollution. Models indicate that restoring shade cover to natural levels could reduce temperatures in the mainstem Willamette River by 0.5 degrees Celsius (DEQ, 2004). The amount allocated to each source of thermal pollution in the Willamette Basin TMDL varies by location, but, generally, non-point sources are allowed to contribute no more than 0.05 degrees C, point sources can contribute up to 0.25 degrees C, and zero degrees C allocated to the U.S. Army Corps of Engineers Willamette Project reservoirs. DEQ factors in 0.05 degrees as a reserve capacity, which is set aside to accommodate future growth and potential increased demand for industrial and municipal wastewater discharges. On average, waterways in the Willamette Basin need to receive 0.23 percent less thermal input than current loads (DEQ, 2004).

The major implication of the temperature TMDLs is the need for protection and restoration of streamside vegetation. Examples of options to address thermal pollution include:

- Developing educational materials that explain why landowners should preserve natural streamside vegetation
- Implementing demonstration projects on public land to illustrate potential riparian management techniques

- Instituting a riparian ordinance that prohibits the removal of native streamside vegetation
- Acquiring critical streamside property
- Becoming involved in a water quality trading program

3.2.2 Bacteria

Bacteria pollution is found in all four subbasin of the County DMA. Seventy percent of the flow in the upper reach of the Willamette is from the Coast Fork, Middle Fork, and McKenzie River and these rivers effectively dilute bacterial concentrations from other tributaries in the mainsteam of the Willamette River (DEQ, 2004). The major contributors of bacteria to the upper reach of the mainstem Willamette River are from tributaries located in the Upper Willamette subbasin. According to a DEQ monitoring report, the Long Tom River increased bacterial concentrations in the mainstem Willamette River by approximately 77 percent (DEQ, 2004). Other waterbodies in the Lane County on the 303(d) list for bacteria include Coyote Creek, Fern Ridge Reservoir, Amazon Diversion Canal, the A3 Drainage, and Amazon Creek. It is important to maintain low bacteria levels throughout the Headwaters Region within Lane County to maintain water quality standards in the Willamette River.

According to the Willamette Basin TMDL, point sources in the upper areas of the Willamette Basin cause less than a one-percent increase in the bacteria concentrations over natural conditions (DEQ, 2006). Therefore, the focus of the TMDL implementation efforts should be on non-point sources. Non-point sources of bacteria include livestock, irrigation runoff, and streambank erosion. The major sources of bacteria in the urban and rural residential areas in the region include stormwater runoff, erosion, domestic and wild animal waste, failing septic systems, and municipal sewer overflows. Models indicate that if non-point source allocations are met within each subbasin, the entire upper reach of the mainstem Willamette River will comply with water quality standards with respect to bacteria.

DEQ planning targets for DMAs are designed to prevent the degradation of water quality. Chapter Two of the Willamette Basin TMDL states, “In subbasins with no listings, generalized reductions will be used as planning targets by designated management agencies (DEQ, 2006)”. The bacteria reduction targets are generalized into percent reduction ranges that are applied in all the subbasins of the Willamette Basin. These planning targets have been allocated among agricultural and urban land uses, which are the two major land uses that contribute bacteria to waterways. The Willamette Basin Bacteria TMDL states urban areas must reduce their bacteria contributions by 80-94% to meet water quality standards. Although the Coast Fork has shown significant reduction in bacteria concentrations since it was listed in 1996, 1998, and 2002, the jurisdictions operating in the subbasin should continue to plan for further reductions.

Potential bacteria management strategies within Lane County’s TMDL jurisdiction include:

- Preventing erosion and controlling sediment from new construction
- Detaining and treating stormwater prior to discharge into waterways
- Keeping stormwater conveyance channels clear of organic matter
- Controlling animal waste

- Maintaining and restoring riparian buffers
- Encouraging better site design to decrease runoff
- Preventing non-stormwater and illegal discharges
- Developing stewardship and educational programs to prevent pollution
- Street sweeping

3.3.3 Mercury

Mercury is a very complex pollutant. The way it acts in nature and the different forms it takes make it difficult to understand and accurately monitor. Mercury is naturally occurring at low levels, but when native soil erodes at an accelerated rate, those molecules are released in abnormal amounts. Mercury is also set in motion when mercury-laden sediment that has been deposited long ago is re-suspended due to high flows or a significant erosion disturbance. Air deposition from emissions is one of many ways that mercury moves through the environment. Mercury can be transported through the air after soil disturbance and automobile and industrial emissions and these emissions can travel across many miles to be later deposited by rainfall beyond local, state, or even international boundaries. Some point sources, including timber mills and processing plants, discharge low levels of mercury in their wastewater effluent. Stormwater runoff suspends mercury molecules and carries them to waterways.

High mercury levels in the Willamette Basin have resulted in fish consumption advisories. To protect public health, especially that of pregnant women and young children, the Department of Human Services (DHS) has issued advisories recommending that people limit the amount of fish they consume from certain waterways. The DHS specifically advises against consuming large amounts of fish from the Willamette River, Coast Fork Willamette River, Dorena Reservoir, and Cottage Grove Reservoir due to the high levels of mercury. The goal of the mercury TMDL is “to reduce mercury levels in the basin to a point where fish are no longer unsafe to eat” (DEQ, 2006).

In the upper reaches of the Coast Fork subbasin, legacy mines were thought to be a large contributor of mercury pollution. Monitoring shows that mines are a significant source in the Cottage Grove area, but results from the Dorena Lake area show that there are many other sources of mercury. According to the TMDL, mines contribute none of the mercury load in the Dorena area and runoff from air deposition contributes 79.4% of total mercury loads. In the Cottage Grove area, however, mines contribute 75.2% and runoff from air deposition contributes 19%. These findings not only indicate that the Coast Fork subbasin is facing a unique challenge with the legacy mines in the Cottage Grove area, but also that the rest of the Lane County portion of the Willamette Basin needs to address mercury-laden runoff and erosion of native soils. The table below outlines the sources of mercury pollution and percent reductions needed to achieve water quality standards for basin-wide and site specific to Dorena Lake, and Cottage Grove Lake.

Table 2: Willamette Basin Mercury TMDL Sources and Reductions Needs

Pollutant	Sources	Reductions
Mercury	Willamette Basin* Erosion of native soil (47.8%) Atmospheric deposition and runoff, including stormwater (47.7%) Point sources (3.9%) Legacy mines (0.6%) Low levels are naturally occurring	Willamette Basin: 26.4% (128.5 kg/year)
	Dorena Lake Atmospheric deposition and runoff (31.1%) Erosion from disturbed forest land (68.9%)	Dorena Lake: 29.8% (2.08 kg/year)
	Cottage Grove Lake Mines (74.4%) Atmospheric deposition and runoff (8.0%) Erosion from disturbed forest land (17.6%)	Cottage Grove: 67.8% (3.13 kg/year)

** Annual mean estimate. Mercury load contributions change significantly during winter high flows. During high winter flows, 69.2% of the load is from sediment re-suspension, 0.2% from mines, 1.2% from point sources, 14.7% from erosion, and 14.7% from air deposition. Source: Department of Environmental Quality, Willamette Basin TMDLs, 2006*

Despite the uncertainty and complex nature of mercury, certain steps can be taken help minimize the mercury deposition in waterways and eventual accumulation in the tissues of fish, wildlife, and humans. Steps DMAs can implement include mercury recycling and education programs as well as erosion prevention and sediment control regulations for new construction.

Implementation plans must include a mercury reduction strategy "that includes feasible measures to minimize mercury runoff" (DEQ, 2006). DMAs have an array of options to reduce mercury pollution. Many of the management strategies that address mercury pollution also address bacteria and temperature. The following potential management strategies tackle the mercury runoff issue directly.

- Working with dentist offices to properly dispose of mercury wastes
- Establishing a stormwater management plan
- Stormwater detention and treatment prior to discharge into waterways
- Establishing an erosion prevention and sediment control program
- Regular street sweeping and stormwater system maintenance
- Minimizing land disturbance during construction and other development activities

4.0 Water Resource Assets and Gaps

The Headwaters Region of the Willamette River is critical to the maintenance and restoration of clean water throughout the Willamette Basin. A review of Lane County programs, ordinances, and best management practices indicates that much is already being done to protect and restore water quality. Additional actions identified in this Implementation Plan reinforce waterway protection and strive to prevent further water quality degradation.

Lane County, in association with Lane Council of Governments (LCOG), completed a gaps analysis to plan for actions necessary to meet Willamette Basin TMDL requirements. LCOG worked with DEQ and regional partners to gather data and conduct the analysis required to complete a comprehensive inventory of water quality related programs and policies in the County. The gaps analysis, titled *Willamette Headwaters: Water Quality Assets, Gaps, and Opportunities Study (Working Draft, October 2007, LCOG),* helped identify assets and gaps throughout the County. During the study, the participating DMAs had the opportunity to develop a record of all water quality-related activities currently underway in each DMA, identify water quality protection assets and gaps, prioritize efforts of the DMA's (individually and collectively), and identify opportunities and commonalities between DMA jurisdictions in Lane County.

4.1 Assets

Many water-quality efforts are integrated into a wide variety of established programs and ordinances in Lane County. Table 3 lists an inventory of water quality related measures and documents that are currently integrated Lane County's policies and procedures. Best Management Practices and educational programs intended for both staff and citizens of Lane County are also identified.

Table 3: Lane County Water Quality Related Programs and Policy

Existing Programs, Ordinances, and Practices
Pet waste pick-up guidance & ordinances (Lane Code 6.585 & 7.140)
Illicit discharge standards (Lane Code 5.747)
Illegal dumping standards (Lane Code 5.740-5.745, 6.535, & 9.030)
Roadside vegetation management and last resort herbicide use policy (Lane Code 15.500 to 15.530)
Riparian modification standards (Lane Code 16.253)
Public road and right of way drainage policy (Lane Code 15.515)
Erosion standards within Metro boundary (Lane Code 9.945)
Tree conservation and protection standards (Lane Code 9.90)
Floodplain modification standards (Lane Code 16.244 & 10.271-05-45)
Willamette River greenway modification standards (Lane Code 16.254 & 10.322-01-95)
Natural resource district (Lane Code 16.213 & 10.250-05-75)
Grading, excavation and clearing (Lane Code 16.005)
County employee training programs ("Short School" etc.)
Lane County Waste Management hazardous waste collection and education program
Routine Road Maintenance BMP's, including use of vegetated and soil facilities (bio-filters) and mechanical stormwater treatments
Public notification of high bacteria overflow events
Septic system setback requirements
Subsurface Sanitation Program
Integrated Vegetation Management Program
Street sweeping and leaf pickup program
Stormwater maintenance program
Culvert replacement program
Existing Documents
Lane County Comprehensive Plan Rural Areas [Comprehensive Plan] (1983 & adopted in 1984)
Eugene-Springfield Metro Area General Plan (1982, Updated in 1991 & 2004, updated in 2010)
Lane County Stormwater Management Plan (2004)
Lane County Wildlife Habitat Assessment (1980)
ESA Limit 10 Routine Road Maintenance BMPs

Lane County Routine Road Maintenance BMP Manual
NPDES Phase II permit
Stormwater System Map
Lane County Land Use and Development Code
River Road – Santa Clara Stormwater Basin Master Plan (2012)

4.2 Gaps

Analysis of existing policies and programs suggests that Lane County should emphasize non-point sources and focus on stormwater planning and management, education and training, riparian area management, and septic system management. Some aspects of these efforts can be integrated into existing programs and practices.

LCOG's analysis compared the inventory of existing water quality-related programs and policies to the strategies identified in DEQ's Water Quality Management Plan to arrive at the level of priority for actions for Lane County. The table below outlines the focus areas that are of special concern for Lane County. The table assigns a high, medium, or lower priority to seven major focus areas using the methodology described above.

Table 4: Focus Areas for Pollutant Reduction

Strategy Category	Priority Rating
Septic System Management	High
Education/ Training	High
Stormwater Planning and Management	High
Riparian Protection and Restoration	Medium
Erosion Control	Medium
Illegal Discharge	Medium
Animal Waste Management	Medium

The previous TMDL Plan considered the gaps developed by LCOG as identified in Tables 5, 6, 7, and 8 below, to the limit that County resources allowed. Section 5.0 discusses TMDL strategies for the next five years building upon the gaps identified.

Table 5: Gaps in Existing Water Quality Efforts for Temperature

Temperature Gaps	Potential Solutions
Streamside vegetation unprotected	Provide technical assistance to landowners along waterways Demonstrate riparian area, wetland, and floodplain BMPs on publicly managed land Adopt a riparian buffer ordinance or overlay zone Educate landowners about the value of riparian areas Initiate a tree planting program along waterways
High priority riparian areas unidentified	Determine areas that will yield a large benefit if protected or restored Establish framework to identify critical riparian areas Determine the feasibility of acquiring critical lands

Table 6: Gaps in Existing Water Quality Efforts for Bacteria

Bacteria Gaps	Potential Solutions
Proper animal waste management	Provide bags for pet owners to pick-up after pets Partnerships with watershed councils and others Erect signs to inform pet owners of the problems related to pet waste Develop educational materials about proper manure management Implement programs to better manage waste in areas with high concentrations of wildlife
Erosion prevention and sediment control at new construction sites	Adopt erosion prevention and sediment control regulations for new construction Provide incentives to developers who meet certain erosion control qualifications Implement site plan review procedures that includes requirements for erosion control mechanisms Establish site inspection and monitoring procedures
Lack of a process to inventory, monitor, and correct failing septic systems	Offer assistance for homeowners to replace a failing or outdated system Use building records to identify systems that may be outdated and more likely to fail Educate homeowners on proper septic maintenance and inspection
Programs to detect and eliminate illegal discharges into waterways	Promote proper waste management through education Develop a stormwater system map Increase fines for illegal dumping Establish an illegal dumping control program Educate citizens about waste disposal opportunities and the hazards of improper waste disposal Develop a process to respond to and document complaints of illegal discharge
Lack of multi-objective stormwater plans	Develop a stormwater system map and plan Regional stormwater map and/or plan Develop and implement operations and maintenance procedures using best management practices Integrate water quality protection and natural resource considerations in existing plans
Lack of stormwater detention facilities and incentives to encourage their construction	Use an ordinance or other regulatory mechanism to address runoff from new construction projects Establish maintenance program for all stormwater features Adopt water quality standards for public works projects Provide incentives to landowners that construct on-site stormwater detention/treatment facilities Encourage stormwater features on existing open space or landscaped areas through a retrofit incentive program
Lack of process to notify public of high bacteria levels	Distribute educational materials Establish a program to notify residents when high bacteria levels are present

Table 7: Gaps in Existing Water Quality Efforts for Mercury

Mercury Gaps	Potential Solutions
Erosion prevention and sediment control regulations for new construction	Adopt erosion prevention and sediment control guidelines for new construction Provide incentives to developers who meet certain erosion control qualifications Implement site plan review procedures that includes requirements for erosion control mechanisms Establish site inspection and monitoring procedures
Programs to work with dentists and recycle fluorescent light bulbs	Contact jurisdictions with established mercury reduction programs Implement programs modeled after existing programs
Process to notify citizens of fish consumption advisories	Distribute educational materials on fish consumption advisories Put up signs when fish consumption advisories are issued

Lack of stormwater detention facilities and incentives to encourage their construction	Use an ordinance or other regulatory mechanism to address runoff from new construction projects Establish maintenance program for all stormwater features Adopt water quality standards for public works projects Provide incentives to landowners that construct on-site stormwater detention facilities Encourage stormwater features on existing open space or landscaped areas through a retrofit incentive program

Table 8: Gaps in Existing Water Quality Efforts for All Pollutants

Gaps for All Pollutants	Potential Solutions
Monitoring capacity	Partner with watershed councils to establish a region-wide monitoring program
Enforcement capacity	Encourage a 'Neighborhood Watch'-type program for water quality violations
Taking advantage of non-point source grant opportunities	Establish an inventory of non-point source grant opportunities Apply collectively for funding for region-wide projects and protection mechanism implementation
Regional water quality coordination	Use Source Water Assessments to target contaminant sources Partnerships with watershed councils and others Region-wide stormwater map and/or plan Regional drinking water protection effort Regional pollution prevention team Regional Mercury Reduction Strategy Provide free hazardous waste disposal and advertise existing programs
Public employee pollution prevention training programs	Regional public works BMP-sharing network Use training materials from EPA and DEQ in existing training programs Regional training sessions
Promotion of water quality efforts	Advertise successes in local media Build interpretive displays near water quality projects
Incentives/regulations for stormwater features in new development	Adopt an ordinance requiring stormwater detention and treatment in new developments Encourage stormwater features on existing open space or landscaped areas through a retrofit incentive program

5.0 Implementation Strategies

This plan strives to contribute to the following basin-wide goals:

- reduce heat loads to less than 0.05 degrees,
- reduce 80-94 percent bacteria loading, and
- minimize mercury runoff

Lane County compared the results from the 2007 gaps and opportunities analysis with potential actions that help minimize pollutants of concern. Table 9 below summarizes the County's TMDL Implementation Plan activities for the next five years. This matrix shows the entire range of potential actions that Lane County will pursue to reduce heat, bacteria, and mercury impacts to Willamette Basin waterways. Execution of the County's TMDL strategies is dependent on the continuation of existing programs, and in the case of the enhanced actions, on the realization of new funding and resources. Following is an

overview of the water-quality protection actions categorized by focus areas. The relevant strategies are pointed to the relevant matrix items using […]. For example, [A-2] refers to the matrix item numbered A-2.

5.1 Riparian Protection and Restoration

Riparian and wetland protection and restoration program, strategies, and activities are listed under Group A in Table 9. This group addresses the gaps identified in Table 5 for temperature. When the Willamette Basin TMDL process was initiated, Lane County already had a riparian protection mechanism in place. Lane Code 16.253 *Riparian Regulations* stipulates that a minimum of seventy-five percent (75%) of the total area of any legal lot within the riparian setback area shall remain in an unaltered, indigenous state except as provided in LC 16.253(2)(b)(i) and LC 16.253(5)(b). It further requires that removal of existing vegetation from the riparian setback area of any legal lot shall not exceed the shoreline linear frontage and square footage limitations, calculated based upon a variety of factors such as parcel size, location, and proposed activity. This plan continues to monitor the number of development applications having riparian setback modification components [A-2].

Likewise, Lane Code 16.244 regulates existing floodway and floodplain areas to maintain critical functions. Among many requirements, the applicant is required to demonstrate adequate hydraulic design to ensure that no infiltration and discharge from sewage systems occurs in the floodplain. The matrix table includes actions regarding monitoring floodplain modification related activities [A-1].

In addition to implementation of Riparian Setback Requirements of Lane Code 16.253, the County also responds to riparian regulation violations. Code requirements are enforced, and the number of violations is tracked. Monitoring of the County's TMDL Plan will report any violations as indicated in the matrix [A-2]. The County will also track distribution of educational materials describing the importance of riparian protection, and track non-compliant riparian modifications during the permit process.

The Lane County GIS department has developed a mapping application that clearly identifies riparian areas subject to the riparian code requirements. The County intends to use the application to monitor loss or gain of riparian vegetation and identify areas for riparian restoration within the County DMA jurisdiction. The mapping application is also available to public users seeking information on the protected zones.

Lane County will continue to strengthen working relationships with regional watershed councils. Partnership opportunities include participating in education outreach, riparian restoration projects, and other projects that benefit non-point stormwater management within the Willamette Basin. County staff will attend watershed council meetings, identify mutual priorities, and pursue partnership projects as staffing and budgets allow. County staff will continue to exchange technical assistance with regional watershed councils and restoration practitioners. County coordination and interaction with watershed councils will be tracked and recorded annually through the number of projects, summary of project details, and/or the number of County staff hours dedicated in development projects within the County [A-4].

Additionally, Lane County will continue to send public notices to applicable watershed councils for pending development projects within the County. This allows watershed councils to provide public comment and environmental technical assistance on project aspects such as project design, implementation, mitigation, and monitoring. Project referrals to watershed councils and watershed council project interactions will be documented annually [A-5].

The County also looks for opportunities for partnership projects to restore native vegetation. In addition to riparian planting projects, future partnerships with regional watershed councils and/or other environmental organizations may include activities to control highly invasive species, fish friendly culvert replacements, and streambank stabilization projects. The County makes sure that vegetation cover lost during County project execution is restored. In accordance with Lane County's Routine Road Maintenance Best Management Practices (RRM BMP) Guide, the County will continue the practice of replanting equivalent native trees and shrubs in the riparian areas impacted by County public improvement projects. Lane County will record number of riparian plantings projects implemented annually [A-3].

Within the Willamette Basin, Lane County has acquired and/or managed more than 100 acres of wetlands for preservation and mitigation. Many of the County's wetland and riparian restoration activities associated with construction projects require the implementation of protection instruments (i.e. conservation easements), which outline commitment to restore and preserve the natural areas in perpetuity. As part of this implementation strategy, Lane County will develop a framework to review tax-foreclosed properties for critical riparian area. Lane County will evaluate the parcels for highly functioning and valued environmental attributes. If County-owned critical riparian areas are identified, the County will develop a protection memorandum and retain the parcel [A-7].

5.2 Animal Waste Management

Lane County's pet waste strategy is included in Table 9 [C-1]. Lane County has been implementing pet waste pick-up ordinances (Lane Code 6.585 & 7.140) that require pet owners to pick up their pet's waste at public places, and encourage them to comply with the law public awareness. Lane County Parks within the Willamette Basin that have existing pet waste stations includes Armitage Park, Baker Bay Park, Hendricks Bridge Park, Howard Buford Recreation Area (Mount Pisgah), Orchard Point Park, Perkins Peninsula Park, and Richardson.

Lane County will maintain existing pet waste stations and signs in public areas (Parks), and review for opportunities to install new waste collection stations as funding allows [C-1]. The stations will be properly signed and stocked with bags. As pet use within public areas increases, the County will look for opportunities to install additional pet waste pick-up stations. The County Parks Division will continue to look for grant funding opportunities to assist with expansion of its existing pet waste program. News releases will accompany the installation of any new stations to encourage citizens to use them.

Lane County also plans to distribute educational materials outlining proper care of domestic and other animal waste at locations such as Lane County Animal Services, Greenhill Humane Society, Lane County

Fair booth, and other applicable community events. Brochure distribution will be documented by the number of pet and animal waste educational materials distributed annually [F-4]. It is anticipated that a minimum of one printing and distribution of materials will occur by the second year of the Willamette Basin TMDL Plan implementation.

5.3 Stormwater Planning and Management

This section addresses gaps for all three pollutants and implements some of the potential solutions identified in Table 6, 7, and 8. Stormwater planning programs are listed in Group E of the matrix. Lane County recognizes that proper stormwater management assists in reducing most stormwater pollutants, including those not directly addressed by the current Willamette Basin TMDLs.

5.3.1 Low Impact Development by Lane County

When opportunities arise, the County incorporates LID code requirements as appropriate. The Goshen Region Employment and Transition (GREAT) Plan is an example.

The County recently adopted the GREAT Plan that allows urban levels of industrial development on the existing Rural Industrial zoned land in Goshen, an unincorporated area just outside the urban growth boundary of the cities of Eugene and Springfield. The adoption of the plan provided the opportunity to update related development codes in Lane Code. LC 16.280(16)(d). In order to implement applicable stormwater management requirements, Lane County has adopted and incorporated the April 2008 version of the City of Eugene Stormwater Management Manual by Ordinance No. 13-2. In addition to applying Eugene Stormwater Management Plan, including LID provisions, the code specifies *"The quality of the stormwater leaving the site after development must be equal to or better that the quality of the stormwater leaving the site before development, as much as is practicable…"* for the following stormwater specific standards:

- Stormwater Pollution Reduction Standards[9]
- Stormwater Flow Control
- Stormwater Oil Control
- Stormwater Source Controls
- Dedication of Stormwater Easements
- Stormwater Operations and Maintenance

In addition to implementation and monitoring of LID code associated with the GREAT PLAN [E-4], the County will seek opportunities to promote LID on County-owned properties. These facilities can dually serve as outdoor classroom settings. Lane County Waste Management and Parks Divisions prioritize LID and context sensitive stormwater management options when upgrading facilities. Lane County will continue to look for opportunities to promote LID on County properties, and such efforts will be documented during the implementation of this plan [E-3].

[9] Excerpts of the adopted code is available in Appendices

Lane County will continue to use the Routine Road Maintenance Best Management Practices (RRM BMP) manual and other educational guides for road maintenance activities. Many of the BMPs in the RRM manual utilize LID and context sensitive measures. Periodic updates to the RRM BMP manual will be undertaken to adopt new stormwater BMP agency standards. Lane County will continue to train County employees on stormwater BMPs as well as sponsor County employees for stormwater-related trainings [E-7].

5.3.2 Low Impact Development by the Cities

Low Impact Development is promoted in the County MS4[10] area through partner city ordinances and development codes. Best Management Practices involving Low Impact Development (LID) within the UGBs of Eugene and Springfield are identified in existing Intergovernmental Agreements (IGAs) with both cities. City BMPs adopted by the County through these IGAs are provided in Appendix 3 (City of Eugene adopted BMPs) and Appendix 4 (City of Springfield adopted BMPs).

5.4 Erosion Control

This section addresses mercury and bacteria gaps identified in Lane County water quality efforts. Erosion Control strategies are shown in Group D of the implementation matrix (Table 9). Erosion-related strategies include the referral of development proposals to the DEQ, and the implementation of City of Eugene and City of Springfield adopted BMPs within UGBs as identified in existing IGAs.

The Lane County Land Management Division (LMD) refers development proposals that disturb more than one acre of ground to DEQ for regulation under the state 1200-C permit program [D-4].

Under terms of separate, existing Intergovernmental Agreements with the partner cities (Eugene and Springfield), the County delegates development proposal review authority in the Urban Growth Boundary (UGB) to the respective cities. Existing IGAs also delegate authority to the cities for exercising their erosion control BMPs and regulations within the UGB. Strategies D-2 and D-3 located in the Appendix reflect these arrangements. Lane County will track implementation of erosion and sediment control BMPs within the Eugene and Springfield UGBs through the cities.

Public construction projects executed under Lane County's Capital Improvement Program and Road Maintenance efforts will continue to implement erosion and sediment control BMPs. Annual reporting will include the number capital improvement and road maintenance projects inspected and reviewed for erosion and sediment BMPs, and any corrective actions issued [D-4].

5.5 Septic System Management

Septic system-related strategies appear with other strategies in Group C in the matrix. Lane County will continue to apply and enforce Oregon Administrative Rule (OAR) 340-71 and OAR 340-73 as an agent of DEQ, pursuant to a contractual agreement established in 1981. Under the existing agreement with the

[10] Metropolitan Separate Stormwater Sewer System

agency, septic system failures are investigated and resolved. Lane County tracks and records the number of investigations, failures, and violations annually.

Lane County plans to develop new and/or revise existing septic system management educational brochures for distributing to parties involved with septic system investigations and failures. Additionally, County staff will pursue other opportunities to distribute septic system education brochures, such as at Lane County's Customer Service Center lobby and with applicable development permit applications. The number of Septic System Management brochures distributed with building permits and distributed to parties involved in septic failure investigations will be recorded annually [C-3].

5.6 Illicit Discharge and Illegal Dumping

Illicit discharge and illegal dumping can have significant impacts on water quality. The gap analysis identified a lack of programs to detect and eliminate illicit discharges and illegal dumping in the Lane County DMA. Since the implementation of the first 5-year TMDL Plan, significant progress has been made, particularly in Lane County code development and through new partnerships with regional municipalities. Existing IGAs authorize partner cities to exercise their illicit discharge ordinance and regulations within their UGB areas. The delegation of authority is further bolstered in Lane Code 5.747(7) and 5.747(8) by adopting Cities' Illicit Discharge ordinance by reference. Illegal discharges for the rest of the County, including within the Willamette Basin, are managed and responded pursuant to the County's illegal dumping ordinances (Lane Code 5.740-5.745, 6.535, & 9.030). The County can also seek technical support from the City of Eugene and City of Springfield if needed.

First responders for illicit discharge detection follow procedures described by County BMP 497 (Detection of Illicit Discharge). Most often, illicit discharge issues become known during routine maintenance or through public complaints. In an illicit discharge response event, County maintenance employees typically remove the debris or contract out to hazardous waste handlers if the debris is not easily recognizable to be non-hazardous. Additionally, Lane County Waste Management employs a Nuisance Abatement Coordinator who is responsible for investigation, clean up, and enforcement of Lane County's illegal dumping ordinance. Lane County will continue to track and record the number of illicit discharge and illegal dumping incidences / violations annually (C-4).

The County intends to develop a drainage mapping system that identifies outfalls to waterbodies in the County areas surrounding Eugene and Springfield (E-5). Drainage mapping efforts will provide conveyance information that will enhance existing spill response policies and procedures. This storm mapping will be used to identify potential sources of pollutants when illicit discharges are discovered.

Inside the Eugene and Springfield UGB's, the cities have been delegated enforcement authority for illicit discharges and the County has adopted the cities respective codes. For similar issues outside the UGBs, the County has developed both a countywide illicit discharge ordinance and an illegal dumping ordinance. Lane County will continue to track and record the number of illicit discharge and illegal dumping incidences / violations responded to annually.

Lane County staff will continue to participate in a variety of trainings on stormwater quality and illicit discharge detection, reporting, investigation, and enforcement. Lane County's bi-weekly road maintenance foreman's meetings is a forum to discuss and develop strategies for specific illicit discharge instances and educate all maintenance workers on illicit discharge protocols. Illicit discharge will be a topic for discussion at the internal "Short School" training events. Additionally, all Lane County Public Works Road Maintenance Division Supervisors and Lead Workers will continue to attend HazMat First Responder Training each year and maintain certification current.

5.6.1 Household and Non-Household Hazardous Waste Collection

Lane County, in cooperation with various agencies and watershed councils hosts collection events to provide opportunities for residents to safely dispose of household hazardous waste free of charge. Since 1986, Lane County Waste Management has been conducting Household Toxics Roundups and Business Collections lasting one to two-days for each event. These events take place at different locations and times each year throughout Lane County. This program is run through the Lane County Waste Management Division and supplements a free appointment-only collection of hazardous waste offered weekly at the Division's permanent household hazardous waste collection facility, located at the Glenwood Central Receiving Station. Customers at the Glenwood permanent facility are predominantly residents within and adjacent to the Willamette Basin boundary. Lane County Waste Management Division publicizes its Household Toxics Roundups and other household hazardous waste collection programs. The communication methods include radio advertisements, press releases, printed schedules/brochures, Recycling Guide, and the Lane County Waste Management Division website. The County will document the number of collection events held annually, as well as track the approximate amount of hazardous waste gathered at collection events annually (B-6).

In addition to the above-mentioned collection program, the County will continue to operate recycling centers for collecting potentially hazardous material, such as auto batteries, oil and oil filters, at its 16 solid waste transfer sites. Disposal sites also have load-check programs to capture hazardous waste disposed of in the solid waste stream. The load check program includes an extensive screening and educational effort to inform landfill users of the proper disposal options available.

Lane County will research opportunities to expand the Household Hazardous Waste Collection Program. Since the opening of the Household-Hazardous Waste collection facility in 1998, the Waste Management Division has expanded hours of operation and plans to offer further expanded hours during peak seasons in the future. The Division has also expanded the number of rural collection events over the past several years, currently offering five to six events throughout the year at various locations.

Lane County will continue to offer programs to capture mercury-containing waste such as thermometers and florescent bulbs. The County offers annual fluorescent light bulbs collection events from households in addition to accepting such products at the Lane County's hazardous waste facilities. The County also has an existing program to work within non-household businesses (i.e. labs, dentist offices, etc.) with the intent of collecting mercury-containing wastes. The County will evaluate the existing hazardous waste program to look for opportunities to improve collection of products containing mercury from household

and non-household sources, and continue to participate in grant opportunities to assist mercury collection efforts through Lane County Waste Management. These events are reported annually (B-7, B-8). Training provided to County hazardous waste handlers will also be documented annually.

In addition to the collection of fluorescent lamps at County-sponsored hazardous waste events from both households and businesses, Lane County Waste Management has collaborated with other agencies and retailers to provide free fluorescent lamp collection centers for households at 13 different retail facilities throughout the County. Costs associated with household fluorescent lamp collection and disposal is covered by the County. Additionally, the County provides education to retailers on proper handling procedures, including materials for handling bulb break clean up.

Lane County Waste Management Division maintains an information-rich website that provides information on waste reduction and recycling programs in order to conserve resources and prevent waste. The website offers a wide range of information to the public, including electronic access to special and hazardous waste programs, educational brochures, handbook, etc. The website is updated monthly for current information, including schedules and locations for hazardous waste collections, oil, filter and antifreeze recycling centers, battery recycling, paint recycling, fluorescent lamp recycling, and other household hazardous wastes.

Lane County participates in public events such as the Lane County Fair and other public events as they arise. Waste educational materials including the Lane County Recycling Guide (offered in English and Spanish language formats) are distributed to the public at these events. Additionally, Lane County Waste Management Division is a regular participant of the Lane Pollution Prevention Coalition (P2C) which hosts public outreach events such as the Lane County Home and Garden Shows in the spring and fall, and other special events as they arise. The County will look for opportunities to distribute stormwater education materials at these events.

County staff is available to answer questions on recycling and disposal of hazardous wastes Monday through Saturday 8 am to 4:30 pm. During off-hours, an extensive answering machine system provides callers the opportunity to leave messages and receive a return call for information as requested.

5.7 Education/Training

Lane County has identified education and outreach as a primary way to engage its citizens in stormwater programs. Many educational and outreach strategies included in this plan (B-8, E-5,F-4, F-6) are intended for communicating water quality issues and encouraging behavior changes that benefit water quality. Lane County will look for opportunities to publish and distribute educational materials on topics such as stormwater management best management practices (BMPs), erosion and sediment control BMPs, pet waste, septic system management, illicit discharge, and household hazardous waste. Potential distribution locations are information kiosks at County lobbies, Capital Improvement Project information meetings, project preconstruction meetings, special community events, the County's website, County employee training sessions, and through education outreach activities associated with County restoration actions.

Lane County plans to develop and enhance existing educational materials with the intent of distributing them to the community. Such activities will be documented and the number of printed stormwater education materials handouts will be recorded. The County will continue to sponsor a biennial one-day training event titled 'Short School.' This training is available and required for the entire Lane County Public Works Road Maintenance Staff where they can learn current stormwater BMPs through staff presentations. Staff responsible for such training reviews the RRM BMP Guide annually to ensure it reflects the most current stormwater information and agency policies. Two or more Short School Trainings are planned in the next five years. Training documentation includes the number attended and TMDL and stormwater materials presented (B-3).

During the last five-year of TMDL implementation, Lane County installed a demonstration project highlighting the benefits of Low Impact Development (LID) and stormwater treatment methods. The demonstration project constructed in conjunction with the Bob Straub Parkway project hosts native plants along with stormwater treatment features. As funding allows, the County will continue to display the demonstration project as well as other County sponsored stormwater, riparian, and wetland restoration sites in an outdoor classroom setting to interested community groups such as regional high school and college students.

5.8 Cost Analysis

In this implementation plan, Lane County has proposed a wide range of strategies that address TMDL pollutant parameters. Lane County plans to implement those strategies that can be reasonably done and that meet the local needs within available resources.

The County recognizes that successful implementation of the strategies identified within this Plan depends upon funding and resource availability. Currently, stormwater management and monitoring activities are supported by the Lane County Road Fund, which has experienced significant reduction in revenue sources since the first TMDL plan implementation period. Despite funding gaps, the County has been able to expand strategies in this Implementation Plan from the previous Plan. Strategies that are small in nature and are easy to implement are continued and expanded, such as including stormwater information presented on County websites. Some strategies exist as regular County programs and services. This plan update takes the opportunity to include them in the TMDL monitoring scope by making small adjustments to provide monitoring information.

This updated Plan includes stormwater activities that the County has been monitoring and reporting under the County's National Pollution Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit. The County TMDL DMA overlaps with the County Metropolitan Separate Storm Sewer Systems (MS4) permit area (essentially the urban growth boundary area of the Cities of Eugene and Springfield), and some of the monitoring activities under that program also address temperature, mercury, and bacteria loads in the waterbodies within the County DMA. In the last five years, stormwater management specific IGAs have been executed with the Cities. As per the terms of the IGAs, the Cities provide essential stormwater services inside the UGBs for the County, such as, public

education, outreach, erosion control, and illicit discharges. The County reimburses the Cities for performing identified tasks in the IGA for the County.

This plan includes strategies which will be executed if funding sources are identified and available. Moving forward with the implementation of some of the strategies in this Plan may require a combination of existing funding, future budgeting, and partnerships for grants. Existing and future grant opportunities can assist Lane County with reaching these TMDL Implementation targets. Lane County will continue to seek and apply for grant opportunities associated with all opportunities, such as pet waste disposal, riparian restoration and protection, mercury collection, septic sanitation programs, education of staff, and expanding awareness region-wide landowners about stormwater management.

6.0 Implementation Matrix

The previous section discussed Lane County implementation strategies in detail. These discussions are presented in a tabular format in Table 9 below, which is referred to as an *Implementation Matrix*. A similar implementation matrix tool was used in the last 5-year Implementation Plan. This plan continues to use the tool with slight modifications. Information contained in this matrix include pollutants being addressed, the implementation strategy that will lead to success, proposed timeframes for strategy implementation, and monitoring parameters and reporting methodology that will document progress and successful implementation by Lane County. This matrix will also serve as an executive summary and tracking tool for the required annual and five year reporting to DEQ.

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Table 9: Implementation Matrix

Category	Strategy (Lane County Actions)	Target Pollutant	Pollution Source	Measurable Goals (Indicator of Progress)	Program Description (Policy reference)	Monitoring Scope	Actions	Timeline/ Frequency	Responsible Division	How
(A) Riparian and Wetland Protection and Restoration Programs										
(A) Riparian and Wetland Protection and Restoration Programs	(A-1) Regulate existing floodway and floodplain to maintain critical functions through existing code provisions	Temperature	Sediments	Application of floodplain modification standards in LC 16.244, LC 10.271	Prevent flood damage to riparian areas through permitting process	Countywide	1. Review floodplain floodway declaration applications	On-going	LMD Manager	• LMD will track floodplain related applications in the Accela Tracking system
	(A-2) Regulate riparian areas through existing code provisions	Temperature	Solar Radiation	Implementation of Riparian modification standards in LC 16.253	Protect riparian area encroachments and regulate existing riparian vegetation	Countywide	1. Apply Lane Code 16.253 Riparian Setback requirements for all development proposals	On-going	LMD Manager	• Track the number of riparian related complaints and responses. • Track the number of Riparian Setback Special Use Permit applications
	(A-3) Replant equivalent riparian areas impacted by public improvement projects with native trees and shrubs in accordance with prevailing best management practices	Temperature	Solar Radiation	Implementation of MMS (459) Other Vegetation Management, Minimization and Avoidance in County Right-Of-Way	Lane County adopted RRM BMP	Countywide	1. Monitor tree and shrub removal and replacement activities as per standard practices. 2. Follow Maintenance Management System (MMS 459) procedures when trees are impacted.	On-going	RMD Manager ECSD Manager PD Manager	• Report the number of county projects requiring the application of Activity Code MMS 459- Seeding and Mulching
	(A-4) Promote riparian related projects as funding allows	Temperature	Solar Radiation and Sediments	Active participation and working relationship between County staff, regional watershed councils, and restoration practitioners	Partnership/ coordination	Countywide	1. Collaborate with watershed council partners and other applicable restoration practitioners on projects of mutual interest.	On-going	RMD Manger ECSD Manager PD Manager WMD Manager	• Track the number of meetings attended by County staff • Track staff hours spent on partnership projects
							2. Investigate the feasibility of Lidar Mapping Application for riparian vegetation along temperature-limited streams.	June 2019	ECSD Manager WMD Manager	• Track hours spent on the Lidar project
	(A-5) Maintain public notice referrals to watershed councils for public and private development proposals.	Temperature	Solar Radiation and Sediments	Coordination with watershed councils during the development planning process	Referral Program	Countywide	1. Request comments on private and public development proposals from watershed councils	On-going	LMD Manager	• Track the number of referrals sent to watershed councils

Category	Strategy (Lane County Actions)	Target Pollutant	Pollution Source	Measurable Goals (Indicator of Progress)	Program Description (Policy reference)	Monitoring Scope	Actions	Timeline/ Frequency	Responsible Division	How
	(A-6) Identify watershed council partners and support riparian restoration and/or LID on-the-ground projects	Temperature Mercury Bacteria	Solar Radiation and Sediments	As funding allows, partner with watershed councils on waterways improvement projects such as culvert replacements, stream bank stabilization, invasive species removal, riparian tree planting etc.	Culvert Replacement Program	Countywide	1. Coordinate and participate with watershed councils on restoration projects	Annual review	ECSD Manager RMD Manager	• Track the number of capital improvement /road maintenance projects having restoration components with watershed council support
	(A-7) Look for opportunities to retain and/or create easements on county owned/ disposed properties for riparian purposes	Temperature	Solar Radiation	Setup program and process that looks for opportunities to retain and/or create easements on surplus properties	Surplus properties and foreclosed on properties auctions	Countywide	1. Monitor and review County initiated surplus property auctions for possible parcel retention	Annual review June 2016	ASD Manager	• Track the number of parcel analysis performed for auctioned properties • Develop riparian assessment checklist for reviewing surplus properties
(B) Pollution Prevention in Municipal Operations										
(B) Pollution Prevention in Municipal Operations	(B-1) Prioritize mechanical mowing over chemical uses	Bacteria, Temperature Mercury	Chemical agents, sediments	Implementation of Vegetation Management Program activities MMS 482, 483, 484, 441, 442	These MMSs refer to Mowing, Brush Mowing and Brush Cutting actions	Countywide	1. Use roadside mowers, brush mowing and brush cutting in vegetation management	On-going	RMD Manager	• Report linear miles mowed
	(B-2) Minimize common pollutants found on roadway surfaces through Lane County's Street Sweeping and Leaf Pickup programs.	Bacteria, Mercury	Pest waste, Chemical agents, Hydrocarbons, Leaks, Sediments	Street sweeping and leaf pickup accomplishments	Street Sweeping Program collect roadway debris and pollutants before they reach stream, waterbodies	Countywide	1. Sweep curbed streets 2. Conduct annual leaf pickup events	On-going	RMD Manager	• Lane miles swept within monitoring period • Report the quantity of leaf collected
	(B-3) Train County employees on stormwater best management practices	Bacteria, Mercury, Temperature	Pest, Chemical agents, Leaks	Participation in the in-house Short School Training Program	Short School refers to County in-house training program for road maintenance crews	Countywide	1. Conduct biennial training for all maintenance employees	Year 2015 and Year 2017	RMD Manager WMD Manager	• Report the number of short school attendees • Report stormwater topics covered
	(B-4) Reduce fuel consumption and leakages	Temperature Mercury	Chemical agents, Hydrocarbon, Lead	Incorporation of electric and high MPG vehicles in the transportation fleet	Fleet Replacement Program	Countywide	1. Consider replace fossil fuel-based vehicles to electric or hybrid systems	On-going	FD Manager	• Report the number of new energy efficient fleet vehicles • Report estimated fuel savings • Report the number of vehicles serviced
	(B-5) Intercept mercury containing waste to prevent it from going to the landfill	Mercury	Household waste	Facilitation of convenient disposal of mercury containing household waste	Annual Hazardous Waste Rural Roundup	Countywide	1. Conduct annual events for collection of households' florescent light bulbs and other	Four to Five roundups per period	WMD Manager	• Report the number of collection roundups occurred annually • Report the pounds of waste collected • Estimated mercury waste intercepted

Category	Strategy (Lane County Actions)	Target Pollutant	Pollution Source	Measurable Goals (Indicator of Progress)	Program Description (Policy reference)	Monitoring Scope	Actions	Timeline/ Frequency	Responsible Division	How
				through off-site rural roundup events	Program		domestic waste containing mercury.			
	(B-6) Safe disposal of household hazardous waste	Mercury	Household waste containing hazardous materials	Quantity of mercury containing waste collected at the Lane County's hazardous waste facilities.	Special Waste Program	Countywide	1. Collect hazardous waste at the County collection sites	Weekday collection	WMD Manager	• Report total pounds collected • Report quantity shipped for disposal • Estimated mercury intercepted
	(B-7) Safe disposal of mercury containing business waste	Mercury	Business waste containing mercury products	Collection roundups and quantity of waste intercepted	Hazardous Waste	Countywide	1. Work with non-household businesses to collect mercury containing waste 2. Recycle mercury-containing waste	Four to Five business pickup visits per year	WMD Manager	• Report the number of collection visits occurred annually • Report the pounds of waste collected • Estimated mercury waste intercepted and recycled
	(B-8) Educate citizens about recycling and hazardous waste management	Mercury, Bacteria	Household waste, refuse	Achieve countywide recycling goal	Recycling Program	Countywide	1. Run advertisements regarding waste management methods 2. Conduct Master recyclers classes 3. Distribute newsletters and brochures	Newsletter biannual	WMD Manager	• Report countywide recovery rate • Report the number of radio, tv, newspaper ads annually • Report the number of brochures, newsletter produced annually
	(B-9) Monitor/update existing RRM BMP Guide and incorporate applicable BMPs into the employee-training program	Bacteria Mercury Temperature	Non-accepted road maintenance practices	Introduction of new best management practices related to stormwater pollution reduction in road maintenance practices and training events	Road Maintenance Program	Countywide	1. Research new BMPs 2. Conduct trainings to implement new BMPs	June 2015	RMD Manager WMD Manager	• Report new BMPs implemented and included in trainings materials • Report any new trainings received and imparted
	(B-10) Maintain catch basins, pipes and inlets	Bacteria, Mercury	Hydrocarbons, lead, chemicals	Maintain stormwater infrastructure and replace failing components as necessary	Road maintenance Program	Inside MS4 boundary	1. Maintain inlets, catch basins, manholes 2. Maintain pipes and culverts 3. Replace failing inlets, pipes, manholes as necessary	On-going	RMD Manager	• Report the number of inlets maintained • Report the lineal feet of pipes maintained • Report replaced/ rehabilitated infrastructures
(C) Pet/Animal Waste, Septic Systems, Illicit Discharges										
(C) Pet/Animal waste, Septic Systems, Illicit Discharges	(C-1) Reduce pet waste in public areas by enforcing applicable regulations and facility improvements as funding allows	Bacteria	Pet and animal waste	Maintenance of pet waste stations and signs in public areas	Pet waste pickup guidance and ordinances LC 6.585 and LC 7.140	Countywide	1. Stock pet waste stations with disposal bags 2. Add new bag dispensers as funding allows 3. Review for opportunities to install new waste collection stations as funding allows	On-going	PD Manager	• Report the number of boxes dispensed (pet pickup bags) • Report the number of new pet waste pick up stations added

Category	Strategy (Lane County Actions)	Target Pollutant	Pollution Source	Measurable Goals (Indicator of Progress)	Program Description (Policy reference)	Monitoring Scope	Actions	Timeline/ Frequency	Responsible Division	How
	(C-2) Continue subsurface sanitation program for new/replacement systems and failures of existing systems	Bacteria	Failing septic systems	The number of septic system inspection and investigations and permits issued	Septic System Setback Requirements, Subsurface Sanitation Program	Countywide	1. Review new and replacement septic system per County design standards 2. Investigate septic system failures	On-going	LMD Manager	• Report the number of new septic system installation permits • Report the number of septic system alteration and repair permits
	(C-3) Educate public on septic system maintenance, failures and pollution risks through educational material distributions	Bacteria	Failing septic systems	Distribution of septic system management educational brochures to parties involved with new and replacement septic systems and septic system failures	Subsurface Sanitation Program	Countywide	1. Distribute educational material during permit issuance and during new/replacement applications and during septic investigations 2. Educate septic system owners about pollution causes 3. Develop informational brochures	On-going	LMD Manager	• Report the number of septic system maintenance brochures/handouts distributed
	(C-4) Discourage illegal discharges and roadside dumping and respond to incidents	Bacteria, Mercury Temperature	Solid / Domestic Waste, Industrial waste	Execution of illegal dumping and illicit discharge detection response program	Illegal Dumping/Illicit Discharge Response Nuisance LC 9.945	Countywide	1. Respond to illegal dumping and illicit discharge complaints 2. Impose penalties to violators	On-going	WMD manager	• Report the number of illicit discharge and illegal dumping incidents • Report the number of penalties
	(C-5) Enforce and administer illicit discharge, detection, response, and enforcement programs inside the UGB through partnership with the cities of Eugene and Springfield	Mercury, Bacteria Temperature	Solid Waste, Industrial Waste	Prevention of illicit discharges through local codes	Illicit discharge enforcement activities	MS4 boundary	1. Implement city ordinances for illicit discharge through City County Intergovernmental Agreement with City of Springfield	On-going	DPW Manager	• Report the number of illicit discharge responded and administered by the City
							2. Implement city ordinances for illicit discharge through City County Intergovernmental Agreement with City of Eugene		EPWD Manager	• Report the number of illicit discharge responded and administered by the City

(D) Erosion and Sediment Control During Construction										
(D) Erosion and Sediment Control During Construction	(D-1) Implement erosion and sediment control regulations to minimize or stop soil erosion and reduce sediments from entering waterbodies	Mercury Bacteria	Sediments	Regulated development activities through ordinances	IGA with the City of Springfield	Inside Springfield MS4 Boundary	1. Implement City of Springfield's BMP CSW1	On-going, unless IGA is not renewed	DPW Manager ECSD Manager	• Report the number of erosion control permits issued in the UGB
					IGA with the City of Eugene	Inside Eugene MS4 boundary	1. Implement City of Eugene BMP E2	On-going unless IGA is not renewed	EPWD Manager ECS Manager	• Report City of Eugene's Erosion Prevention and Construction Site Management Program activities
	(D-2) Review County erosion and sediment BMPs annually and incorporate new BMP measures as they become available.	Mercury Bacteria	Sediment	Incorporation of new erosion control related BMPs into road maintenance activities	Training Program	Countywide	1. Review new BMPs and add to County Road Maintenance Practices	On-going	RMD Manager WMD Manager	• Report reviews of BMPs • Report new BMPs implemented.
	(D-3) Track the number of development applications that disturb one acre or more.	Mercury Bacteria	Sediment	Refer development applications that disturb one acre or more to DEQ to assist with their 1200-C permit compliance program.	Permit compliance 1200-C Permit Program Grading excavation and clearing codes LC 16.005 Natural Resources District LC 16.213, LC 10.250	MS4 boundary and Countywide	1. Refer DEQ when a development proposal impacts more than one acre land	On-going	LMD Manager	• Report the number of 1200-C applications referred to DEQ annually.
	(D-4) Implement erosion and sediment control BMPs for County construction projects.	Mercury	Sediment	Track the number of County construction projects that incorporate erosion and sediment control BMPs	1200 CA Permit Program, Capital Improvement Program	Countywide	1. Implement BMP M.2.A.1 to countywide construction projects	On-going	ECS Manager RMD Manager	• Report the number of capital improvement and maintenance projects utilizing erosion and sediment control BMPs. • Report any corrective actions incorporated in the projects
Stormwater Planning and Programs, Structural Collection and Treatment of Stormwater										
Planning and Programs, Structural Collection and Treatment of	(E-1) Partner with the City of Springfield on Erosion and Sediment Control Regulations within County areas of the UGB	Temperature Mercury Bacteria	Sediments, stormwater runoff, heavy metals, hydrocarbons	Administration of a post-construction stormwater system maintenance, inspection, and compliance program that ensure stormwater management systems are operated and	Intergovernmental Agreement with City of Springfield	Springfield MS4 boundary	1. Implement city's Erosion and Sediment Control BMP DS2 inside the City's UGB	On-going	DPW Manager ECSD Manager	• Report City's inspection and enforcement activities in the UGB

				maintained consistent with local regulations.						
	(E-2) Partner with the City of Eugene on development standards within County areas of the UGB	Temperature Mercury, Bacteria	Sediments, runoff	Administration of stormwater development standards program that ensures private stormwater management systems are designed and installed consistent with local regulations	Intergovernmental Agreement with City of Eugene	MS4 boundary	1. Adopt stormwater design standards and BMP P6, BMP E4 inside the City's UGB	On-going	EPWD Manager ECSD Manager	• Report on IGA partnership achievements.
	(E-3) Prioritize Low Impact Development (LID) options when upgrading County facilities such as construction of stormwater bioswales and preservation of riparian areas from development activities.	Mercury Temperature Bacteria	Sediments Stormwater runoff	Documentation of County projects considered for LID options	Capital Improvement Program, Road Maintenance Program	Countywide	1. Document design concept process	Project by project basis	ECSD Manager RMD Manager PD Manager	• Report the number of County projects planned and/or developed with LID options
	(E-4) Implement Low Impact Development requirements for new private developments in the Goshen area as part of the Goshen Region Employment and Transition (GREAT) Plan	Mercury Temperature Bacteria	Sediments, heavy metals, hydrocarbons, industrial waste	Implementation of LID stormwater standards for development proposals in LC 16.280	GREAT Plan, Lane Code 16.280	Goshen region	1. Review development proposal consistent with applicable stormwater standards outlined in LC 16.280	Project by project basis	LMD Manager ECSD Manager WMD Manager	• Report the number of land use, building, and septic permit issued in the Goshen area • Report the number of water quality facilities permitted with building permits
	(E-5) Develop and maintain stormwater conveyance system outfall maps to track and locate problems more efficiently	Mercury, Temperature Bacteria	Illicit discharges	Development of stormwater mapping application to aid illicit discharge detection	Mapping Program	Countywide	1. Continue developing GIS-based stormwater mapping tools	On-going	ECSD Manager RMD Manager WMD Manager	• Report GIS tools/applications under development and use
	(E-6) Conduct public education and outreach on stormwater quality for activities such as illegal discharge/dumping, pet waste, riparian, and wetland protection	Mercury Temperature Bacteria	All types	Build brochure portfolio for various pollutants and target groups	Intergovernmental Agreement with City of Springfield and City of Eugene	MS4 boundary and Countywide	1. Track City' brochure portfolio and look for opportunities to distribute them to county residents	On-going	ECSD Manager	• Report the number of new brochure developed/adopted • Report the number of brochure distributed
									DPW Manager	• Report the number of new brochure developed/adopted • Report the number of brochure distributed
	(E-7) Sponsor county employees to attend stormwater training	Mercury Temperature Bacteria	All types	Number of County employee receiving stormwater training	Training Program	Countywide	1. Provide employees opportunities to attend stormwater trainings	On-going	ECSD Manager RMD Manager WMD Manager PD Manager FD Manager	• Report the number of stormwater related trainings attended

	(E-8) Have appropriate staff attend DEQ TMDL meetings	All	All pollution sources	Keep up to date on TMDL issues, policies, and programs	Stormwater Program	Countywide	1. County staff attend TMDL related activities	On-going	ECSD Manager WMD Manager	• Report TDML meetings attended
(F) Education and Outreach, Public Involvement										
(F) Education and Outreach, Public Involvements	(F-1) Develop and distribute stormwater/water quality materials such as brochures, factsheets, mailers, signage, and web pages	Bacteria Temperature Mercury	All pollution sources	Keeping County residents informed about stormwater related information, activities, and policies	Lane Manual	Countywide	1. Use appropriate media to communicate with the community regarding various stormwater programs	On-going	ECSD Manager WMD Manager	• Report on materials developed and distributed
	(F-2) Pursue and implement mutual stormwater strategies of interest with other jurisdictions	Bacteria Temperature Mercury	All pollution sources	Execute and renew intergovernmental agreements as appropriate	IGA with partners	MS4 boundary	1. Look for opportunity to collaborate on stormwater issues and projects of mutual interest	On-going	ECSD Manager	• Report existing and future partnership efforts
	(F-3) Conduct stormwater quality and riparian protection outreach via methods such as , workshops, event hosting, fairs in partnership with the cities	Bacteria Temperature Mercury	All pollution sources	Collaboration with and participation in events such as workshops, fairs, and tradeshows hosted by agencies	IGAs with the partner cities	MS4 boundary	1. Participate in planning and development of regional events	On-going	WMD Manager	• Report the number of events participated
	(F-4) Inform animal and pet owners about bacteria pollution issues associated with improper waste disposal.	Bacteria	Animal waste	Look of opportunities to distribute educational materials outlining proper care of domestic and other animal waste	NPDES	Countywide	1. Distribute brochures at applicable locations and events	On-going	WMD Manger PD Manager	• Report the location and number of educational materials distributed

	(F-5) Inform County residents about TMDL program and activities	Bacteria Temperature Mercury	All pollution sources	Post TMDL Implementation Plan on website	TMDL	Countywide	Maintain stormwater website	On-going	WMD Manager	• Report website maintenance activities
	(F-6) Educate the public on proper hazardous waste disposal.	Mercury Bacteria	Solid waste	Incorporate hazardous waste collection and disposal information in educational materials, such as newsletters and brochures	Quantity of hazardous waste collected	Countywide	Distribute hazardous waste disposal educational materials during collection activities and/or other events.	On-going	WMD Manager	• Report the number of educational materials distributed.

Acronyms:
ECSD: Engineering and Construction Services Division(Lane County)
ASD: Administrative Services Manager
TMDL: Total Maximum Daily Load
MMS: Maintenance Management System (Lane County)
DPW: Springfield Development and Public Works
PD: Parks Division (Lane County)
FD: Fleet Division (Lane County)
MS4: Municipal Separate Storm Sewer System
LID: Low Impact Development
EPWD: Eugene Public Works Department
WMD: Waste Management Division (Lane County)
IGA: Intergovernmental Agreement
BMP: Best Management Practices
RRM: Road Maintenance Manual (Lane County)
LMD: Land Management Division (Lane County)
MPG: mileage per gallon
LC: Lane Code

6.1 Measuring and Monitoring the TMDL Plan

The ultimate success of the Willamette Basin TMDL Plan will be measured by the de-listing of 303(d) streams throughout the Willamette Basin. Those de-listings will occur only when supported by water quality monitoring data taken at key intervals and key points throughout the Basin. Those sampling activities are best conducted by entities with broad oversight and/or involvement such as DEQ. For evaluation and documentation purposes, the County commits to monitor implementation of the strategies included in this Plan and submittal of annual monitoring reports.

Being located in the Headwaters region of the Basin, activities in the Lane County can play a role in overall water quality of downstream portion of the Basin. For some strategies, such as planting trees along waterways, it may take years to reap the heat load reduction benefits. Through other strategies, such as continuing partnerships to urban growth boundaries with regional municipalities for code enforcement and education outreach related to water quality, the County could see more immediate benefits in preventing further water quality degradation.

Lane County will meet reporting expectations and requirements from Oregon DEQ by submitting TMDL monitoring reports annually. The annual progress report will summarize the status of each implementation strategy. Similar to preceding annual monitoring efforts, the reports will contain a copy of the Implementation Matrix with summary results reported under the monitoring status column, indicating which strategies in the matrix were successfully implemented and which need improvement.

6.2 Compliance with Statewide Planning Goals

The following paragraphs demonstrate that all of the strategies outlined in this Plan are consistent with applicable Lane County Rural Comprehensive Plan (RCP) policies and Statewide Planning Goals. The County will also comply with local planning policies and statewide land use laws in any future actions related to TMDL project implementation.

The Lane County RCP consists of all adopted general and detailed plans that make up the planning framework of the Lane County area, and it applies to all unincorporated lands within Lane County beyond the Urban Growth Boundaries (UGB's) of incorporated cities and beyond the boundary of the Eugene-Springfield Metropolitan Area General Plan (*Metro Plan*). Local plans do not apply to state and federal jurisdiction lands such as National Forest Lands and BLM. In addition, RCP provisions and representations of County positions on various issues are presented for consideration by other jurisdictions in their own management actions and in regional partnerships.

RCP General Policy A-1: *For Each Oregon Department of Land Conservation and Development (LCDC) Goal, there are one or more RCP Policies to be applied by the County toward land use and other planning and resource-management issues, in the interest of compliance with sound planning principles and statewide planning law. Policies are binding commitments, but will be carried out within established*

work programs and over-all County priorities. The application of policies which call for any programs or studies will occur as County resources in terms of both staff and budgetary allocations permit.[11]

Goal 1- Citizen Involvement: *To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.*

RCP Policy 1-3: *Firmly identified public needs and desires shall be responded to by the County planning process, within the parameters of state and local planning requirements.*

RCP Policy 1-5: *The program of communicating with chartered community organizations shall be continued.*

Lane County is committed to public participation processes as part of the ongoing management activities, including the stormwater management program. This process provides opportunities for members of the public to participate during the development and implementation phases of project activities. Citizens are notified of upcoming changes in County codes and any County efforts to collaborate with other municipalities and agencies in activities conducted under this plan. Public participation and involvement associated with the County's Stormwater Management Program utilizes the Roads Advisory Committee (RAC) and public Open House forums for review and input to Lane County's Stormwater Management Program. The RAC is comprised of volunteer, private citizens that have input on various implementation plans throughout Lane County's Public Works Department. At Open House forums, citizens are informed of County partnerships with other local municipalities and are provided the opportunity to voice their concerns and provide input on TMDL activities, including the Stormwater Management Program.

The chartered Watershed Councils in each subbasin shall be a key forum for continuing communication of TMDL activities and monitoring through project lifecycles and to meet DEQ monitoring expectations. In addition, land use strategies identified in this plan are instituted through ordinances that are subject to public review and comments through public hearings processes. Therefore, the Lane County TMDL Implementation Plan complies with Statewide Planning Goal 1 and the applicable Goal 1 policies in the Lane County Rural Comprehensive Plan.

Goal 2- Land Use Planning: *To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.*

RCP Policy 2-6: *The revised General Plan shall have primary jurisdiction in all areas of the County outside the incorporated City Urban Growth Boundaries and the Plan Boundary shown on the Eugene-Springfield Metro Plan Diagram which includes the land outside the UGB out to the Metro Plan Boundary.*

[11] Note: The *Metro Plan* and all associated refinement plans, special area plans, and functional plans apply in the central urban area of Lane County that is within the *Metro Plan* boundary. The *Metro Plan* jurisdictional area of responsibility is coordinated and shared between Lane County DMA and the two cities, Eugene and Springfield.

The Lane County Willamette Basin TMDL Implementation Plan is a single purpose plan that includes the factual and analytical basis for management strategies to improve water quality included in the Plan. Proposed strategies identified within the County's Willamette Basin TMDL Implementation Plan do not conflict with Lane County's Comprehensive Plan and other planning documents that set the policy framework for the County. Therefore, the Lane County TMDL Implementation Plan complies with Statewide Planning Goal 2 and the applicable Goal 2 policy in the Lane County Rural Comprehensive Plan.

Goal 3- Agricultural Lands: *To preserve and maintain agricultural lands.*

The agency responsible for developing and implementing management strategies to control non-point source pollution arising from agricultural activities is the Oregon Department of Agriculture (ODA). ODA is identified as the designated management agency (DMA) responsible for regulation of water quality improvements related to agricultural practices (i.e., erosion control, siltation control, animal waste management, and riparian area management on farm land). Agricultural practices are regulated by Oregon Senate Bill 1010, and plans developed for farm lands are under oversight by ODA. Therefore, Goal 3 does not apply to Lane County's Willamette Basin TMDL Implementation Plan.

Goal 4- Forest Lands: *To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest trees species as the leading use on forestland consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture.*

The Oregon Departments of Forestry (ODF) is identified as the designated management agency (DMA) responsible for developing and implementing management strategies for control of non-point source pollution arising from timber management practices on forest-zoned lands and lands under their jurisdiction. Although, ODF is exempt from submitting a TMDL implementation plan because their activities are regulated under the State Forest Practices Act. Timber harvest activities are regulated for sound management of soil, air, water, and fish and wildlife resources on private commercial operations, under state forest management plans for state forests. Federal forestlands under jurisdiction of the USFS and BLM have resource management plans, and water quality restoration plans for guidance on federal forests. Therefore, Statewide Planning Goal 4 does not apply to Lane County's Willamette Basin TMDL Implementation Plan.

Goal 5: Open Spaces, Scenic and Historic Areas, and Natural Resources: *To protect natural resources and conserve scenic and historic areas and open spaces.*

RCP Flora and Fauna Policy 5-2: *Recognize existing federal and state programs protecting threatened or endangered fish and wildlife species.*

RCP Flora and Fauna Policy 5-3: *Through the use of County regulations including zoning, seek to minimize the adverse impacts of land use changes on sensitive species (those susceptible to significant population declines resulting from habitat modification).*

RCP Flora and Fauna Policy 5-4: *Public agencies are encouraged to work with landowners to conserve wildlife habitats.*

RCP Flora and Fauna Policy 5-6: *Riparian vegetation along Class 1 streams in the County is recognized as being of high value for many purposes, notably wildlife habitat and stream bank stabilization. Riparian lands shall be defined as the lands within 100 feet of ordinary high water on Class I streams, and shall be considered "significant 1C" areas under OAR 660-16-000/025; "3C" protection of the riparian resource shall be achieved through development setbacks and vegetation management regulations within the riparian strip.*

RCP Flora and Fauna Policy 5-13: *In its program of protecting "1C" resources, the County shall make maximum practical use of existing land use regulations (e.g. Willamette Greenway Permit…) to achieve such protection.*

RCP Water Resources Policy 5-1: *State policy normally promotes multiple uses of surface waters throughout Lane County. Under such policy, use conflicts do occur. As the first step in addressing this problem, the County urges the Oregon Water Quality Review Board and DEQ to update the existing water basin plans and establish priorities among the various beneficial uses for specific water areas. The ESEE consequences of each use should be considered in establishing priorities and resolving any identified conflicts. Lane County will cooperate to the maximum extent practicable in such a program.*

Significant open space, scenic and historic areas or natural resource areas under Lane County jurisdiction that will be impacted by activities summarized within the County's Willamette Basin TMDL Implementation Plan are most likely to be found in Lane County Parks, within the Willamette Greenway, and in roadside areas crossing or adjacent to waterways. The Implementation Plan identifies future County involvement in riparian planting projects and other activities that will eventually lead to a net increase in enhancement, restoration and protection of Goal 5 resources. Compliance with RCP policies will include working with landowners and the State (DEQ) to address TMDLs, considering multiple objectives and striving to increase the health of the waterways. In addition, establishing priorities among the various beneficial uses will minimize adverse impacts on other species.

The Plan provides a broad range of activities and educational projects that Lane County will continue to provide. Goal 5 resources are addresses in the Plan, primarily through programs and activities.. Education programs and on the ground projects will lead to the future protection of existing County-owned riparian and wetland resources that exhibit high environmental function and values known to improve water quality. Therefore, the Lane County TMDL Implementation Plan complies with Statewide Planning Goal 5 and the applicable Goal 5 policies in the Lane County Rural Comprehensive Plan.

Goal 6- Air, Water and Land Resources Quality: *To maintain and improve the quality of the air, water, and land resources of the state.*

RCP Water Quality Policy 6-1: *Avoidance and/or control of soil erosion shall be a major criterion to be addressed in all applicable review procedures and County construction activity.*

RCP Water Quality Policy 6-2: *The re-establishment of vegetative cover by standard erosion control practices shall be required as part of the land development process.*

RCP Water Quality Policy 6-3: *Lane County shall cooperate with DEQ and other state and federal agencies in maintaining domestic water supplies to the existing standards of the appropriate governing body.*

RCP Water Quality Policy 6-4: *Lane County shall promote watershed practices which protect and enhance water quality and quantity through land use planning, Public Works projects and management of County facilities.*

RCP Water Quality Policy 6-5: *Lane County shall cooperate with LCOG and DEQ in identifying sources of water pollution and controlling or abating them. The County's primary emphasis will be the possible degradation of ground and surface water quality by onsite sewage disposal systems.*

RCP Water Quality Policy 6-6: *Lane County shall cooperate with the Oregon Water Policy Review Board to evaluate flow requirements necessary to maintain water quality in critical streams and support the establishment of minimum flow designations for those streams.*

The County's Willamette Basin TMDL Implementation Plan addresses water quality by describing actions that will be carried out to reduce surface water inputs of heat, bacteria, and mercury. All federal and state wetland requirements within the Plan boundary will continue to be satisfied under State/Federal wetland permits, as required by safe harbor under OAR 660-023 provisions applicable for Lane County. The Plan identifies the County's actions for compliance with Riparian Modification and Setback Requirements, which establishes protection for riparian areas. The Plan describes continued compliance with Willamette River Greenway Modification Standards and Erosion Standards within the Eugene-Springfield Urban Growth Boundary (UGB). Lane County's Willamette Basin TMDL Implementation Plan includes elements to better manage stormwater through considerations for stormwater detention and treatment requirements to reduce the erosive forces of stormwater runoff and resulting sedimentation. Therefore, the Lane County TMDL Implementation Plan complies with Statewide Planning Goal 6 and the applicable Goal 6 policies in the Lane County Rural Comprehensive Plan.

Goal7 - Areas Subject to Natural Disasters and Hazards: *To protect life and property from natural disasters and hazards.*

Lane County's Willamette Basin TMDL Implementation Plan identifies continued compliance with Floodplain Modification Standards and Floodplain Development Standards, which ensures conformance with FEMA floodplain requirements as a key response to areas subject to natural disasters and hazards. Through this permit process, any development within the floodway must demonstrate that activities will not detrimentally impact the mapped base flood elevation for the project area. Additionally, Chapter 16.005 of Lane Code implements the County's Comprehensive Plan policies and outlines development restrictions for grading, excavation and clearing activities. The code regulations regarding grading and clearing by mechanical equipment may be restricted or regulated by the Approval Authority either at the time of approval of a development permit or of an application if there is a finding that such grading

or clearing presents a real threat of pollution, contamination, silting of water bodies or water supplies, erosion and slide damage, or alteration of natural drainage patterns in the area. In all cases, excessive grading, excavation and clearing shall be avoided when detrimental to soil stability and erosion control. The character of soils for fills and the characteristics of parcels or lots made usable by means of fill shall be suitable for the intended purpose. Adherence to these standards will ensure that the Lane County TMDL Implementation Plan complies with Statewide Planning Goal 7 and the applicable Goal 7 policies in the Lane County Rural Comprehensive Plan.

Goal 8 - Recreational Needs: To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.

RCP Policy 8-7: Encourage the development of environmentally compatible tourist and recreational facilities which enhance the economic prospects of rural areas while serving the recreational needs of tourist and County residents.

RCP Policy 8-10: Encourage public and private participation to increase access to waterways, where needed, without infringement upon private property rights.

The Lane County Willamette Basin TMDL Implementation Plan strives to ensure improvements to the water quality in our rivers, lakes, and streams, which will in turn, can ensure highest and best multiple uses of those waterways. The importance of high quality waterways on desired recreational activities that occur in waterways of Oregon is well documented. Improved water quality and environmentally compatible restoration, as well as access to waterways in Lane County are enhanced by activities outlined in the TMDL Plan. The County TMDL implementation plan is consistent with Statewide Planning Goal 8 and the applicable Goal 8 policies in the Lane County Rural Comprehensive Plan.

Goal 9 - Economic Development: To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare and prosperity of Oregon's citizens.

RCP Policy 9-9: Tourism shall be considered as a base industry having high potential for growth throughout the County. Development of facilities oriented towards tourists shall be given maximum support within the framework of these policies.

RCP Policy 9-10: As a stimulus to the tourist industry, the County shall maintain and when possible, improve public recreational facilities such as parks, boat ramps, etc.

Lane County's Willamette Basin TMDL Implementation Plan will provide for improvements to water quality that ensure Lane County continues to provide tourist industry stimulus, and amenities that assist in attracting high wage jobs and employees. Lane County's waterways have been determined to be an important factor in quality of life considerations in the region. This impacts economic development opportunities within the County. The regulations under Lane Code for riparian habitat and floodplain standards ensures appropriate development, if any, occurs within the riparian corridor, which can allow for some development of property to still occur on subject parcel areas outside of the riparian corridor.

Therefore, the Lane County TMDL Implementation Plan complies with Statewide Planning Goal 9 and the applicable Goal 9 policies in the Lane County Rural Comprehensive Plan.

Goal 10 - Housing: To provide for the housing needs of citizens of the state.

The County's Willamette Basin TMDL Implementation Plan will not affect availability, types, or distribution of housing nor influence other housing needs available in unincorporated Lane County. Therefore, Statewide Planning Goal 10 is not applicable to the Lane County TMDL Implementation Plan.

Goal 11 - Public Facilities and Services: To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

RCP Policy 11-3: Lane County shall actively support and assist progressive solid waste management efforts. The Lane County Solid Waste Management Plan (SWMP) shall be the primary instrument to affect this policy.

The SWMP is a companion single purpose plan with activities designed to remove solid waste from the County waste stream, which is integrated with the County's Willamette Basin TMDL Implementation Plan in the framework of waste management's key role in coordination of all waste reduction and reduction of pollutants in Lane County. The TMDL Plan is consistent with Goal 11 where applicable in rural unincorporated zones in the Willamette Basin through activities shown on the Implementation Matrix in Table 6. A public service that Lane County will conduct is consideration of the development of a Lane County Stormwater Management Manual for application in rural Lane County modeled after the partnership document developed with *Metro Plan* partner Eugene. Also, the matrix lists consideration of new code language that would enhance development of private and public stormwater facilities and standards required for new subdivision development. Septic System management strategies are also noted in this Plan. Therefore, the Lane County TMDL Implementation Plan complies with the framework for rural development under Statewide Planning Goal 11 and the applicable Goal 11 policy in the Lane County Rural Comprehensive Plan.

Goal 12 – Transportation: To provide and encourage a safe, convenient and economic transportation system.

RCP Policy 12-1: Lane County shall strive for a coordinated and balanced transportation system which complies with LCDC Goal 12 and is responsive to the economic, social, and environmental considerations, and which will work toward the following objectives:

c. A transportation system responsive to changing needs and conditions.

d. Consideration of direct and indirect impacts of proposed transportation projects on the environment, energy resources, economy and general livability.

Lane County is responsible for providing safe and economic infrastructure for approximately 1446 miles of County Roads. The Willamette Basin TMDL Implementation Plan contains numerous implementation and educational activities under direct responsibility of the Road Maintenance Division. Many of the County Best Management Practices affect culverts and other facilities where rivers and roads intersect.

Implementation activities are coupled with classes regularly taught in 'Short School' and at public educational opportunities that highlight appropriate stormwater BMPs for roadways. Therefore, the Lane County TMDL Implementation Plan complies with Statewide Planning Goal 12 and the applicable Goal 12 policy in the Lane County Rural Comprehensive Plan.

Goal 13 - Energy Conservation: To conserve energy.

The County's Willamette Basin TMDL Implementation Plan does not influence energy consumption. Therefore, Statewide Planning Goal 13 and the RCP Chapter 13 policies are not applicable to the Lane County TMDL Implementation Plan.

Goal 14: Urbanization: To provide for an orderly and efficient transition from rural to urban use.

RCP Policy 14-11: Use of utility easements and natural drainage ways within the urban growth area shall be consistent with applicable plans, will have multiple use where practicable and will be based on County-city agreement.

Lane County's Willamette Basin TMDL Implementation Plan applies to the unincorporated areas of Lane County's jurisdiction. The County continues to partner with other municipalities on coordinated plans for stormwater management, for example in partnership with Eugene, that are applicable to urban transition areas within the Metro Plan. Educational and training components of the Plan are provided to all interested parties, regardless of rural or urban residence. Therefore, the Lane County TMDL Implementation Plan indirectly complies with Statewide Planning Goal 14 and the Goal 14-11 policy in the Lane County Rural Comprehensive Plan.

Goal 15 - Willamette River Greenway: To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

RCP Policy 15-6: Prioritize water quality management controls along the Coast Fork and the Main Stem, especially in the Metro area.

The Lane County TMDL Implementation Plan is designed to improve water quality of the Willamette River by reducing pollution loads, and as a result, enhance the quality of lands within the Willamette River Greenway. As outlined within Lane Code 16.254, Greenway Development Permit, the County has an existing review and permitting procedure for certain land use activities within the Willamette River Greenway boundary, as required by the Statewide Willamette River Greenway Goal and the Lane County Willamette River Greenway Plan. The Greenway Development Permit code includes specific design criteria and a 100-foot setback from ordinary high waterline of the river for new intensifications, developments and changes of use (except for a water-related or water dependent use). These specific activities, plus continuing educational strategies to increase understanding of the importance to water quality in the Willamette Greenway, will ensure the Lane County TMDL Implementation Plan complies with Statewide Planning Goal 15 and the applicable Goal 15 policies in the Lane County Rural Comprehensive Plan.

Goal 16: Estuarine Resources; Goal 17: Coastal Shorelands; Goal 18: Beaches and Dunes; and Goal 19: Ocean Resources

The Willamette Basin is within the Inland Region of the Lane County RCP, not the Coastal Region. Therefore, Goals 16, 17, 18, and 19 are not geographically applicable to the Lane County Willamette Basin TMDL Implementation Plan.

6.3 Consistency with the Metro Plan

The Cities of Springfield, Eugene, and Lane County (for the area within the metro boundary) have an acknowledged Comprehensive Plan called the Metro Plan. Lane County adopted the Metro Plan in 1982 (Ordinance No. 856), and the plan was acknowledged by the Land Conservation and Development Commission the same year. The document has undergone several reviews and amendments to keep it in compliance with applicable new state law, administrative rules, and to address changing local conditions. The latest revision was in 2004 which the County adopted in June 2004 (Ordinance No. PA 1197). Relevant elements, goals, and policies in the Metro Plan applicable to the County's TMDL Plan (and NPDES Phase II Permit) stormwater efforts are provided below.

C. Environmental Resources Element

The emphasis in this element is the protection of waterways as a valuable and irreplaceable component of the overall natural resource system important to the metropolitan area.

Applicable Goals:

1. Protect valuable natural resources and encourage their wise management, use, and proper reuse.
2. Maintain a variety of open spaces within and on the fringe of the development area.
3. Protect life and property from the effects of natural hazards.
4. Provide a healthy and attractive environment, including clean air and water, for the metropolitan population.

Applicable Policies:

C.5 Metropolitan goals relating to scenic quality, water quality, vegetation and wildlife, open space, and recreational potential shall be given a higher priority than timber harvest within the UGB.

C.8 Local governments shall develop plans and programs which carefully manage development on hillsides and in water bodies, and restrict development in wetlands in order to prevent erosion and protect the scenic quality, surface water and groundwater quality, forest values, vegetation, and wildlife values of those areas.

C.17 The map titled Goal 5 Significant Riparian Corridors for the area inside the Metro Plan Boundary and outside the UGB, dated January 2004, adopted and incorporated here, shall be used to identify significant riparian corridors for purposes of applying Goal 5 riparian protection provisions in Lane Code Chapter 16 for areas outside the UGB and inside the Plan Boundary. The map is on file at the Lane County Land Management Division.

C.25 Springfield, Lane County, and Eugene shall consider downstream impacts when planning for urbanization, flood control, urban storm runoff, recreation, and water quality along the Willamette and McKenzie Rivers.

C.26 Local governments shall continue to monitor, to plan for, and to enforce applicable air and water quality standards and shall cooperate in meeting applicable federal, state, and local air and water quality standards.

C.29 Prior to the completion of the next Metro Plan update, the air, water, and land resource quality of the metropolitan area will be reassessed.

C.30 Except as otherwise allowed according to Federal Emergency Management Agency (FEMA) regulations, development shall be prohibited in floodways if it could result in an increased flood level. The floodway is the channel of a river or other watercourse and the adjacent land area that must be reserved to discharge a one-percent-chance flood in any given year.

C.31 When development is allowed to occur in the floodway or floodway fringe, local regulations shall control such development in order to minimize the potential danger to life and property. Within the UGB, development should result in in-filling of partially developed land. Outside the UGB, areas affected by the floodway and floodway fringe shall be protected for their agricultural and sand and gravel resource values, their open space and recreational potential, and their value to water resources.

C.32 Local governments shall require site-specific soil surveys and geologic studies where potential problems exist. When problems are identified, local governments shall require special design considerations and construction measures be taken to offset the soil and geologic constraints present, to protect life and property, public investments, and environmentally sensitive areas.

D. Willamette River Greenway, River Corridors, and Waterways Element

The Greenway element emphasizes the intrinsic value of the Willamette River waterway for enjoyment, and active and passive use by residents of the area.

Applicable Goal:

To protect, conserve, and enhance the natural, scenic, environmental, and economic qualities of river and waterway corridors.

Applicable Policies:

D.2 Land use regulations and acquisition programs along river corridors and waterways shall take into account all the concerns and needs of the community, including recreation, resource, and wildlife protection; enhancement of river corridor and waterway environments; potential for supporting non-automobile transportation; opportunities for residential development; and other compatible uses.

D.3 Eugene, Springfield, and Lane County shall continue to cooperate in expanding water-related parks and other facilities, where appropriate, that allow access to and enjoyment of river and waterway corridors.

D.4 Lane County, Springfield, and Eugene shall continue to participate in efforts to determine the feasibility of an urban canal that would connect Eugene's historic Millrace to Amazon Creek. Likewise, Springfield's efforts to improve the scenic quality of its Millrace should be encouraged.

D.5 New development that locates along river corridors and waterways shall be limited to uses that are compatible with the natural, scenic, and environmental qualities of those water features.

D.6 New industrial development that locates along the Willamette and McKenzie Rivers shall enhance natural, scenic, and environmental qualities.

E. Environmental Design Element

The Environmental Design Element is concerned with that broad process which molds the various components of the urban area into a distinctive, livable form that promotes a high quality of life.

Applicable Goals:

1. Secure a safe, clean, and comfortable environment which is satisfying to the mind and senses.

2. Encourage the development of the natural, social, and economic environment in a manner that is harmonious with our natural setting and maintains and enhances our quality of life.

3. Create and preserve desirable and distinctive qualities in local and neighborhood areas.

Applicable Policies

E.2 Natural vegetation, natural water features, and drainage-ways shall be protected and retained to the maximum extent practical. Landscaping shall be utilized to enhance those natural features. This policy does not preclude increasing their conveyance capacity in an environmentally responsible manner.

E.8 Site planning standards developed by local jurisdictions shall allow for flexibility in design that will achieve site planning objectives while allowing for creative solutions to design problems.

G. Public Facilities and Services Element

The public facilities element deals with components of the natural resource system in the context of the water and stormwater systems. The public facilities element includes findings and policies related to waterways, groundwater, drinking water protection, the Clean Water Act, and the Endangered Species Act.

Applicable Goals:

1. Provide and maintain public facilities and services in an efficient and environmentally responsible manner.
2. Provide public facilities and services in a manner that encourages orderly and sequential growth.

Applicable Policies:

G.2 Use the planned facilities maps of the Public Facilities and Services Plan to guide the general location of water, wastewater, stormwater, and electrical projects in the metropolitan area. Use local facility master plans, refinement plans, capital improvement plans and ordinances as the guide for detailed planning and project implementation.

G.11 Continue to take positive steps to protect groundwater supplies. The cities, county, and other service providers shall manage land use and public facilities for groundwater related benefits through the implementation of the Springfield Drinking Water Protection Plan and other wellhead protection plans. Management practices instituted to protect groundwater shall be coordinated among the City of Springfield, City of Eugene, and Lane County.

G.14 Improve surface and ground water quality and quantity in the metropolitan area by developing regulations or instituting programs for stormwater to:

a. Increase public awareness of techniques and practices private individuals can employ to help correct water quality and quantity problems;

b. Improve management of industrial and commercial operations to reduce negative water quality and quantity impacts;

c. Regulate site planning for new development and construction to better manage pre- and post-construction storm runoff, including erosion, velocity, pollutant loading, and drainage;

d. Increase storage and retention and natural filtration of storm runoff to lower and delay peak storm flows and to settle out pollutants prior to discharge into regulated waterways;

e. Require on-site controls and development standards, as practical, to reduce offsite impacts from stormwater runoff;

f. Use natural and simple mechanical treatment systems to provide treatment for potentially contaminated runoff waters;

g. Reduce street-related water quality and quantity problems;

h. Regulate use and require containment and/or pretreatment of toxic substances;

i. Include containment measures in site review standards to minimize the effects of chemical and petroleum spills; and

j. Consider impacts to ground water quality in the design and location of dry wells.

G.15 Implement changes to stormwater facilities and management practices to reduce the presence of pollutants regulated under the Clean Water Act and to address the requirements of the ESA.

G.16 Consider wellhead protection areas and surface water supplies when planning stormwater facilities.

G.17 Manage or enhance waterways and open stormwater systems to reduce water quality impacts from runoff and to improve stormwater conveyance.

G.18 Include measures in local land development regulations that minimize the amount of impervious surface in new development in a manner that reduces stormwater pollution, reduces the negative effects from increases in runoff, and is compatible with Metro Plan policies.

G.19 The cities and Lane County shall adopt a strategy for the unincorporated area of the UGB to: reduce the negative effects of filling in floodplains and prevent the filling of natural drainage channels except as necessary to ensure public operations and maintenance of these channels in a manner that preserves and/or enhances floodwater conveyance capacity and biological function.

G.20 Maintain flood storage capacity within the floodplain, to the maximum extent practical, through measures that may include reducing impervious surface in the floodplain and adjacent areas.

6.4 Partnership Opportunities

This Plan continues utilize the findings of a companion document titled *"The Willamette Headwaters Water Quality Assets, Gaps, and Opportunities Study" (Working Draft, October 2007, LCOG)*,submitted during the previous Plan preparation. It identifies and analyzes opportunities to partner with other jurisdictions in the Lane County area of the Willamette Basin. That study was published by LCOG and findings are summarized below.

DMAs throughout Lane County vary in aspects such as size, geography, proximity to waterways, level and quality of existing infrastructure, level of services provided, and resources available. Populations range from 300 to 8,500 and land under the authority of DMAs can be as little as 216 acres or as much as 670,000 acres. The jurisdictional DMA responsibility for Lane County extends to the city limits of the other cities in the Willamette Basin portions of Lane County. The urban center of the County is under coordinated responsibility of the County and the two cities, Eugene and Springfield. In spite of the differences, all jurisdictions in Lane County have similar opportunities to improve water quality conditions, challenges, and mandates due to their location within the context of the larger Willamette Basin.

Jurisdictions in the region are already taking steps to preserve and restore water quality in the region. Some jurisdictions have been able to do more than others have, but all seem to recognize that water quality is a fundamental component of a healthy, appealing community. There are many opportunities to augment existing initiatives; for example, entering agreements with other jurisdictions for mutual benefit and coordinating with other jurisdictions that are implementing the same measures.

Based on the Water Quality Management Plan in the Willamette Basin TMDLs, materials from DEQ, EPA, and other organizations and the Lane County Water Quality Gaps Analysis there are seven major focus areas in this region of the Willamette Basin. These represent the areas that may be considered gaps in how the region as a whole is protecting and restoring water quality. The level of priority for actions is specific to each jurisdiction. The seven major water quality focus areas are:

- Animal Waste Management
- Septic System Management
- Erosion Prevention and Sediment Control
- Illegal Discharge
- Riparian Protection and Restoration
- Stormwater Planning and Management
- Education/Training

Table 10 outlines the focus areas of special concern identified by DEQ as an outcome of the Willamette Basin Gaps Analysis Study for this region. The table assigns a high, medium, or lower priority to each of the eight major focus areas for each jurisdiction. Lane County has many commonalities with other local jurisdictions. For example, stormwater planning and management is a high priority for Lane County as well as education and training.

Table 10: Other Jurisdiction DMAs in Lane County

DMAs	Animal Waste Management	Stormwater Planning & Management	Septic System Management	Erosion Control	Illegal Discharge	Riparian Protection & Restoration	Education & Training
Coburg	Medium	High	High	High	Medium	High	High
Creswell	Medium	High	Lower	Medium	Medium	High	High
Cottage Grove	Medium	High	Lower	High	Medium	Medium	High
Junction City	High	High	Lower	High	High	Medium	High
Lane County (outside Metro)	Medium	High	High	Medium	Medium	Medium	High
Lowell	Medium	High	Lower	High	High	Medium	High
Oakridge	Medium	High	Lower	Medium	Medium	High	High
Veneta	High	High	Lower	High	High	Medium	High
Westfir	Lower	High	Medium	High	Medium	High	High

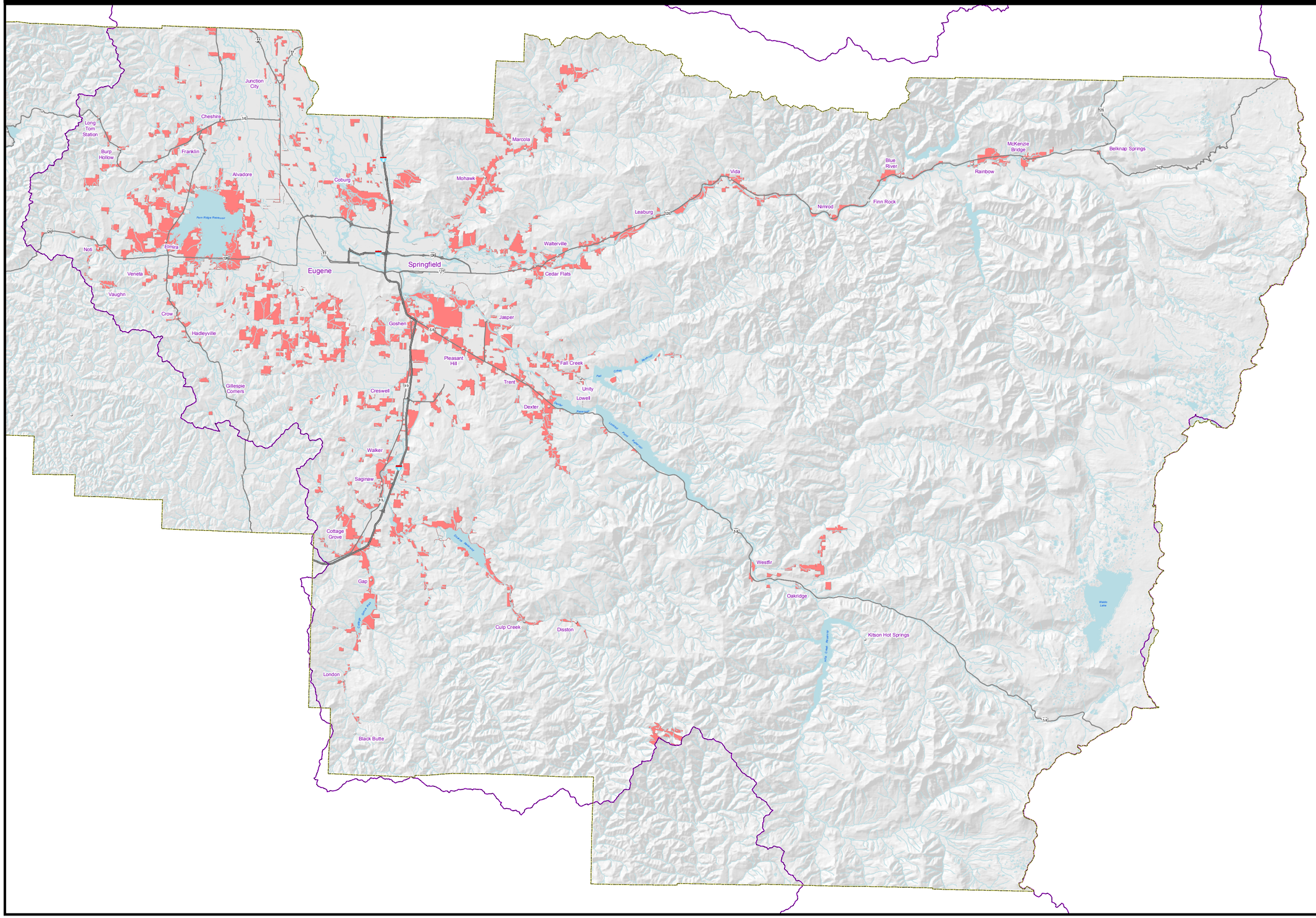
Source: Willamette Headwaters Water Quality Assets, Gaps, and Opportunities Study (Working Draft, October 2007, LCOG)

Lane County provides training for Public Works staff to ensure the likelihood that staff performs public operations in the best way possible. Other agency and private landowners could also benefit from incorporating water quality-related trainings. Riparian protection and restoration is an important step that Lane County is taking to reduce temperature loads. There is potential to initiate joint efforts that are coordinated across jurisdictional boundaries to increase effectiveness and reduce costs of TMDL Implementation.

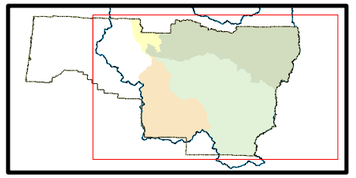
7.0 Appendices

Appendix 1: Lane County Willamette Basin TMDL Area Maps

Lane County Willamette Basin TMDL Area



Map 1



- Lane County Boundary
- Subbasin
- UGB
- Lane County TMDL Coverage (94,656 acres, 147.9 mi^2)
- Not Under Lane County's TMDL Jurisdiction
- Coast Fork Watershed
- Mckenzie Watershed
- Middle Fork Watershed
- Upper Willamette Watershed
- Water Features
- Interstate Freeway
- State Highway
- Other Roads

November 2013

N

0 2.5 5 10 Miles

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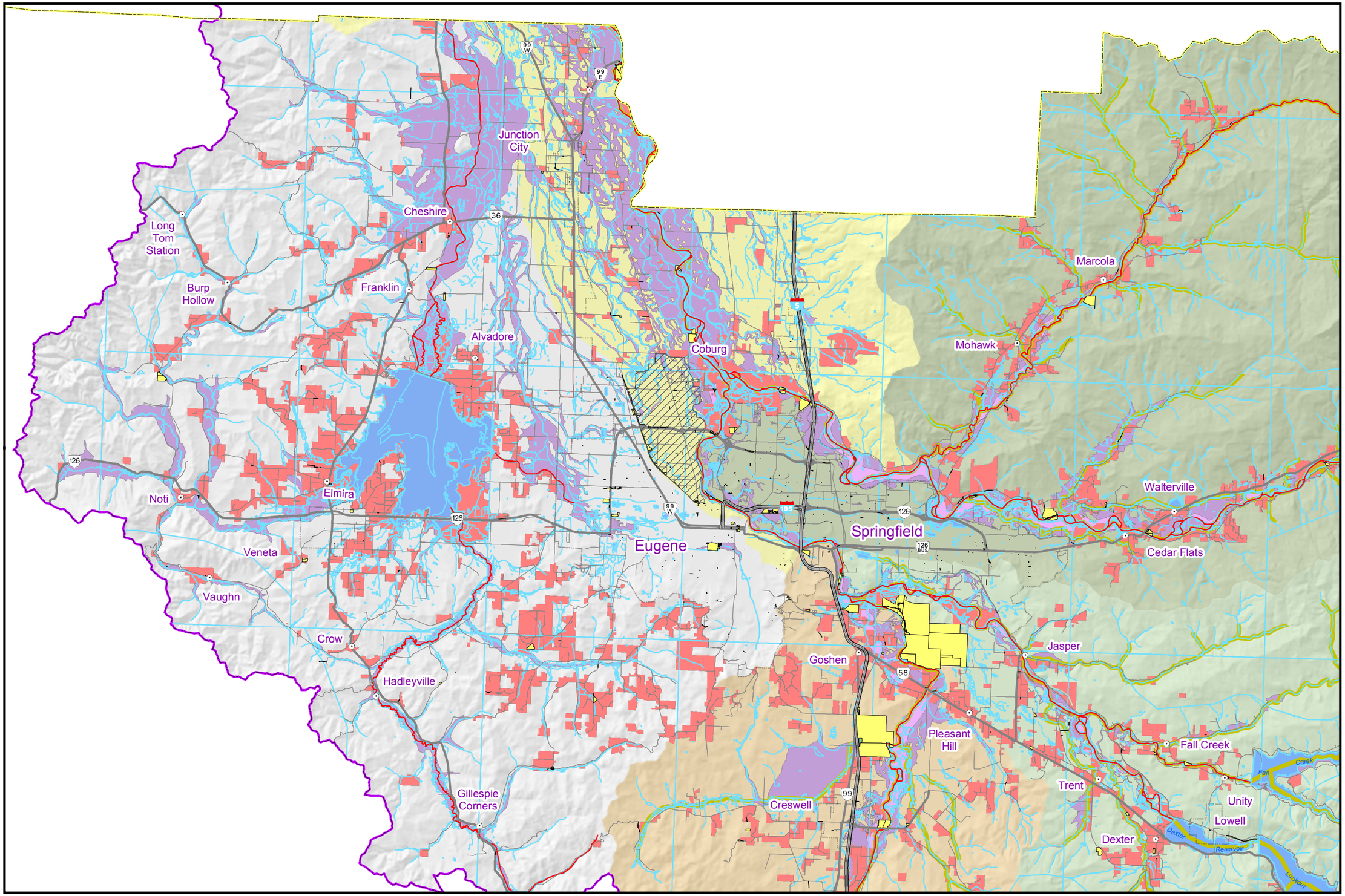
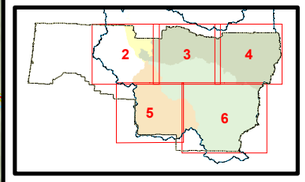
Lane County Willamette Basin TMDL Area



Map 2



- Lane County Boundary
- Subbasin
- County Owned Land (included in TMDL Coverage)
- UGB
- Santa Clara Maintenance Boundary
- Lane County TMDL Coverage (94,656 acres, 147.9 mi^2)
- 303(d) Listed Stream
- Class 1 Stream* & National Wetlands Index
- Fish Bearing Stream**
- Coast Fork Watershed
- Mckenzie Watershed
- Middle Fork Watershed
- Upper Willamette Watershed
- 100-year Flood Zone
- Floodway
- Water Features
- Interstate Freeway
- State Highway
- Other Roads

* These Lane County Land Management data describe perennial fish bearing streams regulated for developement under Lane Code 16.253.

** These ODFW data describe areas of suitable habitat believed to be used (currently and historically) by wild, natural, and/or hatchery fish populations. The term "currently" is defined as within the past five reproductive cycles. This information is based the judgment of ODFW staff, extensive surveys, biologists and where possible, the professional opinions of staff from other natural resource agencies.

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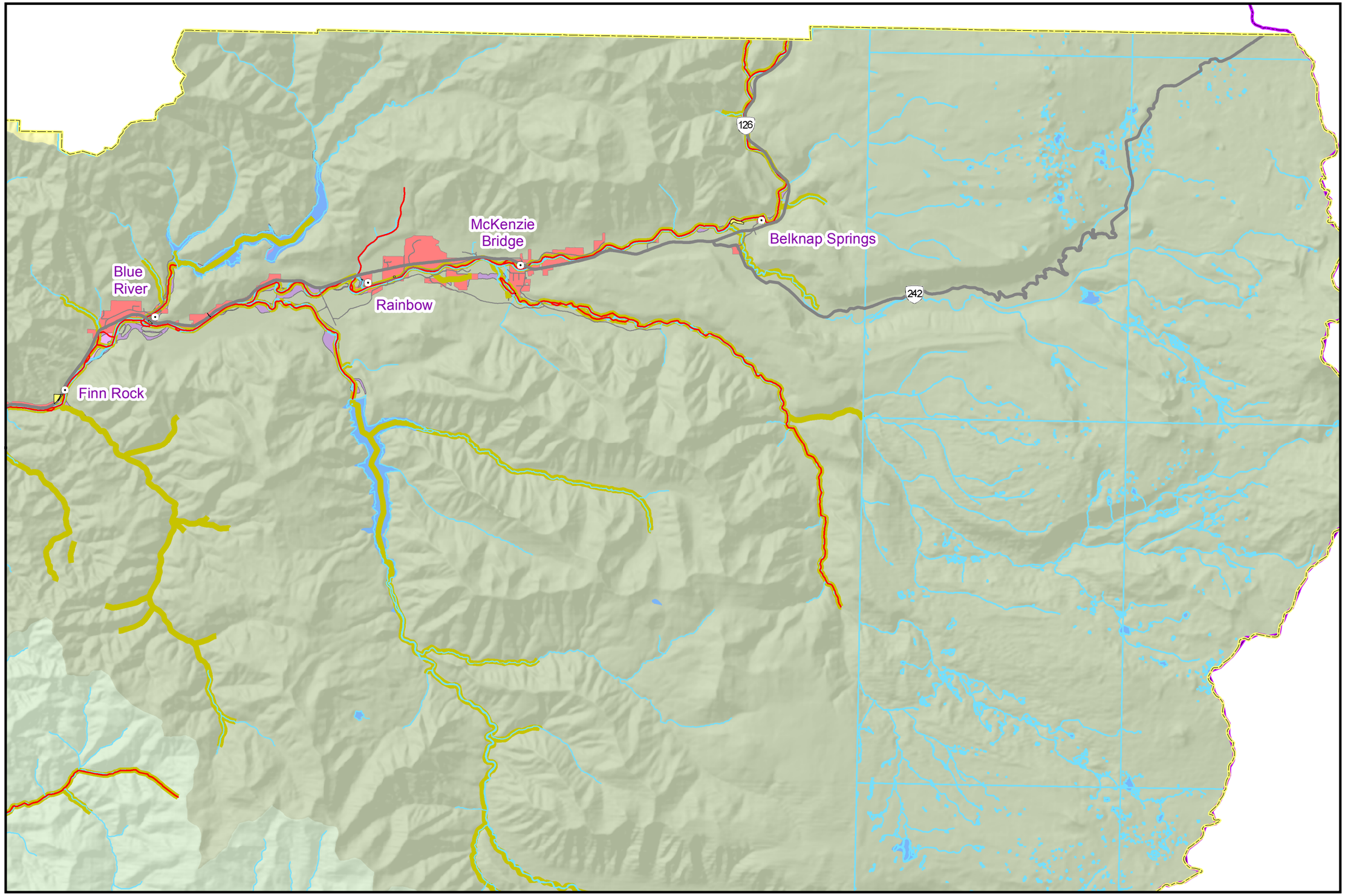

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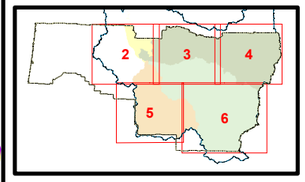

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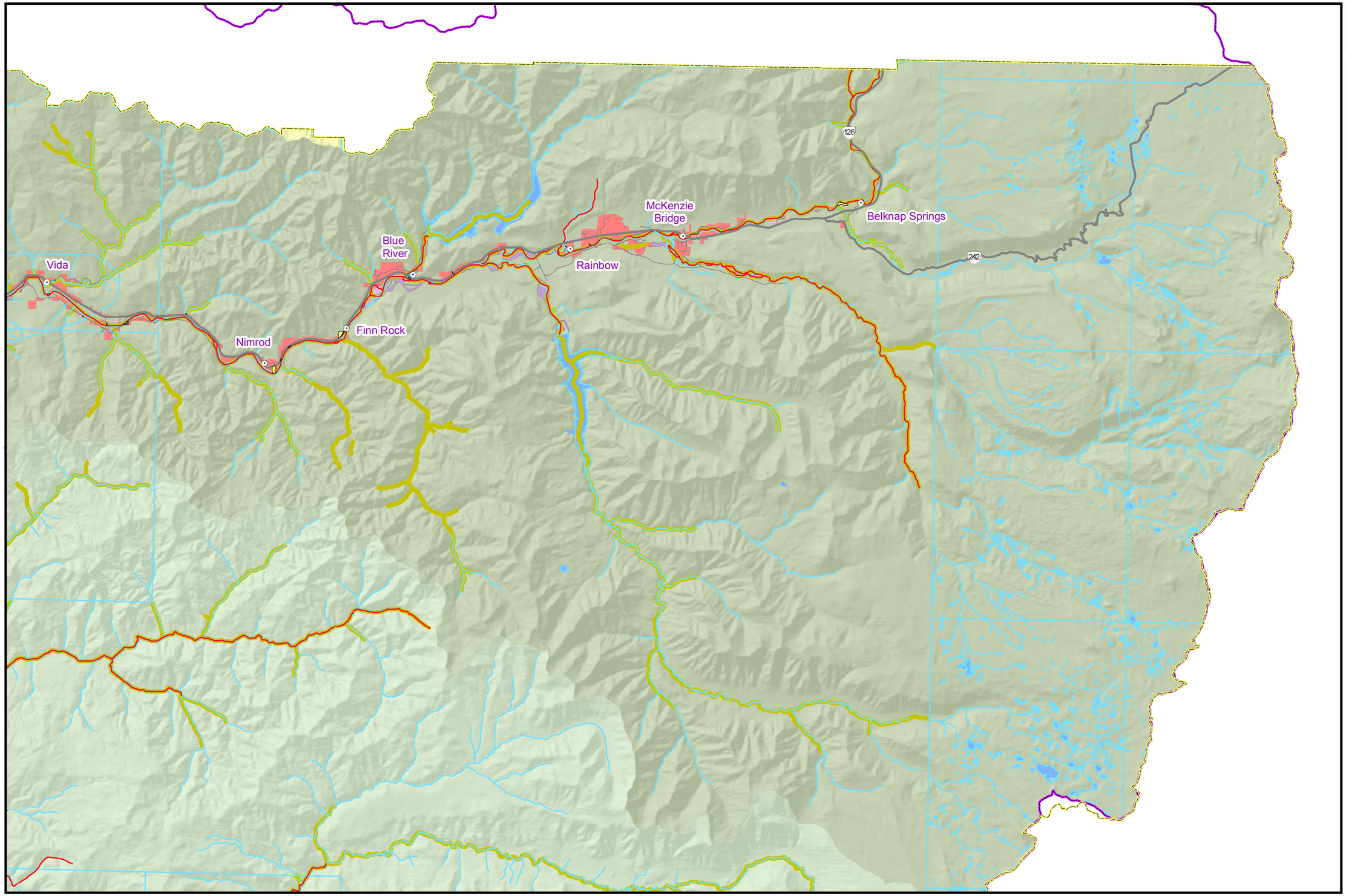
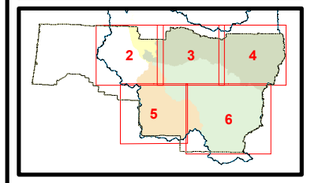


Map 4



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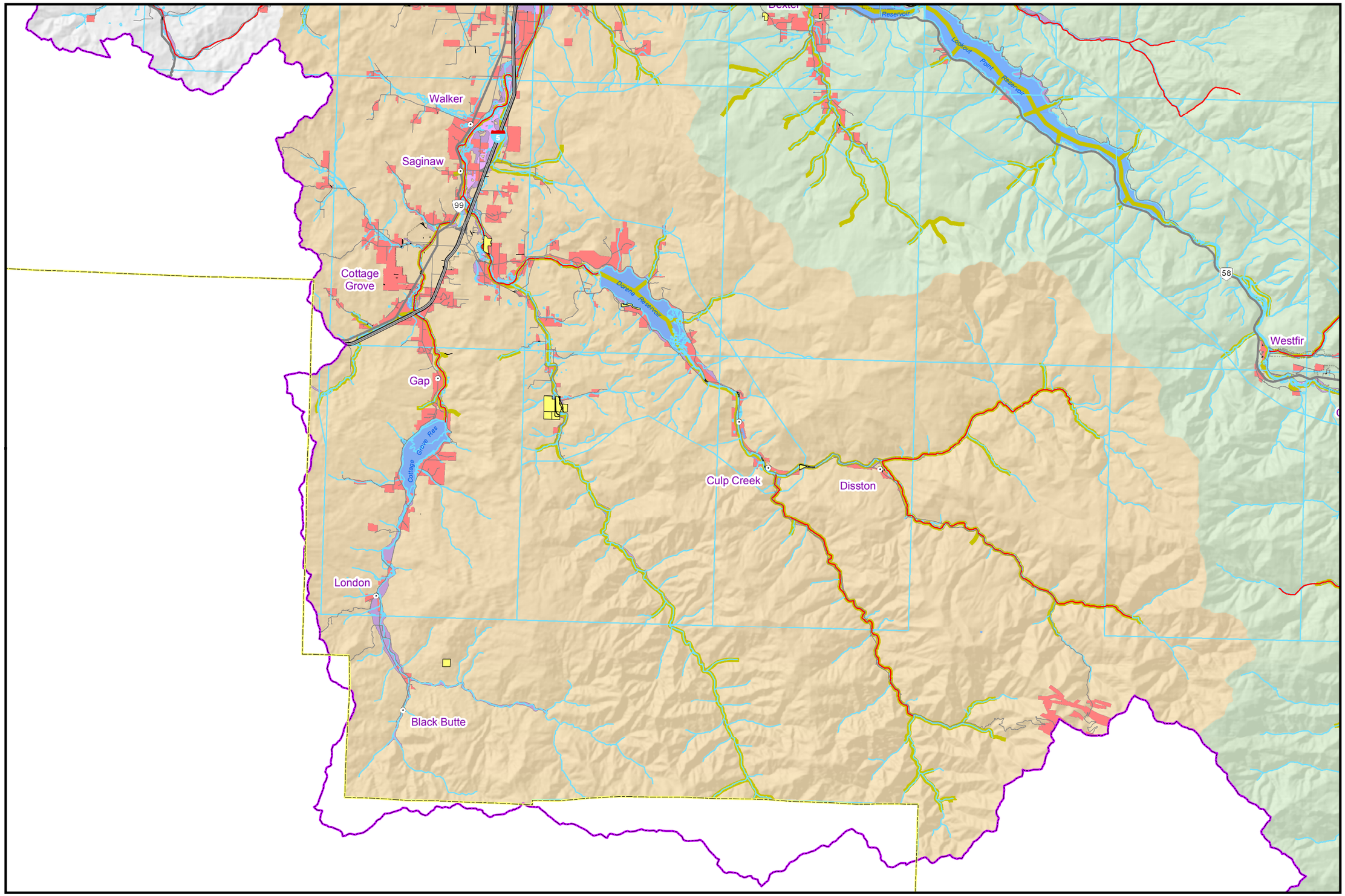
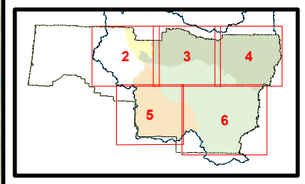


Map 5



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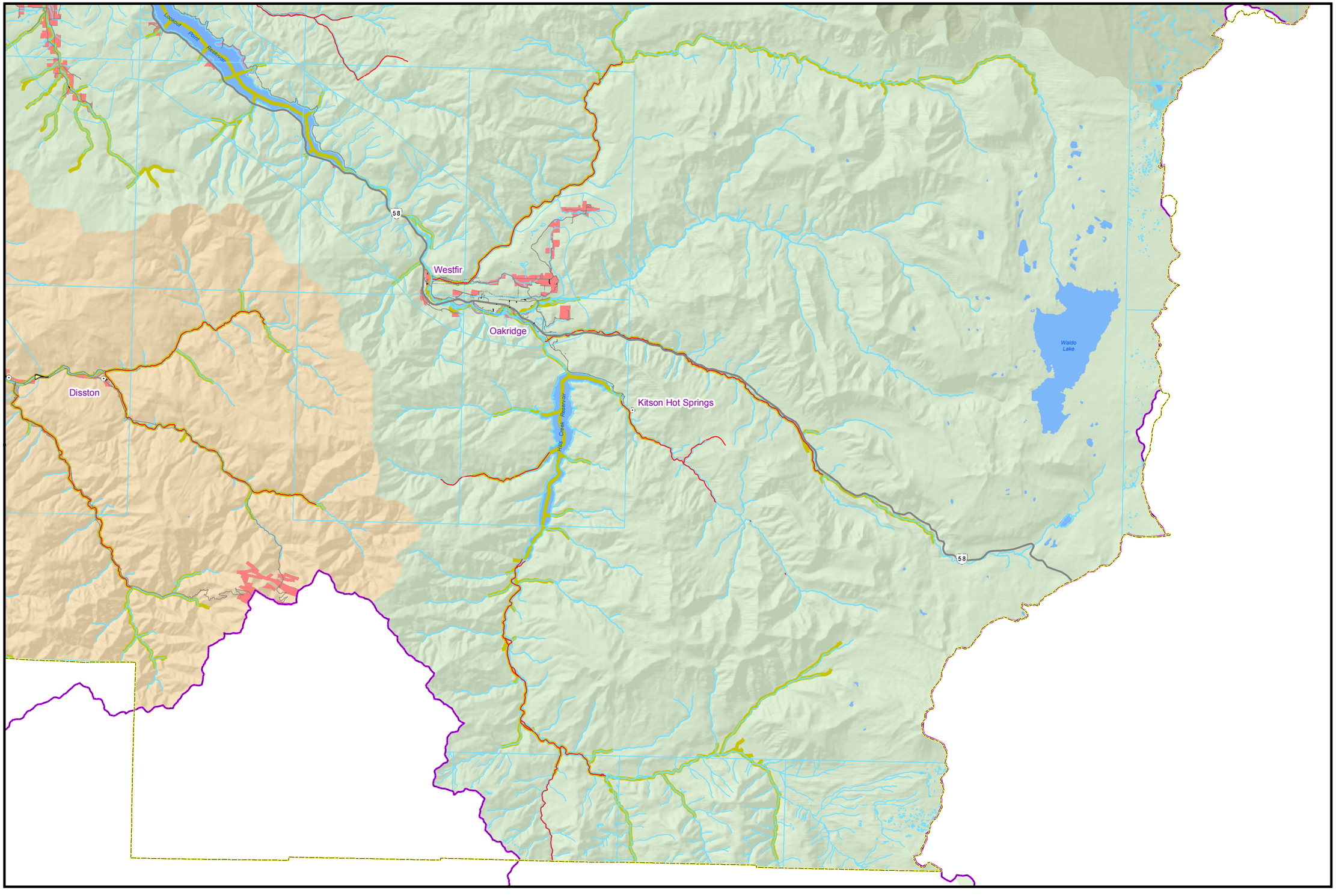
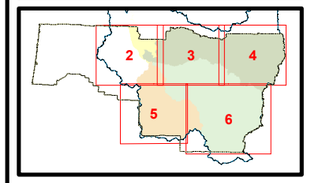


Map 6



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November 2013

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Appendix 2: Glossary

303(d) List - A section of the Clean Water Act of 1972 requiring states to identify and list water bodies that do not meet the State's water quality standards. DEQ compiles a list of impaired and threatened waterbodies in need of water quality restoration which is submitted to EPA for approval. This list is commonly referred to as the "303(d) List" because it is prepared in accordance with the requirements of section 303(d) of the federal Clean Water Act of 1972. The term is often used in a narrow sense to refer only to the specific list of impaired and threatened waters within the jurisdiction of a State, Territory, or authorized Tribe.

Anthropogenic - When used to describe "sources" or "warming", means that which results from human activity.

Background - All non-anthropogenic sources of pollutants. In cases DEQ is unable to distinguish background and anthropogenic sources of pollutants, the pollutants are considered as background in the analysis.

Background Sources - Includes all sources of pollution or pollutants not originating from human activities. In the context of a TMDL, background sources may also include anthropogenic sources of a pollutant that the Department of another Oregon state agency does not have authority to regulate, such as pollutants emanating from another state, tribal lands or sources otherwise beyond the jurisdiction of the state.

Basin - A third field hydrologic unit as identified by the U.S. Geological Survey.

Best Management Practices (BMPs) - Methods, measures, or practices that are determined to be reasonable and cost-effective means for a landowner to meet certain, generally nonpoint source, pollution control needs. BMPs include structural and nonstructural controls and operation and maintenance procedures.

Channel Morphology - The structure, form and evolution of stream channels.

Clean Water Act (CWA) - The Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972), Public Law 92-500, as amended by Public Law 96-483 and Public Law 97-117, 33 U.S.C. 1251 et seq. The Clean Water Act (CWA) contains a number of provisions to restore and maintain the quality of the nation's water resources. One of these provisions is section 303(d), which establishes the TMDL program.

Critical Habitat - Those areas that support rare, threatened or endangered species, or serve as sensitive spawning and rearing areas for aquatic life as designated by the U.S. Fish and Wildlife Service or NOAA Fisheries pursuant to the Endangered Species Act (16 USC 1531).

Designated Management Agency (DMA) - Means a federal, state or local governmental agency that has legal authority over a sector or source contributing pollutants, and is identified as such by the Department of Environmental Quality in a TMDL.

Discharge - Flow of surface water in a stream or canal or the outflow of groundwater from a flowing artesian well, ditch, or spring. Can also apply to discharge of liquid effluent from a facility or to chemical emissions into the air through designated venting mechanisms.

Effluent - A discharge of liquid waste.

Geographic Information Systems (GIS) - A computer system designed to view, sample and create spatial data sets.

Hydrologic Unit - A USGS classification of drainage areas: watershed (5th Field), subbasin (4th Field) and basin (3rd Field).

Hydrology - The scientific study of the water of the earth, its occurrence, circulation and distribution, its chemical and physical properties, and its interaction with its environment, including its relationship to living things.

Impaired Segments - Waterbodies (i.e., stream reaches or lakes) that have been placed on the Section 303(d) list because they exceed water quality standards for one or more pollutant(s).

Load Allocation (LA) - The portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources. Load allocations are best estimates of the loading, which can range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading. Wherever possible, natural and nonpoint source loads should be distinguished.

NPDES - National Pollutant Discharge Elimination System established by the Clean Water Act. The national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the Clean Water Act. Facilities subjected to NPDES permitting regulations include operations such as municipal wastewater treatment plants and industrial waste treatment facilities.

Natural background levels - Natural background levels represent the chemical, physical, and biological conditions that result from natural changes to the earth's surface, such as weathering or decay.

Nonpoint Sources - Pollution that is not released through pipes but rather originates from multiple sources over a relatively large area. Nonpoint sources can be divided into source activities related to either land or water use including failing septic tanks, improper animal-keeping practices, forestry practices, and urban and rural runoff.

Point Sources - Pollutant loads discharged at a specific location from pipes, outfalls, and conveyance channels from either municipal wastewater treatment plants or industrial waste treatment facilities. Point sources can also include pollutant loads contributed by tributaries to the main receiving water stream or river.

Pollutant - A contaminant that is discharged to a waterbody, resulting in the impairment of that waterbody. Types of pollutants include dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water (CWA Section 502(6)).

Pollution - Contamination or other alteration of the physical, chemical, or biological properties of any waters of the State, including change in temperature, taste, color, turbidity, silt, or odor of the waters, or such radioactive or other substance into any waters of the State which by itself or in connection with any other substance present, will or can reasonably be expected to create a public nuisance or render such waters harmful, detrimental, or injurious to public health, safety, or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic live, or the habitat thereof.

Runoff - That part of precipitation, snowmelt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into receiving waters.

Salmon - Means Chinook, chum, coho, sockeye and pink salmon.

Salmon and Steelhead Spawning - Biologically based numeric criteria for streams in which seven-day-average maximum temperatures may not exceed 13.0 degrees Celsius (55.4 degrees Fahrenheit).

Salmon and Trout Rearing and Migration - Biologically based numeric criteria for streams in which seven-day-average maximum temperatures may not exceed 18.0 degrees Celsius (64.4 degrees Fahrenheit).

Salmonid or Salmonids – Means native salmon, trout, mountain whitefish and char (including bull trout). For purposes of Oregon water quality standards, salmonid does not include brook or brown trout since they are introduced species.

Sewage treatment plant - A system that uses the process of purifying mixtures of human and other wastes by aerobic and/or anaerobic means in the treatment of municipal sewage or industrial wastes of a liquid nature.

Subbasin - A region drained by a forth field hydrologic unit (river system) as identified by the U.S. Geological Survey.

Total Maximum Daily Load - A written quantitative plan and analysis for attaining and maintaining water quality standards and includes the elements described in OAR 340-042-0040. These elements include a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards, allocations, of portions of that amount to the pollutant sources or sectors, and a Water Quality Management Plan to achieve water quality standards.

Waste Load Allocation - The portion of pollutants allowed in a total maximum daily loads for a point source.

Waterbody -Any surface waters of the state.

Watershed - A drainage area or basin in which all land and water areas drain or flow toward a central collector

Appendix 3: Relevant Lane Code

LC 6.585 Dog Waste Matter.
(1) It shall be unlawful for a dog owner, as that term is defined in LC Chapter 7, to allow a dog, except for a seeing eye dog, to deposit solid waste matter on County Park property. It shall be a defense to this section if the dog owner immediately removes the solid waste.
(2) A violation of this section is a Class C violation.

LC 7.140 Dog Waste Matter.
(1) It shall be unlawful for a dog owner to allow the dog, except for service dogs, to deposit solid waste matter on any property other than that of the dog owner. It shall be a defense to this section if the dog owner immediately removes the solid waste.
(2) A violation of LC 7.140 is a Class C violation.

LC 10.250-70 Uses Subject to State and Federal Permits.

(1) When State or Federal permits, leases, easements or similar types of authorization are also required for a use, subject to special use approval, information required as part of the State or Federal permit process may be required to be made available to the County for the determination that applicable criteria are satisfied.
(2) Applicants shall make application for all requisite State and/or Federal permits, leases, easements or similar type of authorization within 10 days following application for a special use approval in order to avoid unnecessary delays caused by the unavailability of State or Federal processing information which may be deemed necessary for special use review.
(3) Any use authorized by the provisions of this District shall also require the securing of any necessary State or Federal permit, lease, easement or similar type of authorization.
(4) Proposals subject to special use approval or for building permits for uses otherwise allowed shall be forwarded in writing to the Oregon State Department of Fish and Wildlife within 14 days of final action to evaluate the impact upon habitats and to make recommendations concerning ways to avoid adverse impacts.

LC 10.271-35 Provisions for Flood Hazard Reduction
(3) Floodways. Located within areas of special flood hazard established in LC10.271-15 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles and erosion potential, the following provisions apply:

> (a) Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge. This evidence shall utilize hydrologic and hydraulic analyses performed in accordance with standard engineering practices.

LC 16.005 Use of a Development.
(1) A Development May Be Used Only For a Lawful Use. A lawful use is a use that is not prohibited by law or which is nonconforming pursuant to LC 16.251 below of this chapter.
(2) Grading, Excavation and Clearing. Grading and clearing by mechanical equipment for either road and/or development purposes may be restricted or regulated by the Approval Authority either at the time of approval of a development permit or of an application if there is a finding that such grading or clearing presents a real threat of pollution, contamination, silting of water bodies or water supplies, erosion and slide damage, or alteration of natural drainage patterns in the area. In all cases, excessive

grading, excavation and clearing shall be avoided when detrimental to soil stability and erosion control. The character of soils for fills and the characteristics of parcels or lots made usable by means of fill shall be suitable for the intended purpose.
(3) Conditions. The following conditions may be imposed at the time of approval of a development for which a permit or application is required and for which a finding has been made as required in LC 16.005(2) above in order to ensure site and area stability:

(a) Maintain vegetation and eliminate widespread destruction of vegetation.
(b) Carefully design new roads and buildings with respect to:
(i) Placement of roads and structures on the surface topography.
(ii) Surface drainage on and around the site.
(iii) Drainage from buildings and road surfaces.
(iv) Placement of septic tank disposal fields.
(c) Careful construction of roads and buildings:

LC 16.213 Natural resources Zone (NR-RCP)
(6) Property Development Standards. All uses or activities permitted or conditionally permitted above, shall be subject to the following development standards:

(a) Property Line Setbacks. No structure other than a fence or sign shall be located closer than:
(i) 20 feet from the right-of-way of a State road, County road or a local access public road specified in LC Chapter 15; and
(ii) 10 feet from all other property lines except as provided below.
(b) Riparian Setback Area. Except for property located between the Eugene-Springfield Metropolitan Area General Plan Boundary and the Eugene and Springfield Urban Growth Boundaries, where setbacks are provided for in LC 16.253(6), the riparian setback area shall be the area between a line 100 feet above and parallel to the ordinary high water of a Class I stream designated for riparian vegetation protection in the Rural Comprehensive Plan. No structure other than a fence shall be located closer than 100 feet from a wetland or from the ordinary high water of a Class I stream designated for riparian vegetation protection by the Rural Comprehensive Plan. A modification to the riparian setback standard for a structure may be allowed provided the requirements of LC 16.253(3) or LC 16.253(6), as applicable, are met.
(c) Maintenance, Removal and Replacement of Indigenous Vegetation within the Riparian Setback Area. Maintenance, removal and replacement of indigenous vegetation within wetlands or within the riparian setback area designated for riparian vegetation protection by the rural comprehensive plan must comply with the provisions of LC 16.253(2) or LC 16.253(6), as applicable.

LC 16.244 Floodplain Combining Zone (/FP-RCP)
(2) Methods of Reducing Flood Losses. In order to accomplish its purpose, this section includes methods and provisions for:

(a) Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities.
(b) Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.
(c) Controlling the alteration of natural floodplains, stream channels and natural protective barriers, which help accommodate or channel flood waters.

(d) Controlling filling, grading, dredging and other development, which may increase flood damage.
(e) Preventing or regulating the construction of flood barriers, which will unnaturally divert flood waters or which may increase flood hazards in other areas.

LC 16.253 Riparian Regulations

(2) Removal of Vegetation Within the Riparian Setback Area. The following standards shall apply to the maintenance, removal, destruction and replacement of indigenous vegetation within the riparian setback area along Class I streams designated for riparian vegetation protection by the Rural Comprehensive Plan. For purposes of LC 16.253(2)(b)(i) and (iii) below, Resource Zones shall be: LC 16.210 (F-1); LC 16.211 (F-2); LC 16.212 (EFU); LC 16.213 (NR); LC 16.214 (ML); LC 16.215 (PR); LC 16.216 (QM); LC 16.227 (IWC); and LC 16.232 (DR). For purposes of LC 16.253(2)(b)(i) and (iii) below, Nonresource Zones shall be: LC 16.219 (PF); LC 16.220 (C-1); LC 16.221 (C-2); LC 16.222 (C-3); LC 16.223 (C-R);LC 16.224 (M-1); LC 16.225 (M-2); LC 16.226 (M-3); LC 16.229 (RA); LC 16.230 (RG); LC 16.231 (RR); LC 16.290 (RR); LC 16.291 (RC); LC 16.292 (RI); LC 16.294 (RPF); and LC 16.295 (RPR).

(a) A minimum of seventy-five percent (75%) of the total area within the riparian setback area of any legal lot shall remain in an unaltered, indigenous state except as provided in LC 16.253(2)(b)(i) and LC 16.253(5)(b) below; and

(b) Removal of existing vegetation from within the riparian setback area of any legal lot shall not exceed the shoreline linear frontage and square footage limitations calculated as follows:

(i) The maximum allowable removal for any legal lot having frontage of 200 feet or less in length along a Class I stream shall not exceed 50 linear feet along the shoreline and an area not greater than 2,500 square feet within the riparian setback area of a Nonresource Zone, or 5,000 square feet within the riparian setback area of a Resource Zone.

(ii) The maximum allowable removal for any legal lot having frontage of more than 200 feet but less than 400 feet in length along a Class I stream shall not exceed 25 percent of the total linear footage along the shoreline, and an area not greater than 25 percent of the total square footage of the entire area within the riparian setback area.

(iii) The maximum allowable removal for any legal lot having frontage 400 feet or greater in length along a Class I stream shall not exceed 100 linear feet along the shoreline of the Class I stream and an area not greater than 5,000 square feet within the riparian setback area of a Nonresource Zone, or 10,000 square feet within the riparian setback area of a Resource Zone. Removal of indigenous vegetation from within the riparian setback area in excess of 100 linear feet and the square footage of the applicable zone designation, to provide water access for a water-dependent use or to allow selective thinning of indigenous vegetation to provide viewscapes, may occur subject to compliance with LC 16.253(5)(a)(i) below, prior to removal.

(iv) Removal of vegetation from within the riparian setback area in excess of LC 16.253(2)(a) and (b) above, to allow riparian enhancement projects designed to improve or diversify habitat of designated areas within the riparian setback area may occur subject to compliance with LC 16.253(5)(b) below, prior to removal. 16.253 Lane Code 16.253

(c) Compliance. Removal of vegetation from within the riparian setback area in excess of the removal provisions in LC 16.253(2)(a) or (b) above, without prior Planning Director approval shall require compliance with the provisions of LC 16.253(4) and LC 16.253(5)(c) below, and may be subject to other remedies available to Lane County for violation of the standards in LC 16.253(2) above.

LC 16.280 Goshen Industrial Zone (GI, LI)
16 (d) Stormwater Management Requirements

(i) General Provisions. The County will issue a development permit only where adequate provisions for stormwater and flood water runoff have been made in conformance with the stormwater management requirements set forth in this subsection 16.280(d).

Connections to drainage facilities within the County right-of-way must be authorized through facility permits issued by the Director in accordance with ORS 374.305 through 374.340.
(ii) Definitions. For the purposes of this Section and the Stormwater Management Manual, the following definitions apply:
(aa) Base Flood. The flood having a one percent chance of being equaled or exceeded in any given year. Also referred to as the "100-year flood."
(bb) Biofiltration. Deliberate filtering of sediments and other pollutants from stormwater runoff by directing flow through a vegetated area.
(cc) Channel Maintenance. Periodic removal of debris, sediment, vegetation, litter and other material within the bed or banks of a stream or channel recognized as part of the city's stormwater drainage system, and performed by the city or in accordance with county policy.
(dd) Channelize, Channelizing. Human alteration of the bed or banks of a natural stream or river to maintain or increase its conveyance or capacity characteristics without maintaining its natural character, typically by straightening its course, increasing its depth and removing obstructions in the bed or on the banks.
(ee) Constructed Wetlands. A facility that exhibits wetland characteristics but was constructed for the express purpose to perform a utility need, such as a sedimentation pond, and is not eligible for mitigation credit or subject to the jurisdictional requirements of federal and state wetland law.
(ff) Easement of Record. A valid easement that is recorded and on file at the Lane County Recorder's office.
(gg) Enhancement. To increase or improve natural values in one or more of the following ways:

- Increasing the wildlife habitat value by increasing the supply and diversity of natural food sources throughout the year, increasing the diversity and duration of water features throughout the year or increasing the diversity in size and structure of plants.
- Improving water quality by reducing the amount of pollutants entering the water or removing pollutants already in the water.
- Improving the natural character by encouraging and allowing natural vegetation to grow in natural patterns according to soil and water conditions.
- Removing litter, refuse and unnatural fill.
- Improving the capacity of the area to contain, detain or filter stormwater runoff.

(hh) Flood, or Flooding. A general and temporary condition of partial or complete inundation of normally dry land areas from:

- The overflow of inland or tidal waters; or
- The unusual and rapid accumulation of runoff of surface waters from any source.

(ii) Flood control design storm. A theoretical storm for evaluating the capacity of the storm drainage system and designing improvements for the required level of protection, in accordance with the Stormwater Management Manual.
(jj) Flood Insurance Rate Map (FIRM). The official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

(kk) Flood Insurance Study. The official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Boundary-Floodway Map, and the water surface elevation of the base flood.
(ll) Floodway. The channel of a river or other watercourse and the adjacent land areas designated as a floodway by the Federal Emergency Management Agency.
(mm) Flow control facility. Any structure or drainage device that is designed, constructed, and maintained to collect, retain, infiltrate, or detain surface water runoff during and after a storm event for the purpose of controlling post-development water quantity leaving the development site.
(nn) Goal 5 Water Resource Site. The resource site as identified in the Goal 5 Water Resources Conservation Plan. For riparian corridor and upland wildlife habitat sites, the Goal 5 Water Resource Site includes the stream and riparian areas that may extend beyond applicable conservation setbacks. Wetland sites include only the wetland, itself.
(oo) Grassy Swales. Shallow ditches lined with grass or other vegetation for the purpose of filtering sediments and other pollutants from stormwater runoff.
(pp) Impervious surface/area. Any surface area that causes water to run off the surface in greater quantities or at an increased rate of flow from conditions pre-existing to development. Types of impervious surface include, but are not limited to, rooftops, asphalt and concrete parking lots, driveways, roads, sidewalks, and pedestrian plazas.
(qq) Natural Drainageways. Natural rivers, streams, channels, creeks, or other areas that naturally convey stormwater runoff or portions thereof that have not been channelized, and which retain a predominantly natural character.
(rr) Natural Functions and Values. Characteristics of a site that contribute to the healthy and effective functioning of natural processes on the site, along with the contribution made by the site to the healthy and effective functioning of the larger natural resource system of which the site is a part; including but not limited to improvement of water quality, provision of food, water and cover for wildlife, storage capacity for flood waters, protection against erosion, sediment removal, fisheries habitat, and groundwater recharge or discharge.
(ss) Natural Resource Area. The area within the mapped boundaries of any locally inventoried wetland, pond, stream, channel, river, lake or upland wildlife habitat area.
(tt) Oil control facility. Any structure or drainage device that is designed, constructed, and maintained to remove oil and grease from storm runoff.
(uu) Open Waterway. A natural or human-made swale, creek, stream, open channel, ditch or other similar water feature, that has a defined and identifiable channel with slopes, that is predominantly of earthen material, and that has the specific function of conveying and/or storing stormwater runoff.
(vv) Property suspected or known to contain contaminants in the soil or groundwater. Any real property where the presence of any hazardous substance or petroleum product indicates an existing release, past release, or threatened release of a hazardous substance or petroleum product into the ground, ground water, or surface water of the property.
(ww) Protected Wetland, Protected Natural Resource. A wetland or other natural resource identified for protection in an adopted plan.
(xx) Stormwater Management Manual. For purposes of this Section, the Stormwater Management Manual means the City of Eugene Stormwater Management Manual (April 2008 version), which has been adopted and incorporated by reference, and made applicable to the area subject to this Section 16.280.
(yy) Stormwater Management Facility. Any structure or configuration of the ground that is used or, by its location, becomes a place where stormwater flows or is accumulated, including but not limited to, pipes, sewers, curbs, gutters, manholes, catch basins, ponds, open drainage ways, runoff control facilities, wetlands, and their accessories.

(zz) Water Features. Permanent or intermittent bodies of water, including streams, ponds, rivers, lakes, drainage channels, open waterways and jurisdictional wetlands.
(aaa) Water Quality Design Storm. A theoretical storm for estimating the amount of stormwater runoff to be treated. Facilities designed to store and treat a volume of stormwater must be sized in accordance with the Stormwater Management Manual.
(bbb) Wetland. Any parcel or portion of a parcel which meets the state or federal definition of wetlands that are under the jurisdiction of state or federal laws.
(ccc) Wetland Boundary. Any mapped wetland boundary produced by methods consistent with state and federal law and policy and for which a concurrence has been made in writing by the applicable state or federal agencies.
(iii) Stormwater Management Manual. In order to implement applicable stormwater management requirements, Lane County has adopted and incorporated by this reference the April 2008 version of the City of Eugene Stormwater Management Manual as part of this Section 16.280 by Ordinance No. 13-2. The Lane County Land Management Division will maintain and make available to the public copies of the Stormwater Management Manual.
(iv) Flood Control.
(aa) Purpose. The purpose of Flood Control standards is to protect life and property from flood and drainage hazards by maintaining the capacity of the County's stormwater conveyance system through the establishment of destination regulations for stormwater runoff from development.
(bb) Applicability and Exemptions. Destination standards apply to all developments adding or redeveloping more than 1,000 square feet of impervious surfaces unless the replacement of more than 1,000 square feet of impervious surface is for purposes of maintenance or repair for the continuance of the current function on the development site.
(cc) Standards. Surface discharges from onsite facilities must be discharged to an approved drainage facility. On-site infiltration is the preferred stormwater destination for all developments. Stormwater drainage facilities must be designed and constructed according to adopted plans and policies, and in accordance with the stormwater destination provisions and the facility design requirements set forth in the Stormwater Management Manual. Stormwater management must avoid a net negative impact on nearby streams, wetlands, groundwater and other water bodies. All local, state, and federal permit requirements related to implementation of stormwater management must be met by the owner/operator prior to facility use.
(dd) Underground Injection Control Systems. Stormwater runoff disposed of in underground systems is also regulated through the federal Underground Injection Control (UIC) program under Part C of the Safe Drinking Water Act (42 U.S.C. § 300, Chapter 6A, Subchapter XII) and Oregon Administrative Rule Chapter 340, Section 044. To utilize Underground Injection Controls for stormwater management the owner/operator must obtain authorization from the Oregon Department of Environmental Quality prior to facility use.
(v) Stormwater Pollution Reduction.
(aa) Purpose. The purpose of Stormwater Pollution Reduction standards is to reduce the impacts of development on water quality by providing standards for the capture and treatment of stormwater runoff from development.
(bb) Applicability and Exemptions. Water Quality standards apply to all developments adding or redeveloping more than 1,000 square feet of impervious surfaces unless the replacement of more than 1,000 square feet of impervious surface is for purposes of maintenance or repair for the continuance of the current function on the development site.
(cc) Standards. The quality of the stormwater leaving the site after development must be equal to or better than the quality of the stormwater leaving the site before development, as much as is practicable based upon the following:

(A) Applications must include pollution reduction facilities selected from the Stormwater Management Manual as follows:
(i) For land use applications for undeveloped land, the selected pollution reduction facilities must treat all the stormwater runoff from the development site that will result from the water quality design storm;
(ii) For land use applications that change or add development to an already developed site, the selected pollution reduction facilities must treat the stormwater runoff from all added and replaced impervious surface that will result from the water quality design storm;
(iii) For development permit applications, the selected pollution reduction facilities must treat all stormwater runoff from all new or replaced impervious surface, or an equivalent on-site area, that will result from the water quality design storm; 16.280 Lane Code 16.280
(B) All pollution reduction facilities must be sited, designed and constructed according to the pollution reduction provisions and the facility design requirements set forth in the Stormwater Management Manual.
(vi) Stormwater Flow Control.
(aa) Purpose. The purpose of Stormwater Flow Control standards is to protect waterways from the erosive effects of increases in stormwater runoff peak flow rates and volumes resulting from development.
(bb) Applicability and Exemptions. Flow Control standards apply to all developments adding or redeveloping more than 1,000 square feet of impervious surfaces unless the replacement of more than 1,000 square feet of impervious surface is for purposes of maintenance or repair for the continuance of the current function on the development site.
(cc) Standards. The quantity and flow rate of stormwater leaving the site after development must be equal to or less than the quantity and flow of stormwater leaving the site before development, as much as practicable, based on the following criteria:
(A) Applications must demonstrate, using methodology in the Stormwater Management Manual, that peak rates of flow delivered to an existing open waterway will not increase during storms larger than the water quality design storm and smaller than the flood control design storm as a result of the development that is the subject of the application;
(B) All facilities to control the rate of stormwater runoff must be sited, designed and constructed according to the flow control provisions and the facility design requirements set forth in the Stormwater Management Manual. Flow control facilities must be designed using one of the methodologies outlined in the Stormwater Management Manual.
(vii) Stormwater Oil Control.
(aa) Purpose. The purpose of Stormwater Oil Control standards is to protect the County's stormwater system from oil and grease from stormwater runoff of impervious surface areas on properties that produce high concentrations of these pollutants.
(bb) Applicability. Oil control standards apply to:
(A) All new commercial and industrial development with parking lots that store wrecked or impounded vehicles; or
(B) Any development that would result in an expected daily traffic count greater than one hundred vehicles per 1,000 square feet of gross building area, based on the most recent version of The Institute of Transportation Engineers' Trip Generation Manual; or
(C) Any development that would result in 100 or more off-street parking spaces.
(cc) Standards. All oil control facilities must be sited, designed and constructed according to the oil control provisions and the facility design requirements set forth in the Stormwater Management Manual.
(viii) Stormwater Source Controls.

(aa) Purpose. The purpose of Stormwater Source Control standards is to prevent stormwater pollution by eliminating pathways that may introduce pollutants into stormwater.
(bb) Applicability and Exemptions. Except as exempted below and except when the source control would duplicate source controls required by a state or federal permit obtained by the applicant, source control standards apply to all land use applications, development permits and tenant improvements that result in any of the defined site uses or characteristics listed in below.
(A) Fuel dispensing facilities and surrounding traffic areas where vehicles, equipment, or tanks are refueled on the premises. A fuel dispensing facility is the area where fuel is transferred from bulk storage tanks to vehicles, equipment, and/or mobile containers. Exempt from this subsection are:
(i) Propane tanks.
(ii) Fuel dispensing areas generally used to service oversized equipment, for example cranes, that cannot maneuver under a roof or canopy.
(iii) Existing fueling areas where scope of work is limited to a new canopy installation over an existing fuel pad that is not being upgraded, an underground tank replacement for compliance with state regulations, or the replacement of a fuel pump on an existing fuel pad that is not being upgraded.
(B) Exterior storage of liquid materials, for example chemicals, food products, waste oils, solvents, process wastewaters, or petroleum products in aboveground containers, in quantities of 50 gallons or more, including permanent and temporary storage areas. Exempt from this subsection are underground storage tanks or installations requiring a Water Pollution Control Facility (WPCF) permit and containers with internal protections (such as double-walled containers).
(C) All facilities that store solid waste. A solid waste storage area is a place where solid waste containers, including compactors, dumpsters, and garbage cans, are collectively stored. Solid waste storage areas include, areas used to collect and store refuse or recyclable materials collection areas. Exempt from this subsection are solid waste storage areas for one and two family dwelling and areas used for the temporary storage of wood pallets or cardboard.
(D) Developments that stockpile or store high-risk or low-risk bulk materials in outdoor containers, as the terms “high risk” and “low risk” are in the Stormwater Management Manual. Exempt from this subsection are:
(i) Materials which have no measurable solubility or mobility in water and no hazardous, toxic or flammable properties.
(ii) Materials which exist in a gaseous form at ambient temperature.
(iii) Materials, except for pesticides and fertilizers, that are contained in a manner that prevents contact with stormwater.
(E) Developments proposing the installation of new material transfer areas as defined in the Stormwater Management Manual, or structural alterations to existing material transfer areas, such as access ramp re-grading and leveler installations. Exempt from this subsection are areas used only for mid-sized to small-sized passenger vehicles and restricted by lease agreements or other regulatory requirements to storing, transporting or using 16.280 materials that are classified as domestic use, for example, primary educational facilities (elementary, middle or high schools), buildings used for temporary storage and churches.
(F) All development with a designated equipment or vehicle washing or steam cleaning area, including smaller activity areas such as wheel-washing stations. Exempt from this subsection are:
(i) Washing activity areas generally used to service oversized equipment than cannot maneuver under a roof or canopy, for example cranes and sail boats.
(ii) Evaporation unit installed as part of a wash recycling system are exempt from the wastewater connection requirement.
(iii) One and two family dwelling sites.

Development that is intended for the storage of 10 or more fleet vehicles must include a designated vehicle washing area.
(G) All development projects that disturb property suspected or known to contain contaminants in the soil or groundwater.
(H) All development with new covered vehicle parking areas, or existing parking structures that are being developed. Exempt from this subsection are single-level canopies, overhangs and carports.
(cc) Standards. All source controls must be designed and constructed according to the source control provisions set forth in the Stormwater Management Manual.
(dd) Enforcement. Failure to construct, operate and maintain source controls when a land use application, development permit or tenant improvement has resulted in a defined site use or characteristic listed above is subject to enforcement in accordance with Lane Code.
(ix) Dedication of Stormwater Easements.
(aa) Purpose. The purpose of Dedication of Stormwater Easements is to ensure that County maintained stormwater management facilities designed and constructed in accordance with adopted policies and the Stormwater Management Manual can be accessed by the County for routine and/or emergency maintenance to protect life and property from flood and drainage 16.280 Lane Code 16.280 hazards, ensure that water quality is protected, and to ensure that waterways in the headwaters area are protected from the erosive effects of runoff.
(bb) Applicability. Stormwater easement standards apply to all land use applications and development permits that result in the construction of a County maintained Stormwater Management Facility.
(cc) Standards. The applicant must dedicate public easements approved by the County over County maintained stormwater management facilities provided the County makes findings to demonstrate consistency with constitutional requirements. The conveyance of ownership or dedication of easements may be required in any of the following circumstances:
(A) Except for areas on the County's acknowledged Goal 5 inventory, where the subject property in the proposed development is or will be periodically subject to accumulations of surface water or is traversed by any open drainage way, headwater, stream, creek, wetland, spring, or pond, including those not maintained by the city which drain onto or from city-owned property or into city maintained facilities.
(B) For areas on the County's acknowledged Goal 5 inventory, where the subject property in the proposed development is or will be periodically subject to accumulations of surface water or is traversed by any water course or channel.
(C) Where necessary to extend public drainage facilities and services to adjoining undeveloped property.
(D) To provide necessary drainage from the public right-of-way.
(E) Where the County has accepted functional maintenance responsibility for pollution reduction and/or flow control facilities.
(x) Stormwater Operation and Maintenance.
(aa) Purpose. The purpose of Stormwater Operation and Maintenance standards is to ensure that stormwater management facilities designed and constructed in accordance with the Stormwater Management Manual are operated and maintained in a manner that protects life and property from flood and drainage hazards, protects water quality, and protects the waterways from the erosive effects of runoff.
(bb) Applicability. Operation and maintenance standards apply to all facilities designed and constructed in accordance with the Stormwater Management Manual.
(cc) Standards
(A) Unless the County accepts the responsibility to operate and maintain a stormwater facility, all stormwater management facilities must be privately operated and maintained.
(B) All stormwater facilities must be operated and maintained in accordance with Lane Code and the Stormwater Management Manual.

(C) Applications proposing private operation and maintenance of all or part of the stormwater facility must include an Operations and Maintenance Plan in accordance with the forms adopted as a part of the Stormwater Management Manual.
(D) A maintenance log is required. The log must provide a record of all site maintenance related activities. The log must include the time and dates of facility inspections and specific maintenance activities, and must be available to County inspection staff upon request.
(dd) Enforcement. Failure to operate or maintain the Stormwater Management Facility according to the Operations and Maintenance Plan may result in enforcement action, including a civil penalty, as specified in Lane Code.
(e) Utilities
(i) Underground Utilities
(aa) Generally. All new utility lines including, but not limited to, those required for electric, communication, lighting, and cable television services and related facilities must be placed underground, except for surface mounted transformers, surface mounted connection boxes and meter cabinets which may be placed above ground, temporary utility service facilities during construction, and high capacity electric lines operating at 50,000 volts or above.
(bb) Subdivisions. The following additional standards apply to all new subdivisions, in order to facilitate underground placement of utilities:
(A) The developer must make all necessary arrangements with the serving utility to provide the underground services. Care must be taken to ensure that all above ground equipment does not obstruct vision clearance areas for vehicular traffic as required in Lane Code (LC) 15.095(3) and as defined in LC 15.010(40);
(B) The County reserves the right to approve the location of all surface-mounted facilities;
(C) All underground utilities, including sanitary sewers and storm drains installed in streets by the developer, must be constructed prior to the surfacing of the streets; and
(D) Stubs for service connections must be long enough to avoid disturbing the street improvements when service connections are made.
(ii) Exception to Undergrounding Requirement. The standard applies only to proposed subdivisions. An exception to the undergrounding requirement may be granted due to physical constraints, such as steep topography, sensitive lands, or existing development conditions.
(f) Easements
(i) Provision. The developer or applicant must make arrangements with the County, the applicable zone, and each utility franchise for the provision and dedication of utility easements necessary to provide full services to the development. The County's standard width for public main line utility easements is determined by the County Engineer.
(ii) Recordation. As determined by the County Engineer, all easements for sewers, stormwater management, water quality facilities, water mains, electric lines, or other public utilities must be recorded with the final plat. See subsection (6), Site Design Review, and Lane Code Chapter 13, Land Divisions.
(g) Construction Plan Approval and Assurances
(i) Plan Approval and Permit. No public improvements, including sanitary sewers, storm sewers, streets, sidewalks, curbs, lighting, parks, or other requirements may be undertaken until the plans have been approved by the County, permit fee paid, and permit issued. The permit fee is required to defray the cost and expenses incurred by the County for construction and other services in connection with the improvement. The permit fee is set by the County.
(ii) Performance Guarantee. The County may require the developer or subdivider to provide bonding or other performance guarantees to ensure completion of required public improvements. See subsection (6), Site Design Review, and Lane Code Chapter 13, Land Divisions.

(h) Installation

(i) Conformance Required. Improvements installed by the developer either as a requirement of these regulations or at his/her own option, must conform to the requirements of this Chapter, approved construction plans, and to improvement standards and specifications adopted by the County.

(ii) Commencement. The County must be notified in advance in writing before any work begins.

(iii) Resumption. If work is discontinued for more than one month, the County must be notified in writing before work is resumed.

(iv) County Inspection. Improvements must be constructed under the inspection and to the satisfaction of the County. The County may require minor changes in typical standards and specifications, and details if unusual conditions arising during construction warrant such changes in the public interest. Modifications to the approved design requested by the developer may be subject to review as a modification of approval and/or conditions of approval. Any monuments that are disturbed before all improvements are completed by the subdivider must be replaced prior to final acceptance of the improvements.

(v) Engineer's Certification and As-Built Plans. A registered engineer must provide written certification in a form required by the County that all improvements, workmanship, and materials are in accord with current and standard engineering and construction practices, conform to approved plans and conditions of approval, and are of high grade, prior to County acceptance of the public improvements, or any portion thereof, for operation and maintenance. The developer's engineer must also provide two set(s) of "as-built" plans, in conformance with the County Engineer's specifications, for permanent filing with the County.

Appendix 4: City of Eugene BMPs

A1	Stormwater Education
Responsible Department/Division	Public Works / Administration Division
Description	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. 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.
Tasks	1. Update and improve upon educational materials through assorted print material, videos, web, audio and visual media. 2. Prepare and staff booths at special events to reach community members. 3. Develop on-going campaigns as appropriate to support projects, programs, special opportunities and targeted pollutants.
Measurable Goals	• 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.
Tracking Measures	• 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.

P1	Educational Volunteer Program
Responsible Department/Division	Public Works / Parks & Open Space Division
Description	Manage and support the City's Stream Team volunteer program and other community volunteer programs that promote 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.
Tasks	1. Recruit, support, and coordinate activities for groups or organizations to adopt portions of the City's stormwater system, such as creeks, ponds, and drainage channels. 2. Investigate inclusion of publicly owned vegetated stormwater facilities within developed parks and right of way into the volunteer program. 3. Advertise, coordinate and conduct periodic work parties for regular and drop-in volunteers aimed at waterway clean-up, invasive species removal, native vegetation salvage and native vegetation planting in riparian areas. 4. Partner with local agencies, organizations, businesses and/or corporate sponsors to plan, promote, coordinate and implement annual large scale waterway clean-up volunteer events. 5. Inform the public about the purpose of the volunteer program through public presentations, distribution of program information materials, event related press releases and news media articles and news stories. Include in the communication the challenges and benefits of managing stormwater properly.
Measurable Goals	• 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.

E2	Erosion Prevention and Construction Site Management Program
Responsible Department/Division	Public Works / Engineering Division
Description	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.
Tasks	1. Screen all development permits for sensitive area status, conduct plan reviews, issue erosion permits, conduct erosion inspections, and provide compliance enforcement as appropriate. 2. Issue Erosion Permits for activities which disturb an area one acre or greater in size or disturb an area 500 square feet or greater within a sensitive area (i.e. adjacent to a water feature or its buffer, ground slopes greater than 10%, having highly erodible soils). 3. Conduct education and outreach related to new erosion techniques/practices. 4. Act as 1200-C Agent for DEQ.
Measurable Goals	• 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.
Tracking Measures	• Number of compliance orders issued. • Number of permits issued. • Number of inspections. • Number of training/outreach events.

E4	Stormwater Development Standards
Responsible Department/Division	Public Works / Engineering Division
Description	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.
Tasks	1. Screen development permits for post-construction stormwater management, conduct plan reviews, approve stormwater facilities, conduct inspections, and provide compliance enforcement as appropriate. 2. Maintain an up-to-date Stormwater Management Manual for new development. 3. Track, evaluate, and develop new technologies and practices for post-construction stormwater management. 4. Provide training and technical assistance on water quality facilities to city staff and the public. 5. Conduct a review of policies, practices and regulations to identify potential barriers to implementing low impact development techniques.
Measurable Goals	• 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.
Tracking Measures	• 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.

M1	Management of Illicit Discharges to the Municipal Stormwater System
Responsible Department/Division	Public Works / Maintenance Division
Description	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.
Tasks	1. Use CCTV inspection, dye testing, smoke testing and field investigation to identify illegal connections, cross connections with the wastewater system and failures in the pipe system. 2. Inspect stormwater outfalls to identify illicit discharges, as well as track outfalls added or removed from the stormwater system. 3. Implement the City's Stormwater System Administrative Rule, 58-02-01-F, with the intent to prohibit improper connections and illegal discharges to the City's stormwater system utilizing an effective enforcement program .
Measurable Goals	• Work to reduce the number of improper discharges into the municipal stormwater system through public outreach and a reasonable enforcement of regulations.
Tracking Measures	• 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.

M2	Spill Response
Responsible Department/Division	Public Works / Maintenance Division
Description	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.
Tasks	1. Maintain an on-call list of personnel trained in spill response procedures. 2. Maintain an inventory of equipment and supplies necessary to mitigate improper discharges to the municipal stormwater system. 4. 3.Coordinate in conjunction with Fire Department / Hazmat Team on mitigation efforts including hazardous material clean-up and disposal. Update the City of Eugene's Public Works Maintenance Spill Response and Illicit Discharge Operations Plan.
Measurable Goals	• 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.
Tracking Measures	• Up-to-date list of employees trained for spill response. • Track number of spills and follow-up details.

M6	Regulation of Inspection, Maintenance and Reporting of Private Underground Stormwater Structures
Responsible Department/Division	Public Works / Maintenance Division
Description	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.
Tasks	1. Develop templates for written correspondence to the private operator, such as inspection notifications, reporting reminders, notices of non-compliance, notices of violation, and enforcement documents. 2. Establish criteria for when maintenance audits, corrective actions, and/or enforcement actions are warranted. 3. Develop and maintain mechanisms, processes and procedures to track structure type, ownership, maintenance inspections, required reports, corrective maintenance activity and enforcement actions. 4. Collect and file the required annual reports as provided by the private operator.
Measurable Goals	• 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.
Tracking Measures	• 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.

P1	Educational Volunteer Program
Responsible Department/Division	Public Works / Parks & Open Space Division
Description	Manage and support the City's Stream Team volunteer program and other community volunteer programs that promote 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.
Tasks	1. Recruit, support, and coordinate activities for groups or organizations to adopt portions of the City's stormwater system, such as creeks, ponds, and drainage channels. 2. Investigate inclusion of publicly owned vegetated stormwater facilities within developed parks and right of way into the volunteer program. 3. Advertise, coordinate and conduct periodic work parties for regular and drop-in volunteers aimed at waterway clean-up, invasive species removal, native vegetation salvage and native vegetation planting in riparian areas. 4. Partner with local agencies, organizations, businesses and/or corporate sponsors to plan, promote, coordinate and implement annual large scale waterway clean-up volunteer events. 5. Inform the public about the purpose of the volunteer program through public presentations, distribution of program information materials, event related press releases and news media articles and news stories. Include in the communication the challenges and benefits of managing stormwater properly.
Measurable Goals	• 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.

P6	Compliance Program for Maintenance of Privately Owned Vegetated Stormwater Facilities
Responsible Department/Division	Public Works / Parks & Open Space Division
Description	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.
Tasks	1. Continue to document pertinent information for new privately owned and operated vegetated stormwater facilities. This includes photo documentation of newly constructed facilities and populating the stormwater facility tracking system database with all new facility information. 2. Develop an administrative rule that details the policy guidelines, practices, procedures, specific authorities, permitted actions, and penalties to be used by City staff in managing the program. 3. Establish criteria for when maintenance audits, corrective actions, and/or enforcement actions are warranted. 4. Maintain mechanisms, processes and procedures to track BMP ownership, maintenance inspections, required reports, corrective maintenance activity and enforcement actions. 5. Develop templates for written correspondence to BMP owners, such as inspection notification, reporting reminder, notice of non-compliance, notice of violation, and enforcement documents. 6. Review required inspection and maintenance logs submitted by BMP owners
Measurable Goals	• 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.

Appendix 5: City of Springfield BMPs

Disclaimer: It should be noted that the City of Springfield BMPs listed are part of the City's 2010 Stormwater Management Plan and the information contained are outdated. However, the City is currently implementing MS4 Permit in an extended status. All associated documents, including the referenced BMPs are in the process of review in preparation of the permit renewal. While the BMP numbering may remain as in the current document, the City may modify the BMP descriptions in the updated version. This appendix will be updated when a newer version become applicable.

BMP PE2: Outreach Efforts with Regional Partners

Responsible Parties

The City's Environmental Services and Maintenance Divisions staff coordinate with local and regional agencies on public education efforts. Their local/regional coordinating groups include: Pollution Prevention Coalition of Lane County (P2C), a workgroup of staff from Springfield, Eugene, Lane County, Springfield Utility Board (SUB), Eugene Water and Electric Board (EWEB), Lane Regional Air Pollution Authority (LRAPA), and the DEQ. The Metropolitan Endangered Species Act [ESA] Coordinating Team (MECT) is comprised of members from the cities of Eugene and Springfield, Lane County, EWEB, SUB, Willamalane Park and Recreation District, and the Lane Council of Governments (LCOG). The Public Works Public Information and Education Specialist also coordinates public outreach/education efforts with peers from local public agencies.

BMP Description

Support selected local and regional partnerships with organizations and jurisdictions that present a well-organized and effective stormwater-related educational outreach program. Support may include financial contributions, participation on committees, staff time for projects, and freely sharing informational materials for use by partners. The purpose of this BMP is to enhance open exchange of proven ideas and strategies, and to enhance efficiency and cost effectiveness of public outreach efforts.

Existing Conditions

Various agencies and jurisdictions, both local and statewide, are involved with stormwater- related education efforts. Some of these entities have developed significant programs by virtue of involvement with NPDES regulations from the initial Phase I NPDES stormwater program in the early 1990s. Consequently, much information and program refinement has occurred, and several programs are quite advanced.

Information sharing is an efficient and effective way to gain expertise as well as multiply the efforts of any one group. The synergistic effect is increased further when dealing with local partners, as the "message" put forth by a combined effort is consistent across adjacent jurisdictions. Combining resources within the local area is a proven strategy to reduce confusion from inconsistent messages, gain support, enhance access to funding, and gain benefits from multiple viewpoints. Further, using an area-wide approach to identifying priorities for education insures that jurisdictions are not working at cross-purposes.

Springfield was a participant on the MECT, which was organized to coordinate a response to issues presented by the Endangered Species Act as it relates to governmental and quasi-governmental agencies in the Eugene/Springfield area. The MECT met to address issues of mutual concern and to combine resources to gain the research and analyses need to support local ESA planning and response activities. MECT's goal is to provide a coordinated approach to identifying and responding to habitat and water quality problems in the metro area, including prioritizing, locating funding, and coordinating a

response to preserve, renovate, or restore riparian areas and waterways. In 2002, MECT produced a Comprehensive Riparian Assessment of local waterways in the metro (Eugene and Springfield) area, which identified target areas for protection and restoration activities. Shortly after the group stopped meeting as the project was concluded.

Springfield also participates in the P2C. The P2C provides useful, coordinated educational messages and technical assistance to the community regarding stormwater and pollution prevention issues. Examples of its efforts include a mercury thermometer exchange program at a recent home show event, and the development of a traveling educational display called the House of Pollution Solutions, and the DEQ grant-funded public information kiosks that are stationed throughout the metro area.

The City is an active member of the Oregon Association of Clean Water Agencies (OR- ACWA) in the state. In terms of education, ACWA has compiled or published several stormwater-related guidance documents. They include a CD of stormwater-related materials referred to as “the best of the best.” They also developed a guide to managing underground injection facilities (UIC Manual), guidance documents on managing fats, oils, and greases in a sanitary system (FOG BMP Manual), an ESA guidance manual for cities, a model erosion control program, and numerous educational handouts. As a member and participant in ACWA, Springfield has participated in the development of and has access to these statewide materials.

Springfield also works with the City of Eugene, Lane County and other agencies in coordinating educational messages and technical assistance to the public involving car washing and pressure washing activities. Public messages have been advertised via radio and fact sheets and “fish friendly car wash kits” have been developed and are available to charity car wash groups.

Springfield along with the Willamalane Parks and Recreation District are currently working together on the installation and maintenance of doggie pot stations thought out Springfield’s parks and public greenways.

Proposed MS4 Plan Activities

The City will continue to participate in local/regional/State partnerships that are deemed valuable in terms of public outreach effectiveness. If the opportunity presents itself, new partnership programs will be evaluated to determine if they are appropriate for the City to join. The City will continue to maintain the public information kiosk in Springfield City Hall.

Measurable Goals

The City will evaluate the current partnership programs annually to determine their effectiveness. Those programs determined to be less effective will be revised or removed.

Opportunities and available staffing and funding will also determine the number and level of participation in partnerships.

Development/Implementation Schedule

FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
Continue partnership in local and statewide programs.				
Review effectiveness of partnership programs each year and modify as warranted.				

BMP PE3: Stormwater Education School Workshops

Responsible Parties

Environmental Services Division

BMP Description

Provide education classroom presentations on the sources and impacts of stormwater quality pollution.

Existing Conditions

The City is presently developing curriculum for presentations in elementary, middle, and high schools. The curriculum is based on approximately one-hour presentations, and will include participatory games, educational video, and exercises that include an overview of the stormwater drainage system in relation to other systems (wastewater, drinking water) and that stress the importance of citizens' household activities in fighting stormwater pollution.

Proposed MS4 Plan Activities

The Environmental Services Division will provide the presentations to classrooms upon request, with the number of presentations based on demand within the School District (which is undetermined at this point). The presentations will be advertised to teachers through the existing School District communications structure. The content of the presentations will be reviewed and updated every two years to reflect any changes in regulatory measures or City ordinances.

Measurable Goals

The effectiveness of this program will be gauged through the use of a teacher survey given at the completion of the workshop, or, alternately, a series of workshops within a school. Those areas identified as ineffective or poorly received will be enhanced or removed from the program. Those program elements viewed as effective will be maintained. Effectiveness of presentation advertisement will be gauged by teacher demand. Promotion efforts will increase if little interest is shown for scheduling presentations.

Development/Implementation Schedule

FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
Develop a stormwater education workshop/ promote through the School District	Provide workshops as requested to classrooms	Update and review workshop program - presentation effectiveness and interest	Provide workshops as requested	Update and review workshop program

BMP PE4: Stormwater Educational Brochures Portfolio

Responsible Parties : Public Works Environmental Services and Maintenance Divisions.

BMP Description

A portfolio of educational brochures was developed for all Public Works field staff to assist with educating and informing the public when activities are observed that may adversely impact stormwater quality.

Existing Conditions

City staff frequently observe activities throughout the city that violate City Codes and may result in impacts to the stormwater drainage system, such as improper erosion control, illicit discharges of pollutants, material dumping, or improper handling and/or storage of potentially polluting materials like petroleum products.

Formal enforcement activities are frequently not appropriate in these situations and education and technical assistance is often the best approach to achieve long-term behavioral changes and Code compliance. As well, the unlawful actions often are either too minor or conclusive evidence is not available to take enforcement action, or the incidents occur based on ignorance of how the stormwater drainage system works. These situations present an excellent opportunity for educating the responsible party by presenting information regarding options or alternative behaviors that do not adversely impact the environment.

An easily-managed portfolio containing a broad range of informational and educational handouts was developed for all City staff working in the field or responding to complaints of spills, dumping, or other problematic practices. Staff was trained on the use of the handouts, as well as information concerning the City's Municipal Code with regard to illegal activities covered by the handouts. The purpose of this portfolio is to insure that this material is readily available when violations are observed in the field. The handouts inform residents that their activities may cause significant pollution levels downstream, harming fish, plants, and aquatic life, as well as potentially harming people swimming or recreating in the waterway.

The portfolios include handouts and brochures on a wide variety of household and construction BMPs, including concrete cleanout, car washing, restaurant and business stormwater BMPs, pet waste disposal, and more, addressing situations which are relatively frequently observed. Staff receiving these portfolios were briefed on the content and purpose of the handouts, and provisions were developed for updating and refilling the portfolios as the material was used. The portfolios were developed in 2001, and distribution and training on their contents occurred in 2002. They will continue to be refined and updated as appropriate.

Proposed MS4 Plan Activities

The Environmental Services Division will continue to provide the portfolios to all new field staff and provide training on their contents. The portfolios will be reviewed and updated on an annual basis. The topics covered by the handouts will increase over time, as needed to address various observed situations and conditions.

Measurable Goals

Public Works staff will log the impacting stormwater activities that are observed in the field. The program will be evaluated annually with field staff and revised as appropriate to enhance effectiveness. Those activities that continue to be a problem will be further evaluated to determine the best way to eliminate the behavior.

Development/Implementation Schedule

FY 07-08	**FY 08-09**	**FY 09-10**	**FY 10-11**	**FY 11-12**
Continue to provide portfolios to new staff each year.				
Review field logs and update portfolios as necessary each year.				

BMP PI1: Public Involvement/Participation

Responsible Parties : Environmental Services Division

BMP Description

Provide opportunities for public involvement and input in the development and implementation of the Stormwater Plan.

Existing Conditions

Public involvement and review is a component of all significant regulatory actions at the City, and is, therefore, an ongoing effort. The Planning Commission (PC), in its role as the Committee for Citizen Involvement (CCI), reviewed and approved the Public Involvement work plan and schedule for the Stormwater Plan. The Public Involvement Program was included in the City's NDPES MS4 permit application.

The Public Involvement component of the Stormwater Plan, as outlined in the City's MS4 application, included a series of three public informational meetings, using an open house format. These events were scheduled to correspond roughly with the information gathering, plan drafting, and final plan development phases of the Stormwater Plan. Outreach to citizen, civic and neighborhood groups regarding the public events was conducted through a broad effort, including direct mailings, newspaper advertising, the City's website, direct telephone contact with stakeholder groups, and electronic mailing lists. Public comments and questions were solicited at these workshops. Formal public hearings also were convened by the Planning Commission in recommending, and the CCI in adopting, the Stormwater Plan.

Proposed MS4 Plan Activities

The City will continue to follow the approved public involvement plan schedule as approved by the CCI and submitted in the MS4 permit application. The City will also involve the City Council in implementation on an ongoing basis.

Public involvement is an integral component of the City's public policy-making processes, and is established by Ordinance. Where requirements of the Stormwater Plan trigger this process, such as passing or amending ordinances, adopting plans or regulations, the City will follow its adopted public involvement processes.

Measurable Goals

The City will provide three public workshops, plus public hearing opportunities, during the Stormwater Plan development and adoption process. The comments received from these events will be reviewed and incorporated into the MS4 plan as appropriate. Staff will apprise the City Council of Stormwater Plan implementation efforts annually.

Development/Implementation Schedule

FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
Implement CCI- approved public involvement plan.	Identify and implement public involvement activities in implementing Stormwater Policies, implementation actions and BMPs, in accordance with Springfield's Citizen Involvement Program.			

BMP ID1: Illicit Discharges Reporting Hotline and Tracking System

Responsible Parties: Environmental Services Division

BMP Description

Develop and implement a designated hotline for the receipt of complaints/reports of illicit discharges or spills, and maintain a tracking system documenting complaints/incidents and follow-up actions taken.

Existing Conditions

City staff routinely receive calls from citizens concerning illicit discharges, spills, or other stormwater drainage system-related problems. These calls have traditionally been received by either Maintenance or Environmental Services staff and are processed as appropriate. Without a designated phone line for the receipt of these complaints, citizens sometimes encountered difficulties identifying the appropriate individual, department or division to contact. Calls sometimes were transferred to inappropriate individuals, resulting in delays, frustration, and lack of appropriate follow-up actions.

As a result, in 2000, a telephone number was designated by the City as a "stormwater hotline," and published in the phone book. By establishing this phone number, citizens are now able to quickly and easily access the appropriate person within the City ensuring a more timely and adequate response. The phone number may be used by citizens for asking questions, reporting spills, reporting illicit discharges and/or accessing general

stormwater information. This number is included on informational brochures, such as those available at public events and handed out by staff for "educational" opportunities, and is displayed on catch basin labels. The hotline is answered by the Water Resources Program staff who are qualified to answer most stormwater-related questions and provide

appropriate staff responses to resolve most issues. The Water Resources Program staff also route calls to other City staff for handling when it's warranted. Each call is documented in a database along with all follow-up actions taken to resolve the incident.

Proposed MS4 Plan Activities

The Stormwater Hotline is currently in place and will continue to be operated indefinitely. The number for the hotline will continue to be provided on informational brochures. This service, currently operational during normal City business hours, will be evaluated in FY 05-06 to determine whether 24-hour reporting and response capability is warranted.

Measurable Goals

Each year the number of calls received and the follow-up actions will be tracked. Information regarding the complaint will also be documented in databases maintained by the Environmental Services and Maintenance Divisions. (These databases also are referred to in BMP ID2.)

Development/Implementation Schedule

FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
Operate the hotline, publish and promote the phone number and document calls received each year.				
No scheduled action.	No scheduled action.	Evaluate program effectiveness	Implement program improvements as warranted.	

BMP ID2: Illicit Discharges Response and Enforcement

Responsible Parties

Environmental Services, Engineering, and Maintenance Divisions, and Office of the City Attorney

BMP Description

This BMP also includes the development and implementation of protocols that the City will use in order to respond to complaints/reports of illicit discharges or spills in a most efficient and effective manner.

Existing Conditions

Procedures:

Services provided by the City have traditionally included response to nuisance complaints of various sorts by members of the public. In the past, however, the City's ability to respond to and resolve complaints involving spills or dumping into the streets, public rights- of-way, or stormwater drains connected to the City's storm sewer system has been limited. Over the last three years, however, the City has developed increased ability to respond to stormwater polluting incidents with trained staff, necessary equipment, and improved enforcement authority.

An important aspect of the City's overall program has been to coordinate and augment the City's complaint response among the Public Works, Police, and Fire and Life Safety Departments. In developing the current program, Environmental Services staff assessed the response process that was being used by the City's various departments for spills, dumping, and other environmental incidents. The evaluation revealed that past practices were not well coordinated, were inconsistent, and led to delays or failures in some cases, and double-staffing in others. As a result, Standard Operating Procedures have been developed to clarify response protocols and establish consistent communication and enforcement procedures.

The goals of the Standard Operating Procedures for response and enforcement are to:

(1) respond quickly and efficiently to citizens' pollution incident complaints and reports of dumping or spills;

(2) ensure that all incidents are handled by appropriately trained staff or contractors;

(3) respond to both the citizens who report incidents, and those who are responsible for the incidents;

(4) ensure that the significant aspects of all incidents are well documented; and

(5) avoid "double staffing" of incidents through efficient coordination of appropriate staff.

The Standard Operating Procedures have been agreed to by all affected Public Works Divisions.

The Environmental Services and Maintenance Divisions maintain and share databases that track incidents and follow-up actions taken to resolve them.

Enforcement:

The City has had limited coordinated enforcement efforts and, in the past, City staff have had varying degrees of awareness and understanding about enforcement authority available to them to resolve illegal activities that threaten the stormwater drainage system and receiving streams. In 2002-2003, staff and legal counsel reviewed Federal, State, and local laws and Codes directly enforceable by City staff and legal counsel regarding illegal erosion, land alteration activities, dumping, and other polluting events. As a result, amendments to the Municipal Code provide broad ability for the City to assess and determine when actions negatively impacting any elements of the stormwater drainage system are unlawful and require abatement. The Code also provides authority for the City to take measures appropriate and necessary to abate the situation.

Section 8 of the Municipal Code, and various sections of the Springfield Development Code, which are enforceable within the City's urbanizable area, supplement the nuisance prohibitions of the Code in enabling the City to protect the stormwater drainage system and enforce against those who cause damage to it.

The City has not completed all steps necessary to have a fully operational and effective enforcement program. The most significant gaps in Springfield's program include:

(1) lack of coordinated agreements with Lane County to achieve efficient resolution of Code violations;

(2) an enforcement guide has not yet been developed to establish clear and objective procedures for applying penalties; and

(3) training of all staff in appropriate enforcement protocols has yet to be completed.

Proposed MS4 Plan Activities

Regarding incident response, the Standard Operating Procedures are presently in effect, and responses are currently coordinated among appropriate City divisions. The incident response protocols will continue to be followed throughout each year of the permit period, and performance improvement evaluations will occur if and when evaluations show the protocols are not fully effective or efficient.

Regarding the City's enforcement program, the City intends to complete the following activities within the permit period:

(1) develop an enforcement guide and penalty matrix;

(2) initiate amendments to the Urban Transition Agreement with Lane County to improve enforcement in the urbanizable area; and

(3) provide staff training and tool kits.

Measurable Goals

Periodic check-ins on an every-other-year basis with Environmental Services and Maintenance Division staff will be conducted to monitor and improve the effectiveness of the incident response program.

Development/Implementation Schedule

FY 07-08	**FY 08-09**	**FY 09-10**	**FY 10-11**	**FY 11-12**
Implement protocols for responding to complaints annually, and maintaining complaint database.				
Program evaluation year.	Program review.	Program evaluation year.	Program review	Program evaluation year.
	Review/ revise Standard Operating Procedures.		Review/ revise Standard Operating Procedures.	
Implement amended Codes and track success.	Develop/ adopt enforcement guide and penalty matrix.	Implement enforcement guide and penalty matrix.	Review enforcement guide and penalty matrix.	Update enforcement guide and penalty matrix.
	Develop modifications to Urban Transition Agreement as needed.	Track effectiveness of enforcement program in urban transition area.	Review effectiveness of Urban Transition Agreement.	
	Conduct staff training and maintain updated enforcement tool kit.			

BMP ID3: Outfall Inventory and Mapping

Responsible Parties: Environmental Services Division

BMP Description

Inventory and map outfalls to the stormwater drainage system and develop an outfall database. The outfall map and database will be used for detection and elimination of illicit discharges as described in BMPs ID4 and ID5.

Existing Conditions

An initial task to locating and eliminating illicit discharges is surveying, inventorying, and mapping all outfalls to the stormwater drainage system. An outfall map, in conjunction with systematic monitoring and sampling, forms the basis for further investigations. Springfield initiated a stormwater drainage system outfall inventory in 2000, which involved a physical inspection of the entire open channel drainage system. At the same time, staff inventoried and mapped all of the DEQ-permitted industrial source outfalls within the City. The updated outfall map (included in the City's Geographic Information System) and outfall database have been completed. The inventory database includes information regarding the precise location of each outfall, its source, and additional relevant information such as flow rate, observed/potential pollution problems, outfall condition, and the owner's awareness of the outfall. The physical inspection also resulted in locating over 200 additional unmapped and previously unknown outfalls to the stormwater drainage system.

Proposed MS4 Plan Activities

The outfall mapping effort will be ongoing as new development and redevelopment result in the construction of new outfalls to the stormwater drainage system. Ongoing efforts will include, at a minimum, yearly map updates from "as-built" plans, as well as physical inspections every four years of new or redeveloped areas of the system. Periodic additional updates to capture outfalls from new developments or newly permitted industrial dischargers will be conducted as needed.

Measurable Goals

Conduct GIS map updates at least annually and conduct physical re-inspections of new or redeveloped areas every four years.

Development/Implementation Schedule

<table>
<tr><th>FY 07-08</th><th>FY 08-09</th><th>FY 09-10</th><th>FY 10-11</th><th>FY 11-12</th></tr>
<tr><td colspan="5">Conduct yearly outfall map updates.</td></tr>
<tr><td rowspan="2">Complete outfall mapping for City and urbanizable area.</td><td colspan="4">Maintain outfall mapping</td></tr>
<tr><td>No scheduled actions.</td><td>No scheduled actions.</td><td>Conduct a follow-up inspection of outfalls.</td><td>No scheduled actions.</td></tr>
</table>

BMP ID4: Water Quality Monitoring for Illicit Discharges

Responsible Parties

Environmental Services Division

BMP Description

Conduct water quality monitoring of the City's stormwater drainage system in an attempt to establish baseline water quality data, observe trends, document effectiveness of BMPs, and identify illicit discharges.

Existing Conditions

In 2001, Environmental Services Division staff developed and initiated implementation of an ongoing, albeit limited, stormwater monitoring program to document and assess stormwater quality in drainageways throughout the city. As mentioned above, the purpose of the monitoring program is to establish baseline data, track trends and identify illicit discharges. Over time, the monitoring will support adaptive management strategies to improve the City's stormwater quality improvement efforts. The monitoring is conducted on a subbasin by subbasin basis. The program employs two submersible data logging monitors that measure pH, temperature, dissolved oxygen, and conductivity on a continuous basis (i.e., every 15 minutes) for later download to a computer. These units are placed one upstream, and the other downstream of significant outfalls to a drainageway. Data are recorded for a period of at least one week, at which time the units are serviced, data downloaded, and the units re-deployed downstream to the next significant outfall on the monitored system. As the equipment is not capable of measuring all parameters desired for analysis, grab samples are also collected for analysis in the laboratory when and where the units are deployed. Grab samples are analyzed for dissolved metals, oil and grease, and bacteria.

A quality assurance/quality control (QA/QC) program has been developed and implemented to ensure the accuracy of all the data collected. Because the City has limited equipment and resources, the monitors are rotated throughout the city and data is only collected periodically in any one location. Therefore, this program in and of itself does not capture water quality or illicit discharges continuously throughout the system. To date, one full rotation of the equipment throughout the City's major outfall locations has been completed and a second comprehensive monitoring round is anticipated.

Proposed MS4 Plan Activities

The monitoring program described above will be ongoing throughout the permit period. Where evidence of water quality problems is identified, the City will conduct further investigations and analyses as needed to identify and abate the sources of pollution. Where evidence of illicit discharges is observed through sampling results, compliance efforts will be made, including locating the source of the discharge and responsible party, and eliminating the source (see BMP ID2 for Enforcement Program). When monitoring of all subbasins has been completed, the equipment will be installed where substandard

water quality is chronic and not caused by identifiable violations. Efforts can then be made to locate and eliminate the source(s) of that contamination through educational and cooperative efforts.

Measurable Goals

The monitoring program will be conducted at each of the significant outfalls to the drainageways over the course of the five-year permit period. Results from the monitoring will be evaluated on an ongoing basis.

Development/Implementation Schedule

FY 07-08	**FY 08-09**	**FY 09-10**	**FY 10-11**	**FY 11-12**
Conduct water quality monitoring of all significant outfalls to drainageways.				
Evaluate monitoring results to identify pollutants of concern and to support identification of illicit discharges.				
Where deemed necessary, conduct follow-up investigations to identify and eliminate the source of illicit discharges. Where chronic substandard water quality is found, use data to prioritize public outreach and modify BMPs as appropriate.				

BMP CSW1: Erosion and Sediment Control Regulations

Responsible Parties

Environmental Services, Community Services, Planning, Engineering, and Maintenance Divisions

BMP Description

This BMP is intended to provide for maintenance, review and augmentation of City Ordinances and Codes adopted to enable administration and enforcement of programs aimed at reducing and/or eliminating erosion and sedimentation associated with both public and private construction or other land alteration, as well as construction site waste. This BMP is intended to fulfill requirements i-iii of this Minimum Control Measure described on page 68.

Existing Conditions

Regulatory authority for implementation and enforcement of Springfield's erosion and sediment control program is provided in both the Development and Municipal Codes. These Codes provide a framework for oversight of construction that requires erosion and sediment control measures during construction or redevelopment of sites disturbing greater than 50 cubic yards of soil. Specific requirements for construction site operators are addressed during the Site Plan Review and subdivision review processes.

Provisions enabling inspections and enforcement of required erosion and sediment control BMP measures and environmental compliance of construction activities are included in the Municipal Code. Violations are enforced through stop work orders and/or citations and civil penalties. As well, the City can obtain injunctive relief or has the ability to take remedial actions deemed necessary through the Municipal Court.

Proposed MS4 Plan Activities

The City will continue to implement existing regulations on an ongoing basis. The City will also review the effectiveness of the existing Codes and Ordinances, and will amend the Municipal Code as appropriate.

Measurable Goals

The City will track construction and other land alteration site inspections and permit or Code violations. The information will be reviewed on an annual basis to evaluate the effectiveness of the City's regulations and to develop amendments necessary to fully comply with the permit requirements for this Minimum Control Measure noted previously.

Development/Implementation Schedule

FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
Implement existing Municipal Code and Springfield Development Code provisions on an ongoing basis.				
Continue Code Review for erosion and construction site runoff control effectiveness.	Prepare and adopt ordinances as needed to improve effectiveness of Codes and permitting programs.	Track permit compliance and impacts to stormwater.		Program review and assessment.
Review City Codes and Ordinances on an ongoing basis; revise as appropriate.				

BMP CSW2: City Staff Erosion Control Training

Responsible Parties

Public Works Department

BMP Description

This BMP entails provision of adequate and ongoing erosion control training opportunities so staff can educate and inform contractors and developers; fairly and knowledgeably enforce the City's Codes and regulations; and conduct their work in a responsible manner. This BMP is intended to partially fulfill requirement vi of this Minimum Control Measure.

Existing Conditions

Erosion and sedimentation are significant water pollution issues. Erosion carries contamination, such as oil and grease, and toxic heavy metals that are present in the soil, and discharges these pollutants into the stormwater drainage system. Sediment that is discharged into waterways impacts wildlife habitat and critical stormwater infrastructure, such as pipes, detention ponds, and open waterways, and removes valuable topsoil along stream banks. Finally, erosion problems in Springfield have caused land instability drainage problems, and have endangered the safety of property.

Erosion control training for City staff is important to help staff recognize potential erosion problems, as well as avoid creating those problems during the course of their work. Training is provided internally on specific programs or issues, and is part of the ongoing employee development program on a routine basis for new and experienced staff. The goal is to ensure that staff are adequately informed of the regulations, and have the tools, supplies, and knowledge to avoid creating unnecessary soil erosion. It also supports staff in constructively educating citizens and the development community with regard to appropriate and required erosion control measures. Educational and outreach documents are readily available and training is provided to enable staff to quickly and easily obtain information on proper erosion control measures.

Proposed MS4 Plan Activities

The Public Works Department is in the process of increasing staff resources available to implement the Land and Drainage Alteration Program (LDAP), which is largely where ongoing approval and monitoring of erosion and sediment control measures will occur. However, various staff throughout the Public Works and Development Services Departments need to be trained to recognize conditions encountered in the field that warrant appropriate follow-up actions by the City, ranging from educating and gaining cooperative remediation from contractors in the field, to pursuing enforcement actions.

During the permit period, the Public Works and Development Services Departments will collaborate to plan and provide training programs tailored to the needs of Springfield. The trainings will be evaluated and revised as needed to meet staff needs.

Measurable Goals

The goal of this BMP will be to provide a comprehensive erosion control training at least once annually to ensure that new staff receive adequate training and that improvements in the City's inspection, enforcement, and technical assistance activities are implemented consistently throughout the organization.

Development/Implementation Schedule

FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
Conduct staff training on an ongoing basis; update as needed.				
Evaluate the effectiveness of the training and update/improve as warranted.				

BMP CSW4: Inspections and Enforcement

Responsible Parties

Environmental Services, Community Services, Engineering, and Maintenance Divisions and Development Services Department

BMP Description

Develop and implement Code authority to prohibit and enforce the dumping of nuisance waste associated with construction sites.

Existing Conditions

The City developed Code authority in the Springfield Municipal Code (Section 5.002) that prohibits the disposal of nuisance waste on public or private property, including stormwater drainageways. The Municipal Code includes provisions for nuisance management at all public and private properties including construction sites. The Code strictly prohibits depositing of wastes including, but not limited to: sewage, industrial material, hazardous waste, trash, debris, and used building materials.

Enforcement of the Code is provided by (designees of) the City Manager. Additional inspections and educational compliance efforts are provided by Environmental Services

and Maintenance Division staff. Violations are enforced through civil penalties or stop work orders, as appropriate. Any Springfield citizen or City employee can refer observed or suspected violations for investigation.

Proposed MS4 Plan Activities

Implement existing Code authority on an ongoing basis. Review the effectiveness of the existing Code every two years and amend the Code as appropriate, based on program effectiveness, new or proposed requirements or regulations, budget, and staffing.

Measurable Goals

The City will track construction site inspections and nuisance violations similarly to LDAP inspections. The list of violations will be reviewed on an annual basis to evaluate the effectiveness of the program.

Development/Implementation Schedule

FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
Implement existing Code authority on an ongoing basis.				
Review and amend the Code as appropriate.				
Conduct inspections on an ongoing basis.				

BMP DS2: Post-Construction Stormwater System Maintenance Inspections and Compliance

Responsible Parties

Environmental Services Division

BMP Description

This BMP provides for an inspection and compliance program to ensure that private stormwater management systems (both non-structural and structural), constructed consistent with City development review approvals, are operated and maintained over the long term. This is a direct requirement (ii.2) of Minimum Control Measure #5 - Post- Construction Stormwater Management for New Development and Redevelopment.

Existing Conditions

As described in BMP DS1, the City has required, through the development review and approval process, stormwater management systems (both structural and non-structural) in private developments for many years. The systems approved under the current standards are intended to meet the Federal MEP requirement at the time they become operational. While developments are required to maintain sites in the approved conditions for the duration of their operation, the City currently has no program or staffing to ensure “adequate long-term operation and maintenance” of stormwater management systems. However, inadequately maintained facilities, such as oil/water separators or clogged catch basin, are frequently observed by staff when responding to complaints.

Proposed MS4 Plan Activities

Over the course of the MS4 permit timeframe, the City will develop a stormwater management system maintenance inspections and compliance program. This program will dedicate staff resources necessary to inventory the private stormwater management systems that have been constructed, inspect them, and provide education and technical assistance to property owners, as well as enforcement activities if and when needed to remediate substandard conditions.

Measurable Goals

Measurable goals for this BMP include tracking of inspections and maintenance activities performed, as well as substandard conditions identified in the field and follow-up activities that demonstrate that the facilities have been returned to the conditions under which they were originally approved.

Development/Implementation Schedule

FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
No action	Develop long-term BMP maintenance inspection, technical assistance, and enforcement program.	Dedicate staffing to conduct inspections, technical assistance, and enforcement activities on an ongoing basis.	Maintain inspection and compliance activities and track/analyze program effectiveness and success/failure of BMPs observed over time.	

BMP DS3: Stormwater Facilities Master Plan (SWFMP) and Capital Improvement Program (CIP)

Responsible Parties : Public Works Department

BMP Description

This BMP provides for completion of a comprehensive Stormwater Facilities Master Plan (SWFMP) for the City that includes up-to-date stormwater drainage system information, recommendations for future improvements, and assists both the City and the development community in planning for expansion in a way that addresses stormwater quality and capacity issues.

Existing Conditions

The systems of pipes, ditches, ponds, and other stormwater handling facilities are interconnected, and to work efficiently, must be sized and staged to minimize flooding and provide additional capacity for future development. The City maintains master plan documents that identify the available capacity requirements for expansion, bottlenecks, and recommended stormwater drainage system improvements. The existing Master Plan for

the City is actually two plans: The West Springfield Drainage Master Plan and the Storm Drainage Study for East Springfield, written in June, 1983, and June, 1979, respectively. Both studies are outdated and inadequate to address current stormwater management issues, especially those that are associated with water quality.

Proposed MS4 Plan Activities

The City has dedicated staffing and funding for the purpose of developing and implementing a new comprehensive SWFMP. A consultant team has been retained to assist in the development of the SWFMP. Development of the SWFMP was initiated during the summer of 2003, and was completed and presented to the City Council for adoption in 2008. The SWFMP includes recommendations and a prioritized list of multiple objective capital improvement projects, which will be reviewed and implemented through the City's annual Capital Improvement Program (CIP). Staff will update and modify the SWFMP over time as necessary to respond to community development patterns.

Measurable Goals

Measurable goals include completion of the SWFMP in 2008, and implementation of stormwater quality-related capital improvement projects on an ongoing basis as prioritized in the plan.

Development/implementation Schedule

FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
Complete and adopt updated SWFMP.		Implement SWFMP through annual CIP adoption and construction process.		