

City of Springfield

Total Maximum Daily Load

Implementation Plan



Springfield Mill Race 2010

April 2014

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Section One – Introduction

This document is the City of Springfield’s Implementation Plan (IP, or the “Plan”) for the Total Maximum Daily Load (TMDL) program, a key component of the federal Clean Water Act. This Plan describes the strategies that the City will implement to reduce temperature, bacteria, and mercury pollution in the Willamette and McKenzie Rivers. This IP is a required submittal, to comply with the Willamette Basin TMDL order (issued by DEQ, Sept 21, 2006) and to help meet pollutant load allocations for the Upper Willamette sub-basin as approved by the US Environmental Protection Agency (EPA) in September 2006.

As importantly, it compliments Springfield’s existing stormwater management efforts based in the Clean Water Act, Endangered Species Act, Safe Drinking Water Act, and Springfield’s endorsed “Key Outcomes for Stormwater.” This last measure is a Council-endorsed statement of desired conditions for Springfield’s open waterways. The Key Outcomes ensure that stormwater management is focused on creating safe, clean, and attractive community amenities from Springfield’s many open waterways.

The Plan is organized into five sections: This first section introduces the Plan, and explains the organization and goals of the Plan.

Section Two provides a brief overview of the City of Springfield, the TMDL program, and TMDL development process. It describes each of the three major pollutants addressed in the Willamette Basin TMDL (Temperature, Bacteria, and Mercury), their sources in Springfield, and explains the region’s water resources and important issues related to water quality. This section also includes a description of Springfield’s public involvement in this planning effort.

Section Three provides an overview of the City’s current and proposed programs and efforts to address TMDL pollutants and identifies gaps in the existing plans and programs with regard to these pollutants.

Section Four identifies strategies, tasks, and measurable goals the City plans to take to address the identified pollutants. A matrix included in this section outlines these strategies and includes a schedule of when the various tasks will be accomplished. It also includes measures or metrics that will be used to track how effective the implementation of the Plan is, and how progress will be monitored.

Section Five outlines how the effectiveness of the Plan will be measured and how the Plan will be adaptively managed to remain effective. It also includes discussion of how this Plan complies with various other local land use plans.

The overall goal of this Plan is to identify and prioritize measures that the City will take to minimize, to the extent practicable, temperature, bacteria, and mercury contributions to surface waters within the jurisdictional control of the City. It does not propose ordinances, or establish or limit land use, but focuses on a continued multi-faceted

approach of education, inspection, municipal operations, and partnerships to reduce specific sources of contamination within the City's jurisdiction to improve water quality.

Section Two – Background

Plan Jurisdiction

The City of Springfield lies south of the McKenzie River, and north and east of the Willamette River, approximately a mile south of their confluence, in the southern Willamette Valley. The area includes river side channels and tributary streams, including the historic Springfield Mill Race and Cedar Creek, which are salmon bearing waterways, as well as other open channels and drainage ways, and a piped storm sewer system. Springfield is a Designated Management Agency (DMA), with jurisdiction over portions of the McKenzie and Willamette Rivers and their tributaries within or adjacent to its Urban Growth Boundary, along with its own municipal stormwater drainage system.

TMDL Requirements

The Clean Water Act of 1977 “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 and/or conduct assessments to understand current conditions, determine sources of pollution, and develop and establish metrics for pollutant loading (the TMDLs) as a tool to improve water quality.

The Oregon Department of Environmental Quality (DEQ) set water quality standards for waterways in the region, to protect beneficial uses such as drinking, fishing, swimming, fish spawning, and irrigation. Streams, lakes, and rivers that do not meet these standards are included in a list of impaired waterbodies. This list, developed in response to Section 303(d) of the Clean Water Act, is referred to as the 303(d) list, and contains the names and descriptions of waterways, or sections of waterways that have been shown to not meet state water quality standards for any listed pollutants.

Both the McKenzie and Willamette Rivers fail to consistently meet Oregon State water quality standards for temperature; the Willamette also fails to meet water quality standards for bacteria, and through a complex analysis, has been listed as not meeting state standards for mercury. Springfield’s public stormwater drainage system discharges to both of these waterways, the City controls urban land use activities that impact the waterways, and therefore, the City is a DMA for both of these waterways.

TMDL Development

The federal Clean Water Act defines *Total Maximum Daily Load* as the maximum amount of any pollutant that can be safely assimilated by a waterway in one day without significant degradation of water quality. This is the Total Maximum Daily Load for that pollutant. Establishing an acceptable pollutant discharge quantity and determining which parties may contribute portions of that total amount are two prime objectives of the TMDL program. TMDL development begins when water quality monitoring demonstrates that a stream, lake, or river does not meet State water quality standards. This waterway is classified as water-quality limited and is placed on the state's 303(d) list of water-quality limited waterways.

After extensive water quality monitoring and modeling efforts, TMDLs are developed in Oregon by the DEQ, and establish the difference between the capacity of a waterbody to assimilate pollutants, and the current pollutant load. TMDLs are expressed as numeric standards or percent pollutant reductions that are required to achieve 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 apportioned to the different sources of pollution according to their contribution to the overall pollution load. Any difference between the waterway's loading capacity and the current pollutant load must be mitigated by pollution reduction activities. The DEQ develops wasteload allocations for point sources such as wastewater treatment plants and industrial discharges, and load allocations for non-point source pollution from agricultural, urban, and forestry lands such as erosion, animal wastes, and stormwater.

The Oregon Administrative Rule (OAR 340-042-0025) that addresses TMDLs requires local governments, agencies, or major facilities to develop TMDL Implementation Plans for 303(d)-listed waterways within their jurisdiction. These responsible parties are classified as DMAs. In the Willamette Basin, DMAs include federal agencies such as the Bureau of Land Management, state agencies such as the Departments of Forestry and Agriculture, and jurisdictions such as counties, municipalities, and others. According to OAR 340-042-0025, TMDL Implementation Plans must include the following five elements:

1. Management strategies that will be used to achieve load allocations,
2. A timeline and schedule to achieve measurable milestones,
3. A plan for periodic review and revision of the implementation plan,
4. Evidence of compliance with applicable statewide land use requirements, and
5. Any other analyses or information as specified in the Water Quality Management Plan.

In the Willamette Basin, DMAs are required to develop and submit these plans to the DEQ within 18 months of the release of the final TMDLs. On September 21, 2006, the Willamette Basin TMDL was issued as an order by the DEQ. TMDL Implementation Plans were due on April 1, 2008. In April of 2009 the DEQ approved Springfield's TMDL IP. In April 2014 the DEQ requires that Springfield submit a 5 Year Plan Review Report along with a revised TMDL IP. This plan reflects that process.

TMDL Parameters

Temperature, bacteria, and mercury are the parameters included in all of the Willamette Basin TMDLs (See Table 5, *TMDL Implementation Tracking Matrix*). Although other parameters are included in sub-basin TMDLs, these three are major concerns throughout the entire Willamette Basin.

Brief summaries of these pollutants, as well as their sources and impacts, are included below. More in-depth information 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 and potential sources of each pollutant and the waterways in the region not meeting its respective water quality standard for that pollutant. They also include a brief list of potential strategies to address each parameter.

Temperature

Warm water, when it outfalls to surface waterways, is considered a pollutant, since its effect on plant and animal life is similar to that of many chemical or organic pollutants. In the Willamette Basin, the temperature concern is that the surface waterways are too warm at certain times of year, and pose a threat to fish species such as salmon, which require cold water habitats to complete their life cycle. Water warmer than certain established limits, which vary from season to season and reach to reach, is considered thermal pollution.

Removal or disturbance of streamside vegetation is a primary activity that negatively impacts stream temperature, since the loss of streambank shade cover allows direct sunlight on the water surface, and hence warmer water. Another is the discharge of non-contact cooling water from industrial operations. However, water temperature also is affected by erosion, warming of urban runoff across un-shaded impervious surfaces, loss of channel complexity, low streamflows, and dams.

Other major sources of thermal pollution addressed by the DEQ for the Willamette Basin temperature TMDLs include industrial dischargers, wastewater treatment facilities, and dam and reservoir operations. Point sources will continue to be regulated through the existing National Pollution Discharge Elimination System (NPDES) permit methods. During the next renewal of their NPDES permits, it is expected that wastewater treatment plants, as well as large industrial permitted discharges, will be assigned waste heat load allocations, temporary allocations of reserve capacity and compliance requirements.

Springfield is a partner in the Metropolitan Wastewater Management Commission's (MWWMC's) regional wastewater facilities, and a contributor to the public wastewater system. Wastewater discharges from MWWMC facilities to the Willamette River may, on occasion, be warmer than normal streamflows. However, discharges from this facility are covered under a separate NPDES Permit, and are not addressed in this document.

The focus of the non-point source temperature TMDL, as it relates to municipalities like Springfield, is to minimize or mitigate the removal or disturbance of streamside vegetation. Maintaining this riparian-area vegetation is believed to be the most effective way to minimize thermal pollution. This is accomplished by protecting and re-establishing vegetation along waterways to provide shade cover. Temperature benefits also can be realized through stream restoration projects including stabilizing streambanks, increasing stream flows, decreasing channel width, and restoring channel complexity.

The maximum allowable temperature increase in the waters of the state from all human activities can be no more than 0.3 degrees Celsius. This was designated by the State of Oregon in Oregon Administrative Rule 340-041-0028. In the TMDLs, this allowance is known as the Human Use Allowance and is allocated among 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 0.7 degrees Celsius (DEQ, 2006).

The amount allocated to each source of thermal pollution varies by location, but generally, non-point sources are allowed to contribute no more than 0.05 degrees C. above the ambient water temperature. Point sources can contribute up to 0.25 degrees C, and the TMDL allocates 0.0 degrees C to the U.S. Army Corps of Engineers Willamette Project reservoirs. The DEQ factors in 0.05 degrees as a reserve capacity that will be set aside now to accommodate future growth in anticipation of increased demand for industrial and municipal wastewater discharges. On average, waterways in the Willamette Basin need to receive 23 percent less thermal input than is currently being received (DEQ, 2004).

Based on historical data supplied by the point sources, discharger, 100% of the reserve capacity will need to be issued on a temporary basis, through NPDES permit renewals in order to avoid putting any of the dischargers at risk of immediate non-compliance. In actuality, it is unlikely that any reserve capacity will be available for growth in the near term.

The primary strategy for the reduction of thermal loading is the protection and restoration of streamside vegetation. Examples of options to address thermal pollution include mechanisms such as:

- **Education** - Develop and distribute materials that explain why landowners should preserve natural streamside vegetation.

- **Outreach** - Implement demonstration projects on public land to illustrate potential riparian management techniques.
- **Ordinance** – Institute or enhance riparian ordinances that prohibit the removal of native streamside vegetation, and provide for restoration activities where appropriate.
- **Acquisition** - Acquire critical streamside property for public ownership and eventual restoration and/or riparian enhancement.
- **Partnerships** - Become involved in a water quality trading program, engage business and industry in mutually-beneficial restoration/mitigation programs and projects.
- **Public Sector Leadership** - Actively restore and/or enhance riparian areas on public land, help private property owners restore and/or enhance riparian areas on private land, and provide a forum to coordinate public and private resources.

Bacteria

The Mainstem Willamette River was listed on the 1996, 1998, and 2002 303(d) lists. The Middle Fork Willamette was also listed on the 1996, 1998, and 2002 lists. The McKenzie River is not listed for bacteria.

While bacteria levels on the Willamette show general improvement, the DEQ has set planning targets for DMAs in order to prevent the degradation of water quality. Chapter Two of the Willamette Basin TMDL states that “In subbasins with no listings, generalized reductions will be used as planning targets by designated management agencies” (DEQ, 2006). The bacteria targets are generalized into percent reduction ranges that are applied in all the sub-basins of the Willamette Basin. These planning targets have been allocated among the two major land uses that contribute bacteria to waterways: agricultural and urban. The Willamette Basin Bacteria TMDL states that urban areas must reduce their bacteria contributions by 80-94% to meet water quality standards.

According to the Willamette Basin TMDL, point sources in the upper 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 is on non-point sources. Models indicate that if these allocations are met within each sub-basin, the entire upper reach of the Mainstem Willamette River will be in compliance with water quality standards.

Bacteria violations of water quality standards are most common in creeks and streams that drain urban and agricultural land. The Mainstem Willamette River is water-quality limited for bacteria during the high flows of the fall-winter-spring months, but is in compliance during minimal summer flows when there is the least amount of stormwater runoff. This indicates that significant sources of bacteria likely originate and accumulate on land, and are then carried into waterways through stormwater runoff.

The major sources of bacteria in the urban and rural residential areas are stormwater runoff, erosion, domestic and wild animal waste, failing septic systems, and municipal sewer overflows. Other sources of bacteria include sanitary waste from illegal camping, irrigation runoff, and illicit discharges and waste dumping. The Eugene/Springfield/Lane County Wastewater Treatment Facility operated by the MWMC has bacteria limits in its own NPDES wastewater discharge permit that address bacteria from that source.

Strategy options included in available guidance documents to address increased bacteria levels in the urban area include measures such as:

- **Erosion Prevention** - Preventing erosion and controlling sediment from new construction sites.
- **Stormwater Pre-treatment** – Applying BMP’s to treat stormwater runoff prior to discharge into waterways.
- **Ditch Cleaning** - Keeping stormwater conveyance channels clear of organic matter while preserving the pollution-removal benefits of vegetation.
- **Animal/Pet Wastes** - Controlling pet wastes through pet waste stations and pet owner education, and limiting the number and concentration of wild animals.
- **Riparian Protection** - Maintaining and restoring riparian buffers to allow them to function as vegetative areas to help filter pollutants from runoff.
- **Post-construction Stormwater Management** - Encouraging better site design of new developments, to decrease runoff and/or treat runoff prior to discharge to the storm system.
- **Illegal Discharge Detection and Elimination** - Preventing non-stormwater and illegal discharges to the system, through inspection and compliance actions as well as outreach and education.
- **Education and Outreach** - Developing stewardship and educational programs through schools and civic groups, as well as business and industry, to prevent pollution.
- **Good Housekeeping** - Street sweeping, material handling, and good work practices to eliminate pollution from municipal maintenance activities.

Mercury

Managing mercury contamination in rivers and streams is complex, due to the diverse and difficult-to-control sources of the pollutant. Further, mercury is toxic in very small amounts, and tends to accumulate in the tissues of animals that ingest or are otherwise exposed to it, effectively concentrating the exposure to animals or people ingesting the contaminated species.

Mercury assumes several forms in nature, both organic and inorganic. Most are powerful toxins, and many are readily assimilated by humans through ingestion. Once ingested, they act on the nervous system, especially the brain, where they adversely impact IQ, language, and physical coordination skills. These effects are even more pronounced in fetal development.

Mercury levels observed in fish tissue in the Willamette Basin have resulted in the Oregon Department of Human Services (DHS) issuing advisories recommending that people limit the amount of fish they consume from mercury-contaminated water bodies. 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.

In Oregon, naturally-occurring mercury is found in many local soils, and very high concentrations exist in some in areas. It can be transported through the air after soil disturbance or become airborne as a contaminant from the combustion of waste materials, fossil fuels or even wood. In this manner it can travel for hundreds, or even thousands of miles from its source and be deposited by rainfall.

A few industrial sources discharge low levels of mercury in their wastewater effluent and it may be discharged from municipal wastewater treatment plants, where it originates from paint, rubber, and other sources, as well as small amounts from dental offices. It is a common pollutant associated with the combustion of coal or petroleum. Runoff and seepage from legacy gold and mercury mines in the Coast Fork Willamette area also contributes mercury directly to the Willamette River, through leaching of mercury from waste piles and contaminated mine drainage that flows down the Coast Fork.

Legacy mines located in the Coast Fork Willamette drainage basin are significant contributors of mercury pollution in the upper Willamette area. Monitoring shows that mines are a significant source in the Cottage Grove Lake area, where they contribute 74% of the mercury contamination. Additionally, runoff from air deposition contributes 19%. Table 1, below, outlines the sources of mercury and percent reductions needed to achieve water quality standards for the Willamette Basin.

That said, monitoring conducted by the Oregon DEQ indicates that atmospheric deposition, primarily from coal burning in Asia, is the single largest contributor of mercury to Oregon's waterways. Since minimizing this source is beyond the scope of Springfield's influence, control of this source is linked to minimizing stormwater runoff and controlling soil erosion, which washes mercury-laden sediments into surface waters. Mercury-laden sediments are also exposed when sediment deposited long ago is re-suspended as a result of high stream flows or a significant disturbance of soil.

Table 1: Willamette Basin Mercury TMDL Sources and Reductions Needed

Sources	Reductions
Willamette Basin	
<ul style="list-style-type: none"> ▪ 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)

Source: Department of Environmental Quality, Willamette Basin TMDLs, 2006

The DEQ has developed interim mercury allocations for point and non-point sources while more research is conducted. The DEQ expects all non-point sources, such as the City of Springfield, to begin implementing mercury reduction management strategies and policies, while the TMDL is revised to reflect the results of further research.

Implementation plans must include a mercury reduction strategy “that includes feasible measures to minimize mercury runoff” (DEQ, 2006). The DEQ has proposed options to reduce mercury pollution, many of which Springfield has either already implemented, or will implement as part of its NPDES Stormwater Management Plan. Many of the management strategies that address mercury pollution also address bacteria and temperature. Potential mercury management strategies include:

- **Erosion and Sedimentation Management**
 - Stormwater treatment and/or flow control prior to discharge into waterways.
 - Operate an erosion prevention and sediment control program for construction and land development activities.
 - Development Code provisions for riparian area protection.
- **Street sweeping and stormwater system maintenance**
 - Control deposition from mobile combustion sources (vehicles) and tire/rubber/toxin deposits from vehicle wear.
 - Optimize stormwater system inputs and control structure efficiency.
- **Illicit discharge outreach, education, and compliance assurance**
 - Outreach and education for the general public and business community to help minimize the frequency of spills and dumping.

Springfield’s mercury-control practices will extend to both the McKenzie and Willamette Rivers.

Summary of TMDL Parameters

Table 2 summarizes the parameters addressed in the Willamette Basin TMDL, the major sources of that pollutant, and reductions needed to meet water quality standards.

Table 2: Willamette Basin TMDL Parameters, Sources, and Reductions Needed

Parameters	Sources	Reductions
Temperature	<ul style="list-style-type: none"> ▪ Streamside vegetation removal ▪ Wastewater discharge ▪ Industrial point sources ▪ Channel modification ▪ Water extraction ▪ Disruption of seasonal cooling and warming patterns ▪ Dam and reservoir operations 	<hr/> Willamette Basin: Varies <hr/>
		All Sub-basins: Average of 23%
Bacteria	<ul style="list-style-type: none"> ▪ Stormwater discharge ▪ Construction site erosion and runoff ▪ Failing septic systems ▪ Illegal discharges ▪ Wastewater treatment plants & other point source treatment failures ▪ Sewer overflows during wet weather ▪ Surface runoff ▪ Animal wastes 	<hr/> Urban: 80 - 94% <hr/>
		Agricultural: 66 – 83%
Mercury	<ul style="list-style-type: none"> ▪ Erosion from urban, farm, and forest land ▪ Construction site erosion and runoff ▪ Atmospheric deposition and runoff, including stormwater ▪ Other (dentist offices, fluorescent light bulbs, etc.) ▪ Point sources ▪ Legacy mines ▪ Naturally occurring ▪ Mines 	Willamette Basin: 26.4%

Source: Department of Environmental Quality, Willamette Basin TMDLs, 2006

Springfield Basin Description

The City of Springfield is located between the McKenzie River to the North, the Middle Fork Willamette on the South, and the Main Stem Willamette on the West. The Coast Fork Willamette joins the Middle Fork just southwest of the City's Urban Growth Boundary (UGB) to form the Mainstem, which flows generally northward before joining with the McKenzie, northwest of Springfield. While portions of the McKenzie and Middle Fork are contiguous to the City's UGB, only the Mainstem Willamette flows completely through Springfield's jurisdiction. This occurs from near the confluence of the Middle Fork with the Coast Fork, to where the Mainstem flows under the Interstate 5 Bridge and into Eugene's jurisdiction.

Springfield discharges stormwater to all three of the sub-basins listed above, including discharging directly into Eugene's jurisdiction. In Eugene, it flows on to the Mainstem

Willamette, and on into Lane County’s jurisdiction. Springfield stormwater runoff also discharges directly to the McKenzie River and its tributaries Cedar Creek and the Keizer Slough. Discharges occur to the Middle Fork Willamette River, as well as to waterways within Lane County’s jurisdiction. Springfield works cooperatively with various agencies and citizen groups to actively support appropriate management of both Cedar Creek and other waterways lying outside of the jurisdiction of the City and the TMDL Implementation Plan. The Springfield Mill Race which carries stormwater from urban development and the Jasper Slough discharges into the Main Stem Willamette near Island Park in Downtown Springfield. From the standpoint of the City’s TMDL IP efforts, no distinction is made in how stormwater runoff and the associated pollution control strategies will be managed from one basin to the next.

Springfield’s jurisdiction on the 303(d) listed waterways is determined by the DEQ and has been designed as those portions within or adjacent to the City’s Urban Growth Boundary. However, the measures included in this IP will apply to City outfalls, whether they discharge directly or indirectly to 303(d) listed waterway segments.

The approximate drainage basin area for each of the waterways is shown on Table 3, Basin Drainage Area by Waterway, below:

Table 3 Basin Drainage Area by Waterway

Drains to	# of Drainage Basins	Combined Area, in acres
McKenzie River	5	8,651
Willamette River	8	6,417
Eugene, then Willamette	2	4,294

Source: City of Springfield

The area included inside the planning area (the UGB) is approximately 14,500 acres in 2007. It includes approximately 196 miles of stormwater conveyance systems, including both piped and open channel systems, in 13 small open channels, ditches, or sloughs, and 14 larger open waterways. There are approximately 6,000-owned catchbasins and area drains, and numerous private facilities that contribute to the public storm system. The system currently includes 9 city-owned vegetated stormwater quality facilities. The number of facilities owned or maintained by the City can change yearly as development occurs.

A small portion of the drainage from the McKenzie River seasonally flows through the stormwater drainage system in the City, and is directed into surface waterways which eventually flow to the City of Eugene, and then to the Willamette. In this fashion, a small percentage of McKenzie River water is diverted into the Willamette River, well upstream of the confluence of the two rivers.

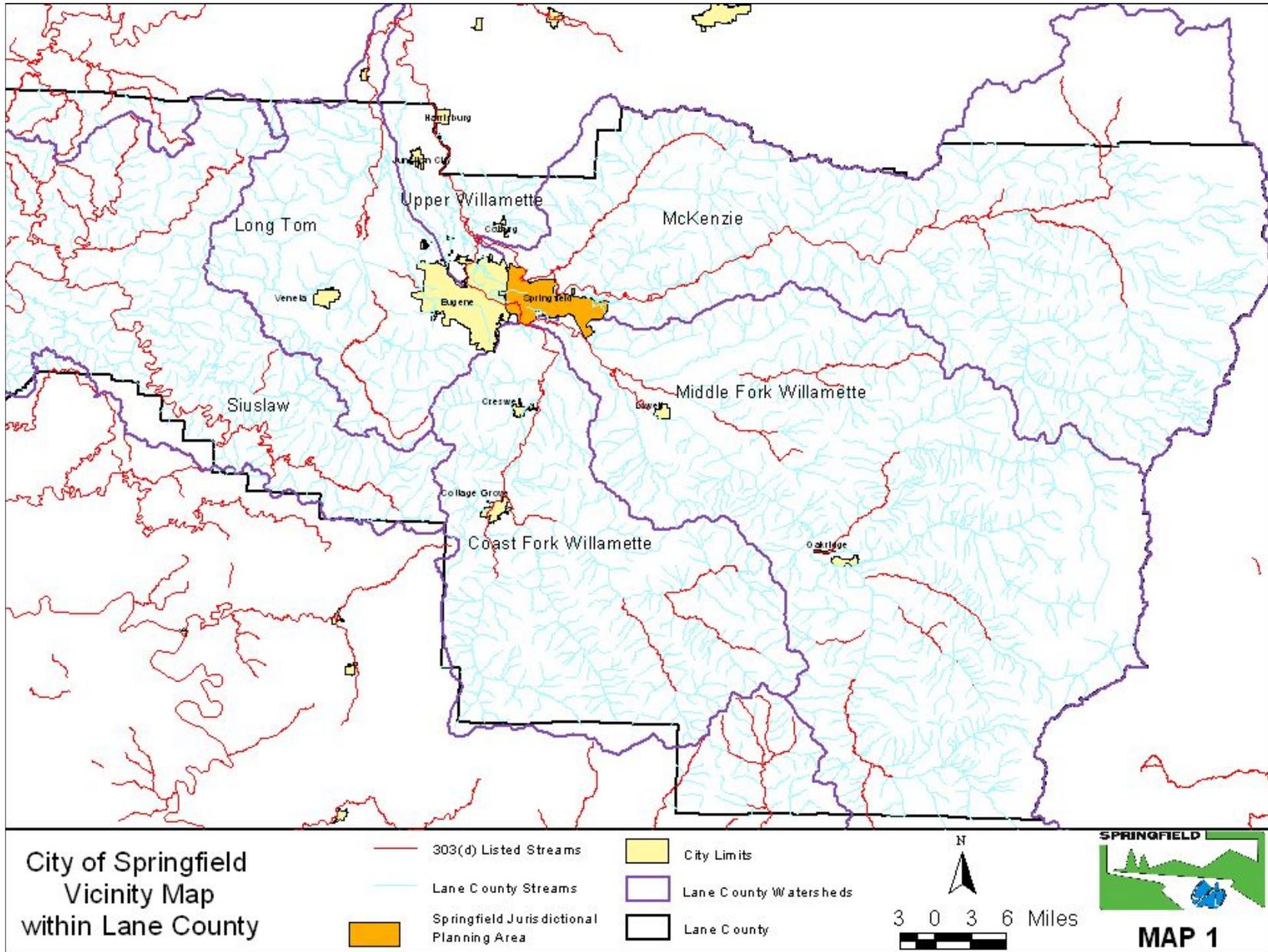
Most of the open drainage systems in the City have gradients that are low, with culverts and other impingements that are designed to accommodate expected flows. Riparian areas are frequently impacted with invasive species and lack shade partially as a result of previous urban development practices and agricultural uses.

Land uses that exhibit large amounts of impervious areas tend to generate larger amounts of stormwater runoff, which can be a contributing factor to increased amounts of erosion and pollutant transport. In addition, unmitigated runoffs from impervious surfaces tend to exhibit higher runoff temperatures. However, in Springfield, high bacteria levels typically are associated with less-impervious residential areas. Measurable amounts of mercury (which in Springfield is believed most closely associated with erosion and sedimentation) have only been detected in one waterway. This waterway flows from a mixed residential and commercial area and past an industrial facility, and has not been associated with construction-related soil erosion.

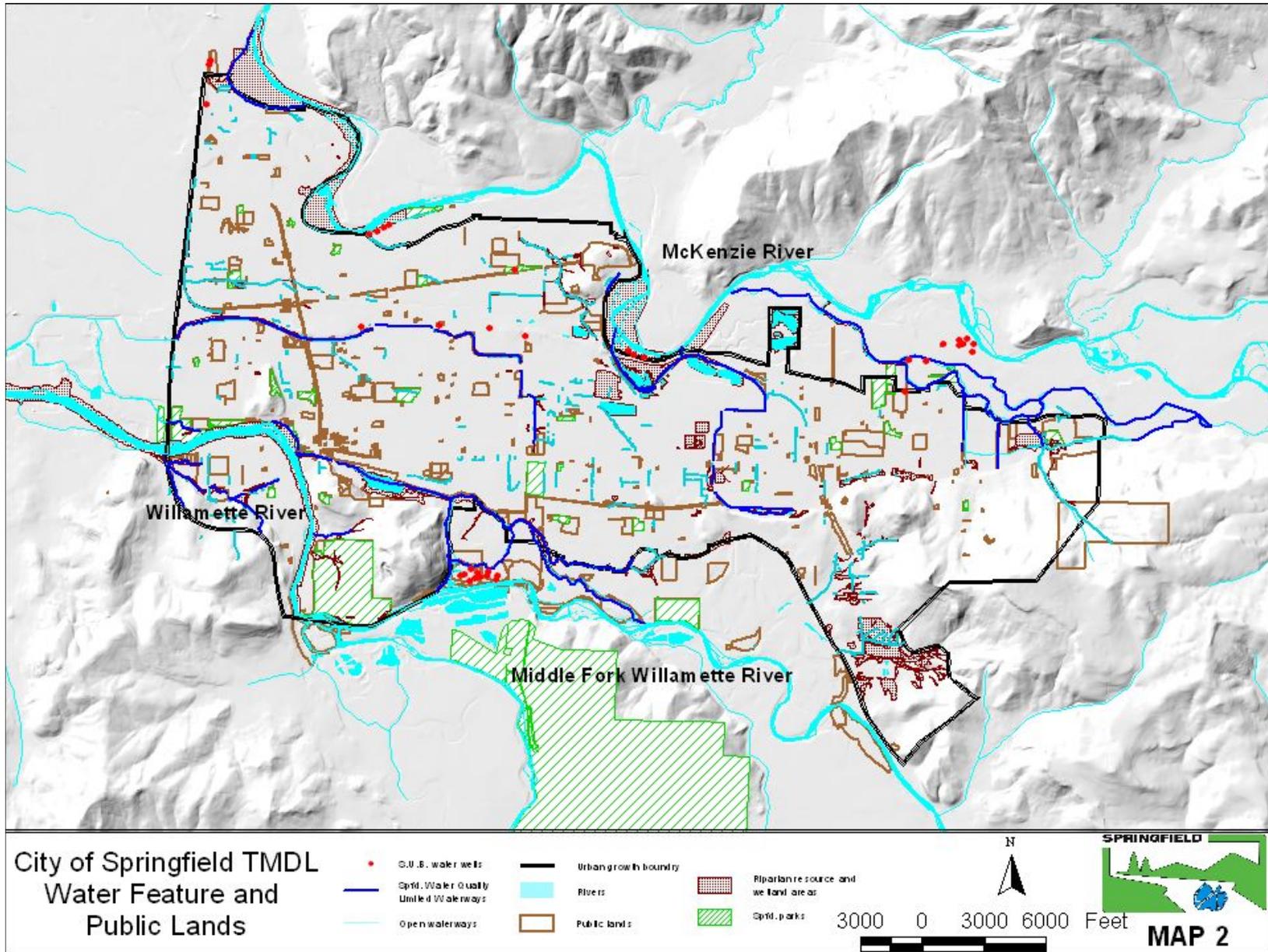
Map 1 on the following page shows Springfield's location in Lane County of Oregon and the surrounding watersheds, including area cities and 303(d) listed waterways.

Map 2 shows public lands and water-related features within and near the City of Springfield. This map is included to show where public ownership adjacent to waterways exists, as an indicator of potential publicly-initiated riparian restoration/enhancement sites. Riparian restoration/enhancement actions will address temperature, bacteria and mercury through stormwater filtering and reduced erosion.

Map 1: City of Springfield Vicinity Map, within Lane County



Map 2: City of Springfield TMDL Water Feature Map



Section Three – Existing Resources, Programs, and Gaps

Several water-quality related programs are already in place in Springfield, and have direct application to managing TMDL pollutants. Primary among them is Springfield's status as a Phase II city under the provisions of the Clean Water Act's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) program. As such, the City has received an NPDES MS4 stormwater discharge permit, which authorizes the City to discharge stormwater to the Waters of the State and the U.S. under the condition that it reduces pollutants "to the maximum extent practicable." The City's required Stormwater Management Plan (SWMP), adopted in 2004, re-adopted in 2011, and currently under implementation, outlines actions the City will take to identify and implement Best Management Practices (BMPs) in 6 operational areas over which the City has authority.

This program has guided the development of numerous water-quality related programs within the City and will continue to do so as the SWMP's defined implementation schedule is put in place. Many, but not all, of the measures in the SWMP directly or indirectly address temperature, bacteria, or mercury pollution. A discussion of the practices and programs applicable to the control of TMDL pollutants is included in this section.

Other regulatory programs that Springfield is currently involved in that have the potential to impact TMDL pollutants include:

- **Safe Drinking Water Act** - Springfield utilizes wells for municipal water supply and has established a Drinking Water Protection Plan (adopted 1999) that establishes wellhead protection zones, with protective measures implemented in these zones.
- **NPDES 1200CA Permit** - for construction and maintenance activities carried on by the City.
- **State Land Use Planning Goals** - specifically Goal 5, requiring riparian and wetland protection of identified areas within the City, and Goal 6, which requires air, water and land discharges to not exceed the carrying capacity of resources, or degrade or threaten the availability of such resources. Springfield has inventoried these protected areas and developed ordinances in the Development Code to comply with State law.
- **Endangered Species Act** - requires that the City protect water quality as it impacts threatened and endangered aquatic species. In Springfield, this protection is focused on anadromous salmonid species, but also includes Oregon Chub, Pacific Lamprey, Western Pond Turtles, and others.

Resources

Water quality efforts currently underway in Springfield cover a broad range of programs. Provisions of the NPDES MS4 program require that the SWMP address the following areas:

- **Citizen Involvement** – Involving the public in the process of the SWMP development, as well as subsequent updates, revisions, and amendments of the SWMP and other stormwater-quality related planning efforts.
- **Public Education and Outreach** – Ensuring that stormwater education for businesses, industries, and citizens is a primary emphasis of the plan.
- **Illicit Discharge Detection and Elimination** – Identifying and eliminating sources of dumped, spilled, or illegally discharged pollutants, including inspections, incident tracking, and compliance/enforcement efforts.
- **Construction Site Erosion Control** – Ensuring that erosion at construction sites is minimized through permitting, inspections, and compliance efforts.
- **Post-Construction Stormwater Management** – Ensuring that development provides for long-term stormwater runoff treatment, through effective municipal and development codes and plan review.
- **Good Housekeeping for Municipal Operations** – Reviewing and adapting standard maintenance procedures to ensure that the City’s normal maintenance practices, such as equipment operation and maintenance, or landscape/waterway management do not contribute pollutants to Springfield’s stormwater system

Table 4 on the following page displays an inventory of measures contained in the SWMP that are directly relevant to the control of temperature, bacteria, and mercury.

Table 4: Some of the City of Springfield's Existing Water Quality Related Program and Policy Inventory

NPDES Minimum Control Area	Programs, Ordinances, and Practices	Impact on TMDL Pollutants	Primary TMDL Pollutants Affected		
			Temp	Bacteria	Hg
Public Education	Outreach with regional partners	Reduce erosion			
	Education in schools and public events	Enhance riparian protection and improve water quality			
	Brochures, handouts on water quality and spill prevention	Reduce dumping and spills	X	X	X
	Catch basin curb marker program	Increase citizen awareness			
	Education and outreach to business	Increase citizen awareness			
Citizen Involvement	Public events for SWMP development and amendments	Encourage support for clean water			
	Outreach to citizen and business partners	WQ awareness	X	X	X
	Water resource area awareness and facility enhancement	Water quality awareness and citizen involvement			
Illicit Discharge Elimination	Auto shop inspections	Reduce incidences of dumping and illicit discharges			
	Pet waste management program	Waste management			
	Spill response / compliance	Enhance spill response	X	X	X
	Pressure and car washing programs	Increase citizen and business awareness of WQ			
	Water quality monitoring				
Construction Site Runoff Control	As required, review of City Capital Improvement Projects to ensure consistency with 1200C permit requirements	Manage construction activities			
	Erosion control Land Development and Alteration Permit (LDAP) program for construction	Reduce erosion and sediment	X	X	X
	Development and municipal code requirements	Reduce dumping/spills			

Post-Construction Stormwater Management	Development code requirements	Enhance shading and riparian areas in new developments			
	Plan review requirements	Reduce runoff and urban pollutants	X	X	X
Good Housekeeping in Municipal operations	Water Quality Facility Management Program	Increase water quality awareness/ reduce pollution loading and transport			
	Work practice review and BMP Manual for Maintenance activities	Reduce erosion			
	Review vegetation management/riparian enhancement	Reduce dumping/spills and temperature			
	Routine staff training	enhance spill response	X	X	X
	SWPCP for Maintenance Facility and fire training facility	WQ awareness			
	Pollutant control through street sweeping, catchbasin cleaning and storm line cleaning	Contaminant reduction			

Data Gaps/Analysis

An important part of this Plan is reviewing existing programs and identifying gaps where they can be supplemented to more adequately address pollutants, or new programs developed to directly fill those gaps. While the summary above shows existing programs are broad, some gaps do exist.

Strategies included in this document are intended to address the gaps, based on discussions with City Engineering and Water Resources staff, review of citizen complaints and response logs, and DEQ guidance materials.

TEMPERATURE – The Plan proposes measures to both support and refine existing programs to address gaps in the City’s temperature management. Existing programs under this TMDL’s first permit cycle are revised to provide implementation, refinement, or continuation of efforts. These focus on supporting or upgrading programs in the following areas:

Inventory Existing and Potential Shade & Enhancement Areas

- Review and update priority project list(s) that include shading.
- Continue to work to develop public/private partnerships for demonstration projects.

Riparian Protection

- Review Development Code and subsequent enhancement for riparian setbacks, buffers, and riparian vegetation management requirements, as appropriate.
- Continue to work in managing the Mill Race Restoration Project as needed, and continue to explore additional funding and projects.
- Continue to enhance and broaden outreach and education to groups, citizens, businesses, and industry.
- Continue to pursue additional or alternative funding sources for shade development projects as well as project prioritization and phasing.

Industrial Discharges

- Continue to work with warm water point source dischargers and the DEQ to address point sources through the Industrial Stormwater NPDES permit program.

BACTERIA – Springfield’s existing water quality programs include BMPs to address bacterial contamination; the strategies below build on or refine existing programs.

Sanitary Sewer Overflows – Work Practices

- Review and update current standard operating procedures for spill response. Amend or revise if appropriate to ensure rapid and effective sewer overflow response, cleanup and reporting.
- Review and update contractor work provisions to ensure that contractors know and understand Springfield’s requirements for dealing with sanitary spills and are aware of the required cleanup and reporting regulations.

Animal/Pet Wastes – Program Enhancement

- Continue to coordinate with local partners such as Willamalane Park and Recreation District to identify locations for additional pet waste disposal stations in public areas and work cooperatively to assist with station maintenance and new installations as appropriate.
- Identify pet care providers and services and assess pet waste management practices. Review and update list of pet supply, services, and care facilities and continue to work with facility owners on proper waste handling.
- Continue to identify and review options for distributing outreach material such as brochures that discuss proper waste management and hold Canines for Clean Water pledge events. Review and revise educational materials as needed.
- Continue to conduct outreach to recreational wildlife feeders to discourage feeding of wildlife such as wildfowl and nutria.
- Explore development of a pest management program and adoption of a wildlife feeding ordinance.
- Continue to enhance existing pet waste outreach and education; work with citizen groups, students, and at public events.

Septic Tank, Transient Camping and Private Sanitary Infrastructure Outreach and Education

- Continue to identify septic systems within the City limits, and assess feasibility or need for connection to the City's sanitary sewer system.
- Continue to provide education and outreach materials to septic system owners to ensure proper maintenance.
- Continue investigations into illicit recreational vehicle and commercial business waste disposal practices.
- Continue to focus on illegal transient camper enforcement at sites where wastes impact open waterways.

MERCURY – The City has a successful erosion control programs for construction sites and other sources. Mercury control efforts focus on supporting and refining existing programs to minimize stormwater runoff and erosion and continued implementation of a post-construction stormwater facility management program.

The City also presents activities such as “Spring Clean-up” with free disposal of household waste, and partnering with other agencies in a “Pollution Prevention Coalition” to sponsor events such as mercury thermometer exchanges and florescent light bulb collection/disposal.

Construction Site Erosion Program Review

- Review LDAP (Land and Drainage Alteration Permit construction site erosion control) program, identify program needs, and assist with any program adaptation or support.
- Work with the Oregon DEQ to renew the IGA for construction activity within Springfield's jurisdiction.

Post Construction Support

- Continue participation in plan review by water resources staff; work towards broader involvement.
- Continued implementation of an ongoing, post-construction BMP inspection program to ensure ongoing maintenance of stormwater facilities on both public and private sites, as resources allow.

Street Sweeping, Storm System Cleaning Program Reviews

- Program review of the existing sweeping program, including equipment, sweeping schedule, and any needed support efforts for equipment upgrades, schedule revisions or service level adjustments, within resource limitations, to optimize program effectiveness.
- Program reviews of the catchbasin and pipe maintenance programs, equipment, schedule, and identify program gaps and needs if necessary.

Hazard Waste Control

- Mercury pollution source assessment; research sources of mercury and what household products, electronics, appliances, etc... may contain mercury and determine what pollution prevention projects/programs the City has the resources to implement.
- Continue to provide information and/or participate in household hazardous waste collection events to reduce the improper disposal of items containing mercury, as resources allow.

Section Four – Implementation Strategies

This section presents refinements to the strategies listed in Section 3, including details on how and when the strategies will be implemented. The goal of program implementation will be to ensure flexible, cost effective, and robust programs, collaboration with citizens and businesses, and an educational approach.

Temperature Reduction Strategies – Based on support and refinement of existing programs.

Strategy T1 - Inventory Existing and Potential Shade & Enhancement Areas

Task - “Maintain a priority project list for shading.”

Developing streamside shade first requires an inventory of prospective sites. Once inventoried, sites can be evaluated for their potential, with regard to effectiveness, potential shade, cost, etc... and so prioritized. During the first 5 year cycle, Springfield staff reviewed maps and aerial photos of the City as well as past waterway inventories and assessments and identified sites with the potential for developing shading projects. This list was then reviewed and prioritized to facilitate developing and implementing projects. The list is currently used as a resource for the development of a CIP waterway restoration projects list. During this next 5 year cycle staff will review and update the existing inventory list.

Measurable Goal

- Review the inventory of surface waterways with regard to shade potential, including evaluation for feasibility of shade development projects. Prioritize list of potential sites. Complete this task by April 2017.

Task - “Work to develop public/private partnerships for demonstration projects.”

Public involvement in shade development can, where appropriate, leverage the City’s resources. Public involvement also gains “buy in” and a sense of ownership from the citizens involved. Public/private partnerships will continue to be pursued with businesses, schools, and citizen groups.

Measurable Goal

- Continue to meet with selected businesses and citizen groups and propose partnerships to develop shading projects at selected public sites. Work to target one public/private shading project for completion each year. Note that this level of success is a target, as the potential for private partnering is not an outcome that can be numerically predicted. In addition, the City will need to operate within available annual revenue resources. Ongoing throughout the 5 year cycle.

Strategy T2 - Riparian Area, Parking lot, and Streetscape Shade Enhancement

Task - “Additional Code review, evaluation and enhancement for parking lot, streetscape shade and riparian vegetation management, setbacks and buffers and retrofit practices if appropriate.”

Springfield’s Development Code already includes riparian setbacks for protected waterways along with requirements for street trees and parking lot landscape planning that includes requiring canopy tree. Staff will continue to review these provisions and determine if additional riparian protection or impervious surface shading is feasible and called for to meet thermal load reduction objectives. Urban stormwater retrofit practices, low impact design approaches (LIDA), and green infrastructure practices will be encouraged for new and/or redevelopment projects under the existing review process and code. Code updates are complex, and occur only when a broad package of amendments are developed and brought forward for adoption.

Measurable Goals

- Review the Development Code with key planning staff and determine if shading or riparian protection amendments are appropriate, by April, 2016.
- If amendments are deemed appropriate, staff may develop and initiate proposed changes for review by City Council, or work to include them in an amendment package to Council, by April, 2018.

Task – “Mill Race restoration, maintenance, and enhancements.”

The City identified restoration of the Springfield Mill Race as a priority project to enhance fish passage, reduce water temperature, improve water quality and flows, and re-establish native habitat. The Army Corps of Engineers (ACOE) also participated in this project. The restoration project with the ACOE has been completed. The final results included a new channel entrance, dam removal, invasive species removal, re-vegetation with native trees and shrubs, and constructed wetlands. The City has an agreement with the ACOE to maintain the functions and values of the restoration project for a period of five years.

Continued efforts will be made to obtain grants, develop partnerships, and explore funding for activities such as maintenance, monitoring, and additional projects on the Lower Mill Race. Projects and phasing will be explored to determine the feasibility of developing projects over a longer time period and to better utilize limited funding sources. Some projects being investigated include a stormwater treatment park on the north bank, railroad bridge removal/conversion into pedestrian foot bridge, and bank restoration.

Measurable Goals

- Explore additional or alternative funding sources, this includes, but is not limited to, applying for private, state or federal grant funding for watershed enhancement as opportunities are identified, and to the extent that staff can respond. Exploring alternative funding sources will be ongoing throughout the 5 year cycle.
- Continue to identify discrete projects that can be accomplished to advance and compliment the overall restoration project. These include work both inside and outside of the initial ACOE study area, such as in the Lower Mill Race. Review and update the project list by April, 2018.

Strategy T3 - Manage Industrial Warm Water Discharges

Task - “Work with industrial sources and Oregon DEQ to address warm water discharges for point sources through the Industrial Stormwater NPDES permit program.”

Presently, several industrial point sources discharge non-contact cooling water to the City’s stormwater system. These sites are managed by the Oregon DEQ’s Stormwater NPDES permit program. Springfield staff will continue to review and provide comments to the DEQ when a facility’s permit is issued or renewed. Staff will continue to provide technical assistance to industries when found in non-compliance.

Measurable Goals

- Staff will continue to work collaboratively with industrial dischargers and state water quality regulators to arrive at acceptable resolutions to manage industrial warm water inflows to the public stormwater drainage system. This work began during the first 5 year cycle and will continue as DEQ and industry staff pursues revisions to the industries’ discharge permits. This task will be ongoing throughout the 5 year cycle.

Strategy T4 – Public Outreach and Education

Task – “Continue to develop and distribute outreach and education materials to the public.”

Presently ESD staff has evaluated various activities that involve warm water discharges and have developed a variety of handouts and fact sheets addressing the issues and concerns. In addition, the City continues working with other local agencies in the evaluation, development and distribution of additional public outreach materials and has developed handouts, fact sheets and radio ads. The most common non-industrial warm water discharges are being addressed as well as promoting riparian restoration and stream side gardening to provide shade.

The City has established a web site that also provides links to water quality information, pollution prevention, and fact sheets addressing temperature issues. Additional outreach has been provided to City staff through the City's newsletter and to the public at events such as Spring Cleanup, Home and Garden Shows, Arbor Day, and Earth Day.

Measurable Goals

- Staff will continue to work with other agencies and independently in the development, evaluation, needs assessment, and discussions on types of temperature related activities effecting water quality. Staff will continue to develop/distribute material and research sources of outreach available, re-evaluate existing materials and develop additional material if needed on an annual basis starting January, 2015.

Bacteria Reduction Strategies – Based on support and refinement of existing programs.

Strategy B1 - Sanitary Sewer Overflows – Work Practices

Task - “Review current standard operating procedures for spill response. Amend or revise if appropriate to ensure rapid and effective sewer overflow response.”

Springfield will review the current written Standard Operating Procedures and Practices (SOPPs) for addressing sanitary sewer spills, overflows, and repair of damaged sanitary sewer pipes, to ensure that responses are timely, procedures are appropriate and comply with current regulations. Springfield staff reviewed and updated SOPPs during the first 5 year cycle and will conduct two additional reviews during the subsequent 5 year cycle.

Measurable Goals

- First review of relevant SOPPs by April, 2016. Second review by April, 2018.
- Develop, amend, and implement updated SOPPs if necessary, by April, 2017 and April, 2019.

Task - “Review contractor work provisions to ensure that contractors know and understand Springfield's requirements for dealing with sanitary spills.”

During the first 5 year cycle, Springfield staff reviewed the City's standard contract specifications to identify shortfalls regarding contractor work practices, spill response procedures, and general obligations regarding working on or around the sanitary system and updated the specifications. A review and update, if needed, of these standard contract specifications will be done again during this 5 year cycle.

Measurable Goals

- Review of relevant contract specifications by April, 2016.
- Revisions, if needed, by April, 2017.

Strategy B2 – Animal/Pet Waste Program Enhancement

Task - "Coordinate with local partners to identify locations for additional pet waste disposal stations in public areas and assist with station placement and maintenance."

Springfield presently coordinates with the Willamalane Park and Recreation District to operate pet waste disposal stations throughout the City. The City provides some supplies and disposal stations and both Willamalane and the City provide maintenance and service for re-stocking supplies. The City will continue to work cooperatively with local partners such as Willamalane, School District 19, and Operations to identify additional sites, and if appropriate, facilitate the installation and service of these sites.

Measurable Goals

- Continue to collaborate with local partners to identify additional prospective pet waste station sites by April, 2015 and again by April, 2018.
- Continue to coordinate or otherwise assist with installation and maintenance of any new sites by April, 2016 and by April, 2019.

Task - "Continue identification and waste management assessment of pet care providers and services.

Springfield staff identified development standards for pet parks, kennels and pet day care facilities to ensure proper waste management. Proper waste management standards are addressed for all new facilities during the development review process. Staff will review and update the list of pet supply, service, and care facilities and continue to work with facility owners on proper waste handling. Staff will assess waste management practices and provide outreach to facility owners to improve waste handling.

Measurable Goals

- Continue to identify, review and update list of pet supply, service, and care facilities. Assess and develop outreach needs and options. Update existing list by April, 2017.
- Conduct assessment and/or make contact with participating owners/operators and track facility participation by April, 2018

Task - “Continue pet waste outreach and education at public events and distribute outreach materials at pet-related businesses.”

Proper management of pet waste is a priority of Springfield’s existing stormwater management outreach and education program. Staff will continue to emphasize proper pet waste management through public events, brochures, posters, and citizen contact. Currently the City has a popular “Canines for Clean Water Program” and distributes brochures at local pet supply stores. Staff will continue to identify and review options for distributing outreach material such as brochures that discuss proper waste management and by holding Canines for Clean Water pledge events.

Measurable Goals

- Continue to identify and review options for distributing outreach material such as brochures that discuss proper waste management and hold Canines for Clean Water pledge events. By April, 2016.
- Review and update educational materials as needed. By April, 2017.

Task – “Wildlife feeding outreach and education.”

Recreational feeding of waterfowl and invasive nutria populations along waterways results in concentrations of wildlife that far exceed the natural carrying capacity of the local waterways. This results in degraded stream banks, erosion, and high levels of fecal contamination. Identifying popular wildlife feeding areas and focusing education and outreach efforts to citizens through educational signs and handouts will hopefully educate and discourage feeding, encourage wildlife populations to disperse, and allow riparian areas and water quality to recover. Staff will continue to coordinate with the park district and Operations in activities such as identifying locations, posting signs, and distribution of educational materials. The City will continue to explore the development of a pest management program and adopting a wildlife feeding ordinance.

Measurable Goals

- Continue to coordinate with Willamalane Park and Recreation District and City Operations staff to identify locations where wildlife feeding is concentrated. Update site lists, and where appropriate post signs by April, 2016 and by April, 2018.
- Explore development of a pest management program and adopting a wildlife feeding ordinance by April, 2017.

Strategy B3 - Septic Tank, Transient Camping and Private Sanitary Infrastructure Outreach and Education

Task - “Maintain a septic system inventory program for sites within the City limits and work with property owners to provide public sanitary services when feasible. Continue

to incorporate and extend services as appropriate. Review, update, and deliver outreach and educational materials to owners.

Springfield has a small number of residences within the city limits using private septic systems; however, permitting authority for these systems lies within the jurisdiction of the Lane County Sanitarian. Where Lane County identifies septic issues within the Springfield UGB, staff will collaborate with County officials related to extending urban services consistent with current County and/or City land use regulations.

Some of these residences have a public sanitary sewer system available but have not connected for various reasons. Currently, there is no mandatory connection to the public sanitary sewer for existing and properly functioning septic systems. However, where private septic systems are found failing, connection to the municipal sanitary system may be required.

Staff will continue to identify and track existing septic systems within the City and provide property owners with educational material. Staff will work cooperatively with owners and encourage them to hook up to the public sanitary system where appropriate.

Measurable Goals

- Maintain a septic system inventory within the City limits as an ongoing process throughout the 5 year cycle.
- Work with property owners within the City limits to provide public sanitary services when feasible. Continue to incorporate and extend services as appropriate as an ongoing task throughout the 5 year cycle.
- Review, update as needed, and deliver outreach and education literature to private septic system owners twice during the 5 year cycle by April, 2016 and by April, 2018.

Task - "Continue investigations into illicit commercial waste disposal practices."

Springfield currently operates an Illicit Discharge Detection and Elimination (IDDE) program to detect and eliminate illegal discharges to the storm drainage system. Examples include automobile repair facilities, pressure washing, carpet cleaners, and pet and paint waste management programs. However, other categories of activities will be researched and included for targeted outreach efforts.

Springfield will continue a targeted outreach/education program to address private waste-generating businesses and activities to ensure proper disposal of sanitary and commercial wastes and washwater.

Measurable Goals

- Continue to identify target audiences, and develop and distribute outreach materials specific to them which incorporate best management practices,

relevant regulatory requirements, and lists of resources and phone numbers for additional information. Two efforts will be made during the 5 year cycle to identify additional audiences and develop material as needed. By April, 2015 and again in April, 2017.

Task - “Review transient camping enforcement procedures and focus efforts on sites where sanitary or other wastes impact open waterways. Seek enforcement through existing local codes and/or other statutes, as resources allow.”

Transient campers may pollute waterways with sanitary and other wastes. Springfield presently addresses illegal camping; however, limited resources do not always provide for the removal and cleanup of all camps. Since camps near waterways present the most pressing water quality hazard, focusing camp elimination based on a priority system is appropriate where resources are limited.

Springfield will continue working towards a goal of eliminating and cleaning up transient campsites along or near waterways. Camps will be removed, and the sites cleaned of refuse and sanitary wastes, to the extent possible within existing resource constraints. During the first 5 year cycle staff developed notification procedures and priority site criteria, assessed known sites and implemented cleanup efforts, and has worked with land owners to enforce illegal camping.

Measurable Goals

- Review and update as needed, procedures and priority site determination criteria with Police Department and Operations staff as needed by April, 2017.
- Work with private land owners to enforce illegal camping regulations on private property. Assist private landowners to locate resources such as cleanup contractors and identify deterrents, such as fencing or brush clearing, for landowner consideration. Ongoing throughout the 5 year cycle.
- Assess known campsites on public land, update the priority list for removal, and continue to investigate campsite-deterrent measures by April, 2018.

Strategy B4 – Public Outreach and Education

Task – “Review, update, develop and distribute outreach and education materials to the public, as needed.”

Presently ESD staff has evaluated various activities that involve bacteria and have developed a variety of handouts and fact sheets. The most common sources the city addresses are domestic pet waste, failing septic systems, and wildlife feeding. The City has established a web site that also provides links to water quality information and fact sheets addressing bacteria issues. Additional outreach has been provided to City staff through the City’s newsletter and to the public at public events such as the Springfield Cleanup, Home and Garden Shows, and Earth Day. The Canines for Clean Water and

septic tank inventory programs both provide educational materials related to their programs.

Measurable Goals

- Staff will continue to work with other agencies and independently in the evaluation and discussions on types of bacteria related activities effecting water quality. Staff will continue to develop/distribute material and research distribution options, re-evaluate existing educational material, and develop additional material if needed annually starting January, 2015.

Mercury Reduction Strategies – Enhancement of Existing Programs

Strategy M1 – Limit Construction Site Erosion

Task - “Continue to review existing Land Drainage Alteration Program (LDAP) construction site erosion control program, identify any additional program needs, and assist with program modifications or support to enhance program effectiveness.”

Springfield’s LDAP program is a DEQ approved and effective construction site erosion control program based on permitting, inspections, and outreach to contractors and developers. Springfield staff will continue to evaluate the program to identify limitations and work cooperatively with LDAP and other Public Works staff to enhance program effectiveness. To support increased efforts in both limiting site erosion and ensuring compliance to the 1200-CN NPDES permit requirements, city staff will take steps to renew an IGA with DEQ that sets forth minimum requirements to ensure eligibility of owners or operators of construction activities within the City of Springfield for automatic coverage under the NPDES 1200-CN permit issued by DEQ.

Measurable Goals

- Conduct programmatic review of the LDAP program to determine if program revisions, enhancements, or modifications are appropriate. Complete by April, 2015.
- Work with the DEQ to re-new the IGA for construction activities by November, 2015. Note that this is a “goal target date”. It is the current IGA expiration date and that discussion, signing, and approvals may not meet this target date; the City will strive to achieve it to the extent practical.

Strategy M2 – Enhance Post Construction Support

Task - “Continue Water Resources planning staff participation in the City’s existing development plan review process; expand review by Water Resources staff into more comprehensive involvement in the approval process.”

Environmental Services (ESD) water quality professionals currently assist with the review of large-scale development proposals to help identify potential water quality impacts related to new development design. Staff will continue to expand its level of review by engaging in a review during the initial phases of the process, when significant design alterations to enhance water quality are more feasible, and will engage in the review of smaller-scale developments. ESD staff has participated in the review and updates made to the City's Engineering Design Standards and Development Code and will continue to participate in future updates and reviews.

Measurable Goals

- Continue involvement by engaging in the review process for proposals requiring engineering review and smaller scale developments that include water quality or LID development standards. Ongoing involvement throughout the 5 year cycle.

Task - "Continue to implement a post-construction BMP inspection program to ensure maintenance of water quality BMPs at private development sites."

New private development projects are currently inspected during construction and upon completion. In the past, subsequent inspections were only conducted on a complaint basis, and evidence suggests that BMPs and water quality design features were deteriorating over time as a result of limited maintenance.

Springfield implemented a Stormwater Facility Management Program during the first 5 year cycle and will continue to implement the program. Staff will continue to conduct inventories and inspections of privately-owned water quality facilities to ensure long-term functionality, within existing resource limitations.

Measurable Goals

- Review program needs, available staff, and resources by April, 2016.
- Continue program implementation within resource limitations. Program implementation is ongoing throughout the 5 year cycle.

Strategy M3 – Evaluate/Enhance Street Sweeping, Catch Basin, and Pipe Cleaning Programs

Task - "Review, with Development and Public Works Operations staff, the current programs for street sweeping and catch basin and storm drainage pipe cleaning, including equipment and schedules; identify program needs."

Springfield's street sweeping program has been reviewed as part of the City's SWMP and subsequently upgraded in capacity and efficiency. This measure will focus on ongoing review, identification and resolution of any remaining programmatic gaps of this

successful program. Similarly, cleaning and maintaining catch basins and drainage pipes is critical in maintaining the effectiveness of these BMPs.

Measurable Goals

- Review existing sweeping and catch basin and pipe cleaning programs, equipment, technology and citizen complaints with Operations staff and adaptively manage program as needed, by April, 2016.

Strategy M4 – Hazardous Waste Control

Task - “Identify sources of mercury pollution and what household products, electronics, appliances, etc... may contain mercury and determine what pollution prevention projects/programs are feasible to implement.”

Springfield staff will research sources of mercury to better understand what products contain mercury, how to properly dispose of or recycle them, as well as determining at what level the City is capable of implementing programs and/or projects to address mercury waste reduction.

Measurable Goals

- Mercury pollution source assessment; research sources of mercury and what household products, electronics, appliances, etc... contain mercury and determine what pollution prevention projects/programs the City has the resources to implement. By April, 2016.

Task - “Use household hazardous waste collection events to reduce the improper disposal of items containing mercury.”

Springfield along with other local agencies and solid waste handlers sponsor periodic household waste collection events throughout the year. Springfield will continue to be an active partner in promoting and sponsoring events as well as researching other creative disposal options.

Measurable Goals

- Springfield will continue to participate in the support of events such as the Lane County household hazardous waste events including outreach at public events such as the Springfield Cleanup, Lane County Home Show, and Earth Day. Ongoing throughout the 5 year cycle.

Strategy M5 – Public Outreach and Education

Task – “Develop and distribute outreach and education materials to the public.”

Presently ESD staff has developed a variety of erosion and sediment control handouts and fact sheets. ESD staff also provides information on the proper disposal of some household objects that contain mercury, the most common sources being addressed are electronics, thermometers, and florescent lights. Mercury switches in thermostats and inside automobiles are also prime contributors, as these items are typically destroyed in junkyards, and so result in a mercury release. Outreach is provided to City staff and to the public at public events such as the Springfield Cleanup, Lane County Fair, Earth Day, and available on the City's webpage.

Measurable Goals

- Staff will continue to work with other agencies and independently to address mercury related activities effecting water quality. Staff will continue to develop/distribute material and research educational options. Review and revise existing material and develop additional material if needed to address other possible mercury sources annually starting April, 2015.

Implementation Matrix

The following matrix (Table 5) details the strategies that will be implemented within the next five years. The matrix displays the TMDL pollutant, the strategy to address it, timeline, and how to measure progress and successful implementation. This matrix will also serve as a tracking tool for annual reporting to the DEQ.

Table 5 - TMDL Implementation Tracking Matrix 2014 - 2019

The following matrix details the strategies that will be implemented within the next five years. The matrix displays the TMDL pollutant, the strategies to reduce them, implementation timeline, and how to measure progress and successful implementation.

Table 5 - TMDL Implementation Tracking Matrix

POLLUTANT	SOURCE of POLLUTANT	STRATEGY <i>What we are doing & will do to reduce pollution from this source</i>	ACTIONS <i>Specific ways to implement strategies</i>	BENCHMARK <i>Intermediate indicators to know progress is being made</i>	TIMELINE	MEASURE <i>How we will track implementation & completion</i>	STATUS
Temperature	Solar radiation to surface waters	T1 - Inventory Existing and Potential Shade and Enhancement Areas	Maintain a priority project list for shading.	Review and update the existing inventory identifying potential sites.	By April 2017	Revise priority list of potential sites.	
			Work to develop public/private partnerships for demonstration projects.	Continue to explore available options for partnering on shading projects.	Ongoing throughout the cycle	Meet with selected groups and propose partnerships to implement shading projects.	Ongoing
		T2 - Riparian Area, Parking Lot, and Streetscape Shade Enhancement	Additional code review, evaluation and enhancement for parking lot, streetscape shade and riparian vegetation management, setbacks and buffers, and retrofit practices if appropriate.	Review the Development Code with key planning staff and determine if shading or riparian protection amendments are appropriate.	By April 2016	Review of Development Code for enhancement of riparian protection and impervious surface shading.	
				If amendments are appropriate, develop & propose to Council or work to include them in an amendment package.	By April 2018	Proposals brought to Council.	
			Mill Race restoration, maintenance, and enhancements	Continue to explore additional or alternative funding options & sources.	By April 2019	Review and update projects, funding options and source list.	
				Work in identifying discrete projects that can advance overall restoration.	By April 2018	Review and update project list.	
	Warm water discharges	T3 – Manage Industrial Warm Water Discharges	Work with industrial sources and Oregon DEQ to address warm water discharges through the Industrial Stormwater NPDES permit program.	Staff will continue to work with industrial dischargers and State regulators to find acceptable management resolutions.	Ongoing throughout the cycle	Industrial Stormwater permits reviewed, comments provided, and technical assistance provided as needed.	Ongoing
	Public Interaction	T4 – Public Outreach and Education	Continue to develop and distribute outreach and education materials to the public.	Staff will continue to evaluate program needs and activities that effect water temperature. Staff will develop and distribute educational materials based on these evaluations.	Annually Starting January 2015	Continue to work with other agencies and independently to address activities that affect water temperature. Continue to develop and distribute educational material.	Ongoing

Table 5 - TMDL Implementation Tracking Matrix 2014 - 2019

POLLUTANT	SOURCE of POLLUTANT	STRATEGY <i>What we are doing & will do to reduce pollution from this source</i>	ACTIONS <i>Specific ways to implement strategies</i>	BENCHMARK <i>Intermediate indicators to know progress is being made</i>	TIMELINE	MEASURE <i>How we will track implementation & completion</i>	STATUS
Bacteria	Sanitary sewer system	B1 - Sanitary Sewer Overflows - Work Practices	Review current standard operating procedures for spill response. Amend or revise if appropriate.	Review relevant SOPPs for spills and overflows.	By April 2016 – 1 st review By April 2018 – 2 nd review	Review(s) completed	
			Review contractor work provisions to ensure contractors understand Spfld. requirements for dealing with sanitary spills.	Develop/amended SOPPs, if needed.	By April 2017 and By April 2019	Approve and implement new or amended SOPPs if appropriate	
			Coordinate with local partners to identify additional sites for pet waste disposal stations in public areas and assist with placement and maintenance.	Conduct review of relevant Springfield standard contracting specifications.	By April 2016	Review of contract specifications	
			Continue identification and waste management assessment of pet care providers and services.	Develop revisions, if needed	By April 2017	Adoption of new or amended contractor work provisions.	
	Animal/Pet waste	B2 - Animal/Pet Waste - Program Enhancement	Continue to collaborate with local partners to identify additional prospective pet waste stations.	Continue to collaborate with local partners to identify additional prospective pet waste stations.	By April 2015 and By April 2018	Update and maintain a list of possible locations.	Ongoing
			Continue to coordinate or otherwise assist with installation and maintenance of any new sites.	Continue to coordinate or otherwise assist with installation and maintenance of any new sites.	By April 2016 and By April 2019	Installation and maintenance of new sites.	Ongoing
	Animal/Pet waste	B2 - Animal/Pet Waste - Program Enhancement	Continue to identify, review and update list of pet supply, service, and care facilities. Assess and develop outreach needs and options	Continue to identify, review and update list of pet supply, service, and care facilities. Assess and develop outreach needs and options	By April 2017	Update list of facilities and outreach needs and options.	
			Conduct assessment and/or make contact with participating owners/operators and track facility participation.	Conduct assessment and/or make contact with participating owners/operators and track facility participation.	By April 2018	Assess and/or contact participating facilities. Track participation.	
			Identify and review options for distributing outreach material such as brochures and hold Canines for Clean Water pledge events.	Identify and review options for distributing outreach material such as brochures and hold Canines for Clean Water pledge events.	By April 2016	Update list of distribution sites and hold public events.	
			Review and update educational materials as needed.	Review and update educational materials as needed.	By April 2017	Review, revise, and approve current educational.	
	Wildlife feeding outreach and education.	B2 - Animal/Pet Waste - Program Enhancement	Continue to coordinate with the park district and City Operations staff to identify locations of wildlife feeding. Update list and where appropriate post signs.	Continue to coordinate with the park district and City Operations staff to identify locations of wildlife feeding. Update list and where appropriate post signs.	By April 2016 and By April 2018	Update list of locations. Post signs and distribute educational material.	
			Explore development of a pest management program and adopting a wildlife feeding ordinance.	Explore development of a pest management program and adopting a wildlife feeding ordinance.	By April 2017	Review done and options investigated.	Added
	Sanitary wastes	B3 - Septic Tank, Transient Camping and Private Sanitary Infrastructure Outreach and Education	Maintain a septic system inventory program for sites within the City limits; work with property owners to provide public sanitary services when feasible. Review, update, and deliver educational material as appropriate.	Maintain a septic system inventory within the City limits.	Ongoing	Continued maintenance of septic system inventory and tracking database.	Ongoing
			Review, update, and deliver outreach and educational materials to owners as appropriate.	Work with property owners within the City limits to provide public sanitary services when feasible. Continue to incorporate and extend services as appropriate.	Ongoing	Properties within the City Limits connected to public system when feasible.	
			Review, update, and deliver outreach and educational materials to owners as appropriate.	Review, update, and deliver outreach and educational materials to owners as appropriate.	By April 2016 and By April 2018	Update and distribute outreach and educational material.	
			Continue investigations into illicit commercial waste disposal practices.	Continue to identify target audiences, and develop and distribute outreach material specific to them which incorporate BMPs and relevant regulatory requirements.	By April 2015 and By April 2017	Identify additional audiences; develop and deliver educational material.	

Table 5 - TMDL Implementation Tracking Matrix 2014 - 2019

POLLUTANT	SOURCE of POLLUTANT	STRATEGY <i>What we are doing & will do to reduce pollution from this source</i>	ACTIONS <i>Specific ways to implement strategies</i>	BENCHMARK <i>Intermediate indicators to know progress is being made</i>	TIMELINE	MEASURE <i>How we will track implementation & completion</i>	STATUS
			Review transient camping procedures, and focus additional efforts where sanitary waste or other waste impact open waterways. Seek enforcement through existing codes/statutes, as resources allow.	Review and update procedures & priority site determination criteria with PD and Operations staff as needed.	By April 2017	Review and update policies and procedures, priority list, and tracking program. Work with land owners to enforce illegal camping. Assess known illegal camp sites.	Ongoing
				Work with land owners to enforce illegal camping regulations on private property.	Ongoing throughout the cycle		
				Assess known campsites on public land and update the priority list for removal. Continue to investigate campsite deterrent measures.	By April 2018		
	Public Interaction	B4 – Public Outreach and Education	Review, update, develop, and distribute outreach and education materials to the public, as needed.	Staff will continue to evaluate needs, types of bacteria related activities affecting water quality, continue to develop educational material and distribution options.	Annually Starting January 2015	Develop/distribute materials and research distribution options.	Ongoing
Mercury	Construction site soil erosion	M1 - Limit Construction Site Erosion	Continue to review existing LDAP construction site erosion control program, identify any additional program needs, and assist with program modifications or support to enhance program effectiveness.	Staff will review the LDAP program to determine if program revisions, enhancements, or modifications are appropriate.	By April 2015	Review of current program and updates made.	
				Work with the DEQ to re-new the IGA for construction activities within the City of Springfield.	Target date by Nov. 2015	City Council approval of IGA for construction activities.	
	M2 - Enhance Post Construction Support	Continue Water Resources staff participation in plan review & expand Water Resource staff involvement in the approval process.	Continue involvement by engaging in the review process for proposals requiring engineering review and/or smaller scale developments that include water quality or LIDA.	Ongoing throughout the cycle	Involvement in the review process for developments having WQ and/or LIDA proposals.	Ongoing	
		Continue to implement a post-construction BMP inspection program to ensure maintenance of WQ BMPs at private sites.	Review program needs, available staff, and resources.	By April 2016	Assessment of program, staff, and resource needs.		
	Continue program implementation within resource limitations.		Ongoing throughout the cycle	Continue implementation of a Stormwater Facility Management Program.	Ongoing		
	Urban street runoff	M3 - Evaluate/Enhance Street Sweeping, Catchbasin, and Pipe Cleaning Programs	Review with DPW Operations staff the current street sweeping, catchbasin & pipe maintenance programs, equipment, and schedule; identify program needs.	Review existing sweeping and CB and pipe cleaning programs, equipment, technology, and complaints with Operations staff; adaptively manage as resources allow.	By April 2016	Review, approval and implementation of updates to the current programs.	
	Hazardous waste control	M4 - Hazardous Waste Control	Identify sources of mercury pollution and what household products, electronics, appliances, etc... may contain mercury and determine what pollution prevention projects/programs are feasible to implement.	Mercury pollution source assessment; research sources of mercury and determine what pollution prevention projects/programs the City has resources to implement.	By April 2016	Complete mercury pollution source assessment.	
				Use household hazardous waste collection events to reduce the improper disposal of items containing mercury.	Springfield will continue to participate in the support of events such as the Lane County household hazardous waste events including outreach at public events such as home shows, Spring Cleanup and Earth Day.	Ongoing throughout the cycle	Participate in public collection events and promote outreach.

Table 5 - TMDL Implementation Tracking Matrix 2014 - 2019

POLLUTANT	SOURCE of POLLUTANT	STRATEGY <i>What we are doing & will do to reduce pollution from this source</i>	ACTIONS <i>Specific ways to implement strategies</i>	BENCHMARK <i>Intermediate indicators to know progress is being made</i>	TIMELINE	MEASURE <i>How we will track implementation & completion</i>	STATUS
	Public Interaction	M5 – Public Outreach and Education	Develop and distribute outreach and education materials to the public.	Staff will continue to develop/distribute educational material and research education options.	Annually Starting April 2015	Review, update, and distribute educational materials.	Ongoing

Section 5 – Measuring and Monitoring Progress, and Adaptive Management

Measuring and Monitoring Progress

The ultimate measure of success for area TMDL programs will be the de-listing of 303(d)-listed streams throughout the Willamette Basin. Monitoring the performance of this plan requires monitoring both the success of implementing the measures outlined in the plan (implementation monitoring), and the effectiveness of the measures at reducing pollution (effectiveness monitoring).

Implementation Monitoring

The City's resources are limited. While the Implementation Schedule presented in Table 5 is realistic, unforeseeable events can, and do occur: budget shortfalls, staffing limitations, and changing priorities can impact the rate or success of implementation. For that reason, monitoring to ensure timely and effective program implementation is an important element of the Plan.

Table 5, the TMDL Implementation Tracking Matrix, includes target dates for the implementation of each of the measures included in this Plan. Implementation status on the Tracking Matrix will be updated annually, and forwarded to the DEQ to satisfy the annual Plan Implementation and Reporting Requirement.

Where implementation of a particular measure is infeasible, unavoidably delayed, or the target date is otherwise not able to be met, staff will evaluate the cause. Options include adaptively managing to facilitate implementation of the measure, developing an equivalent measure, or working with the DEQ to develop a strategy for accomplishing a similar result using an alternate method or schedule.

Effectiveness Monitoring

Some strategies, such as planting trees for shade along waterways, may take years to produce measurable benefits. Within that time frame, other factors, such as changes in stream flow, local land uses, or climate change may generate long-term alterations in temperature regimen, making monitoring results unreliable. Other measures, such as erosion and sediment control ordinances or pet waste management programs, may produce results which are not readily quantified or may result from unknown outside influences.

Springfield recognizes that the effectiveness of the Plan will be best measured by tracking implementation of strategies identified in this Plan that are generally recognized by the DEQ and other experts as effective. Therefore, implementation monitoring target dates in the plan are important measures of overall plan effectiveness. Target dates for implementation are identified for each strategy in Table 5, TMDL Implementation Tracking Matrix.

Reporting, Review, and Adaptive Management

The City must monitor both its progress with implementing the provisions of the Plan and the effectiveness of the Plan itself, including any changes or adaptive management measures proposed or incorporated into the Plan. Two reports are required to be submitted to the DEQ to track these parameters: Annual Progress Reports, which track implementation of each management strategy, and an Implementation Plan Review Report, compiled every 5 years. This is a comprehensive review and assessment of the plan, which outlines past performance and summarizes adaptive management revisions to the Plan.

Annual Progress Reports will present the implementation status of the various strategies and measures using the TMDL Implementation Matrix in Table 5. It will also include adaptive management measures taken or proposed to enhance Plan effectiveness annually.

The Review Report will evaluate the overall effectiveness of the Plan, including the annual adaptive management measures, information on the efficiency and effectiveness of the various strategies, and include an assessment of the Plan's overall effectiveness at meeting pollution reduction goals. It will also provide an opportunity to revise the Plan as needed to constructively build for success in the next 5 years.

Compliance with Statewide Land Use Goals

This section explains the relationship among the City of Springfield's Total Maximum Daily Load Implementation Plan, its Stormwater Management Plan (Stormwater Plan), Eugene-Springfield Metropolitan Area Plan (Metro Plan) goals and policies, relevant Springfield Development Code (SDC) articles and the Public Works Engineering Design Standards and Procedures Manual (EDSP Manual) regarding compliance with Land Use Compatibility Statements (LUCS).

TOTAL DAILY MAXIMUM DAILY LOAD IMPLEMENTATION PLAN

This TMDL-IP fulfills the City's requirements as a Designated Management Agency (DMA), under the TMDL provisions of the federal Clean Water Act, to develop and implement a plan to reduce the discharge of certain pollutants into identified waterways. In this case, the pollutants are excessive bacteria, mercury, and warm water, and the identified waterways are portions of the Willamette and McKenzie Rivers, near the City of Springfield.

The focus of this IP includes review, assessment, and enhancement of select, existing stormwater pollution control measures and programs found in the City's Stormwater Management Plan, which is presently being implemented. It addresses gaps in the City's pollution control programs based in the SWMP, resulting from the DEQ's

designation of the TMDL pollutants indicated above. Measures in the IP include, generally:

Temperature Control Measures

- Inventory existing and potential shade enhancement areas
- Riparian protection
- Managing warm industrial discharges

Bacteria Control Measures

- Sanitary Sewer overflow prevention/cleanup practices
- Pet waste, transient camping, and targeted industrial discharge management
- Private onsite sanitary sewage system assessment, outreach, and education

Mercury Control Measures

- Review of existing construction erosion control programs
- Continued participation in the City's existing design review process for new development
- Review and assessment of the existing street sweeping and storm system cleaning programs

The TMDL-IP does not propose any land use changes, new fixed structures or facilities, or new municipal code provisions; its focus is on management practices and review and enhancement of existing programmatic efforts.

STORMWATER PLAN

The Stormwater Plan was developed to provide policy and management guidance for activities affecting stormwater throughout the City of Springfield and its urban area. The Stormwater Plan was originally adopted by the Springfield City Council in 2004 and revised and re-adopted in 2010. The areas of focus within the Stormwater Plan include:

- Pollution incidents and unlawful (illicit) discharges to the City's stormwater system.
- On-site management strategies of stormwater runoff to help reduce the quantity of stormwater and pollution entering the drainage system.
- Reduction and prevention of stormwater pollution from City facilities due to City activities and business practices.
- Public education geared toward community stewardship of water.
- Public awareness and involvement in the City's stormwater management.
- Targeted capital improvements and maintenance programs to improve water quality and restore high priority areas.
- DEQ-required Municipal Separate Storm Sewer System (MS4) Plan Elements.

Applicable Stormwater Plan Minimum Control Measures referenced below are found in the City's SWMP:

#4 Construction Site Stormwater Runoff Control, CSW1 Erosion and Sediment Control Regulations and CSW3 Land and Drainage Alteration Permit Program; and

#5 Post-Construction Stormwater Management for New Development and Redevelopment, especially DS1 Springfield Development Code (SDC) Standards and the Engineering Design Standards and Procedures (EDSP) Manual.

While the Development and Public Works Department has taken over the responsibility of running the LDAP program, there are still references to LDAPs in the SDC. The following is a discussion of the relationships of the Metro Plan, the SDC, the EDSP Manual and the Springfield Municipal Code (SMC), 1997. Typically, the Metro Plan is used during the review of quasi-judicial and legislative reviews of development. The SDC and the EDSP Manual are used together in the evaluation of most land use applications, especially partitions, subdivisions and site plan reviews. The SMC is used for processing LDAPs and enforcing Erosion Control regulations in the field.

METRO PLAN

The Cities of Springfield, Eugene and metro Lane County have an acknowledged Comprehensive Plan called the Metro Plan. Springfield adopted the Metro Plan by Ordinance 5024 on March 1, 1982. The Metro Plan was acknowledged by the Land Conservation and Development Commission on August 23, 1982. The Metro Plan was revised in 1987 and in 2004. The Metro Plan complies with the 14 applicable State Planning Goals. The goals and policies in the Metro Plan that are applicable to the Stormwater Plan are provided below.

C. Environmental Resources Element:

Applicable Goals:

1. Protect valuable natural resources and encourage their wise management, use, and proper reuse.
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.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 McKenzie and Willamette Rivers.
- 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 geological constraints present, to protect life and property, public investments and environmentally sensitive areas.

- 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 urban growth boundary.
- 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 protect the scenic quality, surface water and ground water quality, forest values, vegetation, and wildlife values of those areas.
- C.26** Local governments shall continue to monitor, plan for, and 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.

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

Goal:

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 the 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 corridors and waterway environments; potential for supporting non-automobile transportation; opportunities for residential development; adjoining uses; and other compatible uses.
- 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.

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.

Applicable Policies:

- E.2** Natural vegetation, natural water features, and drainageways 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.

Goal:

- 1.** Provide and maintain public facilities and services in an efficient and environmentally responsible manner.

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 groundwater 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 problem;
 - 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 off-site 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 wastes;

- i. Include containment measures in site review standards to minimize the effects of chemical and petroleum spills; and
- j. Consider impacts to groundwater quality in the design and location of drywells.
- 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 Endangered Species Act.
- 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 affects from increased runoff, and is compatible with Metro Plan policies.

SPRINGFIELD DEVELOPMENT CODE (SDC)

The SDC is the City's zoning ordinance and is applicable both within the city limits and Springfield's urban transition area. The SDC was adopted by Ordinance 5326 in May, 1986. The SDC has been amended several times since that date. The Stormwater Plan boundary is contiguous with the SDC boundary. There are a number of SDC sections that either specifically address stormwater regulation or control development impact on stormwater:

- Section 3.3-300** Willamette Greenway Overlay District
- Section 3.3-400** Floodplain Overlay District
- Section 3.3-500** Hillside Development Overlay District
- Section 4.3-110** Stormwater Management
- Section 4.3-115** Water Quality Protection
- Section 4.3-117** Natural Resource Protection Areas
- Section 5.12-100** Land Divisions
- Section 5.15-100** Minimum Development Standards
- Section 5.17-100** Site Plan Review

The SDC includes notification and request for comments to affected agencies, including those having requirements applicable to a proposed land use, and other interested parties. Correspondence received during the comment period become part of the findings included in the staff report and may be included in conditions that must be met in resulting land use approvals. Through this process, the Development and Public Works Department is delegated the authority to impose standards for erosion control and stormwater management for land use decisions made in accordance with the SDC.

THE ENGINEERING DESIGN STANDARDS AND PROCEDURES MANUAL (EDSPM)

The EDSPM contains design standards and procedures that are meant to establish, clarify and assist both City staff and private engineers in creating safe, efficient, and

cost-effective street, drainage and sanitary sewer projects for the City. The EDSPM was adopted by Resolution 02-46 in October 2002. It was most recently updated in September 2011 and re-adopted in December 2012. The following sections address stormwater and related issues and are used during the development review process:

Section 3.00

Stormwater Quality. Establishes stormwater management in accordance with the provisions of SDC Article 32 to promote water quality, and to protect groundwater and the vegetation and rivers it supports.

Stormwater Quality Design Standards. Implements water quality design standards for stormwater runoff. It sets standards for facility design based on runoff volumes and flow rates. It discusses water quality pollutants of concern, the protection of waterways, underground injection, drinking water protection, vegetation requirements, and set standards for type of designs to meet pollutant loading through a vegetated and structural treatment process. It requires facility owners to build and maintain their facilities through signed and recorded agreements.

Section 4.00

Stormwater Capacity Standards. Implements design standards for storm drainage capacity in accordance with Springfield Drainage Master Plans, the on-going update of those plans, the SDC, and Standard Construction Specifications. Requires a complete drainage study for all public and private storm systems, including the submittal of hydrologic and hydraulic calculations. Addresses catch basin inlet designs, constructed channels, outfalls, downstream protection and detention ponds.

Section 7.00

Hillside Development Standards. Provides consistent design policies and standards for street, storm and sanitary sewers on existing land with slopes greater than 15 percent. Addresses special design considerations for steep hillside development.

SPRINGFIELD MUNICIPAL CODE

Section 8.00

Erosion Control. Sets forth minimum expectations to contain or minimize erosion on-site during construction and to avoid affecting adjacent properties or waterways. Includes Best Management Practices commonly used. Requires, at a minimum, the engineer of the infrastructure project to ensure that the erosion control plan and the activities on the construction site meet or exceed the performance standards within the most current NPDES Stormwater Discharge Permit (1200CA) issued to the City. This permit has been granted to the City by DEQ to allow the City to manage erosion control within our permitted construction projects within public rights-of-way and easements. The requirements for planning and implementation of management practices for erosion control is already a City responsibility and this section of the EDSPM documents what we expect of ourselves and our permittees during infrastructure construction.

Section 8.300

Sets forth specific rules and regulations to control excavating, grading, and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and of safeguarding persons and property against unreasonable hazards resulting from uncontrolled grading and excavating practices in the interest of protecting the public health, safety and general welfare. The permit issued by the city for this work is called the Land and Drainage Alteration Permit. Erosion control is currently a part of the LDAP review process.

Section 4.372 Illicit Discharge

Sets forth specific rules and regulations to control discharges, or cause the discharge, of any substance into the city stormwater system if the discharge poses a threat to health, safety, public welfare, or the environment, or is otherwise prohibited by law.

COST ANALYSIS

Strategies identified in this Plan include enhancements to existing programs, as well as developing and implementing new ones. In some cases, the cost of implementation is within the range of existing staff and resources. Other programs will experience high cost variability, such as developing public-private partnerships for shade enhancement projects.

The City of Springfield anticipates a variety of strategies to address Plan implementation costs, including using existing budgets and resources, budgeting for future programs through the existing budgetary processes, pursuing grant funding, and developing collaborative, mutually-beneficial partnerships. A key to the success of this strategy is prioritization of projects where initial funding is inadequate, and a plan to pursue needed funding over time for lower priority projects. In all cases, efforts will be made to leverage Springfield's funds effectively, to be responsive to unforeseen opportunities, adapt to changing economic realities, and pursue creative and innovative approaches to funding.

Table 6, TMDL Funding Sources, identifies the anticipated funding sources for the strategies in this Plan.

Table 6, TMDL Funding Sources

Funding Sources for TMDL Strategy Implementation				
	Strategy	Funding/Resources Type		
		Drainage Funds (current)	Drainage Funds (future)	Grants and other possible sources (future)
Temperature	Inventory existing and potential shade and enhancement areas	X	X	X
	Riparian protection and enhancement	X	X	X
	Manage industrial warm water discharges	X	X	
	Public Education and Outreach	X	X	X
Bacteria	Sanitary sewer overflows – work practices	X	X	
	Pet wastes program enhancement	X	X	X
	Waterfowl and Nutria feeding outreach	X	X	
	Septic tank, transient camping and private sanitary infrastructure outreach and education		X	
	Public Education and Outreach	X	X	X
Mercury	Limit construction site erosion	X	X	
	Enhance post-construction support	X	X	
	Evaluate/enhance street sweeping/CB Maintenance	X	X	
	Hazardous Waste Control	X	X	
	Public Education and Outreach	X	X	X

