

City of Springfield

Total Maximum Daily Load

Implementation Plan



Franklin Blvd. Glenwood swales 2018

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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 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 instead 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 tributaries within its Urban Growth Boundary and discharges to the McKenzie and Willamette rivers, 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 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 impaired 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 required Springfield to submit a 5 Year Plan Review Report along with a second cycle revised TMDL IP. In 2019 the DEQ requires that Springfield draft and submit a Plan matrix by April 1, 2019 and a third five year cycle revised TMDL IP by November 1, 2019. This plan reflects that process. The 5 Year Plan Review Report for the second cycle will be submitted via the DEQ's online reporting form by November 1, 2019.

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. Discharges from this facility are covered under a separate NPDES Permit, are not within Springfield's jurisdictional boundaries, 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 what 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 303(d) lists. The McKenzie River is currently 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 sub-basins 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

impaired 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.

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.
- **Illicit 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 minimize 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.

According to the *Global Mercury Assessment 2018*, emissions from global sources remain the primary source of mercury in North America. 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% <hr/>
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% <hr/>
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 	<hr/> Willamette Basin: 26.4% <hr/>

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 Mainstem 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 Mainstem 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. It includes approximately 206 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, 500-owned catch basins and area drains, and numerous private facilities that contribute to the public storm system. The system currently includes 25 city-owned vegetated stormwater quality facilities and 115 structural 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.

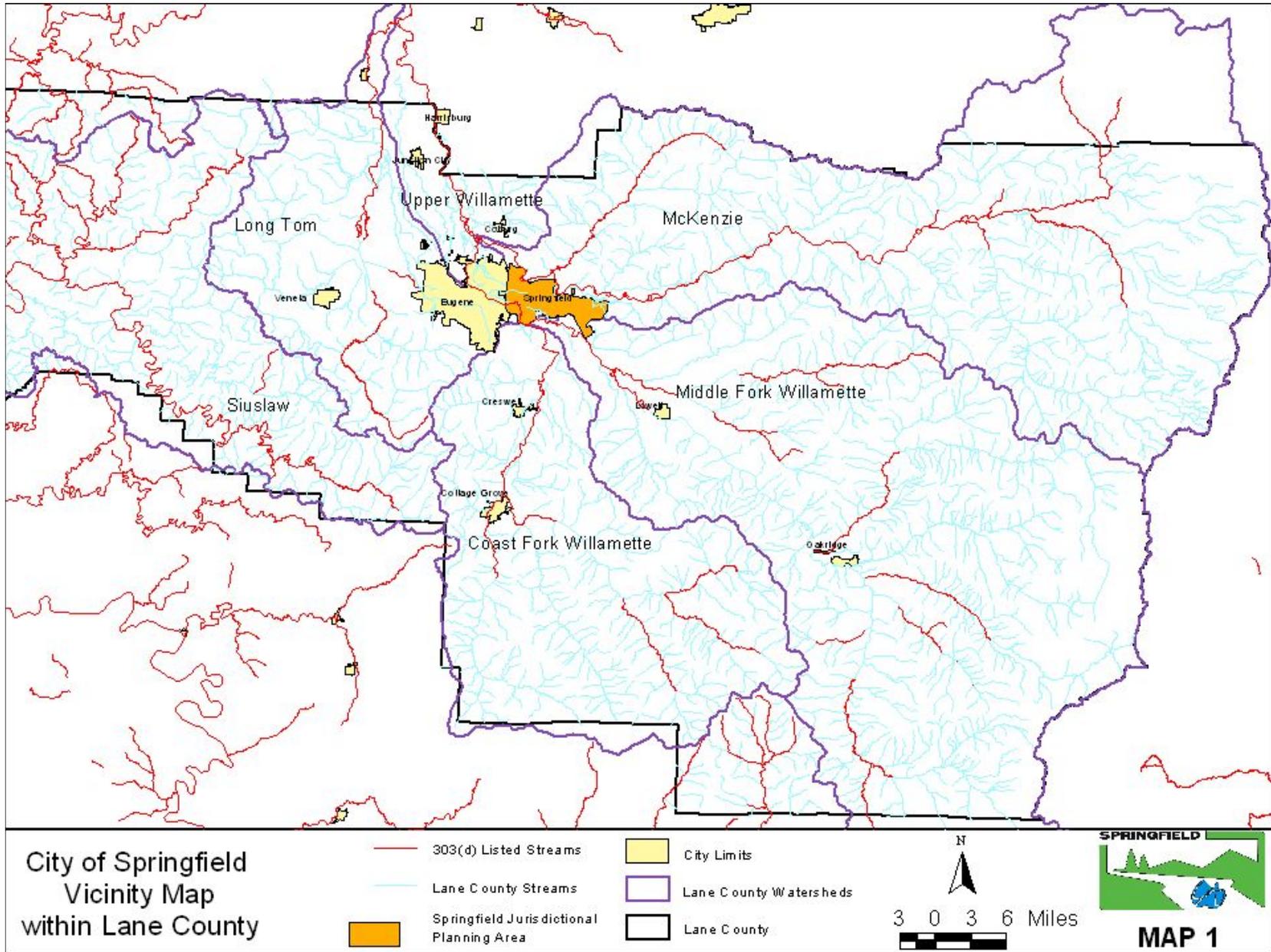
Most of the open drainage systems in the City have gradients that are low, with culverts and other impingements that are designed to accommodate expected flows. Riparian areas are frequently impacted with invasive species and lack shade partially as a result of previous urban development practices and 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 particular waterway flows from a mixed residential and commercial area and past an industrial facility, and has not been associated with construction-related soil erosion.

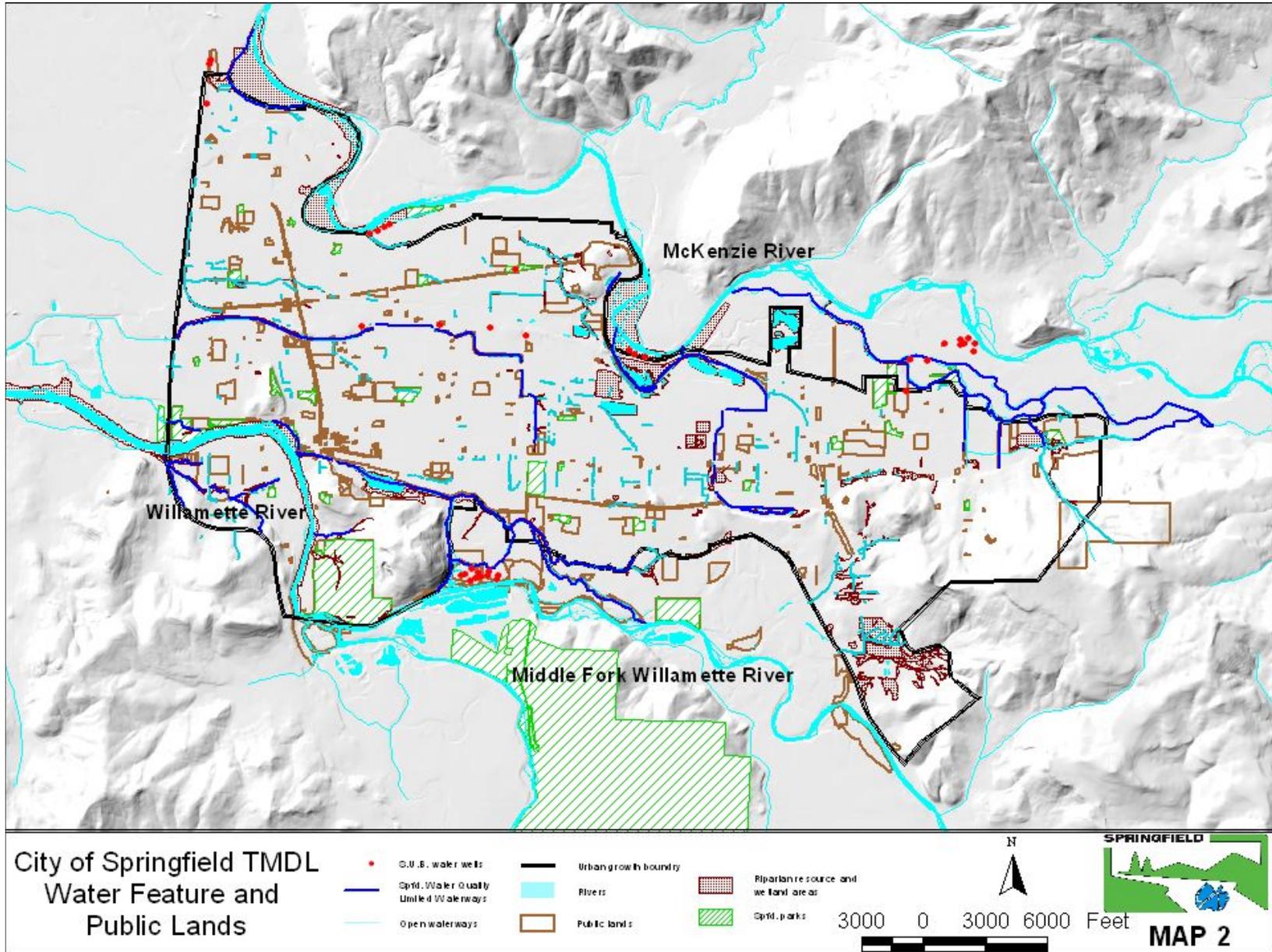
Map 1 on the following page shows Springfield's location in Lane County of Oregon and the surrounding watersheds, including neighboring cities and 303(d) listed waterways.

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 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) which 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 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 response, 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 routine 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 Springfield's Existing Water Quality Related Programs and Policies

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, website and social media spotlights	Reduce dumping and spills	X	X	X
	Catch basin curb marker, Little Litter, and Up Stream Art programs	Increase citizen awareness			
	Education and outreach to business	Increase citizen awareness			
Public Participation and Involvement	Public events for SWMP development, website postings for feedback	Encourage support for clean water program efforts			
	Outreach to citizen and business partners	Water quality awareness	X	X	X
	Water resource area awareness and facility enhancement, stewardship, facility signage	Water quality awareness and citizen involvement			
Illicit Discharge Elimination	Technical assistance and outreach to targeted businesses	Reduce incidences of dumping and illicit discharges			
	Spill response, prevention, and compliance	Enhanced spill response and waste management			
	Pressure and car washing programs	Waste management and water quality awareness	X	X	X
	Infrastructure mapping, visual monitoring, outfall inventories and assessments	Identification of potential illicit discharge problem areas			
	Website reporting, factsheets	Water quality awareness			
Construction Site Runoff Control	Review of City Capital Improvement Projects to ensure consistency with 1200C permit requirements, referral and tracking to DEQ for 1200C	Manage construction activities	X	X	X

	<p>Erosion control Land Development and Alteration Permit (LDAP) program for construction</p> <p>Development and municipal code requirements</p> <p>Education material, website factsheets and standards</p>	<p>Reduce erosion and sediment</p> <p>Reduce dumping/spills</p> <p>Erosion, sediment, and water quality awareness. Manage construction activities</p>			
Post-Construction Stormwater Management	<p>Development code requirements, design standards</p> <p>Plan review requirements</p> <p>Water Quality Facility Management Program</p> <p>Education material, website factsheets and standards</p>	<p>Enhance shading and riparian areas in new developments, and wetland and riparian protection</p> <p>Reduce runoff and urban pollutants</p> <p>Increase water quality awareness/ reduce pollution loading and transport</p> <p>Water quality awareness. Manage construction activities</p>	X	X	X
Good Housekeeping in Municipal operations	<p>Work practice review and BMP Guidance Manuals for Maintenance activities</p> <p>O&M standards for public water quality facilities. Routine staff training</p> <p>Stormwater pollution plans for Operations Facility and fire training facility</p> <p>Pollutant control through street sweeping, catch basin cleaning and storm line cleaning</p>	<p>Reduce erosion, reduce dumping/spills, reduce runoff and urban pollutants, temperature management</p> <p>Enhance spill response, water quality awareness</p> <p>Water quality awareness and good housekeeping to reduce contaminants and runoff</p> <p>Contaminant reduction</p>	X	X	X

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.

Strategies included in this document are intended to address the gaps and enhance developed programs, 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 were revised under the second cycle to provide implementation, refinement, or continuation of efforts. Under the third cycle there will be a need to review existing programs, inventories, project lists, codes, and standards to ensure that they continue to protect water quality and address temperature reduction within Springfield’s jurisdiction. 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 and/or riparian enhancement.
- Continue work to develop public/private partnerships.
- Review existing natural resource inventories and identify needs.

Riparian Protection

- Review Development Code and Engineering Design Standards and Procedures Manual for natural resource protection in areas such as: riparian setbacks, buffers, and riparian vegetation management requirements; identify needs.
- Continue 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.

Industrial Discharges

- Identify industries within Springfield’s City limits with stormwater discharges and provide technical assistance to reduce warm water discharges and improve stormwater treatment where opportunities exist.

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.
- Review and update list of pet supply, services, and care facilities and continue to work with facility owners on proper waste handling and disposal.
- Continue to identify and review options for distributing outreach material such as brochures that discuss proper waste management and conduct 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.
- Continue to explore a wildlife feeding ordinance.

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

- Continue to identify septic systems within the City limits, and maintain an inventory.
- Continue to provide education and outreach materials to septic system owners to ensure proper maintenance.
- Continue outreach and education for recreational vehicle and commercial business waste disposal practices.
- Continue to implement a program that includes illegal transient camp enforcement at sites where wastes impact open waterways.

MERCURY – The City has a successful erosion control program 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 provides an annual “Spring Clean Up” event offering free disposal of household waste. This event partners with other local agencies to help in the recycling and proper disposal of mercury containing items such as mercury thermometers, appliances, and florescent light bulbs.

Construction Site Erosion Program Review

- Review LDAP program, and identify program needs.
- Refer construction activity that requires a 1200C permit within Springfield’s jurisdiction to the Oregon DEQ.

Post Construction Support

- Continue to provide technical support, as needed, in site plan review by Water Resources staff.

- Continue 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.
- Review post-construction management program and update as needed.

Street Sweeping, Storm System Cleaning Program Reviews

- Continue implementation of street sweeping and storm water system cleaning programs to reduce pollutants in the public ROW and drainage system(s).
- Review current practices and standards; update as necessary.

Hazard Waste Control

- Review the existing mercury pollution source assessment; update as needed and continue to determine the mercury 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 encourage proper 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 is to ensure flexible, cost effective, and robust programs that include collaboration with citizens, regional partners, and local businesses, using an educational approach.

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

Strategy T1 - Inventory Existing and Potential Shade & Enhancement Areas

Task 1 - “Maintain a priority project list for riparian/channel enhancement projects.”

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. The list also included systems that could benefit from in-channel and/or riparian enhancement work. 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 CIP waterway restoration projects. During the second 5 year cycle staff reviewed and updated the existing inventory list and confirmed the listed needs and project information.

During the third Plan cycle staff will review the project list and if necessary add additional sites that may become identified from a possible wetland/natural resource inventory review and potential UGB expansion. Additionally, the City is currently working on a Glenwood stormwater evaluation that includes open waterway systems. This evaluation may identify additional shade and/or riparian projects that could be added to the existing project list.

Measurable Goal

- Review and update as needed, the inventory list of surface waterways with regard to shade and enhancement potential, including feasibility and implementation. Prioritize the list of potential sites. Complete first review by April, 2021 and complete first update by July, 2021. Complete second review by April, 2023 and complete second update by July, 2023.

Task 2 - “Continue work to develop public/private partnership 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, regional partners, and citizen groups.

Measurable Goal

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

Task 3 - “Review existing natural resource inventories and identify needs.”

Springfield currently has inventories for natural resource areas such as local wetlands, natural resource protection areas, and local Water Quality Limited Waterways. Over the years, if not periodically reviewed and updated, inventories can become outdated. Springfield intends to review its inventories and identify needs and processes.

Measurable Goal

- Review existing natural resource inventories and identify needs by July, 2022.

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

Task 1 - “Review Development Code for parking lot, streetscape, riparian vegetation management, setbacks, buffers, and retrofit practices.”

Springfield’s Development Code currently includes riparian setbacks for protected waterways and requirements for street trees and parking lot canopy trees. Staff has identified the need to review existing Code due to local resource inventories, potential requirements under the new Phase II MS4 General Permit, and the need for some existing language to be made clearer. Staff will review these provisions and determine if additional protection or enhancements to these stipulations are necessary. Urban stormwater retrofit practices, low impact development approaches (LIDA), and green infrastructure practices are encouraged for new and/or redevelopment projects in Springfield’s current development code. Code updates are complex, and occur only when a broad package of amendments are developed and brought forward for adoption; staff will include any new Phase II MS4 Permit requirements in the review process.

Measurable Goals

- Review the Development Code with key planning staff and determine if shading or riparian protection amendments are appropriate, by April, 2021.
- 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 July, 2022.

Task 2 - “Mill Race restoration management 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 was completed as of March 2012. 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 had an agreement with the ACOE to maintain the functions and values of the restoration project for a period of five years. The restoration and management activities took place during the first and second TMDL IP cycles. Ongoing operation and maintenance will continue in the third cycle.

Continued efforts will be made to obtain grants, develop partnerships, explore funding, and acquire land for activities such as maintenance, assessment monitoring, and additional enhancement projects along 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 that were investigated during the second cycle include a stormwater treatment park on the north bank, railroad bridge removal/conversion into pedestrian foot bridge, and bank restoration. To date, the stormwater treatment pond has been constructed, and efforts continue with the possibility of implementing the rail/road bridge and bank restoration activities. Education and outreach efforts will continue along the Mill Race Path and are part of the public education strategies below.

Measurable Goals

- 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, as needed, the project list by April, 2021 and again by April, 2023.

Strategy T3 - Manage Industrial Warm Water Discharges

Task 1 - “Identify industries within Springfield’s City limits with stormwater discharges and provide technical assistance to reduce warm water discharges and improve stormwater treatment where opportunities exist.”

Currently, several industrial point sources discharge non-contact cooling water into 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, within Springfield City Limits, is issued or renewed.

Measurable Goals

- As of 2018, the DEQ updated and reissued certain stormwater NPDES permits and plans to eliminate others. Staff will continue to stay informed regarding the

stormwater permits within Springfield City Limits and provide feedback to industry and the DEQ when applicable. This task will be ongoing throughout the 5 year cycle.

- Staff will review the list of current industrial stormwater discharger's within Springfield and identify opportunities to provide technical assistance in areas such as, warm water discharge reduction and or treatment; review and update list by July, 2020 and again by July, 2022.

Strategy T4 – Public Outreach and Education

Task 1 - "Continue to review, develop, and distribute outreach and education materials to the public as needed."

Currently ESD staff has assessed various activities that involve warm water discharges and have developed a variety of educational handouts and fact sheets addressing the issues and concerns. In addition, the City continues working with other local agencies in the development and distribution of additional public outreach materials and has developed regional handouts, fact sheets, and radio ads. Springfield is an active member in multiple local, regional, and State education and outreach groups. The most common non-industrial warm water discharges are being addressed as well as promoting riparian restoration and streamside gardening to provide shade.

The City has established a website that also provides links to water quality information, pollution prevention, and educational fact sheets addressing temperature issues. Additional outreach continues to be provided to City staff through the City's newsletter and to the public at events such as Spring Clean Up, home and garden shows, Arbor Day, Clean Water Garden workshops, and Earth Day.

Measurable Goals

- Staff will continue to work with other agencies, and independently, in the development and assessment of temperature related activities effecting water quality. Staff will continue to research sources of thermal pollution, evaluate existing materials, and develop and distribute educational material as needed. Material distribution will be ongoing throughout the plan cycle. Twice during the cycle, by June, 2020 and by June, 2023, material will be reviewed and updated as needed.

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

Strategy B1 - Sanitary Sewer Overflows – Work Practices

Task 1 - “Review current standard operating procedures for sanitary spill response. Amend or revise if appropriate to ensure rapid and effective 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 and second 5 year cycles and will conduct an additional review during this cycle.

Measurable Goals

- Review of relevant SOPPs by April, 2021 with revisions, if needed, by January 2022.

Task 2 - “Review contractor work provisions to ensure that contractors know and understand Springfield’s requirements for dealing with sanitary spills.”

During the first and second 5 year cycles, 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 third 5 year cycle. If changes are made to the current provisions, educational outreach will be conducted to contractors. Contractor education is one of Springfield’s education and outreach efforts under the MS4 Permit.

Measurable Goals

- Review of relevant contract specifications by April, 2021.
- Revisions, if needed, by January, 2022

Strategy B2 – Animal/Pet Waste Program Enhancement

Task 1 - “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 and Springfield School District to maintain pet waste disposal stations throughout the City. The City also maintains stations on public property/ROW. While Willamalane and the Springfield School District are responsible for maintaining pet waste stations on their

property, the City provides bags and pet waste stations to both agencies per their request. The City will continue to work cooperatively with local partners such as Willamalane, Springfield School District, and City Operations to identify additional sites, and if appropriate, facilitate the installation and service of these stations. City staff has mapped the locations of these stations and maintains a pet waste station inventory.

Measurable Goals

- Continue to collaborate with local partners to identify additional prospective pet waste station sites by April, 2020 and again by April, 2022.
- Continue to coordinate or otherwise assist with installation and maintenance of any new sites by August, 2020 and by August, 2022.
- Continue to maintain an inventory of the stations locations; mapping is ongoing throughout the Plan cycle.

Task 2 - “Continue to identify pet care providers and services and provide outreach.”

Springfield staff identified development standards for pet parks, kennels and pet day care facilities to ensure proper waste management during the first Plan cycle. Proper waste management standards are addressed for all new facilities during the development review process. During the first and second Plan cycles, staff worked with facility owners to coordinate educational material distribution and provided facilities with technical assistance on proper waste management. Staff will review and update the list of pet supply stores and service providers within the UGB, and will continue to work with facility owners on proper pet waste management. During the second Plan cycle Water Resource staff re-developed the Clean Water Business Program that offers pet care providers an opportunity to participate. Staff will continue to offer the opportunity to pet care providers, adaptively manage the program, and/or discontinue the program based on participation.

Measurable Goals

- Continue to identify, review, and update list of pet supply, service, and care facilities. Assess outreach needs and options. Update existing list by April, 2020 and again by April, 2022.
- Continue to coordinate with facility owners on educational material distribution and track the location and materials distributed. Ongoing throughout the Plan cycle.
- Continue to offer and provide technical assistance about pet waste management to pet facilities. Reach out to owners/operators at least twice during the Plan cycle; track facility participation. By April, 2020 and again by April, 2022.

Task 3 - “Continue pet waste outreach and education at public events and distribute outreach materials.”

Proper management of pet waste is a priority of Springfield’s existing stormwater management outreach and education programs. Staff will continue to encourage proper pet waste management through activities such as, outreach at public events, handouts,

website material, social media, calendar contests, and citizen contact. Currently, the City implements a popular “Canines for Clean Water Program” that distributes brochures at local pet supply stores and holds “pick up after your pet” pledge events. Staff will continue to identify and review options for distributing pet waste outreach materials.

Measurable Goals

- Continue to identify and review options for distributing pet waste outreach materials. By April, 2020 and again by April, 2022
- Hold at least one Canines for Clean Water pledge event each fiscal year.
- Review and update, as needed, program educational materials, twice during the cycle; by June, 2020 and by June, 2023.

Task 4 - “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 help discourage feeding, allowing wildlife populations to disperse, and riparian areas and water quality to recover. Staff will continue to coordinate with the park district and the City’s Operations Division to identify locations, post signs, and distribute educational materials. Sign installation is mapped and educational material (door hangers, signs, etc.) distribution is tracked. The City explored adopting an ordinance prohibiting the feeding of wildlife during the second Plan cycle. Staff was directed at that time to provide more education to residents to try to curtail wildlife feeding, and then determine the need for an ordinance.

Measurable Goals

- Continue to coordinate with partners such as, Willamalane Park and Recreation District and City Operations staff to identify locations where wildlife feeding is concentrated and where appropriate, post signage. Reach out to partners and staff at least twice during the Plan cycle; by April, 2021 and by April, 2023.
- Continue to track material distribution and update sign inventory on an ongoing basis.
- Continue to explore adopting a wildlife feeding ordinance by April, 2022.

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

Task 1 - “Maintain a septic system inventory for sites within the City limits and work with property owners to provide public sanitary services when feasible. Continue to incorporate and extend sewer 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 limits and provide property owners with educational material. Staff will work cooperatively with owners and encourage them to connect to the public sanitary system where appropriate.

Measurable Goals

- Continue to maintain a septic system inventory within the City limits; ongoing process throughout the 5 year cycle.
- Continue to work with property owners within the City limits to provide public sanitary services when feasible. Continue to incorporate and extend services as appropriate; ongoing throughout the 5 year cycle.
- Review, update as needed, and deliver outreach and education materials to private septic system owners twice during the 5 year cycle by April, 2020 and by April, 2023.

Task 2 - “Continue investigations into sanitary 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. Program staff actively responds to reports of illicit discharges as well as other WQ-related complaints and works to mitigate the discharge in a timely manner. The IDDE Program is guided by the City’s MS4 Permit and Stormwater Management Plan, and has protocols in place for receiving, responding, and enforcement of discharges, spills, or dumping into a waterway or storm system within Springfield’s urban growth boundary. The IDDE Program has an active outreach component that targets commercial and industrial sites that may have the potential to pollute stormwater. Some examples of past education and outreach efforts that have specifically focused on sanitary waste disposal practices by commercial businesses

include: mobile carpet cleaners, RV waste dumping, port-a-potty BMP's, pressure washing, and pet waste management. Springfield's IDDE program has identified waste-generating activities that have the potential to discharge bacteria and/or polluted wash water; this strategy is part of that larger targeted effort.

Springfield will continue a targeted outreach/education program to address private waste-generating businesses and activities to ensure proper disposal of sanitary 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, 2020 and again by April, 2023.

Task 3 - "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, Springfield focuses on eliminating camps in these priority areas.

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 and second Plan cycles, staff developed notification procedures, priority site criteria, assessed known sites, implemented cleanup efforts, and worked with land owners and regional partners to reduce illegal camping along waterways and wetlands.

Measurable Goals

- Review and update procedures and priority site determination criteria with Springfield's Police Department and Operations staff as needed by April, 2020 and again by April, 2022.
- Work with private land owners and regional partners 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. Ongoing throughout the 5 year cycle.
- At least two efforts will be made to assess known campsites on public land, update the priority list for removal, and continue to investigate campsite-deterrent measures by July, 2020 and again by July, 2022.

Strategy B4 – Public Outreach and Education

Task 1 - “Continue to review, update, develop and distribute outreach and education materials to the public, as needed.”

Presently ESD staff has assessed 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 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 Clean Up, 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 assessment of bacteria related activities effecting water quality. Staff will continue to develop/distribute material and research distribution options, assess existing educational material, and develop additional material if needed. Material distribution will be ongoing throughout the plan cycle. Twice during the cycle, by June, 2020 and by June, 2023, material will be reviewed and updated as needed.

Mercury Reduction Strategies – Enhancement of Existing Programs

Strategy M1 – Limit Construction Site Erosion

Task 1 - “Continue to review, and update as needed, the existing Land Drainage Alteration Permit (LDAP) construction site erosion control program.”

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 assess the program to identify limitations and to enhance program effectiveness.

Measurable Goals

- Conduct a review of the LDAP program to determine if revisions, enhancements, or modifications are needed. Complete review by April, 2021 and if needed, take applicable code sections to Council for re-adoption by July, 2022.
- Refer construction activity within Springfield’s jurisdiction that requires 1200C permits to the Oregon DEQ. Ongoing throughout the 5 year cycle.

Strategy M2 – Enhance Post Construction Support

Task 1 - “Continue Water Resources staff participation in the City’s development plan review process.”

Water Resources 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 evolve its level of participation 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. Water Resource staff has participated in the review and updates of the City’s Engineering Design Standards and Procedures Manual and Development Code in the past 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.
- Continue to provide assistance, as needed, in the review and update of design standards and/or code as they relate to water quality facilities and post-construction development requirements. Ongoing involvement throughout the 5 year cycle.

Task 2 - “Continue to implement a post-construction BMP inspection program to ensure maintenance of water quality facilities at private development sites.”

New private development projects are currently inspected during construction and upon completion.

Springfield implemented a Water Quality Facility Management Program during the first and second 5 year cycles. 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 the Water Quality Facility Management program, adaptively manage, and update as needed by April, 2022.
- Continue program implementation within resource limitations. Program implementation is ongoing throughout the 5 year cycle.

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

Task 1 - “Continued implementation of the current programs for street sweeping and catch basin and storm drainage pipe cleaning. Adaptively manage program practices and standards to enhance maintenance standards, as needed.

Springfield’s street sweeping program has been reviewed as part of the City’s 2010 SWMP and subsequently upgraded in capacity and efficiency. This measure will focus on a review of maintenance standards for street sweeping. Similarly, the review will include current practices and standards for cleaning and maintaining the City’s catch basins/inlets and storm pipe system.

Measurable Goals

- Continue implementation of street sweeping and storm system cleaning programs to reduce pollutants in the public ROW and drainage system(s).
- Strive to inspect/clean at least 10% of City owned catch basins/inlets per year.
- Review existing sweeping, catch basin, and pipe cleaning program practices/standards and develop enhanced standards as needed. Review by July, 2021 and update by January, 2022.

Strategy M4 – Hazardous Waste Control

Task 1 - “Identify sources of mercury pollution and which household products, electronics, and appliances may contain mercury and determine what pollution prevention projects/programs are feasible to implement.”

Springfield staff will continue to research sources of mercury to better understand which 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. Springfield along with other local agencies and solid waste handlers sponsor periodic household waste collection events. Under past Plan cycles Springfield held thermometer exchange events; currently Springfield hosts the annual Spring Clean Up event. Springfield will continue to promote the Lane County Hazardous Waste Collection Center to encourage proper disposal of items containing mercury. Managing mercury contamination in rivers and streams is complex, due to the diverse and difficult-to-control sources of the pollutant.

Measurable Goals

- Review, and update as needed, the mercury pollution source assessment; research sources of mercury and what household products, electronics, and appliances contain mercury and determine which pollution prevention projects/programs the City has the resources to implement. By April, 2021 and again by April, 2023.

Task 2 - “Use household waste collection events to encourage proper disposal of items containing mercury.”

Springfield along with other local agencies and solid waste handlers sponsor periodic household waste collection events, such as the Spring Clean Up, 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 and support events involving household hazardous waste including outreach at public events such as the Springfield Clean Up, and home and garden shows. Ongoing throughout the 5 year cycle.

Strategy M5 – Public Outreach and Education

Task 1 - “Continue to review, develop, and distribute outreach and education materials to the public, as needed.”

Currently 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, resulting in a mercury release. Outreach is continues to be provided to City staff and to the public at events such as the Spring Clean Up, Earth Day, home shows, and is 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 research proper disposal methods and sources of mercury, review and revise existing educational materials, develop additional materials as needed, and distribute these materials and research educational options. Material distribution will be ongoing throughout the plan cycle. Twice during the cycle, by June, 2020 and by June, 2023, material will be reviewed and updated as needed.

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 2019 - 2024

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>	Division(s) Responsible and/or Lead	BENCHMARK <i>Intermediate indicators to measure progress</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	Task 1 - Maintain a priority project list for riparian/channel enhancement projects.	Engineering Division Water Resources Division	Review the existing inventory identifying potential sites.	By April 2021 – 1 st review. By April 2023 2 nd review	A reviewed and updated priority list of potential sites.	
				Engineering Division Water Resources Division	Update the existing inventory identifying potential sites.	By July 2021 – 1 st update. By July 2023 2 nd update		
			Task 2 - Continue to work to develop public/private partnership projects.	Engineering Division Water Resources Division	Continue to explore available options for partnering on projects.	Ongoing throughout the cycle	Meet with selected groups and propose partnerships to implement; target one public/private project for completion during the 5 year cycle.	Ongoing
			Task 3 - Review existing natural resource inventories and identify needs.	Community Development Division	Review existing natural resource inventories and identify needs.	By July 2022	Natural resource inventories reviewed and next steps identified.	Added
	Solar radiation to surface waters	T2 - Riparian Area, Parking Lot, and Streetscape Shade Enhancement	Task 1 - Additional review of Development Code for parking lot, streetscape, riparian vegetation management, setbacks, and buffers, and retrofit practices.	Community Development Division Water Resources Division	Review the Development Code with key planning staff and determine if shading or riparian protection amendments are appropriate.	By April 2021	Review of Development Code for enhancement of riparian protection, parking lot shading, streetscape shading, setbacks/buffers and retrofit practices.	
				Community Development Division	If amendments are appropriate, staff may develop and initiate proposed changes for review by City Council, or work to include them in an amendment package.	By July 2022	Proposals brought to Council.	
			Task 2 - Mill Race restoration, management and enhancements	Engineering Division Water Resources Division	Work to identify discrete projects that can advance overall restoration. These include work both inside and outside of the initial ACOE study area, such as in the Lower Mill Race.	By April 2021 and again by April 2023	Review and update project list.	
	Warm water discharges	T3 – Manage Industrial Warm Water Discharges	Task 1 - Identify industries within Springfield’s City limits with stormwater discharges and provide technical assistance to reduce warm water discharges and improve stormwater treatment where opportunities exist.	Water Resources Division	Continue to stay informed regarding the stormwater permits and provide feedback to industry and the DEQ, when applicable.	Ongoing throughout the cycle	Industrial stormwater permits reviewed, comments provided, and technical assistance provided as needed.	Ongoing
				Water Resources Division	Reviews the list of current industrial stormwater discharger’s within Springfield and identify opportunities to provide technical assistance.	Review/update by July 2020 Review/update by July 2022	List reviewed and updated as needed; opportunities identified.	
	Public Interaction	T4 – Public Outreach and Education	Task 1 - Continue to review, develop, and distribute outreach and education materials to the public.	Water Resources Division	Continue to review, develop, and distribute educational materials.	Ongoing throughout the cycle	Material distribution will be ongoing throughout the plan cycle.	Ongoing
Water Resources Division				By June 2020 and By June 2023		Educational material assessed.		

Table 5 - TMDL Implementation Tracking Matrix 2019 - 2024

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>	Division(s) Responsible and/or Lead	BENCHMARK <i>Intermediate indicators to measure progress</i>	TIMELINE	MEASURE <i>How we will track implementation & completion</i>	STATUS
Bacteria	Sanitary sewer system	B1 - Sanitary Sewer Overflows - Work Practices	Task 1 - Review current standard operating procedures for sanitary sewer spill response. Amend or revise if appropriate.	Water Resources Division Operations Division	Review relevant SOPPs for spills and overflows.	by April, 2021	Review(s) completed	
				Water Resources Division Operations Division	Revisions, if needed.	by January 2022	Approve and implement new or amended SOPPs if appropriate	
			Task 2 - Review contractor work provisions to ensure contractors understand Springfield's requirements for dealing with sanitary sewer spills.	Engineering Division Water Resources Division	Conduct review of relevant Springfield standard contracting specifications.	By April 2021	Review of contract specifications	
				Engineering Division	Develop revisions, if needed	By January 2022	Adoption of new or amended contractor work provisions, if appropriate.	
	Animal/Pet waste	B2 - Animal/Pet Waste - Program Enhancement	Task 1 - Coordinate with local partners to identify additional locations for pet waste disposal stations in public areas and assist with placement and maintenance.	Water Resources Division	Continue to collaborate with local partners to identify additional prospective pet waste stations.	By April 2020 and By April 2022	Update and maintain a list of possible locations.	
				Water Resources Division	Continue to coordinate or otherwise assist with installation and maintenance of any new sites.	By August 2020 and By August 2022	Installation and maintenance of new sites.	
				Water Resources Division	Continue to maintain an inventory of station locations	Ongoing throughout the cycle	Map updated and maintained.	Added Ongoing
			Task 2 - Continue identification of pet care providers and services and identify outreach opportunities.	Water Resources Division	Continue to identify, review and update list of pet supply, service, and care facilities. Assess outreach needs and options.	By April 2020 and by April 2022	Update list of facilities and outreach needs and options.	
				Water Resources Division	Continue to coordinate with facility owners on educational material distribution and track location and materials.	Ongoing throughout the cycle	Continued distribution of outreach materials.	Added Ongoing
				Water Resources Division	Continue to offer and provide facilities technical assistance in proper waste management.	By April 2020 and by April 2022	Reach out to participating facilities. Track participation.	
			Task 3 - Continue pet waste outreach and education at public events and distribute outreach materials.	Water Resources Division	Continue to identify and review options for distributing outreach materials that discuss proper waste management.	By April 2020 and by April 2022	Updated list of distribution sites	
				Water Resources Division	Review and update, as needed, program educational materials.	By June, 2020 and by June, 2023	Review, revise, and approve current educational.	
				Water Resources Division	Hold at least one Canines for Clean Water pledge event each fiscal year.	Starting July 2019	One pledge event per FY held.	Added
			Task 4 - Wildlife feeding outreach and education.	Water Resources Division	Continue to coordinate with partners such as the park district and City Operations staff to identify locations of wildlife feeding, and if appropriate post signs.	By April 2021 and by April 2023	Updated list of locations. If appropriate, the number of new signs installed.	
				Water Resources Division	Continue to track distribution and update inventory	Ongoing throughout the cycle	Location map updated and maintained.	Added Ongoing
				Water Resources Division	Continue to explore adopting a wildlife feeding ordinance.	By April 2022	Review done and options investigated.	
	Sanitary wastes	B3 - Septic Tank, Transient Camping and Private Sanitary Infrastructure Outreach and Education	Task 1 - Maintain a septic system inventory 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.	Water Resources Division Information Technology	Continue to maintain a septic system inventory within the City limits.	Ongoing throughout the cycle	Updated septic system inventory.	Ongoing
				Engineering Division	Continue to -work with property owners within the City limits to provide public sanitary services when feasible. Continue to incorporate and extend services as appropriate.	Ongoing throughout the cycle	Properties within the City Limits connected to public system, as appropriate.	Ongoing
				Water Resources Division	Review, update as needed, and deliver outreach and educational materials to owners.	By April 2020 and by April 2023	Outreach and educational material updated and distributed.	

Table 5 - TMDL Implementation Tracking Matrix 2019 - 2024

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>	Division(s) Responsible and/or Lead	BENCHMARK <i>Intermediate indicators to measure progress</i>	TIMELINE	MEASURE <i>How we will track implementation & completion</i>	STATUS
		B3 - Septic Tank, Transient Camping and Private Sanitary Infrastructure Outreach and Education (cont.)	Task 2 - Continue investigations into sanitary waste disposal practices.	Water Resources Division	Continue to identify target audiences, and develop and distribute outreach material specific to them which incorporate BMPs and relevant regulatory requirements.	By April 2020 and by April 2023	Audiences identified; educational material developed and delivered.	
			Task 3 - 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.	Water Resources Division Operations Division	Review and update procedures & priority site determination criteria with PD and Operations staff as needed.	By April 2020 and by April 2022	Policies, procedures, and priority list reviewed and updated.	
				Water Resources Division Community Development Division	Work with land owners and regional partners, as needed, to enforce illegal camping regulations on private property.	Ongoing throughout the cycle	Enforcement of illegal camping that may impact open waterways.	Ongoing
				Water Resources Division Operations Division	Assess known campsites on public land and update the priority list for removal. Continue to investigate campsite deterrent measures.	By July, 2020 and by July, 2022	Assess known illegal camp sites and updated priority list.	
	Public Interaction	B4 – Public Outreach and Education	Task 1 - Continue to review, update, develop, and distribute outreach and education materials to the public, as needed.	Water Resources Division	Continue to review, develop, and distribute educational materials.	Ongoing throughout the cycle	Material distribution will be ongoing throughout the plan cycle.	Ongoing
				Water Resources Division		By June 2020 and by June 2023	Educational material assessed.	
Mercury	Construction site soil erosion	M1 - Limit Construction Site Erosion	Task 1 - Continue to review existing LDAP construction site erosion control program.	Engineering Division	Staff will review the LDAP program to determine if program revisions, enhancements, or modifications are appropriate.	Review by April 2021 and update by July 2022, if appropriate.	Current program reviewed and updated, as appropriate.	
			Engineering Division	Refer construction activity within Springfield's jurisdiction that requires 1200C permits, to the Oregon DEQ.	Ongoing throughout the cycle.	Tracking of 1200C permit referrals.	Added	
		M2 - Enhance Post Construction Support	Task 1 - Continue Water Resources staff participation in the City's development plan review process.	Engineering Division Water Resources Division	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
				Engineering Division Water Resources Division Community Development Division	Continue to provide assistance, as needed, in the review and update of design standards and or codes as they relate to water quality facilities and post-construction development requirements.	Ongoing throughout the cycle	Involvement in the review and updating of design standards and or codes as they relate to water quality facilities and post-construction development requirements	Added Ongoing
			Task 2 - Continue to implement a post-construction BMP inspection program to ensure maintenance of water quality facilities at private sites.	Water Resources Division	Review program, adaptively manage, update as needed.	By April 2022	Assessment/review of program; updated as appropriate.	
				Water Resources Division Engineering Division	Continue program implementation within resource limitations.	Ongoing throughout the cycle	Continue implementation of a Stormwater Facility Management Program.	Ongoing
	Urban street runoff	M3 - Street Sweeping, Catch Basin, and Pipe Cleaning Programs	Task 1 - Continued implementation of the current programs for street sweeping and catch basin and storm drainage pipe cleaning. Adaptive management of program practices and standards to enhance maintenance standards, as needed.	Operations Division	Continue implementation of street sweeping and storm system cleaning programs to reduce pollutants in the public ROW and drainage system(s).	Ongoing throughout the cycle	Ongoing tracking and reporting of street sweeping and storm system cleaning.	Added Ongoing
				Operations Division	Strive to inspect/clean at least 10% of City owned catch basins/inlets per year.	Starting July 2019	Strive to inspect/clean at least 10% of City owned catch basins/inlets per FY; track and report.	Added
				Operations Division Water Resources Division	Review existing sweeping, catch basin, and pipe cleaning program practices/standards and develop enhanced standards, as needed.	Review by July 2021 and update, as needed by January 2022.	Practices/standards reviewed and enhanced, as needed	

Table 5 - TMDL Implementation Tracking Matrix 2019 - 2024

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>	Division(s) Responsible and/or Lead	BENCHMARK <i>Intermediate indicators to measure progress</i>	TIMELINE	MEASURE <i>How we will track implementation & completion</i>	STATUS
	Hazardous waste control	M4 - Hazardous Waste Control	Task 1 - Identify sources of mercury pollution and which household products, electronics, appliances, etc... may contain mercury and determine what pollution prevention projects/programs are feasible to implement.	Water Resources Division	Review and update, as needed the mercury pollution source assessment; research sources of mercury and determine what pollution prevention projects/programs the City has resources to implement.	By April 2021 and by April 2023	Complete Mercury pollution source assessment updated.	
			Task 2 - Use household waste collection events to encourage proper disposal of items containing mercury.	Development and Public Work Department	Springfield will continue to participate in and support events involving hazardous waste..	Ongoing throughout the cycle	Participate in public collection events and promote Lane County Hazardous Waste Collection Center.	Ongoing
	Public Interaction	M5 – Public Outreach and Education	Continue to review, develop and distribute outreach and education materials to the public, as needed.	Water Resources Division	Continue to review, develop, and distribute educational materials.	Ongoing throughout the cycle	Material distribution will be ongoing throughout the plan cycle.	Ongoing
				Water Resources Division		By June 2020 and By June 2023	Twice during the cycle, educational material assessed.	

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. The Review Report 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 Springfield's TMDL Implementation Matrix Table 5. It will also include adaptive management measures taken or proposed to enhance Plan effectiveness annually.

The Review Report is a DEQ developed online form that 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 includes 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
- Outreach and education on temperature

Bacteria Control Measures

- Sanitary Sewer overflow prevention/cleanup practices
- Pet waste, transient camping, and targeted business discharge management
- Private onsite sanitary sewage system inventory, O&M outreach, and education
- Outreach and education on bacteria

Mercury Control Measures

- Review of existing construction erosion control programs
- Continued participation in the City's existing design review process for new development
- Enhanced efforts and review of maintenance standards for existing street sweeping and storm catch basin cleaning programs
- Outreach and education on mercury

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 MANAGEMENT PLAN

The Stormwater Management Plan (SWMP) was developed to provide policy and management guidance for activities affecting stormwater throughout the City of Springfield and its urban area. The SWMP was originally adopted by the Springfield City Council in 2004 and revised and re-adopted in 2010. The SWMP also includes a chapter that specifically address the City's NPDES MS4 Permit and the permit requirements. 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 pollution prevention and water quality.
- Public awareness and involvement in the City's stormwater management and

stewardship.

- Targeted capital improvements and maintenance programs to improve water quality.
- DEQ-required Municipal Separate Storm Sewer System (MS4) Permit elements.

Applicable SWMP Minimum Control Measures referenced below are found in the City's 2010 SWMP (see note below):

#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.

NOTE:

As of the drafting of this implementation plan, the City is still using the 2010 SWMP. An update of the SWMP is not expected to happen before the submittal and approval of this implementation plan; DEQ approval for this IP is expected to occur no later than July 1, 2019. Therefore the applicable SWMP Minimum Control Measures referenced above may change.

An updated SWMP is expected to continue to implement control measures as listed by the DEQ-required MS4 Permit elements. If directed by the DEQ, the City will update this TMDL IP to include the applicable SWMP Minimum Control Measures as noted above.

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 (1200C) 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 riparian 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 waste program enhancement	X	X	X
	Wildlife 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	
	Street sweeping/catch basin Maintenance	X	X	
	Hazardous waste control	X	X	
	Public education and outreach	X	X	X