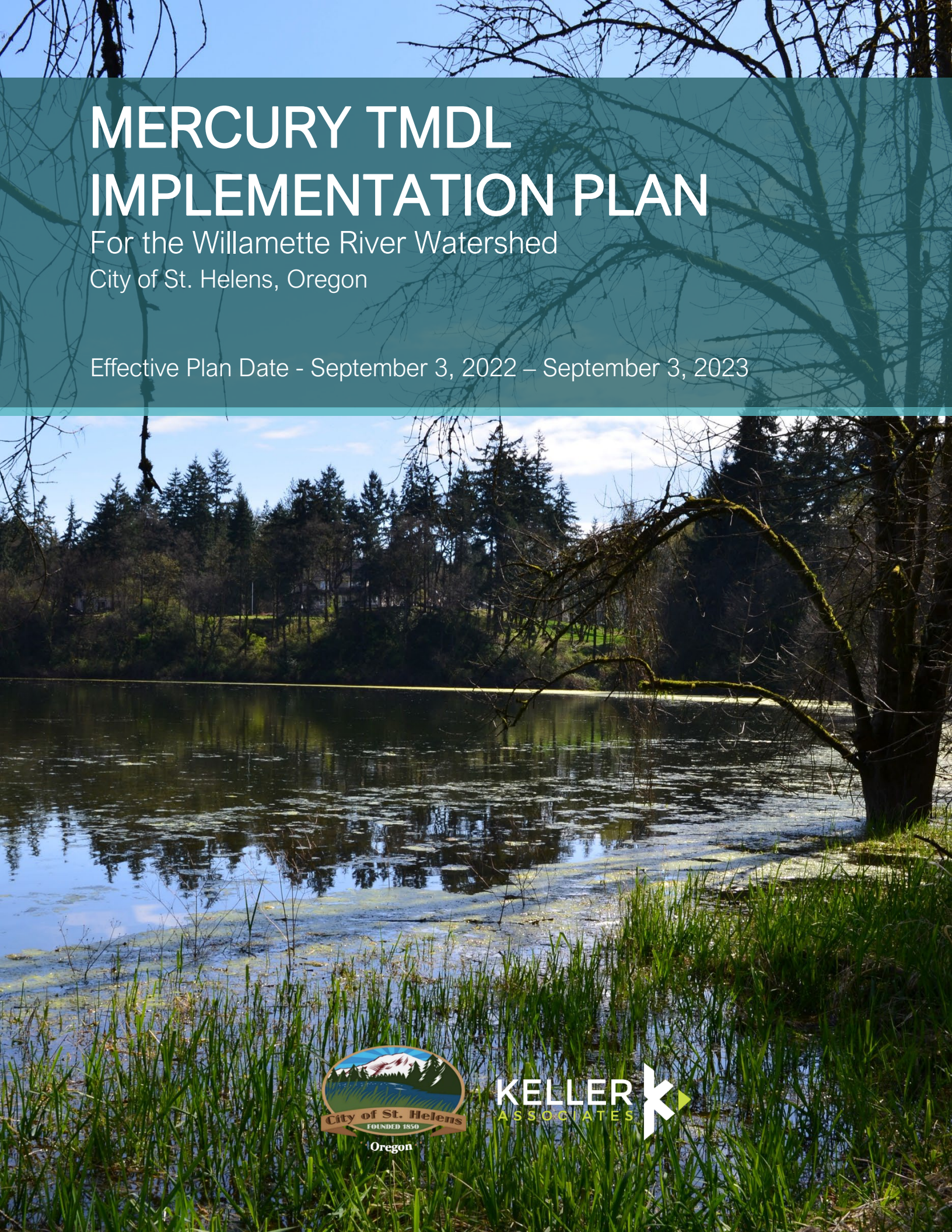
MERCURY TMDL IMPLEMENTATION PLAN

For the Willamette River Watershed

City of St. Helens, Oregon

Effective Plan Date - September 3, 2022 – September 3, 2023



City of St. Helens
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SECTION 1: **INTRODUCTION**

1.1 Background and Overview of TMDL Requirement

In 1972 the U.S. Environmental Protection Agency (EPA) was authorized by the Clean Water Act (CWA) to "restore and maintain the physical, chemical, and biological integrity of all waters of the nation". Following the authorization, the EPA designated state agencies to develop water quality standards, perform water quality monitoring to order to understand current conditions, determine sources of pollution, and to develop Total Maximum Daily Loads (TMDLs) as a tool to improve water quality and restore the beneficial uses of surface waters. The state agency tasked with this responsibility is Oregon Department of Environmental Quality (DEQ).

The Clean Water Act requires a Total Maximum Daily Load to be developed for water bodies that are found to not meet water quality standards. These waters are placed on the 303(d) list. The 303(d) list is the list of the state's impaired and threatened waters.

A TMDL is a regulatory mechanism under the Clean Water Act that serves as a plan for restoring impaired or polluted waters. It identifies the maximum amount of a specific pollutant that a body of water can receive while still meeting water quality standards. A TMDL Implementation Plan is a written plan which outlines specific management strategies and actions that will be implemented in order to meet water quality standards over time, including management goals, projects, partners, priorities, schedule and findings along with tracking, monitoring and reevaluation processes.

The TMDL allocates pollutant loadings among point and non–point sources, background levels, reserves for future growth, and a margin of safety, and is utilized for implementing the additional controls needed to restore and maintain the quality of water resources. Point sources are those sources which enter surface waters through a pipe or a conveyance system such as from a municipal stormwater. Nonpoint sources are those sources which enter surface waters through diffused and dispersed overland flow such as surface runoff.

In Oregon, DEQ is responsible for developing and implementing TMDLs, including assessing data, compiling the 303(d) list, and submitting the 303(d) list to the EPA for federal approval. In 1998, Oregon DEQ began the work of identifying the waterbodies in the Willamette Basin which were impaired due to elevated levels of mercury in fish tissue, and in 2006 developed first the Total Maximum Daily Load for mercury in the Willamette Basin Water Quality Management Plan (WQMP).

The amount of pollutant that a waterbody can receive and still meet the applicable water quality standard is referred to as the "loading" or "assimilative capacity" of the waterbody, and it is calculated as part of the TMDL. Loading from all pollutant sources must not exceed the loading or assimilative capacity (also referred to as the TMDL) of a waterbody and must include an appropriate margin of safety. DEQ performed water quality monitoring and modeling to establish loading capacity and the current pollutant load for the Willamette Basin TMDL and determine the percent pollutant reductions that need to be met to bring water bodies into compliance with water quality standards.

The September 2006 Willamette Basin TMDL issued by DEQ issued covered nine of the twelve subbasins within the Willamette River Basin and required the responsible Designated Management Agencies (DMAs) to develop TMDL Implementation Plans describing the management strategies they will implement and strategies they will use monitor and mitigate excess loading of TMDL pollutants.

In November 2019, a new TMDL replaced the mercury requirements established in 2006 Willamette Basin Water Quality Management Plan. The EPA disapproved DEQ's TMDL update and subsequently developed its own TMDL, which was finalized in February 2021. The City of St. Helens was not a DMA in the 2006 WQMP, but is one of several cities designated as new DMAs in the updated WQMP. The Willamette Basin TMDL covers all perennial and intermittent streams in the Willamette Basin.

1.2 St. Helens and the Lower Willamette Subbasin

The Willamette River discharges an average of 22.73 million acre-feet to the Columbia River annually. The mainstem of the Willamette River includes flow from 12 major tributaries referred to as the Willamette Basin. These tributaries are the Middle Fork Willamette River, the Coast Fork Willamette River, the Upper Willamette River, the McKenzie River, the North Santiam River, the South Santiam River, the Middle Willamette River, Yamhill River, Molalla-Pudding River, Tualatin River, Clackamas River, and the Lower Willamette River.

The Lower Willamette Subbasin is the northernmost portion of the Willamette Basin and is drained by the Willamette River, the Multnomah Channel, and tributaries. The 408 square mile subbasin extends from the Sandy and Clackamas subbasins in Cascade foothills on the east, across the Willamette River to the Tualatin divide on the west, north to St. Helens and south to Willamette Falls at River Mile 26.6.

St. Helens falls within the northernmost boundary of the Lower Willamette Subbasin, and both Milton Creek and McNulty Creek in St. Helens are considered major tributaries to the Lower Willamette River subbasin and are listed on the Oregon 303(d) list for mercury.

The St. Helens Mercury TMDL Implement Plan covers,

- Mercury pollutant concerns in impaired waters under the jurisdiction of the City of St. Helens
- The City's role as a DMA for the Willamette Basin
- Impacted water bodies under St. Helens jurisdiction
- Management strategies that will be implemented by the City to address the mercury TMDL pollutant
- Relevant goals and targets of the TMDL Implementation Plan
- TMDL implementation monitoring and reporting
- Goals and targets of the plan
- Funding sources and strategies for the TMDL Implementation Plan,
- Legal authority and compliance with land use requirements.

The TMDL Implementation Plan also provides a comprehensive TMDL Implementation Plan Management Strategy Matrix, List of figures and tables, List of abbreviations and definitions, and a list of references used to develop the plan.

SECTION 2: **DMA RESPONSIBILITIES**

2.1 St. Helens Designated Management Agency Responsibility

The City of St. Helens is a new DMA for the Willamette Basin Water Quality Management Plan. As a DMA, the City has legal authority over the impaired surface waters contributing pollutants and is identified as such in the TMDL and in its jurisdiction and is responsible for water quality within its jurisdiction and is required to submit a TMDL Implementation Plan to the DEQ under Oregon Administrative Rule 340-042-0080. The St. Helens Mercury TMDL Implementation Plan identifies management strategies that the City of St. Helens will use to reduce mercury pollutant from nonpoint sources to restore and protect water quality in local waterways and the Willamette River.

DEQ's WQMP requires cities with a population of 5,000 people or greater to implement stormwater control measures for the Willamette Basin. The jurisdictional limits of the St. Helens DMA and local waterways are illustrated below in Figure 1. Within jurisdictional limits, the City of St. Helens will implement, monitor, and report feasible stormwater measures to reduce the potential for mercury to enter streams.

FIGURE 1 | JURISDICTIONAL LIMITS OF THE ST. HELENS DMA AND LOCAL WATERWAYS

The City's Public Works Engineering Division is responsible for coordinating and implementing the stormwater program and meeting the regulatory requirements of the TMDL. The Public Works Operations Division will implement street and stormwater program activities. The Engineering Division and the Planning Division will work closely together to ensure that development code and policies are updated to meet regulation. The Engineering Division will also work closely with

the Finance Department to ensure funding sources for the implementation of the TMDL plan. Figure 2 identifies the City's overall organizational structure, and Figure 3 outlines the divisions which will play key roles in the management and administration of the TMDL Plan.

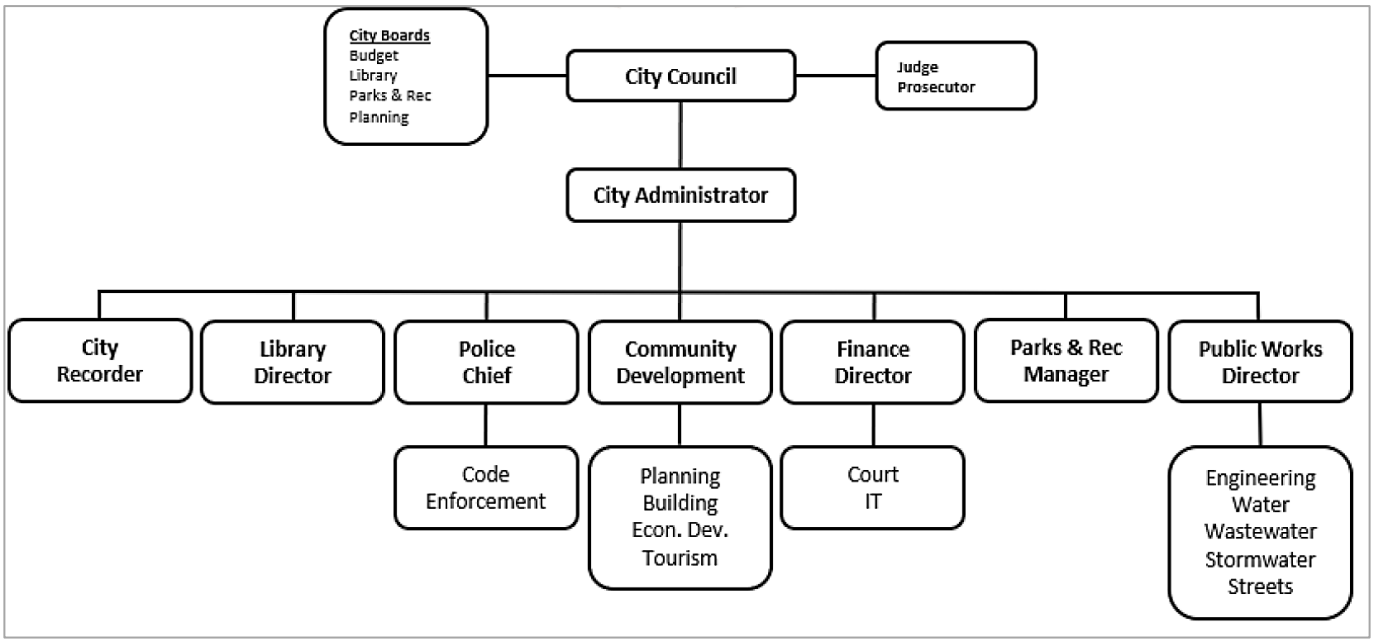

FIGURE 2 | CITY OF ST. HELENS ORGANIZATIONAL STRUCTURE

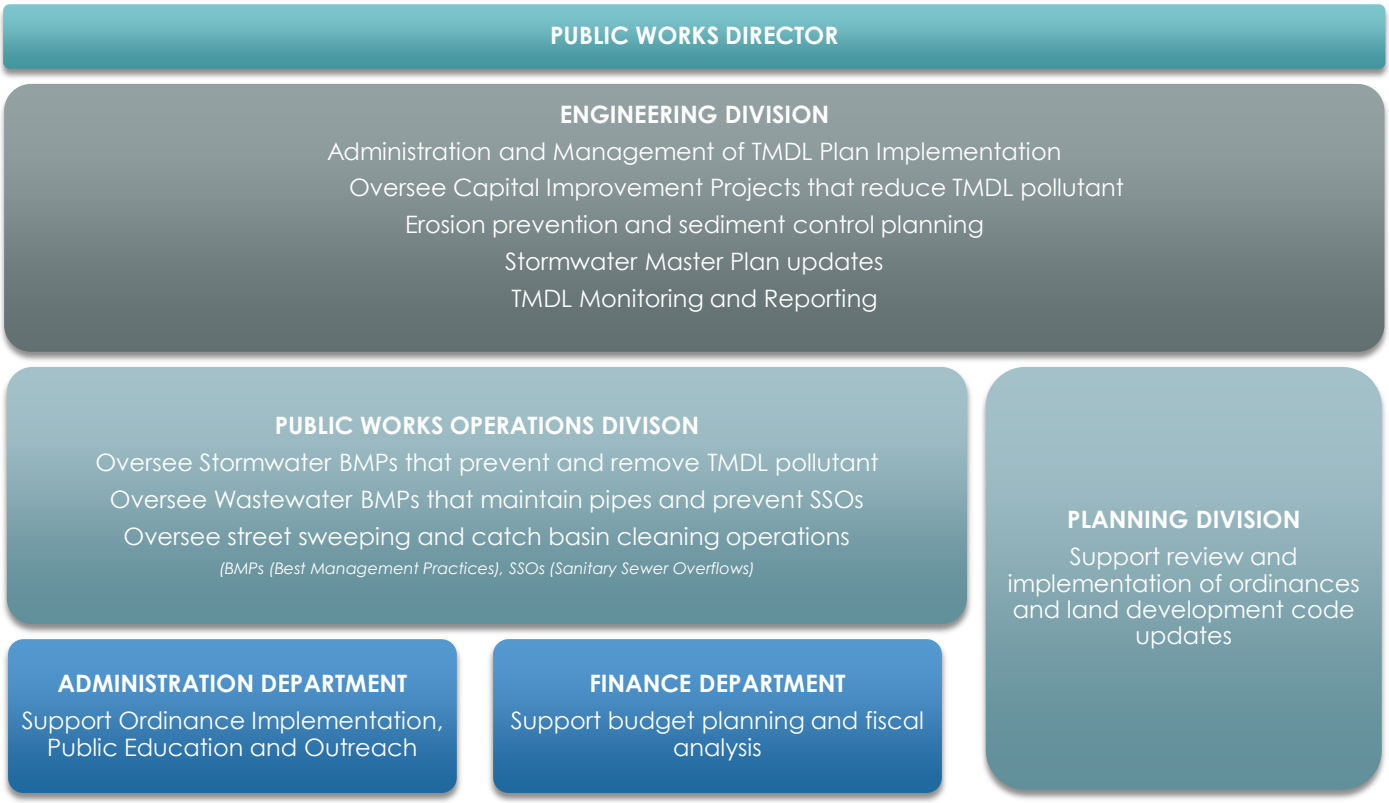

FIGURE 3 | CITY OF ST. HELENS TMDL RESPONSIBILITY STRUCTURE

SECTION 3: **IMPACTED WATER BODIES**

3.1 TMDL Pollutant of Concern: Mercury

The objective of reducing mercury in the waters of the Willamette Basin is to prevent risks to public health. High mercury levels in the Willamette Basin have resulted in fish consumption advisories. To protect public health the Department of Human Services (DHS) has issued advisories recommending that people limit the number of fish they consume from certain waterways. The DHS specifically advises against consuming large amounts of fish from the Willamette River due to the high levels of mercury.

Water quality standards are in place to protect people from high levels of mercury exposure when eating fish, and the Willamette River and many of its tributaries do not currently meet water quality standards for mercury and are included on Oregon's list of impaired waters under Clean Water Act §303(d). The TMDL for mercury is designed to restore the beneficial use of fishing to the Willamette River and its tributaries.

Mercury can be transported in the air and deposited by rainfall or from automobile or industrial emissions. Specifically for St. Helens, nonpoint sources include stormwater runoff which may suspend mercury molecules and carry them to waterways. Stormwater can carry polluted runoff from streets, rooftops, parking lots, industrial facilities, and construction sites into waterbodies. This runoff can contain not only the mercury pollutant, but also metals, pesticides, PCBs (Polychlorinated biphenyls), and PAHs (Polycyclic Aromatic Hydrocarbons) that can harm fish and other aquatic life. Studies show that large metropolitan areas, rapidly developing urban areas, and high-traffic roadways can be significant sources of these pollutants. Mercury is naturally occurring at low levels, but when native soil erodes at an accelerated rate mercury particles can be released in abnormal amounts. The erosion and transport of soil to Willamette Basin streams are controllable and these pathways are addressed in the TMDL and WQMP. The TMDL water column target for the Lower Willamette Basin to meet a fish tissue methylmercury criterion of 0.040 mg/kg is 1.23 ng/L.

3.2 Impacted Water Bodies

The City of St. Helens lies along the banks of the Columbia River approximately 55 miles due east from the Pacific Ocean. Topography generally slopes downward to the east, towards the Columbia River. The Columbia River, the Multnomah Channel, Jackass Canyon, Milton Creek, McNulty Creek, the Frogmore Slough, and two unnamed creeks flow through the City of St. Helens. Jackass Canyon is 303(d) listed for sedimentation and has a TMDL for temperature. McNulty Creek is 303(d) listed for biological criteria. The lower Columbia River is 303(d) listed for arsenic, DDE (Dichlorodiphenyldichloroethylene), fecal coliforms, and PCBs, and has a TMDL for dioxins and temperature. This TMDL Implementation Plan will address St. Helens tributaries which may have mercury impacts on the Willamette Basin.

Tributaries Milton Creek and McNulty Creek flow into the Willamette River. Milton Creek flows through the southern end of St. Helens and enters the waters of Scappoose Bay as the bay merges into the Multnomah Channel. The Milton Creek watershed is approximately 21,561 acres and is 60 stream miles in length. The entire Milton Creek watershed subbasin is composed 11% developed, 7% crops/pasture, 48% forest, 33% shrub/herb, and 1% wetland land cover. The McNulty Creek watershed is 7,696 acres, is 20 stream miles in length and lies south of Milton Creek. McNulty Creek also flows into the waters of Scappoose Bay.

The City also has jurisdiction over the portions of Multnomah Channel and Scappoose bay which border City limits.

FIGURE 4 | ST. HELENS WATER BODIES

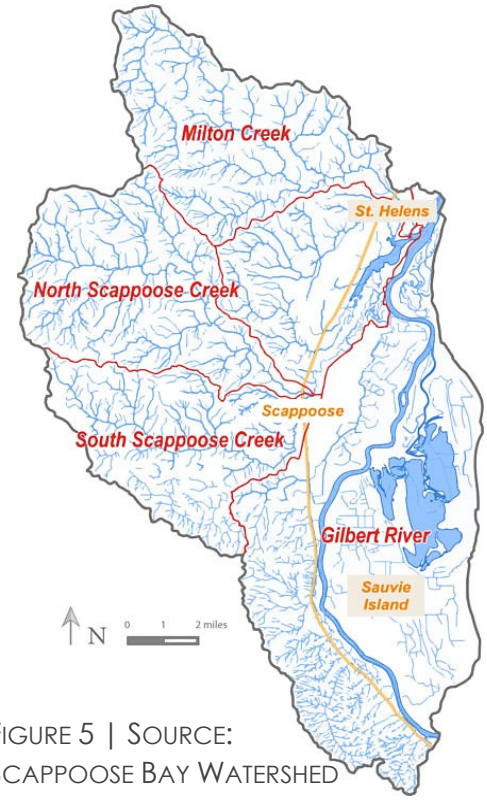

FIGURE 5 | SOURCE: SCAPPOOSE BAY WATERSHED COUNCIL SUB WATERSHEDS

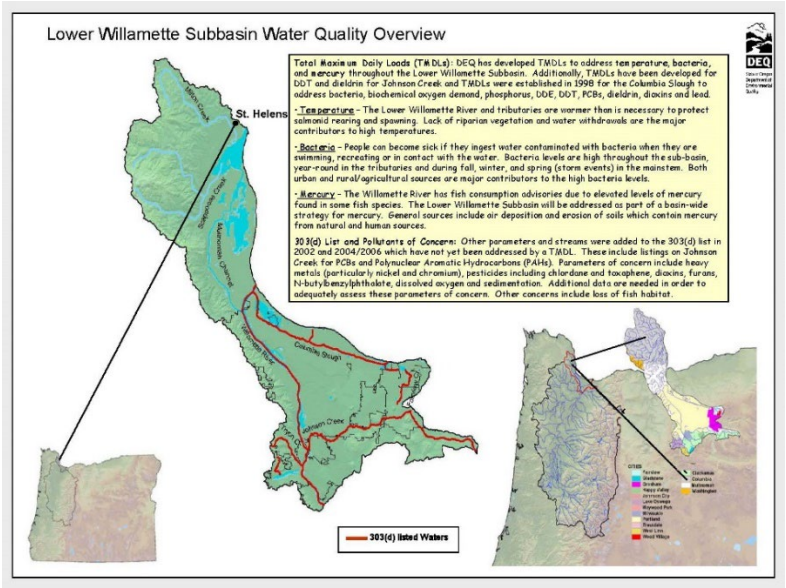

FIGURE 6 | SOURCE: DEQ LOWER WILLAMETTE SUBBASIN WATER QUALITY OVERVIEW

The City of St. Helens is in the Lower Willamette HUC8 basin (HUC8 17090012). The median water column concentrations and percent reductions needed to achieve the TMDL target in the HUC8 subbasin are shown in Table 1. The percent reductions are applied to the at-source mercury loads to calculate the daily loading capacity for the subbasin. Loading capacity is the

amount of a pollutant or pollutants that a waterbody can receive and still meet water quality standards (40CFR 130.2(f)).

HUC8 / Waterbody	Median THg Concentration (ng/l)	Required Percent Reduction	At Source THg Load (g/day)	THg Loading Capacity (g/day)
17090012	1.23	89%	6.02	0.68

Source: Total Maximum Daily Load (TMDL) for Mercury in the Willamette Basin, Oregon – United States Environmental Protection Agency (EPA) Region 10 (Table 1, Page 6, 2021)

TABLE 1 | TOTAL MERCURY REDUCTIONS AND ESTIMATED LOADING CAPACITY FOR ST. HELENS HUC8 SUBBASIN

The total HUC8 17090012 subbasin mercury loading capacity of 0.68 grams per day is divided into several different mercury allocation categories. The total mercury allocations and percent reductions by source category are presented in Table 2.

Category	HUC8 17090012	
	Allocated At-Source Loads (g/day)	Percent Reductions in At-Source Loads for Land Managers EPA 2019 Allocated Reduction
Agriculture, forest, shrub, developed, other[1] (runoff and sediment)	0.07	97%
Non-Permitted Urban Stormwater	< 0.01	75%
NPDES Permitted POTW Wastewater Discharges	0.23	65%

Source: Oregon DEQ Final Revised Willamette Basin Mercury Total Maximum Daily Load (2019) and Allocation Summary - U.S. EPA Total Maximum Daily Load (TMDL) for Mercury in the Willamette Basin, Oregon (Pages 12-13, 2021)

TABLE 2 | TOTAL MERCURY ALLOCATIONS FOR ST. HELENS HUC8 SUBBASIN

DEQ intends to use Total Suspended Solids (TSS) as a surrogate for total mercury in the water column. The TSS surrogate targets will be used for reducing total mercury instream and as one tool for evaluating progress towards achieving allocations and the total mercury TMDL water column target. In addition, because TSS is a cost-effective surrogate it will be used to supplement but not supplant the allocations and TMDL water column target for evaluating TMDL implementation effectiveness. The TSS surrogate targets, found in Table 3, apply to the mainstem Willamette and HUC8 outlets.

Years from 2019	Reduction in 95th Percentile of TSS	Cumulative total reduction in TSS Concentration (mg/L)	Target for Maximum Instream TSS (mg/L)
0	0%	0	17
5	10%	1.7	15
10	25%	4.3	13
20	50%	8.5	9
30	75%	12.7	4

Source: Oregon DEQ Final Revised Willamette Basin Mercury Total Maximum Daily Load (2019, Table 10-2, Page 64-221)

TABLE 3 | INSTREAM MAINSTEM WILLAMETTE AND HUC 8 OUTLETS SURROGATE TARGETS FOR REDUCING HIGH TOTAL SUSPENDED SOLID CONCENTRATIONS DURING TIMES OF HIGH PRECIPITATION EVENTS AND HIGH FLOWS

SECTION 4: **SIX STORMWATER MEASURES**

4.1 Six Measures Reduce Stormwater Impacts to Waterbodies

DEQ cannot quantitatively determine the amount of mercury in stormwater discharges of non-MS4 permitted cities such as the City of St. Helens. In the absence of this data, DEQ is requiring non-MS4 permitted cities with a population of 5,000 people or greater to implement the stormwater control measures shown in figure below to achieve needed nonpoint source reductions in mercury and sediment. If the City of St. Helens is later identified by DEQ as needing coverage under an MS4 permit, the MS4 permit requirements will supersede the stormwater control requirements below within the permit coverage area.

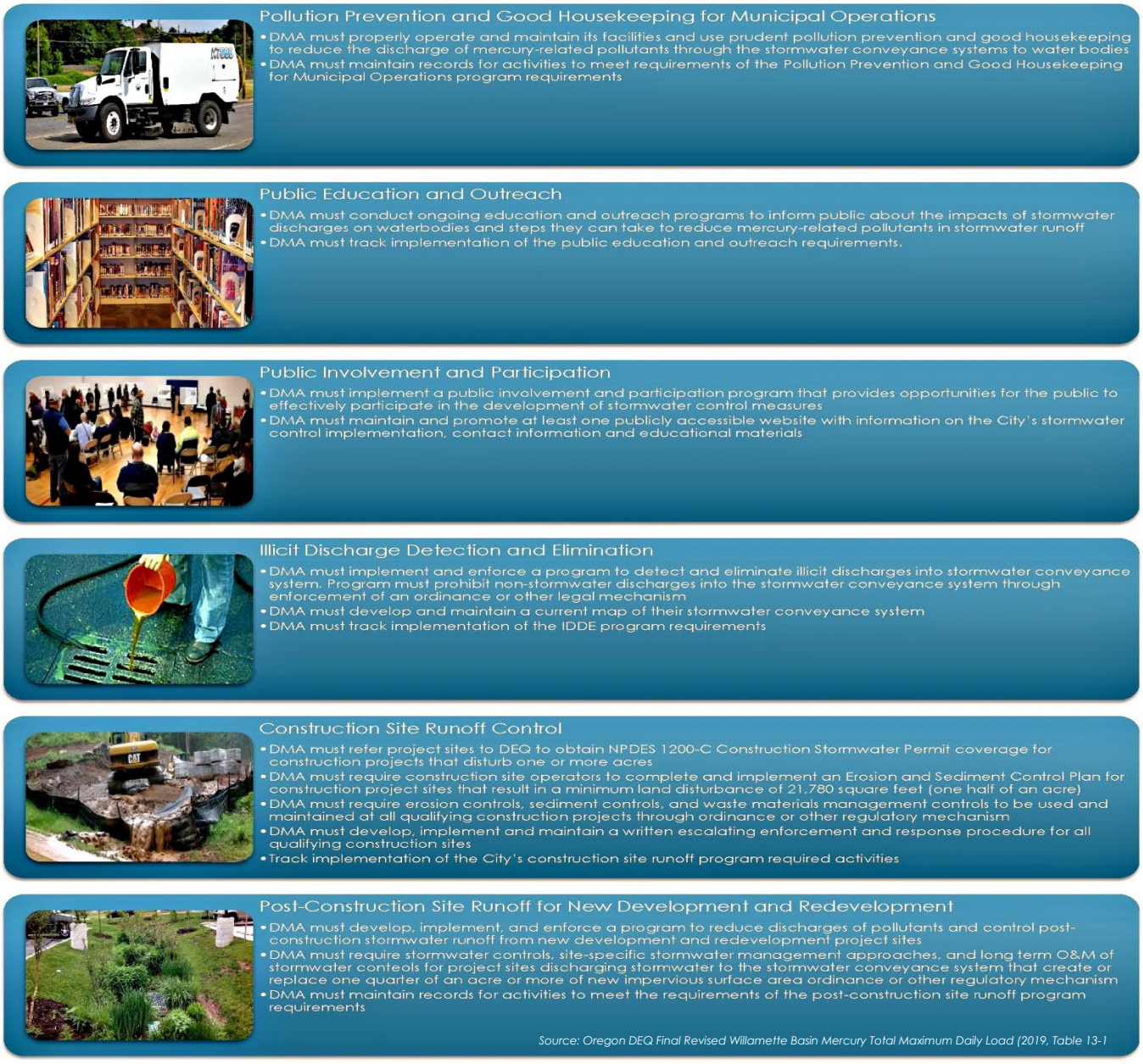

FIGURE 7 | MINIMUM SIX MEASURES TO REDUCE STORMWATER IMPACTS TO WATERBODIES

SECTION 5: **MANAGEMENT STRATEGIES**

5.1 Management Strategy

The City anticipates using management strategies to reduce the TMDL pollutant from nonpoint sources in the Willamette Basin and expects to begin implementing these strategies by September 3, 2022.

These strategies are designed to restore and protect water quality in local waterways and the Willamette River. The TMDL Implementation Plan Management Strategy Matrix in Appendix A identifies the City's key management strategies to reduce TMDL pollutants and improve water quality.

The Oregon Administrative Rule (OAR) 340-042-0080 serves as the overall management strategy guide for TMDLs and requires agencies classified as DMAs to:

1. Identify the management strategies that will be used to achieve load allocations and reduce pollutant loading.
2. Provide a timeline for implementing management strategies and a schedule for completing measurable milestones.
3. Provide for performance monitoring with a plan for periodic review and revision of the implementation plan.
4. Provide evidence of compliance with applicable statewide land use requirements, and
5. Provide any other analyses or information specified in the WQMP.

5.2 Pollution Prevention and Good Housekeeping Strategy

The City's pollution prevention and good housekeeping strategy of its municipal operations will be to develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the stormwater system; to conduct employee training on how to incorporate pollution prevention and good housekeeping techniques into municipal operations such fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance; and to determine the appropriate best management practices (BMPs) to meet TMDL requirements for this minimum control measure as required by the WQMP minimum stormwater measurements. The City expects to begin implementing pollution prevention and good housekeeping strategies by September 3, 2022.

5.3 Public Education and Outreach Strategy

The public education and outreach strategies the City will pursue to promote the proper understanding of water quality issues and encourage correct behavior will be to use existing outlets to distribute information to targeted audiences, including the City's website, the City Hall building, the St. Helens Public Library, and information inserts with utility bills. Messages will aim to educate the public on the proper application and disposal of pesticides, herbicides, and other toxic chemicals; the selection and use of erosion and sediment control best management practices (BMPs). The City expects to begin implementing public education and outreach strategies by September 3, 2022.

5.4 Public Involvement and Participation Strategy

The City will conduct public involvement and encourage public participation as required by DEQ for the Mercury TMDL Implementation Plan. This will include maintaining a publicly accessible webpage with stormwater information, ensuring the City's TMDL Implementation Plan available via its website, and posting notices to the public via print and online internal and external media channels such as the newspaper and the City newsletter. The City expects to begin implementing public involvement and participation strategies by September 3, 2022.

5.5 Illicit Discharge Detection and Elimination Strategy

The City will create an Illicit Discharge Detection and Elimination (IDDE) program to manage, detect and address illicit discharges to stormwater conveyance systems by establishing the legal authority to eliminate illicit discharges by adapting an existing ordinances or adopting new ones, develop a tracking system to map outfalls and document reported illicit discharges, and educate City employees and the public to prevent discharges. The IDDE program will include appropriate enforcement procedures and actions to ensure compliance. The City expects to begin implementing Illicit Discharge Detection and Elimination (IDDE) strategies by March 3, 2024.

5.6 Construction Site Runoff Control Strategy

Federal regulations require construction sites that disturb one acre or more to obtain NPDES permit coverage for their stormwater that discharges either directly to waterbodies or through a storm drain conveyance system. The City will develop procedures for site inspection and enforcement of control measures, develop procedures for site plan review of construction plans

that consider potential water quality impacts, expand existing ordinances to require the implementation of proper erosion and sediment controls, and controls for other wastes, on applicable construction sites, and impose sanctions to ensure compliance. The City will require sediment and erosion control plans of new and re-development projects. Construction activities such as clearing, grading, excavation, and materials or equipment staging, and stockpiling will be included in construction site runoff control. The Construction Site Runoff program will include appropriate enforcement procedures and actions to ensure compliance. The City expects to begin implementing construction site runoff control strategies no later than September 3, 2025.

5.7 Post-Construction Site Runoff Control Strategy

The City will develop, implement, and enforce a program to reduce discharges of pollutants and control post-construction stormwater runoff from new development and redevelopment project sites in its jurisdictional area by ensuring that the new development code contains provisions for erosion control mechanisms in new developments, redevelopment, and site greater than 1/4 acre. Some of these measures may include minimization of disturbance and imperviousness, and maximization of open space, stormwater retention/detention BMPs that control stormwater by gathering runoff in wet ponds, dry basins, or multi-chamber catch basins and slowly releasing it to receiving waters or drainage systems in an effort to control stormwater volume and settle out particulates for pollutant removal, the use of infiltration basins/trenches, dry wells, and porous pavement, grassy swales, filter strips, artificial wetlands, and rain gardens. The City expects to begin implementing post-construction site runoff control strategies no later than September 3, 2025.

SECTION 6: **MONITORING AND REPORTING**

6.1 Measuring and Monitoring Progress

The City is required to monitor for program compliance. It will do this by conducting two types of monitoring: implementation monitoring and effectiveness monitoring. Implementation monitoring relates to the tracking of BMP implementation and evaluating whether BMP measurable goals and tracking measures are met. Effectiveness monitoring relates to the measure of progress of BMP implementation. Monitoring the success and effectiveness of the strategies includes monitoring data, photo documentation, volume of sediment captured, and percent survival of planted vegetation.

The City recognizes that progress towards lowering mercury pollutant load will be best measured by tracking accomplishments towards implementing the strategies identified in this Implementation Plan.

Godfrey Park Ravine

6.2 Implementation Monitoring

The mechanism for tracking the St. Helens implementation efforts will be annual reports submitted to the DEQ. These reports will contain the implementation matrix with information on the progress of each stormwater quality measure.

Implementation monitoring strategies will include maintaining records for activities to meet the requirements of the Pollution Prevention and Good Housekeeping for Municipal Operations program requirements, tracking the implementation of the public education and outreach requirements, maintaining a system of documenting complaints and reports of illicit discharges into the stormwater conveyance systems under City jurisdiction, tracking the implementation of the required activities for construction site runoff, and maintaining records of activities to meet the requirements of the post-construction site runoff program requirements.

6.3 Effectiveness Monitoring

The City will evaluate the TMDL Implementation Plan every five years following submittal of the plan. The evaluation will include a review of existing water quality data (not collected by St. Helens) and other information to evaluate the effectiveness of the Plan relative to the pollution reduction goals. The report will describe what information was used in the evaluation, findings of the evaluation, and the basis for this reasoning. If the evaluation indicates that the Plan is not

likely to be adequate to meet the pollution reduction goals, the City will describe how the City will modify the Plan or undertake other efforts to achieve these goals, and the timeline for accomplishing this.

Effective monitoring strategies will include identifying recommendations or activities that worked, which activities achieved the most success, and evaluating how much more effort is required to achieve success.

Because DEQ anticipates keeping cities reporting cycles consistent with past TMDLs, the City of St. Helens next TMDL Implementation Plan review will occur in September 2023.

6.4 Reporting, Review, and Adaptive Management

Cities that have been named DMAs in the Willamette Basin WQMP have annual reporting requirements. The St. Helens DMA will report on annual progress in implementing nonpoint source strategies identified in the TMDL Implementation Matrix, including any delays or challenges faced in implementing strategies. Activities on the Implementation Matrix will be continuously tracked throughout the reporting period. Annual reports will be posted on the City of St. Helens website.

In the five-year reviews, the St. Helens DMA will address progress in implementing mercury reduction strategies. The details of this submittal will be provided by DEQ to DMAs or responsible persons in advance of the deadline for these reports. In each TMDL Annual Report, the City will assess progress toward implementation of the program, including a qualitative evaluation of at least one education and outreach activity corresponding to the reporting timeframe for the associated TMDL Annual Report. The evaluation will be used to guide future stormwater education and outreach efforts. During the five-year review, the St. Helens DMA will review the Implementation Plan in collaboration with DEQ staff to evaluate whether strategies, timelines, milestones, or other components of the Plan should be updated for the next five years, in general, however, the City anticipates that the TMDL Implementation Plan Matrix will need to be updated every five years.

The St. Helens DMA may also update Implementation Plans more often than every five years due to significant changes in TMDL pollutant reduction strategies or program priorities.

Adaptive management is a central element of TMDL Implementation Plans. As part of adaptive management, DEQ intends to regularly review the progress of Implementation Plans. Through this ongoing monitoring and evaluation, DMAs can re-evaluate the TMDL Implementation Plan and modify policy and approaches to achieve better environmental outcomes.

The City expects to submit annual reports to DEQ by the next TMDL review cycle in September 2023.

6.5 Timeline and Schedule

A timeline for specific pollutant reduction strategies is included in the Implementation Matrix. The timeline for implementing each of the six stormwater control measures, as identified in the WQMP, is as follows:

Stormwater Control Measure		Implementation
1.	Pollution Prevention and Good Housekeeping for Municipal Operations	September 3, 2022
2.	Public Education and Outreach	September 3, 2022
3.	Public Involvement and Participation	September 3, 2022
4.	Illicit Discharge Detection and Elimination	March 3, 2024
5.	Construction Site Runoff Control	September 3, 2025
6.	Post Construction Site Runoff for New Development and Redevelopment	September 3, 2025

TABLE 4 | STORMWATER CONTROL MEASURES AND IMPLEMENTATION DATES

SECTION 7: **GOALS AND TARGETS**

The City will develop measurable objectives associated with the TMDL requirements in order to track progress over time, including evaluating the six minimum stormwater control measures and identifying the strategies and actions in TMDL implementation plan that can be implemented to reduce mercury.

The objective of St. Helens Mercury TMDL Implementation Plan is to fulfill all requirements designated in the Oregon State TMDL Rule 340-042-0080 and the final revised Willamette Basin Mercury TMDL and WQMP. The St. Helens TMDL Implementation Plan is for managing stormwater discharges from the stormwater conveyance system as well as overland flow to reduce mercury and sediment in stormwater runoff. Goals for achieving these requirements include,

- Identifying management strategies which will be used to achieve load allocation and reduce pollutant loading
- Providing deadlines for implementing the management strategies
- Providing interim steps or milestones that the City will complete prior to achieving full implementation
- Providing a plan for performance monitoring, periodic review, and revisions
- Providing evidence of compliance with applicable statewide land use requirements
- and providing other elements as specified in the WQMP

SECTION 8: **FUNDING SOURCES**

DMAs of the Willamette Basin TMDLs are expected to perform a fiscal analysis to estimate the resources needed to develop, execute, and maintain the programs described in their implementation plans.

The implementation of the strategies identified in this Plan are critical to the overall success of the Plan and the eventual reduction of pollutants under the City of St. Helens jurisdiction. Some strategies are easy to implement, such as adding information about stormwater onto the website, and most of the strategies can be integrated into the workloads of existing staff using City of St. Helens general fund. However, some strategies are larger in scope and will likely require additional outside funding and will be dependent on finding grants and/or allocating larger amounts from future general fund budgets. Therefore, a fiscal analysis is required to identify resources necessary to develop, implement, and maintain the plan components identified in the report.

Because of the absence of resources available for additional programs and practices, many plan elements have been selected on the basis of their minimal financial impact to the City. Items such as street sweeping and catch basin cleaning are tasks that are already budgeted for and can be further financed through the existing St. Helens public works operations staff and budget. Other tasks which require the development of programs, or the increase training of staff will be analyzed for their financial impact to determine if the costs can be absorbed in the current City budget or will require additional external funds. Some potential funding sources are the Clean Water State Revolving Fund, a loan program for below-market rate loans for planning, design, and construction of various water pollution control activities; or the Drinking Water Source Protection Fund, also a loan program which provides funds for certain source water assessment implementation activities, including source water protection land acquisition and other types of incentive-based source water quality protection measures.

To fully implement the TMDL's mercury control strategy, the City will identify a funding source(s) for full implementation in keeping with the DEQ's deadlines for implementation.

SECTION 9: **LEGAL AUTHORITY**

The City of St. Helens legal authority to implement TMDL management strategies as provided by relevant Oregon State Constitution sections, Oregon state statutes, and City of St. Helens charter and code.

New code sections on nonpoint source protection such as "strategies to reduce runoff and erosion directly to waterbodies" which could also address potential future projects to enhance riparian areas through native planting, reducing sediment inputs from improperly placed or designed culverts in streams will be reviewed as part of the TMDL implementation.

Specific City Code sections and authorities relevant to TMDL implementation are listed below,

Reference	Code Title
13.20	Storm Water Utility
18.16	Storm Drainage
13.14	General Sewer Use And Industrial Pretreatment Regulations
17.40	Protective Measures For Significant Wetlands, Riparian Corridors, And Protection Zones
17.152	Street And Utility Improvement Standards
18.08	General Design Requirements For Public Improvements
17.46	Floodplains And Floodways

TABLE 5 | CITY CODE RELEVANT TO TMDL IMPLEMENTATION AND ENFORCEMENT

9.1 Current Measures That Protect Against Direct Discharge From Nonpoint Sources

The St. Helens Municipal Code limits activities and uses within the protection zones and protects nonpoint sources of sediment and Hg from direct discharges into streams, rather than through the stormwater conveyance system.

- ☐ 17.40.025 (1) All significant wetlands, significant riparian corridors and protection zones shall be protected from alteration or development activities, except as specifically provided herein. 17.40.040(1) Protection Zone Reduction (Up to 50 Percent for Undeveloped Properties). The protection zone may be reduced by the approval authority up to 50 percent where equal or better protection for identified resources will be ensured through restoration, enhancement and similar measures…(d)proposed development shall minimize disturbance to the protection zone by utilizing design options to minimize or reduce impacts of development.

- ☐ 18.16.120 General concepts and principles. As an area is developed, impervious area and surface runoff increase. This runoff collects and transports pollutants to downstream receiving waters. Pollutants of concern include: (1) Suspended solids (sediment)., (2) Heavy metals such as lead, copper, zinc, and cadmium., (3) Nutrients such as nitrogen

and phosphorus., (4) Bacteria and viruses., and (5) Organics such as oil, grease, hydrocarbons, and pesticides. Pollution reduction facilities can greatly improve the quality of runoff collected and released to our waterways.

☐ 18.16.140 Pollution reduction facilities. (1) Constructed Wetlands. Constructed wetlands, like natural wetlands, remove pollutants through sedimentation, filtration, and biologic processes. Wetlands typically have shallower water depths than ponds. Wetlands also provide plant and animal habitat.

☐ 17.46 17.40.025 Floodplains And Floodways provides for "Restricting or prohibiting development which is dangerous to health, safety, and property due to water or erosion hazards, or which results in damaging increases in erosion or in flood heights or velocities", "Requiring that development vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction", and "Controlling filling, grading, dredging, and other development which may increase flood damage".

SECTION 10: **LAND USE REGULATIONS**

Oregon Administrative Rules (OAR) 340-042-0080(3) (a) (D) defines one of the required elements of a TMDL Implementation Plan to be evidence of compliance with applicable statewide land use requirements. Per the TMDL Implementation Plan Guidance Document, this consists of the following:

- Identification of applicable acknowledged local comprehensive plan provisions and land use regulations.

- Explanation of how the implementation plan is consistent with these local planning requirements or what steps will be taken to make the local planning requirements consistent with the implementation plan.

The City of St. Helens Comprehensive Plan can be found in Title 19 of the St. Helens Municipal Code. The Comprehensive Plan acknowledges and addresses all statewide land use planning goals. Municipal Code review and updates will include, but is not limited to, Title 19 and Title 18. The City's ongoing land use practices, permitting practices, and development code are consistent with the land use goals and the proposed management strategies in the Implementation Matrix. Furthermore, the proposed TMDL Implementation Plan is consistent with the City's Engineering Standards found in Title 18 of the St. Helens Municipal Code.

The City of St. Helens Municipal Code sections relevant to the TMDL Implementation Plan will be periodically reviewed by the Engineering and Planning Divisions and updated to ensure that it meets and continues to comply with Plan goals.

10.1 DLCD Land Use Planning Goals 5, 6, and 7

The Oregon Department of Land Conservation and Development has developed Statewide Land Use Planning Goals which provide guidelines to local comprehensive planning. Planning goals 5, 6, and 7 are appliable to the Mercury TMDL Implementation.

The City expects to begin implementing processes to meet Goals 5, 6, and 7 no later than September 3, 2025, by

(1) Creating an inventory of natural resource and significant sites to be protected.

(2) Performing a review to the Comprehensive Plan to address solid waste, water waste, noise and thermal pollution, air pollution, and industry-related contaminants and determine the appropriate pollution control measures.

(3) Addressing natural hazards, such as floods and earthquakes, with public education, and proper planning to ensure seismic resiliency is considered in new developments.

APPENDIX A: **TMDL IMPLEMENTATION PLAN MANAGEMENT STRATEGY MATRIX**

Milton Creek

The TMDL Implementation Matrix on the following pages detail the strategies that will be implemented within designated timelines of the plan. St. Helens strategies will be implemented by the deadlines of the WQMP, including identifying and securing funding as an interim step for the implementation of the management strategies. The matrix displays the pollutant being addressed, the strategy to address it, when that strategy will be implemented, and how to measure progress and successful implementation. This matrix will serve as a tracking tool for annual reporting to the DEQ.

ST. HELENS MERCURY TMDL IMPLEMENTATION PLAN MANAGEMENT STRATEGY MATRIX

POLLUTANT: *Mercury*			SOURCES: *Stormwater Runoff, Illicit Discharges & Spills, Construction and Post-Construction Site Runoff, and Erosion and Sediment*			
Source	Strategy	Action	Milestone	Measure	Implementation Deadline / Timeline	Fiscal Analysis
POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS						
City Street Runoff	Implement O&M activities to prevent or remove sediment and associated pollutants.	Implement an annual street sweeping program	Begin to develop the program that will be used to manage annual street sweeping program for all major City streets (arterials and collectors)	Track the miles of street swept.	9/3/2022, Annual	TBD
Stormwater O&M	Implement O&M activities to prevent or remove sediment and associated pollutants.	Implement an annual catch basin and stormwater system cleaning and maintenance program.	Begin an assessment of the catch basins and storm drains that will be incorporated into an annual stormwater O&M program	Database and map of the storm drain assets that will be a cleaned as part of the annual stormwater O&M program.	9/3/2022, Annual	TBD
City owned or operated facilities with industrial activity	Ensure that City owned or operated facilities with industrial activity are 1200-Z Permitted, if applicable.	Perform a review of City facilities with industrial activity as the first step to determining if they require permitting	Begin an assessment of City facilities to determine if they need permitting	Spreadsheet of City facilities, list of operations and activities which occur at each site. City currently owns the former BOISE Paper Mill Site which has a joint 1200-Z permit with the Wastewater Treatment Plant.	9/3/2022	TBD
Soil Erosion & Sediment	Decrease sedimentation and erosion from City staff operations.	Create training handout detailing the best industry standards on erosion and sedimentation control for all Public Works staff	Begin reviewing best industry standards on erosion and sedimentation control in preparation for developing training handout	One training handout on erosion and sedimentation control best practices Right-of-Way permit was revised in May 2022 to require erosion control measures in the public right-of-way and includes street cleaning and not washing sediment and materials into waterways or the public storm system.	9/3/2022, Annual	TBD
PUBLIC EDUCATION AND OUTREACH						
All Sources	Educate the public on the impacts of how stormwater discharges affect waterbodies and the steps they can take to reduce mercury-related pollutants in stormwater runoff	Create a public stormwater pollution prevention awareness brochure.	Begin reviewing and researching public educational materials on stormwater pollution prevention in preparation for developing brochure.	One brochure on stormwater pollution prevention made available to the public at City Hall and at the Public Library. In TMDL Annual Report include assessment of progress, including a qualitative evaluation of at least one education and outreach activity which can be used to inform future	9/3/2022, Annual	TBD

ST. HELENS MERCURY TMDL IMPLEMENTATION PLAN MANAGEMENT STRATEGY MATRIX

POLLUTANT: *Mercury*			SOURCES: *Stormwater Runoff, Illicit Discharges & Spills, Construction and Post-Construction Site Runoff, and Erosion and Sediment*			
Source	Strategy	Action	Milestone	Measure	Implementation Deadline / Timeline	Fiscal Analysis
				stormwater education and outreach efforts. City's recently updated stormwater master plan, which was made available for public comment before adoption, is on the City's website and includes catch basin and storm drain cleaning as part of the annual maintenance program.		
PUBLIC INVOLVEMENT AND PARTICIPATION						
All Sources	Provide for Public Participation on the City's draft Mercury TMDL Implementation Plan	Provide for public comment on the draft Mercury TMDL Implementation plan at publicly advertised City Council Meeting	Submit draft Mercury TMDL Implementation plan for City Council review and public comment by 9/2022	Draft Mercury TMDL Implementation made available for public comment at City Council	9/3/2022	TBD
ILLICIT DISCHARGE DETECTION AND ELIMINATION						
Hazardous Waste	Educate City staff and citizens about recycling and hazardous waste management	Promote public awareness of recycling and hazardous waste by developing and promoting a web page dedicated to educating City staff and citizens.	Create an illicit discharge detection and elimination web page by 3/2024	Illicit discharge detection and elimination web page promoting public awareness of recycling and hazardous waste	3/3/2024, Ongoing	TBD / Identify Funding Source
Stormwater Outfalls	Update City current stormwater conveyance system GIS maps with all outfall locations	Update the City's GIS maps with stormwater outfall locations and an create inventory of outfalls and stormwater control locations	Update GIS and stormwater system inventory by 3/2024	Updated storm system layers on GIS map and stormwater system inventory	3/3/2024 As needed	TBD
Illegal discharges and roadside dumping	Develop, implement, and enforce illicit discharge detection and elimination response program	Create an illicit discharge detection and elimination response program supported by updated City Code and ordinances with the appropriate enforcement procedures and actions to ensure compliance with program	Begin reviewing and researching the IDDE programs of other municipalities as a platform to create the City's new IDDE by 9/3/2023 Create an IDDE program webpage and incident reporting hotline by 3/2024 Identify funding source and begin the update to City Code and ordinances, with the appropriate enforcement procedures and actions to support the IDDE program by 3/2024	Draft IDDE program document IDDE program website and incident reporting hotline Funding source identified First draft of update to City Code and ordinances	3/3/2024 As needed and Ongoing	TBD / Identify Funding Source

ST. HELENS MERCURY TMDL IMPLEMENTATION PLAN MANAGEMENT STRATEGY MATRIX

POLLUTANT: *Mercury*			SOURCES: *Stormwater Runoff, Illicit Discharges & Spills, Construction and Post-Construction Site Runoff, and Erosion and Sediment*			
Source	Strategy	Action	Milestone	Measure	Implementation Deadline / Timeline	Fiscal Analysis
CONSTRUCTION SITE RUNOFF CONTROL						
Site Runoff	Provide Educational Information to Construction Site Operators	Provide site runoff documentation to contractors as part of Building or Public Improvement Permitting process Refer project sites that disturb over 1 acre to DEQ for 1200-C permit	Create Site Runoff educational material to provide to Developers and Contractors as part of the Public Improvements Permitting Process by 9/3/2025 Draft fact sheet/pamphlet to refer developers to for 1200-C permit information and make available on City website by 9/3/2025	Site runoff educational pamphlet Track and report the number of site runoff documentation provided to contractors Pamphlet referring sites to DEQ for 1200-C Stormwater Permit Track number of applicable projects and number of projects referred to pamphlet/DEQ	9/3/2025 Ongoing	TBD / Identify Funding Source
Soil Erosion & Sediment	Require Erosion and Sediment Control Plans for sites that disturb at least a ½-acre and are not covered by a 1200-C Permit Track implementation of construction site runoff program activities	Incorporate requirement for project sites that disturb ½ acre or more to complete and implement and Erosion and Sediment Control Plan as part of the Building or Public Improvement Permitting process Create a tracking system for construction site runoff program activities	Draft documentation which will require for project sites that disturb ½ acre or more to complete and implement and Erosion and Sediment Control Plan by 9/3/2025 Create tracking system by 9/3/2025	Construction Site Runoff Program Database	9/3/2025 Ongoing	TBD / Identify Funding Source
Erosion, Sediment, and Waste materials	Develop ordinance to require erosion controls, sediment controls, and waste materials management controls be used and maintained at all qualifying construction projects	Update City Code and ordinances, with the appropriate enforcement procedures and actions to require erosion controls, sediment controls, and waste materials management controls on qualifying sites	Identify funding source and update City Code and ordinances, with the appropriate enforcement procedures and actions for Erosion, Sediment, and Waste materials control by 9/3/2025	Funding source identified. Adopted City Code and ordinances, with the appropriate enforcement procedures and actions for Erosion, Sediment, and Waste materials control	9/3/2025 / As needed	TBD / Identity Funding Source
POST-CONSTRUCTION SITE RUNOFF FOR NEW DEVELOPMENT AND REDEVELOPMENT						
Stormwater Runoff, Erosion & Sediment	Implement a post-construction BMP inspection program to ensure maintenance of water quality facilities at private sites	Update City Code and ordinances, with the appropriate enforcement procedures and actions to require the reduction of pollutant discharges and control post-construction stormwater runoff from new development and redevelopment project sites Inspect sites annually to ensure proper maintenance of private water quality facilities, and require owners of BMPs to maintain them	Identify funding source by 9/3/2025 Update City Code and ordinances, with the appropriate enforcement and response procedures for pollutant discharge and post-construction stormwater runoff by 9/3/2025 Create Post-Construction Site Runoff Tracking System by 9/3/2025	Adopted City Code and ordinances, with the appropriate enforcement procedures and actions for actions for pollutant discharge and post-construction stormwater runoff Record and track annual inspections and activities for the post-construction site runoff program requirements	9/3/2025 / Ongoing	TBD / Identify Funding Source

ABBREVIATIONS & DEFINITIONS

Oregon Association of Clean Water Agencies (ACWA)	A private, not-for-profit organization that serves Oregon wastewater treatment and stormwater management agencies and their consultants in the development of policies and programs for collaborative management of water resources in Oregon.
Best Management Practice (BMP)	A practice, or combination of practices, that is determined to be an effective and practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.
Capital Improvement Project (CIP)	A project identified in capital improvement program such as new construction, expansion, renovation, or replacement project for an existing facility or facilities that helps maintain or improve a City asset.
City	The City of St. Helens
Clean Water Act (CWA)	Establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.
(Oregon) Department of Environmental Quality (DEQ)	Chief regulatory agency of the government of the U.S. state of Oregon responsible for protecting and enhancing the state's natural resources and managing sanitary and toxic waste disposal
Designated Management Agency (DMA)	A federal, state or local governmental agency that has legal authority over a sector or source contributing pollutants and is identified as such by the Department of Environmental Quality in a TMDL.
Environmental Protection Agency (EPA)	Executive agency of the United States federal government tasked with environmental protection matters.
Hydrologic Unit Code (HUC)	A multi-scale numeric code used by the U.S. Geological Survey to classify major areas of surface drainage in the United States. The code includes fields for geographic regions, geographic subregions, major river basins and subbasins. The third field of the code generally corresponds to the major river basins named in OAR 340, division 41. The fourth field generally corresponds to the subbasins typically addressed in TMDLs
Illicit Discharge Detection and Elimination (IDDE)	Illicit Discharges are any discharge into a storm drain system that is not entirely composed of stormwater. Illicit discharges often contain pathogens, nutrients, surfactants, and various toxic pollutants.
Management Strategies	Measures to control the addition of pollutants to waters of the state and includes application of pollutant control practices, technologies, processes, siting criteria, operating methods, best management practices or other alternatives

Municipal Separate Storm Sewer System (MS4)	A conveyance or system of conveyances that is owned by a state, city, town, village, or other public entity that discharges to waters of the U.S, designed or used to collect or convey stormwater, not a combined sewer, and not part of a sewage treatment plant.
National Pollutant Discharge Elimination System (NPDES)	NPDES permit program was created in 1972 by the Clean Water Act (CWA), helps address water pollution by regulating point sources that discharge pollutants to waters of the United States.
Nonpoint Source Pollution	Pollution resulting from results from precipitation, atmospheric deposition, land runoff, infiltration, drainage, seepage, or hydrologic modification. Any source of water pollution that does not meet the legal definition of point source in section 502(14) of the Clean Water Act of 1987.
Oregon Administrative Rules (OAR)	The official compilation of rules and regulations having the force of law in the U.S. state of Oregon. It is the regulatory and administrative corollary to Oregon Revised Statutes and is published pursuant to ORS 183.360(3).
Performance Monitoring	Monitoring implementation of management strategies, including sector-specific and source-specific implementation plans, and resulting water quality changes
Pollutant	meaning provided in the Federal Water Pollution Control Act Section 502 (33 USC Section 1362)
Reasonable Assurance	a demonstration that a TMDL will be implemented by federal, state or local governments or individuals through regulatory or voluntary actions including management strategies or other controls
Source	any process, practice, activity or resulting condition that causes or may cause pollution or the introduction of pollutants to a waterbody
State	State of Oregon
Stormwater Master Plan (SWMP)	The master plan that will the City over the next 20 years on stormwater projects, water quality improvements, and reduction of localized flooding.
Subbasin	the designation in the fourth field of the U.S. Geological Survey Hydrologic Unit Code
Total Maximum Daily Load (TMDL)	a written quantitative plan and analysis for attaining and maintaining water quality standards and includes the elements described in OAR 340-042-0040. These elements include a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards, allocations of portions of that amount to the pollutant sources or sectors, and a Water Quality Management Plan to achieve water quality standards

Urban Growth Boundary (UBG)	A regional boundary, set in an attempt to control urban sprawl by, in its simplest form, mandating that the area inside the boundary be used for urban development and the area outside be preserved in its natural state or used for agriculture
Waterbody	Any surface waters of the state.
Water Quality (WQ)	The condition of the water, including chemical, physical, and biological characteristics, usually with respect to its suitability for a particular purpose such as drinking or swimming
Water Quality Management Plan (WQMP)	the element of a TMDL describing strategies to achieve allocations identified in the TMDL to attain water quality standards. The elements of a WQMP are described in OAR 340-042-0040(4)(l)
Willamette Basin Water Quality Management Plan	Plan containing the overall framework for implementing the Willamette Basin TMDL.

LIST OF FIGURES

LIST OF TABLES

LIST OF REFERENCES

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2) TMDL Development Status for 303(d) Listed Waters, 2012, DEQ
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