

City of Molalla
Clackamas County, Oregon



TMDL IMPLEMENTATION PLAN

SEPTEMBER 2022



**The Dyer Partnership
Engineers & Planners, Inc.**

Project No. 100.27

1330 Teakwood Avenue
Coos Bay, Oregon 97420
(541) 269-0732
www.dyerpart.com

759 West Central Avenue
Sutherlin, Oregon 97479
(541) 459-4619

481 S. Main St
Lebanon, Oregon 97355
(541) 405-4520

City of Molalla
Clackamas County, Oregon

TMDL Implementation Plan

Submitted to:
Oregon Department of Environmental Quality
Northwest Region
700 NE Multnomah St., Suite 600
Portland, OR 97232

Prepared by:
The Dyer Partnership Engineers & Planners, Inc.
481 S. Main St.
Lebanon, OR 97355

Submitted by:
City of Molalla
P.O. Box 248
Molalla, OR 97038

Dan Huff, City Manager

Date

Table of Contents

SECTION 1: INTRODUCTION & BACKGROUND

1.1 Introduction	1-1
1.2 Background	1-1

SECTION 2: TMDL REQUIREMENTS & PARAMETERS

2.1 TMDL Requirements	2-1
2.2 TMDL Parameters	2-2
2.3 Temperature	2-2
2.4 Bacteria	2-4
2.5 Mercury	2-5
2.6 Pesticides	2-6
2.7 Metals	2-6

SECTION 3: WATER QUALITY EFFORTS

3.1 Molalla Municipal Code – Public Services	3-1
3.2 Molalla Development Code - Development	3-1
3.3 Molalla Development Code – Additional Regulations	3-2
3.4 Molalla Standard Specifications for Public Works Construction	3-2
3.5 Parks Plan	3-4
3.6 Street Sweeping Program	3-5
3.7 Stormwater System Maintenance	3-5
3.8 Pet Waste	3-5
3.9 Water Conservation Outreach	3-5

SECTION 4: IMPLEMENTATION STRATEGIES

4.1 Stormwater System Planning	4-1
4.2 Wastewater System Planning	4-1
4.3 Riparian Protection and Restoration	4-2
4.4 Public Education and Outreach	4-2
4.5 Public Involvement and Participation	4-2
4.6 Illegal Discharge Detection and Elimination (IDDE)	4-3
4.7 Construction Site Runoff and Erosion Control	4-3
4.8 Post-Construction Site Runoff for New Development and Redevelopment	4-4
4.9 Animal Waste Management	4-5
4.10 Mercury and Pollutants	4-5

SECTION 5: MONITORING, REPORTING, COMPLIANCE & FUNDING

5.1 Public Involvement	5-1
5.2 Land Use Compliance	5-1
5.3 Funding	5-1

SECTION 6: TMDL IMPLEMENTATION MATRIX

SECTION 1: INTRODUCTION & BACKGROUND

1.1 Introduction

This document is the Total Maximum Daily Load (TMDL) Implementation Plan for the City of Molalla. This plan is intended to comply with the Willamette Basin TMDL order and to meet pollutant load allocations for the Molalla-Pudding Subbasin, as approved by the US Environmental Protection Agency (EPA) in December 2008. The goal of this Implementation Plan is to minimize and reduce temperature, bacteria and mercury contributions to surface waters within the jurisdictional control of the City of Molalla.

Through a multi-faceted approach of monitoring, land use and development standards, public operations, partnerships, and education, this plan targets sources of contamination within the City's authority.

1.2 Background

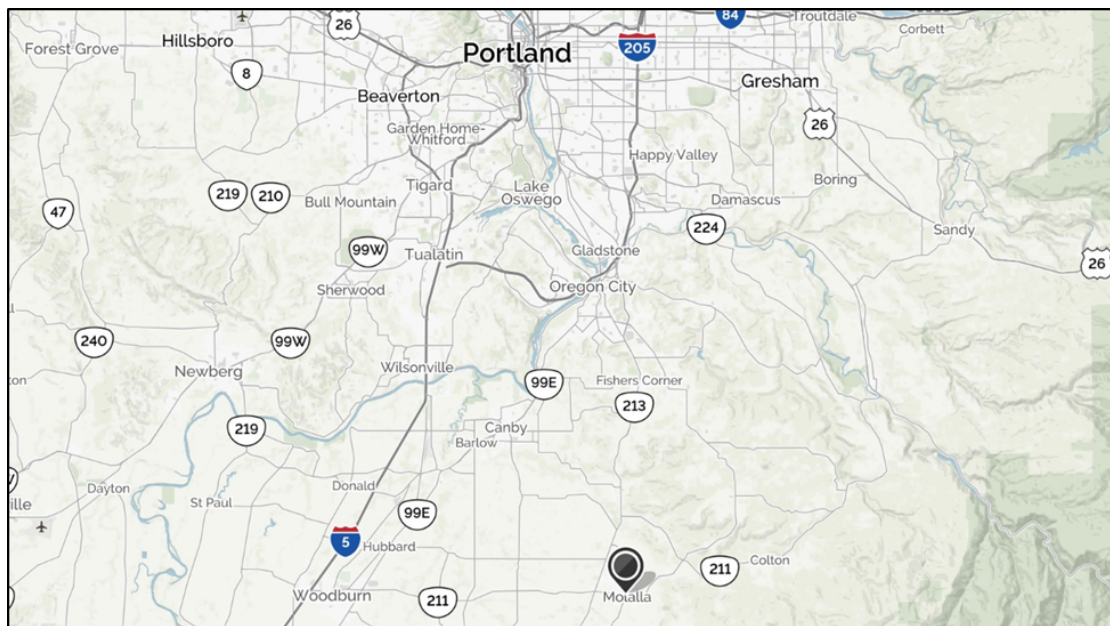
The Molalla-Pudding Subbasin (approximately 878 square miles in area) is located in the north-eastern portion of the middle Willamette Basin. The Molalla River flows into the Willamette River between river miles 35 and 36 and the Pudding River is a tributary to the Molalla River less than a mile upstream of the Molalla River mouth. The subbasin is located within Clackamas and Marion Counties and includes the communities of Woodburn, Mt. Angel, Silverton, Canby, Molalla, Hubbard, Gervais, Aurora, Brooks, Barlow, Colton and Scotts Mills and portions of Salem, Keizer, Donald, and Wilsonville.

The City of Molalla is a fast growing rural community located in the southwest section of Clackamas County. The City's population was estimated to be 9,910 in 2020 by the Portland State University Population Center.

The City is approximately 14 miles south of Oregon City via State Highway 213, approximately 25 miles northeast of Salem, and approximately 27 miles southeast of Portland. The surrounding area around the City of Molalla is generally used for agricultural purposes. Highway 213 runs north-south through the western end of the City, and Highway 211 runs east-west through the midsection of the City. Figure 1.2.1 illustrates the location of the City.

The City is located at approximately river mile 20 of the Molalla River, which is located about a mile east of the City's current urban growth boundary (UGB). Two branches of Creamery Creek flow through the north end of the City and run generally from the southeast to the northwest. These branches meet east of Highway 213, and Creamery Creek flows into the Molalla River several miles outside the UGB. Bear Creek, which runs generally parallel to and south of Creamery Creek, flows through the south end of the UGB before turning northwest through the City. Bear Creek exits through the west end of the City before eventually flowing into the Pudding River.

**FIGURE 1.2.1
CITY LOCATION**



In 2001, the City completed a Local Wetland Inventory (LWI) and riparian assessment that describes and maps potentially jurisdictional wetlands and streams within the City’s UGB. The LWI was approved by the Oregon Department of State Lands (DSL) in March of 2004 and notes the three drainage basins within the City of Molalla Urban Growth Boundary (UGB) as follows:

- The northeastern portion of the UGB is within the Molalla River basin; drainage from this basin flows northeastward via a natural drainage way to the Molalla River.
- The central portion of the UGB is within the Creamery Creek basin; Creamery Creek flows diagonally from the southeast to the northwest before reaching the Molalla River north of the UGB.
- The southern portion of the UGB is within the Bear Creek basin. Bear Creek joins Kaiser Creek (located south of the UGB) to flow to the Pudding River many miles to the west.

The City operates and discharges treated wastewater under Waste Discharge Permit No. 101514 from the National Pollutant Discharge Elimination System (NPDES). From May 1st to October 31st, discharge to waters of the state is prohibited, and recycled water is land applied onto DEQ approved sites. The recycled water used for irrigation is treated to the same standards as effluent discharged to the Molalla River, except that effluent discharged to the river is dechlorinated using ascorbic acid (Vitamin C). From November 1st to April 30th, effluent is discharged to the Molalla River in accordance with the NPDES Permit.

SECTION 2: TMDL REQUIREMENTS & PARAMETERS

2.1 TMDL Requirements

The Oregon Department of Environmental Quality (DEQ) established a Total Maximum Daily Load (TMDL) for the Willamette Basin in an order signed on September 21, 2006 which was later revised to incorporate mercury requirements and established in another order signed on February 4, 2021. The TMDL requires designated agencies and municipalities to implement actions to improve water quality. The pollutants addressed in the 2006 Willamette Basin TMDL and the 2019 Final Revised Willamette Basin Mercury TMDL that specifically affect Molalla are bacteria, temperature, and mercury.

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”. In response to the Clean Water Act, the EPA designated state agencies to develop water quality standards, perform water quality monitoring to understand current conditions, determine sources of pollution, and develop TMDLs as a tool to improve water quality. As a component of the overall effort to protect and restore the beneficial uses of Oregon’s water bodies, the DEQ issued TMDLs for the entire Willamette Basin.

The TMDL process begins when a stream, lake, or river does not meet water quality standards and is classified as water quality-limited on the state’s 303(d) list. TMDLs identify the maximum amount of a specific pollutant that can be present in a water body without violating water quality standards. This is known as the loading capacity.

After extensive water quality monitoring and modeling efforts, TMDLs establish the difference between the loading capacity and the current pollutant load. TMDLs are expressed as numeric standards or percent pollutant reductions that need to be met to bring water bodies into compliance with water quality standards. The difference between the current load and the loading capacity is known as excess load.

The excess load is split up between 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 waste load allocations for point sources such as wastewater treatment plants and industrial discharges. They develop load allocations for non-point pollution from agricultural, urban, and forestry lands such as erosion, animal wastes, and stormwater.

The Oregon Administrative Rules in Chapter 340 Division 42 address the requirements for local governments and other agencies to develop TMDL Implementation Plans. Responsible parties that are able to implement pollution reduction strategies are classified as Designated Management Agencies (DMAs). In the Willamette Basin, DMAs include federal agencies such as the Bureau of Land Management, state agencies such as the Department of Forestry and the Department of Agriculture, counties, cities, and others.

The Oregon Department of Agriculture (ODA) is working with farmers to address contributions from farmland, the Oregon Department of Forestry is addressing contributions from forestland, and federal land management agencies are implementing TMDLs according to their internal

procedures. Point sources, such as wastewater treatment facilities will be addressed through their individual permitting processes. Cities and counties must address contributions through the development of Implementation Plans.

According to OAR 340-042-0080, TMDL Implementation Plans must include the following elements:

1. Identify the management strategies the DMA or other responsible person will use 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. To the extent required by ORS 197.180 and OAR chapter 340, division 18, provide evidence of compliance with applicable statewide land use requirements; and
5. Provide any other analyses or information specified in the WQMP.

2.2 TMDL Parameters

Temperature, bacteria, and mercury are the three parameters that have been included in all of the Willamette Basin TMDLs. Although other parameters are included in sub basin TMDLs, these three pollutants are the major concerns throughout the entire Willamette Basin.

The following subchapters contain brief summaries of TMDL parameters, but more in-depth information on these parameters and the processes used to develop the TMDLs can be found in Chapters 2, 3, and 4 of the *Willamette Basin TMDL* (DEQ, 2006), the *Final Revised Willamette Basin Mercury Total Maximum Daily Load* (DEQ, 2019), and the *Molalla-Pudding Subbasin TMDL and WQMP* (DEQ, 2008). The summaries below include basic information about the characteristics of the parameter, the potential sources of each pollutant, waterways in the region not meeting water quality standards, and a brief list of potential strategies to address each parameter.

2.3 Temperature

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

The major sources of thermal pollution that the DEQ evaluated for the Willamette Basin temperature TMDLs are wastewater treatment facilities, dam and reservoir operations, and the loss of streamside vegetation. Point sources will continue to be regulated through the existing National Pollution Discharge Elimination System (NPDES) permit methods. Sewage treatment

plants, as well as large industrial permitted discharges, will be allocated heat loads during the next renewal of their NPDES permits.

The focus of the non-point source temperature TMDL is to mitigate the removal or disturbance of streamside vegetation. The most effective way to minimize thermal pollution is by reducing the amount of solar radiation that reaches the water. This is accomplished by protecting and reestablishing vegetation along waterways to provide shade cover. Temperature benefits can also be realized through stream restoration projects including stream bank stabilization, increasing stream flows, decreasing channel width, and restoring channel complexity. Attainment and preservation of effective shade levels on smaller tributaries associated with system potential vegetation will eliminate most anthropogenic nonpoint source heat loads. Per the Molalla-Pudding Subbasin TMDL, surrogate measure is percent effective shade targets and a heat load equivalent of 0.05°C of the Human Use Allowance (DEQ, 2008).

Temperature TMDLs have been developed for the Willamette sub basins and mainstream Willamette River. The DEQ used two different approaches in developing the temperature TMDLs. One TMDL focuses on the mainstream Willamette River and its major tributaries up to the first dam. Using the other approach, the DEQ developed TMDLs on a more localized scale for stream segments upriver from dams.

The maximum temperature increase in the waters of the state from all human activities can be no more than 0.3° C. 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 split up between various sources of human-caused thermal pollution. Models indicate that restoring shade cover to natural levels could reduce temperatures in the mainstream Willamette River by 0.5° Celsius (DEQ, 2006).

The amount allocated to each source of thermal pollution varies by location. Generally, non-point sources are allowed to contribute no more than 0.05° C, and point sources can contribute up to .25° C. The TMDL allocates 0.05° C to the U.S. Army Corps of Engineers Willamette Project reservoirs. The DEQ factors in 0.05° as a reserve capacity that will be set aside now to accommodate future growth by meeting the increased demand for industrial and municipal wastewater discharges.

On average, waterways in the Willamette Basin need to receive 23 percent less thermal input than is currently being received (DEQ, 2006). The major consequence of the temperature TMDLs is the need to protect and restore streamside vegetation. Thermal pollution can be addressed by a variety of measures, including:

- Develop materials for landowners explaining the benefits of preserving natural streamside vegetation.
- Implement demonstration projects on public land to illustrate potential riparian management techniques.
- Actively restore riparian areas on public land and help private property owners restore riparian areas on private land.
- Institute a riparian ordinance that prohibits the removal of native streamside vegetation.
- Acquire critical streamside property.

- Become involved in a water quality trading program.

2.4 Bacteria

The Molalla-Pudding subbasin TMDL addresses seven bacteria-impaired stream reaches from both the 2004-06 and 2002 303(d) lists. The 2002 bacteria listings for the Molalla River from river mile 0 to 25 and the summer (June 1 – September 30) listing for the Pudding River from river mile 0 to 35.4 had been removed from the 2004-06 303(d) list, but a review of data indicated that the bacteria criteria could be exceeded at the highest stream flows on the Molalla River and during the summer on the Pudding River. For those reasons, a bacteria TMDL was completed for the Molalla River and the summer season for the Pudding River. Analysis of bacteria data, stream flows, and precipitation indicates that the main sources of bacterial contamination in the Molalla and Pudding Rivers and their tributaries are nonpoint sources. Non-point sources include agricultural runoff and urban stormwater, though runoff from forestry land use does not appear to cause the bacteria criteria to be exceeded. Load allocations are expressed in terms of a surrogate measure – percent reduction in bacteria concentrations. Load allocations apply generally by land use, basin-wide, and year-round. Stream and season-specific load allocations were calculated for streams where sufficient stream flow data were available to calculate a loading capacity and excess load. Load allocations, as percent reductions, were reduced until no one sample (based on available data) exceeded the single sample criterion of 406 *E.coli* organisms per 100 milliliters.

The Molalla-Pudding Subbasin load reduction for the listed waterbodies range from 75-87% during the summer months (June 1-September 30) and 70-92% in fall-winter-spring months (October 1 – May 31). 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 reaches of the Willamette Basin cause less than a one percent increase in the bacteria concentrations over natural conditions (DEQ, 2006). Accordingly, the focus of the TMDL implementation efforts should be on non-point sources.

Bacteria violations of water quality standards are most common in creeks and streams that drain urban and agricultural land. The mainstream Willamette River is water quality limited for bacteria during the high flows of the fall-winter-spring months, but is in compliance during summer low flows when there is the least amount of runoff.

Above Willamette Falls, violations in the bacteria standards are usually single sample events that are related to high levels of precipitation and the resulting 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 livestock, irrigation runoff, and stream bank erosion.

Local jurisdictions can focus on urban issues to ensure that the quality of water does not degrade due to current land use, population growth, and land use changes. Strategy options to address bacteria in the urban area include:

- Preventing erosion and controlling sediment from new construction.
- Detaining and treating stormwater prior to discharge into waterways.

- Keeping stormwater conveyance channels clear of organic matter.
- Controlling animal waste.
- Maintaining and restoring riparian buffers.
- Encouraging better site design to decrease runoff.
- Preventing non-stormwater and illegal discharges.
- Developing stewardship and educational programs to prevent pollution.
- Street sweeping.

2.5 Mercury

Mercury is a very complex pollutant. The way it acts in nature and the different forms it takes make it difficult to understand and accurately monitor. With no regard to local, state, or even international boundaries, mercury can be transported in the air after soil disturbance, automobile emissions, and industrial emissions across many miles and deposited by rainfall.

Air deposition from emissions is one of many ways that mercury moves through the environment. Some point sources, including timber processing plants and mills, discharge low levels of mercury in their wastewater effluent. Stormwater runoff suspends mercury molecules and carries them to waterways.

Mercury is naturally occurring at low levels, but when native soil erodes at an accelerated rate those molecules are released in abnormal amounts. Mercury is also set in motion when sediment that has been deposited long ago is re-suspended due to high water flows or a significant disturbance.

High mercury levels in the Willamette Basin have resulted in fish consumption advisories. To protect public health, especially that of pregnant women and young children, the Department of Human Services (DHS) has issued advisories recommending that people limit the amount of fish they consume from certain waterways. For example, the DHS specifically advises against consuming large amounts of fish from the Willamette River due to the high levels of mercury.

Despite the uncertainty and complex nature of mercury, there are steps that can be taken to minimize the amount of mercury that is deposited in waterways and accumulated in the tissues of fish, wildlife, and humans. One of the primary goals of the Final Revised Willamette Basin Mercury TMDL is to reduce mercury levels in the basin to a point where fish are no longer unsafe to eat.

To begin addressing the mercury problem in the Willamette Basin, DEQ developed wasteload allocations for point sources and load allocations for non-point sources (DEQ, 2019). The DEQ developed allocations for the Final Revised Willamette Basin Mercury TMDL and were calculated as percent reductions and compared to the load capacity for non-point sources and point sources (DEQ, 2019).

The DEQ expects all non-point sources to begin implementing mercury reduction management strategies and policies based on the load allocations defined in the Final Revised Willamette Basin Mercury TMDL (DEQ, 2019).

Implementation plans must include a mercury reduction strategy that incorporates the six stormwater control measures as defined in the 2019 Final Revised Willamette Basin Mercury TMDL. The minimum stormwater control measures required by the DEQ include:

1. Pollution Prevention and Good Housekeeping for Municipal Operations
2. Public Education and Outreach
3. Public Involvement and Participation
4. Illicit Discharge Detection and Elimination
5. Construction Site Runoff Control
6. Post Construction Site Runoff for New Development and Redevelopment

DMAs have an array of options to reduce mercury pollution. Many of the management strategies that address mercury pollution also address bacteria and temperature. Potential management strategies include:

- Working with dentist offices to properly dispose of mercury wastes.
- Establishing a stormwater plan.
- Stormwater detention and treatment prior to discharge into waterways.
- Establishing an erosion prevention and sediment control program.
- Regular street sweeping and stormwater system maintenance.
- Limiting land disturbance whenever possible.

2.6 Pesticides

The primary pesticides of concern in the Pudding River Watershed are the listed pesticides: chlordane, dieldrin, and DDT (dichlorodiphenyltrichloroethane), including the DDT metabolites DDE and DDD. Chlordane, dieldrin, and DDT are toxic organochlorine pesticides. Historically, DDT, dieldrin, and chlordane were used extensively as agricultural insecticides and to control insect disease vectors such as mosquitoes. Load allocations for DDT and dieldrin are expressed as percent reductions necessary to achieve the human health criteria based on water and fish ingestion. The Molalla-Pudding Subbasin TMDL requires a 30% reduction in DDT and a 90% reduction in dieldrin on the Pudding River and its tributaries. The TMDL also uses a surrogate measure of total suspended solids (TSS), which correlates strongly with DDT, to set targets that will achieve partial load allocations for non-point sources in all sectors. A 96-hour average TSS target of 15 mg/L for the Pudding River will partially achieve the load allocations.

2.7 Metals

DEQ and other entities have identified exceedances of iron, manganese and arsenic water quality criteria in the Molalla-Pudding Subbasin. Iron, manganese and arsenic are naturally occurring substances and particularly prevalent in soils deriving from eroded volcanic rocks. DEQ's data review and analysis of metals correlation with stream flow and precipitation supports the conclusion that manganese and arsenic are present in the Pudding River at natural concentrations and are not concentrated by human activities. Iron concentrations correlate with stream flow and precipitation and DEQ's conclusion is that human caused activities that lead to eroding stream

banks and runoff may concentrate iron in surface water at higher than natural concentrations. The Molalla-Pudding Subbasin TMDL sets a target of 6 mg/L total suspended solids (TSS) to meet 7-79% iron reduction based on Pudding River flow.

SECTION 3: WATER QUALITY EFFORTS

The City of Molalla currently has several efforts underway that address water quality issues. Molalla's Municipal Code and 2017 Molalla Standard Specifications for Public Works Construction include erosion control requirements, riparian area and tree protection, vegetation and tree planting, stormwater quality design standards, protection of the storm drainage system, and encouragement of low impact development.

Additionally, the City maintains street sweeping and animal waste pick up programs, has adopted a Parks Master Plan that promotes the protection and enhancement of vegetation and riparian areas, and continues efforts to educate the public about water conservation.

3.1 Molalla Municipal Code – Public Services

The City of Molalla Municipal Code, Title 13-Public Services provides requirements for the protection of the City's storm drainage system by reducing illegal discharge and cross-connections. Code sections in place to protect the storm drainage system are summarized below.

13-08.300 Abandonment of Private Sewer Systems

When public sewer becomes available to a property served by a private sewage disposal system, and upon notification to the property owner from the City, a direct connection shall be made to the public sewer, and any septic tanks, cesspools, and similar private sewage disposal facilities shall be decommissioned, abandoned and filled with suitable material.

13-08.840 Discharge to Storm Drains

No person shall discharge or cause to be discharged into any storm drain any matter other than unpolluted runoff or storm drainage.

3.2 Molalla Municipal Code - Development

The City of Molalla completed and adopted revisions to the City of Molalla Development Code on October 11, 2017. Code sections in place to uphold water quality efforts are summarized below.

17-2.4.030 Water Resources (WR) Overlay

The WR Overlay District has been established and is intended to protect and enhance significant wetlands, stream corridors and floodplains identified in the Molalla Natural Features Inventory by conserving significant riparian corridors, undeveloped floodplains, and locally significant wetlands in keeping with the requirements of State Planning Goal 5 (Natural Resources) and applicable state statutes, administrative rules, and the Molalla Comprehensive Plan.

The WR Overlay District includes the riparian corridor extending upland 50 feet from the top-of-bank of Bear Creek, Creamery Creek and the Molalla River. Where a significant wetland is located fully or partially within the riparian corridor, the riparian corridor shall extend 50 feet upland from the edge of the wetland and the riparian area for isolated wetlands shall extend 25 feet from the edge of the wetland. The district also includes the 100-year flood plain on properties identified as vacant or partially vacant on the 2007 Molalla Buildable Lands Inventory.

Native vegetation removal and building, paving, grading, and filling are restricted within the WR Overlay riparian corridors.

17-3.2 – Building Orientation and Design/Non-Residential Buildings

Site design standards for non-residential buildings may be waived if a significant tree or other environmental feature precludes strict adherence to the standard and will be retained and incorporated into the design.

17-3.4.030 – Landscaping and Screening

All portions of lots not otherwise developed with buildings, accessory structures, vehicle maneuvering areas, or parking lots shall be landscaped. All lots shall conform to the minimum landscape areas standards for the applicable zoning district, as outlined in the Code. A combination of deciduous and deciduous and evergreen trees, shrubs, and ground covers shall be used for all planted areas. Existing mature trees that can thrive in a developed area and that do not conflict with other provisions of the Code shall be retained where specimens are in good health, have desirable aesthetic characteristics, and do not present a hazard.

3.3 Molalla Municipal Code – Additional Regulations

The City of Molalla Municipal Code, Title 21-Additional Regulations includes provisions for excavation, fills, grading and erosion control. The Title 21 Code section in place to minimize erosion is summarized below.

21-70 Excavation, Fills, Grading and Erosion Control

Applications, provided by the Planning Director, shall be completed for grading, excavation, fill and erosion control. Excavation or fill shall not create a slope that causes surface drainage to flow over adjacent public or private property in a volume or location materially different from that which existed before the excavation or fill. Surface and subsurface drainage caused or affected by changing of grade or uncovering subsurface sources such as springs shall be collected by an approved means and carried to an approved discharge point.

The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control shall consist of effective planting or such other measures as the Public Works Director may determine. The protection for the slopes shall be installed as soon as practicable and prior to final approval.

3.4 2017 Molalla Standard Specifications for Public Works Construction

The City of Molalla adopted the current 2017 Molalla Standard Specifications for Public Works Construction (PW Standards) on September 6, 2017. Sections found in the PW Standards related to water quality efforts are summarized below.

1.17.16 Preservation, Restoration, and Cleanup

Street Cleanup – On all construction projects, the contractor shall clean spilled soil, mud, rock, gravel, or other foreign material caused by construction operations from sidewalks, gutters, streets, and roads at the conclusion of each day’s operation.

1.18.4 Erosion Prevention and Sediment Control

It is the goal of the City to eliminate or minimize to the extent feasible all sediment and other pollutants reaching the public storm and surface water system resulting from development, construction, grading, excavating, clearing and any other activity that accelerates erosion. It is the policy of the City to require temporary and permanent measures for all construction projects to lessen the adverse effects of construction on the environment. All projects shall have a current DEQ 1200-C permit, as required by the State of Oregon, and include properly installed, operated, and maintained temporary and permanent erosion-control measures as provided in the PW Standards or in an approved erosion control plan.

Existing vegetation shall be protected and left in place whenever practicable. Where existing vegetation has been removed, or the original land contours have been disturbed, the site shall be revegetated, and the vegetation established, as soon as practicable.

3.1.2 General Design Requirements (Stormwater)

In developing drainage plans for stormwater management, the design engineer is encouraged to provide, to the extent feasible, on-site stormwater management through the use of Low Impact Development (LID) principles. The primary Stormwater management objective for LID is to match pre-development (bare site) hydrologic condition over the full range of rainfall intensities and durations as detailed in Section 3.3 of the PW Standards. LID principals include, but are not limited to:

- Integration of stormwater management into site planning activities.
- Use of natural hydrologic functions as the integrating framework.
- Minimize site disturbance.
- Focus on prevention rather than mitigation.
- Emphasize simple, nonstructural, low-tech, and low cost methods.
- Manage stormwater as close to the source as possible.
- Distribute small-scale LID techniques throughout the landscape.
- Create a multifunctional landscape.

3.3.9 Detention/Retention Facility Protection (Stormwater)

Stormwater quantity detention/retention facilities and stormwater quality facilities shall be designed to prevent scouring at the inflow structure(s) by use of an engineered energy-dissipating device such as a Swale Inflow Spreader or other method approved by the Public Works Department authorized representative.

3.3.10 Drainage Report (Stormwater)

A drainage report, prepared by a professional engineer registered in the State of Oregon, shall be submitted for proposed developments. The detailed report shall include a description of the land cover resulting from the proposed project, a description of the potential stormwater quantity and

quality impacts of the project, a description of the proposed methods for collection and conveyance of runoff from the project site, and proposed methods for control of any increase in stormwater quantity and for maintenance of stormwater quality.

3.5.1 Water Quality Facility Design Standards (Stormwater)

New development and other activities that create new impervious surfaces or increase in the amount of stormwater runoff or pollution leaving the site are required to construct or fund permanent water quality facilities to reduce contaminants entering the stormwater and surface water system. Stormwater quality facilities shall be designed to capture and treat 80% of the average annual runoff volume, to the maximum extent possible, with the goal of 70% total suspended solids (TSS) removal.

3.10 Stormwater Quality Facility Design

The purpose of Section 10 is to outline the design and construction guidelines for water quality facilities in the City of Molalla. The guidelines set forth in Section 10 may be used to comply with the water quality facility design standards in Subsection 3.5. It is the responsibility of the design engineer to determine the appropriate design criteria that ensures compliance with the PW Standards, in combination with federal, state and local laws and ordinances. Facility design criteria are presented for the following facility types:

- Biofiltration Swales
- Sand Filters
- Wet Ponds
- Extended Wet Ponds
- Extended Dry Ponds
- Wetlands
- Infiltration Trenches
- Infiltration Basins

3.5 Parks Plan

In 2014 the City of Molalla adopted a Parks Master Plan that promotes the protection and enhancement of vegetation and riparian areas.

The City currently has a significant amount of passive open space and exceeds recommended standards for natural areas based on the current supply. Community members have expressed support for preserving these spaces and acquiring additional open space throughout the City as new development occurs. The plan recommends that the City incorporate the following types of areas in establishing and maintaining the city-wide open space system:

- Continue to require dedication of a specific percentage of open space as part of the subdivision and residential development review processes.
- Combine designation of open space with protection of environmentally sensitive or natural areas.
- In targeting specific areas for open space acquisition, dedication or protection, prioritize natural area and open space protection and management to maximize natural resource values.

- Identify, acquire and conserve key open space areas adjacent to proposed trail corridors or linear parks, including the Bear Creek corridor. Use these to enhance the trail system and provide for well-connected pockets of open space throughout the community.

3.6 Street Sweeping Program

The City of Molalla maintains a street sweeping program that utilizes a City owned street sweeper. The City has adopted a public works policy that requires department personnel to track street sweeping activities using a street sweeping zone map and summary log. The summary log provides personnel a method to track the zones and/or streets that were cleaned and the opportunity to report any noticeable sources of pollution. In 2021, the City estimates that 756 lane miles were swept as part of the City's sweeping program which is estimated to have removed over 872,000 lbs of debris from City Streets.

3.7 Stormwater System Maintenance

In order to continue to provide a viable stormwater collection system, the City maintains a budget within the Public Works Department for stormwater maintenance. A full time City crew is available for the upkeep of catch basins, manholes and pipelines.

3.8 Pet Waste

Dog waste stations have been installed in Sheets Field, Pocket, Basketball, Clark, Fox, Ivor Davies and Long city parks. The City supplied 22,745 bags in City Parks in 2021 and maintains a stock of replacement waste bags. The City replenishes the waste station bags on a regular basis.

3.9 Water Conservation Outreach

In 2015 the City of Molalla included approximately 2,900 water conservation flyers in their May residential and commercial water bills. The flyers were also handed out at the City's 2015 National Night out, to further promote water conservation. Additionally, the City's website includes a tip sheet for indoor and outdoor water conservation.

SECTION 4: IMPLEMENTATION STRATEGIES

The City of Molalla will continue with the water quality efforts outlined in Section 3 and work to continue implementing the strategies and activities provided in this section. The City's goal is to adopt this Plan and utilize the implementation strategies to reduce contributions of increased temperatures, bacteria, mercury and pollutants to surface waters within the City's jurisdiction.

4.1 Stormwater System Planning

Stormwater planning and management is the City's primary focus for addressing the reduction of TMDL pollutants. Coordinated efforts by all City departments within the City are needed to manage stormwater and reduce pollutants covered in the Willamette Basin and Molalla-Pudding Subbasin TMDL.

The City will continue to follow the recommendations of the 2003 Stormwater Master Plan to implement upgrades and improvements, in order to maintain a well working stormwater conveyance system. The master plan will continue to be available on the City's website to help educate developers and the public about the stormwater issues and hydrology of the City.

As the existing Stormwater Master Plan reaches the end of its 20-year design life, it will require updating. The city has tentatively scheduled to begin work on updating the Stormwater Master Plan during the 2022/23 fiscal year. The new plan will be used to identify gaps in the existing pollution control strategies in order to help the City identify ways to address these gaps. The updated Stormwater Master Plan will also include water quality protection mechanisms to ensure that future stormwater system expansions and upgrades are designed and constructed with the consideration of water quality.

Revisions to the Molalla Development Code and PW Standards have incorporated requirements to uphold stormwater water quality efforts and erosion control for new development and construction. The City will work to educate the public and developers on the implementation of these codes and standards to ensure the water quality standards set forth are met.

4.2 Wastewater System Planning

In 2017, the City began work on updating their 2000 Wastewater Facilities Master Plan. This work included an extensive evaluation of the Wastewater Treatment Plant (WWTP) and collection system. The new *Wastewater Facility and Collection System Master Plan* was completed and adopted by City Council on December 12, 2018.

The WWTP evaluation provided recommendations for plant upgrades and modifications to address discharge loading. The update was completed and the recommended improvements that were provided in the update were made with respect to mass load limits and temperature compliance with their NPDES discharge permit.

The collection system evaluation focused on Inflow and Infiltration (I/I) issues and provided recommendations to address areas of concern. With the adoption of the new facilities plan, the City has established an I/I reduction program that focuses on the decrease of system I/I and the elimination of cross connections between the storm and sanitary sewer systems.

4.3 Riparian Protection and Restoration

The City of Molalla has been proactive in their efforts to protect riparian areas within the City. The City's development code has established a Water Resources Overlay District, which protects the riparian corridors of Bear Creek, Creamery Creek and the Molalla River. The City will continue to adhere to the development code and work to educate developers and public about the importance of the code and the protection of the riparian areas.

The City has adopted a Parks Plan that recommends the protection of environmentally sensitive or natural areas. The Parks Plan provides recommended trail projects that provide the opportunity to improve riparian and stream areas. The following trail projects were identified as Tier 1 (5-15 year implementation) projects by the Project Advisory Committee and will be considered by the City when budget allows and/or development occurs in the proposed trail area:

- Molalla Rail Trail
- Bear Creek Greenway
- Land Lab Trail
- Cole Avenue Trail
- Rail High School Connector

4.4 Public Education and Outreach

The City will continue to use existing methods to inform and distribute information to residents and developers about the importance of water quality and conservation and protection and enhancement of existing vegetation in riparian areas. These methods include the City's website, City Hall, monthly billing statements, and City Staff meetings.

The City of Molalla has partnered with the Molalla Area Library District to begin a divergent process of generating ideas for an outreach program. Updates will be reported in the Annual TMDL submittal. The City will explore an educational /outreach program to provide a maintenance plan for privately owned storm water facilities.

Building relationships with local watershed groups will also be considered as budget and staff availability allows. Fostering these relationships will provide the City the opportunity to educate the public on restoration and enhancement opportunities promoted by these groups.

The City will record and evaluate all information encompassed within the education and outreach programs.

4.5 Public Involvement and Participation

The City is currently working to implement a public involvement and participation program that will provide opportunities for the public to effectively participate in the development of stormwater control measures. To facilitate public involvement and participation, the City will implement a web-based community engagement platform "The Current", that will provide

contact information and educational materials to increase involvement and participation opportunities for the public.

4.6 Illicit Discharge Detection and Elimination (IDDE)

To detect and eliminate illicit discharges into the stormwater conveyance system the City will begin to develop an illicit discharge detection and elimination plan. The City is scheduled to begin Stormwater Master Planning in FY 22/23 which will result in gap analysis between stormwater mapping and requirements of the *Final Revised Willamette Basin Mercury TMDL (DEQ, 2019)*.

The City enforces Illicit discharges prohibitions through a Code Enforcement Office. The City has an established Municipal Code related to Surface Water Management (Chapter 13.13), including clauses related to illicit discharges, and stormwater parameters (Temp, pH, etc.).

To track implementation of the IDDE program requirements, the City will assess progress towards implementation of the program. The TMDL Annual Reports will include the number of code enforcement cases related to IDDE.

The City will continue to provide preventative measures to address illegal discharge of waste. The City will continue to promote the annual Spring Cleanup provided by Molalla Sanitary Services. While many items that can contribute to illegal discharge are accepted at this event (motor oil and household appliances), hazardous wastes are not. For hazardous waste disposal, the City will continue to provide information to the public regarding the availability of hazardous waste drop off at Oregon Metro, located in Oregon City.

The City provides a pharmaceutical disposal facility in the Police Department located at City Hall. The City will maintain this facility and continue to provide information about proper disposal and use of this facility on their website. The website and brochure can be viewed from the following webpage links:

- <https://www.clackamasproviders.org/drug-take-back-boxes/>
- <https://www.clackamasproviders.org/wp-content/uploads/2014/09/BB-BrochureFINAL.pdf>

The City has budgeted to provide portable toilets for public use in parks and areas, with no public facilities, during City funded events.

4.7 Construction Site Runoff and Erosion Control

As discussed in Section 3, the goal of the City's current Public Works Design Standards is to eliminate or minimize, to the extent feasible, all sediment and other pollutants reaching the public storm and surface water system resulting from development, construction, grading, excavating, clearing and any other activity that accelerates erosion.

The City requires temporary and permanent measures for all construction projects to lessen the adverse effects of construction on the environment. The City has established Municipal Code Section 13.13.600 for construction activities which require erosion prevention and sediment

control and established Municipal Code sections 13.13.700-13.13.720 which address violations progressively.

All projects are required to have a current DEQ 1200-C permit, as required by the State of Oregon, and include properly installed, operated, and maintained temporary and permanent erosion-control measures as provided in the Standards or in an approved erosion control plan. The City has established Public Works Design Standards that include reference to DEQ in Section 1.18.4 for all projects that meet 1200-C criteria.

The City has established requirements for each Civil Design Plan to include Erosion Control Plans and will continue efforts to ensure that all new development plans incorporate the required erosion control. The City will also continue project inspection efforts to make certain that the requirements of the design standards are adhered to.

The City will continue efforts to manage the Water Resources Overlay District, which was established to protect and enhance wetlands, stream corridors and floodplains and lessen the amount of land vulnerable to excessive erosion and reduce activities that create unnecessary erosion and sediment runoff in these areas. The Annual Reports will include number of Projects that required Site Runoff Program implementation.

4.8 Post-Construction Site Runoff for New Development and Redevelopment

The City's Water Resources Overlay District will continue to develop, implement, and enforce programs to reduce discharges of pollutants and control post-construction stormwater runoff from new development and redevelopment project sites. The City shall implement a Water Resources Overlay District program for monitoring post-construction site runoff.

The City plans to implement the following strategies for post-construction site runoff from project sites discharging stormwater to the storm water conveyance system that create or replace 10,890 square feet (one quarter of an acre) or more of new impervious surface area:

1. The City shall adopt Public Works Standards for stormwater retention and water quality facilities to specify the stormwater controls at all qualifying sites.
2. The City Public Works Standards shall require predevelopment hydrology characteristics for site-specific stormwater management that target natural surface or predevelopment hydrological function through the installation and long-term operation and maintenance of stormwater controls.
3. Maintain Public Works Standards that require all private storm facilities to enter into System Maintenance Agreements with the City prior to Certificates of Occupancy being issued.

The City will target natural surface or predevelopment hydrologic function of new development or redevelopment and will retain rainfall on-site to minimize the offsite discharge of precipitation by utilization of stormwater controls that infiltrate and evapotranspire stormwater. Stormwater quality facilities shall be designed to capture and treat 80% of the average annual runoff volume, to the maximum extent possible, with the goal of 70% total suspended solids (TSS) removal.

Impervious surfaces shall include pavement, gravel roads, buildings, public and private roadways, and all other surfaces with similar runoff characteristics. The removal efficiency standard for TSS specifies only the design requirements. It is not intended as a basis for performance evaluation or compliance determination of a stormwater quality control facility installed or constructed pursuant to this section. If an on-site water quality facility cannot be constructed to treat the runoff from the development's impervious surface, then with the approval of the Public Works Department authorized representative, an on- or off-site water quality facility may be designed to treat runoff from an equivalent area of adjacent untreated impervious surfaces. The water quality facility shall meet all applicable requirements of these standards.

The City shall maintain records of post-construction site runoff programs and installations and shall document post-construction activities in its Project Management Systems and report as needed in TMDL Annual Reports.

4.9 Animal Waste Management

The City will continue to maintain and stock the dog waste stations have been installed in City parks as detailed in Section 3.

4.10 Mercury and Pollutants

Because mercury and pollutant reduction encompass many of the implementation activities and water quality efforts outlined in Sections 3 and 4 of this plan, the City's overall goal to reduce these contaminants is to adhere to the implementation strategies. These strategies include stormwater system planning, erosion control standards, limiting land disturbance, reducing hazardous waste discharge and street sweeping.

SECTION 5: MONITORING, REPORTING, COMPLIANCE & FUNDING

The City of Molalla understands the importance of monitoring the implementation strategies addressed in this TMDL Implementation Plan. The City will actively track the implementation progress of the strategies as outlined in this Plan and TMDL Implementation Matrix (Section 6). The City will also monitor the effectiveness of each strategy with respect to how well each is removing pollutants, either qualitatively or quantitatively.

The City will provide DEQ with an annual review of the Plan and Matrix and provide a progress and effectiveness updates for each strategy. Through an adaptive management approach, the review will also highlight any updates or revisions to the Plan or Matrix that may be required. The City will also review, evaluate and revise the TMDL Implementation Plan in its entirety every five years. The review will include a summary of accomplishments and any hindrances that have or will affect implementation progress. Revisions, additions, or restructuring required to create a new, modified plan will be coordinated with DEQ. Both the annual and five year reviews will be presented to City Council for review.

5.1 Public Involvement

A key aspect to monitoring progress of the implantation strategies is public input. The City Council will be presented with the final TMDL Implementation Plan and encouraged to adopt the strategies set forth and educate the residents of Molalla of its importance.

A Code enforcement reporting form has been made available on the City's website. Through this reporting, the City will utilize the public's input to address any code issues witnessed that may affect the goals of this Plan.

5.2 Land Use Compliance

All strategies and activities listed in this Plan and Implementation Matrix are consistent with the City of Molalla land use plans. The Plan has been reviewed by City staff for consistency with local and state planning goals. All revisions to the TMDL implementation Plan will include a review for land use compatibility with the City staff. The City will also consider the Plan when developing or revising City ordinances that involve land use.

5.3 Funding

Implementation of the TMDL strategies covered in this Plan is essential to the success of the overall Plan and the work to reduce pollutants from the City of Molalla. The City has identified a number of strategies to accomplish this reduction. Some of these strategies are small in nature and easy to implement and will be intergraded into workloads of existing staff and use general funds that are already allocated or will be allocated in coming years. Larger strategies will require further planning as budget becomes available and may also require the City to seek outside funding in the way of loans or grants. The City will review the strategies and funding status on an annual basis and look for possible funding sources for TMDL implementation.

The City has established a Surface Water Utility User Charge that is based on the amount of impervious area on a property. The fees collected from residential, commercial, and industrial sites will be allocated to the maintenance and improvement of the existing stormwater collection system.

SECTION 6: TMDL IMPLEMENTATION MATRIX

The following matrix details the strategies that will be implemented over the next five years. Some of these strategies will be implemented only as funding allows. The matrix shows the pollutant being addressed, the strategy to address it, the time table for implementation, and how progress and success will be monitored. This matrix will serve as the tracking tool for annual reporting to DEQ.

POLLUTANT: Temperature		City of Molalla: TMDL Implementation Tracking Matrix						
SOURCE <i>What sources of this pollutant are under your jurisdiction?</i>	STRATEGY <i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	HOW <i>Specifically, how will this be done?</i>	FISCAL ANALYSIS <i>What is the expected resource need? Are there existing resources budgeted? If not, where will the resources come from?</i>	MEASURE <i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	TIMELINE <i>When do you expect it to be completed?</i>	MILESTONE <i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	ADAPTIVE MANAGEMENT APPLIED <i>Indicate how strategies have changed with annual review reports.</i>	STATUS <i>Include summary and date.</i>
Lack of shading in riparian areas	Protect and enhance existing vegetation in riparian areas.	Enforce existing Municipal Code 17-2.4.030 for new development: 50 ft. riparian and wetland setback and protection of native vegetation.	Code enforcement staffing; 0.20 FTE is currently funded.	Track enforcement actions and violations as well as development plan review. Record square footage of riparian area protected with all development.	On-going	Retain all existing riparian vegetation on developments planned through 2021, as required by Municipal Code 17-2.4.030. Report areas protected in annual TMDL review report.	No changes made to code or application of code.	Protection of riparian areas adhered to with development of Colima Apartments (20-01); 643 N Molalla Ave (20-02); Bartell Subdivision (21-01).

Lack of shading in riparian areas	Protect and enhance existing vegetation in riparian areas.	Removal of creosote-treated railroad-tie bridge over Bear Creek on Molalla Forrest Road (19-07)	\$90,000	Railroad ties can leach creosote into soil and water systems. The removal is being done in accordance with approvals from DEQ, DSL, SHPO and US Army Corps of Engineers	1 year	Annual review of budget for possible implementation or private development. Report funding status in annual TMDL review report.	This project replaces the Bear Creek Greenway Project which was completed in 2018	Construction of the second phase (riparian zone spanning footbridge) scheduled for July 2020 was completed. The third phase has now been named "Chief Yelkus Park". IT is being funded in part by HB5006 money, and a wetland delineation has been ordered by the City.
Lack of shading in riparian areas	Protect and enhance existing vegetation in riparian areas.	Conduct public education on protection of riparian areas.	Staffing to conduct educational effort; 0.20 FTE currently funded.	Number of Pre-application Meetings, which include public education	On-going	Educational outreach once per year through 2021. Provide outreach details in annual TMDL review report.	No change.	Continued education of development community and property owners during pre-application meetings.

Lack of shading in riparian areas	Protect and enhance existing vegetation	Tree protection as required by City Code 17-3.4.030.	Staffing as required for plan review and enforcement.	Track enforcement actions and violations as well as number of existing trees retained with each development.	On-going	Maintain all existing trees, where possible, on new development as required by Municipal Code 17-3.4.030.	No changes made to code or application of code.	Community Planner continued enforcement of development code on all projects.
Lack of shading in riparian areas	Partner with watershed groups and Clackamas County SWCD	Establish working relationships, Partner on riparian restoration projects, and public outreach opportunities	Volunteer staffing as required	Number of meetings attended, and projects collaborated on	5 Years	Attend at least one meeting annually 2020	The City has exceeded its goals in this area.	The City continues to provide a volunteer board member for Pudding River Watershed Council
Lack of shading in riparian areas	Tree planting	Enforce tree planting and landscaping by way of Municipal Code 17.3.4.	In City budget for Code enforcement staffing.	Number of trees planted and Area landscaped.	On-going	Establish list of projects that provided new trees and landscape areas through 2020 and include in annual TMDL review.	No changes made to code or application of code.	Project 20-07 "Creamery Creek Park" has been renamed "Strawberry Park" and is under construction. Final tree planting in the Riparian area will occur post-construction.

Stormwater	City Council overview and acknowledgement .	Review TMDL Plan, annual reports and five year review with City Council.	None	Track number of times TMDL reports are covered in City Council meeting minutes.	On-going	City Council approval of TMDL Plan and review reports.	No change.	Council reviewed draft TMDL Report as part of regular meetings in June 2022. Council was also briefed on the new Mercury requirements during the budget committee meeting in May.
------------	---	--	------	---	----------	--	------------	---

Reduced stream flow in Molalla River and tributaries	Reduce municipal water diversion.	Water conservation efforts	Staffing to complete scada programming and review compliance with AWWA Water Audit standards; 0.15 FTE currently funded.	Monitor total water use VS Total Production	On-going	Water use reported annually in TMDL report.	No change.	The City completed it's buildout of water auditing methodology, and performed a comprehensive leak assessment throughout town. Several capital Projects were launched due to the results of that study, including the Scandia Waterline Project (21-06) which is handling the largest leaking mainline in town.
Wastewater treatment plant discharge	Maintain low effluent temperatures .	Maintain compliance with NPDES permit requirements.	Wastewater treatment staff; funded positions.	Molalla River temperature monitoring.	Continuous temperature measurement ; monthly permit reporting.	Report instream temperature monitoring with annual TMDL report review.	No change.	Effluent temperatures are available by reference to the City's monthly Discharge Monitoring Reports (DMRs).

POLLUTANT: Bacteria, Mercury, and Legacy Pesticides

City of Molalla: TMDL Implementation Tracking Matrix

SOURCE <i>What sources of this pollutant are under your jurisdiction?</i>	STRATEGY <i>What is being done, or what will you do, to reduce and/or control pollution from this source?</i>	HOW <i>Specifically, how will this be done?</i>	FISCAL ANALYSIS <i>What is the expected resource need? Are there existing resources budgeted?</i>	MEASURE <i>How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?</i>	TIMELINE <i>When do you expect it to be completed?</i>	MILESTONE <i>What intermediate goals do you expect to achieve, and by when, to know progress is being made?</i>	ADAPTIVE MANAGEMENT APPLIED <i>Indicate how strategies have changed with annual reports.</i>	STATUS <i>Include summary and date.</i>
Stormwater	Promote Low Impact Development and on-site stormwater treatment.	Encourage green street standards – at least half street improvements with new development. Meet pre-development hydrology requirements per Municipal Code 17-3.6 and Public Works Design Standards Section 3.2.	Currently in Public Works budget.	Percent of green street standards for each project. For each project, stormwater quantity calculations to meet pre-development hydrology and water quality requirements per PW Standards.	On-going	All new development plans incorporate green street standards where practical and include pre-development hydrology. Report applicable improvements in annual TMDL review report.	No change.	Protection of riparian areas adhered to with development of Colima Apartments (20-01); 643 N Molalla Ave (20-02); Bartell Subdivision (21-01).
Stormwater	Promote Low Impact Development and on-site stormwater treatment.	Incorporate stormwater treatment with transportation projects	Included in city budget according to capital improvement plan.	Project that include installed of stormwater treatment features	20 21	Hwy 211 sidewalk project	Listed most current projects.	This project was constructed in 2021.

Stormwater	Promote Low Impact Development and on-site stormwater treatment.	Encourage use of drainage swales that settle, infiltrate, and treat turbid runoff. Current Public Works Design Standards Section 3.5 provides design specifications for drainage swales.	Currently in City planning budget for plan review.	Track number of projects that incorporate drainage swales.	On-going	Add drainage swales installed to GIS Stormwater map by end of 2021. Report number of water quality facilities constructed in annual TMDL review report.	No change.	Three new water quality swales incorporated into Colima Apartments (20-01); 643 N Molalla Ave (20-02); Bartell Subdivision (21-01).
Stormwater	Reduce pet waste in stormwater runoff.	Install waste bags in parks and common dog-walking locations. Citizen education about improper pet waste management.	Currently in Parks budget.	Track waste bag usage within the City.	On-going	Report bag use in annual TMDL review report.	No change.	Supplied 22,745 bags in City Parks in 2021. This number is nearly 10 times higher than previous years as new stations were added.

Stormwater	Educate developers and the public about stormwater and hydrology in the City of Molalla.	Make Stormwater Master Plan and Public Works Design Standards available to public via City website.	None	Number of private development that meet stormwater standards.	On-going	All Private development projects meet stormwater detention and water quality requirements.	No change.	Protection of riparian areas adhered to with development Colima Apartments (20-01); 643 N Molalla Ave (20-02); Bartell Subdivision (21-01).
Stormwater	Prevent erosion from construction sites.	Conduct grading inspections per Municipal Code 21.70 to ensure protection against erosion.	Currently in Public Works budget.	Percent of sites that comply voluntarily.	Ongoing	Report permitted excavation projects that complied with Municipal Code 21.70 in annual TMDL review report.	No change.	Reviewed with development of Colima Apartments (20-01); 643 N Molalla Ave (20-02); Bartell Subdivision (21-01).
Stormwater	Prevent erosion from construction sites.	Cooperate with DEQ to enforce erosion control through 1200C permits as required by Municipal Code - Chapter 17 and Public Works Design Standards 1.18.4.	Currently in Public Works budget.	Keep track of 1200C permits within City boundaries.	On-going	Report projects that complied with 1200C permits in annual TMDL review report.	No change.	
Stormwater	Reduce runoff and sediment load from impervious areas: roads, vacant lots.	Maintain weekly street sweeping schedule.	Currently in Public Works budget.	Using street sweeping log, track frequency of areas cleaned.	On-going	Report volume estimate of street sweepings in annual TMDL review report.	No change.	Approximately 969 CY (872,000 lbs) between 6/1/21-6/1/22. This is more than 7 times higher than the 114,232 lbs hauled last year.

Stormwater	Maintenance Program for stormwater collection system.	Maintain storm system components including; catch basins, manholes and pipes.	Currently in Public Works budget. System Development Charges in place for storm drainage	Track maintenance projects that improve stormwater system. Construct Decant Facility as funding allows.	On-going	Indicate number and type of maintenance projects in annual TMDL review report. Provide funding status for Decant facility in annual	No change.	Decant Facility Design has been completed, funding becomes available July 2022 as planned.
------------	---	---	--	--	----------	--	------------	--

Combined storm and sanitary sewers, and Inflow/Infiltration	Increase effectiveness and efficiency of wastewater treatment.	Eliminate illicit discharge and infiltration issues in downtown core.	To be determined.	Average daily flow to treatment plant before and after cross connect issues addressed.	5 years	Report completion of planned inflow/infiltration projects in annual TMDL review report. Include annual review of budget for inflow/infiltration projects.	No change.	Completion of sewer project on Patrol St. Completion of repairs to the Molalla Lift Station Feeder Line (a High Priority Project in the Wastewater Collection System Master Plan). Total influent at the WWTP measurably reduced, estimated 26% reduction since 2018 at the time of this report.
---	--	---	-------------------	--	---------	---	------------	--

Combined storm and sanitary sewers, and Inflow/Infiltration	Decommission Septic Systems per Municipal Code 13.08.300 – Upon Availability of Public Sewer – Abandonment of Private Systems.	Administer 30 day notice to connect to city sewer where public sewer is made available.	Planning staff, full time.	Number of new connections made annually as a result of annexations, violations discovered.	On-going	Connect all residential, commercial, industrial properties within city limits to city sewer and report in annual TMDL review report.	No change.	As of today 10 of the previously identified 11 properties have abandoned their septic systems and hooked up to sewer system.
Illegal Discharge and Industrial Pretreatment Program	Code enforcement of Municipal Code 13.08.840 – Discharge Into Storm Drains. Establishment Pretreatment code: 13.13.530	Provide code enforcement form to citizens. Update Industrial Pretreatment Survey.	Currently in City budget for Operations Supervisor.	Track number of complaints and issues.	On-going	Code enforcement form has been made available on the City of Molalla website. Report number of complaints received, and corrective actions taken in annual TMDL review report.	No change.	The City received zero illegal discharge complaints in 2021.
Mercury Measure #1	Pollution Prevention and Good Housekeeping for Municipal Operations	Build Decant Facility for Stormwater debris	\$80,000 for construction. Maintenance and disposal costs to be determined next round.	Completed project	09/31/23	Design acceptance package by January 2023	TBD	TBD

Mercury Measure #2	Public Education and Outreach	Coordinate with Library District for ideas. Provide public information on 4 th of July Parade Float, and display at annual “National Night Out”.	\$1000 /year	Photographs	09/31/23	Mockups should be available by 06/15/23	TBD	TBD
Mercury Measure #3	Public Involvement and Participation	Establish “Molalla Current” as a public outreach and participation platform.	Est \$8000 /year (\$300 from storm fund)	Number of Citizens signed up.	09/31/23	Milestone: 800 citizens signed up by January 2023.	TBD	TBD
Mercury Measure #4	Illicit Discharge Detection and Elimination	IDDE program through Code Enforcement via Manual Count. Coordinate annual Spring Cleanup Event. Provide Pharmaceutical disposal facility at Police Dept.	Est \$7500 /year	Number of Code Enforcement Cases.	09/31/23	Milestone: next annual spring cleanup day event moves forward in March/April 2023.	TBD	TBD

Mercury Measure #5	Construction Site Runoff Control	Document Site Runoff Program Implementation as a STORMWATER file in each project folder.	\$0	Number of Projects that required Site Runoff Program implementation	09/31/23	Milestone: all staff briefed on this requirement by 1/31/23	TBD	TBD
Mercury Measure #6	Post-Construction Site Runoff for New Development and Redevelopment	Update PW Standards to require capture and treatment of 80% of the average annual runoff volume, to the maximum extent possible, with the goal of 70% total suspended solids (TSS) removal.	\$1500 one time	Upon completion and publication of document revision	December 2023	Draft completed by Sept 2023	TBD	TBD