

# Willamette Basin Mercury Total Maximum Daily Load

## TMDL Planning and Implementation for Non-permitted Stormwater Management for Cities

Water Quality, TMDL Program

May 11, 2021

POLL

# Learning Objectives

- Overview of BMPs to reduce sediment/mercury
- NPS load reductions needed for non-permitted urban stormwater runoff
- Understanding of the stormwater control measures your city will need to implement to comply with the TMDL WQMP and the deadlines for completion



Photo Source: Within our Reach Conference



**Most mercury comes from air deposition from sources outside Oregon then moves from land to waterbodies through erosion and runoff**

**88 – 96% reduction  
of total mercury  
needed**



**Primary TMDL  
Implementation  
Strategy**



**reduce erosion and  
runoff to waterbodies**



# State Mercury Reduction Efforts

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- Last coal-fired power plant in Oregon near Boardman closed in 2020
- In 2019, the state of Oregon joined 20 other states in a lawsuit against EPA's decision to ease restrictions on coal-fired power plants
- State bans, restrictions and management related to:
  - Lighting fixtures
  - Novelty items
  - Thermostats, and
  - Vehicle switches
- The 2007 legislature required dental offices to install dental amalgam separators
- Other voluntary efforts, such as household hazardous waste collection days.

# Overview of BMPs





Photo source: ODA



# Road Management



Photo source: BLM



# Clean up contaminated sites





# Construction runoff protection







**Treat stormwater**



# Use Green infrastructure—soak it in!





# Required Stormwater Control Measures in TMDL Water Quality Management Plan





# EPA Disapproval of DEQ's TMDL

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- EPA's TMDL developed nonpoint source and point source pollutant allocations by subbasin—need to look at EPA's TMDL to find them
- EPA's TMDL states that reasonable assurance for their TMDL relies on DEQ's Water Quality Management Plan (WQMP)

Effective Allocations = EPA's TMDL

Effective Management Measures = DEQ's WQMP

# NPS Load Allocations for Non-Permitted Stormwater

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“aggregated” allocations—i.e. non-permitted MS4 cities (n = 60) together must meet the allocations in each subbasin

75% total Hg reductions\*

\* Exception: 97% for Middle Willamette 17090007

# Mercury in Stormwater

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- Large communities were required to collect mercury in stormwater (i.e. MS4 Phase I permit holders)
  - Median value of total mercury: 4.62 ng/L ( $n = 655$ )
  - TMDL water column target = 0.14 ng/L
- TMDL modeling indicated that mercury in SW is primarily a function of erosion and runoff from atmospheric deposition of mercury, rather than specific sources in large urban areas
- DEQ concluded mercury is also present in smaller urban communities and could contribute to water quality impairments



# Mercury Reductions Are Occurring

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- Since the 2006 mercury TMDL, DMAs have been implementing mercury reduction plans to help reduce mercury inputs to the watershed, including, but not limited to:
  - Conducting outreach and education about best management practices for the management of dental wastes and recycling of fluorescent lighting
  - Requiring sediment and erosion control plans of new and re-development projects
  - Requiring or encouraging the use of low impact development to reduce the volume and rate of stormwater discharged to our streams
  - Reducing emissions by purchasing more fuel-efficient vehicles for municipal fleets
  - Enforcing and/ or encouraging conservation and enhancement of riparian buffers, which trap sediment and prevent stream bank erosion
  - Performing regular street sweeping and catch basin cleaning



# The Numbers

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In 2018, DEQ completed a comprehensive assessment of TMDL implementation in the Willamette Basin. Results from urban DMAs without MS4 permits and populations <10K showed evidence of the following stormwater components :

**23%** Illicit discharge detection and elimination program

**51%** Pollution prevention and good housekeeping

**65%** Erosion and sediment control from construction activities

**35%** Post-construction stormwater control

**61%** Stormwater public outreach and education



# Required Six Stormwater Control Measures

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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



# Applicability

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- Cities 5,000 or greater (19): Must implement 6 stormwater control measures.
- Cities less than 5,000 (41): Must evaluate the 6 minimum stormwater control measures and identify the strategies and actions that they can implement to reduce mercury and sediment.



Upon request, DMAs must provide information to DEQ regarding their specific limitations to implementing all or some of the 6 stormwater controls



Under certain circumstances, DEQ may require implementation of all 6 stormwater controls, such as when city growth exceeds 5,000 people



# Communities 5,000 or Greater

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## Greater than 10K

- Canby
- Cottage Grove
- Dallas
- Lebanon
- McMinnville
- Newberg
- St. Helens
- Woodburn
- Sandy
- Silverton

## Between 5K and 10K

- Creswell
- Independence
- Junction City
- Molalla
- Monmouth
- Scappoose
- Sheridan
- Stayton
- Sweet Home



# Pause for Questions

# 1

## Pollution Prevention and Good Housekeeping for Municipal Operations

- ✓ Maintain city facilities, roadways, etc. using pollution prevention and good housekeeping practices to reduce discharge of pollutants through SW conveyance system
- ✓ DMAs must maintain records for activities and include a descriptive summary of their activities in the TMDL annual report





## 2 Public Education and Outreach

- ✓ Conduct an ongoing public stormwater education and outreach program—who is the target audience and what is the best way to communicate?
- ✓ DMA must assess progress toward implementation of the program, including a qualitative evaluation of at least one education and outreach activity in the TMDL annual report





### 3 Public Involvement and Participation

- ✓ Provide opportunities for the public to effectively participate in the development of stormwater control measures using city's public notice requirements
- ✓ Maintain and promote at least one publicly accessible website with information on the city's stormwater control implementation, contact information, and educational materials





## 4 Illicit Discharge Detection and Elimination

- ✓ Implement and enforce a program to detect and eliminate illicit discharges into the stormwater conveyance system through an ordinance or other regulatory mechanism
- ✓ Stormwater conveyance system map and digital inventory must include the location of outfalls, conveyance system and stormwater control locations
- ✓ Procedure to document all complaints or reports of illicit discharges into and from the stormwater conveyance system



# 5 Construction Site Runoff Control

- ✓ DEQ 1200C permit: Construction sites one or more acres
- ✓ Require Erosion and Sediment Control Plans for construction project sites that result in a minimum land disturbance of 1/2 acre or more
  - Initial clearing through final stabilization
- ✓ Implement and maintain a written escalating enforcement and response procedure





## 6 Post-Construction Site Runoff for New Development and Redevelopment

- ✓ Applies to new development or redevelopment projects that create or replace 1/4 acre
- ✓ Goal is to retain rainfall on-site and minimize the offsite discharge of precipitation (e.g. low impact development principles)
- ✓ Stormwater that leaves site must be treated. Treatment systems should be designed to remove at least 80% of TSS
- ✓ Long term operation and maintenance requirements



# Implementation Schedule

Stormwater Control Measures	Cities less than 5,000	Cities 5,000 – 10,000	Cities greater than 10,000
1. Pollution Prevention and Good Housekeeping for Municipal Operations	As determined by DEQ based on information provided by DMA	<b>Mar. 3, 2024</b> (3 yrs.)	<b>Sept. 3, 2022</b> (18 mo.)
2. Public Education and Outreach	As determined by DEQ based on information provided by DMA	<b>Mar. 3, 2024</b> (3 yrs.)	<b>Sept. 3, 2022</b> (18 mo.)
3. Public Involvement and Participation	As determined by DEQ based on information provided by DMA	<b>Mar. 3, 2024</b> (3 yrs.)	<b>Sept. 3, 2022</b> (18 mo.)
4. Illicit Discharge Detection and Elimination	As determined by DEQ based on information provided by DMA	<b>Sept. 3, 2025</b> (4.5 yrs.)	<b>Mar. 3, 2024</b> (3 yrs.)
5. Construction Site Runoff Control	As determined by DEQ based on information provided by DMA	<b>Sept. 3, 2030</b> (9.5 yrs.)	<b>Sept. 3, 2025</b> (4.5 yrs.)
6. Post-Construction Site Runoff for New Development and Redevelopment	As determined by DEQ based on information provided by DMA	<b>Sept. 3, 2030</b> (9.5 yrs.)	<b>Sept. 3, 2025</b> (4.5 yrs.)



# Stormwater Resources

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1. Center for Watershed Protection resources: <https://www.cwp.org/mission-vision>
2. Coquille TMDL Low Impact Development (LID) Implementation Tool: Guidance Document: <https://www.oregon.gov/deq/FilterDocs/coqlidguidance.pdf>
3. EPA Stormwater resources: <https://www.epa.gov/npdes/npdes-stormwater-program>
4. Low Impact Development in Western Oregon: A Practical Guide to Watershed Health: <https://www.oregon.gov/deq/wq/tmdls/Pages/TMDLs-LID.aspx>
5. SRF Program website: <https://www.oregon.gov/deq/wq/cwsrf>
6. TMDL Implementation Guidance: Guidance for Including Post Construction Elements in TMDL Implementation plans: <https://www.oregon.gov/deq/FilterDocs/tmdls-07wq004tmdlimplplan.pdf>

From Appendix D in the Mercury WQMP

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# TMDL Implementation Plan Updates

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- Cities must submit new or updated TMDL implementation plans by Sept. 3, 2022.

NOTE: These plans should be “approvable”, not draft.

- Reporting matrix table must include development of measurable objectives associated with each of the 6 stormwater management measures.
- Reporting matrix should include dates to meet the implementation deadlines associated with each stormwater management measure



# Measurable Objectives

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- Strategies must include a method to track progress and document challenges
  - Measure whether or not you're gaining ground on successfully and fully implementing a strategy
- Strategies must include interim timelines to measure progress against
  - Track whether or not you're meeting your targets and use adaptive management

# Enforcement

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## OAR 340-012-0055(2)(e)

*Failing to timely submit or implement a Total Maximum Daily Load (TMDL) Implementation Plan, by a Designated Management Agency (DMA), as required by department order.*

DEQ may send **warning letters** to DMAs that do not submit implementation plans or annual reports on time or documents are unsatisfactory. Warning letters may lead to **penalties** if not fixed.

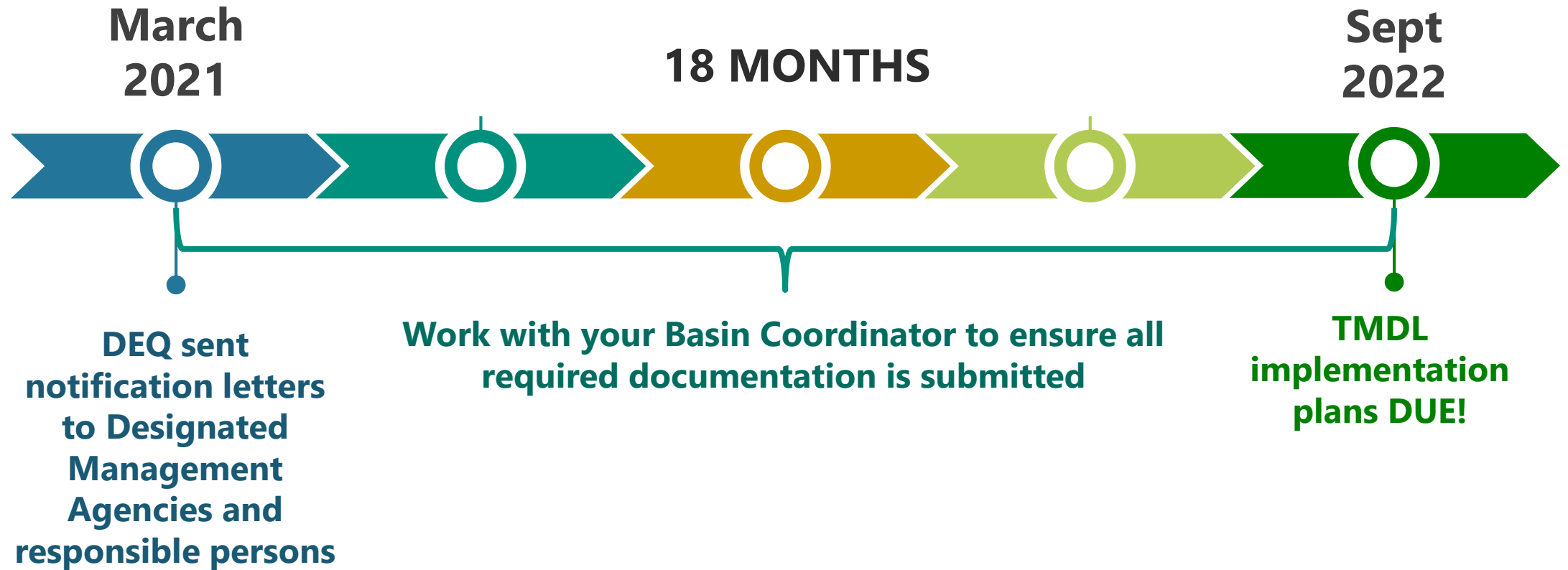
**NOTICE**

**THANK YOU FOR  
NOTICING THIS NEW  
NOTICE**

**YOUR NOTICING IT HAS  
BEEN NOTED**



# The Willamette Basin Mercury TMDL



# Learn More at Upcoming Workshops!

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- May 25** TMDL Planning and Implementation for Permitted MS4s
- June 1** TMDL Planning and Implementation for Counties
- June 8** TMDL Planning and Implementation for Responsible Persons, Water Conveyance Entities



# Basin Coordinator Contacts

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**QUESTIONS?**

