

Surface Water Master Plan



Planning Commission Meeting – August 7, 2019

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Agenda

- I. Comprehensive Plan
- II. Clean Water Act (CWA)
 - TMDL program
 - NPDES MS4 permits
- III. Other regulations
- IV. Wrap Up/Questions

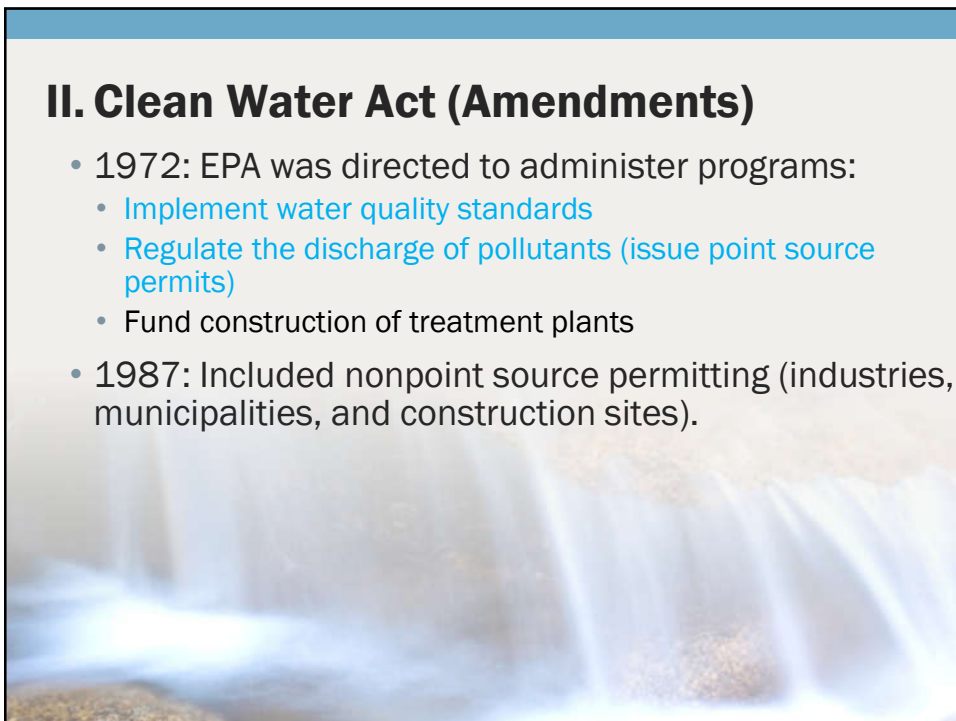
I. Comprehensive Plan

- Supporting Document
- Goal 11 – Public Facilities Plan
 - Section 3: Storm Drainage
- Orderly provision of storm facilities to serve development



II. Clean Water Act (Amendments)

- 1972: EPA was directed to administer programs:
 - Implement water quality standards
 - Regulate the discharge of pollutants (issue point source permits)
 - Fund construction of treatment plants
- 1987: Included nonpoint source permitting (industries, municipalities, and construction sites).



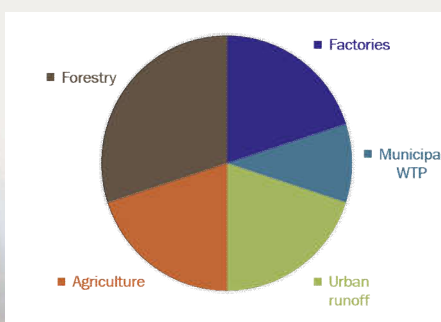
Water quality standards

- DEQ requires that Integrated Reports (305(b)) be prepared every 2 years to summarize data.
- If instream data indicate standards are exceeded, the water body is placed on the 303(d) list.
- A Total Maximum Daily Loads (TMDL) program must be developed for water bodies on the 303(d) list.

| Basin Name | Water Body | Pollutant | Season | Criteria | Beneficial Uses | Status | 2010 Assessment Action | [Data Source] Supporting Data |
|--|--|-----------|-------------|------------------------------|---|--|------------------------|--|
| Subbasin 4th Field HUC | LEED River Miles Segment Miles Reach Name Reach ID | | | | | | | |
| Lower Columbia; Willamette | Columbia River 1240483462464 35.2 to 98 | Arsenic | Year Around | Table 20 Toxic Substances | Resident fish and aquatic life; Anadromous fish passage; Drinking water | 303(d) | No 2010 action | Previous Data: USGS data from 4 sites (Warrendale, Hayden Island, Columbia and Beaver); 14 of 16 samples exceeded Water Quality Standard for Arsenic, Table 20. Values where Lugli. Previous Status: 303(d) Previous Action: Added to database Previous Assessment Year: 1998 |
| Lower Columbia- Caskanie; Lower Willamette 17080003; 17090012 78 | Columbia River 1240483462464 35.2 to 98 | Arsenic | Year Around | Table 20 Toxic Substances | Aquatic life; Human health | Cat 5; Water quality limited, 303(d) list, TMDL needed | No 2010 action | Previous Data: [DEQ] LASAR 12961 River Mile 64.8: From 8/25/1997 to 8/25/1997, 0 out of 1 samples > applicable Table 20 criterion; [DEQ] LASAR 12979 River Mile 64.7: From 8/25/1997 to 8/25/1997, 0 out of 1 samples > applicable Table 20 criterion. [DEQ] LASAR 12980 River Mile 64.6: From 8/25/1997 to 8/25/1997, 0 out of 1 samples > applicable Table 20 criterion. Previous Status: Cat 5; Water quality limited, 303(d) list, TMDL needed Previous Action: Added to database Previous Assessment Year: 2004 |
| Lower Columbia- Willamette 20001 | Columbia River 1240483462464 35.2 to 98 | | | | | | | |

TMDL programs

- TMDL programs establish the allowable pollutant load a water body can receive without exceeding standards.
- The allowable load is distributed/allocated among the various dischargers/jurisdictions.



- A TMDL is the pie, load allocations are a piece of the pie.

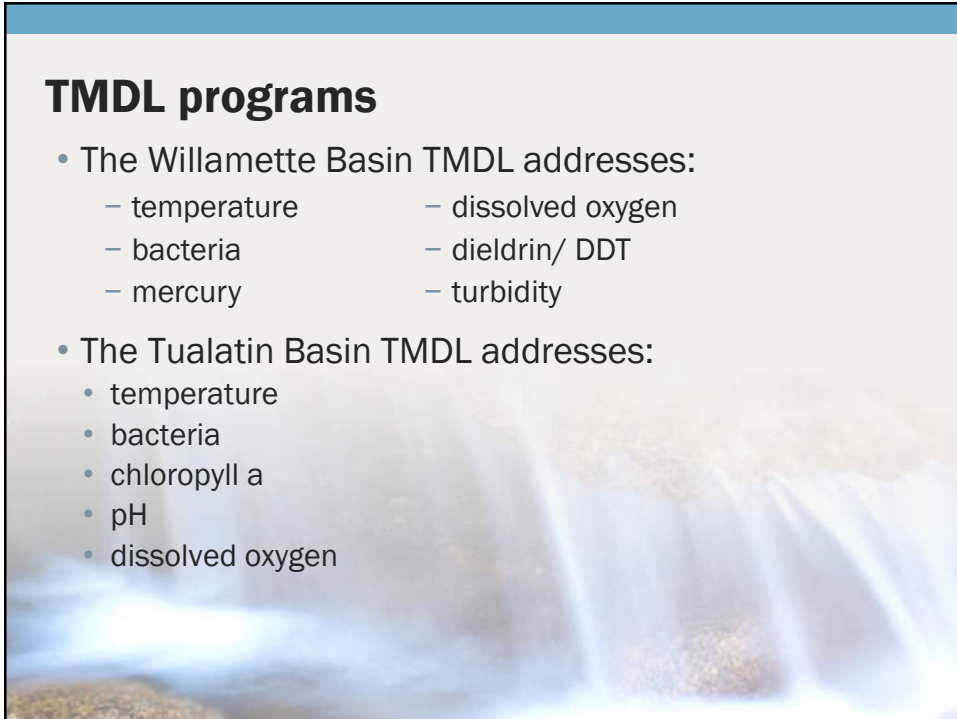
TMDL programs

- The Willamette Basin TMDL addresses:

- temperature
- dissolved oxygen
- bacteria
- dieldrin/ DDT
- mercury
- turbidity

- The Tualatin Basin TMDL addresses:

- temperature
- bacteria
- chlorophyll a
- pH
- dissolved oxygen



NPDES permitting program

- 1987 Water Quality Act:

- Added selected nonpoint sources to the NPDES permitting program
 - Municipal separate storm sewer systems (MS4s)
 - Industrial runoff
 - Construction site runoff (focused on erosion control)



MS4 NPDES permitting program Phase I permit

- 1995 - 2000: 1st permit term
- 2004 - 2009: 2nd permit term
- 2012 - 2017: 3rd permit term
- Next permit?

Note: Phase II permits for smaller communities were first issued in 2007.



Current NPDES MS4 Permit Requirements

- Implement a SWMP that addresses the following program areas:
 - Illicit Discharge Detection & Elimination
 - Industrial and Commercial Facility Inspections
 - Construction Site Runoff Control
 - Education and Outreach
 - Public Involvement and Participation
 - Pollution Prevention for Municipal Operations
 - Water Quality Facility Maintenance
 - Post-Construction Site Runoff
- Annual reporting.
- Monitoring (analyzing stormwater samples).



Additional Phase I permit requirements

- TMDL benchmarks (completed 2017).
- Hydromodification assessment (completed 2015).
- Retrofit strategy (completed 2015).
- Construction of a retrofit (completed 2016/17).
- Waste Load Allocation (WLA) attainment assessment (completed 2015).



III. Other regulations – not specifically addressed

- Waters of the US (WOTUS)
- Removal/Fill Permits - 401 Certifications
- Major/Minor Utility (CDC Chapter 85, Definitions)

Questions?

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II. Clean Water Act

- CWA was an amendment to the 1948 Federal Water Pollution Control Act (Truman).
- CWA included expansion and reorganization of the Pollution Control Act in 1972.
- Designed to achieve the goal of restoring and maintaining the “chemical, physical and biological integrity of the nations waters”.



- Ohio River on fire, 1969



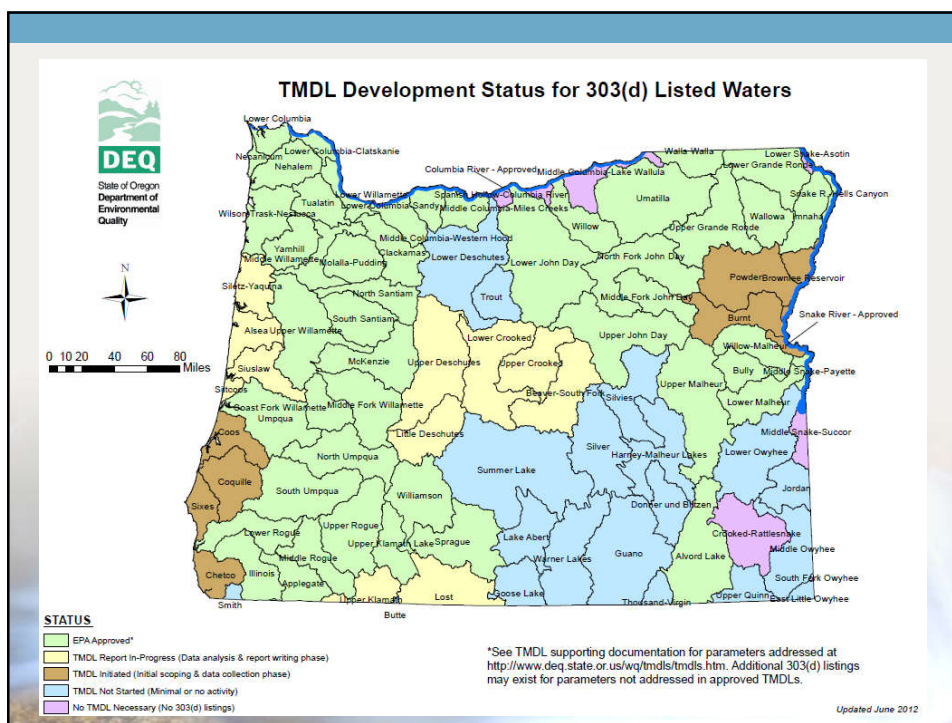
- Fish kill resulting

Water quality standards

- Implemented by the EPA and/or individual states.
- In Oregon, state standards exist for instream water quality.
- Standards include the following elements:
 - Designated beneficial uses
 - Water quality criteria
 - Anti-degradation policy

Oregon Department of Environmental Quality
Table 30
Aquatic Life Water Quality Criteria for Toxic Pollutants
340-041-8033

| Pollutant | CAS Number | Human Health Criterion | Freshwater (µg/L) | | Saltwater (µg/L) | |
|---|------------|------------------------|-----------------------|-------------------------|-----------------------|-------------------------|
| | | | Acute Criterion (CMC) | Chronic Criterion (CCC) | Acute Criterion (CMC) | Chronic Criterion (CCC) |
| <small>^C Criterion is expressed in terms of "dissolved" concentrations in the water column. ^F The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endpoint F at bottom of Table 30.</small> | | | | | | |
| 12 Chromium VI | 18540299 | n | 16 ^C | 11 ^C | 1100 ^C | 50 ^C |
| <small>^C Criterion is expressed in terms of "dissolved" concentrations in the water column. ^F The freshwater criterion for this metal is expressed as "total recoverable" and is a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endpoint E at bottom of Table 30.</small> | | | | | | |
| 13 Copper | 7440508 | y | See II | See II | 4.8 ^C | 3.1 ^C |
| <small>^C Criterion is expressed in terms of "dissolved" concentrations in the water column. ^E The freshwater criterion for this metal is expressed as "total recoverable" and is a function of hardness (mg/L) in the water column. To calculate the criterion, use formula under expanded endpoint E at bottom of Table 30.</small> | | | | | | |
| 14 Cyanide | 57125 | | 2 ^D | | 1 ^D | 1 ^D |



Illicit Discharge Detection & Elimination

- Develop, implement, and enforce an IDDE program.
 - System maps
 - Ordinance
 - Dry weather screening program
 - Inform the public
 - Respond to complaints
 - Identify sources
 - Eliminate discharges, as discovered
 - Respond to spills



Industrial and Commercial Facility Inspections

- Screen existing and new facilities.
- Track industries required to obtain 1200Z permits.
- Consider whether commercial facilities should be added to the program.
- Establish priorities and procedures for inspection.



Construction Site Runoff Control

- Develop, implement, and enforce a program to reduce pollutants from construction activities.
 - Applies to sites that are 1,000 square feet or larger
- Provide education to construction site operators.
- Provide an erosion control manual.
- Conduct site plan reviews.
- Conduct inspections.



Public Involvement and Participation

- Implement a public education program and distribute public education materials.
 - Staff training on pest management and spill response
 - Brochures
 - Events
 - Catch basin stenciling
 - Watershed groups
 - Website
 - Pet waste pick up
- Implement a public participation process.



Pollution Prevention for Municipal Operations

- Develop and implement an O&M program to reduce pollutants from municipal operations.
- Employee training.
- Erosion control for street repairs.
- Street sweeping.
- Pest management program.
- Manage runoff from municipal facilities.
- Eliminate cross connections.
- Consider water quality in CIP projects.



Water Quality Facility Maintenance

- Inventory and map water quality facilities.
- Develop inspection and maintenance schedule.
- Develop criteria and priorities for inspections and maintenance.
- Develop tracking mechanisms.
- Ensure inspectors are trained.



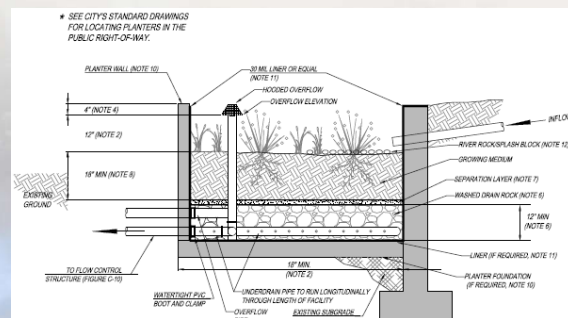
New Development and Redevelopment

- Develop, implement, and enforce a program to address pollutants from new and re-development with impervious surface areas of 1,000 SF or greater.
- Target natural surface or pre-development hydrologic functions.
- Optimize on-site retention.
- Reduce runoff volume, duration, and rates.
- Prioritize and include implementation of LID, green infrastructure or equivalent approaches.
- Capture and treat 80% of average annual runoff.



New Development and Redevelopment

- Eliminate barriers to Low Impact Development (LID).
- Develop or reference an enforceable manual.
- Require equivalent measures when the project site is characterized by factors limiting use of on-site methods.
- Develop inspection and enforcement response procedures.



Monitoring

- Analyze stormwater and biological samples from outfalls and streams:
 - To identify or track trends
 - To evaluate the effectiveness of the program
 - To compare to water quality standards
 - To identify sources
 - To estimate loadings

