

Deschutes TMDL Advisory Group

Focus on the Middle Watershed

January 2011

Speaker Notes

Slide #2

This section of the watershed has four main parameters of concern:

Temperature: *We need to cool the water.* Repairing and restoring the riparian vegetation is critical.

Fecal Coliform Bacteria: We need to limit new contributions and identify and reduce non-point sources. We know on-site septic systems (OSS) are a contributor to high levels of nitrates and fecal coliform bacteria. Thurston County revised the regulation addressing OSS in May 2010.

Fine Sediments – Much of these are coming down from the upper watershed. There are no *new* known sources. Some are contained throughout the watershed and can take many years or even decades to move through. Work done to control sediments in the upper watershed will benefit the middle section.

Dissolved Oxygen: The area from Offut Lake to Deschutes Falls is violating water quality standards. Temperature influences the dissolved oxygen concentration in the water. Colder water holds more oxygen.

Other issues include:

- **Livestock & Agriculture:** These are the most predominant non-point source contributors in this area of the watershed. This is due to how close they are to both the river and some of its tributaries.
- **Gravel mine operations:** The issue of gravel washing contributing to the removal of dissolved oxygen was discussed. Ecology regulates this activity through the Sand and Gravel General Permit.

Slide #3

Winter bacteria: The good news is we met the water quality standards for areas tested.

Summer bacteria: Work is still needed for Reichel, Spurgeon, and Chambers Creek, as well as the Deschutes River. Bacteria is harder to find in some areas. We need constant vigilance to prevent or limit new contributions.

Slide #4

Groundwater is colder than surface water. Modeling shows the water could be cooled by 5 degrees Celsius with fully established riparian vegetation to provide shade. Restoring shade would also reduce the number of reaches that now exceed lethal temperatures. We know that in certain areas we cannot meet the water quality standards due to natural conditions. We need to think comprehensively about fixes throughout the entire watershed. We also need to remember that new riparian vegetation takes times to grow to full maturity to provide optimum shade.

Slide #5

Temperature: *We need to cool the water.* Repairing and restoring the riparian vegetation is critical.

Fecal Coliform Bacteria: We need to limit new contributions and identify and reduce non-point sources. Septic systems actually contribute very little to this section of the watershed because of the predominance of permeable outwash soils and the distance to surface waters.

Fine Sediments: Much of these are coming down from the upper watershed. There are no new known sources. Some are contained throughout the watershed and can take many years or even decades to move through. Work done to control sediments in the upper watershed will benefit the middle section.

Slide #6

Urban areas produce the most significant fecal coliform bacteria loads.

Slide #7

We've modified Table 1 from the Draft Technical Report. The table shows the target reductions needed to achieve water quality standards within the Deschutes River, Capitol Lake, and Budd Inlet watersheds during the growing season (May through September.)

Slide #8

We've modified Table 2 from the Draft Technical Report. The table shows the target reductions needed to achieve water quality standards within the Deschutes River, Capitol Lake, and Budd Inlet watersheds during the non-growing season (October through April).

Slide #11

The model identifies areas where re-establishing mature vegetation would increase shade areas and reduce water temperature.

Slide #12

We've modified Table 3 from the Draft Technical Report. This table shows the conditions in tributaries to the Deschutes River, including temperature load targets, for streams not meeting the water quality standards.

Slide #13

We're particularly looking at shade and sediment. Remember that work done in one area of the watershed affects another. This is another reason why we need to think and act comprehensively throughout the watershed for solutions. An important note to remember - rivers are known to move and shift over time.

Slide #14

We've modified Table 4 from the Draft Technical Report. The table shows the conditions in tributaries to the Deschutes River, including DO, pH, and nutrient loads, for streams not meeting the water quality standards for DO or pH.

Slide #15

We've modified Table 5 from the Draft Technical Report. The table shows the fine sediment load targets by reach for the Deschutes River watershed.

Slide #17

Reminder regarding Fine Sediments: The Sand and Gravel General NPDES Permit is addressed in the Draft Technical Report. The report does not recommend any changes to the permit conditions. If Ecology felt the sand and gravel operations were a big contributor to the water quality problems, we would suggest changes.

Slide #18

We've identified some key partners for this part of the watershed. Representatives from each of these organizations gave us information along the way about their roles and responsibilities. It included:

- What do we have influence over?
- What is already in place?
- What do we still need to do?
- What are the land uses in the middle watershed?

Slide #19

Here are some good examples of work already happening in the area of environmental education and outreach. These efforts reach out to landowners, community members, schools, and anyone interested in environmental issues.

The **Thurston Conservation District** completed work through an Ecology grant titled, "Deschutes Early Action TMDL Response", resulting in two publications: "Your Role in Deschutes Watershed Water Quality Protection", and "Clear Choices for Clean Water". Part of the project was a Stewards Program, which provided outreach to 72 people and technical assistance to 176 agricultural or streamside landowners.

The **Puget Sound Partnership** developed a central "bank" of information from a wide variety of sources. It includes Puget Sound Resources, Action Agenda documents, Salmon Recovery & Watershed work plans, "Puget Sound Starts Here" campaign materials, and more!

The **Thurston County Stream Team** is a program for citizens interested in protecting and enhancing water resources in Thurston County watersheds. Partners are from the cities of Olympia, Lacey, and Tumwater, and Thurston County. Activities include planting native trees, stenciling storm drains, monitoring local streams, and removing litter.

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Thurston County is quite active and here are some examples:

Watershed Characterization Study: The goal is to restore, rehabilitate, and preserve the watershed. Work is funded by an EPA West Coast Estuaries Initiative Grant, "*Protecting Puget Sound Watersheds Water Quality and Aquatic Resources from the Impacts of Growth*".

Shoreline Master Program: They are in the process of updating this program for consistency with the latest state requirements.

Critical Areas Ordinance: They are also updating these. They have a “Virtual Open House” online that is a great “one-stop shopping” approach to providing information on this effort.

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Monitoring continues from **Thurston County** and the Thurston Conservation District (through **South Sound GREEN**). We can use monitoring data to help identify areas needing shade and estimate the total number of river miles or segments. Additionally, we can use it as an “early warning” system to help identify potential or growing problem areas.

Ecology is conducting a Deschutes River Multi-Parameter TMDL **Effectiveness Monitoring Pilot Project** to:

- Summarize and link watershed-based cleanup efforts to changes in stream habitat and biological communities.
- Distinguish between natural and anthropogenic variability that affect changes in biological communities over time.
- Link biological community composition with water quality.

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All these agencies address compliance issues.

Dept. of Ecology: Typical issues investigated include stream alteration, dredging, bank stabilization, illegal discharges to storm drains or surface waters, livestock issues typically associated with mature, wetlands fill, and other types of pollutant discharges.

Dept. of Agriculture:

- Dairy Nutrient Management inspects dairy farms and takes action to ensure compliance with water quality laws.
- Pesticide Management enforces state and federal pesticide laws; investigates complaints of pesticide misuse.

Thurston County: They have three different dedicated phone numbers for specific issues.

Slide #24

Riparian vegetation restoration: This will provide shade throughout the watershed system. In time it will reduce temperature and help dissolved oxygen levels. Colder water holds more oxygen.

Source identification: We can achieve some of this through monitoring efforts.

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Funding opportunities: EPA and Ecology grants. *Does anyone know of any others?*

Develop partnerships: We need to create a multi-prong approach to landowners. We to develop strategic plans to address all or at least multiple number of environmental issues at one time. This reduces the amount of stress or anxiety to landowners who have to deal with more than one agency or organization.

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We don't have to wait until the cleanup plan is submitted to EPA to work on these two items. A lot of work has already occurred and we will see those efforts continuing as we move forward with our work.

Technical assistance: Examples include farm plans, farm inventories, and riparian restoration plans.

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Negative public perception: Some people are still skeptical about any funding attached to governmental agencies. *How do we change this attitude and perception?*

Thurston County Critical Areas Ordinances: Check the county website if you're interested on the status of the proposed changes.

Dedicated funding: This is a problem everywhere. Grants can help pay for implementation activities but then what? How do you pay for the continual implementation of best management practices, equipment repairs, or replacing plants that didn't survive?

Non-point source pollution: This is sometimes difficult to identify and difficult to control.

Behavior change: What motivates landowners to change? Is it money? Resources? Recognition? We need to identify what will best motivate the landowners in this watershed and tailor our outreach approach accordingly. We want to see sustained and lasting changes resulting in improved environmental conditions. We need to increase public awareness of the environmental problems and possible solutions.

Slide #29

Water withdrawal & exempt wells: Ecology's Water Resources Program addresses this issue.

Chemical Use: The WSDA has regulations on chemical use.

Slide #30

Pharmaceuticals & personal care products: A joint collaboration between Ecology and the U.S. EPA resulted in a publication, *"Pharmaceutical and Personal Care Products in Municipal Wastewater and their Removal by Nutrient Treatment Technologies"*. This publication provides information about the screening study done in 2008 to characterize pharmaceuticals and personal care products (PCPs) in municipal wastewater treatment plants (WWTPs).

Slide #31

The February 24 meeting is cancelled so we'll meet again in March. Please note the location has changed from the Tumwater Fire Department to the LOTT Clean Water Alliance's new facility.