

# Addressing Stormwater

## WSDOT's Experience

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# Today's Topics

- WSDOT stormwater permit compliance activities
- How WSDOT addresses stormwater as part of projects
- Budget overview
- Overall stormwater issues

# Why is WSDOT Managing Stormwater?

- Efficient drainage of stormwater off pavement for safe driving conditions and roadway integrity.
- Stormwater runoff contributes to water quality problems and erosion.
- Improving stormwater management is important to Puget Sound and salmon recovery efforts.
- Permits required under federal Clean Water Act and state Water Pollution Control Act.



Interstate 405 in Bellevue

# Stormwater Maintenance

## Traditional Work plus NPDES Permit Requirements



- Inspection, cleaning, and repairing
  - Ditches
  - Culverts
  - Catch Basins
  - Stormwater Facilities
- Sweeping Shoulders
- Managing Maintenance Facilities

# Stormwater Monitoring

- Collect and test stormwater runoff at 16 stations in 13 different locations statewide.
- Locations include maintenance yards, ferry terminals, and rest areas as well as stormwater treatment facilities.
- Collect and analyze over 350 samples throughout the year for a variety of pollutants.



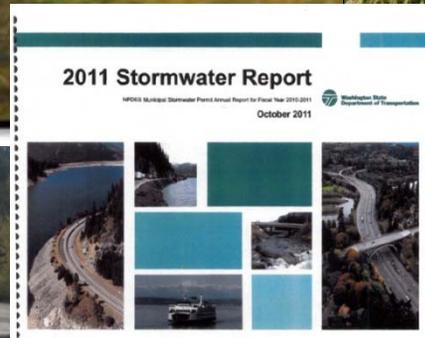
# Stormwater Features Inventory



- Inventory all stormwater treatment and runoff control facilities and outfalls (~1,665 highway centerline miles and ~12,000 outfalls).
- Coordinate inventory of storm sewer connections with Municipalities adjacent to state highways (~110 Municipalities).
- Establish ongoing program to inventory WSDOT's stormwater conveyance system (pipes, ditches, etc).

# Other Permit Requirements

- Implement 26 water cleanup plans (Dept of Ecology plans)
- Locate and resolve illegal connections
- Report results annually
- Assess erosion control at construction sites and provide training



# I-5/SR 16 Westbound Nalley Valley

*Opened to traffic in June 2011*

- New impervious surface - 14 acres
- Treated existing and replaced impervious surface - 48 acres
- Collection and conveyance system - ditches, storm sewers, bridge drains
- Stormwater facilities:
  - 4 two-cell permanent lined ponds, piped conveyance to Thea Foss Waterway
  - 5<sup>th</sup> lined pond to be expanded in eastbound project for combined treatment



# SR 270, Pullman to Idaho State Line

*Completed November 2007*

- New impervious surface - 28 acres
- Treated existing impervious surface - 31 acres
- Stormwater facilities:
  - 23 acres of Natural and Engineered Dispersion
  - 9 Bio-Infiltration/Detention ponds totaling 4 acres
  - 5,000 feet of Biofiltration Swales

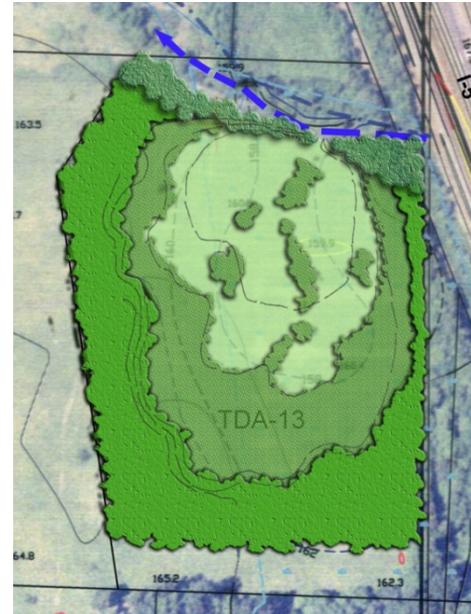
Typical Bio-infiltration/Detention Pond



# I-5/Blakeslee Junction to Grand Mound

*Opened to traffic in November 2011*

- New impervious surface – 17 acres;  
Treated existing impervious surface – 10 acres.
- Used standard media filter drains for water quality treatment – high ground water limited space for standard runoff control.
- Multi-agency collaboration produced agreement to enhance 3 degraded off-site wetlands downstream of project to control runoff.
- Wetland enhancement approach fit within existing landscape, reduced wetland impacts, and removed the need to construct vaults under I-5.



## Benefits over traditional approach:

- *Increased water storage and improved floodplain function in watershed*
- *Wetland enhancement improved overall watershed and habitat function*
- *Groundwater recharge*
- *Sediment control*

# Examples of Stormwater Management During Construction



Blakeslee Junction to Grand Mound  
2010



Ridgefield 2009

# Cost of Addressing Stormwater as Part of Projects

- As part of projects, we install stormwater facilities to address problems associated with runoff.
- Cost spent on addressing stormwater as part of projects is estimated to be approximately 10% of project cost. Cost varies substantially depending on project location and other specifics.
- See October 2011 handout for more detail.

# WSDOT Stormwater Costs by Program: 2011-13

Program H	Environmental	\$6.2M
Program I	Construction	About 10% of project cost
Program D	Capital Facilities	\$1.2M
Program M	Maintenance Operations	\$38.5M

# M&O Stormwater Costs: 2011-13 Plan Dollars

• Sweeping	\$8.6m
• Ditches	\$13.0m
• Culverts	\$6.5m
• Catch Basins	\$8.5m
• Stormwater Facilities	\$1.9m
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Total Program M:	\$38.5m

# Future Stormwater issues

- Future funding to implement permit – for 13 -15 biennium, \$18M needed for permit compliance (\$10.2M received for 11-13 biennium for permit compliance)
- Compliance challenge
- EPA audit of WSDOT's permit compliance – Jan/Feb 2012
- Permit reissuance – March 2014

# Questions?

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