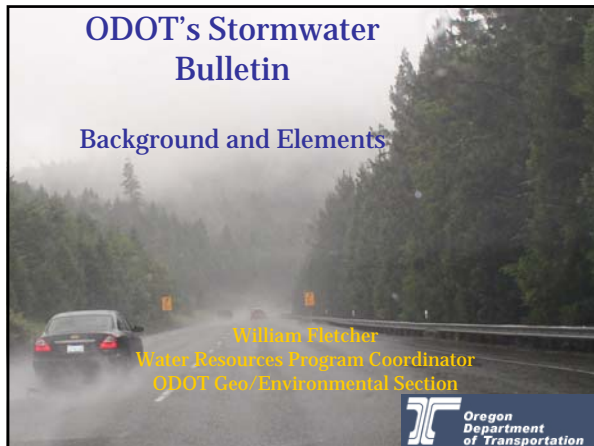


ODOT's Stormwater Bulletin


Background and Elements

William Fletcher
Water Resources Program Coordinator
ODOT Geo/Environmental Section



Purpose of the Bulletin

- Provide Water Quality and Flow Control Guidance for ODOT
- Bring ODOT into alignment with the result of the collaborative work with the Regulatory Agencies on stormwater




Drivers

- CWA 401 Certification for 404 permits
- ESA BA/BO when T&E fish are affected
- NPDES MS4 Permit
- TMDL Program
- Governor's Sustainability Initiative


Incentives for Collaboration

- ODOT dissatisfaction with and confusion about the stormwater regulatory environment
- Regulatory Agency dissatisfaction with ODOT's stormwater management process and products
- Fear that without improvement, regulatory gridlock was on the horizon



Working Together

- ODOT initiated a collaborative working group with the stormwater stakeholders:
 - NMFS
 - USFWS
 - FHWA
 - DEQ
 - EPA
 - ODFW



Results

- Clear goals for highway projects
- Criteria based on scientific evaluation and consensus approval
- Tools and information to assist in planning for stormwater treatment
- Incorporation of the results into Programmatic permits and agreements


Water Quality Goals

Treat all of the highway runoff
from the
Contributing Impervious Area
generated by
the Water Quality Design Storm
using
Preferred BMPs

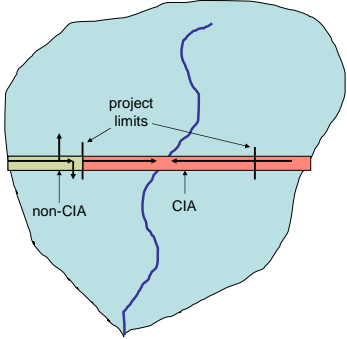
Stormwater Management is Needed

For any action that will

- Add/modify impervious surface area
- Change the drainage (type, location etc.) or drainage area
- Replace or widen stream crossing structures
- Require a CWA 404 permit *and* involves impervious surface

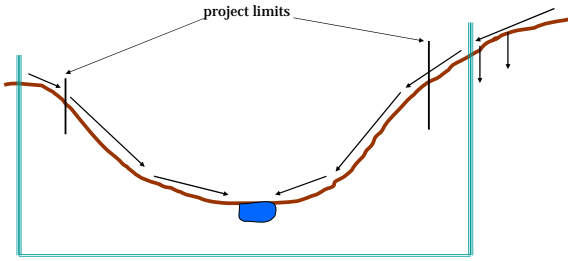


Contributing Impervious Area



Project limits within a single watershed

CIA Boundaries



Water Quality Design Storm


Treat all of the runoff from the 85th percentile storm (85% of all storms in a year are this size or smaller).

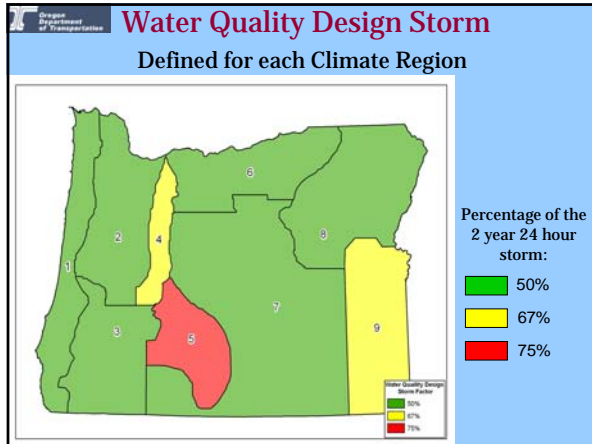
This results in more than 90% of the annual runoff being treated



Water Quality Design Storm

- The actual WQ Design Storm size is a function of the climate zone and local precipitation frequency
- The WQ Design Storm is defined as a percentage of the 2 year 24 hour event for each climate region in Oregon





Flow Control Design Storms

Protect channel form and processes by maintaining the frequency and duration of discharges from the range of Flow Control (Water Quantity) Design Storms

Flow Control Design Storms

Lower Discharge Endpoint

- Western OR - 42 percent of the 2-year, 24 hour event
- Southeast, Northeast, North Central Regions: 48 percent of the 2-year, 24 hour event
- Eastern Cascades Region: 56 percent of the 2-year, 24 hour event

Flow Control Design Storms

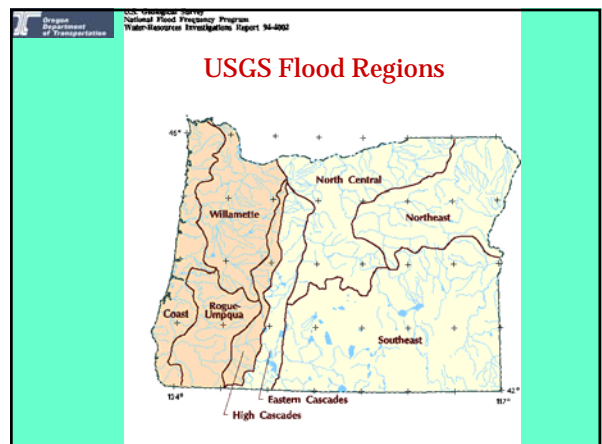
Upper Discharge Endpoint

- Minimally incised streams - Channel bank overtopping event
- Incised Streams - 10-year/24-hour storm event

Flow Control Design Storms Exemptions


Flow control is not necessary when:

- The receiving water is a large river, lake, reservoir or estuary
- The increase in discharge to surface waters is less than 0.5 cfs for the 10 year 24 hour storm



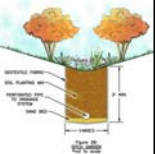
Preferred BMPS

- Stormwater Treatment Techniques that are effective at treating a range of pollutants
- They utilize infiltration into the soil and/or filtration through a media such as amended soil



Preferred BMPS

- **Infiltration techniques**
- Bioretention facilities
- Bioslope (“Ecology Embankment”)
- Amended Soil Swales and Filter Strips
- Treatment wetlands



BMP Selection Tool

- The selection of treatment techniques and strategies is supported by the BMP Selection Tool
- The Selection Tool is to help designers find the most effective treatment that is suitable for an individual project



BMP Selection

- Key selection criteria (metrics)
 - Treatment capability
 - Physical site suitability
 - Maintenance
 - Conflicting Resources,
 - Risk and public perception
 - Cost

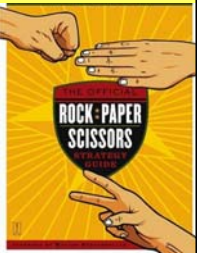


Table 4. BMP Performance Summary Table*

	Pre-treatment	Best Management Practice																			
		Infiltration	Filtration	Pool/Ponds	Space-constrained or Urban Application																
Surface Area (↑ is greater area)																					
Drainage Area (↑ is greater area)																					
Soil Infiltration Rate (↑ is higher rate)																					
Slope (gradient) (↑ is steeper)																					
Groundwater depth (↑ is deeper)																					
Confined space/safety (↑ is greater)																					
Dependency on Soil Characteristics																					
Maintenance level of effort	M	M+	M	TBD	TBD																
Frequency of maintenance	M	M+	M	TBD	TBD																
Reliability/durability (equipment)	M	M+	M	TBD	TBD																
Need for "specialized" equipment	M	M+	M	TBD	TBD																
O&M Cost (including waste disposal)	H	M+	H	M	TBD	TBD															
Community Acceptance	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Construction Cost	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Wildlife Habitat	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Incorporation into Project Development

- Early identification of water resources issues
- Inclusion of stormwater treatment in the initial design, with focus on LID
- Selection of final stormwater management plan by DAP
- Ongoing coordination with the Regulatory agencies

Enshrinement of the Results

- Endangered Species Act: SLOPES IV
- Clean Water Act: ODOT-DEQ Streamlining MOA
- ODOT Geo/Environmental Services Bulletin
- Training for ODOT Staff and (soon) Local Agencies and Consultants



Questions?



http://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/Storm_Management_Program.shtml