

WASHINGTON STATE  
DEPARTMENT OF  
ECOLOGY

# 2012 Western Washington Hydrology Model Training

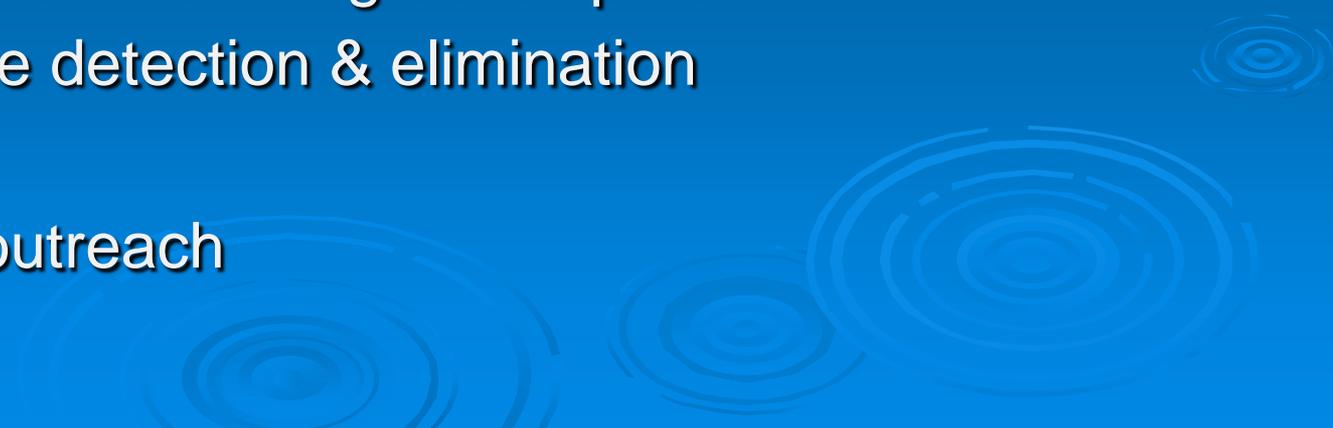
Spring 2013



# Background

- **Municipal Stormwater NPDES Permits**
  - 6 Phase I municipalities & WSDOT
  - 85 Phase II municipalities in West. Wash.
  - 28 Secondary permittees in WW
- Municipalities must regulate stormwater entering and leaving their municipal separate storm sewer system (MS4)

# Municipal Stormwater Programs

- Legal authority
  - System mapping
  - Coordination within depts & among munis
  - Public involvement & participation
  - *Control runoff from new & redev & construction sites*
  - Structural controls
  - Source controls on existing development
  - Illicit discharge detection & elimination
  - O & M
  - Education & outreach
- 

# New & Redevelopment & Construction Sites

- Phase I permit: S5.C.5.a.i.
- Phase II permit: S5.C.4.a.i.
- Adopt what is in Appendix 1 of the permits or equivalent
- Appendix 1 includes:
  - Definitions
  - Thresholds
  - Minimum Requirements (1 – 9)
  - Adjustments and Variances

# New & Redevelopment & Construction Sites

- Phase I permit: S5.C.5.a.ii.
- Phase II permit: S5.C.4.a.ii.
- Adopt requirements for these subjects
  - Site Planning
  - BMP selection, design and infeasibility criteria
  - LID competing needs criteria
- Use SWMMWW, or document how an alternative requirement meets fed & state laws

# Deadlines

- Phase I: SW Code – 6/30/15  
Development codes - 6/30/15
- Phase II: SW Code – 12/31/16\*  
Development Codes – 12/31/16\*

\* Centralia, Kelso, Longview, Cowlitz Co. – 6/30/17  
Aberdeen – 6/30/18

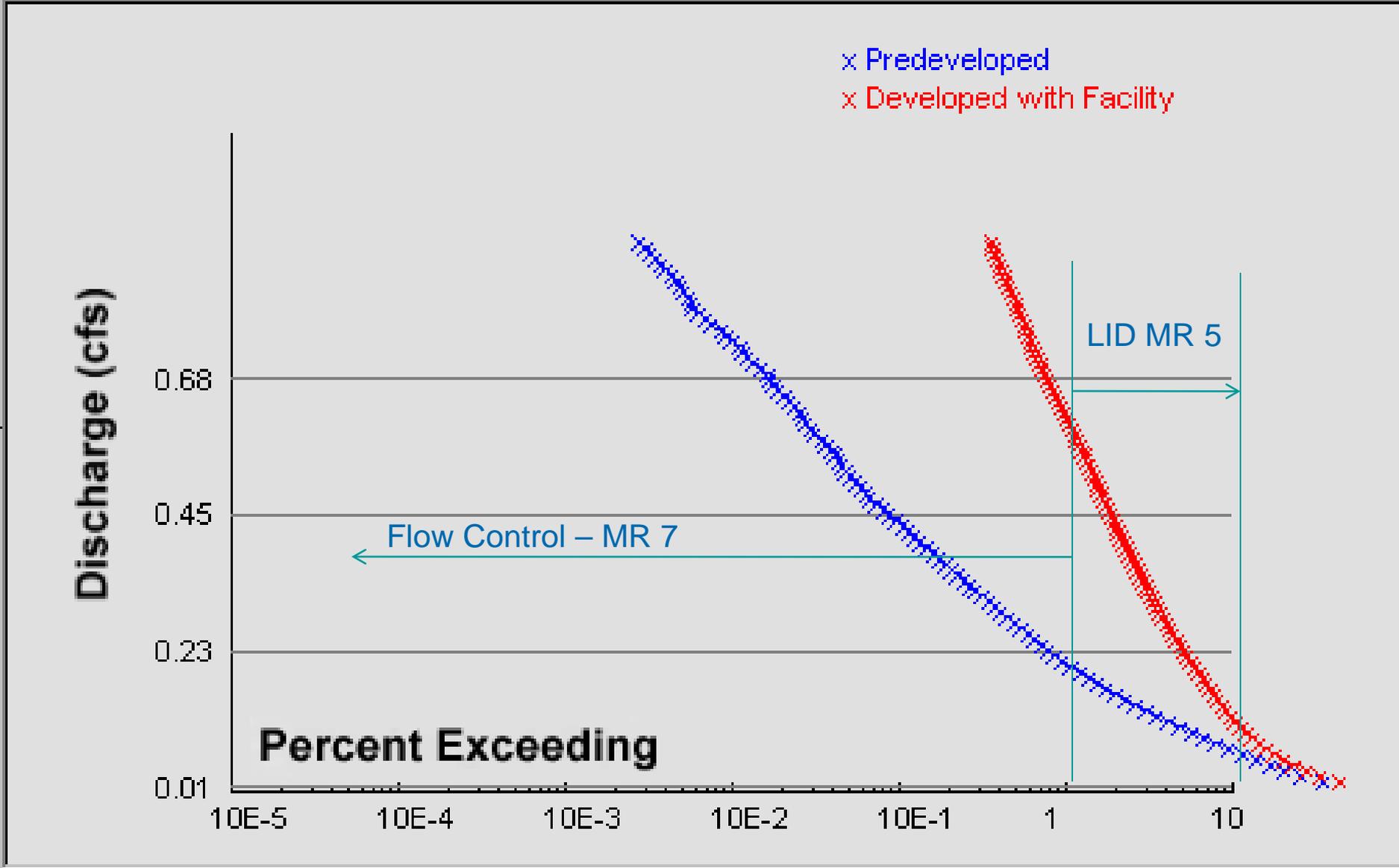
# Minimum Requirement #6 Treatment

- Need Continuous Runoff Model for Sizing
- WWHM or MGS Flood
  - WQ Design Flow Rate
    - On-line
    - Off-line
  - WQ Design Storm Volume
  - Both are intended to achieve effective treatment for 91% of the runoff
  - Determine amount of water treated by LID BMPs

# Minimum Requirement #7

## Flow Control

- Match discharge durations to pre-developed durations for the range of pre-developed flow rates from 50% of the 2-year flow through the 50-year flow for the site
- Need WWHM or MGS Flood for design
- WWHM3 meets need; WWHM2012 improves design



# Minimum Requirement #5

## On-site Stormwater Management

- Small projects: Use LID BMPs on List #1 to extent feasible
- Large projects:
  - Inside UGA: Use BMPs on List #2 to extent feasible, or meet LID performance standard
  - Outside UGA:
    - If parcel  $\geq$  5 acres, meet LID performance standard
    - If parcel  $<$  5 acres, List #2 or LID performance standard

# Minimum Requirement #5

## On-site Stormwater Management

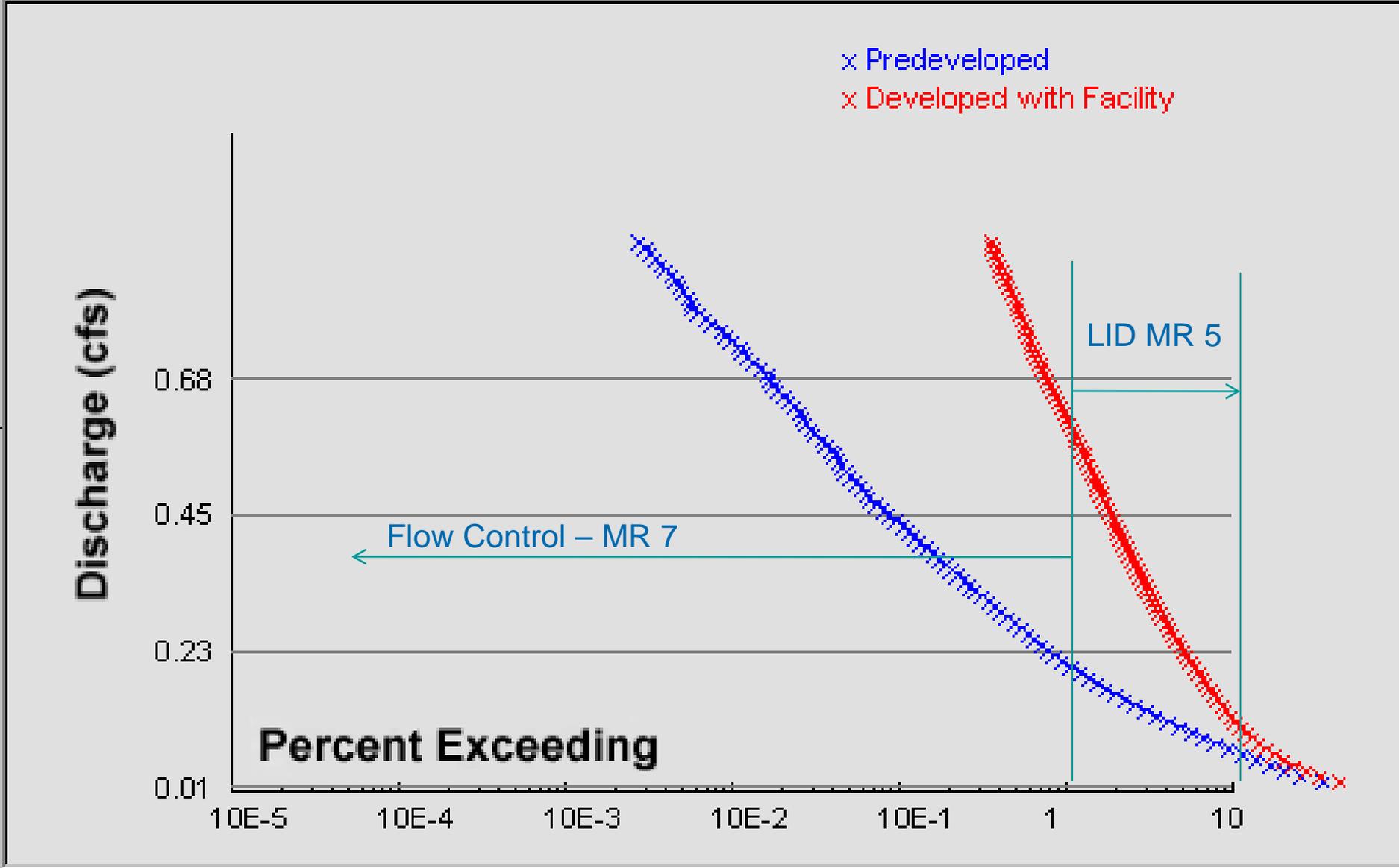
- Need WWHM or MGS Flood
  - To estimate effectiveness of LID BMPs at reducing runoff
  - To determine compliance with LID Performance Standard



# LID Performance Standard

- Match discharge durations to pre-developed durations for the range of pre-developed rates from 8% of the 2-year flow through 50% of the 2-year flow for the site





# LID Performance Standard

- Need WWHM or MGS Flood to determine compliance
- WWHM3 meets need – but WWHM 2012 easier
- To determine benefit of LID BMPs before sizing any additional treatment or flow control facilities

# Minimum Requirement #8

## Wetlands Protection

- Intent unchanged – maintain hydroperiod
- Appendix I-D: Guidance changed
- Guide Sheet 3B
  - Maintain daily water volume inputs within  $\pm$  20% of pre-project volume
  - Maintain monthly water volume inputs within  $\pm$  15% of pre-project volume
- New WWHM capability to track inputs

# WWHM 2012 Training

- This session: Assumes familiarity with WWHM
- Ongoing training:
  - Morning: WWHM basics
  - Afternoon: WWHM advanced

# Who Will Use WWHM 2012

## ➤ Consultants

- Design
- Submittal documentation

## ➤ Municipal Staff

- Submittal requirements
- Design reviews

Questions?

