



# 2018 Stormwater Management Manual for Eastern Washington


 DEPARTMENT OF  
ECOLOGY  
State of Washington

 Eastern Washington  
Stormwater Group

APWA Conference  
October 3, 2018

Presented By:  
Rebecca Dugopolski, Herrera  
Robin Kirschbaum, RKI

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## Overview

- Manual background and history
- Summary of 2018 manual updates
  - Requirements/guidance that has not changed
  - Key changes by chapter
- Questions



Photo courtesy of Jon Morrow, City of Ellensburg

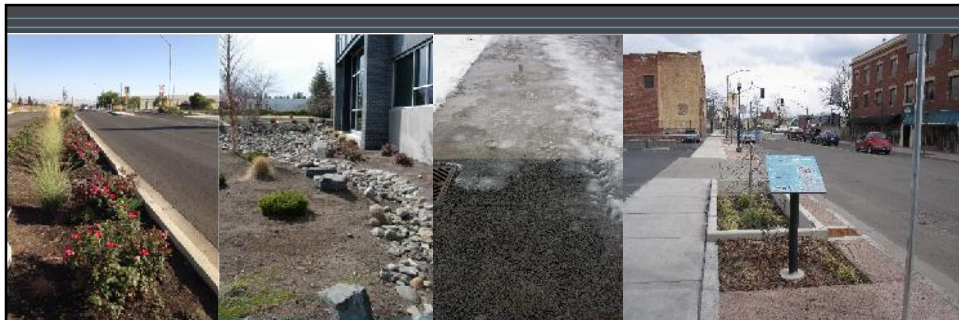
## Poll Question #1

### Who are you representing?

- Eastern WA city, county, or secondary permittee
- Western WA city, county, or secondary permittee
- State agency
- Federal agency
- Non-profit organization
- Private sector (consultant, contractor, developer, etc.)
- General public
- Other



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## Background and History



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## 2004 Manual Development

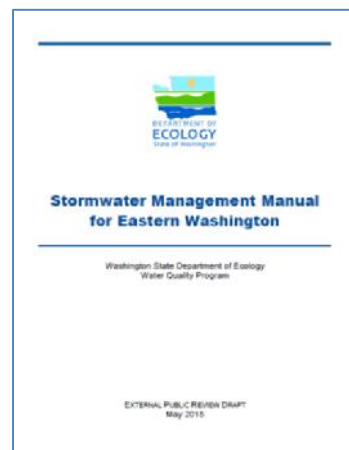
- 2001
  - Steering Committee formed
  - Stakeholder workshop
- 2002-2003
  - Public review
- 2004
  - Existing manual published by Ecology



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## 2018 Manual Development

- 2016
  - Initial kickoff meeting
  - Steering Committee formed
- 2017
  - Consultant team selected



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## 2018 Manual Team

### Ecology:

- Abbey Stockwell (Project Manager)
- Doug Howie
- Bill Moore
- Amanda Heye
- Vince McGowan



### Consultant Team:

- Rebecca Dugopolski, Herrera (Project Manager)
- Robin Kirschbaum, RKI
- Erick Fitzpatrick, AHBL
- Jon Rudders, GeoEngineers
- Jay Slagle, MadSkills
- Christine Sophos, CMS Writing & Editing Services



### Eastern WA Steering Committee:

- Colleen Little, Spokane County (Chairperson)
- Danielle Mullins, City of West Richland
- Tom Wachholder, City of East Wenatchee
- Jon Morrow, City of Ellensburg
- Shilo Sprouse, City of Pullman
- Mark Melton, City of Richland
- Adrienne Pearson, City of Spokane
- Heather Killinger, Grant Conservation District
- Brad Daly, City of Walla Walla
- Seth Walker, Walla Walla County
- David Haws, Yakima County
- Alex Nguyen, WSDOT
- Dean Smith, Department of Corrections
- Jennifer Lange, Douglas County

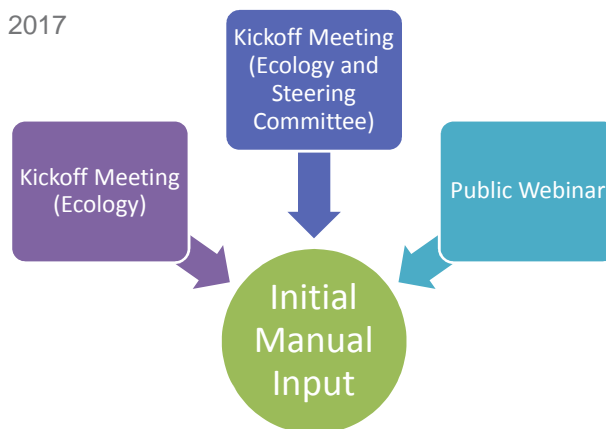


Eastern Washington Stormwater Group

## 2018 Manual Development

### Phase 1

May-June 2017



## 2018 Manual Mission Statement

“Complete a focused update of the manual via an open and collaborative process to include the latest advances in stormwater management, needed clarifications, and improved ease of use.”

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## 2018 Manual Project Objectives

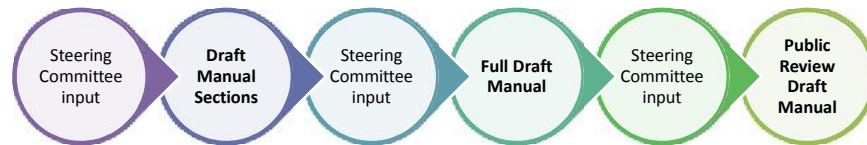
- Complete a focused update of the manual
- Open and transparent public process
- Work closely with the Eastern Washington Steering Committee
- Promote public participation to solicit feedback and help improve adoption and use of the manual
- Provide a user-friendly on-line version of the manual

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## 2018 Manual Development (cont.)

### Phase 2

July 2017-July 2018

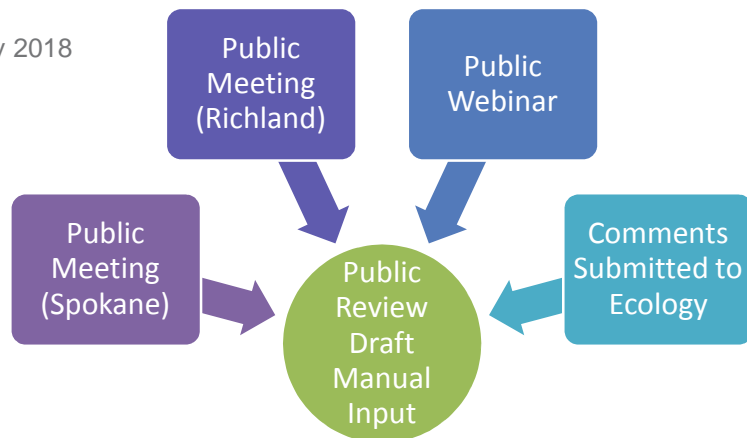


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## 2018 Manual Public Involvement

### Phase 2

May-July 2018



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# 2018 Manual Public Involvement



### Upcoming Public Meetings and Webinar

**Meeting #1 - Spokane, WA**  
 Location: Shadle Library Meeting Room,  
 2111 W. Walladay Ave., Spokane, WA  
 Date: June 13, 2018  
 Time: 10am - noon

**Meeting #2 - Richland, WA**  
 Location: Department of Ecology,  
 3100 Port of Benton Blvd., Richland, WA  
 Date: June 26, 2018  
 Time: 10am - noon

**Webinar**  
 Date: July 18, 2018  
 Time: 10am - noon  
 WebLink: <https://www.ecology.wa.gov/updates/2018-manual-public-involvement>

### Opportunities for Review and Input:



### Project Description

The Washington State Department of Ecology is updating the Manual to:

- Clarify redevelopment requirements;
- Add or refine Best Management Practice standards;
- Improve alignment with other state standards and guidance; and
- Enhance ease of use.

### Project Objectives

- Complete a focused update of the Manual;
- Employ an open and transparent public process;
- Work closely with the Eastern Washington Steering Committee;
- Promote public participation to solicit feedback and help improve adoption and use of the Manual; and
- Provide a user-friendly on-line version of the Manual.

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Climate Water & Shorelines Waste & Toxics Spills & Cleanup

### Learn more and help us improve the manual

The 2018 manual will guide stormwater management in Eastern Washington for years to come. Your input will help us create guidance that protects water quality while being useful and applicable to Eastern Washington communities.

We're accepting comments on the draft 2018 manual until 11:59 p.m. on July 25, 2018.

You may provide comments on the [2018 draft of the manual](#) by emailing [SWPermitsComments@ecy.wa.gov](mailto:SWPermitsComments@ecy.wa.gov). You may use [this comment spreadsheet](#) (Excel) to organize and submit your comments (preferred method).

We also have the [Track Changes version of the manual](#), if and the [Figures from the manual](#) as separate documents.

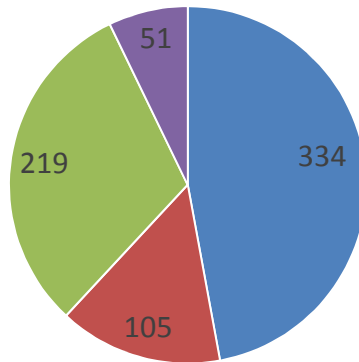
See [upcoming public meetings](#).

Read our [Spring 2018 Manual Update Newsletter](#).

Sign up for email updates at the [Stormwater Eastern WA](#) homepage.

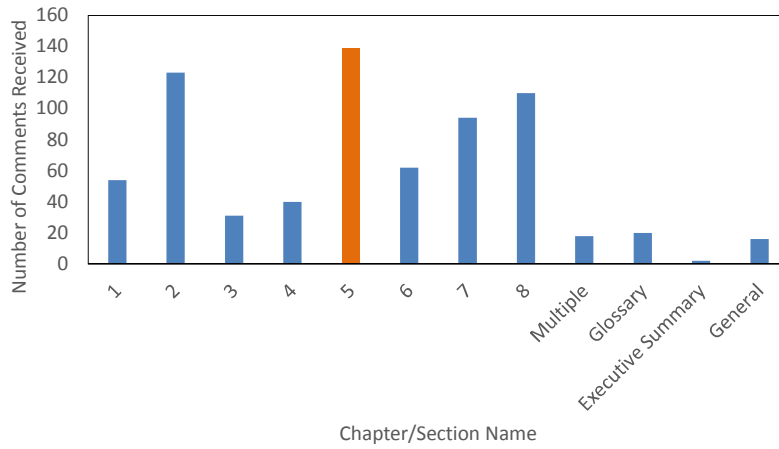
<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>

## Comments Received (prior to Public Review Draft)



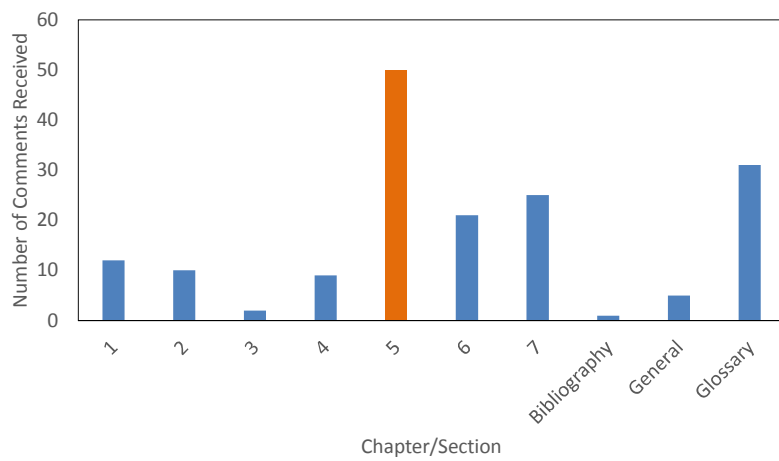
■ Steering Committee Members ■ Ecology ■ Consultant Team ■ Public

## Comments Received (prior to Public Review Draft)




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## Comments Received (Public Review Draft)





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## 2018 Manual Updates



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## Not Changed



Example 2-year, 24-hour Isopluvial Map (unchanged from 2004 SWMMEW)

- Core Elements
- Thresholds for new and redevelopment
- Design storms
- Isopluvial maps
- Manual organization (8 chapters)

# Key Changes

## Chapter 1 – Introduction

- Clarified regulatory and permit requirements
- Added WSDOT link for latest available data on highway stormwater runoff

Quality Assurance Project Plan for  
**WSDOT Roadway Stormwater  
 Treatment Evaluation:  
 Best Management Practices**

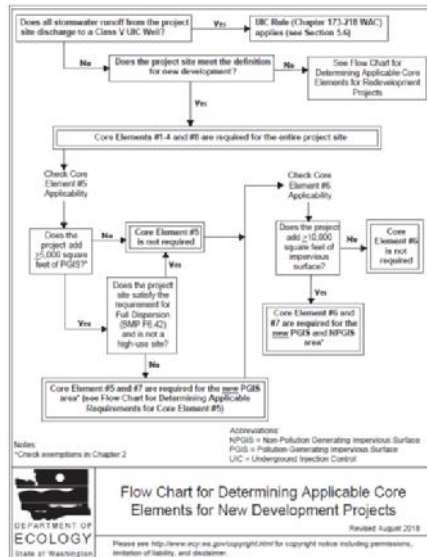
July 2014 Addendum to the March 2014 Revision

Prepared by  
 Environmental Assessment Program,  
 Washington State Department of Ecology  
 and  
 Environmental Services Office,  
 Stormwater and Watersheds Program,  
 Washington State Department of Transportation



# Key Changes

## Chapter 2 – Core Elements for New Development and Redevelopment



- Shifted exemptions forward, clarified where needed
- Updated and shifted definitions
- Modified flow charts to clarify Core Element applicability
- Expanded list of responsibilities for local jurisdictions
- Incorporated errata

## Key Changes

### Chapter 3 – Preparation of Stormwater Site Plans

- Provided more direction on Stormwater Site Plan preparation
- Added guidelines for Small Project Construction Stormwater Pollution Prevention (formerly BMP C180 in Chapter 7)
- Incorporated the LID site planning guidelines from the Eastern WA LID Manual into Appendix 3D

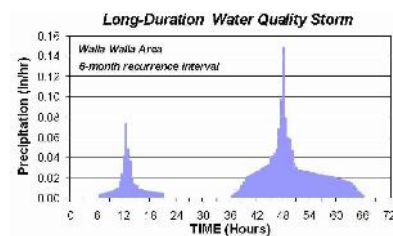


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## Key Changes

### Chapter 4 – Hydrologic Analysis and Design

- Added new tables summarizing the advantages, disadvantages, and applicability for:
  - Hydrologic analysis methods
  - Average annual precipitation
  - Design storm distributions
- Various streamlining edits
- Moved hyetographs to Appendix 4D



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## Key Changes

### Chapter 5 – Runoff Treatment BMP Design



Photo courtesy of AHBL (Source: 2013 Eastern WA LID Manual)

- Updated BMP Template
  - Added tables summarizing BMP applicability
  - Streamlined the stepwise procedure for BMP design in text and tables
  - Added cold weather, arid, and semiarid climate considerations
- Incorporated errata for oil control guidance
- Clarified metals treatment requirements
- Updated Site Suitability Criteria (SSC)
- Added screening criteria for infiltration BMPs
- Added BMPs:
  - Bioretention
  - Permeable Pavement
  - Compost-Amended Vegetated Filter Strip (CAVFS)
  - Media Filter Drain

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## Key Changes

### Chapter 5 – Runoff Treatment BMP Design (cont.)

- Updated BMP T5.100: API (baffle type) Separator Bay design criteria
- Incorporated updated UIC guidance
- Updated Emerging Technologies for alignment with the SWMMWW and TAPE
- Added Appendix 5B with planting recommendations for vegetated BMPs



Photo courtesy of Jon Morrow, City of Ellensburg

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## Key Changes

### Chapter 6 – Flow Control BMP Design



Photo courtesy of AHBL (Source: 2013 Eastern WA LID Manual)

- Updated BMP Template (same as Chapter 5)
- Added BMPs from the Eastern WA LID Manual
  - Rain Water Harvesting
  - Permeable Pavement
  - Amending Construction Site Soils
  - Trees
  - Vegetated Roofs
  - Minimal Excavation Foundations
- Updated dispersion BMP design guidance based on WSDOT HRM

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## Key Changes

### Chapter 6 – Flow Control BMP Design (cont.)

- Updated guidance for determining design infiltration rates
- Updated Appendix 6B (Guidelines for Site Characterization of Geotechnical Properties) to add:
  - Small-Scale Pilot Infiltration Test (PIT)
  - Large-Scale PIT
  - Recommended laboratory procedures



Photo courtesy of AESI for the Ballard Natural Drainage System Project

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# Key Changes

## Chapter 7 – Construction Stormwater Pollution Prevention



Photo courtesy of Herrera

- Added 13th element (Protect LID BMPs [Infiltration BMPs])
- Incorporated errata
- Edits to align with the SWMMWW (“E” flag all BMPs to highlight that there may be differences from the SWMMWW BMPs)
- Added BMPs:
  - Material Delivery, Storage, and Containment
  - Concrete Washout Area
  - Vegetative Filtration
  - Treating and Disposing of High pH Water
- Removed BMPs:
  - Stake and Wire Fence
  - Payment of Erosion Control Work
  - Straw Bale Barrier

# Key Changes

## Chapter 8 – Source Control

- Added BMP numbering
- Edits to align with the SWMMWW (“E” flag all BMPs)
- Update to NAICS codes (Appendix 8A)
- Added BMPs for:
  - Formation of a Pollution Prevention Team
  - Good Housekeeping
  - Pools, Spas, Hot Tubs, and Fountains
  - Dock Washing
  - Color Events
  - Construction Demolition
  - In-Water Fueling
  - Pet Waste
  - Goose Waste



Photo courtesy of Herrera

- Potable Water Line Flushing, Water Tank Maintenance, and Hydrant Testing
- Storm Drain Inlet Labeling
- Temporary Fruit Storage
- Well, Utility, Directional and Geotechnical Drilling
- Roof Vents
- Nurseries and Greenhouses
- Building, Repair, Remodeling, Painting, and Construction

## Key Changes

### Chapter 8 – Source Control (cont.)



Photo courtesy of Herrera

- Divided Landscaping and Lawn/Vegetation Management into several BMPs:
  - Landscaping and Lawn/Vegetation Management
  - Pesticides and an Integrated Pest Management Program
  - Fertilizer Application
  - Storage of Dry Pesticides and Fertilizers
  - Irrigation

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## Key Changes

### Glossary and Bibliography

#### Glossary

- Deleted unused terms
- Updated definitions for consistency with the Eastern WA Phase II Permit
- Updated definitions based on errata
- Added applicable terms from the SWMMWW and the Eastern WA LID Manual

#### Bibliography

- Added applicable references from the SWMMWW, WSDOT HRM, and Eastern WA LID Manual

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# QUESTIONS?

1. Access the Public Review Draft manual (and the Final Manual once it is released) from Ecology's website:  
<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>
2. Sign up for the Eastern WA Manual and Phase II Permit Listserv:  
<http://listserv.ecology.wa.gov/scripts/wa-ECOLGY.exe?A0=stormwater-eastern-wa>



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