

2016 Stormwater Manual Update

Urban Forestry Commission

Wednesday, October 7, 2015

Seattle Municipal Tower 2750



Seattle
 Public
Utilities

Presented by:
Sherell Ehlers, P.E.

Agenda

- Project Background
- Stormwater Manual Changes
- Timing

Project Background

- Why do we have a Stormwater Code & Manual?
 - Protect life, property, surface waters from harm
 - Meet requirements of state and federal law
 - Required under the federal Clean Water Act/NPDES permit

Project Background

- Achieve equivalency with Ecology Manual (2014) & 2013 – 2018 Stormwater NPDES Permit
 - Ecology reviewing Stormwater Manual concurrently
- Revisit some thresholds
- Use the revision process as an opportunity to:
 - Address shortcomings
 - Streamline requirements
 - Reorganize Stormwater Manual based on feedback
 - Simplify and limit text in Stormwater Manual

Project Background

- Stormwater Code approved by Council 9/21/15
- Effective January 1, 2016

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Stormwater Code & Rules Update

DEPARTMENT OF PLANNING AND DEVELOPMENT



Our Stormwater Code protects people, property, and the environment by controlling how rain water runs off of streets, buildings, and parking lots.

public
engagement

public
review

final
report

council
process

final
decision

[What & Why](#)

[Get Involved](#)

[Project Documents](#)

[Background](#)

[Timeline](#)

Meetings & Events

September 2015

[9/30 2016 Stormwater Manual Update](#)

[See other meetings & events](#)

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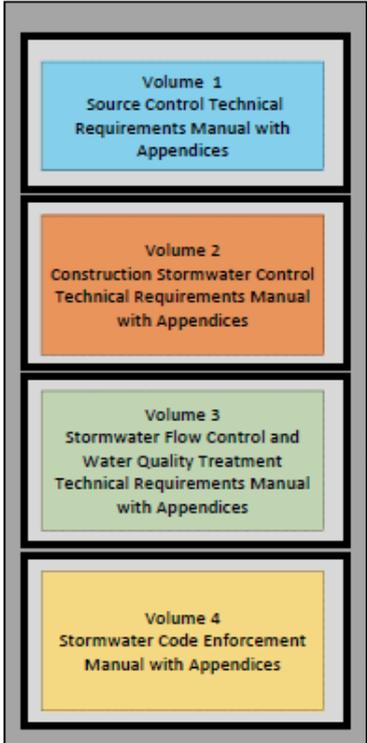


Changes

- Manual Organization:
 - Volume 1 – Project Minimum Requirements ***New***
 - Volume 2 – Construction Stormwater Control
 - Volume 3 – Project Stormwater Control
 - Volume 4 – Source Control
 - Volume 5 – Enforcement
 - Appendices – A - I

Current Seattle Stormwater Manual

November 2009
1 Manual (4 Directors' Rules¹)
4 Volumes

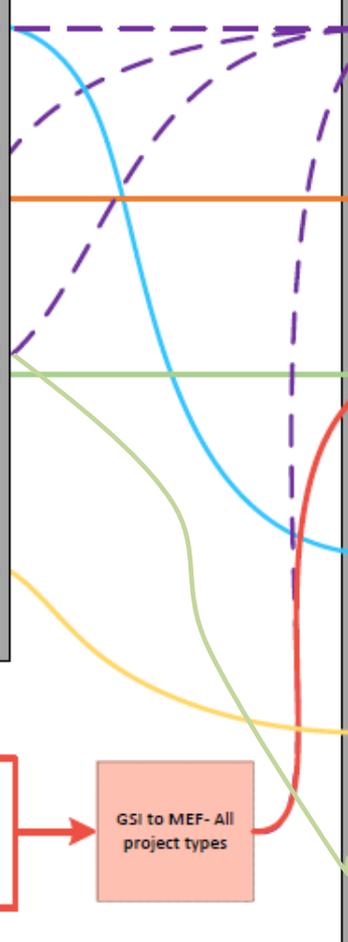
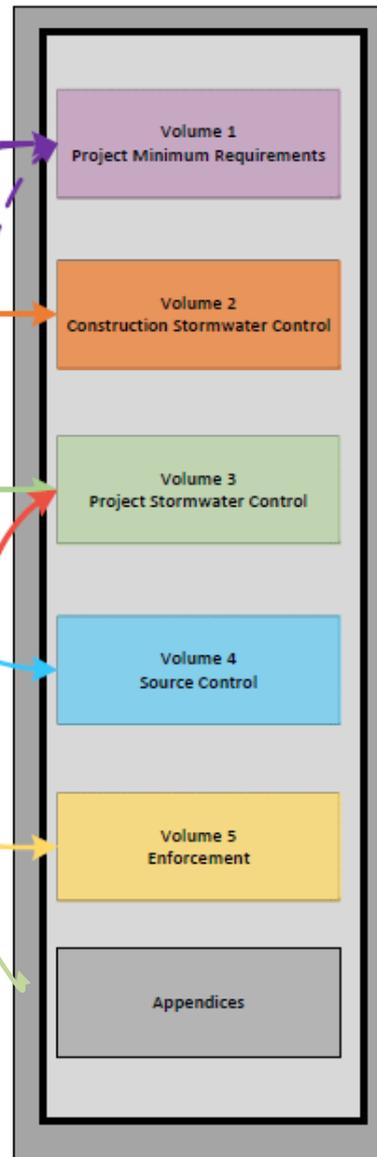


February 2013
GSI to MEF Directors' Rules²



Revised Seattle Stormwater Manual

Effective 2016
1 Manual (1 Directors' Rule)
5 Volumes



Volume 1 – Project Minimum Requirements

1

Table of Contents

- Chapter 1 – Introduction
- Chapter 2 – Determining Minimum Requirements
- Chapter 3 – Minimum Requirements for All Projects
- Chapter 4 – Minimum Requirements Based on Project Type
- Chapter 5 – Minimum Requirement Standards
- Chapter 6 – Alternative Compliance
- Chapter 7 – Site Assessment and Planning
- Chapter 8 – Drainage Control Review and Application Requirements

Changes

1

- Volume 1 – Project Minimum Requirements
 - New volume
 - Content includes:
 - Guide to other volumes for additional information
 - Minimum Requirements for All Projects
 - Minimum Requirements for Project Types
 - Site Assessment, Planning & Documentation
 - Drainage Control Review & Application Requirements

Volume 1 – Code Language

1

- Volume 1 – Project Minimum Requirements
 - Code Language will be updated in Final Manual
 - Revised Code Language available online:
<http://www.seattle.gov/dpd/codesrules/changestocode/stormwatercode/projectdocuments/default.htm>
 - Terminology change:
“Impervious surface” to “hard surface”

Volume 1 – Chapter 4

1

- Chapter 4 - Minimum Requirements Based on Project Type

Project Type	Soil Amendment	On-site Stormwater	Flow Control / Water Quality Treatment
Single-family Residential	X	X	
Trail & Sidewalk	X	X	
Parcel-based	X	X	X
Roadway	X	X	X

Volume 1 – Chapter 5, 6, 7, 8

1

- Chapter 5 - Minimum Requirement Standards
 - On-site Stormwater Management
 - Flow Control
 - Water Quality Treatment
 - Chapter 6 - Alternative Compliance
 - Chapter 7 - Site Assessment and Planning
 - Added Section 7.2- Site Assessment
 - Chapter 8 - Drainage Control Review and Application Requirements
 - Added minimum Site Plan requirements
 - Added On-site Stormwater Management Documentation section
 - ***New*** On-site Calculator
- 12
- PE required for projects with no POD

Volume 2 – Construction Stormwater Control

2

Table of Contents

- Chapter 1 – Introduction
- Chapter 2 – Construction Stormwater and Erosion Control Plan
- Chapter 3 – Selecting Construction Stormwater Controls
- Chapter 4 – Standards and Specifications for Construction Erosion and Sedimentation Control
- Chapter 5 – Source Control Practices for Construction Pollutants Other than Sediment

Changes

2

- Volume 2 – Construction Stormwater Control
 - Renamed volume
 - Condensed text
 - Added “Protect Stormwater BMPs” for equivalency
 - Updated, deleted, and added BMPs
 - Updated figures

Volume 3 – Project Stormwater Control

3

Table of Contents

- Chapter 1 – Introduction
- Chapter 2 – BMP Categories
- Chapter 3 – BMP Selection & Sizing Approach
- Chapter 4 – General Design Requirements
- Chapter 5 – BMP Design
- Chapter 6 – References

Changes

3

- Volume 3 – Project Stormwater Control
 - Renamed volume
 - Condensed text
 - BMP selection combined into a single chapter (Ch. 3)
 - Added Dispersion and Infiltration Feasibility sections (Ch. 3)
 - General Design Requirements (Ch. 4)
 - BMP Design criteria combined into a single chapter (Ch. 5)
 - Non BMP-specific information moved to appendices

Volume 3 – Chapter 2

3

- Chapter 2- BMP Categories:
 - BMPs no longer broken up by flow control and water quality treatment
 - Instead by BMP function:
 - 2.2. Soil Amendment
 - 2.3. Tree Planting and Retention
 - 2.4. Dispersion BMPs
 - 2.5. Infiltration BMPs
 - 2.6. Rainwater Harvesting BMPs
 - 2.7. Alternative Surface BMPs
 - 2.8. Detention BMPs
 - 2.9. Non-infiltrating BMPs

Volume 3 – Chapter 3

BMP Selection & Sizing

- ***New*** Section 3.1 – Determine Dispersion Feasibility
- ***New*** Section 3.2- Determine Infiltration Feasibility

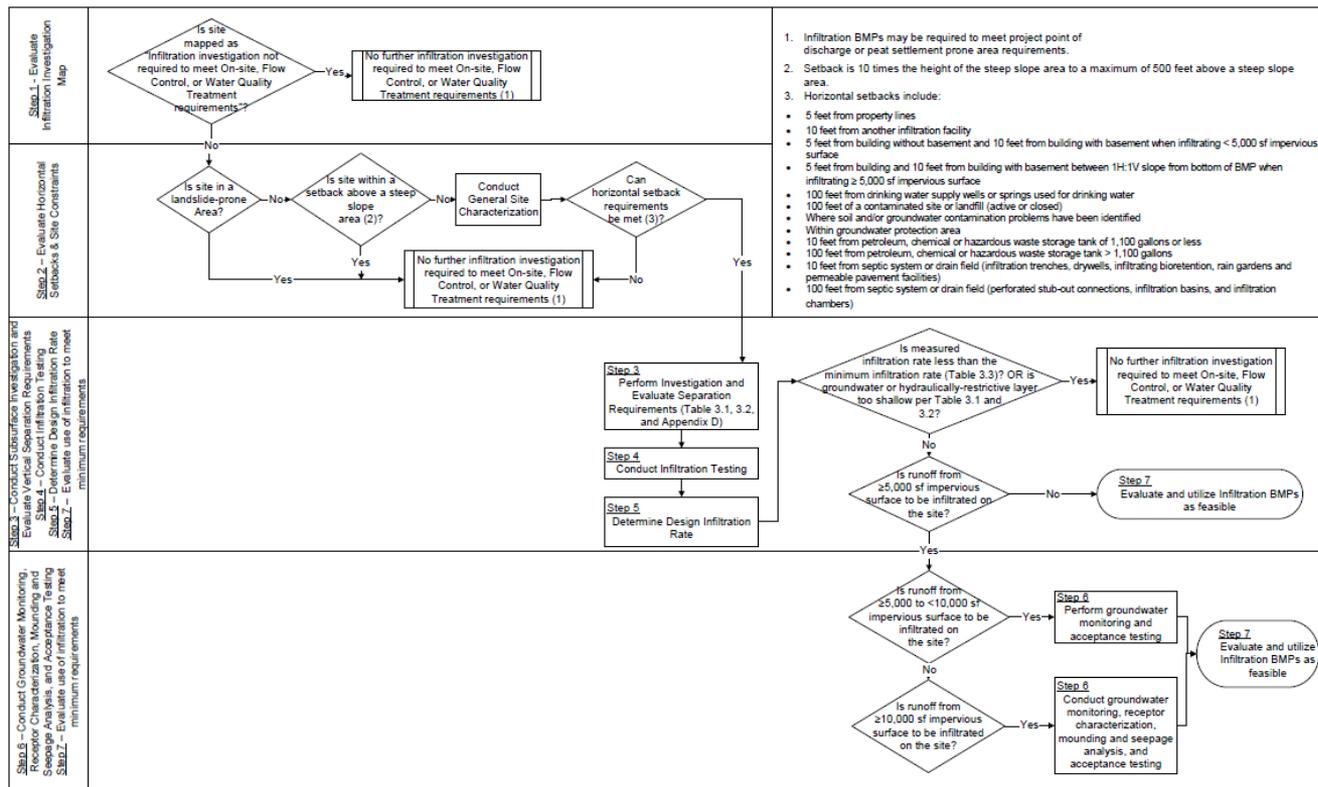


Figure 3.1. Infiltration Feasibility

Volume 3 – Chapter 3

BMP Selection & Sizing

3

- Section 3.3 – BMP Selection for On-site Stormwater Management
- Section 3.4 – BMP Selection for Flow Control
- Section 3.5 – BMP Selection for Water Quality Treatment

On-site List for Parcel-based Projects

Category	BMPs	Projects Discharging to a Receiving Water Not Designated by Section 22.801.050, Public Combined Sewer, or Capacity Constrained System, or its Basin	Projects Discharging to a Designated Receiving Water or its Basin
1	Full Dispersion	R, S	R, S
	Infiltration Trenches	R, S	R, S
	Dry Wells	R, S	R, S
2	Rain Gardens	R ^a , S ^a	R ^a , S ^a
	Infiltrating Bioretention	R, S	R, S
	Rainwater Harvesting	R ^b	X
	Permeable Pavement Facilities	R, S	R, S
	Permeable Pavement Surfaces	S	S
3	Sheet Flow Dispersion	R, S	R, S
	Concentrated Flow Dispersion	S	S
	Splashblock Downspout Dispersion	R	R
	Trench Downspout Dispersion	R	R
	Non-infiltrating Bioretention	R, S	R, S
	Vegetated Roofs	R ^c	X
4	Perforated Stub-out Connections	R	R
	Newly Planted Trees	S	S

R = Evaluation is required for all roof runoff from parcel-based projects.

S = Evaluation is required for all surfaces of parcel-based projects, unless otherwise noted below.

X = Evaluation is not required but is allowed.

Volume 3 – Chapter 4

- Chapter 4 – General Design Requirements
 - Combined general design requirements:
 - Section 4.1- Sizing Approach
 - On-site Approach
 - Pre-sized Approach
 - Modeling Approach
 - Section 4.2 - Bypass General Design Requirements
 - Section 4.3 - Conveyance General Design Requirements
 - Section 4.4 - Presettling and Pretreatment requirements
 - Section 4.5 - Infiltration BMPs
 - 100% Infiltration on the site
 - Infiltrating to meet Water Quality Treatment
 - Infiltrating to meet Flow Control

Volume 3 – Chapter 5

3

- Chapter 5 – BMP Design
 - Combined on-site stormwater management, flow control, and water quality BMP design sections into a single chapter
 - BMPs are grouped by function (e.g. infiltrating BMPs)

Volume 4 – Source Control

4

- Changes
 - Condensed text
 - Updated, deleted, and added BMPs
 - Updated figures
- Table of Contents
 - Chapter 1 – Introduction
 - Chapter 2 – Citywide Best Management Practices
 - Chapter 3 – Commercial and Industrial Activity Best Management Practices
 - Chapter 4 – References

Volume 5 – Enforcement

5

- Changes
 - Minor changes
- Table of Contents:
 - Chapter 1 - Introduction
 - Chapter 2 - Penalty Assessment Matrix

Appendices

- Appendix A – Definitions
- Appendix B – Background Information on Chemical Treatment
- Appendix C – On-site List BMP Infeasibility Criteria ***New***
- Appendix D – Subsurface Characterization and Infiltration Testing for Infiltration Facilities ***New***
- Appendix E – Additional Design Requirements ***New***

Appendices

- Appendix F – Hydrologic Analysis and Design ***New***
- Appendix G – Stormwater Control Operations and Maintenance Requirements
- Appendix H – Financial Feasibility Documentation for Vegetated Roofs and Rainwater Harvesting ***New***
- Appendix I- Integrated Pest Management Plan

Timeline

- ✓ • **Spring 2013:** Outreach to Frequent Users
- ✓ • **Summer 2013:** Initial Outreach
- ✓ • **Fall 2013 / Winter 2014:** Public Outreach
- ✓ • **Spring 2014:** Initial drafts available for public comment
- ✓ • **Spring/Summer 2015:** Legislative process and formal public review for 2016 Stormwater Code Update
- • **Fall 2015:** Directors' Rule process and formal public review for 2016 Stormwater Manual Update
 - **October 18, 2015 – Comments Due**
 - **January 2016:** Stormwater Manual and Code are scheduled to take effect

Questions

Ede Courtenay

Engineering Services Drainage Review - DPD

Ede.Courtenay@Seattle.gov

(206) 733 – 9679



Michelle Lange

Development Services Office - SPU

Michelle.Lange@Seattle.gov

(206) 727 – 8726

Seattle
Public
Utilities

Sherell Ehlers, P.E.

Stormwater Policy - SPU

Sherell.Ehlers@Seattle.gov

(206) 386 - 4576

Seattle
Public
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