Agenda

- Project Background
- Stormwater Manual Changes
- Timing
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

  - 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
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
Volume 1 – Project Minimum Requirements

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

• 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

- Volume 1 – Project Minimum Requirements
  - Code Language will be updated in Final Manual
  - Revised Code Language available online: http://www.seattle.gov/dpd/codesrules/changestocodestormwatercode/projectdocuments/default.htm

- Terminology change: “Impervious surface” to “hard surface”
### Chapter 4 - Minimum Requirements Based on Project Type

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Soil Amendment</th>
<th>On-site Stormwater</th>
<th>Flow Control / Water Quality Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family Residential</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Trail &amp; Sidewalk</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Parcel-based</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Roadway</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Volume 1 – Chapter 5, 6, 7, 8

• 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
  • PE required for projects with no POD
Volume 2 – Construction Stormwater Control

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

• 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

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

• 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

• 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

![Diagram of BMP Selection & Sizing](image)

**Figure 3.1. Infiltration Feasibility**
Volume 3 – Chapter 3
BMP Selection & Sizing

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

\(R = \) 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

• 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

• 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

• 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

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