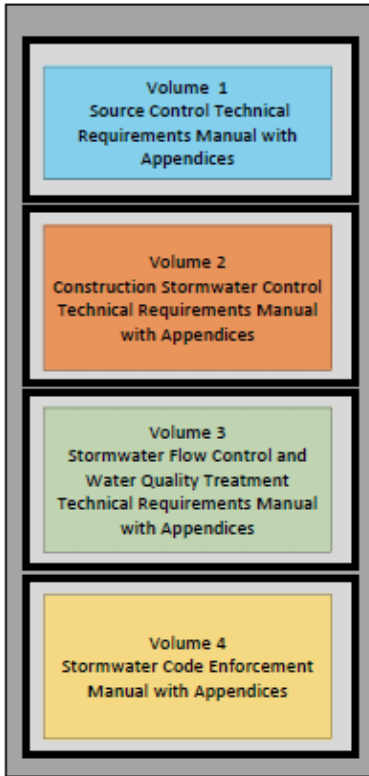


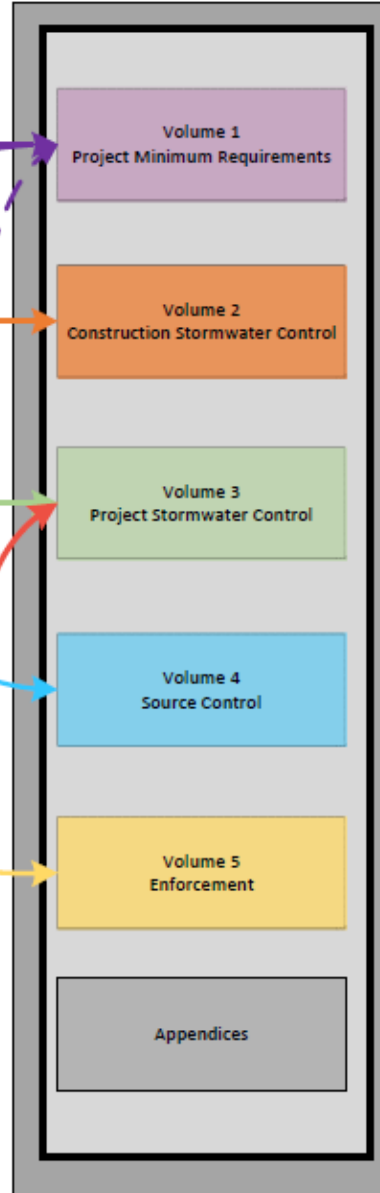
Current Seattle Stormwater Manual

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



Revised Seattle Stormwater Manual

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



February 2013
GSI to MEF Directors' Rules²



GSI to MEF- All project types

NOTES

- 2009 Directors' Rules:
 - Vol. 1: [2009-003 SPU, 15-2009 DPD](#)
 - Vol. 2: [2009-004 SPU, 16-2009 DPD](#)
 - Vol. 3: [2009-005 SPU, 17-2009 DPD](#)
 - Vol. 4: [2009-006 SPU, 18-2009 DPD](#)
- 2013 GSI to MEF Directors' Rules:
 - SFR and Parcel Based: [DWW 201.1 SPU, 15-2012 DPD](#)
 - Roadway, Trail, Sidewalk: [DWW-201.2 SPU, 16-2012 DPD](#)

Summary of Changes to Seattle’s Stormwater Manual

Volume	2016 Stormwater Manual
Volume 1- Project Minimum Requirements	<p>January 2016 Final Stormwater Manual</p> <ul style="list-style-type: none"> • Globally changed “DPD” to “SDCI” where applicable • Updated language in throughout (including Stormwater Code tables) to match the final language in the 2016 Stormwater Code <p>Fall 2015 Final Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Globally changed “impervious” to “hard” where applicable for consistency with Ecology’s Stormwater Management Manual for Western Washington (SWMMWW) <p>Spring 2014 Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Includes text and requirements from the following 2009 Stormwater Manual Volumes: <ul style="list-style-type: none"> ○ Volume 1: Source Control Technical Requirements Manual (Seattle 2009) ○ Volume 2: Construction Stormwater Control Technical Requirements Manual (Seattle 2009) ○ Volume 3: Stormwater Flow Control & Water Quality Treatment Technical Requirements Manual (Seattle 2009) ○ GSI to MEF Directors’ rules (Seattle 2013) • Revised project type requirements for single-family residential, parcel-based, and roadway projects to include permanent dewatering of groundwater peak flow control standard • Added an On-Site Stormwater Management section to include minimum requirements from the GSI to MEF Directors’ Rules • Added receiving water figures and updated project type figures • Refer to Volume 1 summary sheet for additional information
Volume 2- Construction Stormwater Control	<p>January 2016 Final Stormwater Manual</p> <ul style="list-style-type: none"> • Globally changed “DPD” to “SDCI” where applicable • Globally clarified that “public drainage system” includes “public drainage system or public combined sewer” <p>Fall 2015 Final Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Removed list of 19 elements in Chapter 2 since it is included in the Stormwater Code • Globally changed “impervious” to “hard” where applicable for consistency with the SWMMWW <p>Spring 2014 Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Edited BMPs for consistency with Ecology’s SWMMWW • Consolidation of text in Chapter 1 (Introduction) and Chapter 2 (The Submittal Process) • Added Element #19 – Protect Green Stormwater Infrastructure BMPs [equivalency] • Updated, deleted, and added BMPs (refer to Volume 2 summary sheet for additional detail)

Volume	2016 Stormwater Manual
Volume 3- Project Stormwater Control	<p>January 2016 Final Stormwater Manual</p> <ul style="list-style-type: none"> • Globally changed “DPD” to “SDCI” where applicable • Chapter 2- updated BMP Category tables for consistency with Applicability Tables in BMP sections • Minor changes to Chapter 3- BMP Selection and Sizing Approach <ul style="list-style-type: none"> ○ Minor edits to Figure 3.1- Infiltration Feasibility ○ Minor changes to Section 3.2– Determine Infiltration Feasibility <ul style="list-style-type: none"> ▪ Clarified horizontal setback requirements for different BMPs (Step 2) ▪ Added guidance on seasonal timing of subsurface investigations (Step 3) ▪ Revised Acceptance Testing and folded in relevant text from Appendix D (Step 6) ○ Updated Table 3.4 “Flow Control BMPs and Applicable Standards” for consistency with Applicability Tables in BMP sections ○ Minor edits to Figure 3.2 • Revisions to Chapter 4- General Design Requirements <ul style="list-style-type: none"> ○ Added guidance for when additional flows may pass through a flow control facility ○ Added guidance on detention BMP use of orifice to meet flow control standards, and provided general scenarios that meet flow control standards with a 0.5-inch orifice and 3-foot live storage ○ Revised Section 4.2.2- Bypassing Flows Entering or Leaving a Site ○ Revised Section 4.2.3- Overflow Requirements, added overflow requirements specific to the right-of-way ○ Condensed text in Section 4.4- Presettling and Pretreatment Requirement ○ Added permeable pavement sand layer requirement to Section 4.5.2.2- Imported Soil and Sand <p>Fall 2015 Final Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Globally changed “impervious” to “hard” where applicable for consistency with the SWMMWW • Revised Chapter 3- BMP Selection and Sizing Approach <ul style="list-style-type: none"> ○ New Section 3.1– Determine Dispersion Feasibility <ul style="list-style-type: none"> ▪ Added steps for determining dispersion feasibility ○ New Section 3.2– Determine Infiltration Feasibility <ul style="list-style-type: none"> ▪ Added steps for determining infiltration feasibility ▪ Text moved and revised from Fall 2014 Section 5.4.1 ▪ Added Figure 3.1 Infiltration Feasibility ▪ Added Table 3.1. and Table 3.2 for Minimum Investigation and Testing Requirements for Shallow Infiltration BMPs, and Deep Infiltration BMPs ▪ Added Table 3.3 Minimum Measured Infiltration Rates ○ Section 3.3 – Selection for On-site Stormwater Management <ul style="list-style-type: none"> ▪ Clarified On-site list approach (Step 1 and Step 4) ○ Section 3.4 – BMP Selection for Flow Control <ul style="list-style-type: none"> ▪ Added dispersion to Step 1 ▪ Revised Table 3.4- Flow Control BMPs

Volume	2016 Stormwater Manual
Volume 3- Project Stormwater Control (cont.)	<ul style="list-style-type: none"> ○ Section 3.5 – BMP Selection for Water Quality Treatment <ul style="list-style-type: none"> ▪ Added Table 3.5 - Solids loading potential categories, descriptions, and TSS characteristics ▪ Removed Step 3 (Determine if Infiltration is Feasible) and moved text into Step 4 and Step 5 ▪ Added Step 6: Use Pre-sized, Modeling, or Mass-based Sizing Approach for BMP Design. ▪ Revised Figure 3.2 • Revised Chapter 4- General Design Requirements <ul style="list-style-type: none"> ○ Revised Section 4.4 (Presettling and Pretreatment) to provide more detailed information regarding which BMPs require presettling or pretreatment ○ Added Table 4.1 (Pretreatment Requirements) to summarize BMP and Presettling Cell and Structure requirements • Moved Section 5.4.1 Design Requirements for Infiltration BMPs to new Section 3.1 and Appendix D • Added Infiltration Chambers BMP section to Chapter 5 • Revised Proprietary and Emerging Water Quality Treatment Technologies to fold in new requirements and mass-based sizing approach <p>Spring 2014 Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Consolidation of text • Reorganized based on manual user and City staff input (refer to Volume 3 summary sheet for additional information) • Moved Chapter 6 text to Appendix F (Hydrologic Analysis and Design) • Edited BMPs for consistency with Ecology’s SWMMWW (refer to Volume 3 summary sheet for additional information)
Volume 4- Source Control	<p>January 2016 Final Stormwater Manual</p> <ul style="list-style-type: none"> • Globally changed “DPD” to “SDCI” where applicable • Minor edits to clarify which activities must be covered under an NPDES permit <p>Fall 2015 Final Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Globally changed “impervious” to “hard” where applicable for consistency with the SWMMWW • Minor edits for reduction and consolidation of text <p>Spring 2014 Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Consolidation of text in BMP sections and edited BMPs for consistency with Ecology’s SWMMWW • Consolidated and deleted BMPs (refer to Volume 4 summary sheet for additional detail) • Added BMP for Site Maintenance in Citywide BMPs
Volume 5- Enforcement	<p>January 2016 Final Stormwater Manual Globally changed “DPD” to “SDCI” where applicable</p> <p>Spring 2014 Draft Public Review Stormwater Manual Minor edits</p> <p>Fall 2015 Final Draft Public Review Stormwater Manual No additional edits following Spring 2014 draft</p>

Volume	2016 Stormwater Manual
Appendices:	<p>January 2016 Final Stormwater Manual</p> <ul style="list-style-type: none"> • Globally changed “DPD” to “SDCI” where applicable • Added definitions in Appendix A per the final language in the 2016 Stormwater Code • Updated Appendix C, Appendix D, Appendix E, Appendix F, and Appendix G • Changed name of Appendix E to “Additional Design Requirements and Plant Lists” <p>Fall 2015 Final Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Globally changed “impervious” to “hard” where applicable for consistency with the SWMMWW • Updated Appendix C, Appendix D, and Appendix G • Added Appendix H – Financial Feasibility Documentation for Vegetated Roofs and Rainwater Harvesting • Shifted Integrated Pest Management Plan to Appendix I <p>Spring 2014 Draft Public Review Stormwater Manual</p> <ul style="list-style-type: none"> • Appendices from each volume (2009) combined and provided in a centralized location at the end of the manual (refer to Appendix summary sheet for full list of appendices) • All relevant sections edited for consistency with Ecology’s SWMMWW, if applicable • New Appendix C that contains On-site Stormwater Management Infeasibility Criteria

Seattle's New Volume 1 Project Minimum Requirements

January 2016 Final Stormwater Manual

- Globally changed “DPD” to “SDCI” where applicable
- Updated language in throughout (including Stormwater Code tables) to match the final language in the 2016 Stormwater Code

Fall 2015 Final Draft Public Review Stormwater Manual

- Globally changed “impervious” to “hard” where applicable for consistency with the SWMMWW
- Updated language previously quoted from the Stormwater Code to match the final language contained in the 2016 Stormwater Code

Spring 2014 Draft Public Review Stormwater Manual

- The new Volume 1 – Project Minimum Requirements includes text and requirements from the following:
 - Volume 1: Source Control Technical Requirements Manual (Seattle 2009)
 - Volume 2: Construction Stormwater Control Technical Requirements Manual (Seattle 2009)
 - Volume 3: Stormwater Flow Control & Water Quality Treatment Technical Requirements Manual (Seattle 2009)
 - GSI to MEF Directors’ Rules (Seattle 2013)
- Revised project type requirements for parcel-based, and roadway projects to include permanent dewatering of groundwater peak control standard
- Added On-Site Stormwater Management minimum requirements (slight modifications from the GSI to MEF Directors’ Rules) for consistency with Ecology’s Stormwater Management Manual for Western Washington (SWMMWW)

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Chapter 1 – Introduction			
Volume 3, Chapter 1- Introduction	Minor edits	Kept proposed changes in Spring 2014 Draft and made additional minor edits.	Kept proposed changes in Fall 2015 Draft and made additional minor edits.
Chapter 2 – Determining Minimum Requirements			
Volume 3, Section 2.3- Which Minimum Requirements Apply to My Project?	<ul style="list-style-type: none"> • Reformatted the 7 steps • Added new project type figures • Removed the “Joint Project” definition • Added project types for Utility, Road Maintenance, WSDOT, and Special Circumstances Projects • Added figures showing the Creek and Small Lake Basins, Public Combined Sewer Basins, and Designated Receiving Water Drainage Areas 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Revised definition of Sidewalk Project • Renamed “road maintenance project” “pavement maintenance project” 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> • Clarified definition of utility project • Added definition of hard surface to Step 5
Chapter 3 – Minimum Requirements for All Projects			
Volume 3, Section 2.6- Other Minimum Requirements that May Apply	<ul style="list-style-type: none"> • Minor edits • Amended Soils requirement moved to On-site Stormwater Management in Chapter 4 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Included additional examples of PGPS 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> • Updated Stormwater Code Language

Chapter 4- Minimum Requirements Based on Project Type

<p>Volume 3, Section 2.4.1-2.4.4 – Minimum Requirements for Single Family Residential Projects (SMC 22.805.030), Trail and Sidewalk Projects (SMC 22.805.040), Parcel-Based Projects (SMC 22.805.050), and Roadway Projects (SMC 22.805.060)</p>	<ul style="list-style-type: none"> • On-site stormwater management code language added • Revised flow charts to focus on project minimum requirements, flow control, and water quality requirements for roadway and parcel-based projects • References column added to supplement Stormwater Code language 	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Added “Soil Amendment” section 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Updated Stormwater Code Language • Minor edits to flow charts (Figures 4.1 and 4.2) to match 2016 Stormwater Code • Clarified when the 0.1 and 0.15 cfs flow control threshold applies for parcel - based and roadway projects
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Chapter 5- Minimum Requirement Standards

<p>GSI to MEF Directors’ Rules, Chapter 5 (SMC 22.805.070)</p>	<p>On-site stormwater management code language added.</p>	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Added “Soil Amendment” section 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Updated Stormwater Code Language
<p>Volume 3, Section 2.4- Minimum Requirements for Flow Control and Treatment (SMC 22.805.080 and SMC 22.805.090)</p>	<ul style="list-style-type: none"> • Updated wetland protection standard for consistency with Ecology’s SWMMWW • Minor edits to Water Quality Treatment standards 	<p>Kept proposed changes in Spring 2014 Draft</p>	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Updated Stormwater Code Language • Deleted repetitive text • Clarified that “Projects Discharging to a Receiving Water Not Designated by Section 22.801.050” includes wetlands, creeks, and small lakes • Re-ordered Water Quality Treatment Standards sections for consistency with Volume 3, Section 3.5. • Clarified when Oil Control, Phosphorus Treatment, Enhances Treatment, and Basic Treatment are required

Chapter 6: Alternative Compliance

<p>Volume 3, Section 2.8- Alternative Compliance</p>	<p>Minor edits</p>	<p>Kept proposed changes in Spring 2014 Draft</p>	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Updated Stormwater Code Language
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Chapter 7: Site Assessment and Planning

<p>Volume 3, Chapter 3- Site Planning, Site Assessment, and Drainage Control Review</p>	<ul style="list-style-type: none"> • Consolidation of text, minor edits 	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Added guidance for when dewatering must occur 	<p>Kept proposed changes in Fall 2015 Draft</p>
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Chapter 8: Drainage Control Review and Application Requirements

<p>Volume 3, Chapter 3- Site Planning, Site Assessment, and Drainage Control Review</p>	<ul style="list-style-type: none"> • Added minimum Site Plan requirements from Tip 103 • Added On-site Stormwater Management Documentation section • Added Memorandum of Drainage Control (MDC) requirements from SMC, Section 22.807.020.B.1.d • Added code section references for survey requirements 	<p>Kept proposed changes in Spring 2014 and made the following additional changes:</p> <ul style="list-style-type: none"> • Clarified when a drainage control plan is required 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Added a requirement to identify all stormwater BMPs in the Memorandum of Drainage Control (MDC) requirements
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Summary of Changes to Seattle’s Construction Stormwater Control Volume

January 2016 Final Stormwater Manual

- Globally clarified that “public drainage system” includes “public drainage system or public combined sewer”
- Updated BMPs as summarized below

Fall 2015 Final Draft Public Review Stormwater Manual

- Removed list of 19 elements in Chapter 2 since it is included in the Stormwater Code
- Globally changed “impervious” to “hard” where applicable for consistency with Ecology’s Stormwater Management Manual for Western Washington (SWMMWW)

Spring 2014 Draft Public Review 2015 Stormwater Manual

- Volume 2: Construction Stormwater Control Technical Requirements Manual (Seattle 2009) split into Volume 1 – Project Minimum Requirements and Volume 2 – Construction Stormwater Control (*Seattle 2015*)
- Condensed text in Chapter 1 (Introduction) and Chapter 2 (The Submittal Process)
- Added Element #19 – Protect Green Stormwater Infrastructure BMPs [Equivalency]
- Updated, deleted, and added BMPs as summarized below

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Temporary Cover Practices			
BMP E1.10: Temporary Seeding	Minor edits [Equivalency]	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP E1.15: Mulching, Matting, and Compost Blankets	Clarified minimum application depth for wood fiber and cellulose mulch. Minor edits to figures.		
BMP E1.20: Clear Plastic Covering	Updated figure		

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
BMP E1.25: Polyacrylamide for Soil Erosion Protection	Refer to Ecology's SWMMWW	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
Permanent Cover Practices			
BMP E1.30: Preserving Natural Vegetation	Updated figure	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Added reference to SMC for Tree Protection and Trees and Vegetation Planning Considerations 	Kept proposed changes in Fall 2015 Draft
BMP E1.35: Buffer Zones	Updated photo	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP E1.40: Permanent Seeding and Planting	No edits	Made the following changes: <ul style="list-style-type: none"> Revised Design Criteria for Soil Amendments with reference to COS Specifications and Volume 3 Added design criteria for seeding and planting 	
BMP E1.45: Sodding	No edits	Made the following changes: <ul style="list-style-type: none"> Revised Design Criteria for Soil Amendments with reference to COS Specifications and Volume 3 	
BMP E1.50: Topsoiling	BMP has been removed	Not applicable	
Not applicable	Not applicable	Added BMP E1.50: High Visibility Fence	
Temporary Erosion Control BMPs			
BMP E2.10: Stabilized Construction Entrance	Revised depth of material and clarified materials to avoid. Updated photo.	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Revised Design Criteria for geotextile with reference to COS Specifications 	Kept proposed changes in Fall 2015 Draft
BMP E2.15: Tire Wash	Minor edits; revised figure [Equivalency]	Kept proposed changes in Spring 2014 Draft and made additional minor edits	

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
BMP E2.20: Construction Road Stabilization	No edits	No edits	Kept proposed changes in Fall 2015 Draft
BMP E2.25: Water Bars	Refer to Ecology's SWMMWW	Kept proposed changes in Spring 2014 Draft and made additional minor edits	
BMP E2.30: Level Spreader	Moved BMP to Appendix E (Additional Design Requirements)	Not applicable	
BMP E2.35: Check Dams	Added design criteria and clarified language. Updated figure.	Kept proposed changes in Spring 2014 Draft and made additional minor edits	
BMP E2.40: Triangular Silt Dike (Geotextile-Encased Check Dam)	Updated figure	Kept proposed changes in Spring 2014 Draft and made additional minor edits	
BMP E2.45: Dust Control	No edits	Added design criteria for building demo	
Permanent Erosion Control BMPs			
BMP E2.50: Gradient Terraces	Refer to Ecology's SWMMWW	No edits	No edits
BMP E2.55: Bioengineered Protection of Very Steep Slopes	BMP has been removed	Not applicable	Not applicable
BMP E2.60: Channel Lining	Refer to Ecology's SWMMWW	No edits	No edits
Temporary or Permanent Erosion Control BMPs			
BMP E2.65: Pipe Slope Drains	Moved BMP to Appendix E (Additional Design Requirements)	Not applicable	Not applicable
BMP E2.70: Subsurface Drains	No edits	No edits	Kept proposed changes in Fall 2015 Draft and made additional minor edits
BMP E2.75: Surface Roughening	Refer to Ecology's SWMMWW	No edits	No edits
BMP E2.80: Earth Dike and Drainage Swale	Updated figure and references [Equivalency]	Kept proposed changes in Spring 2014 Draft Public Review Stormwater Manual and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP E2.85: Outlet Protection	Moved BMP to Appendix E (Additional Design Requirements)	Not applicable	Not applicable
BMP E2.90: Grass-Lined	Refer to Ecology's SWMMWW	No edits	No edits

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Channels			
BMP E2.95 Turbidity Curtain	No edits	Removed BMP	Removed BMP
Sediment Control Practices			
BMP E3.10: Filter Fence	Added design criteria and maintenance standards section [Equivalency]. Updated photo.	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Revised Design Criteria for geotextile and added reference to COS Specifications 	Kept proposed changes in Fall 2015 Draft
BMP E3.15: Brush Barrier	Refer to Ecology's SWMMWW	No edits	No edits
BMP E3.20: Gravel Filter Berm	No edits		
BMP E3.25: Storm Drain Inlet Protection	Updated photo	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made additional minor edits
BMP E3.30: Vegetated Strip	No edits	Increased maximum slope within the vegetated filter strip to 25 percent	Kept proposed changes in Fall 2015 Draft
BMP E3.35: Straw Wattles, Compost Socks, and Compost Berms		No edits	No edits
BMP E3.40: Sediment Trap	Minor edits [Equivalency]	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP E3.45: Temporary Sediment Pond (or Basin)	Refer to Ecology's SWMMWW	No edits	No edits
BMP E3.50: Portable Sediment Tank	Minor edits [Equivalency]	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP E3.55: Construction Stormwater Chemical Treatment	Refer to Ecology's SWMMWW	No edits	No edits
BMP E3.60: Construction Stormwater Filtration	Added a section on sizing criteria for flow-through treatment systems that direct discharge into designated receiving waters, or that discharge into listed creek basins or non-listed creek basins [Equivalency].	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Added a paragraph on filtration in conjunction with polymer treatment 	Kept proposed changes in Fall 2015 Draft
BMP E3.65: Cleaning Inlets	No edits	No edits	Kept proposed changes in Fall 2015

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
and Catch Basins BMP E3.70: Street Sweeping and Vacuuming			Draft and made additional minor edits
Source Control Practices			
BMP C1.10: Certified Erosion and Sediment Control Lead	No edits	Moved to Chapter 2 – Construction Stormwater and Erosion Control Plan	Kept proposed changes in Fall 2015 Draft
BMP C1.15: Material Delivery, Storage, and Containment		No edits	No edits
BMP C1.20: Use of Chemicals During Construction	No edits	No edits	No edits
BMP C1.25: Demolition of Buildings			
BMP C1.30: Building Repair, Remodeling, and Construction			
BMP C1.35: Sawcutting and Paving Pollution Prevention			
BMP C1.40: Temporary Dewatering	Clarified definition, purpose, and planning considerations		
BMP C1.45: Solid Waste Handling and Disposal	No edits	<ul style="list-style-type: none"> • Added a paragraph regarding recycling of readily recyclable construction and demolition waste materials and submittal of a Waste Diversion Report per SMC 21.36.089. • Added chart of the current and future targeted materials and their handling, hauling and destination requirements 	Kept proposed changes in Fall 2015 Draft
BMP C1.50: Disposal of Asbestos PCBs	No edits	No edits	No edits
BMP C1.55: Airborne Debris Curtain			
Not applicable	New BMPs include BMP C1.56:	No edits	No edits

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
	Concrete Handling and Disposal and BMP C1.59: High pH Neutralization Using CO ₂ [Equivalency]		

Summary of Changes to Seattle's Flow Control and Water Quality Treatment Volume 3

January 2016 Final Stormwater Manual

- Globally changed “DPD” to “SDCI” where applicable
- Chapter 2- updated BMP Category tables for consistency with Applicability Tables in BMP sections
- Minor changes to Chapter 3- BMP Selection and Sizing Approach
 - Minor edits to Figure 3.1- Infiltration Feasibility
 - Minor changes to Section 3.2– Determine Infiltration Feasibility
 - Clarified horizontal setback requirements for different BMPs (Step 2)
 - Added guidance on seasonal timing of subsurface investigations (Step 3)
 - Revised Acceptance Testing and folded in relevant text from Appendix D (Step 6)
 - Updated Table 3.4 “Flow Control BMPs and Applicable Standards” for consistency with Applicability Tables in BMP sections
 - Minor edits to Figure 3.2
- Revisions to Chapter 4- General Design Requirements
 - Added guidance for when additional flows may pass through a flow control facility
 - Added guidance on detention BMP use of orifice to meet flow control standards, and provided general scenarios that meet flow control standards with a 0.5-inch orifice and 3-foot live storage
 - Revised Section 4.2.2- Bypassing Flows Entering or Leaving a Site
 - Revised Section 4.2.3- Overflow Requirements, added overflow requirements specific to the right-of-way
 - Condensed text in Section 4.4- Presettling and Pretreatment Requirement
 - Added permeable pavement sand layer requirement to Section 4.5.2.2- Imported Soil and Sand
- Updated BMPs as summarized below

Fall 2015 Final Draft Public Review Stormwater Manual

- Globally changed “impervious” to “hard” where applicable for consistency with the SWMMWW
- Revised Chapter 3- BMP Selection and Sizing Approach
 - Added Section 3.1– Determine Dispersion Feasibility
 - Added steps for determining dispersion feasibility
 - Added Section 3.2– Determine Infiltration Feasibility
 - Added steps for determining infiltration feasibility

- Text moved and revised from Fall 2014 Section 5.4.1
- Added Figure 3.1 Infiltration Feasibility
- Added Table 3.1. and Table 3.2 for Minimum Investigation and Testing Requirements for Shallow Infiltration BMPS and Deep Infiltration BMPs
- Added Table 3.3 Minimum Measured Infiltration Rates
- Section 3.3 – Selection for On-site Stormwater Management
 - Clarified On-site list approach (Step 1 and Step 4)
- Section 3.4 – BMP Selection for Flow Control
 - Added dispersion to Step 1
 - Revised Table 3.4- Flow Control BMPs
- Section 3.3 – Selection for On-site Stormwater Management
 - Clarified On-site list approach (Step 1 and Step 4)
- Section 3.4 – BMP Selection for Flow Control
 - Added dispersion to Step 1
 - Added Table 3.1- Flow Control BMPs to summarize standards achievable by each flow control BMP and section reference
- Section 3.5 – BMP Selection for Water Quality Treatment
 - Added Table 3.5 - Solids loading potential categories, descriptions, and TSS characteristics
 - Removed Step 3 (Determine if Infiltration is Feasible) and moved text into Step 4 and Step 5
 - Added Step 6: Use Pre-sized, Modeling, or Mass-based Sizing Approach for BMP Design
 - Revised Figure 3.2 Water Quality Treatment BMP Selection Flow Chart
- Revised Chapter 4- General Design Requirements
 - Revised Section 4.4 (Presettling and Pretreatment) to provide more detailed information regarding which BMPs require presettling or pretreatment
 - Added Table 4.1 (Pretreatment Requirements) to summarize BMP and Presettling Cell and Structure requirements
- Chapter 5 – BMP Design
 - Moved Section 5.4.1 Design Requirements for Infiltration BMPs to new Section 3.1 and Appendix D
 - Added Infiltration Chambers section
 - Revised Proprietary and Emerging Water Quality Treatment Technologies to fold in new requirements and mass-based sizing approach

Spring 2014 Draft Public Review Stormwater Manual

- Volume 3: Stormwater Flow Control & Water Quality Treatment Technical Requirements Manual (Seattle 2009) split into Volume 1 – Project Minimum Requirements and Volume 3 – Project Stormwater Control (Seattle 2014-2015)

- Edited BMPs for consistency with Ecology’s Stormwater Management Manual for Western Washington (SWMMWW)
- Reorganized and condensed text based on manual user and City staff input
 - Moved stormwater education info (Chapter 1) to a SPU Client Assistance Memo (Tips)
 - Moved Chapters 2 and 3 to Volume 1 – Project Minimum Requirements
 - Combined BMP selection for On-site Stormwater Management, Flow Control, and Water Quality Treatment into a single chapter (new Chapter 3)
 - Combined general design requirements (Sizing Approach, Bypass, Conveyance, and Pretreatment) into a single chapter (new Chapter 4)
 - Combined on-site stormwater management, flow control, and water quality BMP design sections into a single chapter along with specific design requirements for Dispersion BMPs, Infiltration BMPs, and Non-Infiltrating BMPs (new Chapter 5)
 - Moved Additional Design Requirements to an appendix (new Appendix E)
 - Moved Chapter 6 – Hydrologic Analysis and Design to an appendix (new Appendix F)

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
On-site Stormwater Management BMPs (previously Green Stormwater Infrastructure BMPs)			
Post-Construction Soil Quality and Depth	<ul style="list-style-type: none"> • Renamed “Soil Amendment BMP” • Edits for consistency with Ecology’s SWMMWW • Consolidation of text 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Edits to clarify that Soil Amendment BMP is required for all applicable projects • Added references to COS Standard Specification for Topsoil Type A, Reused Amended Site Soil, Planting Soil, General Turf Area, and Compost 	Kept proposed changes in Fall 2015 Draft and made additional minor edits
Tree Planting and Retention	<ul style="list-style-type: none"> • Edits for consistency with Ecology’s SWMMWW • Consolidation of text 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Added references to SMC, COS Standard Specifications, and COS Standard Plans for Tree Protection • Reorganized/ moved text within section for clarity 	Kept proposed changes in Fall 2015 Draft and made additional minor edits
Full Dispersion	Shortened, added reference to SWMMWW.	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made additional minor edits

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Downspout Dispersion	<ul style="list-style-type: none"> Split into Splashblock and Trench Downspout Dispersion BMPs Added a new figure Increased setback from property line or structure 	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> Added sentence to allow contributing area greater than 700 sf if contributing area is a vegetated roof. Clarified that dispersion device shall be 5 feet from a structure, and 10 feet from a structure with a basement. Added trench aggregate requirements. 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> Updated Pre-sized Flow Control Credits
Sheet Flow Dispersion	Shortened, edits for consistency with Ecology's SWMMWW.	Kept proposed changes in Spring 2014 Draft and made additional minor edits	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> Updated Pre-sized Flow Control Credits
Concentrated Flow Dispersion	New BMP. Added for consistency with Ecology's SWMMWW.	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> Allow contributing area greater than 700 sf if contributing area is not an impervious surface. Clarified that dispersion device shall be 5 feet from a structure and 10 feet from a structure with a basement. 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> Updated Pre-sized Flow Control Credits

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Bioretention	<ul style="list-style-type: none"> Split into infiltrating bioretention and non-infiltrating Bioretention Edits for consistency with Ecology’s SWMMWW 	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> Edits for clarity and to reduce repeated text between sections Revised Site Considerations to refer to Section 3.2 , 4.5 and Appendix C for setbacks and site constraints Revised Figures Added design criteria specific to bioretention facilities in the public ROW Revised Contributing Area requirements for oversized bioretention facilities Added references to COS Standard Plans for sheet flow (in progress) Edits to Presettling Zone requirements for clarity Added minimum bottom area, minimum and maximum ponding depth, and maximum bottom slope Revised Table 5.17 to clarify presettling requirements, added presettling requirements on Arterial Streets Added maximum side slopes (1H:1V) around trees planted within or alongside slopes in the bioretention cell Revisions to Bioretention Soil section. Added Bioretention Soil mix specification. Added Scarification subsection to require that the side walls and bottom of the bioretention facility are scarified after excavation Edits to Underdrain Requirements section for consistency with Ecology’s SWMMWW (2014 Modifications) Reduced text in Mulch Layer Requirements section Added guidance on BMP Sizing and modeling 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> Clarified applicability of bioretention with underdrain for meeting Peak Flow Control Standard Revised the maximum allowable size of bioretention facility Revised limitations of routing additional flows through the bioretention facility Revised presettling requirements for bioretention facilities in roadways Revised minimum setbacks for facilities with vertical walls Moved observation port requirements to underdrain subsection Shifted overflow requirements to a bulleted list Updated On-site List Sizing Factors and Pre-sized Sizing Factors and Equations for Infiltrating Bioretention with and without Underdrains

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Rain gardens	New BMP. Added for consistency with Ecology's SWMMWW.	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Edits for clarity and to reduce repeated text between sections • Simplified the site considerations and added reference to Section 3.2. • Added minimum bottom area, minimum and maximum ponding depth, and maximum bottom slope. • Added maximum side slopes (1H:1V) around trees planted within or alongside slopes in the rain garden cell • Clarified that bioretention soil mix or amended subgrade soil may be used for rain garden soil mix • Reduced text in Mulch Layer Requirements section • Added guidance on BMP Sizing 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Clarified minimum setback from face of curb to top of slope • Revised overflow freeboard requirements • Updated On-site List Sizing Factors

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Permeable Pavement Facilities	<ul style="list-style-type: none"> • Edited for consistency with Ecology’s SWMMWW • Added requirements for run-on from specific land uses 	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Edits for clarity and to reduce repeated text between sections • Simplified the site considerations and added reference to Section 3.2. • Added specific requirements for if run-on flows into permeable pavement and flow is concentrated • Added reference to ASTM tests for surface infiltration rates of permeable pavements • Added reference to DPD website for approved wearing course material • Revise storage reservoir depth requirements and added ASTM tests for percent voids in storage reservoir. • Added a Subgrade subsection • Clarified when subsurface check dams are required • Revised Figures • Added Underdrain subsection • Added guidance on BMP Sizing and modeling 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Slight revisions and clarifications to table comparison of permeable pavement facilities and surfaces • Added minimum wearing course slope • Revised wearing course description for Permeable Pavers • Added guidance for On-site List Sizing and Pre-sized Approach Sizing • Updated Pre-sized Sizing Factors an Equations for Permeable Pavement Facilities with and without Underdrains
Infiltration Trenches	<p>Added to the list for providing on-site stormwater management</p>	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Edits for clarity and to reduce repeated text between sections • Added perforated pipe and distribution pipe subsections • Revised figures • Added guidance on BMP Sizing and modeling 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Clarified that infiltration trenches and drywells may only receive runoff from PGHS or PGPS if the underlying soil meets the soil suitability criteria • Clarified assumptions made in On-site List Sizing tables • Updated Pre-sized Sizing Factors and Equations
Dry Wells			

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Perforated Stub-Out Connections	New BMP. Added for consistency with Ecology's SWMMWW.	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Added guidance for presettling 	Kept proposed changes in Fall 2015 Draft
Rainwater Harvesting	<ul style="list-style-type: none"> • Edits for consistency with Ecology's SWMMWW • Consolidation of text 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Added references to other design standards and regulations (e.g., Plumbing Code) • Clarified that contributing area must be a roof • Added subsection for Prefilter • Added guidance on BMP Sizing 	Kept proposed changes in Fall 2015 Draft
Single Family Residential (SFR) Cistern	<ul style="list-style-type: none"> • Edits for consistency with Ecology's SWMMWW • Consolidation of text 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Clarified that SFR Cisterns can only be used to meet on on-site list requirements • Pulled text from rain water harvesting and modified for SFR projects • Revised figure 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> • Updated On-site List Sizing Factors
Green Roofs	<ul style="list-style-type: none"> • Edits for consistency with Ecology's SWMMWW • Consolidation of text 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Renamed "Vegetated Roof Systems" 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> • Updated Pre-sized Flow Control Credits
Permeable Pavement Surfaces	<ul style="list-style-type: none"> • Edits for consistency with Ecology's SWMMWW • Consolidation of text 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Edits for clarity and to reduce repeated text between sections • Added text from permeable pavement facilities that is applicable to permeable pavement surfaces • Clarified that permeable pavement surfaces are not intended to mitigate runoff from other surfaces • Revised figure • Added guidance on BMP Sizing and modeling 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> • Added text from permeable pavement facilities that is applicable to permeable pavement surfaces • Added guidance for Pre-sized Approach Sizing • Updated Pre-sized Flow Control Credits for Permeable Pavement Surfaces

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Traditional Infiltration BMPs			
Infiltration Basins	<ul style="list-style-type: none"> Shortened Added references to Ecology’s SWMMWW where design information is the same 	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
Infiltration Chambers	Not applicable	New BMP Added Infiltration Chambers section	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> Added Infiltration Chamber figure Updated Pre-sized Sizing Factors and Equations Added guidance on BMP Sizing and modeling
Detention BMPs			
Detention Pond	<ul style="list-style-type: none"> Shortened Added references to Ecology’s SWMMWW where design information is the same 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Clarified fencing requirements. 	Kept proposed changes in Fall 2015 Draft
Detention Pipe	Minor edits	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Moved detention pipe material and specifications from text into table format Revised access requirements 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> Combined detention pipe bedding and material sections Removed Detention Pipe Material and Bedding Specifications table, added reference to Side Sewer Directors’ Rule Updated Pre-sized Sizing Equations Added guidance on BMP Sizing and modeling

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Detention Vault	<ul style="list-style-type: none"> Shortened Added references to Ecology’s SWMMWW where design information is the same 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Added site consideration guidance for roadway projects and flow control effectiveness Revised figure Revised access requirements 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> Updated Pre-sized Sizing Equations Added guidance on BMP Sizing and modeling
Detention Cistern	Minor edits	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Added contributing area subsection 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> Updated Pre-sized Sizing Factors and Equations
Other Detention Options	Minor edits	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
Control Structures for Flow Control Facilities	<ul style="list-style-type: none"> Moved to Appendix E Removed Rectangular Sharp Crested Weir, V-Notch Sharp-Crested Weir, Proportional or Sutro Weir design information 	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
Non-infiltrating BMPs			
Bioretention Planter or Cells with Liners	<ul style="list-style-type: none"> Renamed “Non-Infiltrating Bioretention” Edits for consistency with Ecology’s SWMMWW Consolidation of text 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Added applicability to the following requirements/ standards: on-site standard, and flow control forest and pasture standards Added guidance on BMP Sizing and modeling 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> Updated Pre-sized Sizing Factors and Equations Added guidance on BMP Sizing and modeling
Basic Biofiltration Swale Wet Biofiltration Swale	<ul style="list-style-type: none"> Condensed into a single BMP section: “Biofiltration Swales” 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Revised figure 	Kept proposed changes in Fall 2015 Draft

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Continuous Inflow Biofiltration Swale	<ul style="list-style-type: none"> Consolidation of text Added references to Ecology’s SWMMWW where design information is the same 	<ul style="list-style-type: none"> Revised where underdrains are required Clarified throughout where each type of biofiltration swale is appropriate 	Kept proposed changes in Fall 2015 Draft
Basic Filter Strip and Compost Amended Vegetated Filter Strip Ecology Embankments	<ul style="list-style-type: none"> Condensed into a single BMP section: “Filter Strips/Drains” Terminology for Ecology Embankments updated to Media Filter Drain Added references to Ecology’s SWMMWW and WSDOT Highway Runoff Manual where design information is the same 	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
Narrow Area Filter Strip	BMP has been removed	Not applicable	Not applicable
Basic and Large Sand Filter Basins Sand Filter Vault Linear Sand Filter	<ul style="list-style-type: none"> Condensed considerably Added references to Ecology’s SWMMWW where design information is the same Figures removed 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Added reference to COS Standard Plan for underdrain pipe requirements 	Kept proposed changes in Fall 2015 Draft

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Wet Ponds- Basic and Large	<ul style="list-style-type: none"> Condensed considerably Added references to Detention Ponds and Ecology’s SWMMWW where design information is the same Figures removed Supplemental design information moved to Appendix E 	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made additional minor edits
Wet Vaults	<ul style="list-style-type: none"> Condensed considerably Added references to Detention Vaults and Ecology’s SWMMWW where design information is the same Figures revised 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Minor revisions to access requirements 	
Stormwater Treatment Wetlands	<ul style="list-style-type: none"> Condensed considerably Added references to Wet Ponds and Ecology’s SWMMWW where design information is the same Figures removed 	Kept proposed changes in Spring 2014 Draft and made additional minor edits	
Combined Detention and Wet Pool Facilities			
API (Baffle Type) Oil/Water Separator Bay	<ul style="list-style-type: none"> Condensed considerably Added references to Ecology’s SWMMWW where design information is the same Figures removed 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Deleted 2-acre drainage area threshold Edits for clarity and to reduce repeated text between sections Revised figures 	
Coalescing Plate (CP) Oil/Water Separator Bay			

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Emerging Technologies	<ul style="list-style-type: none"> • Edits for consistency with Ecology’s SWMMWW • Added a table with current General Use Level Designations (GULDs) • Updated section title to “Proprietary and Emerging Water Quality Treatment Technologies” 	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Added a table of TAPE performance goals • Added Performance Mechanisms, Site Considerations, Design Criteria, BMP Sizing, and Construction Requirements 	Kept proposed changes in Fall 2015 Draft and made additional minor edits

Summary of Changes to Seattle’s Source Control Volume

Spring 2014 Draft Public Review Stormwater Manual

- Volume 1: Source Control Technical Requirements Manual (Seattle 2009) split into Volume 1- Project Minimum Requirements and Volume 4- Source Control (2014-2015)
- Condensed text in BMP sections and edited BMPs for consistency with Ecology’s Stormwater Management Manual for Western Washington (SWMMWW)

Fall 2015 Final Draft Public Review Stormwater Manual

- Minor edits for reduction and consolidation of text

January 2016 Final Stormwater Manual

- Globally changed “DPD” to “SDCI” where applicable
- Minor edits to clarify which activities must be covered under an NPDES permit

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Citywide BMPs			
BMP 1: Eliminate Illicit Connections to Storm Drains	Name change and minor edits: BMP 1: Eliminate Illicit Connections	Kept proposed changes in Spring 2014 Draft and made additional minor edits. Name changed back to “BMP 1: Eliminate Illicit Connections to Storm Drains”.	Kept proposed changes in Fall 2015 Draft
BMP 2: Perform Routine Maintenance for Drainage System	Minor edits	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made the following additional edits: <ul style="list-style-type: none"> • Revised the threshold for when catch basin maintenance is needed • Clarified maintenance actions for if a catch basin lacks sufficient depth to install an outlet trap
BMP 3: Dispose of Fluids and Wastes Properly		Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Added guidance for restrictions on certain types of discharges that may require pretreatment 	Kept proposed changes in Fall 2015 Draft

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
BMP 4: Proper Storage of Solid Wastes		Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made additional minor edits
BMP 5: Spill Prevention and Cleanup		Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Clarified process for reporting all spills, discharges, or releases 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> • Clarified timing for reporting all spills, discharges and releases
BMP 6: Provide Oversight and Training for Staff		Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Added requirement to train all team members annually in spill cleanup 	Kept proposed changes in Fall 2015 Draft
BMP 7: Site Maintenance	New BMP; good housekeeping practices	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Clarified existing requirements • Added requirement to not hose down or otherwise transport pollutants from any area to the ground, surface waters, combined sewer, or a receiving water 	Kept proposed changes in Fall 2015 Draft
Commercial and Industrial Activity BMPs			
BMP 7: Cleaning or Washing of Tools, Engines, and Manufacturing Equipment	Cleaning and washing activities have been condensed into a single BMP: BMP 8: Cleaning or Washing	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made the following additional edits: <ul style="list-style-type: none"> • Clarified which maintenance activity discharges may be allowed
BMP 8: Cleaning or Washing of Food Service Establishment Equipment	Updated wash pad schematic		Kept proposed changes in Fall 2015 Draft
BMP 9: Washing, Pressure Washing, and Steam Cleaning of Vehicles, Equipment, and Building Structures			

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
BMP 10: Collection and Disposal of Wastewater in Mobile Interior Washing Operations		Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP 11: Loading and Unloading of Liquid or Solid Material	Minor edits; now BMP 9		
BMP 12: Fueling at Dedicated Stations	Fueling pads have more explicit requirements; now BMP 10	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Fueling island and containment pad must be paved with Portland cement concrete or equivalent 	Kept proposed changes in Fall 2015 Draft
BMP 13: Automotive Repair and Maintenance	Name change and minor edits: BMP 11: Maintenance and Repair of Vehicles and Equipment	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP 14: Mobile Fueling of Vehicles and Heavy Equipment	Minor edits; now BMP 12		Kept proposed changes in Fall 2015 Draft
BMP 15: Concrete and Asphalt Mixing and Production at Stationary Sites	Name change and minor edits: BMP 13: Concrete and Asphalt Mixing and Production	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> • Revised text box requiring all concrete and asphalt mixing to be covered under an NPDES permit
BMP 16: Concrete Pouring, Concrete/Asphalt Cutting, and Asphalt Application	Minor edits; now BMP 14		Kept proposed changes in Fall 2015 Draft

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
BMP 17: Manufacturing and Post-Processing of Metal Products	Minor edits; now BMP 15	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Removed text box discussing washwater discharge to a storm drain or a receiving water 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> Revised text box requiring all metal manufacturing activities to be covered under an NPDES permit
BMP 18: Wood Treatment	Name change and minor edits: BMP 16: Processing and Storage of Treated Wood	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> Revised text box requiring all activities with treated wood to be covered under an NPDES permit
BMP 19: Commercial Composting	Minor edits; now BMP 17	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Revised text box requiring all composting facilities to be covered under an NPDES permit 	Kept proposed changes in Fall 2015 Draft and further revised text box requiring all composting facilities to be covered under an NPDES permit
BMP 20: Landscaping and Lawn and Vegetation Management	IPM requirements are more robust and include drainage; now BMP 18	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made additional minor edits
BMP 21: Painting, Finishing, and Coating of Vehicles, Boats, Buildings, and Equipment	Name change and minor edits: BMP 19: Painting, Finishing, and Coating Activities		
BMP 22: Commercial Printing Operations	Minor edits; now BMP 20		
BMP 23: Outdoor Manufacturing Operations	Minor edits; now BMP 21	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Added requirement to obtain all necessary permits for installing, altering, or repairing side sewers 	Kept proposed changes in Fall 2015 Draft and made the following additional changes: <ul style="list-style-type: none"> Revised text box requiring all industrial manufacturing activities to be covered under an NPDES permit

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
BMP 24: Outdoor Storage or Transfer of Solid Raw Materials, Byproducts, or Finished Products	Name change and more defined requirements: BMP 22: Outdoor Storage or Transfer of Leachable or Erodible Materials	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP 25: Storage and Treatment of Contaminated Soils	BMP has been removed	Not applicable	Not applicable
BMP 26: Temporary Storage or Processing of Fruits or Vegetables	Name change and minor edits: BMP 23: Temporary Storage or Processing of Fruits, Vegetables, or Grains	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Removed text box referring to King County Industrial Waste Program 	Kept proposed changes in Fall 2015 Draft
BMP 27: Recycling, Wrecking Yard, and Scrap Yard Operations	Minor edits; now BMP 24	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft and made the following additional edits: <ul style="list-style-type: none"> Revised text box requiring recycling, wrecking yard, or scrap yard activities to be covered under an NPDES permit
BMP 28: Outdoor Portable Container Storage	Minor edits; now BMP 25	Name change and minor edits: BMP 25: Portable Container Storage	Kept proposed changes in Fall 2015 Draft and made additional minor edits
BMP 29: Storage of Liquids in Permanent Aboveground Tanks	Minor edits; now BMP 26	Kept proposed changes in Spring 2014 Draft and made additional minor edits	
BMP 30: Parking Lot Maintenance and Storage of Vehicles and Equipment	Name change and minor edits: BMP 27: Lot Maintenance and Storage		Kept proposed changes in Fall 2015 Draft
BMP 31: Dust Control in Disturbed Land Areas and on Unpaved Roadways and Parking Lots	Minor edits; now BMP 28		
BMP 32: Dust Control at Manufacturing Sites	Minor edits; now BMP 29		
BMP 33: Soil Erosion and Sediment Control at Industrial Sites	Minor edits; now BMP 30		

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
BMP 34: Commercial Animal Care and Handling	Minor edits; now BMP 31	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP 35: Log Sorting and Handling	Refers to SWMMWW; now BMP 32		Kept proposed changes in Fall 2015 Draft and made the following additional edits: <ul style="list-style-type: none"> Revised text box requiring log sorting and handling activities to be covered under an NPDES permit
BMP 36: Boat Building, Mooring, Maintenance, and Repair	Minor edits; now BMP 33		Kept proposed changes in Fall 2015 Draft and made the following additional edits: <ul style="list-style-type: none"> Revised text box requiring boat building, mooring, maintenance and repair activities to be covered under an NPDES permit
BMP 37: Logging and Tree Removal	BMP has been removed	Not applicable	Not applicable
BMP 38: Mining and Quarrying of Sand, Gravel, Rock, Peat, Clay, and Other Materials			
BMP 39: Cleaning and Maintenance of Swimming Pools and Spas	Name change and minor edits: BMP 34: Cleaning and Maintenance of Pools, Spas, Hot Tubs, and Fountains	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP 40: Deicing and Anti-icing Operations for Airports and Streets	Minor edits; now BMP 35	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> Removed text box discussing discharges to the sanitary sewer 	
BMP 41: Maintenance and Management of Roof and Building Drains at Manufacturing and Commercial Buildings	Minor edits; now BMP 36	Kept proposed changes in Spring 2014 Draft and made additional minor edits	
BMP 42: Maintenance and Operation of Railroad Yards	Minor edits; now BMP 37		

2009 Stormwater Manual	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
BMP 43: Maintenance of Public and Private Utility Corridors and Facilities	Minor edits; now BMP 38	Kept proposed changes in Spring 2014 Draft and made additional minor edits	Kept proposed changes in Fall 2015 Draft
BMP 44: Maintenance of Roadside Ditches	Added language/ revised ditch reshaping; now BMP 39		

Summary of Changes to Seattle's Stormwater Manual Appendices

Fall 2015 Final Draft Public Review Stormwater Manual

- Globally changed “impervious” to “hard” where applicable for consistency with the SWMMWW
- Updated Appendix C, Appendix D, and Appendix G
- Added Appendix H – Financial Feasibility Documentation for Vegetated Roofs and Rainwater Harvesting
- Shifted Integrated Pest Management Plan to Appendix I

Spring 2014 Draft Public Review Stormwater Manual

- Appendices from each volume (Seattle 2009) combined and provided in a centralized location at the end of the manual
- All relevant sections edited for consistency with Ecology's Stormwater Management Manual for Western Washington (SWMMWW), if applicable

January 2016 Final Stormwater Manual

- Globally changed “DPD” to “SDCI” where applicable
- Added definitions in Appendix A per the final language in the 2016 Stormwater Code
- Updated Appendix C, Appendix D, Appendix E, Appendix F, and Appendix G
- Changed name of Appendix E to “Additional Design Requirements and Plant Lists”

Proposed 2014-2015 Appendix	Equivalent 2009 Volume Appendix/ Chapter	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Appendix A- Definitions	Volumes 1, 2, and 3, Appendix A- Definitions	Includes definitions from all volumes	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Revised definitions for equivalency 	Updated definitions per the final language in the 2016 Stormwater Code
Appendix B- Background Information on Chemical Treatment	Volume 2, Appendix B- Background Information on Chemical Treatment	Removed a section at the end of the appendix that was removed from Ecology’s SWMMWW	Kept proposed changes in Spring 2014 Draft.	Kept proposed changes in Fall 2015 Draft.
Appendix C- On-site Stormwater Management Infeasibility Criteria	GSI to MEF DRs	<ul style="list-style-type: none"> • Added tables of infeasibility criteria for each BMP to evaluate feasibility when using the On-Site List approach. • Combined GSI to MEF DRs with Ecology’s SWMMWW infeasibility criteria. 	Kept proposed changes in Spring 2014 Draft and made the following additional changes: <ul style="list-style-type: none"> • Moved specific setbacks out of Appendix and into Volume 3 • Updates for consistency with BMP Design Criteria in Volume 3 • Removed references to BMP Design Criteria, and pulled any applicable design criteria into the Infeasibility Tables 	Kept proposed changes in Fall 2015 Draft and made additional minor edits.

Proposed 2014-2015 Appendix	Equivalent 2009 Volume Appendix/ Chapter	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Appendix D- Subsurface Characterization and Infiltration Testing for Infiltration Facilities	Volume 3, Appendix E- City of Seattle Modified Procedure for Conducting a Pilot Infiltration Test (PIT)	<ul style="list-style-type: none"> • Added Subsurface Characterization Reporting requirements • Revised to include updated procedures for simple, small PIT, and large PITs • Edits to correction factors and correction factor calculations. 	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Moved text relating to setbacks for infiltration facilities from Volume 3 • Added subsurface investigation procedures and requirements • Added a section on infiltration receptor characterization • Added a section on Acceptance Testing 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Shifted vertical separation requirements from text into tables • Updated procedure for Simple Infiltration Test • Clarified when a licensed professional is needed • Moved Acceptance Testing to Volume 3, Section 3.2.

Proposed 2014-2015 Appendix	Equivalent 2009 Volume Appendix/ Chapter	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Appendix E- Additional Design Requirements	<ul style="list-style-type: none"> • Volume 3, Section 4.6.8- Control Structures for Flow Control Facilities • Volume 3, Section 5.4.5- Hydraulic Structures • Volume 3, Section 5.4.4- Facility Liners • Volume 3, Appendix F- Geotextile Specifications • Conveyance BMPs from Volume 2 • Seattle-specific plant lists from Volume 3 	<ul style="list-style-type: none"> • Consolidation and minor edits to general design requirements that apply to multiple facilities. • Shortened geotextiles section and added references to Standard Specifications tables. • Added plant lists for biofiltration swales, sand filters, and wet ponds. 	<p>Kept proposed changes in Spring 2014 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Added plant lists for Bioretention • Moved text from Volume 2 (BMP E2.30: Level Spreader, BMP E2.65: Pipe Slope Drains, BMP E2.85: Outlet Protection), and Volume 3 (control structures for flow control facilities, supplemental design information for wetponds) 	<p>Kept proposed changes in Fall 2015 Draft and made the following additional changes:</p> <ul style="list-style-type: none"> • Changed name to “Additional Design Requirements and Plant Lists” • Updated Drywell Sizing Tables
Appendix F- Hydrologic Analysis and Design	<ul style="list-style-type: none"> • Volume 3, Chapter 6 • Volume 3, Appendix B- Design Storm Dimensionless Hyetograph Ordinates • Volume 3, Appendix C- Precipitation Magnitude-Frequency Estimates for SPU Rain Gage Locations 	Consolidation of text and updated figures	Kept proposed changes in Spring 2014 Draft and made additional minor edits.	Kept proposed changes in Fall 2015 Draft and made additional minor edits.

Proposed 2014-2015 Appendix	Equivalent 2009 Volume Appendix/ Chapter	Spring 2014 Draft Public Review Stormwater Manual	Fall 2015 Final Draft Public Review Stormwater Manual	January 2016 Final Stormwater Manual
Appendix G- Stormwater Control Operations and Maintenance Requirements	Volume 3, Appendix D- Facility Operations and Maintenance (O&M) Requirements	<ul style="list-style-type: none"> • Updated guidance for GSI BMP O&M tables • Removed maintenance frequencies • Simplified all O&M tables and language to provide results when maintenance is performed. 	Kept proposed changes in Spring 2014 Draft.	Kept proposed changes in Fall 2015 Draft and made the following additional edits: <ul style="list-style-type: none"> • Revised sediment threshold for when inlet/outlet pipes maintenance is required • Removed O&M table for Conveyance Pipes and Ditches
Appendix H – Financial Feasibility Documentation for Vegetated Roofs and Rainwater Harvesting	GSI to MEF DRs	NA	<ul style="list-style-type: none"> • New Appendix not in the Spring 2014 Draft. • Based on text currently included in the GSI to MEF (DR 15-201 and DR 16-2012) 	Kept proposed changes in Fall 2015 Draft
Appendix H- Integrated Pest Management Plan	Volume 1, Appendix B- Example of Integrated Pest Management Program and Plan	Minor edits	Kept proposed changes in Spring 2014 Draft	Kept proposed changes in Fall 2015 Draft