

Summary of Key Changes to Seattle’s Stormwater Manual

Volume	2021 Stormwater Manual
Volume 1 – Project Minimum Requirements	<p>July 2021 Final Stormwater Manual</p> <ul style="list-style-type: none"> • Updated code reference boxes to incorporate final code language • Added/updated references • Added new and updated drainage basin figures (Figures 2.6 through 2.11) <p>Spring 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Threshold for when a single-family residential project will be considered a parcel-based project was added to match Winter 2021 Public Review Draft Code • Added text for clarity related to master use permits • Updated minimum requirements flow charts for Roadway Projects and Parcel-Based Projects • Minor revisions to address public review comments and Ecology review comments <p>Winter 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Added requirements for Approved Point of Discharge and Conveyance Systems to Point of Discharge • Added Stormwater Code language callout boxes • Added references to the new Public Drainage System Requirements Director’s Rule • Updated minimum requirements flow charts for Roadway Projects and Parcel-Based Projects <p>Fall 2020 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Added Acknowledgements section (prior to Chapter 1) • Shifted code language from body text into code language callout boxes • Added text from 2016 Manual back in regarding Basic Treatment Receiving Waters • Added guidance related to Environmentally Critical Areas (Section 7.4) and Landscaping Principles (Section 7.8) • Clarified submittal requirements for Comprehensive Drainage Review for Large Projects (Section 8.3) and Additional Documentation (Section 8.4) <p>Spring 2020 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Placeholder watermarks added to code language (final code language will be added to the final manual) • Clarified definitions and provided examples for single-family residential, parcel-based projects, and special circumstances projects • Added approved landscape management plan as an alternative to treating runoff from pollution generating pervious surfaces • Added new section with submittal requirements for Preliminary Drainage Review • Updated and clarified submittal requirements for Standard Drainage Review and Comprehensive Drainage Review • Updated internal and external references and weblinks

Volume	2021 Stormwater Manual
Volume 2 – Construction Stormwater Control	<p>July 2021 Final Stormwater Manual</p> <ul style="list-style-type: none"> No new edits <p>Spring 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> Clarified requirements for BMP C1.30: Building Repair, Remodeling, and Construction Clarified requirements for BMP C1.40: Temporary Dewatering <p>Winter 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> Minor BMP updates and clarifications <p>Spring 2020 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> Split Concrete Handling and Concrete Washout Area into two separate BMPs for consistency with the 2019 Stormwater Management Manual for Western Washington (SWMMWW) Minor BMPs updates (as summarized in the attached tables) Minor terminology updates and clarifications Updated terminology to "Construction Stormwater Control and Soil Management Plan" Updated internal and external references and weblinks
Volume 3 – Project Stormwater Control	<p>July 2021 Final Stormwater Manual</p> <ul style="list-style-type: none"> Clarified that Ecology’s SWMMWW should be referenced for the latest list of approved continuous simulation models. At the time of publication of the 2021 Seattle Stormwater Manual, MGSFlood has not been approved by Ecology for modeling bioretention. Updated sizing factors for non-infiltrating bioretention (water quality treatment for vertical sides and two pre-developed pasture scenarios) Added sizing factors for detention pipes and detention vaults for 2,000 to 5,000 square feet Clarified Step 3 of the Sizing for On-site List Approach for Rainwater Harvesting Updated figure titles where applicable to indicate “example” configurations for BMPs <p>Spring 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> Incorporated errata from Winter 2021 Public Review Draft Streamlined reference to Land Use Code Updated the Soil Amendment BMP (Section 5.1) and Tree Planting and Retention (Section 5.2) sections for consistency with other City requirements Simplified MLR approach for proprietary treatment technologies Figure updates and clarifications in Chapter 5 (as summarized below) <p>Winter 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> Revised and clarified BMP Selection and Sizing Approach and General Design Requirements (Chapters 3 and 4) Figure updates and clarifications (Chapters 3 and 5) BMP updates and clarifications (Chapter 5) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted to all continuous modeling assumptions tables in Chapter 5 (refer to Appendix F)

Volume	2021 Stormwater Manual
Volume 3 – Project Stormwater Control (continued)	<p>Spring 2020 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Updated guidance related to the Infiltration Investigation Map • Clarified minimum investigation and testing requirements for shallow infiltration BMPs • Clarified On-site List Approach, On-site Performance Standard, and Flow Control requirements • Clarified Modeling Approach and added modeling guidance for projects located in closed depressions • Updated bypass, flow-through, and off-site flow general design requirements for on-line and offline BMPs • Updated and clarified presettling and pretreatment requirements • Added a new BMP (Sidewalk and Trail Compost-Amended Strip) • Updated BMPs and associated figures (as summarized in the attached tables) • Updated internal and external references and weblinks
Volume 4 – Source Control	<p>July 2021 Final Stormwater Manual</p> <ul style="list-style-type: none"> • Updated code reference boxes to incorporate final code language • Minor clarifications to BMP 7 (Property Maintenance) and BMP 38 (Maintenance and Operation of Railroad Yards) <p>Spring 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Incorporated minor revisions to BMP 1 (Eliminate Illicit Connections and Illicit Discharges), BMP 7 (Property Maintenance), and BMP 26 (Storage of Leachable or Erodible Materials) to address public comments <p>Winter 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Minor BMP updates and clarifications <p>Spring 2020 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Updated, clarified, and added required BMP elements and recommended BMPs (as summarized in the attached tables) • Shifted several BMPs from Chapter 3 to Chapter 2 (BMPs for All Real Property) • Added new BMPs (with reference to the 2019 SWMMWW for specifics) • Added new Rooftop Dog Run BMP • Removed Lot Maintenance and Storage BMP • Updated internal and external references and weblinks
Volume 5 – Enforcement	<p>July 2021 Final Stormwater Manual</p> <ul style="list-style-type: none"> • No edits <p>Spring 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • No edits <p>Winter 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Added full text from 2016 Manual (no edits) <p>Spring 2020 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Placeholder page only

Volume	2021 Stormwater Manual
Appendices	<p>July 2021 Final Stormwater Manual</p> <ul style="list-style-type: none"> • Appendix A <ul style="list-style-type: none"> ○ Minor revisions to definitions for consistency with final code language • Appendix B <ul style="list-style-type: none"> ○ Updated code reference boxes to incorporate final code language ○ Added/updated references ○ Revised language for deferred drainage to clarify scenarios where the full development potential does not exceed thresholds ○ Added joint use and maintenance agreement (JUMA) for shared drainage control facilities ○ Revised Section B-1.3 (Lot Boundary Adjustments) for clarity ○ Updated Section B-2 to include references to Sections 3.12, 3.13, and 5.3.4 • Appendix C <ul style="list-style-type: none"> ○ No new edits • Appendix D <ul style="list-style-type: none"> ○ No new edits • Appendix E <ul style="list-style-type: none"> ○ No new edits • Appendix F <ul style="list-style-type: none"> ○ Added footnote to Table F-1 referring to SWMMWW for a list of currently approved continuous simulation models • Appendix G <ul style="list-style-type: none"> ○ Added reminder in the regarding accessibility for maintenance and inspection • Appendix H <ul style="list-style-type: none"> ○ No new edits • Appendix I <ul style="list-style-type: none"> ○ No new edits <p>Spring 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Appendix A <ul style="list-style-type: none"> ○ Incorporated revised SMC, Chapter 22.801 code definitions • Appendix B <ul style="list-style-type: none"> ○ Added text for Typical Drainage Condition #3 ○ Clarified easement language and mainline extension for proposed lots ○ Added new subsection Determining Minimum Requirements for Subdivisions and Short Plats ○ Added Soil Management Plan to Lot Boundary Adjustment Drainage Adequacy Condition #2 • Appendix C <ul style="list-style-type: none"> ○ No new edits • Appendix D <ul style="list-style-type: none"> ○ Revised text for Simple Infiltration Test • Appendix E <ul style="list-style-type: none"> ○ Minor updates and clarifications to address public comments • Appendix F <ul style="list-style-type: none"> ○ Minor updates and clarifications to address public comments ○ Updated rain gauge figure and three tables in Attachment 2

Volume	2021 Stormwater Manual
Appendices (continued)	<p>Spring 2021 Public Review Draft Stormwater Manual (continued)</p> <ul style="list-style-type: none"> • Appendix G <ul style="list-style-type: none"> ○ Minor updates and clarifications to address public comments ○ Updated terminology in Table No. 17 (Proprietary Technology Filter Cartridge Systems) for consistency with Volume 3 • Appendix H <ul style="list-style-type: none"> ○ No new edits • Appendix I <ul style="list-style-type: none"> ○ Minor revisions from technical editor <p>Winter 2021 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Appendix A <ul style="list-style-type: none"> ○ No edits. Placeholder page only. Refer to SMC, Chapter 22.801 to review definitions. • Appendix B <ul style="list-style-type: none"> ○ Clarified requirements for subdivisions ○ Added information on deferred drainage plans for some projects ○ Added section on shared drainage control facilities and systems ○ Added section on easements for subdivisions and short plats ○ Expanded section on Lot Boundary Adjustments ○ Clarified some drainage report format/content requirements • Appendix C <ul style="list-style-type: none"> ○ Clarified one infeasibility criterion for All BMPs ○ Added one infeasibility criterion (related to skate parks, bike parks, and sport courts) for Permeable Pavement Facilities and Permeable Pavement Surfaces ○ Added infeasibility criteria for Sidewalk/Trail Compost-Amended Strip ○ Added three new infeasibility criteria for Non-Infiltrating Bioretention • Appendix D <ul style="list-style-type: none"> ○ Revised Acceptance Criteria definitions and requirements • Appendix E <ul style="list-style-type: none"> ○ Updated plant lists based on landscape architecture review ○ Added a new drywell sizing table (Table E.27) for drywell sizing downstream of bioretention sized for the On-Site Stormwater Management standard • Appendix F <ul style="list-style-type: none"> ○ Updated text regarding tidal influence/sea level rise • Appendix G <ul style="list-style-type: none"> ○ Added recommended inspection frequency column to all tables • Appendix H <ul style="list-style-type: none"> ○ No new edits • Appendix I <ul style="list-style-type: none"> ○ Minor clarifications <p>Fall 2020 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Appendix B <ul style="list-style-type: none"> ○ Added submittal requirements for Preliminary Drainage Control Review ○ Added Drainage Report Format/Content requirements

Volume	2021 Stormwater Manual
Appendices (continued)	<p>Fall 2020 Public Review Draft Stormwater Manual (continued)</p> <ul style="list-style-type: none"> • Appendix I <ul style="list-style-type: none"> ○ Added Landscape Management Plan requirements ○ Minor revisions to Integrated Pest Management Plans ○ Added references <p>Spring 2020 Public Review Draft Stormwater Manual</p> <ul style="list-style-type: none"> • Appendix A <ul style="list-style-type: none"> ○ Placeholder page only. Refer to SMC, Chapter 22.801 to review definitions. • Appendix B <ul style="list-style-type: none"> ○ Content deleted (included with reference to BMP C250 in the 2019 SWMMWW) ○ Will be updated to include Submittal Requirements in a future draft of the Manual • Appendix C <ul style="list-style-type: none"> ○ Added new infeasibility criteria for All BMPs and All BMPs (except Rainwater Harvesting) ○ Added new infeasibility criteria for Vegetated Roof Systems for consistency with the On-site List Calculator ○ Revised categories for consistency with proposed Stormwater Code updates • Appendix D <ul style="list-style-type: none"> ○ Clarified roles and responsibilities of licensed professionals ○ Updated documentation requirements for simple, standard, and comprehensive subsurface investigation reports ○ Updated infiltration testing procedures ○ Added section for acceptance testing including criteria, requirements, and submittals • Appendix E <ul style="list-style-type: none"> ○ Updated and clarified design criteria ○ Added new figure ○ Added impermeable liner ○ Clarified when each liner type applies ○ Added general planting design principles • Appendix F <ul style="list-style-type: none"> ○ Added note regarding current approval status of MGSFlood ○ Added notes regarding the evaluation of tidal influence, sea level rise, and climate change (currently in progress) ○ Updated runoff curve number table for consistency with the SWMMWW ○ Updated internal and external references and weblinks • Appendix G <ul style="list-style-type: none"> ○ Added O&M table for Proprietary Technology Modular Wetland System (No. 22) ○ Updated terminology, table numbering, and references • Appendix H <ul style="list-style-type: none"> ○ One minor edit from 2016 Manual • Appendix I <ul style="list-style-type: none"> ○ No edits from 2016 Manual

Summary of Changes to Volume 1 (Project Minimum Requirements) of the Seattle Stormwater Manual

July 2021 Final Stormwater Manual

- Updated code reference boxes to incorporate final code language
- Added/updated references
- Added new and updated drainage basin figures (Figures 2.6 through 2.11)

Spring 2021 Public Review Draft Stormwater Manual

- Threshold for when a single-family residential project will be considered a parcel-based project was added to match Winter 2021 Public Review Draft Code
- Added text for clarity related to master use permits
- Updated minimum requirements flow charts for Roadway Projects and Parcel-Based Projects
- Minor revisions to address public review comments and Ecology review comments

Winter 2021 Public Review Draft Stormwater Manual

- Added requirements for Approved Point of Discharge and Conveyance Systems to Point of Discharge
- Added Stormwater Code language callout boxes
- Added references to the new Public Drainage System Requirements Director’s Rule
- Updated minimum requirements flow charts for Roadway Projects and Parcel-Based Projects

Fall 2020 Public Review Draft Stormwater Manual

- Added Acknowledgements section (prior to Chapter 1)
- Shifted language and definitions from the Stormwater Code from body text into Stormwater Code language callout boxes
- Added text from 2016 Manual back in regarding Basic Treatment Receiving Waters
- Added guidance related to Environmentally Critical Areas (Section 7.4) and Landscaping Principles (Section 7.8)
- Clarified submittal requirements for Comprehensive Drainage Review for Large Projects (Section 8.3) and Additional Documentation (Section 8.4)

Spring 2020 Public Review Draft Stormwater Manual

- Placeholder watermarks added to code language (final code language will be added to the final manual)
- Clarified definitions and provided examples for single-family residential, parcel-based projects, and special circumstances projects
- Added approved landscape management plan as an alternative to treating runoff from pollution generating pervious surfaces
- Added new section with submittal requirements for Preliminary Drainage Review
- Updated and clarified submittal requirements for Standard Drainage Review and Comprehensive Drainage Review
- Updated internal and external references and weblinks

Section Number and Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 1 – Introduction					
Section 1.2 – How to Use this Manual (Volumes 1 through 5 and Appendices)	Updated Appendix B reference. Appendix B content will be updated in a future draft to include additional detail on submittal requirements.	No new edits	No new edits	No new edits	Added descriptive text to Appendix B for consistency with other appendix summaries
Section 1.4 – How to Use this Volume	No edits	Added preliminary drainage review to the list of topics for Chapter 8	No new edits	No new edits	No new edits

Section Number and Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 2 – Determining Minimum Requirements					
Chapter 2 overview	Minor revisions for clarification	<ul style="list-style-type: none"> Shifted hard surface and project definitions into a Stormwater Code language callout box. Added project site definition in the callout box. 	No new edits	No new edits	Added overview sentences describing content of code reference boxes
Step 1 – Define the Boundaries of the Project Site	Added new requirements for defining project site boundaries	<ul style="list-style-type: none"> Shifted closely related projects description into Stormwater Code language callout box. Clarified requirements for closely related projects based on feedback from Ecology. 	No new edits	Added new text at the end of Step 1 to define the boundary of the project site for subdivisions and short plats.	No new edits
Step 2 – Identify the Type of Project	<ul style="list-style-type: none"> Clarified definitions and provided examples for single-family residential and parcel-based projects Added a new project type for certain land-disturbing activities. Shifted details on utility projects and pavement maintenance projects to Section 4.5 Added clarification regarding special circumstances projects 	<ul style="list-style-type: none"> Shifted project type definitions into Stormwater Code language callout boxes. Added examples of parcel-based projects and activities that need drainage review and source control BMPs. 	<ul style="list-style-type: none"> Added list of eight project types at the beginning of the section Added subsection headings for each project type (Section 2.2.1 through Section 2.2.8) 	<ul style="list-style-type: none"> Noted that single-family projects with greater than 5,000 sf of new plus replaced hard surface are parcel-based projects to match Winter 2021 Public Review Draft code Added example for clarity related to master use permit requirements 	<ul style="list-style-type: none"> Updated code reference boxes to incorporate final code language Added reference to Section 4.4 Added clarifying text for WSDOT projects
Step 3 – Identify the Receiving Water and Downstream Conveyance	Added clarification regarding how to determine the receiving water and downstream conveyance	<ul style="list-style-type: none"> Shifted definitions for receiving waters and systems into Stormwater Code language callout boxes. Added option to contact SDCI or SPU via e-mail for projects that do not require Preliminary Application Reports (PARs) 	Added requirements for Approved Point of Discharge (Section 2.3.1) and Conveyance Systems to Point of Discharge (Section 2.3.2) that was formerly included in Volume 3	<ul style="list-style-type: none"> Updated section references to Section 3.2 and Section 3.12 Updated information related to capacity-constrained systems 	<ul style="list-style-type: none"> Updated code reference boxes to incorporate final code language Added new and updated drainage basin figures (Figures 2.6 through 2.11)
Step 4 – Perform Site Assessment and Planning	<ul style="list-style-type: none"> No edits 	Added references to infiltration and dispersion feasibility analysis requirements in Volume 3	Added a reference to special circumstances (Section 4.7) as a site-specific factor to consider	No new edits	Moved final sentence to Step 7
Step 5 – Calculate Land-Disturbing Activity and New Plus Replaced Hard Surface	<ul style="list-style-type: none"> Renamed this step to add “and New Plus Replaced Hard Surface” Updated impervious surface terminology to hard surfaces Added guidance for existing hard surfaces that will be re-routed to another basin (considered replaced hard surfaces) 	Removed guidance for existing hard surfaces that will be re-routed to another basin (considered replaced hard surfaces)	No new edits	Added text to clarify requirements for natural lawn or turf areas that do not have a free draining sand or gravel layer connected to an underdrain.	Changed “hard surface” back to “impervious surface” for calculations: “However, these facilities [uncovered retention or detention] shall be considered impervious surfaces for the purposes of stormwater facility sizing.”
Step 6 – Calculate New Plus Replaced Pollution Generating Surface	Added guidance for existing pollution generating surfaces that will be re-routed to another basin or converted from non-pollution-generating surface to a pollution generating surface (considered replaced pollution generating surfaces)	Removed guidance for existing pollution generating surfaces that will be re-routed to another basin or converted from non-pollution-generating surface to a pollution generating surface (considered replaced pollution generating surfaces)	No new edits	No new edits	No new edits

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Chapter 2 – Determining Minimum Requirements (continued)					
Step 7 – Determine Which Minimum Requirements Apply	<ul style="list-style-type: none"> Clarified requirements for watersheds near the City limits discharging to adjacent jurisdictions (more stringent requirements apply) Added references to other internal documentation that may apply when determining the minimum requirements for a project 	Clarified reference to additional Director’s Rules, Policies, and Tips.	Added note regarding “other” projects that might want to exceed the minimum requirements for on-site stormwater management, flow control, and/or water quality (e.g., retrofit projects)	Added reference to the new Public Drainage System Requirements Director’s Rule (DWW-210)	Added sentence formerly in Step 4: “Once the applicable minimum requirements have been identified, proceed to <i>Volume 3, Chapters 3, 4, and 5</i> to begin the BMP selection and design process.”
Chapter 3 – Minimum Requirements for All Projects					
Various	Minor terminology revisions and external reference updates	No new edits	Minor edits	No new edits	<ul style="list-style-type: none"> Clarified overview sentences describing content of code reference boxes Updated code reference boxes to incorporate final code language Added/updated references
Section 3.2 – Discharge Point	No edits	No edits	Added requirements for Approved Point of Discharge (Section 3.2.1) and Conveyance Systems to Point of Discharge (Section 3.2.2) that was formerly included in Volume 3	<ul style="list-style-type: none"> Added reference to the new Public Drainage System Requirements Director’s Rule (DWW-210) Added reference to SPU’s Water & Sewer Map to assist with determining if a system is classified as a public sanitary sewer 	Revised terminology in the approved point of discharge list to “receiving waters” and “piped public drainage system (also known as Pipe Storm Drain [PSD])”
Section 3.12 – Extension of Public Drainage System	[new section in Fall 2020 Public Review Draft]	Added placeholder section for Extension of Public Storm System	Updated placeholder section name (Extension of Public Drainage System) and added new subsections for projects conducted inside and outside the right-of-way (refers to new Public Drainage System Requirements Director’s Rule)	No new edits	Added/updated references
Section 3.13 – Public Drainage System Requirements	[new section in Winter 2021 Public Review Draft]	[new section in Winter 2021 Public Review Draft]	Added new placeholder section (refers to new Public Drainage System Requirements Director’s Rule)	No new edits	Added/updated references
Chapter 4 – Minimum Requirements Based on Project Type					
Chapter 4 overview	<ul style="list-style-type: none"> Added mainline extensions to the list of key minimum requirements Added areas subject to additional/modified requirements 	No new edits	No new edits	No new edits	<ul style="list-style-type: none"> Clarified overview sentences describing content of code reference boxes Updated code reference boxes to incorporate final code language Added/updated references
Section 4.1 – Single-Family Residential Projects	No edits	No edits	No edits	Added text for clarity related to master use permits	Added/updated references

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Chapter 4 – Minimum Requirements Based on Project Type (continued)					
Section 4.3 – Roadway Projects	No edits	No edits	Updated minimum requirements flow charts (Figures 4.1a, 4.1b, and 4.1c)	<ul style="list-style-type: none"> Updated minimum requirements flow charts (Figures 4.1a, 4.1b, and 4.1c) Deleted two subsections for consistency with code updates: <ul style="list-style-type: none"> Roadway Projects Discharging to a Public Combined Sewer Roadway Projects Discharging Groundwater – Flow Control 	<ul style="list-style-type: none"> Added/updated references Minor update to Figure 4.1b to correct typos
Section 4.4 – Parcel-Based Projects	Clarified threshold for parcel-based projects discharging groundwater	No new edits	<ul style="list-style-type: none"> Updated minimum requirements flow charts (Figures 4.2a, 4.2b, and 4.2c) Updated groundwater discharge rate in Section 4.4.3.7 (Parcel-Based Projects Discharging Groundwater – Flow Control) 	<ul style="list-style-type: none"> Updated minimum requirements flow charts (Figures 4.2a, 4.2b, and 4.2c) Updated groundwater discharge rate in Section 4.4.3.7 (Parcel-Based Projects Discharging Groundwater – Flow Control) Added requirement for evaluation of groundwater discharge if subsurface drainage (e.g., footing drains, wall drains) extends into a zone containing groundwater 	<ul style="list-style-type: none"> Updated code reference boxes to incorporate final code language Added/updated references Updated groundwater discharge rate and clarified language and examples following the code reference box in Section 4.4.3.7 (Parcel-Based Projects Discharging Groundwater – Flow Control)
Section 4.5 – Reduced Requirements for Certain Land-disturbing Activities	Consolidated requirements for utility projects, pavement maintenance projects, remediation projects (placeholder), and structural stormwater control projects (placeholder) in this section. Refer to draft Stormwater Code for specific language.	Added examples of projects that meet the requirements for structural stormwater control projects.	Updated language from “structural stormwater control” projects to “retrofit” projects for consistency with the Code	Added water quality treatment after “other actions to address stormwater runoff” in Section 4.5.4.	<ul style="list-style-type: none"> Updated code reference boxes to incorporate final code language Added/updated references Minor revision to clarify qualifying retrofit project types (removal of impervious or hard surfaces not associated with other development) in Section 4.5.4
Section 4.7 – Special Circumstances	Expanded section on special circumstances projects to include clarification for projects that propose to develop multiple blocks, projects that discharge to closed-contour basins, projects that discharge to multiple drainage basins, and projects that discharge to subbasins within the public combined sewer system.	Added rail stations in public right-of-way to the list of examples of special circumstances projects.	No new edits	No new edits	Minor revision to clarify sizing for projects that require compliance with more than one flow control standard

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Chapter 5 – Minimum Requirement Standards					
Section 5.3 – Flow Control	Clarified requirements for projects with 35% or greater existing hard surface	No new edits	<ul style="list-style-type: none"> Added new Section 5.3.4 (Existing Condition Standard) for consistency with the Code Added existing conditions definition 	Updated references to the new Existing Condition Standard section	<ul style="list-style-type: none"> Updated code reference boxes to incorporate final code language Added/updated references
Section 5.4 – Water Quality Treatment	<ul style="list-style-type: none"> Added approved landscape management plan as an alternative to treating runoff from pollution generating pervious surfaces Clarified that if the soil suitability criteria for infiltration treatment are met and presettling is provided, then the enhanced treatment performance goal is met Removed the concept of Basic Treatment Receiving Waters Removed employee parking lots for industrial and commercial project sites from the list of basic treatment requirements 	Added the concept of Basic Treatment Receiving Waters back in (2016 Manual language) and clarified that “all marine waters” includes Puget Sound.	<p>Clarified the following:</p> <ul style="list-style-type: none"> Runoff from an impervious area that is routed to a pervious area is not included in a LMP and must be addressed separately through applying Minimum Requirements #5, #6, and/or #7 LMPs do not apply to artificial turf fields 	<ul style="list-style-type: none"> Clarified that LMPs are required to be updated if the layout of the landscaping features will be substantially modified or if specific maintenance approaches will be altered. Updated examples of sites that would require enhanced treatment (Section 5.4.2.3) 	<ul style="list-style-type: none"> Updated code reference boxes to incorporate final code language Minor revisions to clarify that project sites subject to enhanced treatment could also be subject to oil control and phosphorus treatment (removed “discharging to a nutrient-critical receiving water” caveat)
Chapter 6 – Alternative Compliance					
NA	<ul style="list-style-type: none"> Clarified impervious vs. hard surface 	No new edits	Clarified that alternative compliance in creek basins only applies within the City of Seattle	No new edits	Clarified overview sentence describing content of code reference box
Chapter 7 – Site Assessment and Planning					
Section 7.1 through 7.9	N/A	N/A	N/A	Minor revisions from technical editor	No new edits
Section 7.2 – Project Boundaries and Structures	<ul style="list-style-type: none"> Clarified that project boundaries may include multiple properties Updated impervious surface terminology to hard surfaces 	No new edits	No new edits	Minor revisions (see above)	Added Section 3.2.1 reference
Section 7.4 – Environmentally Critical Areas (ECAs)	No edits	Added proposed text from the 2019 SWMMWW regarding information needed to assess impacts and risks to wetlands.	No new edits	Minor revisions (see above)	No new edits
Section 7.8 – Site Design Considerations	[new section not included in Spring 2020 draft]	Added Landscaping Principles as new Section 7.8	Clarified that the specific application of each of these principles will vary from site to site depending on the type of landscaping that is being managed.	Minor revisions (see above)	<ul style="list-style-type: none"> Removed athletic fields example Deleted text regarding sourcing plants from southern climates
Section 7.9 – Site Design Considerations	Added a reference to BMP T5.40: Preserving Native Vegetation (Volume V of the SWMMWW)	Shifted reference to BMP T5.40 and other landscaping considerations to new Section 7.8. Remaining non-landscaping Site Design Considerations are now in Section 7.9.	No new edits	Minor revisions (see above)	No new edits

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Chapter 8 – Drainage Control Review and Application Requirements					
Chapter 8 overview	N/A	N/A	N/A	N/A	<ul style="list-style-type: none"> • Clarified overview sentences describing content of code reference boxes
Section 8.1 – Preliminary Drainage Review	Added a new Section with Preliminary Drainage Review submittal requirements	Added a Stormwater Code language callout box	Added a note referencing Appendix B	No new edits	<ul style="list-style-type: none"> • Updated code reference boxes to incorporate final code language • Added/updated references
Section 8.2 – Standard Drainage Review	Updated and clarified submittal requirements for Standard Drainage Review	<ul style="list-style-type: none"> • Added a Stormwater Code language callout box • Renamed “Drainage Control Plan” to “Standard Drainage Control Plan” to match the Stormwater Code. 	Clarified that projects with no offsite discharge point “includes development conducted in or near a receiving water requiring a Hydraulic Project Approval (WAC 220-660)” and that “the drainage control plan shall be prepared by a licensed engineer.”	<ul style="list-style-type: none"> • Added dewatering plan to submittal if groundwater dewatering will occur • Added reference to LMP being part of a Memorandum of Drainage Control 	Added/updated references
Section 8.3 – Comprehensive Drainage Review for Large Projects	Updated and clarified submittal requirements for Comprehensive Drainage Review	<ul style="list-style-type: none"> • Added a Stormwater Code language callout box • Updated and clarified submittal requirements 	Added reference to LMP requirements	No new edits	No new edits
Section 8.4 – Additional Documentation	Added upstream analysis to additional documentation requirements	Added LMP (refers to Appendix I for submittal requirements) and closed contour analysis as additional documentation that may be required based on project specifics.	No new edits	No new edits	No new edits

Summary of Changes to Volume 2 (Construction Stormwater Control) of the Seattle Stormwater Manual

July 2021 Final Stormwater Manual

- No additional revisions

Spring 2021 Public Review Draft Stormwater Manual

- Clarified requirements for BMP C1.30: Building Repair, Remodeling, and Construction
- Clarified requirements for BMP C1.40: Temporary Dewatering

Winter 2021 Public Review Draft Stormwater Manual

- Minor BMP updates and clarifications (as summarized below)

Spring 2020 Public Review Draft Stormwater Manual

- Split Concrete Handling and Concrete Washout Area into two separate BMPs for consistency with the 2019 SWMMWW
- Minor BMP updates (as summarized below)
- Minor terminology updates and clarifications
- Updated terminology to “Construction Stormwater Control and Soil Management Plan”
- Updated internal and external weblinks

BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Temporary Cover Practices					
BMP E1.10: Temporary Seeding	No edits	N/A	No edits	No edits	No edits
BMP E1.15: Mulching, Matting, and Compost Blankets	<ul style="list-style-type: none"> • Added note to Table 3 regarding evaluation of PCB content (recycled cellulose) • Added “wood straw” as an alternative name for hog fuel (for consistency with the 2019 SWMMWW) 	N/A	No new edits	No new edits	No new edits
BMP E1.20: Clear Plastic Covering	Added Design Criteria regarding drainage at the toe of the covered slope	N/A	No new edits	No new edits	No new edits
Permanent Cover Practices					
BMP E1.30: Preserving Natural Vegetation	Added weblink (SDOT Urban Forestry)	N/A	No new edits	No new edits	No new edits
BMP E1.35: Buffer Zones	Minor terminology edits (for consistency with the 2019 SWMMWW)	N/A	No new edits	No new edits	No new edits
BMP E1.40: Permanent Seeding and Planting	No edits	N/A	No edits	No edits	No edits
BMP E1.45: Sodding	No edits	N/A	No edits	No edits	No edits
BMP E1.50: High-Visibility Fence	Minor terminology edits (“filter fence” instead of “silt fence”)	N/A	No new edits	No new edits	No new edits
Temporary Erosion Control BMPs					
BMP E2.10: Stabilized Construction Access	<ul style="list-style-type: none"> • Updated BMP name for consistency with the 2019 SWMMWW (changed “entrance” to “access”) • Updated terminology (“access point” instead of “entrance,” added “exits”) • Added note regarding use of alternative materials (other than quarry spalls) 	N/A	Added “recycled concrete” to list of unacceptable materials for construction access	No new edits	No new edits

BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
BMP E2.15: Tire Wash	Minor terminology edits	N/A	No new edits	No new edits	No new edits
BMP E2.20: Construction Road Stabilization	Minor terminology edit	N/A	No new edits	No new edits	No new edits
BMP E2.35: Check Dams	Minor terminology edit	N/A	No new edits	No new edits	No new edits
BMP E2.40: Triangular Silt Dike (TSD)	<ul style="list-style-type: none"> Updated BMP name for consistency with the 2019 SWMMWW Minor terminology edits 	N/A	No new edits	No new edits	No new edits
BMP E2.45: Dust Control	Updated BMP references	N/A	No new edits	No new edits	No new edits
Permanent Erosion Control BMPs					
Ecology BMP C202: Riprap Channel Lining	Updated BMP name for consistency with the 2019 SWMMWW (added "Riprap")	N/A	No new edits	No new edits	No new edits
Temporary or Permanent Erosion Control BMPs					
BMP E2.70: Subsurface Drains	No edits	N/A	No edits	No edits	No edits
BMP E2.80: Earth Dike and Drainage Swale	Updated sizing criteria (minor revisions from the 2019 SWMMWW)	N/A	No new edits	No new edits	No new edits
Sediment Control Practices					
BMP E3.10: Filter Fence	<ul style="list-style-type: none"> Updated terminology from "silt fence" to "filter fence" Updated figure (refer to Public Review Draft figure packet) 	N/A	Minor revisions to Figure 14 to allow for wood or steel fence posts	No new edits	No new edits
BMP E3.20: Gravel Filter Berm	No edits	N/A	No edits	No edits	No edits
BMP E3.25: Inlet Protection	<ul style="list-style-type: none"> Updated BMP name for consistency with the 2019 SWMMWW (removed "Storm Drain" prior to "Inlet Protection") Minor terminology edits 	N/A	No new edits	No new edits	No new edits
BMP E3.30: Vegetated Strip	No edits	N/A	No edits	No edits	No edits
BMP E3.35: Straw Wattles, Compost Socks, and Compost Berms	Minor terminology edits	N/A	Minor terminology edits	No new edits	No new edits
BMP E3.40: Sediment Trap	<ul style="list-style-type: none"> Updated planning considerations Clarified sizing criteria Updated outlet riser or pipe elevation for consistency with Figure 19 	N/A	No new edits	No new edits	No new edits
BMP E3.50: Portable Sediment Tank	<ul style="list-style-type: none"> Minor terminology edits Added reference to BMP E3.40 for design inflow selection requirements 	N/A	No new edits	No new edits	No new edits
BMP E3.60: Construction Stormwater Filtration	<ul style="list-style-type: none"> Terminology edits Updated filtration treatment system design requirements (added reference to Element 3) 	N/A	No new edits	No new edits	No new edits
BMP E3.65: Cleaning Inlets and Catch Basins	Updated BMP reference	N/A	No new edits	No new edits	No new edits
BMP E3.70: Street Sweeping and Vacuuming	Updated BMP reference	N/A	No new edits	No new edits	No new edits
Ecology BMP C241: Sediment Pond (Temporary)	Updated BMP name for consistency with the 2019 SWMMWW (moved "Temporary" to the end of the BMP name and removed "or Basin")	N/A	No new edits	No new edits	No new edits

BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Source Control Practices					
BMP C1.15: Material Delivery, Storage, and Containment	No edits	N/A	Minor terminology edits	No new edits	No new edits
BMP C1.20: Use of Chemicals During Construction	Updated weblink (Ecology's list of approved chemicals)	N/A	No new edits	No new edits	No new edits
BMP C1.25: Demolition of Buildings	Updated weblinks (Ecology's Construction and Demolition web page, Puget Sound Clean Air Agency web page)	N/A	No new edits	No new edits	No new edits
BMP C1.30: Building Repair, Remodeling, and Construction	No edits	N/A	<ul style="list-style-type: none"> Added reference to the Seattle Shoreline Program Regulations and Shoreline Master Program code Added requirements for BMPs for over-water and in-water work 	<ul style="list-style-type: none"> Clarified that decking and other similarly effective materials can be used in addition to tarpaulins for over water construction and repair work Clarified that secondary containment systems are required for in water work as well as over water work 	No new edits
BMP C1.35: Sawcutting and Paving Pollution Prevention	No edits	N/A	No edits	No edits	No edits
BMP C1.40: Temporary Dewatering	<ul style="list-style-type: none"> Minor terminology edits Updated BMP references 	N/A	Clarified requirements for discharge structure	<ul style="list-style-type: none"> Added clarification for discharge of dewatering flow: "does not cause erosion or flooding of receiving waters or downstream systems" Added requirement for discharge structures for pumped water to be "converted to gravity flow prior to discharge to a downstream system" Added requirement for sediment removal when establishing wells for well-point dewatering 	No new edits
BMP C1.45: Solid Waste Handling and Disposal		N/A	Updated timelines in Table 9	No new edits	No new edits
BMP C1.50: Disposal of Asbestos PCBs	Updated weblinks	N/A	No new edits	No new edits	No new edits
BMP C1.55: Airborne Debris Curtain	Updated BMP reference	N/A	No new edits	No new edits	No new edits
BMP C1.56: Concrete Handling	<ul style="list-style-type: none"> Updated BMP name (removed "and Disposal") Moved disposal-related content to BMP C1.58: Concrete Washout Area 	N/A	<ul style="list-style-type: none"> Corrected BMP reference Minor terminology edits 	No new edits	No new edits
BMP C1.58: Concrete Washout Area	<ul style="list-style-type: none"> Added Concrete Washout Area as a separate BMP Added conditions where practice applies Added text for washout facility nearing capacity 	N/A	Minor terminology and formatting edits	No new edits	No new edits
BMP C1.59: High pH Neutralization Using CO ₂	No edits	N/A	Minor terminology and formatting edits	No new edits	No new edits

Summary of Changes to Volume 3 (Project Stormwater Control) of the Seattle Stormwater Manual

July 2021 Final Stormwater Manual

- Clarified that Ecology’s SWMMWW should be referenced for the latest list of approved continuous simulation models. At the time of publication of the 2021 Seattle Stormwater Manual, MGSFlood has not been approved by Ecology for modeling bioretention.
- Updated sizing factors for non-infiltrating bioretention (water quality treatment for vertical sides and two pre-developed pasture scenarios)
- Added sizing factors for detention pipes and detention vaults for 2,000 to 5,000 square feet
- Clarified Step 3 of the Sizing for On-site List Approach for Rainwater Harvesting
- Updated figure titles where applicable to indicate “example” configurations for BMPs

Spring 2021 Public Review Draft Stormwater Manual

- Incorporated errata from Winter 2021 Public Review Draft
- Streamlined reference to Land Use Code
- Updated the Soil Amendment BMP (Section 5.1) and Tree Planting and Retention (Section 5.2) sections for consistency with other City requirements
- Simplified MLR approach for proprietary treatment technologies
- Figure updates and clarifications in Chapter 5 (as summarized below)

Winter 2021 Public Review Draft Stormwater Manual

- Revised and clarified BMP Selection and Sizing Approach and General Design Requirements (Chapters 3 and 4)
- Figure updates and clarifications in Chapters 3 and 5 (as summarized below)
- BMP updates and clarifications in Chapter 5 (as summarized below)
- Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted to all continuous modeling assumptions tables in Chapter 5 (refer to Appendix F)

Spring 2020 Public Review Draft Stormwater Manual

- Updated guidance related to the Infiltration Investigation Map (Section 3.2)
- Clarified minimum investigation and testing requirements for shallow infiltration BMPs (Table 3.1)
- Clarified On-site List Approach (Section 3.3.1), On-site Performance Standard (Section 3.3.2), and Flow Control (Section 3.3.3) requirements
- Clarified Modeling Approach (Section 4.1.3) and added modeling guidance for projects located in closed depressions (Section 4.1.3.4)
- Updated bypass, flow-through, and off-site flow general design requirements for on-line and offline BMPs (Section 4.2)
- Updated and clarified presettling and pretreatment requirements (Section 4.4)
- Added a new BMP in Chapter 5 (Sidewalk and Trail Compost-Amended Strip)
- Updated BMPs and associated figures in Chapter 5 (as summarized below)
- Updated internal and external references and weblinks

Section or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 3 – BMP Selection and Sizing Approach					
Chapter 2, Section 2.9 Non-infiltrating BMPs	N/A	N/A	N/A	N/A	<ul style="list-style-type: none"> • Clarified liner requirements for non-infiltrating bioretention • Updated proprietary and emerging water quality treatment technologies table to add new stormwater treatment technologies for consistency with Section 5.8.11

Section or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 3, Section 3.2 Determine Infiltration Feasibility	<ul style="list-style-type: none"> Updated guidance related to the Infiltration Investigation Map (Step 1) Updated infiltration feasibility flow chart (Figure 3.1) 	N/A	<ul style="list-style-type: none"> Clarified guidance related to the Infiltration Investigation Map (Step 1) Minor clarification to one infeasibility criterion for Permeable Pavement Surfaces to clarify that the constraint applies to petroleum, chemical, or liquid hazardous waste storage tanks (Step 2) Added minimum measured infiltration rate for the Sidewalk/Trail Compost-Amended Strip to Table 3.3 (Step 4) Incorporated minor revisions into infiltration feasibility flow chart (Figure 3.1) 	No new edits	No new edits
Chapter 3, Section 3.5 BMP Selection for Water Quality Treatment	Updated water quality treatment BMP selection flow chart (Figure 3.2)	N/A	<ul style="list-style-type: none"> Clarified that the filter strip referenced in Tables 3.6 and 3.7 was a vegetated filter strip Incorporated minor revisions into the Water Quality Treatment BMP Selection Flow Chart (Figure 3.2) 	No new edits	No new edits
Chapter 4 – General Design Requirements					
Chapter 4, Section 4.1 Sizing Approach	<ul style="list-style-type: none"> Clarified modeling approach overview Added modeling guidance for projects located in closed depressions 	N/A	<ul style="list-style-type: none"> Updated modeling approach overview (reverted to 2016 Manual text with minor clarifications) since the City is not planning to update the precipitation time series Added new subsection with modeling guidance for wetland hydroperiod protection (Section 4.1.3.4) 	Updated Table F.12 reference per public comment	Clarified that Ecology’s SWMMWW should be referenced for the latest list of approved continuous simulation models (Section 4.1.3). At the time of publication of the 2021 Seattle Stormwater Manual, MGSFlood has not been approved by Ecology for modeling bioretention.
Chapter 4, Section 4.2 Bypass, Flow-Through, and Off-Site Flow General Design Requirements	Updated bypass, flow-through, and off-site flow general design requirements for on-line and offline BMPs	N/A	Added new text to require sheet flow for scenarios where bypass drainage cannot be collected (no concentrated drainage may flow from the site unless in a conveyance system directed to an approved point of discharge) (Section 4.2.3)	No new edits	No new edits
Chapter 4, Section 4.3 Conveyance and Overflow General Design requirements	Minor terminology revision	N/A	<ul style="list-style-type: none"> Added reference to the Public Drainage System Requirements Director’s Rule (Section 4.3.1) Moved requirements for requirements for Approved Point of Discharge and Conveyance Systems to Point of Discharge to Volume 1 (formerly in Sections 4.3.2 and 4.3.3) Added new requirements for projects with no off-site point of discharge (Section 4.3.2.1) Clarified where infiltration testing can be performed (Section 4.3.2.1) 	Minor revisions (corrected typo and removed outdated reference)	No new edits
Chapter 4, Section 4.5 Infiltration BMPs	Clarified that a water quality treatment BMP is required if native soils do not meet the soil suitability criteria	N/A	<ul style="list-style-type: none"> Clarified the type of water quality treatment that is required prior to infiltration (Section 4.5.2.1) 	No new edits	Changed “native site soils” to “existing site soils” (Section 4.5.2.1)

Section or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 5 – BMP Design					
Chapter 5, Section 5.1 Soil Amendment BMP	<ul style="list-style-type: none"> Added language on Soil Management Plan requirements Updated figure (refer to Public Review Draft figure packet) Clarified modeling guidance 	N/A	<ul style="list-style-type: none"> Clarified acceptable mulching materials (medium and coarse compost, removed bark and leaves) Clarified that compost and other materials can meet either of the two listed organic content requirements Clarified that a Soil Management Plan can be prepared to address different amounts or types of soil amendment and mulch from “pre-approved rates” Updated figure to show the stepped process for amending soils (Figure 5.1) 	<ul style="list-style-type: none"> Minor revisions for clarity and consistency with other City requirements Minor revisions to Figure 5.1 	No new edits
Chapter 5, Section 5.2 Tree Planting and Retention	<ul style="list-style-type: none"> Modified structure setback for newly planted trees Updated tree list and tree size requirements for newly planted trees for consistency with the Green Factor Director’s Rule Clarified the On-site List Approach credits Extended supplemental irrigation requirements (at least 5 growing seasons) 	N/A	Updated reference to approved tree species (updated list will be posted on SDCI’s website in the future)	Minor revisions for clarity and consistency with other City requirements	Added O&M requirement for replenishing mulch for new and retained trees
Section 5.3 Dispersion BMPs					
Chapter 5, Section 5.3.2 Full Dispersion	No edits (refers to the SWMMWW)	N/A	Clarified that portions of a site may be fully dispersed (with a vegetated flow path of at least 100 feet)	No new edits	No new edits
Chapter 5, Section 5.3.3 Splashblock Downspout Dispersion	<ul style="list-style-type: none"> Updated dispersion flowpath requirements Updated continuous modeling assumptions (Table 5.5) Updated figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Minor clarification to applicability footnote for water quality treatment Updated pre-sized flow control credits (Table 5.4) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.5; refer to Appendix F) Redlines incorporated into Figure 5.3 (no changes from proposed Spring 2020 redlines) 	No new edits	No new edits
Chapter 5, Section 5.3.4 Trench Downspout Dispersion	<ul style="list-style-type: none"> Updated dispersion flowpath requirements Added contributing area design criteria (from Splashblock Downspout Dispersion section) Added continuous modeling assumptions (Table 5.7) Updated figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Minor clarification to applicability footnote for water quality treatment Updated pre-sized flow control credits (Table 5.6) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.7; refer to Appendix F) Updated Figure 5.4 to make flowpaths perpendicular to the contours in the plan view. The “flow”, “slope” and “level” arrows from the trench section were removed because these are not requirements for this BMP. 	No new edits	No new edits

Section or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 5, Section 5.3.5 Sheet Flow Dispersion	<ul style="list-style-type: none"> Updated dispersion flowpath requirements Updated continuous modeling assumptions (Table 5.9) Updated figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Minor clarification to applicability footnote for water quality treatment Updated pre-sized flow control credits (Table 5.8) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.9; refer to Appendix F) Added note about modeling amended soils to partially meet flow control and/or water quality treatment. Redlines incorporated into Figure 5.5 (no changes from proposed Spring 2020 redlines) 	No new edits	No new edits
Chapter 5, Section 5.3.6 Concentrated Flow Dispersion	<ul style="list-style-type: none"> Updated dispersion flowpath requirements Updated continuous modeling assumptions (Table 5.11) 	N/A	<ul style="list-style-type: none"> Minor clarification to applicability footnote for water quality treatment Updated pre-sized flow control credits (Table 5.10) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.11; refer to Appendix F) Added note about modeling amended soils to partially meet flow control and/or water quality treatment. Clarified modeling assumptions for hard surface area dispersed (Table 5.11) 	No new edits	No new edits
Chapter 5, Section 5.3.7 Sidewalk/Trail Compost-Amended Strip	<ul style="list-style-type: none"> Added new BMP for on-site stormwater management for sidewalks or trails Added a new figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Incorporated minor revisions for clarity Clarified that modeling will be required to use the BMP for mitigation requirements other than On-Site Stormwater Management Added site considerations Clarified how to measure BMP, level spreader, and contributing area widths Added proposed sizing factors (Table 5.12) Added reminder that modeling in MGSFlood is not currently allowed for this BMP Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.13; refer to Appendix F) Added note about modeling amended soils to partially meet flow control and/or water quality treatment Updated Figure 5.7 for clarity 	Formatting updates	No new edits

Section or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Section 5.4 Infiltration BMPs					
Chapter 5, Section 5.4.2 Infiltration Trenches	<ul style="list-style-type: none"> Added clarifying text related to UIC regulations Modified flow entrance and presettling requirements (removed yard drain option) Updated figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Clarified exemption related to UIC wells at single family homes Clarified that constructed overflow is not required for BMPs designed to infiltrate all flows for required simulation period Revised modeling approach text for clarity Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.16; refer to Appendix F) Minor revisions to Figure 5.8 from proposed Spring 2020 redlines 	Minor revisions to Figure 5.8	Minor revisions to Figure 5.8 to show that the setback is between the building wall and the infiltration trench (not the catch basin structure) and to add a note regarding extending the minimum setback to 10 feet if there is a basement
Chapter 5, Section 5.4.3 Drywells	<ul style="list-style-type: none"> Added clarifying text related to UIC regulations Updated figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Clarified exemption related to UIC wells at single family homes Clarified that constructed overflow is not required for BMPs designed to infiltrate all flows for required simulation period Updated Peak Control Standard sizing factors (Table 5.18) Updated Figure 5.10 to show overflow pipe in plan view 	Minor revisions to Figure 5.10	No new edits
Chapter 5, Section 5.4.4 Infiltrating Bioretention	<ul style="list-style-type: none"> Clarified and updated design criteria for contributing area, ponding area, bioretention soil, plants, and mulch layer Added note to continuous modeling approach section that MGSFlood is currently not approved for modeling bioretention Updated figures (refer to Public Review Draft figure packet) Added a new figure for a facility cleanout outside of the right-of-way 	N/A	<ul style="list-style-type: none"> Clarified contributing areas Clarified that a cell larger than 800 sf are allowable to treat a more regional area but requires the permission of the Director Clarified that constructed overflow is not required for BMP designed to infiltrate all flows for required simulation period Clarified mulch layer requirements Clarified modeling approach for projects that have no off-site point of discharge Updated sizing factors (Table 5.21, 5.22, and 5.23) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.24; refer to Appendix F) Clarified that clean, washed drainage gravel or mulch is allowed in lieu of plants if a licensed landscape architect determines plants will not survive in shaded conditions Clarified use of mineral mulch. Updated Figures 5.11 through 5.15 for clarity. The minimum depth from groundwater was updated in Figures 5.13 and 5.14. 	<ul style="list-style-type: none"> Updated sizing factors per January 2021 errata (Table 5.21) Minor revisions to Figures 5.13 and 5.15 	<ul style="list-style-type: none"> Added/updated references to SPU's Green Stormwater Infrastructure Manual for Capital Improvement Projects and Seattle Streets Illustrated Updated City of Seattle Standard Plan references Revised cleanout and observation port requirements: A cleanout at the upstream end is not required for short runs if certain exceptions are met. No cleanouts are required within a run from underdrain maintenance hole to underdrain maintenance hole except at bends. Updated sizing factors for non-infiltrating bioretention (water quality treatment for vertical sides and two pre-developed pasture scenarios) in Table 5.22 Clarified that Ecology's SWMMWW should be referenced for the latest list of approved continuous simulation models

Section or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 5, Section 5.4.5 Rain Gardens	<ul style="list-style-type: none"> Updated allowable ponding depth in right-of-way (3 inches) Replaced specific right-of-way setbacks with a reference to CAM 1190 	N/A	<ul style="list-style-type: none"> Clarified that constructed overflow is not required for BMPs designed to infiltrate all flows for required simulation period Clarified that aggregate mulch is allowed in rain gardens Updated sizing factors (Table 5.25) 	<ul style="list-style-type: none"> Updated sizing factors per January 2021 errata (Table 5.25) Minor revisions to Figure 5.16 	Fixed typo in Table 5.25 (“rain gardens” instead of “bioretention”)
Chapter 5, Section 5.4.6 Permeable Pavement Facilities	<ul style="list-style-type: none"> Removed simplified comparison table; replaced with text describing the main difference between permeable pavement facilities and permeable pavement surfaces Clarified and updated design criteria for flow entrance/presettling, wearing course, subsurface check dams, geotextiles, and observation/maintenance ports Added design criteria for edge treatment Updated minimum construction requirements Updated figures (refer to Public Review Draft figure packet) Added new figures for edge treatment (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Incorporated minor revisions for clarity Further clarified the difference between permeable pavement facilities and permeable pavement Clarified that constructed overflow is not required for BMPs designed to infiltrate all flows for required simulation period Added clarification for projects that have no off-site point of discharge Added that a manufactured paver restraint may be used at edges if suitable Updated Peak Control Standard sizing factors (Table 5.26) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.27; refer to Appendix F) Updated Figure 5.17 for clarity Redlines incorporated into Figures 5.18 through 5.20 (no changes from proposed Spring 2020 redlines) 	Minor revisions to Figure 5.18	Updated figure titles to clarify that Figures 5.18, 5.19, and 5.20 are examples
Chapter 5, Section 5.4.7 Perforated Stub-Out Connections	Updated figure (refer to Public Review Draft figure packet)	N/A	<ul style="list-style-type: none"> Clarified that constructed overflow is not required for BMPs designed to infiltrate all flows for required simulation period Minor revisions to Figure 5.21 from proposed Spring 2020 redlines 	Minor revisions to Figure 5.21	No new edits
Chapter 5, Section 5.4.8 Infiltration Basins	Updated external references to SWMMWW	N/A	No new edits	No new edits	No new edits
Chapter 5, Section 5.4.9 Infiltration Chambers/Vaults	<ul style="list-style-type: none"> Updated BMP name to add “Vaults” Added design criteria for liners and observation/maintenance ports Clarified applicability for pre-sized approach Updated O&M requirements Updated figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Clarified exemption related to UIC wells at single family homes Clarified that constructed overflow is not required for BMPs designed to infiltrate all flows for required simulation period Clarified observation/maintenance port requirements Added clarification for projects that have no off-site point of discharge Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.29; refer to Appendix F) Added O&M requirement for a 24-in diameter ring and 36-inch diameter vertical pipe if personnel will be entering the facility Minor revisions to Figure 5.22 from proposed Spring 2020 redlines 	No new edits	No new edits

Section or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Section 5.5 Rainwater Harvesting BMPs					
Chapter 5, Section 5.5.1 Rainwater Harvesting	<ul style="list-style-type: none"> Updated On-site List Approach [sizing spreadsheet to be developed] Updated assumptions for determining rainwater demand Updated On-site Performance Standard modeling approach to allow a daily time step 	N/A	<ul style="list-style-type: none"> Updated site considerations Added BMP sizing approach for Category 2 and Category 4 of the On-site List Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.32; refer to Appendix F) 	Streamlined reference to Land Use Code	Clarified Step 3 of the Sizing for On-site List Approach: "If the ratio is at least 0.75 , the rainwater harvesting system meets the requirements for Category 4 of the On-site List."
Chapter 5, Section 5.5.2 Single Family Residential (SFR) Cistern	No edits	N/A	<ul style="list-style-type: none"> Updated site considerations Updated sizing factors (Table 5.33) 	Streamlined reference to Land Use Code	No new edits
Section 5.6 Alternative Surface BMPs					
Chapter 5, Section 5.6.1 Vegetated Roof Systems	<ul style="list-style-type: none"> Clarified above-grade impervious surfaces (at least 10 feet above grade) Added irrigation requirement (minimum of 5 growing seasons) 	N/A	<ul style="list-style-type: none"> Removed restriction on fertilizer/pesticides/herbicides after 2-year plant establishment period Added note to clarify fertilizer application on vegetated roofs Updated sizing factors (Table 5.34) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.35; refer to Appendix F) 	No new edits	Updated flow control credit example percentages in the text preceding Table 5.34 for consistency with Table 5.34 updates
Chapter 5, Section 5.6.2 Permeable Pavement Surfaces	Updated modeling approach (for consistency with SWMMWW)	N/A	<ul style="list-style-type: none"> Added new design criteria for the design of underdrained surfaces to be equivalent to Permeable Pavement Surfaces Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.38; refer to Appendix F) 	<ul style="list-style-type: none"> Added note regarding additional aggregate depth for stormwater storage Updated sizing factors per January 2021 errata (Table 5.36) 	No new edits
Section 5.7 Detention BMPs					
Chapter 5, Section 5.7.1 Detention Ponds	Updated external references to SWMMWW	N/A	Minor edits	No new edits	No new edits
Chapter 5, Section 5.7.2 Detention Pipes	<ul style="list-style-type: none"> Updated site considerations (steep slopes, known landslide areas, and buffers) Updated and clarified design criteria for detention pipe materials and bedding, structural stability, and access Added exfiltration (i.e., watertightness) testing requirements Updated O&M requirements Added new figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Added text to restrict pipe systems that do not provide a watertight seal within 200 feet from top of ECA slope, landslide prone area, or known landslide area or under buildings or other structures Requirements for maintenance access was clarified. Updated sizing factors (Table 5.39) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.40; refer to Appendix F) Updated Figure 5.26 	<ul style="list-style-type: none"> Updated sizing factors per January 2021 errata (Table 5.39) Minor revisions to Figure 5.26 	Reincorporated sizing factors (and added orifice sizes) for 2,000-5,000sf (Table 5.39)

Section or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 5, Section 5.7.3 Detention Vaults/ Chambers	<ul style="list-style-type: none"> Updated BMP name to add “Chambers” Updated site considerations (steep slopes, known landslide areas, and buffers) Split design criteria into two sections (Standard Detention Vaults and Stackable, Modular Detention Chambers) Updated and clarified design criteria for structural stability (Standard Detention Vaults) Added design criteria for sediment storage and observation/maintenance port (Standard Detention Vaults) Added design criteria for flow entrance and presettling, sediment storage, chamber materials and layout, chamber bedding, liner, structural stability, and observation/maintenance port (Stackable, Modular Detention Chambers) Clarified applicability for pre-sized approach Added exfiltration (i.e., watertightness) testing requirements Updated O&M requirements Updated figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Added new text under Site Considerations to clarify impermeable liner requirements Removed Observation/Maintenance Port section for Detention Vaults (not needed) Clarified requirements for sediment/oil storage Clarified access for detention chambers Clarified presettling for detention chambers Added additional requirements for observation/maintenance port for detention chambers Updated sizing factors (Table 5.41) Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.42; refer to Appendix F) Updated Figure 5.27 	<ul style="list-style-type: none"> Updated sizing factors per January 2021 errata (Table 5.41) Minor revisions to Figure 5.27 	Reincorporated sizing factors (and added orifice sizes) for 2,000-5,000sf (Table 5.41)
Chapter 5, Section 5.7.4 Detention Cisterns	Minor edits	N/A	No new edits	Updated sizing factors per January 2021 errata (Table 5.43)	No new edits
Chapter 5, Section 5.7.5 Other Detention Options	No edits	N/A	No edits	No edits	No edits
Section 5.8 Non-infiltrating BMPs					
Chapter 5, Section 5.8.2 Non-infiltrating Bioretention	<ul style="list-style-type: none"> Clarified design criteria for hydraulic restriction layer and bioretention soil mix Added note to continuous modeling approach section that MGSFlood is currently not approved for modeling bioretention Updated figures (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Clarified setbacks for non-infiltrating bioretention Clarified that the liner can be omitted if the horizontal setbacks are met and there are no geotechnical or contamination concerns Updated text related to MGSFlood (not currently approved) Updated sizing factors (Table 5.45 and 5.46) Clarified in the special instructions that if using sand that the vegetation recommended for a sand filter should be used Updated Figures 5.29 and 5.30 to add a minimum depth to groundwater 	<ul style="list-style-type: none"> Removed Peak Control sizing option (included in January 2021 errata) Streamlined reference to Land Use Code Updated sizing factors per January 2021 errata (Table 5.45) 	<ul style="list-style-type: none"> Updated Figure 5.29 to adjust depth below underdrain pipe to 3” minimum (instead of 6”) and to show the water level more clearly Added reference to SWMMWW for the latest list of approved models
Chapter 5, Section 5.8.3 Biofiltration Swales	Minor edits (terminology and consistency with the SWMMWW)	N/A	No new edits	No new edits	No new edits

Section or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 5, Section 5.8.4 Filter Strips/Drains	Updated BMP name from “Basic Filter Strip” to “Vegetated Filter Strip” (for consistency with the SWMMWW) Updated minimum construction requirements (for consistency with the SWMMWW)	N/A	No new edits	No new edits	No new edits
Chapter 5, Section 5.8.5 Sand Filters	Updated site considerations (steep slopes, known landslide areas, and buffers)	N/A	Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (Table 5.50; refer to Appendix F)	No new edits	No new edits
Chapter 5, Section 5.8.6 Wet Ponds	Updated site considerations (steep slopes, known landslide areas, and buffers)	N/A	No new edits	No new edits	No new edits
Chapter 5, Section 5.8.7 Wet Vaults	<ul style="list-style-type: none"> Updated site considerations (steep slopes, known landslide areas, and buffers) Added exfiltration (i.e., watertightness) testing requirements Updated figure (refer to Public Review Draft figure packet) 	N/A	Redlines incorporated into Figure 5.32 (no changes from proposed Spring 2020 redlines)	No new edits	No new edits
Chapter 5, Section 5.8.8 Stormwater Treatment Wetlands	Minor edits (terminology and consistency with the SWMMWW)	N/A	No new edits	No new edits	No new edits
Chapter 5, Section 5.8.9 Combined Detention and Wet Pool Facilities	No edits	N/A	No new edits	No new edits	No new edits
Chapter 5, Section 5.8.10 Oil/Water Separators	<ul style="list-style-type: none"> Minor revisions to equations Updated figure (refer to Public Review Draft figure packet) 	N/A	<ul style="list-style-type: none"> Redlines incorporated into Figure 5.33 (no changes from proposed Spring 2020 redlines) Figure 5.34 was updated for consistency with Figure 5.33 	No new edits	No new edits
Chapter 5, Section 5.8.11 Proprietary and Emerging Water Quality Treatment Technologies	<ul style="list-style-type: none"> Updated applicability table to include Bio Clean (Forterra) MWS-Linear Modular Wetland Added note regarding multiple media blends (only some of which have GULD approval) Added site considerations for the MWS-Linear Modular Wetland Added clarification to mass loading ratios regarding on-line vs. offline water quality design flow rates 	N/A	<ul style="list-style-type: none"> Revised text to clarify that site considerations for the MWS-Linear Modular Wetland are dependent on grading, hydraulics, and landscaping Added reminder that LSUR, SLSUR, and NSUR parameters shall be adjusted (refer to Appendix F) Updated MLRs to “TBD” – discussion is still in progress regarding potential revisions to the MLRs 	<ul style="list-style-type: none"> Minor updates to applicability table for consistency with Section 5.8.11.6 Simplified MLR approach: <ul style="list-style-type: none"> Average MLRs for filter cartridge systems Average MLRs for vertical flow media filter systems 	Added BioPod to applicability table

Summary of Changes to Volume 4 (Source Control) of the Seattle Stormwater Manual

July 2021 Final Stormwater Manual

- Updated code reference boxes to include final code language
- Minor clarifications to BMP 7 (Property Maintenance) and BMP 38 (Maintenance and Operation of Railroad Yards)

Spring 2021 Public Review Draft Stormwater Manual

- Incorporated minor revisions to BMP 1 (Eliminate Illicit Connections and Illicit Discharges), BMP 7 (Property Maintenance), and BMP 26 (Storage of Leachable or Erodible Materials) to address public comments

Winter 2021 Public Review Draft Stormwater Manual

- Minor BMP updates and clarifications (as summarized below)

Spring 2020 Public Review Draft Stormwater Manual

- Updated, clarified, and added required BMP elements and recommended BMPs (as summarized below)
- Shifted several BMPs from Chapter 3 (Business and Public Entity BMPs for Specific Activities) to Chapter 2 (BMPs for All Real Property)
- Added new BMPs (with reference to the 2019 SWMMWW for specifics)
- Added new Rooftop Dog Run BMP
- Removed Lot Maintenance and Storage BMP (content addressed in BMP 7)
- Updated internal and external references and weblinks

Section Name or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Chapter 2 – Best Management Practices for All Real Property (updated from 2016 Stormwater Manual title: “Citywide BMPs”)					
Section 2.1 – Required Best Management Practices	No edits	N/A	<ul style="list-style-type: none"> • Added bulleted list of BMPs 1-8 • Shifted code language from body text into Stormwater Code language callout box 	No new edits	No new edits
BMP 1: Eliminate Illicit Connections and Illicit Discharges	<ul style="list-style-type: none"> • Updated BMP name (added “and Illicit Discharges”) • Added language related to eliminating illicit discharges 	N/A	Revised “local waters” to “receiving waters” for clarity	Added additional options for investigating a potential illicit connection (e.g., smoke testing, flow testing, or visual reconnaissance) to address a public comment	No new edits
BMP 2: Perform Routine Maintenance	Minor edits	N/A	Minor edits	No new edits	No new edits
BMP 3: Dispose of Fluids and Wastes Properly	<ul style="list-style-type: none"> • Added Permitted Centralized Waste Treatment Facilities and combined sewer to list of disposal options • Clarified guidance for handling of contaminated street waste solids 	N/A	Added reference to and weblinks for King County Green Tools and Local Hazardous Waste Management Program	No new edits	No new edits
BMP 4: Proper Storage of Solid Wastes	<ul style="list-style-type: none"> • Updated storage requirements related to dumpsters and trash compactors • Added requirements for used cooking oil storage 	N/A	Minor edits	No new edits	No new edits
BMP 5: Spill Prevention and Cleanup	<ul style="list-style-type: none"> • Clarified that spills resulting from vandalism or poor management are the responsibility of the waste owner • Minor edits to spill prevention • Updated spill cleanup and proper disposal of material requirements 	N/A	Minor edits	No new edits	No new edits

Section Name or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
BMP 6: Provide Oversight and Training for Staff	No edits	N/A	Minor edits	No new edits	No new edits
BMP 7: Property Maintenance	<ul style="list-style-type: none"> Updated BMP name (changed "Site" to "Property") Updated BMP requirements 	N/A	Minor edits	Added " absorbent pads and other containment vessels " in addition to drip pans to address a public comment	Removed "and employee vehicles" per public comment in a section addressing use of drip pans, absorbent pads, or other containment vessels below leaking vehicles
BMP 8: Rooftop Dog Runs	Added new BMP	N/A	<ul style="list-style-type: none"> Clarified that limits on sanitary sewer discharge apply to uncovered areas Added specific requirements for combined sewer areas Additional minor edits 	No new edits	No new edits
Section 2.2 – Required Best Management Practices for Specific Activities	[new section not included in Spring 2020 Public Review Draft]	N/A	Added overview section with bulleted list of BMPs 9-16 and Stormwater Code language callout box	No new edits	Updated per final code language; added public combined sewer
BMP 9: Fueling at Dedicated Stations	<ul style="list-style-type: none"> Moved from Chapter 3 to Chapter 2 Renumbered BMP (previously BMP 10) Updated design requirements for fueling island spill containment pad Updated instructions for calculating the spill retention volume Removed requirements for fueling over open water (covered by BMP 11) 	N/A	<ul style="list-style-type: none"> Clarified that the combined sewer is also acceptable for discharges from the fueling island containment pad Added guidance for continuous runoff modeling for sizing the oil/water separator or dead-end sump Clarified that an automatic shutoff valve is also required for discharges to the combined sewer 	No new edits	No new edits
BMP 10: Mobile Fueling of Vehicles and Heavy Equipment	<ul style="list-style-type: none"> Moved from Chapter 3 to Chapter 2 Renumbered BMP (previously BMP 12) Updated and clarified spill cleanup materials Added requirement for fuel operation plan Clarified that dispersants are allowed (if disposed of properly) 	N/A	Minor edits	No new edits	No new edits
BMP 11: In-Water and Over-Water Fueling	Added new BMP (references S439 BMPs in the 2019 SWMMWW for specifics)	N/A	No new edits	No new edits	No new edits
BMP 12: Maintenance and Repair of Vehicles and Equipment	<ul style="list-style-type: none"> Moved from Chapter 3 to Chapter 2 Renumbered BMP (previously BMP 11) Updated required BMP elements Removed spill response bullets (covered by BMP 5) 	N/A	Minor edits	No new edits	No new edits
BMP 13: Concrete and Asphalt Mixing and Production	<ul style="list-style-type: none"> Moved from Chapter 3 to Chapter 2 Removed pouring areas (covered by BMP 14) Minor edits to required BMP elements 	N/A	Minor edits	No new edits	No new edits

Section Name or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
BMP 14: Concrete Pouring, Concrete/Asphalt Cutting, and Asphalt Application	<ul style="list-style-type: none"> Moved from Chapter 3 to Chapter 2 Minor edits to required BMP elements and recommended BMPs 	N/A	No new edits	No new edits	No new edits
BMP 15: Recycling Wrecking Yard, and Scrap Yard Operations	<ul style="list-style-type: none"> Moved from Chapter 3 to Chapter 2 Renumbered BMP (previously BMP 24) Added examples of PCB sources Updated and added required BMP elements for structural controls, storage, and inspection 	N/A	Minor edits	No new edits	No new edits
BMP 16: Storage of Liquids in Above-ground Tanks	<ul style="list-style-type: none"> Moved from Chapter 3 to Chapter 2 Renumbered BMP (previously BMP 26) Updated and clarified required BMP elements 	N/A	Clarified that oil/water separators and automatic shutoff valves or oil stop valves are required in areas with multiple petroleum product storage tanks	No new edits	No new edits
Chapter 3 – Business and Public Entity Best Management Practices for Specific Activities					
Cleaning or Washing					
BMP 17: Cleaning or Washing	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 18) Added PCBs to list of potential pollutants Updated and clarified required BMP elements Added conditionally permissible wash practices 	N/A	Minor edits	No new edits	No new edits
Transfer of Liquid or Solid Materials					
BMP 18: Loading and Unloading of Liquid or Solid Material	<ul style="list-style-type: none"> Updated required BMP elements for impervious containment 	N/A	Added guidance for continuous runoff modeling	No new edits	No new edits
Production and Application					
BMP 19: Manufacturing and Post-Processing of metal Products	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 15) Minor edits to required BMP elements 	N/A	No new edits	No new edits	No new edits
BMP 20: Processing of Treated Wood	<ul style="list-style-type: none"> BMP name change (removed “and Storage”) Renumbered BMP (previously BMP 16) Updated storage area and treated wood products requirements 	N/A	Minor edits	No new edits	No new edits
BMP 21: Commercial Composting	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 17) Removed content specific to dangerous wastes and undesirable materials 	N/A	Minor edits	No new edits	No new edits

Section Name or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
BMP 22: Landscaping and Vegetation Management	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 18) Deleted content related to pesticides (covered by BMP 49 and BMP 50) 	N/A	Added references under required BMP elements for Landscaping: <ul style="list-style-type: none"> Landscaping principles in Volume 1, Section 7.8 S435 – BMPs for Pesticides and an Integrated Pest Management Program Applicable landscape management plans (Appendix I) 	No new edits	No new edits
BMP 23: Painting, Finishing, and Coating Activities	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 19) Minor edits to required BMP elements 	N/A	No new edits	No new edits	No new edits
BMP 24: Commercial Printing Operations	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 20) 	N/A	No new edits	No new edits	No new edits
BMP 25: Manufacturing Activities	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 21) Minor edits to required BMP elements Added recommended BMPs 	N/A	No new edits	No new edits	No new edits
Storage and Stockpiling					
BMP 26: Storage of Leachable Erodible Materials	<ul style="list-style-type: none"> Updated BMP name (removed “or Transfer”) Updated and clarified required BMP elements Streamlined recommended BMPs 	N/A	No new edits	Revised text for making cleanup materials “ accessible for use ” to address a public comment	No new edits
BMP 27: Temporary Storage of Processing of Fruits, Vegetables, or Grains	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 23) Added note regarding NPDES permit coverage Updated and clarified required BMP elements Added requirement for keeping cleanup materials near storage areas 	N/A	<ul style="list-style-type: none"> Updated examples of outdoor activities associated with food processing Additional minor edits 	No new edits	No new edits
BMP 28: Portable Container Storage	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 25) Updated and clarified required BMP elements Shifted content to recommended BMPs 	N/A	Minor edits	No new edits	No new edits
Lot Maintenance and Storage (previously BMP 27)	Removed BMP (covered by BMP 7)	N/A	No new edits	No new edits	No new edits
Dust, Soil Erosion, and Sediment Control					
BMP 29: Dust Control in Disturbed Land Areas and on Unpaved Roadways and Parking Lots	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 28) Updated and clarified required BMP elements 	N/A	Updated reference to Ecology’s <i>Methods for Dust Control</i> publication	No new edits	No new edits

Section Name or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
BMP 30: Dust Control at Manufacturing Sites	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 29) Clarified required BMP elements 	N/A	No new edits	No new edits	No new edits
BMP 31: Soil Control and Sediment Control at Industrial Facilities	<ul style="list-style-type: none"> Updated BMP name (changed "Sites" to "Facilities") Renumbered BMP (previously BMP 30) 	N/A	No new edits	No new edits	No new edits
Other Activities					
BMP 32: Commercial Animal Care and Handling	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 31) Minor edits to recommended BMPs 	N/A	No new edits	No new edits	No new edits
BMP 33: Log Sorting and Handling	Renumbered BMP (previously BMP 32)	N/A	Updated reference to Ecology's <i>Industrial Stormwater General Permit Implementation Manual for Log Yards</i> publication	No new edits	No new edits
BMP 34: Boat Building, Maintenance, and Repair	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 33) Updated BMP name (removed "Mooring") Minor edits to required BMP elements 	N/A	No new edits	No new edits	No new edits
BMP 35: Cleaning and Maintenance of Pools, Spas, Hot Tubs, and Fountains	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 34) Minor edits to required BMP elements 	N/A	No new edits	No new edits	No new edits
BMP 36: Deicing and Anti-icing Operations for Airports and Streets	Renumbered BMP (previously BMP 35)	N/A	No new edits	No new edits	No new edits
BMP 37: Maintenance and Management of Roof and Building Drains at Industrial and Commercial Buildings	<ul style="list-style-type: none"> Updated BMP name (changed "Manufacturing" to "Industrial") Renumbered BMP (previously BMP 36) Added note regarding NPDES permit coverage Minor edits to required BMP elements 	N/A	No new edits	No new edits	No new edits
BMP 38: Maintenance and Operation of Railroad Yards	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 37) Added required BMP elements (from 2019 SWMMWW) 	N/A	Added bullet on drip pans, absorbent pads/mats, or other containment measures under required BMP elements	No new edits	Added clarification per public comment (and consistency with Ecology) that the storage BMPs for metal scrap only applies to metal punching or other mechanical operations: "Store any metal scrap generated from metal punching or other mechanical operations where it will not come in contact with stormwater"
BMP 39: Maintenance of Public and Private Utility Corridors and Facilities	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 38) Minor edits to required BMP elements 	N/A	Added references under required BMP elements: <ul style="list-style-type: none"> S435 – BMPs for Pesticides and an Integrated Pest Management Program Integrated pest management plans (Appendix I) 	No new edits	No new edits

Section Name or BMP Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
BMP 40: Maintenance of Roadside Ditches	<ul style="list-style-type: none"> Renumbered BMP (previously BMP 39) Minor edits to required BMP elements 	N/A	Added reference under required BMP elements: <ul style="list-style-type: none"> S435 – BMPs for Pesticides and an Integrated Pest Management Program 	No new edits	No new edits
BMP 41: Potable Water Line Flushing, Water Tank Maintenance, and Hydrant Testing	Added new BMP (references S441 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 42: Urban Streets	Added new BMP (references S430 BMPs in the 2019 SWMMWW for specifics)	N/A	No new edits	No new edits	No new edits
BMP 43: Nurseries and Greenhouses	Added new BMP (references S449 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 44: Color Events	Added new BMP (references S436 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 45: Pet Waste	Added new BMP (references S440 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 46: Labeling Storm Drain Inlets on Your Property	Added new BMP (references S442 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 47: Well, Utility, Directional and Geotechnical Drilling	Added new BMP (references S446 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 48: Goose Waste	Added new BMP (references S452 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 49: Pesticides and an Integrated Pest Management Program	Added new BMP (references S435 BMPs in the 2019 SWMMWW for specifics)	N/A	Added reference under required BMP elements: <ul style="list-style-type: none"> Integrated pest management plans (Appendix I) 	No new edits	No new edits
BMP 50: Storage of Dry Pesticides and Fertilizers	Added new BMP (references S444 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 51: Irrigation	Added new BMP (references S450 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 52: Dock Washing	Added new BMP (references S434 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 53: Roof Vents	Added new BMP (references S447 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits
BMP 54: Streets and Highways	Added new BMP (references S406 BMPs in the 2019 SWMMWW for specifics)	N/A	Minor edits	No new edits	No new edits

Summary of Changes to the Appendices in the Seattle Stormwater Manual

Appendix Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Appendix A – Definitions	Placeholder page only. Refer to SMC, Chapter 22.801 to review definitions.	N/A	No new edits; still a placeholder page	Incorporated revised SMC, Chapter 22.801 code definitions	Minor revisions to definitions for consistency with final code language
Appendix B – Additional Submittal Requirements	<ul style="list-style-type: none"> Previously included background information on chemical treatment related to Volume 2 Content deleted (included with reference to BMP C250 in the 2019 SWMMWW) Appendix B will be updated to include Submittal Requirements in a future draft of the Manual 	<ul style="list-style-type: none"> Added submittal requirements for Preliminary Drainage Control Review (Section B-1) Added Drainage Report Format/Content requirements (Section B-2) 	<ul style="list-style-type: none"> Clarified requirements for subdivisions (Section B-1.1.1) Added information on deferred drainage plans for some projects (Section B-1.1.2) Added section on shared drainage control facilities and systems (Section B-1.1.3) Updated typical drainage condition #3 (Section B-1.1.4) Added section on easements for subdivisions and short plats (Section B-1.1.5) Added reference to SPU Policy DWW-160 (Section B-1.2) Expanded section on Lot Boundary Adjustments (Section B-1.3) Clarified some drainage report format/content requirements (Section B-2) 	<ul style="list-style-type: none"> Added text for Typical Drainage Condition #3 Clarified easement language and mainline extension for proposed lots Added new subsection Determining Minimum Requirements for Subdivisions and Short Plats Added Soil Management Plan to Lot Boundary Adjustment Drainage Adequacy Condition #2 	<ul style="list-style-type: none"> Updated code reference boxes to incorporate final code language Added/updated references Revised language for deferred drainage to clarify scenarios where the full development potential does not exceed thresholds Added joint use and maintenance agreement (JUMA) for shared drainage control facilities Revised Section B-1.3 (Lot Boundary Adjustments) to clarify that Preliminary Drainage Review is required, clarify when separate Preliminary Drainage Control Plan is not required, and expand LBA Drainage Adequacy Note #1 regarding piped storm drain Updated Section B-2 to include references to Sections 3.12 (Extension of public drainage system), 3.13 (Public drainage system requirements), and 5.3.4 (Existing condition standard)
Appendix C – On-site Stormwater Management Infeasibility Criteria	<ul style="list-style-type: none"> Added new infeasibility criteria for All BMPs and All BMPs (except Rainwater Harvesting) to Table C.1 Added reference to additional BMP groupings in Table C.1 to Tables C.2, C.3, C.4, C.5, and C.6 Added new infeasibility criteria for Vegetated Roof Systems to Table C.5 for consistency with the On-site List Calculator Added new tables (Tables C.5 and C.6) for Category 4 and 5 BMPs and shifted content from Table C.4 for consistency with proposed Stormwater Code updates 	N/A	<ul style="list-style-type: none"> Combined All BMPs and All BMPs (except Rainwater Harvesting) in Table C.1 Clarified one infeasibility criterion for All BMPs (Table C.1) regarding maintaining a desired 36-inch-wide setback Minor clarification to one infeasibility criterion for Permeable Pavement Surfaces to clarify that the constraint applies to petroleum, chemical, or liquid hazardous waste storage tanks (Table C.3) Added one infeasibility criterion (related to skate parks, bike parks, and sport courts) for Permeable Pavement Facilities and Permeable Pavement Surfaces (Table C.3) Added infeasibility criteria for Sidewalk/Trail Compost-Amended Strip (Table C.3) Added three new infeasibility criteria for Non-Infiltrating Bioretention (Table C.5) Added reference to Rainwater Harvesting infeasibility criteria (Table C.5) 	No new edits	No new edits

Appendix Name	Spring 2020 Public Review Draft	Fall 2020 Public Review Draft	Winter 2021 Public Review Draft	Spring 2021 Public Review Draft	July 2021 Final Manual
Appendix D – Subsurface Characterization and Infiltration Testing for Infiltration Facilities	<ul style="list-style-type: none"> Clarified roles and responsibilities of licensed professionals (Section D-1) Updated documentation requirements for simple, standard, and comprehensive subsurface investigation reports (Section D-2) Updated infiltration testing procedures (Section D-3) Added requirement for vertical separation for groundwater mounding (Section D-7) Added section for acceptance testing including criteria, requirements, and submittals (Section D-8) 	N/A	<ul style="list-style-type: none"> Minor clarifications in Section D-5 (Groundwater Monitoring) Clarified criteria for subsurface conditions observations and underlying soil infiltration rate (Section D-8.1) Revised acceptance testing requirements (Section D-8.2) Clarified that Step 1 (Observation of the Subsurface Conditions) and Step 2 (Infiltration Testing of Differing Soil Conditions) are recommended but optional. Step 3 (Acceptance Testing of Backfilled BMP) is required. (Section D-8.2) 	Revised Simple Infiltration Test; reverted to 2016 Manual text	No new edits
Appendix E – Additional Design Requirements	<ul style="list-style-type: none"> Updated and clarified design criteria for flow control structures for regionally sized detention BMPs, multiple orifice restrictors, weir restrictors (Section E-1) Added new figure for Rectangular Notch, Sharp-Crested Weir (refer to Public Review Draft figure packet) Updated design criteria for through-curb ports (Section E-3) Minor revisions to design criteria and maintenance for level spreaders, pipe slope drains, and outlet protection for consistency with the SWMMWW (Sections E-4, E-5, and E-6) Clarified sizing approach for level spreaders and pipe slope drains (Sections E-4 and E-5) Added impermeable liner and clarified when each liner type applies (Section E-7) Added general design principles to the introduction of the plant lists section (Section E-9) Clarified when the drywell sizing tables apply (Section E-10) 	N/A	<ul style="list-style-type: none"> Integrated new Figure E-3 (no changes from Spring 2020 Public Review Draft) Clarified continuous modeling requirements for level spreaders (Section E-4) Added requirement for high survivability of geotextile fabric per the WSDOT Standard Specifications back into the manual (was included in the 2016 Manual) (Section E-7) Updated plant lists based on landscape architecture review: <ul style="list-style-type: none"> Added design and O&M considerations Removed <i>Carex densa</i> (dense sedge) from Table E.6 (Native List) due to winter die back and availability of evergreen species better suited for bioretention function Removed <i>Leersia oryzoides</i> (rice cutgrass) from Table E.6 (Native List) since it requires extremely wet conditions to thrive Removed <i>Maianthemum dilatatum</i> (False Lily of the Valley) from Table E.6 (Native List) and Table E.9 (Groundcovers) since it is an aggressive spreader, becomes dormant in winter, and is also toxic Reincorporated sizing factors from 2016 Manual (Table E.25, Table E.26, and Table E.28) Added a new drywell sizing table (Table E.27) for drywell sizing downstream of bioretention sized for the On-Site Stormwater Management Standard 	<ul style="list-style-type: none"> Revised Design Criteria for Multiple Orifice Restrictor: “underground weirs or orifices shall not be reduced to less than 0.5-inch length or diameter in an attempt to meet the performance standards” (Section E-1) Minor updates and clarifications to address public comments (Section E-10) <ul style="list-style-type: none"> Updated “high” to “top” orifice Minor correction to section references Added sentence: “The minimum measured infiltration rate from a Small or Large Pilot Infiltration Test (PIT) that is required to use these tables is 0.25 inches per hour (in/hr).” Deleted row of zeros in drywell sizing table (Table E.27) 	No new edits

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Appendix F – Hydrologic Analysis and Design	<ul style="list-style-type: none"> Added note that MGSFlood is currently not approved for modeling bioretention (Table F-1) Added notes regarding the evaluation of tidal influence, sea level rise, and climate change (currently in progress) (Sections F-3 and F-4) Clarified post-developed model application (Table F.8) Updated runoff curve number table for consistency with the SWMMWW (Table F.18) Updated internal and external references and weblinks 	N/A	<ul style="list-style-type: none"> Updated text regarding tidal influence/sea level rise Clarified required HSPF parameter modifications Clarified how the flow duration standard is calculated in a continuous model Updated On-site Performance Standard BMP Design text per latest version of MGSFlood Updated references 	<ul style="list-style-type: none"> Minor updates and clarifications to address public comments <ul style="list-style-type: none"> Added missing symbols back into equations (no changes from 2016 Manual) Updated Land Cover Categorization section to address differences in terminology between WWHM and MGSFlood Updated rain gauge figure (Figure F.1) Updated Tables 1, 2, and 4 in Attachment 2 based on recent rain gauge information and study data 	Added footnote to Table F-1 referring to SWMMWW for a list of currently approved continuous simulation models
Appendix G – Stormwater Control Operations and Maintenance Requirements	<ul style="list-style-type: none"> Added Table of Contents with clickable links instead of a bulleted list of BMPs at the beginning for easier navigation Added Modular Wetland System O&M table (No. 22) Updated terminology, table numbering, and references 	N/A	<ul style="list-style-type: none"> Added “Recommended Inspection Frequency” column (frequencies are primarily from the 2009 Manual with some revisions) Updated noxious weed inspection frequency to March – October for all relevant BMPs Updated “Catch Basin Inserts” to “Catch Basin Filter Socks” Deleted duplicate requirements for sump and access lid (No. 25) Updated growth medium defect or problem(s) for Vegetated Roof Systems (No. 28) 	<ul style="list-style-type: none"> Minor updates and clarifications to address public comments <ul style="list-style-type: none"> Fixed typo in Table No. 11 (Filter Strips) Updated terminology in Table No. 17 (Proprietary Technology Filter Cartridge Systems) for consistency with Volume 3 	Added reminder in the introduction that “All stormwater facilities, BMPs, and drainage systems shall be kept accessible for maintenance and inspection at all times”
Appendix H – Financial Feasibility Documentation for Vegetated Roofs and Rainwater Harvesting	One minor edit from 2016 Manual	N/A	No new edits	No new edits	No new edits
Appendix I – Integrated Pest Management Plan	No change from 2016 Manual	<ul style="list-style-type: none"> Added Landscape Management Plan requirements (Section I-1) Minor revisions to Integrated Pest Management Plans (Section I-2) Added references (Section I-3) 	<ul style="list-style-type: none"> Clarified that an Integrated Pest Management Plan would be required as part of a Landscape Management Plan (Section I-1) Clarified that Step 1 under the Integrated Pest Management Plan Process would need to be repeated if more than one pest is identified (Section I-2) 	Minor revisions from technical editor	No new edits