

### Introduction

While past editions of Olympia's drainage design and erosion control manuals have been equivalent to the appropriate Department of Ecology stormwater manual, the format as well as limited content has been unique to Olympia.

During this 2022 update, Olympia has elected to use the Washington State Department of Ecology's 2019 Stormwater Management Manual for Western Washington as the new format for the City of Olympia 2022 Drainage Design and Erosion Control Manual (DDECM). To this base, Olympia has added elements unique to Olympia from the City of Olympia 2016 DDECM.

This document provides a summary of the following:

- Changes made to be consistent with the Department of Ecology's 2019 Stormwater Management Manual for Western Washington revisions.
- Other changes made to the City of Olympia 2016 DDECM during the 2022 DDECM update.
- What remains unique to the City of Olympia.

### 2019 Stormwater Manual for Western Washington Revisions

The Washington State Department of Ecology made three types of revisions when updating the 2016 Stormwater Management Manual for Western Washington which were incorporated into the 2019 Stormwater Manual for Western Washington. The revisions included:

- Usability enhancements
- Significant changes as contained in Appendix 10 (Equivalent Programs for Runoff Controls for New and Redevelopment and Construction Sites) of the Western Washington Phase II Municipal Stormwater Permit
- Other updates

### Usability Enhancements

Usability enhancements incorporated into the 2019 Stormwater Management Manual for Western Washington and proposed for implementation by Olympia include:

- Fully embracing internet online access to the SMMWW in order to improve the public's ability to review, consider and apply its requirements
- Consolidating repetitive information
- Revising text for clarity
- Reordering sections for a better flow of concepts

## Significant Changes

Appendix 10 (Equivalent Programs for Runoff Controls for New and Redevelopment and Construction Sites) of the Western Washington Phase II Municipal Stormwater Permit contains nine items the Washington State Department of Ecology determined shall be used to amend any enforceable documents, including codes, ordinances, director's rules, public rules and/or manuals, to be functionally equivalent to Appendix I in the Western Washington Phase II Municipal Stormwater Permit (effective August 1, 2019) and the required portions of Ecology's 2019 Stormwater Management Manual for Western Washington.

The following nine Appendix 10 items have been incorporated into the draft 2022 DDECM:

**Item 1. Continuous Simulation Modeling:** Text throughout the draft 2022 DDECM has been updated to require continuous simulation models that include:

- The ability to directly model BMPs that may be used in LID applications, such as bioretention, permeable pavement, and green roofs.
- 15-minute time steps.
- Incorporation of the van Genuchten algorithm to model bioretention.

**Location in Draft:** Throughout

**Item 2. Replaced Hard Surfaces Redevelopment Threshold:** The Minimum Requirement Thresholds for non-road related commercial or industrial redevelopment projects have been updated to require the project proponent to compare the value of the proposed improvements to the value of the Project Site (the limits of disturbance) improvements, rather than the Site (the entire parcel) improvements.

**Location in Draft:** Volume I. Note: Previously included in the 2016 DDECM.

**Item 3. Equivalent Areas:** The Redevelopment Project Thresholds have been updated to allow a project proponent to provide Stormwater Management BMPs for an equivalent area. The equivalent area may be on-site, or off-site if the area drains to the same receiving water and the guidance for in-basin transfers is followed.

**Location in Draft:** Volume I. Note: Previously included in the 2016 DDECM.

**Item 4. Minimum Requirement 2:** The 13 Elements in I-3.4.2 MR2: Construction Stormwater Pollution Prevention Plan (C-SWPPP) have been updated to incorporate changes that were made to the 2015-2020 Construction Stormwater General Permit.

**Location in Draft:** Volume I, Section 1-3.4.2 CR2 Construction Stormwater Pollution Prevention Plan (C-SWPPP)

**Item 5. Minimum Requirement 5:** I-3.4.5 MR5: On-Site Stormwater Management has been updated to require BMP T5.13: Post-Construction Soil Quality and Depth when choosing to use the LID Performance Standard to meet Minimum Requirement 5 for Minimum Requirement 1-5 projects.

**Location in Draft:** Volume I, Section 1-3.4.5 CR5 On-Site Stormwater Management. Note: Previously included in the 2016 DDECM.

**Item 6. Minimum Requirement 7:** I-3.4.7 MR7: Flow Control has been updated to ensure that a TDA discharging to a marine waterbody meets all exemption requirements before it can be determined to be Flow Control exempt.

**Location in Draft:** Volume I, Section I-3.4.7 CR7 Flow Control

**Item 7. Concrete Washout BMP:** BMP C154: Concrete Washout Area has been updated to clarify that auxiliary concrete truck components and small concrete handling equipment may be washed into formed areas awaiting concrete pour, while concrete truck drums must be washed either off-site or into a concrete washout area.

**Location in Draft:** Volume II, Section II-3.2 Construction Source Control BMPs. BMP C154 Concrete Washout Area

**Item 8. Source Control BMPs:** Volume IV (Source Control BMP Library) has been updated with Source Control BMPs for activities not listed in previous versions of the manual. The new activities with Source Control BMPs are:

- S434 BMPs for Dock Washing
- S441 BMPs for Potable Water Line Flushing, Water Tank Maintenance, and Hydrant Testing
- \*S435 BMPs for Pesticides and an Integrated Pest Management Program
- \*S444 BMPs for the Storage of Dry Pesticides and Fertilizers
- S449 BMPs for Nurseries and Greenhouses
- S450 BMPs for Irrigation
- \*S445 BMPs for Temporary Fruit Storage
- S439 BMPs for In-Water and Over-Water Fueling
- S436 BMPs for Color Events
- \*S438 BMPs for Construction Demolition
- S440 BMPs for Pet Waste
- S442 BMPs for Labeling Storm Drain Inlets On Your Property
- S443 BMPs for Fertilizer Application
- S446 BMPs for Well, Utility, Directional and Geotechnical Drilling
- S447 BMPs for Roof Vents
- \*S451 BMPs for Building, Repair, Remodeling, Painting, and Construction
- S452 BMPs for Goose Waste

\*Represents BMPs previously included in the City of Olympia 2016 DDECM.

**Location in Draft:** Volume IV.

**Item 9. Wetlands Guidance:** Appendix I-C: Wetland Protection Guidelines and I-3.4.8 MR8: Wetlands Protection have been updated to require monitoring and modeling of high value wetlands, if the project proponent has legal access to them. The 2014 wetland guidance is retained, but refined, for modeling requirements for lower value wetlands (and high value wetlands that the project proponent does not have legal access to).

**Location in Draft:** Volume I Section I-3.4.8 and Volume I Appendix I-C.

## Other Updates

Other updates made to the 2019 Stormwater Management for Western Washington and proposed for implementation by Olympia include:

- Incorporation of UIC Program guidance. (See Volume I, Section I-4 UIC Program.)
- Expanded guidance for regional facilities. (See Volume I, Appendix I-D: Regional Facilities.)
- Guidance for stormwater control transfer programs. (See Volume I, Appendix I-E: Stormwater Control Transfer Program.)

## Revisions Made to the City of Olympia 2016 Drainage Design and Erosion Control Manual

In addition to the changes made to be equivalent to the 2019 Stormwater Management Manual for Western Washington explained above, Olympia is also proposing the following changes to its 2016 Drainage Design and Erosion Control Manual during this update cycle:

### General

To be consistent with Ecology, Olympia's term "Drainage Control Plan" (and "Abbreviated Drainage Control Plan") has been replaced with Ecology's term "Stormwater Site Plan".

### Volume I

To be consistent with Ecology, Olympia's wet weather limitations for land clearing (October 15 to April 1) have been revised to match Ecology's wet weather limitations (October 1 to April 30)

**Section I-3.7 Exemptions/Variations to the Core Requirements.** This section has been revised to be consistent with Ecology's language.

### Volume II

**Section II-2.4 Soils.** To clarify which soil type information governs in cases of conflict, the following new language has been added: "However, the DDECM overrides any conflicting soil type information".

**Section II-3.2 Construction Source Control Best Management Practices. BMP C120 Temporary and Permanent Seeding. Conditions of Use.** To be consistent with Ecology, Olympia has revised its July 1 to August 30 irrigation requirement from until 80 percent grass cover is established to 75 percent consistent with Ecology's language. And, Olympia has revised its October 1 to March 30 seeding requiring a cover of mulch or erosion control blanket until 80 percent grass cover is established to 75 percent consistent with Ecology's language.

**Section II-3.2 Construction Source Control Best Management Practices. BMP C125 Topsoiling/Composting. Design and Installation Specifications.** To be consistent with Ecology, Olympia has revised the dates for which different stockpiling of topsoil guidelines change from October 15 to April 1 and April 2 to October 14, to October 1 to April 30 and May 1 to September 30 consistent with Ecology's language.

**Section II-3.2 Construction Source Control Best Management Practices. BMP C151 Concrete Handling. Purpose.** To be clear that the BMP also covers the use of mortar, Olympia has included the following language: “This also includes slurry from mortar used for brick and tile work.”

**Section II-3.2 Construction Source Control Best Management Practices. BMP C153 Material Delivery, Storage and Containment.** To be consistent with Ecology, Olympia’s wet weather season (October 15 to April 1) has been revised to match Ecology’s wet weather season (October 1 to April 30).

**Section II-3.3 Construction Runoff Best Management Practices. BMP C120 Inlet Protection. Maintenance Standards.** To address removal of inlet protection, Olympia has added the following new language: “Remove inlet protection once the site has been stabilized following construction.”

**Section II-3.3 Construction Runoff Best Management Practices. BMP C233 Silt Fences.** To address removal of silt fences, Olympia has added new language requiring silt fences to be removed after construction is complete and the site is stabilized has been added.

**Section II-3.3 Construction Runoff Best Management Practices. BMP C240 Sediment Trap. Design and Installation Specifications.** Olympia has removed the following language: “If permanent runoff control facilities are part of the project, they should be used for sediment retention.”

**Section II-3.3 Construction Runoff Best Management Practices. BMP C253 pH Control for High pH Water.** To be consistent with Ecology, Olympia as removed this BMP.

**Appendix II-B Background Information on Chemical Treatment** has been removed from the Draft DDECM.

## Volume III

The following 2016 DDECM Volume III chapters have been eliminated, moved and/or replaced with Ecology’s language:

- Chapter 1 – Introduction
- Chapter 2 – Hydrologic Analysis

Portions of Chapter 3 (Flow Control Design) have been moved to other volumes in the Draft 2022 DDECM and some language has been eliminated.

Appendix item III-B (Western Washington Hydrology Model – Information, Assumptions and Computations Steps) and Appendix item III-C (Washington State Department of Ecology Low Impact Development Flow Modeling Guidance) have been removed from the Draft 2022 DDECM.

## Volume IV

For landscaping related Source Control BMPs, Olympia added the following new language in various locations as applicable:

- Avoid weed and feed products that contain a combination of fertilizer and selective herbicides.
- Per Olympia Municipal Code Chapter 18.32.225, within wellhead protection areas, only slow release fertilizers shall be applied for the life of the development at a maximum amount of 4 pounds of nitrate as Nitrogen annually and no more than 1 pound per application for every 1,000 square feet of turf grass. Only fertilizer formulas with a minimum of 50% water insoluble form of nitrogen are permitted for use. Approved water insoluble forms of nitrogen include sulfur and/or polymer coated fertilizers, Isobutylidene Diurea (IBDU), Methylene Urea and Ureaform, and organic fertilizers registered with Washington Department of Agriculture.

- Test soils to determine the correct fertilizer and lime application rates.
  - Evaluation of soil nutrient levels and pH through regular testing ensures the best possible efficiency and economy of fertilization.
  - Fertilization needs vary by site depending on plant, soil, and climatic conditions.
  - Choose organic fertilizers when possible.
  - For details on soils testing, contact the local Conservation District, a soils testing professional, or a Washington State University Extension office.

## Volume V

The following 2016 DDECM Volume V Chapters have been eliminated, moved and/or replaced with Ecology's language:

- Chapter 1 – Introduction
- Chapter 2 – Treatment Facility Selection Process
- Chapter 3 – Treatment Facility Menus
- Chapter 4 – General Requirements for Stormwater Facilities

**Section V-3 Dispersion BMPs.** Elements of the dispersion BMPs have been modified to reflect Ecology's language.

**Section V-5, BMP T7.20 Infiltration Trenches.** Olympia has included new guidance on infiltration galleries.

**Section V-5, BMP T7.30 Bioretention.** To be consistent with Ecology, Olympia has renamed it's T7.30 "Bioretention Cells, Swales, and Planter Boxes" to "Bioretention".

**Section V-5, BMP T7.50 Drywells.** To be consistent with Ecology, Olympia has added BMP T7.50.

**Section V-7, Biofiltration BMPs.** To be consistent with Ecology, Olympia has renamed it's BMP T9.40 from Basic Filter Strip" to "Vegetated Filter Strip".

**Section V-12.3, Other Detention Design Options.** To be consistent with Ecology, detention ponds, detention tanks and detention vaults have been moved from Volume III Flow Control Design and clearly labeled as a BMP as follows:

- BMP D1. Detention Ponds
- BMP D2. Detention Tanks
- BMP D3. Detention Vaults

Appendix Item V-B (Recommended modifications to ASTM D 2434 When Measuring Hydraulic Conductivity for Bioretention Soil Mixes) has been incorporated into Volume V, Section V-5, BMP T7.30.

Appendix Item V-C (Geotextile Specifications has been incorporated into Volume V, Section V-1.3.4.

Appendix Item V-D (Turbulence and Short-Circuiting Factor) has been incorporated into Volume V as Figure V.13.3.

Appendix Item V-E (Recommended Newly Planted Tree Species for Flow Control Credit) has been incorporated into Volume V, as Table V-11.3.

## Elements Remaining Unique to the City of Olympia

The City of Olympia 2016 DDECM included elements unique to Olympia. Items that continue to be unique to Olympia in the Draft 2022 DDECM are explained below.

### General

The document name continues to be “Drainage Design and Erosion Control Manual”.

Olympia continues to use the term “Core Requirement” rather than Ecology’s term “Minimum Requirement”.

Where appropriate, “local government” and “local jurisdiction” has been replaced with “City of Olympia”, “City” or “Olympia”.

The Public Works Director continues to be identified as the stormwater manual administrator.

The Draft 2022 DDECM continues to reference City of Olympia Engineering Design and Development Standards where appropriate.

Olympia continues to bold key requirements throughout the Draft 2022 DDECM.

The Draft 2022 DDECM continues to have language acknowledging that it has been adopted by ordinance and has the force of law.

### Volume I

**Section I-3.3 Applicability of the Core Requirements.** Olympia’s redevelopment threshold remains more stringent than Ecology’s. Ecology’s figure 1-3.2 Flow Chart for Determining Requirements for Redevelopment has been replaced with Olympia’s unique figure 1-3.2.

**Section I-3.4.1 CR1: Preparation of Stormwater Site Plans.** Olympia’s unique supplementation guidelines addressing City projects and scoping meetings remains in the Draft 2022 DDECM.

**Section I-3.4.2 CR2: Construction Stormwater Pollution Prevention Plan (C-SWPPP) Project Thresholds, C-SWPPP Elements.** Olympia’s unique language making it explicit that self-contained sites (those that discharge only to groundwater) must still comply with all elements with the exception of flow control remains in the Draft 2022 DDECM.

**Section I-3.4.4 CR4 Preservation of Natural Drainage Systems and Outfalls.** The following language unique to Olympia remains:

- Guidance specific to the Chambers Basin R-4CB zone and for evaluating and managing off-site drainage.
- Requirements for demonstrating that reasonable effort is made to obtain off-site drainage easements.

**Section I-3.4.5 CR5 On-site Stormwater Management.** The following language unique to Olympia remains:

- Reference to EDDS for Green Cove and Chambers Basin zoning districts
- Table I-3.1 refers to city limits rather than the UGA

- Table I-3.1 and Figure I-3.3 requires public roadway development and redevelopment to meet the LID performance standard using infiltration (BMP T5.13 and BMP T7.10 or BMP T7.20 or BMP T7.30) rather than permeable pavement (BMP T5.15). BMP T5.15 shall be used only for sidewalks.

**Section I-3.4.6 CR6 Runoff Treatment.** The following language unique to Olympia remains:

- An objective of preserving and protecting the water quality of the underlying drinking water aquifer and receiving surface water.
- The requirement for phosphorous control for projects that directly or via a conveyance system, discharge to Woodard Creek (and potentially the Deschutes River and Capitol Lake).

**Section I-3.4.7 CR7 Flow Control.** This section continues to have explicit language on the locations that are exempt from flow control requirements. (Projects that discharge to Capitol Lake/Deschutes River downstream of Tumwater Falls (Thurston County); or the marine waters of Budd Inlet at or below the ordinary high water.)

**Section I-3.5 Additional Requirements.** This section continues to have Olympia's financial liability and off-site analysis and mitigation requirements as required, when applicable.

**Section I-3.7 Exemptions/Variations to the Core Requirements.** This section continues to allow drainage manual administrator's decisions on applications to be appealed to the Hearing Examiner.

**Appendix.** Olympia has continued to exclude Ecology's list of flow control exempt waters throughout Western Washington from the Appendix item "Flow Control Exempt Receiving Waters", instead Olympia's flow control exempt waters have been added into Volume I, Section I-3.4.7 and the Appendix item references this location.

**Appendix.** Olympia has continued to include its unique Appendix item "Fee-in-Lieu Information (Olympia only)".

## Volume II

**Section II-2.1 and Section II-2.2.** Language which clearly states that a Construction Stormwater Pollution Prevention Plan is required for projects that result in 2,000 square feet or more of a new plus replaced hard surface area or disturb 7,000 square feet or more of land remains in the draft DDECM.

**Section II-2.4 Step 2: Prepare the C-SWPPP.** The following sentence remains in the draft DDECM: "Even if a site is self-contained (discharges only to groundwater), all elements, with the exception of Element #3 Control Flow Rates, shall apply and be implemented throughout construction."

**Figure II-3.2 Wheel Wash.** The Draft 2022 DDECM continues to include Olympia's standard notes for this figure.

**Section II-3.2 Construction Source Control Best Management Practices. BMP C120 Temporary and Permanent Seeding. Maintenance Standards.** The Draft 2022 DDECM continues to require reseeding any seeded areas that fail to establish at least 80 percent cover, rather than using Ecology's 75 percent cover requirement. And continues to include the statement: "If winter weather prevents adequate grass growth, this time limit may be relaxed at the discretion of the City of Olympia when sensitive areas would otherwise be protected."

**Section II-3.2 Construction Source Control Best Management Practices. BMP C121 Mulching. Design and Installation Specifications.** The Draft 2022 DDECM continues to include the requirement to always use 2-inch minimum mulch thickness.

**Section II-3.2 Construction Source Control Best Management Practices. BMP C126 Polyacrylamide (PAM) for Soil Erosion Protection.** The Draft 2022 DDECM continues to reference Olympia's Wellhead Protection Areas as a location the use of PAM may be denied.

**Section II-3.2 Construction Source Control Best Management Practices. BMP C154 Concrete Washout Area. Conditions of Use.** The Draft 2022 DDECM continues to include the following language: "If less than 10 concrete trucks or pumpers need to be washed out on-site, the washwater may be disposed of in a formed area waiting concrete or an upland disposal site where it will not contaminate surface or ground water. The upland disposal site shall be at least 50 feet from sensitive areas such as storm drains, open ditches, or water bodies, including wetlands."

**Section II-3.3 Construction Runoff Best Management Practices. BMP C240 Sediment Trap. Conditions of Use.** The Draft 2022 DDECM continues to include the following language: "Prior to leaving a construction site, stormwater runoff must pass through a sediment pond or trap or other appropriate sediment removal best management practice. Non-engineered sediment traps may be used on-site prior to an engineered sediment trap or sediment pond to provide additional sediment removal capacity." And, the following language: "Whenever possible, sediment-laden water shall be discharged into on-site, relatively level, vegetated areas. This is the only way to effectively remove fine particles from runoff unless chemical treatment or filtration is used. This can be particularly useful after initial treatment in a sediment trap or pond. The areas of release must be evaluated on a site-by-site basis in order to determine appropriate locations for and methods of releasing runoff. Vegetated wetlands shall not be used for this purpose. Frequently, it may be possible to pump water from the collection point at the downhill end of the site to an upslope vegetated area. Pumping shall only augment the treatment system, not replacement it, because of the possibility of pump failure or runoff volume in excess of pump capacity."

**Section II-3.3 Construction Runoff Best Management Practices. BMP C431 Sediment Pond. Conditions of Use.** The Draft 2022 DDECM continues to include the following language: "Prior to leaving a construction site, stormwater runoff must pass through a sediment pond or other appropriate sediment removal best management practice."

**Appendix II-A Required Standard Notes for Erosion Control Plans** continues to reflect Olympia's standards (rather than recommended standards from Ecology).

Olympia has continued to include its unique Construction Stormwater Pollution Prevention Plan Checklist in the Draft 2022 DDECM, this time as Appendix II-B.

## **Volume III**

**Section III-1.2 Choosing Your Runoff Treatment BMPs.** Olympia has continued to remove references to Ecology's Appendix item "Basic Treatment Receiving Waters" and the Appendix item itself since there are no basic treatment receiving waters within Olympia's jurisdiction.

**Section III-1.2 Choosing Your Runoff Treatment BMPs. Step 4: Determine if a Phosphorus Treatment BMP is Required.** Olympia has continued to include language that makes it explicit that phosphorus treatment is required for Woodard Creek and the Deschutes River and Capitol Lake.

**Section III-1.2 Choosing Your Runoff Treatment BMPs, Step 5: Determine if Enhanced Treatment is Required.** Olympia has continued to include language that extends the requirement for enhanced treatment to all development within the designated shoreline boundaries established in the City of Olympia Shoreline Master Program.

**Section III-1.2 Choosing Your Runoff Treatment BMPs, Step 5: Determine if Enhanced Treatment is Required.** Olympia has continued to include language that extends the requirement for enhanced treatment to all industrial, commercial, and multi-family development regardless of the proximity to fish-bearing streams

**Section III-1.2 Choosing Your Runoff Treatment BMPs, Step 5: Determine if Enhanced Treatment is Required.** Olympia has continued to include the following sentence: “To the extent feasible, at sites located within the shoreline designated boundaries, low impact development best management practices shall be used to achieve enhanced treatment.”

**Section III-2.1 An Overview of Hydrologic Analysis and Section III-2.2 Continuous Simulation Models.** Olympia has continued to include language which clarifies that the use of synthetically generated precipitation data cannot be used in lieu of recorded precipitation data.

**Section III-3 Stormwater Site Plans.** Olympia has continued to include detailed Stormwater Site Plan and Abbreviated Stormwater Site Plan submittal language. (Note: Language previously located in Volume I and termed “Drainage Control Plan” and “Abbreviated Drainage Control Plan”.)

## Volume IV

To provide greater detail to the user, Olympia has continued to include the following sections in the Draft 2022 DDECM:

- Section IV-1 How to Use this Volume
- Section IV-2 Stormwater Site Management Plans
- Section IV-3 Source Control of Pollution

**Section IV-4 Source Control BMPs Applicable (Mandatory) to All Sites. BMP S410 BMPs for Correcting Illicit Discharges to Storm Drains. Applicable Operational BMPs.** Language unique to Olympia continues to be included in the Draft 2022 DDECM.

**Section IV-5 Pollutant Source-Specific Activities and BMPs.** Olympia has continued to include section introductory language to provide greater detail to the user.

**Section IV-5 Pollutant Source-Specific Activities and BMPs. S406 BMPs for Streets and Highways. Applicable BMPs.** Olympia has continued to include the following language: “Select de and anti-icers that cause the least adverse environmental impact. Apply only as needed using minimum quantities.” And, “Where practicable use roadway deicers, such as calcium magnesium acetate, potassium acetate, or similar materials, that cause less adverse environmental impact than urea, and sodium chloride.

**Section IV-5 Pollutant Source-Specific Activities and BMPs. S415 BMPs for Maintenance of Public and Private Utility Corridors and Facilities. Applicable BMPs.** Olympia has continued to include the following language: “Within utility corridors, prepare maintenance procedures to minimize the erosion of soil. An implementation schedule may provide for a vegetative, gravel, or equivalent cover that minimizes bare or thinly vegetated ground surfaces within the corridor.”

**Section IV-6 General Source Control Best Management Practices.** Olympia has continued to include the following unique BMPs (renumbered from the 2016 DDECM) in the Draft 2022 DDECM:

- S102 Cover the Activity with a Roof
- S103 Cover the Activity with an Anchored Tarpaulin or Plastic Sheet
- S104 Pave the Activity Area and Slope to a Sump or Holding Tank
- S105 Surround the Activity Area with a Curb, Dike, or Berm or Elevate the Activity
- S106 Implement Integrated Pest Management Measures
- S107 Clean Catch Basins

**Section IV-7 Source Control Best Management Practices for Single-Family Residences.** Olympia has continued to include BMPs for single-family residences.

**Section IV-8 Maintenance Standards for Stormwater Facilities.** Olympia has continued to include a description of the minimum standards for inspection and maintenance of stormwater facilities.

**Miscellaneous BMPs.** The following Olympia-added BMPs remain in the Draft 2022 DDECM:

- Re-numbered S108 BMPs for Cleaning or Washing of Tools, Engines and Manufacturing Equipment
- Re-numbered S109 BMPs for Cleaning or Washing of Cooking Equipment
- Re-numbered S110 BMPs for Collection and Disposal of Wastewater in Mobile Interior Washing Operations
- Re-numbered S111 BMPs for Concrete and Asphalt Mixing and Production at Stationary
- Re-numbered S112 BMPs for Concrete Pouring, Concrete Cutting and Asphalt Application and Temporary Sites
- Re-numbered S113 BMPs for Manufacturing and Post Processing of Metal Products
- Re-numbered 420 BMPs for Painting, Finishing and Coating of Vehicles, Boats, Buildings and Equipment
- Re-numbered S114 BMPs for Agricultural Crop Production
- Re-numbered S115 BMPs for Storage and Treatment of Contaminated Soils
- (Re-numbered) S445 BMPs for Temporary Storage or Processing of Fruits or Vegetables
- (Re-numbered) S116 BMPs for Storage of Solid Wastes and Food Wastes
- (Re-numbered) S444 BMPs for Storage of Pesticides, Fertilizers, or Other Products that can Leach Pollutants
- (Re-numbered) S438 BMPs for the Demolition of Buildings
- (Re-numbered) S117 BMPs for Logging
- (Re-numbered) S451 BMPs for Building, Repair, Remodeling, Painting and Construction
- (Re-numbered) S118 BMPs for Mining and Quarrying of Sand, Gravel, Rock, Minerals, Peat, Clay and Other Materials

**Appendix.** The following Olympia-added Appendix items remain in the Draft 2022 DDECM:

- C1 & C2 – Residential/Commercial Pollution Source Control Program Template
- H1 & H2 – Residential/Corp Agreement to Maintain Stormwater Facilities Template
- I – Stormwater Facility Maintenance Programs Template
- J – Stormwater Facility Descriptions and Checklists
- K – Stormwater Facility Inspection Form and Log Sheet

## Volume V

**Executive Summary of Volume V.** Olympia has continued to include language stating that runoff from private property must be managed on private property. (Note: This is a new location for the language.)

**Executive Summary of Volume V.** Olympia has continued to include language cautioning against installation of high maintenance stormwater treatment facilities. (Note: This is a new location for the language.)

**Section V-4 Roof Downspout BMPs, BMP T5.10A: Downspout Full Infiltration Systems.** Olympia has included BMP T5.10A from the 2016 DDECM, including its unique Figures V-4.1 and V-4.2.

**Section V-5.2 Infiltration BMP Design Steps. 5. Determine the Design Infiltration Rate.** Olympia has continued to include language requiring infiltration rates for facilities designed to achieve CR7 (Flow Control) be determined using grain size analysis methods.

**Section V-5.4 Determining the Design Infiltration Rate of the Native Soils.** Olympia has continued to include language requiring infiltration rates for facilities designed to achieve CR7 (Flow Control) be determined using grain size analysis methods.

**Section V-5.6 Site Suitability Criteria (SSC), SSC-1 Setback Criteria.** Olympia has continued to include setback language unique to Olympia.

**Section V-5.6 Site Suitability Criteria (SSC), SSC-9 Contingency Planning.** Olympia has continued to include its unique contingency planning language.

**Section V-5.6 Site Suitability Criteria (SSC), SSC-10 Verification Testing of the Completed Facility.** Olympia has continued to include its unique verification testing language.

**Section V-6.1 Introduction to Filtration BMPs, Filtration with Media Filter Drains.** Olympia has continued to include language strongly discouraging the use of sand filters.

**Section V-6.1 Introduction to Filtration BMPs, Performance Objectives.** Olympia has continued to include performance objectives.

**Section V-8 Wetpool BMPs, BMP T10.10 Wetponds – Basic and Large, Applications and Limitations.** Olympia has continued to include the following language: “Wetponds may be single-purpose facilities, providing only runoff treatment, or they may be combined with a detention pond to also provide flow control. If combined, the wetpond can often be stacked under the detention pond with little further loss of development area. See BMP T10.40 for a description of combined detention and wetpool facilities.”

**Section V-5 Infiltration BMPs, BMP T7.30 Bioretention.** Olympia has continued to exclude guidance for local governments for designation of geographic boundaries within which bioretention cells, swales, or planters may be designated as infeasible.

**Section V-5 Infiltration BMPs, BMP T7.30 Bioretention.** Olympia has continued to include language requiring infiltration rates for facilities designed to achieve core requirement #7 be determined using grain size analysis method.

**Section V-5 Infiltration BMPs, BMP T7.30 Bioretention.** Olympia has continued to include language requiring infiltration rate verification testing for facilities designed to achieve core requirement #7.

**Section V-5 Infiltration BMPs, BMP T7.30 Bioretention.** Olympia has continued to include language that clarifies freeboard requirements for bioretention cells smaller than 1,000 square feet and how freeboard is measured.

**Section V-5 Infiltration BMPs, BMP T7.30 Bioretention.** Olympia has continued to include language directing designers of bioretention facilities to be located within the public right-of-way to use the planting palette found in the City of Olympia Engineering Design and Development Standards.

**Section V-12.3 Other Detention Design Options, BMP D1: Detention Ponds.** Olympia has continued to include language that requires one foot of dead storage below outlets to allow for sediment build up.

**Section V-12.3 Other Detention Design Options, BMP D1: Detention Ponds.** Olympia has continued to include language requiring a 5-foot wide bench between ponds and the right-of-way to allow for vegetated screening.

**Section V-12.3 Other Detention Design Options, BMP D1: Detention Ponds.** Olympia has continued to include language restricting the use of walls in ponds and identifying design requirements for walls.

**Section V-12.3. Other Detention Design Options, BMP D1: Detention Ponds.** Olympia has continued to include language requiring ponds to be landscaped.