City of Tumwater Drainage Design and Erosion Control Manual

July 1, 2022 Updates

(National Pollutant Discharge Elimination System Permit Phase II Appendix 10)

Ecology determined that the following list 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 (SWMMWW).

Requirement #1:
Update Text: Text throughout the SWMMWW 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.

Updated throughout Volume III

The new WWHM2012 Version 4.2.18 (August 18, 2021) is updated for Western Washington Hydrology Model that includes several new elements related to Low Impact Development (LID), 15-minute time steps, and incorporated the van Genuchten algorithm for modeling bio-retention. See attached link for more information:

https://ecology.wa.gov/DOE/files/fd/fd178640-09c8-400b-ac0b-7071fd2ed985.pdf

The van Genuchten is an equation that is used to evaluate water movement through soil.

Requirement #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.

Covered in Volume I Section 2.3.2 Redevelopment

Redevelopment projects have the same requirements as new development projects in order to minimize the impacts from new surfaces. To not discourage redevelopment projects, replaced surfaces are not required to be brought up to new stormwater standards unless the noted cost or space thresholds are exceeded. As long as the replaced surfaces have similar pollution-generating potential, the amount of pollutants discharged shouldn't be

significantly different. However, if the redevelopment project scope is sufficiently large that the cost or space criteria noted above are exceeded, it is reasonable to require the replaced surfaces to be brought up to current stormwater standards. This is consistent with other utility standards.

Requirement #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.

Updated in Volume I Section 2.3.2 – Redevelopment

This guideline helps mitigate stormwater quality and quantity for new and/or redevelopment sites with topographic constraints. Ecology allows that water quality and quantity mitigations can be accomplished in an area off-site. In order to archive this objective, the equivalent area(s) must drain to the same receiving water body as the site(s).

Requirement #4:
Minimum Requirement 2: The 13 Elements in Minimum Requirement 2 (Construction Stormwater Pollution Prevention) have been updated to incorporate changes that were made to the 2015-2020 Construction Stormwater General Permit.

Updated throughout Volume II

SWPPP Elements have been updated to align with the Construction Stormwater General Permit:

a. *SWPPP Element #3 - Control Flow Rates (pg. 2-14):*
   Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.
b. *SWPPP Element #9 - Control Pollutants (pg. 2-20):*
   i. *Include Vol. IV Section A2.4 Mobile Fueling of Vehicles and Heavy Equipment as a suggested BMP*
   ii. *Require spill kits with trained personnel to conduct re-fueling operations.*
   iii. *Washout of small concrete handling equipment into pre-formed area awaiting concrete where it will not contaminate surface or ground water.*
   iv. *Include food grade vinegar to adjust pH.*
   v. *Wastewater management for water-based shaft drilling for construction activities.*
c. *SWPPP Element #11 - Maintain BMPs (pg. 2-23):*

Remove language regarding "Some temporary Construction SWPPP BMPs are biodegradable and designed to remain in place following construction, such as compost socks."

d. *SWPPP Element #12 - Manage the Project (pg. 2-27):*
Define "significant amount": Appropriate BMPs or design changes shall be implemented as soon as possible whenever inspection and/or monitoring reveals that the BMPs identified in the Construction SWPPP are inadequate, due to the actual discharge of/or potential to discharge ~~a significant amount of~~ any pollutant that will cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), groundwater quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the Federal water quality criteria applicable to Washington. (40 CFR Part 131.45).

Requirement #5:
Minimum Requirement 5: Minimum Requirement 5 (On-Site Stormwater Management) has been updated to require BMP T5.13 (Soil Quality and Depth) when choosing to use the LID Performance Standard to meet Minimum Requirement 5 for Minimum Requirement 1-5 projects.

Covered in Volume I Section 2.4.6 – Minimum Requirement #5: On-Site Stormwater Management

Minimum Requirement #5 includes post construction soil quality and depth as a required BMP and references See Vol. V Chapter 6 (Ecology BMP T5.13).

Requirement #6:
Minimum Requirement 7: Minimum Requirement 7 (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.

Does not apply

No stormwater discharges to marine waters within the City of Tumwater. In the event that water body designations change within the City of Tumwater, we will re-evaluate Minimum Requirement 7.

Requirement # 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.

Updated in Vol II, BMP C154 and Vol. IV Sections A3.1 and A3.2.

Auxiliary concrete truck components (e.g. chutes and hoses) and small concrete handling equipment (e.g. hand tools, screeds, shovels, rakes, floats, trowels, and wheel-barrows) may be washed into formed areas awaiting concrete pour.

Requirment #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:

BMPs that are currently covered in Volume IV:

- S435 BMPs for Pesticides and an Integrated Pest Management Program *BMP A3.6, A3.11, S.8 6.5*
- S443 BMPs for Fertilizer Application *BMP A3.6*
- S444 BMPs for the Storage of Dry Pesticides and Fertilizers *BMP A4.10*
- S445 BMPs for Temporary Fruit Storage *BMP A4.3*
- S438 BMPs for Construction Demolition *BMP A5.1*
- S451 BMPs for Building, Repair, Remodeling, Painting, and Construction *BMP A5.2*
- S440 BMPs for Pet Waste *BMP 6.8*
- S442 BMPs for Labeling Storm Drain Inlets On Your Property *Appendix IV-D*

BMPs that were updated in Volume IV:

- S439 BMPs for In-Water and Over-Water Fueling *BMP A2.5 (new)*
- S449 BMPs for Nurseries and Greenhouses *BMP A3.12 (new)*
- S450 BMPs for Irrigation *BMP A3.13 (new)*
- S446 BMPs for Well, Utility, Directional and Geotechnical Drilling *BMP A3.14 (new)*
- S434 BMPs for Dock Washing *BMP A7.16 (new)*
- S441 BMPs for Potable Water Line Flushing, Water Tank Maintenance, and Hydrant Testing *BMP A7.17 (new)*
- S436 BMPs for Color Events *BMP A7.18 (new)*
- S447 BMPs for Roof Vents *BMP A7.19 (new)*
- S452 BMPs for Goose Waste *BMP A7.20 (new)*

Requirement #9
Wetlands Guidance: Appendix I-C (Wetland Protection Guidelines) and Minimum Requirement 8 (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).

Updated in Vol. 1 Section 2.4.9 - Minimum Requirement #8: Wetlands Protection

Updated Minimum Requirement #8 with flow chart for determining wetland protection level requirements and reference to Appendix I-C – Wetland protection Guidelines in Volume I of the 2019 Stormwater Management Manual for Western Washington (SWMMWW).

Other Drainage Design and Erosion Control Manual updates:

1. Stormwater Bonds:

Updated in Vol 1 Ch. 2.4.11 – Minimum Requirement #10: Financial Liability *Stormwater Bond amount changed from 15% to 25% of stormwater construction costs.*

2. Cattail maintenance threshold in wet ponds.

Updated throughout Stormwater Facilities Maintenance Guide *- Cattail maintenance is required when cattails exceed 25% of surface area of the pond.*

3. Remove dead vegetation from stormwater facilities.

Updated throughout Stormwater Facilities Maintenance Guide *– All dead and dying vegetation shall be removed from all stormwater facilities, including clippings form vegetation pruning. Align with Tumwater Municipal Code 8.04.040 (C)(3).*

4. Maintain grasses and weeds in all stormwater facilities to no more than one foot in height.

Updated throughout Stormwater Facilities Maintenance Guide *– Overgrow, unkept vegetation including grasses and weeds shall be maintained to a height of no more than one foot. Align with Tumwater Municipal Code 8.04.040(C)(3).*

5. Maintain catch basins when sediment is greater than 1/3 of the sump capacity.

Updated in Volume 4, Chapter 5, Section S9 and throughout Stormwater Facilities Maintenance Guide *– Clean catch basins when the depth of deposits reaches 33 percent of the sump depth as measured from the bottom of basin to the invert of the lowest pipe into or out of the basin.*

6. Require infiltration facilities to provide a minimum of 6 feet of separation above seasonal high groundwater.

Updated in Volume V Section 2.2.2 Step 2: Minimum Requirements for Infiltration Facilities *– To maintain consistency with Groundwater Ordinance O2005-003, maintain a minimum separation of six feet between the bottom elevation of the infiltration facility and the season high groundwater table.*