

City of Tacoma Stormwater Management Manual Update

July 2020

Welcome – Meet the Presentation Team



Mieke Hoppin - City of Tacoma, Environmental Services (ES)

- Stormwater Management Manual Update Lead
- Today: Main Presenter



Merita Trohimovich – ES

- Principal Engineer – NPDES Group
- Today: Presentation Facilitator



Aaron Copado and Leah Michaelson –ES

- Education and Outreach Specialists
- Today: Technical Help – Managing Chats, QA, Generally Being Super Helpful



Joy Rodriguez, Planning and Development Services

- Professional Engineer – Site and Building Group

Housekeeping

- You have been muted – feel free to sing along...
- Technical Issues
 - Use the Chat Feature
- Questions
 - Use the Q&A Feature
- Patience is Appreciated
 - Technical issues, short delays, barking dogs, crying babies, chirping birds, helicopters, etc., etc., etc. are just one of the many fun part of the presentation!
- Restrooms, Snacks, Drinks, Time to Shift the Laundry...
 - Just kidding...

Why are we here? Big Picture.

- The Clean Water Act prohibits anybody from discharging pollutants through a point source without an NPDES permit.
- The City of Tacoma has a Phase I Municipal Stormwater Permit that allows the City to discharge stormwater to receiving waterbodies.
- The Permit is issued by the Washington State Department of Ecology
- The Permit requires a “program to prevent and control the impacts of runoff from new development, redevelopment, and construction activities.
- The City has elected to provide a Stormwater Management Manual equivalent to the Washington State Department of Ecology’s July 2019 Stormwater Management Manual for Western Washington.
- The SWMM helps ensure infrastructure that is safe, effective, efficient, economical, and sustainable.

Where are we?

October 1995 Manual

- Developed for 1995 NPDES Permit (Equivalent to Ecology's 1992 Manual)

January 2003 Manual

- Developed for extension of 1995 NPDES Permit (Equivalent to Ecology's 2001 Manual)

September 2008 Manual

- Developed for 2007-2012 NPDES Permit (Equivalent to Ecology's 2005)

February 1, 2012 Manual

- Developed in response to local community concerns and questions (developers, engineers, City staff).

January 2016 Manual

- Developed for 2013-2018 NPDES Permit

July 2016 Manual – Current Version

- Errata to January 2016 Version

July 2021 Manual

- In development for 2019-2024 NPDES Permit
- Intent to be equivalent to Ecology 2019 SWMMWW
- Submitted for equivalency review on July 1, 2020
 - Available for public review through July 31
- Must be adopted by July 1, 2021

Questions? Please use Q&A. And a Joke!!

Q. What is the difference between an introverted engineer and an extroverted engineer?

A. An introverted engineer looks at their shoes when they're talking to you, an extroverted engineer looks at your shoes when they're talking to you.

Proposed Updates Types

- Permit Compliance
 - Additional information in Permit Fact Sheet
- Changes to meet Ecology intent
- Updates for Clarity – New Layout!
- Mistakes – seems impossible but true
- No longer applicable.

Proposed Updates – Permit Compliance

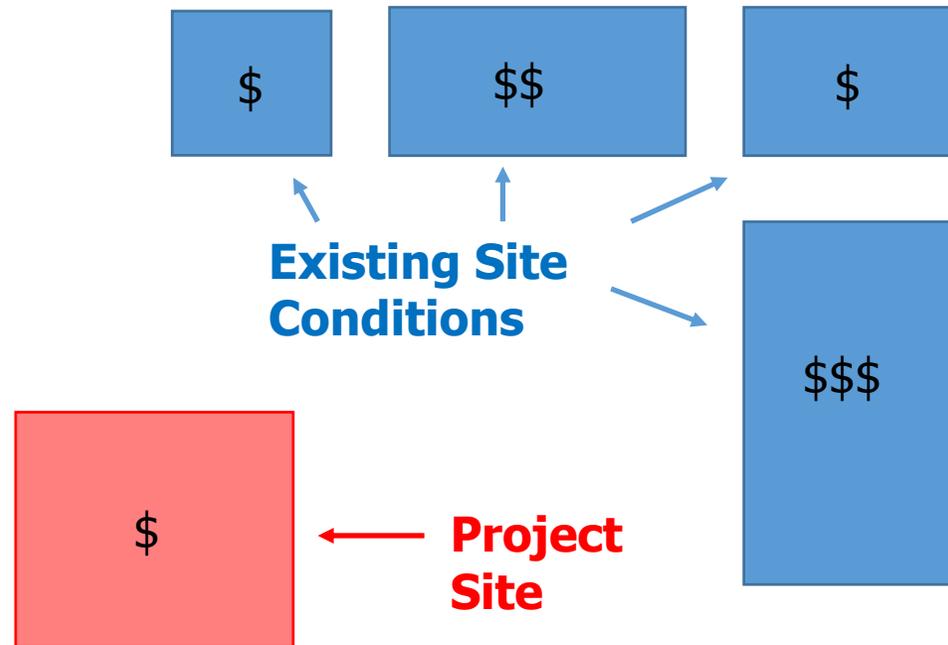
- Continuous Simulation Modeling
 - Requires the use of modeling software that:
 - Can directly model BMPs that may be used for Low Impact Development
 - Have 15-Minute Timesteps
 - Incorporates the van Genuchten algorithm to model bioretention.
 - COT SWMM allows the use of Ecology-approved models – which currently include:
 - WWHM
 - MGSFlood – Limited Approval – Not Allowed for Bioretention Modeling

Proposed Changes – Permit Compliance

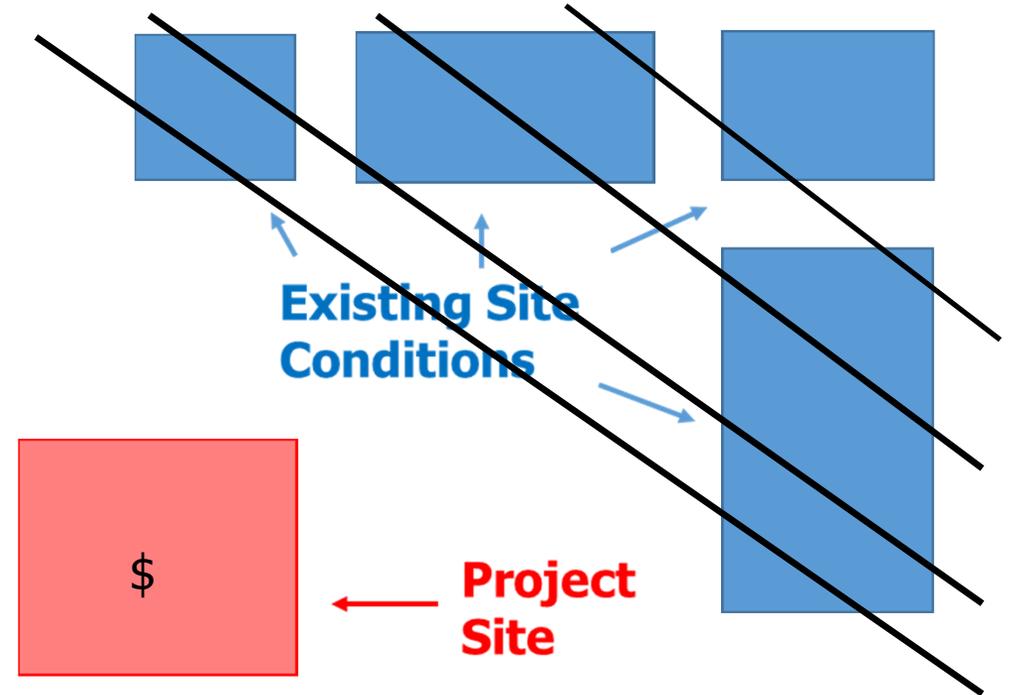
- Replaced Hard Surfaces Redevelopment Thresholds
 - Updates to require the project proponent to compare the value of the proposed improvements to the value of the Project Site (limits of disturbance) improvements rather than Site (entire parcel) improvements.
 - Other types of redevelopment projects shall comply with all the MRs for the new and replaced hard surfaces and the converted vegetation areas, if for commercial and industrial projects, the valuation of the proposed improvements, including interior improvements, exceeds 50% of the assessed value of the existing Site improvements.
 - Reason: To ensure that projects that create impacts are mitigating for those impacts appropriately.

Replaced Hard Surface Redevelopment

Current SWMM



2021 SWMM



Compare \$ to \$\$\$\$\$\$\$

Proposed Changes – Permit Compliance

- Minimum Requirement #2
 - Updates to meet changes made to the Construction Stormwater General Permit

Proposed Changes – Permit Compliance

- Minimum Requirement #5

- Updates to ensure BMP L613: Post Construction Soil Quality and Depth is required when utilizing the LID Performance Standard
- Updated whole section to meet Ecology's intent creating 3 Lists for List Approach – similar to Ecology.
 - Discharges to Flow Control Exempt Waterbodies (includes salt waterbodies) now have a required order of preference for choosing BMPs (previously you could pick any from list as first choice). Example Below for Roofs:
 1. Downspout Full Infiltration
 2. Downspout Dispersion
 3. Perforated Stub-Outs

Proposed Changes – Permit Compliance

- Minimum Requirement #7

- Updates to ensure TDAs discharging to marine waterbodies meet all requirements of flow control exempt waterbodies before it is determined that flow control is not required.
 - Requirements include: making sure stormwater is not directed away from certain streams and wetlands or if it is it is directed in a way that maintains wetland hydrology; there is a manmade conveyance system that extends to the ordinary high water line, the conveyance system has sufficient hydraulic capacity to convey discharges, erodible elements of the system are stabilized
- Added language that the entire City of Tacoma system has sufficient hydraulic capacity for this section only.
 - Additional Protective Measure – Infrastructure Protection still requires projects that impact the system to model for capacity in certain situations.

Proposed Changes – Permit Compliance

- Concrete Washout BMP
 - Update to clarify that auxiliary concrete truck components and small concrete handling equipment may be washed into formed areas awaiting pour while concrete truck drums must be washed offsite or into a concrete washout area.

Proposed Changes – Permit Compliance

- Source Control BMPs Added
 - Dock Washing
 - Storage of Dry Pesticides
 - Nurseries and Greenhouses
 - Irrigation
 - In-Water and Over-Water Fueling
 - Color Events
 - Pet Waste
 - Well, Utility, Directional and Geotechnical Drilling
 - Roof Vents
 - Goose Waste

Proposed Changes – Permit Compliance

- Wetlands Guidance

- Changes to require monitoring and modeling of high value wetlands.
- New requirements will require knowing wetland type for determining modeling and mitigation requirements (required wetland delineation report). Level of Wetland Protection is based on:
 - Wetland Category into which TDA discharges.
 - Whether or not the TDA triggered MR#7 – Flow Control.
 - Whether or not the wetland is a depressionnal or impounded wetland.
 - Whether or not the project proponent has legal access to the wetland.
 - The wetland habitat score.
 - Whether or not the wetland provides habitat for rare, endangered, threatened, and/or sensitive species, and
 - Whether or not there is a presence of a breeding population of native amphibians.

Proposed Changes – Ecology Intent

- Changes throughout entire Manual to mirror Ecology language or revise language to meet Ecology's intent. These are mainly items Ecology updated for clarity. Below is one example:
 - Pavement Maintenance Exemption:
 - Resurfacing by upgrading from dirt to gravel, asphalt, or concrete.
 - Resurfacing by upgrading from dirt to gravel, bituminous surface treatment, asphalt, or concrete.

Proposed Changes – Ecology Intent

- Oil Control Threshold Change
 - Areas of commercial or industrial sites subject to an expected average daily traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area, or 300 total trip ends per day.
 - 300 total trips ends per day helps ensure larger buildings are included in the oil control threshold

Proposed Changes – Clarity and Grammar

- Changes made throughout manual to clarify language.
- Changes made to move sections for ease of use.
- Changes made to update website links, fix typos, shorten run-on sentences, etc.

Proposed Change – New Layout

Volume 1 – Minimum Requirement and Additional Protective Measures

- This includes a description of watersheds, how to determine MRs, and what the MRs are.

Volume 2 – Construction Stormwater Pollution Prevention

- Mostly the same as the old Volume 2 except what is required in a SWPPP was moved to documentation

Volume 3 – Source Control

- Similar to current Volume 4.

Volume 4 – Preserving Drainage Patterns and Outfalls

- Short volume that reiterates the MR and provides more insight into what is required for compliance.

Volume 5 – Onsite Stormwater Management

- Short volume that reiterates the MR and provides a list of BMPs that can be used to meet this MR. A portion of the current Volume 3.

Proposed Change – New Layout

Volume 6 – Stormwater Treatment

- Short volume that reiterates the MR and provides a list of BMPs that can be used to meet the MR for each treatment type. This was a part of the old Volume 5.

Volume 7- Flow Control

- Short volume that reiterates the MR and provide a list of BMPs that can be used to meet the MR. This was a part of the old Volume 3.

Volume 8 – Wetlands Protection

- This was in Volume 1 as an Appendix.

Volume 9 – Operation and Maintenance

- This was in Volume 1 as an Appendix.

Volume 10 – Stormwater Conveyance Design and Protection

- This was part of Volume 3 – it is City specific requirements.

Proposed Change – New Layout

Volume 11 – Best Management Practices Library

- This is a volume that contains the BMPs that can be used to comply with MR#5, MR#6, MR#7, and MR#8. These BMPs were previously in Volumes 3, 5, and 6.

Volume 12 – BMP Resources

- Items that may be applicable to any BMP type (ex. Modeling standards) – it was previously in Volumes 3 and 5.

Volume 13 – Documentation

- Was Volume 1, Chapter 4 and Volume 2 that describe the information you need to submit to the City for review.

Volume 14 – Easements, Access, and Dedicated Tracts

- This was in Volume 3 – easements, access apply to many scenarios.

Volume 15 – Glossary

Proposed Changes – City Changes

- Only 9 Minimum Requirement
- One Additional Protective Measure – Infrastructure Protection (Was MR#10)
 - Updated so City of Tacoma makes determination of mitigation needs.
- New BMPs
 - Portable Sediment Tank
 - Discharge to Wastewater System
 - Rooftop Dog Run
- Updates throughout that clarify language.

More to Come Later...

- Stormwater Site Plan Templates
- Calculation Spreadsheets
- NPDES Compliance Map Layers
- ??? – Ideas
 - Please include ideas for helpful documents in review comments.

Questions? Please use Q&A Button.
And a Joke!

Q. Why did the engineering student leave class early?

A. She was getting a little ANSI!

Who's Excited to Review This???!?

What Can I Review?

- Clean Version
- Edited Version
 - Color Coded!
- Table 10.1
- Table 10.2

Shout Out

- Huge Thanks to AHBL who developed review documents.

Tracked Changes Version

- Color Code
 - Red – Change Required By Permit
 - Pink – Change to meet Ecology's Intent
 - Orange – New Language – City of Tacoma Specific (different than Ecology)
 - Purple – New or revised language for clarity and moved language for clarity.
 - Blue - Grammar
 - Grey – No Longer Needed (Does not Help Clarify)
 - Yellow – Updates Pending (ex. Old maps that need to be updated)

Color Vision Deficient? Let us know ASAP and we will try our best to accommodate.

Tables 10.1 and 10.2

- Tables as required in the NPDES Phase I Permit
- Table 10.1 – Enforceable Document Updates to Match Ecology's Significant Changes (Red Color Code)
- Table 10.2 – Additional Changes (Pink, Purple, Orange)

Note – tables do not show every change just those changes the City deemed necessary to show Ecology for equivalency review.

TMC 12.08 Code Updates

- Very minor changes needed for Permit compliance
 - Changing from term “water quality” to “stormwater treatment” for MR #6,
 - Added definition for stormwater treatment and flow control BMPs/facilities
- As a separate project, the City has been working on a complete 12.08 code revision for clarity.
 - Existing TMC 12.08 contains wastewater and surface water/stormwater
 - TMC 12.08A, 12.08B, 12.08C, 12.08D have been created to separate Administrative Provisions, WW Pretreatment, WW and SW.
 - Many updates to language for clarity

How to Submit Comments

- Visit www.cityoftacoma.org/stormwatermanual for link to the Draft Documents, this presentation, comment template, and additional information.
- Use the Comment Template which includes
 - Document being reviewed (edited version, clean version, Table xx)
 - Volume and Page Number in 2021 Draft Version
 - Review Comment
 - Proposed Change (if possible)
- Submit Comments to swmupdates@cityoftacoma.org
- Comment period ends July 31, 2020.
- Questions or issues please email swmupdates@cityoftacoma.org or call (253)502-2105.

Questions? Please use Q&A. Final Joke!

Q. What do nuclear engineers like to eat?

A. Fission Chips

Thank you for listening in (and singing along).

- www.cityoftacoma.org/stormwatermanual
- swmupdates@cityoftacoma.org
- Mieke Hoppin – (253) 502-2105