

Ecology Updates Stormwater Management Manual for Western Washington

On August 1, 2012, the Washington Department of Ecology (Ecology) released the 2012 Stormwater Management Manual for Western Washington (Manual).

The Manual provides guidance on the measures necessary to control the quantity and quality of stormwater. Local municipalities use the Manual to set stormwater requirements for new development and redevelopment projects. Land developers and engineers use the Manual to design permanent stormwater control plans, create construction stormwater pollution prevention plans, and to determine stormwater infrastructure needs. Businesses use the Manual to help design their stormwater pollution prevention plans.

The Manual represents years of work and learning about new science and new Best Management Practices (BMPs). It also reflects changes in several National Pollutant Discharge Elimination System (NPDES) stormwater general permits.

Areas of change in Manual

Ecology last revised the Manual in 2005. The 2012 Manual contains revisions in the following areas:

- Low impact development (LID) requirements for new development and redevelopment.
- Revised guidance on designing infiltration facilities.
- New and revised stormwater source control and treatment BMPs.
- New and revised construction BMPs.
- Western Washington Hydrology Model (WWHM) update and modeling guidance.

To help reviewers understand these and other proposed Manual changes, Ecology compiled a table listing the location, change description, and reasons for the changes. (www.ecy.wa.gov/programs/wq/stormwater/manual/changechart.pdf). The table indicates changes tied directly to language from one of the NPDES general permits.

MORE INFORMATION

Download the 2012 Manual

<https://fortress.wa.gov/ecy/publications/summarypages/1210030.html>

For more information on the 2012 Manual

www.ecy.wa.gov/programs/wq/stormwater/manual.html

NPDES general permits that reference the Manual in their requirements:

- Municipal Stormwater General Permits.
- Construction Stormwater General Permit.
- Industrial Stormwater General Permit.
- Sand and Gravel General Permit.
- Boatyard General Permit.



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Special accommodations

If you need this document in a format for the visually impaired, call the Water Quality Program at 360-407-6600.

Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 877-833-6341.

Low impact development

Low impact development (LID) stormwater designs mimic natural drainage processes by using stormwater site design and best management practices that retain vegetation, limit impervious surfaces, and infiltrate runoff on-site.

Ecology primarily revised the Manual to include LID stormwater techniques in new development and redevelopment. Ecology made the LID revisions based on rulings by the Pollution Control Hearings Board, after consulting with LID advisory committees, and after providing opportunities for public input. The Manual update also supports the new LID requirements in the Western Washington Municipal Stormwater Permits.

The Manual now includes increased requirements to manage stormwater on-site through either use of listed LID BMPs, or the achievement of an LID performance standard. Development sites in urban areas are subject to feasibility review that can lessen the need to implement LID, such as where soils are too poor to soak up the runoff.

The majority of changes made to the Manual for LID requirements are found in Volume I, Chapters 2 and 3. Design criteria and other details for LID BMPs are primarily in Chapter 5 of Volume V.

New and revised construction BMPs

Volume II of the Manual is devoted to stormwater effects and controls associated with construction activities. Ecology primarily revised Volume II of the Manual to match language in the Construction Stormwater General Permit.

Ecology also revised several construction stormwater BMPs for clarity, removed BMPs that were not working in the field, and added new construction BMPs.

Revised guidance on designing infiltration facilities

When it rains, some stormwater soaks into the ground. The soil infiltration rate tells stormwater system designers just how much, and how quickly, the ground will soak up stormwater. From this information, stormwater designers determine how big to build stormwater facilities and can estimate how much stormwater bioretention facilities and permeable pavements can infiltrate.

Volume III of the Manual describes revised procedures for design of infiltration facilities, bioretention facilities, and permeable pavements, including the methods that designers may use to determine infiltration rates.

Since the infiltration rate is critical in determining the size and function of stormwater facilities, Ecology revised Volume III to limit its recommended methods for determining infiltration rates.

The changes in Volume III aim to bring consistency to infiltration rate determinations and ensure that stormwater facilities are built correctly.

New and revised stormwater source control and treatment BMPs

BMPs are the method by which the Manual controls the adverse impacts from quality and quantity of polluted stormwater. Source control BMPs attempt to prevent pollutants from entering stormwater. Treatment BMPs attempt to remove pollutants from stormwater.

Volume IV of the Manual primarily focuses on source control BMPs and how businesses can prevent stormwater from becoming polluted. Ecology revised Volume IV to clarify several BMPs and to coordinate with the Industrial Stormwater General Permit and Boatyard General Permit.

Volume V of the Manual contains runoff treatment BMPs. Ecology revised this volume to clarify BMPs and to remove BMPs that lacked clear design criteria. Ecology also added guidance for treatment BMPs, especially BMPs used for LID, such as bioretention and dispersion BMPs.

Volume V also discusses emerging technologies within the stormwater field. Ecology added guidance in Volume V so readers may learn about Ecology's role in approving new stormwater technologies and how to submit new technologies for Ecology to review.

Western Washington Hydrology Model update and modeling guidance

Designers and engineers use the Western Washington Hydrology Model (WWHM) to design stormwater systems throughout western Washington.

Ecology is updating the WWHM to add modeling capability for LID techniques. The 2012 updates to WWHM will allow users of the program to design LIDs and demonstrate compliance with the new LID standard.

The update will also add modeling capability for the revised wetlands protection guidance in Volume I, and make WWHM compatible with the Windows 7, 64-bit version operating system. Ecology plans to offer training on the updated WWHM.

Relationship to the NPDES Stormwater General Permits

The Manual is a guidance document. By itself it is not a legally enforceable document. However, several of the NPDES stormwater general permits do require use of parts of the Manual.

The changes to the Manual affect Western Washington permittees under the different NPDES Stormwater general permits at different times. This table shows when Ecology expects these changes to take effect after the issuance of the final Manual in the summer of 2012.



Western Washington permittees covered under the following permits will be affected:	When the 2012 SWMMWW takes effect for each permit:
Municipal Stormwater Permits	According to the implementation schedules of each permit.
Industrial Stormwater General Permit (ISGP)	Possibly, upon reissuance of the ISGP.
Construction Stormwater General Permit (CSWGP)	Possibly, upon reissuance of the CSWGP.
Sand and Gravel General Permit	Possibly, upon reissuance of the Sand and Gravel General Permit.
Boatyard General Permit	Possibly, upon reissuance issuance of the Boatyard General Permit.

Western Washington municipalities not covered under a general stormwater permit often use the Manual. Check with your city or county to find out if it uses the Manual and for possible adoption dates.

For more information

To view the Manual or for more information go to:
www.ecy.wa.gov/programs/wq/stormwater/manual.html

If you have questions on the Manual, contact Carrie Graul at carrie.graul@ecy.wa.gov, or 360-407-7221