



# **Stormwater Management Manual for Western Washington**

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**Volume I - Minimum Technical Requirements  
and Site Planning**

**Volume II - Construction Stormwater Pollution Prevention**

**Volume III - Hydrologic Analysis and  
Flow Control Design/BMPs**

**Volume IV - Source Control BMPs**

**Volume V - Runoff Treatment BMPs**

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## **Executive Summary of 2012 Revisions**

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

The greatest use of the 2005 SWMMWW has been through National Pollutant Discharge Elimination System (NPDES) stormwater permits. The Municipal Stormwater General Permits for western Washington incorporate and reference the SWMMWW. The Industrial Stormwater General Permit, Construction Stormwater General Permit, Boatyard General Permit, and the Sand and Gravel General Permit reference the SWMMWW. Since 2005, Ecology has reissued or issued for the first time all of these NPDES stormwater permits. The 2012 revisions to the SWMMWW will help permittees comply with these permits.

The method by which this manual controls the adverse impacts from quality and quantity of stormwater is primarily through the application of Best Management Practices. Ecology has revised many of the BMPs from the 2005 SWMMWW to improve their effectiveness for protecting water quality and to meet the intent of the anti-degradation provisions of the water quality standards.

In addition, Ecology revised this manual to include low impact development (LID) related definitions, requirements, and an LID performance standard. 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.

Other major changes include revised guidelines on protecting wetlands and designing infiltration facilities, and numerous minor revisions for clarity.

### **How to Find the Stormwater Management Manual on the Internet**

The 2012 Stormwater Management Manual for Western Washington is available on Ecology's website: <http://www.ecy.wa.gov/programs/wq/stormwater/manual.html>

### **How to Find Corrections, Updates, and Additional Information**

With a publication of this size and complexity there will inevitably be errors that must be corrected and clarifications that are needed. There will also be new information and technological updates. Ecology intends to publish corrections, updates and new technical information on our Stormwater Management Manual website. Ecology will not use the website to make revisions in key policy areas – such as the thresholds and minimum requirements in Volume I. Please check this site periodically for corrections and updates.

## Public involvement leading up to the 2012 SWMMWW

Ecology provided public involvement opportunities and received public comments in preparation of the 2012 SWMMWW through advisory committees, listening sessions, surveys, meetings with experts in selected fields, and a public comment period.

- **Low Impact Development (LID) Advisory Committees** To support the development of LID requirements, Ecology formed two advisory committees comprised of representatives from local government permittees, state government, ports, environmental groups, scientists, consultants, and the development industry. The advisory groups met in 2009 and 2010 and provided input to Ecology on the definition of LID, a performance standard, feasibility criteria, and a number of implementation issues. In August 2010, Ecology presented an outline of the proposed LID requirements and took comments from the committee members and the broader interested public. Meeting materials, summaries, references, and comments on Ecology's proposal are available on Ecology's website. The committees met jointly again in May 2011 to provide input on Ecology's preliminary draft LID proposed language. See LID advisory process materials at:

<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/LIDstandards.html>.

The LID requirements are found primarily in Volume I of the manual. Ecology acknowledges the participants of the LID Advisory committees in Volume I.

- **Listening Sessions** In August and September 2010, Ecology hosted listening sessions statewide to announce the reissuance schedule and gather input for preparing to reissue the 2012 permits and update the Manual. More than 200 people attended the listening sessions statewide. Participants largely agreed that the Manual should not be substantively revised, except to include new technical information about LID implementation, add BMPs approved as equivalent, and remove non-working BMPs.
- **Surveys on the Volumes in the Manual** Ecology sent out surveys specific to Volumes II-V to permittees, internal experts, and outside experts asking for comments and advice on revisions for the 2012 draft Manual. Ecology acknowledges those that actively participated in the surveys in the Acknowledgment sections of Volumes II-V.
- **Meetings with experts** In a few cases, Ecology met with internal and external experts to discuss needed changes to the Manual. Ecology acknowledges those that participated in these meetings in the Acknowledgment section of each volume.
- **Public Comment Period** Ecology issued the Draft 2012 SWMWW for a 90 day public comment period (November 4, 2011 – February 3, 2012). During the comment period Ecology held five public workshops throughout Western Washington on the Draft 2012 SWMMWW. At the workshops, Ecology explained the proposed changes to the manual and answered questions. Ecology considered the comments received during the 90-day comment period and made the final changes to the 2012 SWMMWW. Ecology has issued a response to comments with the final version of the 2012 SWMMWW.

## Photo Credits

Cover (clockwise from lower left): This photo shows what can happen when it rains and stormwater controls are not used to control sediment runoff at construction sites; above - a construction crew lays permeable pavers that will help infiltrate stormwater and reduce the size of a centralized stormwater facility; a bioretention swale is used to infiltrate and filter stormwater from a city street and sidewalk; high visibility silt fencing prevents sediments from contaminating an existing stormwater pond and provides a barrier to limit construction activity (photo by Sheila Pendleton-Orme); an impervious containment area prevents pollution from coming into contact with stormwater (photo by Robert Wright); a stormwater wetpond has vegetation that filters pollutants, and check dams that create ponding to allow the settlement of sediments, and reduce the velocity of water.

Spine (top): oil from a parking lot drains to a catch basin and could flow into a stream or lake unless a stormwater treatment facility is provided (photo by Robert Wright); permeable pavement and permeable pavers help reduce the amount of stormwater runoff through infiltration and make a beautiful walkway (photo by Anne Dettelbach); a rain garden in a parking lot filters and infiltrates stormwater runoff.

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