

INTRODUCTION

This *Stormwater Management Manual* (SWMM) is a technical document that outlines the City of Portland's stormwater management requirements. The requirements defined in this manual apply to all development and redevelopment projects within the City of Portland on both private and public property.

The City of Portland's approach to stormwater management emphasizes the use of vegetated surface facilities to treat and infiltrate stormwater on the property where the stormwater runoff is created. Infiltrating stormwater onsite with vegetated surface facilities is a multi-objective strategy that provides a number of benefits, including but not limited to pollution reduction, volume and peak flow reduction, and groundwater recharge. These benefits play a critical role in protecting stormwater infrastructure and improving watershed health. The SWMM complements and supports the City's *Portland Watershed Management Plan, System Plan, Revegetation Program, Greenstreets Program*, and other City standards and practices.

Summary of Changes in the 2008 Revised SWMM

The SWMM was initially adopted in 1999 and was most recently revised in 2004. For this 2008 revision, the entire 2004 SWMM was edited and reorganized to clarify the requirements, eliminate duplication, and improve the overall presentation of the information. The overall structure of Chapters 1 through 4 remains the same as in the 2004 SWMM. Several appendices were renamed and reordered.

Chapter 1 provides the stormwater infiltration, discharge, flow control, and pollution reduction **requirements and related policies** that all development and redevelopment projects in the City of Portland must comply with.

Chapter 1 changes: Emphasis was placed on clarifying the stormwater hierarchy and updating the underground injection control (UIC) requirements. The chapter includes several new graphics and a new section on LEED stormwater credits.

Chapter 2 provides the **design guidelines and specifications for stormwater management facilities** required in order to meet the City's requirements. Projects may choose the **Simplified Approach**, the **Presumptive Approach**, or the **Performance Approach** to select and design stormwater facilities.

Chapter 2 changes: Chapter 2 is still the largest chapter, and was reorganized into three main sections.

- *The first section emphasizes the importance of good site design and outlines the technical steps necessary to move through the permit process.*

- *The second section places new attention on the existing sizing methodologies (the Simplified, Presumptive, and Performance Approaches). Changes include reducing the project size allowed under the Simplified Approach, providing a new calculator for the Presumptive Approach (which allows applicants to take existing infiltration rates into account in a more consistent way), and expanding the application of the Performance Approach to accommodate projects with unique circumstances or innovative solutions.*
- *The third section outlines the importance of the landscape requirements; restructures and streamlines the facilities nomenclature; and updates the design guidelines for each facility with the most up-to-date information available, including new information on culverts and outfalls. New typical details were developed for each facility type and were consolidated into Appendix G.*

Chapter 3 provides the **operations and maintenance requirements** that all projects must comply with.

Chapter 3 changes: Chapter 3 includes updated technical information for maintaining each facility and clarification of the requirements on private vs. public property.

Chapter 4 provides the **source control requirements** that all projects must comply with if they are classified as high risk because of certain site characteristics or activities.

Chapter 4 changes: Chapter 4 was reorganized to clarify the source control requirements and updated with the latest technical information available.

The **Definitions** section defines the technical terms and acronyms used in the manual.

Definition Changes: The definitions were revised to add new terms, delete unused terms, and update existing terms as necessary.

Appendix A includes the **City Code** and **policies** that direct the Bureau of Environmental Services to implement and revise the SWMM. It includes related administrative rules and design guidelines.

Appendix A changes: The City Code is under revision at the time of this publication; a link is provided to the City Auditor's website, which will provide the most up-to-date information. The drainage reserve information previously found in Chapter 1 was completely revised and placed in Appendix A. Two new sections were added to Appendix A, including design guidelines for culverts and outfalls and a section on retrofits.

Appendix B includes the **vendor submittal guidelines** for stormwater treatment technologies.

Appendix B changes: None.

Appendix C provides the technical support documentation for the **Santa Barbara Urban Hydrograph (SBUH) method**, including the Simplified Approach and Presumptive Approach sizing methodologies.

Appendix C changes: The SBUH information, previously included in Appendices C and D, was consolidated into Appendix C, and two new elements were added: the Presumptive Approach Calculator (PAC) and the accompanying PAC User's Manual.

Appendix D is a new appendix that includes **submittal guidance** and all the **forms** necessary for permitting stormwater management plans.

Appendix D changes: This is a new appendix that houses all the SWMM forms (which have all been revised and reformatted). It includes the submittal guidance needed to navigate the land use, zoning, building, public works, and source control permitting processes. The revised administrative review and appeal processes were taken out of Chapters 1 and 4 and placed in Appendix D. Revisions include clarification of special circumstances and an update to the offsite management fee.

Appendix E documents the **pollution reduction methodologies** used to formulate Portland's water quality treatment requirements.

Appendix E changes: None.

Appendix F provides additional **landscape technical specifications**, including depth to groundwater and infiltration testing procedures, stormwater facility soil specifications, and plant lists.

Appendix F changes: Much of the landscape information previously included in Appendix F was revised and moved to the second section of Chapter 2. Appendix F now includes new technical specifications, including improved testing protocols, a new soil specification, and new and easier-to-reference plant lists.

Appendix G includes **typical construction details** for the stormwater facilities included in this manual.

Appendix G changes: Appendix G is a new section that houses the revised facility drawings that were moved from Chapter 2. These files are available as both .pdf and CAD.dwg files on the 2008 Stormwater Management Manual CD and BES's website.

Appendix H includes six case studies that illustrate how to design and permit a range of typical development proposals.

Appendix H changes: This is a new appendix. The case studies were moved from the beginning of the manual and revised.

Looking Ahead

At the request of the City's Stormwater Advisory Committee, the Bureau of Environmental Services (BES) has developed a draft work plan for the next *Stormwater Management Manual* revision (scheduled for 2011). It includes tasks to review and revise the current pollution prevention and flow control standards. In addition, BES is committed to gathering ongoing input from City staff, the development community, and other stakeholders that will be considered in the 2011 revision process. To request more information about the draft work plan or provide suggestions for the next revision, please send an email to StormwaterManual@bes.ci.portland.or.us.