ENB-4.01 - Stormwater Management Manual - Printable Version

STORMWATER MANAGEMENT MANUAL
September 2002, Revision #2
Administrative Rule Adopted by Bureau Pursuant to Rule-Making Authority
ARB-ENB-4.01

The text of the entire manual is available in PDF format. What follows is an excerpt from the Introduction to the manual:

1.1 PURPOSE AND APPLICABILITY OF MANUAL

Stormwater management is a key element in maintaining and enhancing the City's livability. There is a direct link between stormwater and the City's surface and ground waters. As the City is developed, the impervious surfaces that are created increase the amount of runoff during rainfall events, disrupting the natural hydrologic cycle. These conditions erode stream channels and prevent groundwater recharge. Parking lots, roadways, and rooftops increase the pollution levels and temperature of stormwater runoff that is transported to our streams and rivers. Protecting these waters is vital for a great number of uses, including fish and wildlife habitat, recreation, and drinking water.

The purpose of this manual is to provide stormwater management principles and techniques that help preserve or mimic the natural hydrologic cycle and achieve water quality goals. This Stormwater Management Manual provides developers and design professionals with specific requirements for reducing the impacts of stormwater runoff quantity and pollution resulting from new development and redevelopment within the City of Portland. The manual's requirements apply to all new development and redevelopment, whether public or private.

All new development projects with over 500 square feet of impervious development footprint area, and all redevelopment projects redeveloping over 500 square feet of impervious surface, are required to comply with the requirements of this manual. In addition, projects of any size that are classified as high risk because of site characteristics or activities must comply with the requirements identified in Chapter 4.0 of this manual.

1.2 SUMMARY OF MANUAL CONTENTS

Chapter 1.0: Introduction/ General Policies and Procedures, outlines the purpose and applicability of this manual and defines terms. It outlines pollution reduction and flow control requirements, explains the rules for connecting to existing systems, and differentiates public and private stormwater management systems. This chapter also identifies special circumstances on a proposed development site that may make it impractical to implement on-site pollution reduction or flow control to the standards specified in this manual.

Chapter 2.0: Simplified Approach for Stormwater Management, provides a relatively simple process for selecting and designing surface retention facilities that accomplish both pollution reduction and flow control. It also includes design information specific to parking lots and streets.

Chapter 3.0: Alternative Methods for Stormwater Management, provides design requirements under the "presumptive approach" for engineered pollution reduction and flow control facilities. This chapter also explains the "performance approach", which is a process that can be used to propose a type of facility not already included in this manual for review.

Chapter 4.0: Activity Based Pollution Controls, addresses site characteristics and uses with the potential to generate pollutants that may not be addressed solely through the pollution reduction requirements presented in Chapters 2.0 and 3.0. It identifies when and what kinds of pollution controls are required.

Chapter 5.0: Facility Landscaping Requirements and Recommended Plant Lists, outlines facility-specific planting requirements. It also provides general landscaping guidance and includes recommended lists of plantings (trees, shrubs, and grasses) for each stormwater management facility.

Chapter 6.0: Operations and Maintenance Requirements, presents operations and maintenance (O&M) submittal requirements and provides templates for O&M plans.

Chapter 7.0: Stormwater Disposal, discusses procedures for determining the ultimate stormwater discharge point for a site, and outlines design requirements and specifications for public infiltration sumps and private drywells. Design details and testing procedures are included.

Appendix A: City Code Chapter 17.38, Policy Framework, Appeals Process, and Update and Amendment Process, includes the section of City Code that addresses stormwater management policies and standards, and officially recognizes the City's Stormwater Management Manual. The appendix concludes by outlining the policy framework for the City's stormwater management requirements, the appeals process, and the process for updating this manual.

Appendix B: Vendor Submission Guidance for Evaluating Stormwater Treatment Technologies, includes the City's testing protocol for acceptance of stormwater pollution reduction facilities. It also includes a detailed definition of the City's basic pollution reduction requirement of 70 percent total suspended solids (TSS) removal.

Appendix C: Santa Barbara Urban Hydrograph, describes the Santa Barbara Urban Hydrograph method of computing stormwater runoff hydrographs. It includes the City's 24-hour rainfall depths, formulas for computing time of concentration, and runoff curve numbers.

Appendix D: Simplified Approach Sizing Calculations, provides a sample of the method used to calculate the simplified approach sizing factors.

Appendix E: Design Examples and Tips, takes a number of projects step-by-step through the manual. Example forms are filled out and site and landscaping plans are developed. Tips for stormwater management design are also included.

Appendix F: Design Requirements for Facility Inlets, Outfalls, and Control Structures, provides design information and requirements for inlets, outfalls (including rip-rap pad sizing and options for energy dissipation), and control structures (weir and orifice structures). Construction details are included.

Appendix G: Stormwater Facility Photos, provides a number of stormwater management facility photos.

Appendix H: Supplemental Drawings, includes three-dimensional renderings of many simplified approach facilities. It also includes example planting plans and supplemental plan-view and cross-sectional drawings of many facilities.

HISTORY

Adopted July 1, 1999 by Bureau of Environmental Services. Revised September 1, 2002. Submitted for inclusion in PPD May 14, 2003.

2002 Stormwater Management Manual - PDF Files

The manual is in Adobe Acrobat (.pdf) format . If you don't have Adobe Acrobat Reader, you can download the latest version for free.