
INTRODUCTION

Objective of the Manual

The objective of the Georgia Stormwater Management Manual is to provide guidance on addressing stormwater runoff. The goal is to provide an effective tool for local governments and the development community to reduce both stormwater quality and quantity impacts, and protect downstream areas and receiving waters.

This Manual does not cover construction site sediment and erosion control practices. Guidance on these practices can be found in the *Manual for Erosion and Sediment Control in Georgia*.

Organization of the Manual

The Georgia Stormwater Management Manual is organized as a three volume set, each volume being published as a separate document. You are currently reading Volume 2 of the Manual.

Volume One of the Manual, the *Stormwater Policy Guidebook*, is designed to provide guidance for local jurisdictions on the basic principles of effective urban stormwater management.

Volume 1 covers the problem of urban stormwater runoff and the need for local communities to address urban stormwater quantity and quality, stormwater management minimum standards, and guidance on local stormwater programs. It also provides an overview of integrated stormwater management, site and watershed level stormwater management, floodplain management, and technology and tools for implementing stormwater management programs.

Volume Two of the Manual, the *Technical Handbook*, provides guidance on the techniques and measures that can be implemented to meet a set of stormwater management minimum standards for new development and redevelopment. Volume 2 is designed to provide the site designer or engineer, as well as the local plan reviewer or inspector, with all of the information required to effectively address and control both water quality and quantity on a development site. This includes guidance on better site design practices, hydrologic techniques, criteria for the selection and design of structural stormwater controls, drainage system design, and construction and maintenance information.

Volume Three, the *Pollution Prevention Guidebook*, is a compendium of pollution prevention practices for stormwater quality for use by local jurisdictions, businesses and industry, and local citizens.

Users of This Volume

The users of Volume 2 will be site planners, engineers, contractors, plan reviewers, and inspectors from local government and the development community.

Local jurisdictions may adopt and apply the minimum standards for new development and redevelopment in this Manual directly as part of their local development code. Further, local jurisdictions may use Volume 2 to review stormwater site plans and provide technical advice, and may adopt any part of the guidance and design criteria for structural stormwater controls and

drainage design contained in this Manual as their local engineering design requirements. Check with the local review authority for more information.

Those parties involved with site development will utilize Volume 2 for technical guidance and information on the preparation of stormwater site plans, the use of better site design techniques, hydrologic techniques, selection and design of appropriate structural stormwater controls, and drainage (hydraulic) design.

How to Use This Volume

The following provides a guide to the various chapters of Volume 2 of the Manual.

- **Chapter 1 (Stormwater Management Planning and Design).** This chapter provides the framework for addressing stormwater runoff on site of new development and redevelopment. This chapter includes the following sections:
 - Section 1.1 – *The Need for Stormwater Management*. This section provides an overview of the impacts of urban stormwater runoff.
 - Section 1.2 – *Stormwater Management Standards*. This section contains the stormwater management minimum standards for new development and redevelopment sites.
 - Section 1.3 – *Unified Stormwater Sizing Criteria*. This section explains the four sizing criteria for water quality, channel protection, overbank flood protection, and extreme flood protection, and describes the approaches for meeting the criteria through the use of site design practices and structural stormwater controls.
 - Section 1.4 – *Stormwater Better Site Design Practices*. This section covers the toolkit of better site design practices and techniques that can be used to reduce the amount of stormwater runoff and pollutants generated from a site.
 - Section 1.5 – *Stormwater Site Planning*. This section outlines the typical contents and procedures for preparing a stormwater site plan.

- **Chapter 2 (Stormwater Hydrology).** This chapter presents engineering topics and methods used in stormwater drainage, conveyance and facility design.
 - Section 2.1 – *Methods for Estimating Stormwater Runoff*. This section provides an overview of the different hydrologic methods and their application.
 - Section 2.2 – *Storage Design*. This section covers the criteria and general procedures for the design and evaluation of stormwater storage (detention and retention) facilities.
 - Section 2.3 – *Outlet Structures*. This section outlines various stormwater facility outlet types and provides criteria and procedures for water quality outlet design.

- **Chapter 3 (Structural Stormwater Controls).** This chapter contains the information and guidance for the selection and design of structural stormwater controls for managing stormwater quantity and quality. It is divided into the following sections:
 - Section 3.1 – *Structural Stormwater Controls Overview*. This section provides an overview of the structural stormwater controls that can be used to treat stormwater runoff and/or mitigate the effects of increased runoff peak rates, volumes, and velocities.
 - Section 3.2 – *General Application Structural Stormwater Controls*. This section contains detailed information and design criteria for structural controls recommended for general use on most sites with a demonstrated ability to meet stormwater management goals.
 - Section 3.3 – *Limited Application Structural Stormwater Controls*. This section contains detailed information and design criteria for structural controls recommended for limited use or for special site or design conditions.
 - Section 3.4 – *Detention Structural Stormwater Controls*. This section contains detailed information and design criteria for detention (water quantity only) structural controls.

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- **Chapter 4 (Stormwater Drainage System Design).** This chapter provides technical guidance on the various elements of stormwater drainage design. This chapter includes the following sections:
 - Section 4.1 – *Stormwater Drainage Design Overview*
 - Section 4.2 – *Minor Drainage System Design.* This section provides guidelines and design criteria for gutter and inlet hydraulics, and provides an overview of storm drain pipe system design.
 - Section 4.3 – *Culvert Design.* This section covers criteria and procedures for the design and evaluation of culverts.
 - Section 4.4 – *Open Channel Design.* This section describes the criteria and calculations for the design of open stormwater drainage channels.
 - Section 4.5 – *Energy Dissipation Design.* This section includes information and design criteria for a number of energy dissipators, including riprap aprons, riprap basins and baffled outlets.
 - **Appendix A – Rainfall Tables for Georgia.** This appendix provides a series of tables for sixteen locations across Georgia providing rainfall intensity information for various stormwater durations and frequencies.
 - **Appendix B – Soils Information for Georgia.** This appendix contains soils information for Georgia soils, including hydrologic soils group classification and soils permeability.
 - **Appendix C – Miscellaneous Specifications.** This appendix provides additional miscellaneous design details for the design of stormwater management systems.
 - **Appendix D – Structural Stormwater Control Design Examples.** This appendix includes design examples for five different general application structural controls: stormwater pond, bioretention area, surface sand filter, infiltration trench, and enhanced (dry) swale.
 - **Appendix E – Structural Control Maintenance Checklists.** The appendix provides checklists for the inspection and maintenance of structural stormwater controls.
 - **Appendix F – Landscaping and Aesthetics Guidance.** This appendix provides landscaping criteria and plant selection guidance for stormwater management facilities.
 - **Appendix G – Stormwater Computer Models.** This appendix provides guidance on various stormwater-related computer models for planning, design and analysis.
 - **Appendix H – Georgia Safe Dams Rules.** This appendix contains the Georgia DNR-EPD dam safety rules.

Regulatory Status of the Manual

This Manual has been developed to provide guidance on the latest and most relevant stormwater management strategies and practices for the state of Georgia. The Manual itself has no independent regulatory authority. The minimum requirements and technical guidance included in the Manual can only become required through:

- (1) Ordinances and rules established by local communities; and
- (2) Permits and other authorizations issued by local, state and federal agencies.

Adoption of either the Georgia Stormwater Management Manual – Volume 2 or an equivalent stormwater design manual is required for all municipalities covered under the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit.

How to Get Printed Copies of the Manual

Printed copies of the Manual or the Manual on CD can be ordered by calling 404-463-3102 or ordered online at the following Internet address:

<http://www.atlantaregional.com/bookstore/>

How to Find the Manual on the Internet

All three volumes of the Georgia Stormwater Management Manual are also available in Adobe Acrobat PDF document format for download at the following Internet address:

<http://www.georgiastormwater.com>

Contact Information

If you have any technical questions or comments on the Manual, please send an email to:

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