

# STORMWATER DESIGN for SUSTAINABLE DEVELOPMENT

Ronald L. Rossmiller



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### Stormwater Design for Sustainable Development

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# MANAGE STORMWATER RUNOFF THROUGH SUSTAINABLE DESIGN AND DEVELOPMENT

*Stormwater Design for Sustainable Development* presents an integrated approach to controlling stormwater runoff quantity and quality. With a focus on low-impact development, the book describes how to incorporate existing topography and drainage channels, curvilinear street layout, building locations, utilities, and proven best management practices, blending them all into a pleasing whole.

The results, as shown by designs and calculations in several appendices, are developments for various land uses that are attractive, safe, affordable, sustainable, and economical to construct and maintain. They allow developers to use 100 percent of the sites for profitable construction, leading to developments that are community assets.

This practical guide explains how to determine allowable water depths; develop inflow hydrographs for various components of a development; estimate storage volumes for above, surface, and underground locations; calculate outflow structure hydraulics for numerous types of facilities; and calculate routing curves and hydrograph routing. Real-world examples, calculations, and design plans are contained in this valuable resource.

## COVERAGE INCLUDES:

- Low-impact developments
- Triple bottom line (people, planet, profit)
- Coving and curvilinear streets
- Planning
- Types of best management practices
- Precipitation
- Drainage area estimation
- Time of concentration estimation
- Design steps
- Allowable depths
- Depth-storage relationships
- Inflow hydrographs
- Basic hydraulics
- Culvert hydraulics
- Riser structure design
- Hydrograph routing
- Several design examples

Spreadsheets for use in design and retrofit projects are available for download

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