

Design and Construction of Urban Stormwater Management Systems

WATER ENVIRONMENT FEDERATION
AMERICAN SOCIETY OF CIVIL ENGINEERS

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Design and Construction of Urban Stormwater Management Systems

Prepared by
The Urban Water Resources Research
Council of the American Society of Civil
Engineers and the Water Environment
Federation (formerly the Water Pollution
Control Federation)



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ABSTRACT

Design and Construction of Urban Stormwater Management Systems (Manual of Practice No. 77) updates relevant portions of the ASCE/WPCF Manual of Practice No. 37, *Design and Construction of Sanitary and Storm Sewers*. This update is necessary due to the many changes taking place in the field such as the use of microcomputers and the need to control the quality of runoff as well as the quantity. In order to broaden the base of experience reflected in the Manual, each chapter was prepared by one or more authors with experience and expertise in the particular subject area. Thus, the Manual aids the practicing engineer by presenting a brief summary of currently accepted procedures relating to the following areas: 1) Financial services; 2) regulations; 3) surveys and investigations; 4) design concepts and master planning; 5) hydrology and water quality; 6) storm draining hydraulics; and 7) computer modeling.

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Authorized for Publication by the Publications Committee in the name of the Board of Direction Edward O. Pfrang, Executive Director

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Number

- 10 Technical Procedures for City Surveys
- 13 Filtering Materials for Sewage Treatment Plants
- 14 Accommodation of Utility Plant Within the Rights-of-Way of Urban Streets and Highways
- 31 Design of Cylindrical Concrete Shell Roofs
- 33 Cost Control and Accounting for Civil Engineers
- 34 Definitions of Surveying and Associated Terms
- 35 A List of Translations of Foreign Literature on Hydraulics
- 36 Wastewater Treatment Plant Design
- 37 Design and Construction of Sanitary and Storm Sewers
- 40 Ground Water Management
- 41 Plastic Design in Steel—A Guide and Commentary
- 42 Design of Structures to Resist Nuclear Weapons Effects
- 45 Consulting Engineering—A Guide for the Engagement of Engineering Services
- 46 Report on Pipeline Location
- 47 Selected Abstracts on Structural Applications of Plastics
- 49 Urban Planning Guide
- 50 Report on Small Craft Harbors
- 51 Survey of Current Structural Research
- 52 Guide for the Design of Steel Transmission Towers
- 53 Criteria for Maintenance of Multilane Highways
- 54 Sedimentation Engineering
- 55 Guide to Employment Conditions for Civil Engineers
- 57 Management, Operation and Maintenance of Irrigation and Drainage Systems
- 58 Structural Analysis and Design of Nuclear Plant Facilities
- 59 Computer Pricing Practices
- 60 Gravity Sanitary Sewer Design and Construction
- 62 Existing Sewer Evaluation and Rehabilitation
- 63 Structural Plastics Design Manual
- 64 Manual on Engineering Surveying
- 65 Construction Cost Control
- 66 Structural Plastics Selection Manual
- 67 Wind Tunnel Model Studies of Buildings and Structures
- 68 Aeration—A Wastewater Treatment Process
- 69 Sulfide in Wastewater Collection and Treatment Systems
- 70 Evapotranspiration and Irrigation Water Requirements
- 71 Agricultural Salinity Assessment and Management
- 72 Design of Steel Transmission Structures
- 73 Quality in the Constructed Project—a Guide for Owners, Designers, and Constructors
- 74 Guidelines for Electrical Transmission Line Structural Loading
- 75 Right-of-Way Surveying
- 76 Design of Municipal Wastewater Treatment Plants
- 77 Design and Construction of Urban Stormwater Management Systems
- 78 Structural Fire Protection

*Numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 38, 39, 43, 44, 48, 56, and 61 are out of print.

HISTORY OF THE MANUAL

The Urban Water Resources Research Council (UWRRC) of the American Society of Civil Engineers (ASCE) has long been a leader in the transfer of urban drainage technology to the engineering community. A major part of its efforts has been the publication of more than a dozen books related to the general subject of urban storm drainage, most of which are the proceedings of a series of Engineering Foundation Conferences. Many of these books are used as standard references in the field.

The last Manual of Practice related to urban storm drainage was Manual of Practice 37, "Design and Construction of Sanitary and Storm Sewers," published jointly in 1969 by ASCE and the Water Environment Federation (formerly the Water Pollution Control Federation). In 1982, it was supplanted, for sanitary sewers, by Manual of Practice Number 60, "Gravity Sanitary Sewer Design and Construction," again jointly published by ASCE and WEF.

In an attempt to fill the void created by the publication of Manual of Practice 60 (which did not address storm drainage), the UWRRC established a Task Committee, chaired by Mr. Richard Lanyon, to begin drafting a manual of practice on urban storm drainage. The chairmanship of the Task Committee was subsequently assumed by Mr. Jonathan E. Jones, who has seen the Manual through to its completion.

To broaden the base of experience to be reflected in the Manual, each chapter was prepared by one or more authors with experience and expertise in the particular subject area. The chapters were also extensively reviewed by the authors and other experts in the field, as well as other interested parties, including members of the regulatory and public works communities, and specialists in such diverse disciplines as law, planning, landscape architecture, meteorology, and ecology.

A draft of the complete Manual was prepared and distributed to an ASCE Senior Review Committee and the Technical Practice Committee of the Water Environment Federation. Many valuable suggestions for improvement were received. After revision based on these reviews, portions of the Manual were distributed to both committees for a second review.

The final draft of the Manual was approved for publication by WEF and ASCE in 1991.

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