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Preface

Water supply and sewerage systems in cities are critical from health and planning points of view, but many are aging and deteriorating. This may be because engineers have tended to focus on development rather than management. As world populations stabilize, less hydraulic design and better management of existing facilities is required.

Modern practices are needed to manage the systems. Business practices, customer satisfaction, and economic planning are all as important as engineering design and can no longer be disregarded by water service providers.

The subjects covered in this book include potable water supply, sewerage and stormwater drainage. Basic design methods are reviewed followed by ways of improving designs and management of those facilities. The book forms a comprehensive guide for design and operation of water services and managing the associated infrastructure.

Hydraulic management implies optimum storage, peak flow attenuation, pollution control and effluent discharge. Infrastructure management includes rehabilitation, reconstruction, upgrading and maintenance.

Topics relevant to economic efficiency are asset management, privatization, and risk analysis. Efficient use of energy and construction project management are also ways of improving economic viability.

The particular problems of developing countries are covered in a special chapter, but a number of other chapters have ideas of relevance, viz. low cost sanitation, staged water supply expansion and off-grid energy sources. Capacity building and appropriate technologies are particularly appropriate.

Students and practitioners are becoming aware of the changes in emphasis of water engineering and university courses and continuing education courses are now orientated to the subjects covered here. The book is a condensation of graduate courses give by the author at a number of universities and to a number of water utilities organizations worldwide. It also serves as a reference book for planners, designers and operators of water services. The broader field of engineering is likely to expand over the coming years, i.e. technical calculations will be relegated to computers and the engineer will be able to broaden his scope. New relevant topics, for example in the IT area, may therefore emerge in future years. The topics here can form the springboard for new focus and terminology.

The manuscript of the book was set out and typed by April Thompson.

About the author

David Stephenson is Professor of Water Engineering at the University of Botswana. He is also Professor Emeritus at the University of the Witwatersrand and a Visiting Professor at the University of Stuttgart. He teaches Water Supply Management and Water Resources Management at graduate level at these Institutes. He is the author of ten books and many papers on the subjects. He started his career in practice and consults internationally.

He lives on a game farm in Africa.