Preface

The concept for the *Water Environment of Cities* arose from a workshop "Green Cities, Blue Waters" workshop held in 2006.[1] The workshop assembled experts from engineering, planning, economics, law, hydrology, aquatic ecology, geomorphology, and other disciplines to present research findings and identify key new ideas on the urban water environment. At a lunch discussion near the end of the workshop, several of us came to the recognition that despite having considerable expertise in a narrow discipline, none of us had a vision of the "urban water environment" as a whole. We were, as in the parable, blind men at opposite ends of the elephant, knowing a great deal about the parts, but not understanding the whole. We quickly recognized the need to develop a book that would integrate this knowledge to create this vision. The goal was to develop a book that could be used to teach a complete, multidisciplinary course, "The Urban Water Environment", but could also be used as a supplemental text for courses on urban ecosystems, urban design, landscape architecture, water policy, water quality management and watershed management. The book is also valuable as a reference source for water professionals stepping outside their arena of disciplinary expertise.

The Water Environment of Cities is the first book to use a holistic, interdisciplinary approach to examine the urban water environment. We have attempted to portray a holistic vision built around the concept of water as a core element of cities. Water has multiple roles: municipal water supply, aquatic habitat, landscape aesthetics, and recreation. Increasingly, urban water is reused, serving multiple purposes. In this vision, humans are not merely inhabitants of cities, but an integral part of the urban water environment. Humans alter the urban hydrologic cycle and the chemical and physical integrity of urban water systems and are recipients of these alterations. Some of those changes are beneficial, like being able to enjoy a well-planned park with water features whereas others are harmful, like exacerbated flooding caused by poorly planned development upstream. These changes alter the sustainability and resilience of cities in ways that can reasonably be predicted, or at least, anticipated.

[1] Novotny, V. and P. Brown, 2007. Cities of the Future: Towards Integrated Sustainable Water and Landscape Management. Proceedings of an international workshop held July 12–14, 2006 at the Wingspread Conference Center, Racine, WI. IWA Publishing, London.

To reach a multidisciplinary audience, we have written the book for a scientifically literate audience – a reader with a B.S. degree but who would not necessarily have specialized education in hydrology, engineering, law, or other topics. We used several techniques to achieve this goal. First, we explored the same six cross-cutting themes in each chapter – water scarcity, multiple uses of water, water management institutions, integration of new knowledge, sustainability, and resilience. Key paradigms from our specialties, which both guide and limit us, are explained to build context for each chapter. Third, we tried to limit specialized jargon to the extent possible. When specialized terms are needed to achieve precision of meaning, they are defined and included in a glossary. Chapters were cross-reviewed by chapter authors from other disciplines to assure that chapters are readily understood by readers from other disciplines. Finally, last chapter is a synthesis, developed in a workshop held in January 2006 at the Riverwood Inn in Otsego, Minnesota, after authors had written their core chapters.

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