Foreword

The practice of water resources planning and management within the USA has adapted to keep pace with changes in societal values, advances in technology and scientific knowledge, and emerging water resource needs. Its early origins in nation building focused on the development of water supply, power and transport as the population expanded across the continent during the nineteenth century. It progressed through periods intensively focused on the mitigation of flood losses and later saw the emergence of multi-purpose development of the nation’s water resources during the first half of the twentieth century.

The evolution of water resources planning from early single-purpose type projects to subsequent eras emphasizing economic efficiency, multi-purpose planning, and then multi-objective planning and environmental protection continues today as the nation’s environmental awaking during the last half-century has advanced beyond environmental protection to embrace the goals of sustainable development, ecological integrity and integrated water resources management.

This transformation has likewise been accompanied by equally significant changes to the nation’s water governance framework. The demise of the US Water Resources Council portended a federalism shift in decision-making leadership that continues into the twenty-first century. This paradigm change has been facilitated by reductions in real spending on water resources programs across federal agencies. The resulting devolution of the federal role places increased responsibilities on state and interstate organizations for the planning and financing of solutions which will address the water challenges of today and tomorrow.

Against this dynamic backdrop, it is essential to dissect and understand the implications of the concurrent water resources management changes that have been taken place as a prerequisite for measuring the issues we must face in the future. This book, aptly titled ‘The Evolution of Water Resource Planning and Decision Making’, was commissioned by the Institute for Water Resources (IWR) to bring together a group of the nation’s foremost water experts and academicians to provide their unfettered views on what has brought the nation to this critical juncture. Their collective perspectives on the evolution of thinking on topics such as economic analysis, environmental valuation and the state of US water
governance is aimed at informing students and practitioners alike on the nature of the issues looming ahead, while serving to underline the importance of an interdisciplinary approach to water resources planning and management.

Indeed, the development of this book reflects an interdisciplinary approach which mirrors, by design, the breadth of expertise essential to addressing contemporary water resources problems. It is also consistent with the trend in advanced education for multidisciplinary curricula in water resources – such as the advanced degree program developed by several universities as part of a cooperative effort with the Universities Council on Water Resources (UCOWR) and IWR for an interdisciplinary Master’s Degree in Integrated Water Resources Planning and Management.

As evidenced by recent events, the USA will continue to face a daunting array of future water resources challenges. Hurricanes Katrina and Rita exposed a surprisingly fragile New Orleans hurricane protection system, while the accompanying flood response and evacuation planning and execution proved unable to deter the tragedy and loss of life that unfolded. Such vulnerabilities are not limited to coastal storms, and while major initiatives across the nation at the federal and state levels are re-evaluating the threats from both coastal and riverine flooding, concerns are accelerating over the nation’s aging infrastructure, including dams and bridges and other water resources capital stock.

As this book is being published, portions of the southeastern USA are gripped in a severe drought which has escalated a long simmering interstate dispute over water allocation. The US population continues to grow, with some of the greatest increases occurring in areas already facing increased competition for water, and despite an overall abundance of water in the USA, projections related to global warming and environmental change add to an uncertain future – with some regions facing prospects of more intensive drought while others consider possibilities for more severe inland flooding and/or coastal storms.

As we begin a new century, with a new set of water resources challenges, both within the USA and around the world, this book serves as a reminder that the need for continued infusion of scholarship in water resources practice remains as compelling as ever. In fact, facilitating a continuing intersection of scholarship and practice remains the essence of the purpose of the IWR. Within this context, the Water Resources Development Act of 2007 (P.L.110–114) presents a unique opportunity to further advance the alignment of federal water resources principles with contemporary concepts for integrated water resources management, adaptive management, risk and reliability, system resiliency, improved
communication of residual risk and collaborative, transparent decision-making processes.

I am therefore delighted that the IWR had this opportunity to resource and serve as a nexus for supporting the publication of this important book. It will no doubt serve as a scholarly resource for a new generation of practitioners and academicians interested in both the historical context and the future of water resources planning and management.

The IWR is indebted to the esteemed group of authors who poured their passion and knowledge into the various chapters. I wish to thank each of the contributing authors for their tenacity and dedication in seeing this book through to publication. I am certain that the knowledge documented herein will prove invaluable to future decision makers who will have their own distinct set of new water resources challenges to surmount.

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