

Climate Action Plans— Adaptive Management Strategies for Utilities

M71



American Water Works
Association

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Preface

American Water Works Association (AWWA) created the Climate Change Committee under the Water Resources Sustainability Division to prepare its members for the “new normal” scenario, in which the potential effects of climate change must be considered for long-term sustainability of our local, regional, national, and global water resources. This manual is geared toward achieving the Climate Change Committee’s goal to document the status of knowledge and describe current and future research activities that will enhance utilities’ understanding of climate change effects and mitigation/adaptation techniques. Specifically, the manual aims to help small and mid-sized utilities develop climate action plans (CAPs) to address adaptation and mitigation strategies countering the impact of climate change.

The committee recognizes that those effects may be more or less severe depending on each utility’s location and situation, but what the committee is recommending is that each utility assess its vulnerability to climate change and prioritize mitigation and adaptation measures in the context of other risks to their operations.

The manual is organized in a way to introduce the concept of climate change to readers by providing the fundamentals of climate change planning and decision making. The concepts of engineering design and planning in the realm of climate change uncertainty is discussed. The manual also includes a detailed summary of the various impacts of climate change, specifically from a utility perspective, and provides the step-by-step process of developing a CAP. The manual includes a brief summary of the challenges and issues associated with the public and stakeholder engagement. A review of various CAP case studies is included as part of the manual to familiarize readers with the other research material available for their use. In a world of climate change planning, where information and science is changing and improving at a breakneck speed, the authors’ goal is to provide relevant reference material for the information presented. The manual will be reviewed and revised as and when information presented in the manual needs to be updated.

The ultimate goal of the manual is to provide a starting point for utility managers for whom climate change adaptation, planning and developing a CAP are of interest. While the manual does not lend the reader to preparing a fully developed CAP, it guides the reader to all the relevant information they will need to develop one on their own. There is no cookie-cutter approach that can be applied to the process of developing climate action plans that include a step-by-step checklist as the infrastructure vulnerabilities, the climate change impacts, the stakeholder engagement, and the adaptation and response measures vary by region and utility.

The template for the manual is set in such a way that the reader can easily access any of the chapters individually, without having to read the entire manual from the beginning to the end, to grasp the content in the individual chapters. Each chapter is focused on a specific topic and the relevant information supporting the chapter material and the references are included along with the chapter content.

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Executive Summary

American Water Works Association (AWWA) created the Climate Change Committee under the Water Resources Sustainability Division to prepare its members for the “new normal” scenario, in which the potential effects of climate change must be considered for long-term sustainability of our local, regional, national, and global water resources. The manual aims to help small and mid-sized utilities develop climate action plans to address adaptation and mitigation strategies countering the impact of climate change. The ultimate goal of the manual is to provide a starting point for utility managers for whom climate change adaptation planning and developing climate action plans are of interest. While the manual itself doesn’t lend the reader to preparing a fully developed climate action plan, it guides the reader to all the relevant information so that they able to develop a report on their own.

The manual is divided into eleven chapters, each chapter addressing various aspects of the climate action plan development process. Together, the 11 chapters form a cohesive source of information that guides utility managers through the process of developing climate action plans.

Chapter 1—Introduction includes discussion on the importance of climate change impacts on various aspects of water resource management and utility infrastructure planning and management. Developing a sound climate action plan (CAP) that addresses the adaptation and mitigation aspects of site-specific climate change impacts is critical to efficient management of water utilities. The purpose of this manual is to provide a comprehensive guidance document to generate, review, report, and disseminate information on water supply planning and management relating to issues of climate change, both mitigation and adaptation, and to facilitate awareness among water utilities and the broader community on developing and maintaining CAPs. Impacts of climate change on water quality, quantity, operational reliability, and financial and institutional aspects of utility management are discussed in this chapter. The various solutions to help address the impacts that are discussed include mitigation measures, long-term planning processes, demand management, operational controls, carbon footprint reduction, energy