Introduction

Water management has long been a key issue for Texas, a state with a growing population and a diminishing water supply. Severe droughts in the 1990s propelled water supply to the top of the legislative priority list. The legislature responded to drought concerns by adopting Senate Bill 1 in 1997, which created a new regional and state water planning process. Under this legislation, the state was divided into sixteen regional planning areas. Each regional planning group is charged with the task of preparing a regional water plan for their area. The plans assess water demands and supplies, determine needs and recommend water management strategies (WMS) to meet the needs in the respective regions.

The Texas Water Development Board, the agency responsible for state water planning, received the first water plans created under this new "bottom-up" process in 2001. The regional water plans, required to be updated every five years, are incorporated into the State Water Plan, and become the roadmap for developing and managing the state's water resources. The WMS included in the plans are the top priority projects for the state. In order for a WMS –or a portion of it- to be eligible for state funding and permitting, it must be listed as a recommended WMS in an approved regional water plan.

In addressing water supply needs, the regional planning groups must consider *all potentially feasible water management strategies*[1]. However, during the first planning cycle, only one region considered seawater desalination to be a feasible WMS. In general, seawater desalination was considered to be too expensive. The 2001 regional water plans were developed before the advent of the first large-scale seawater desalination facility in the United States, the Tampa Bay Water (TBW) project at Apollo Beach, Florida. The TBW project marks the beginning of the United States' unprecedented focus on large-scale seawater desalination as a water supply alternative.

Water desalination has gained prominence as an alternative water supply source due to the coalescence of many dramatic innovations. This volume explores the areas of expertise and technological advances that together are making seawater desalination a viable water supply option. All papers are voluntary contributions whose authors are recognized authorities in their particular fields. The Appendix contains biographical and contact information for all 39 featured authors.

The volume's first chapter examines water availability in the State and generally discusses water desalination's potential as a new water source for Texas. The opening paper describes current views on water availability in the state. The subsequent papers examine the state's saline water resources that, with the current technological developments, may become feasible water supply options for many areas of Texas.

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[1] Texas Water Development Board, Administrative Rules, Chapter 357, Regional Water Planning Guidelines.

The second chapter focuses on specific advances in desalination technology, desalination technology alternatives, and engineering design issues such as water intake, energy management and recovery, concentrate disposal, and costing of facilities.

The third chapter contains valuable desalination-related case studies and papers. These documents offer a glimpse into financial and institutional incentives and policies that encourage development of alternative water supply options.

The fourth chapter contains an inventory of desalination-related research at Texas universities, including leading researchers' contact information. The last paper is a review of government agencies and professional organizations, along with contact information, that serves as a valuable resource for those seeking additional information on desalination.

I hope that these materials will be a valuable resource for anyone interested in pursuing desalination as a feasible alternative in developing a new drought-proof water supply for Texas.