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TEXAS 50-YEAR WATER PLANS

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More than any other natural resource, water holds the key to our future. Yet scarcity and competition for water, heightened environmental concerns, and the expense of new water-supply development make sound water management increasingly difficult to achieve.

Nowhere is this challenge more recognized than in Texas where the state's population is projected to double in the next 50 years. A corresponding increase in the water needs of communities, while maintaining traditional agricultural and environmental use, has made the need for careful water-management decision-making ever more important. Texas is a vast and diverse state, and water management solutions that are appropriate for one region or locale may not be appropriate for another. Much of the following discussion is taken directly from the 1997 and 2002 Texas Water Plans (TWDB 1997 and 2002).

Texans have long recognized the importance of planning for the State's future water needs, primarily because of the frequency of droughts that have occurred and will continue to occur. Texas began statewide water planning nearly 50 years ago after the devastating drought of the 1950s. At the end of the drought in 1957, the Legislature created the Texas Water Development Board (TWDB) and mandated statewide water planning. Texas Water Code §16.051 reads:

The State Water Plan shall provide for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions, in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare; further economic development; and protect the agricultural and natural resources of the entire State.

Including the 2002 Plan, the TWDB has prepared seven State Water Plans (1961, 1968, 1984, 1990, 1992, 1997, and 2002), and is currently preparing the next State Water Plan to be presented January 2007.

Prior to the 2002 State Water Plan, the TWDB made recommendations pertaining to needed legislative actions in the form of changes in statutes or rules and in needed infrastructure financial assistance. However, a severe drought in 1996 left several communities at the brink of exhausting their water supply, causing legislators to rethink how water management planning should be accomplished.

In the spring of 1997, the 75th Texas Legislature passed a major water bill that completely redefined the water-planning process in the state. Its level of importance was emphasized by its designation as "Senate Bill 1". Senate Bill 1 placed the responsibility for water management planning with local water users grouped together in 16 designated planning regions (Figure 1). This is a significant step in Texas, where the range in water

availability is extreme -- from plentiful in the eastern region of the state to very scarce in the west.

Individuals representing specific water interests were selected to voluntarily serve on a water-planning group in each region and were given the responsibility to develop a consensus-based water management plan that does not conflict with neighboring regions. The primary purpose of these regional plans is to insure that all entities have available water supplies and infrastructure to develop those supplies during especially severe drought conditions, over the next 50 years.

Although each region has its own particular water issues, all regional water plans basically involve the same general objectives. In their simplified form, these objectives include:

1. describing the regional planning area;
2. quantifying current and projected population and water demand;
3. evaluating and quantifying current water supplies;
4. identifying surpluses and needs;
5. evaluating water management strategies and preparing plans to meet the needs;
6. recommending regulatory, administrative, and legislative changes; and
7. adopting the plan, including the required level of public participation.

Thus the regional water planning process provides an evaluation of current and future water demands for all water-use categories, and evaluates water supplies available during drought-of-record conditions to meet those demands. Where future water demands exceed an entity's ability to supply that need, alternative strategies are considered to meet the potential water shortages. In the development of these strategies, the regional plans are to fully recognize and protect existing water rights, water contracts, and option agreements. Because our understanding of current and future water demand and supply sources is constantly changing, it is intended for these plans to be revised every five years or sooner if deemed necessary.

Regions in the eastern part of the state where wetter climatic conditions exist are principally concerned with the issue of allocation of surface-water resources. Of major concern is the possible transport of those resources to destinations outside of the river basins of origin while protecting the long-term supply needs within the basins. In other words, downstream needs often conflict with desires to keep the lakes full for local use.

Regions in the arid western part of the state characteristically have limited amounts of surface water and are often groundwater dependent. Planners in these western regions deal with issues such as management of aquifers where withdrawals often outpace recharge. Also of concern is the growing concept of groundwater marketing and its potential for transport of significant quantities of groundwater to distant destinations.

Following the completion of the first round of regional water planning, the TWDB incorporated the 16 regional plans into a statewide plan that was adopted and presented to the Legislature in January 2002. The following key findings are reported in this Plan:

- The population of Texas is expected to almost double in the next 50 years, from nearly 21 million in 2002 to about 40 million in 2050.

- Total demand for water is expected to increase 18 percent, from nearly 17 million acre-feet in 2002 to 20 million acre-feet in 2050.
- Total municipal and manufacturing water demand is projected to increase by 67 percent and 47 percent respectively.
- Irrigation water demand is projected to decline by 12 percent.
- Water supplies from existing sources are expected to decrease 19 percent.
- Total volume of additional water supply needs increases from 2.4 million acre-feet in 2000 to 7.5 million acre-feet in 2050.
- Total capital costs of implementing all of the water management strategies included in the 16 regional water plans are approximately \$17.9 billion.

The second round of regional planning has now been completed with the 16 regions submitting their adopted water plans to the TWDB in January 2006. In addition to the previously described objectives, the water planning groups in this second round of planning were required to consider water quality impacts, impacts of moving water from agricultural areas, and water conservation and drought contingency plans. The TWDB is currently assimilating the regional plans into the next State Water Plan to be presented to the Legislature in January 2007.

Major changes have taken place in Texas with respect to water management planning. Texans now have the opportunity to take part in identifying their specific water resource and management challenges and, even more important, in developing strategies to meet these challenges.

References

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For additional information see: <http://www.twdb.state.tx.us>

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