RECOMMENDATIONS INCLUDING UNIQUE ECOLOGICAL STREAM SEGMENTS, RESERVOIR SITES, LEGISLATIVE & REGIONAL POLICY ISSUES
TEXAS STATE SENATE BILL 1
REGION B

6.1 Introduction

With the passage of Senate Bill 1, the 75th Legislature established a regional process to plan for the water needs of Texas through the year 2050. As a part of this planning process, the Texas Water Development Board created 16 regional water planning groups and implemented rules and regulations to govern the process on a regional basis.

Region B, as designated by Senate Bill 1, is comprised of 10 counties and a portion of another in North Central Texas.

As a part of the plan, this report identifies and makes recommendations that the Regional Water Planning Group deems vital to the management and conservation of the water resources in Region B.

6.2 Discussion of Regional Issues

In addition to the specific water management strategies recommended for Region B in Chapter 5 of the plan, there were several other issues that the Regional Water Planning Group deemed to be significant water management concepts to be given further consideration as part of the Region B Plan. The Chloride Control Project on the Wichita and Pease Rivers is a water management strategy with high regional support. Other strategies that enhance and/or increase the existing supplies in the region, such as brush control, ground water recharge enhancement weather modification, and increased conservation storage for Lake Kemp, are each potentially feasible management strategies throughout and perhaps beyond the 50 year planning horizon.

Senate Bill 1 requires future projects to be consistent with the approved regional water plan to be eligible for TWDB funding and TNRCC permitting. However, it is the intention of the RWPG that surface water uses that will not have a significant impact on the region's water supply and

water supply projects that do not involve the development of or connection to a new water source are deemed consistent with the regional water plan even though not specifically recommended in the plan.

6.2.1 Chloride Control Project

Natural mineral pollutants, primarily chloride and sulfates in the upper reaches of the Red River Basin in Region B, render downstream waters unusable for most beneficial purposes. From a study initiated by the U.S. Public Health Service in 1957, it was determined that 10 natural salt source areas located in the Red River Basin contribute a daily average of about 3,300 tons of chlorides to the Red River. Subsequent to that study, in 1959 the U.S. Army Corps of Engineers proposed measures to control the natural chloride pollution by recommending control/structural facilities for 8 of the 10 salt source areas.

These recommended chloride control structures are proposed to improve the water quality conditions of the Red River and its tributaries to the extent that the water may be utilized for municipal, industrial, and agricultural uses on a regular basis.

It is anticipated that the Wichita River Basin Chloride Control Project will effectively remove 362 tons per day of the 429 tons per day of chloride entering the Wichita River System. This improved water quality will allow for full utilization of Lakes Kemp and Diversion.

This additional source, would not only increase the reliability of the City of Wichita Falls system, but it would also provide for more diverse and expanded agricultural use and more efficient industrial use.

Also, in the long term, as chloride control facilities are constructed on the Pease River in conjunction with the Crowell Brine Reservoir, the potential exists for another freshwater supply reservoir on the Pease River near Crowell in Foard County, with an estimated yield of 138,000 acre-feet per year.

6.2.2 Brush Control Program

The U.S. Natural Resource Conservation Service (NRCS) estimates that brush in Texas uses about 10 million acre-feet of water annually versus the 15 million acre-feet per year for current human use. Possible advantages of brush control, groundwater enhancement, and weather modification could be additions to water supplies, recharge of shallow groundwater aquifers and spring flow enhancement.

Though water yield following brush control has been investigated in several areas of Texas, the economic benefits and overall productivity of a brush control program may vary significantly depending on geology, nature of water yield, presence of brush, type of brush, and impact on threatened or endangered species.

Recently, the Texas Legislature approved a brush and water study to be conducted through the Texas State Soil and Water Conservation Board, upstream of Lake Kemp on a portion of the Region B Wichita River watershed. The stated goal of this study is to increase streamflow and water availability for industrial, municipal, and other uses through brush control and management.

It is anticipated that this study will provide the Region B Water Planning Group with an estimate of potential streamflow changes in the Wichita River if a large-scale brush management program is conducted, in addition to identifying and prioritizing areas within the Wichita River watershed that contribute the most to streamflow. The results of this study should be utilized by the planning group to gauge the potential effect of brush control on water flow and ecosystem components such as wildlife, livestock production, aesthetics and land values.

6.2.3 Recharge Enhancement

Recharge enhancement is the process in which surface water is purposefully directed to areas where permeable soils or fractured rock allow rapid infiltration of the surface water into the subsurface to increase localized ground water recharge. This would include any man-made structure that would slow down or hold surface water to increase the probability of ground water recharge.

In Region B, ground water is a major source of water for much of the western portion of the region. The Seymour Aquifer, which is generally unconfined, is fairly responsive to local recharge and may benefit from enhanced recharge programs. Further study is needed to determine the applicability of such programs in Region B, the quantity of increased ground water supplies from enhanced recharge structures, and the potential impacts to surface water rights.

6.2.4 Weather Modification

Weather modification is an attempt to increase the efficiency of a cloud to produce precipitation. Efforts to enhance rainfall in Texas began in 1880 and have continued to present day. Several weather modification programs are in place in areas to the west of Region B. While research has suggested increases of 15 % or more of rainfall in areas participating in weather modification, some areas in west Texas have shown greater increases in rainfall. Weather modification programs in Region B could potentially increase surface runoff to reservoirs, reduce irrigation demands, and increase recharge to ground water sources. Based on existing programs, the cost of operating a weather modification program is approximately 10 cents per acre.

6.2.5 Increase Conservation Storage for Lake Kemp

The U.S. Army Corps of Engineers (USCOE) constructed Lake Kemp for flood control and water supply. It is located in an area with high sedimentation rates, and as a result, the firm yield of the reservoir is expected to decrease significantly over the planning period. A new sedimentation survey of Lake Kemp was initiated in 1999, but due to low lake levels, the survey has not been completed. With the completion of the chloride control project, water quality in the Wichita basin is expected to improve such that the water from Lake Kemp will become more desirable for existing and future users. This could result in increased demands that may exceed the available supply of the lake.

The USCOE has provisions to transfer a portion of the flood storage to conservation storage to compensate for siltation, if there is a need for water supply. Since there is regional concern over the long-term quantity of supply from Lake Kemp, it is recommended that following the

completion of the sedimentation study, the feasibility of transferring flood storage to conservation storage be evaluated during the next planning cycle.

6.3 Designation of Unique Stream Segments and Reservoir Sites

In accordance with TAC Section 357.8, the Regional Water Planning Group is not required, but may include in the adopted regional water plan recommendations for river and stream segments of unique ecological value, in addition to unique sites for reservoir construction. Such designation would provide for protection of these specific sites to the extent that a state agency or political subdivision may not obtain a fee title or an easement that would destroy the unique ecological value of the designated stream segment or significantly prevent the construction of a reservoir on a designated site.

6.3.1 Unique Stream Segments

Within Region B, the Texas Parks & Wildlife (TPWD) has suggested that certain stream segments of the Middle Pease River in Cottle County, the Pease River in Foard County, and the Red River from the Wichita/Clay County line upstream through Hardeman County be considered for recommendation as stream and/or river segments of unique value. The TPWD believes that each of these segments satisfy at least one of the designation criteria defined in Senate Bill 1.

The Region B Water Planning Group is committed to the protection and conservation of unique and sensitive areas within the region. To that end, the consensus of the planning group is that a more comprehensive study with supporting data is necessary to accurately characterize and evaluate the listed stream/river segments in order to determine if it is appropriate to recommend them for designation.

In addition, the significance and impact of the designation are not clearly delineated in the legislation or implementing rules. It is not clear what governmental or private activities, other than reservoir construction, might be subject to additional constraints or limitations as a result of designation. It is also not clear what geographic extent might be impacted by the designation. For example, is the entire watershed of the designated stream subject to additional limitations, and how far upstream of the designated stream would limitations apply? The Region B Water

Planning Group suggests that the Legislature may wish to clarify their intent with regard to these results of designation.

6.3.2 Reservoir Sites

It is generally recognized that past studies over the last forty years have identified perhaps the last remaining reservoir site within Region B in which the chemical concentrations are low enough for municipal use.

This site known as the Ringgold Reservoir site is located on the Little Wichita River in Clay County, approximately one half mile upstream from the confluence with the Red River.

With the potential for an estimated increase in water supply yield for Region B of approximately 27,000 acre-feet per year, it is the consensus of the Regional Water Planning Group that this identified site could reasonably be needed to meet regional water needs beyond the 50-year planning period.

6.4 Discussion of Regulatory and Legislative Actions

To facilitate the orderly development, management, and conservation of water resources within the region, and to assist the region in preparing for and responding to drought conditions, the Region B Water Planning Group believes that the regulatory agencies and legislature should consider certain actions relating to water quality and funding issues which affect Region B.

6.4.1 Regulatory Review of Nitrate MCL

In Region B, there are a number of small user groups which utilize water with nitrate levels in excess of 10 mg/l. For the most part this supply is their only source of water, and advanced treatment for the removal of nitrates is very costly. Presently these systems employ bottled water programs for customers that may be sensitive to nitrate concentrations (pregnant women and infants). This program is considered an interim measure by TNRCC until the system can comply with the nitrate standards.

It is the consensus of the Region B Water Planning Group that the regulatory agency review its MCL standards for smaller systems which have no cost effective means to comply with the current nitrate MCL of 10 mg/l, and consider funding new studies to determine the health effects of nitrates in drinking water.

In addition, the planning group requests that the regulatory agencies consider bottled water programs as a long-term strategy to meet the nitrate water quality standards, or alternatively simply provide for a waiver process.

6.4.2 Funding for Comprehensive Studies

In preparing the Region B Water Plan there are several regional water planning, management, and conservation related issues which will require additional funding for data collection and administrative activities in order to adequately assess their viability or feasibility as a cost effective management strategy for Region B. For example, additional funds are needed to identify and evaluate brush control programs in an effort to increase water yields, to complete the Groundwater Availability Models (GAM), to identify and designate unique stream segments and/or reservoir sites for protection of these areas, and to implement various other chloride control measures and wastewater reuse programs throughout Region B.

6.5 Summary of Regional Recommendations

In accordance with 31 TAC 357.7 (a)(9), 31 TAC 357.8, and 31 TAC 357.9, the following recommendations are proposed to facilitate the orderly development, management, and conservation of the water resources available within Region B:

- It is recommended that the Chloride Control Project on the Wichita River be made a regional priority in order to enhance the water quality of Lake Kemp and Lake Diversion, and reclaim those lakes as a viable cost effective short term and long term regional water supply source.

- It is recommended that Region B participate in the State study on brush management and water yields to be conducted on the Wichita River watershed upstream of Lake Kemp. Pending the results of that study, it may be beneficial for the region to adopt selected brush control programs as a water management strategy. In addition, should brush management programs be implemented in the future, it is recommended that the State provide for adequate funding of the programs.

- Region B recommends that no segments be designated as "Unique Stream/River Segments" or "Unique Reservoir Sites" at this time. Pending the results of comprehensive studies and clarification by the Legislature of the significance and impacts of designation, the Regional Water Planning Group may consider designations within the region in the future.

- It is recommended that Region B encourage the regulatory agencies to consider allowing continued long-term use of bottled water programs, and/or providing a waiver for small user groups that can demonstrate they have no reasonable cost-effective means to comply with the current MCL of 10 mg/l.

- It is recommended that Region B support and seek adequate state funding to develop, implement, and evaluate the necessary management strategies adopted as part of this regional plan. This includes strategies identified to meet a specific need as well as general strategies to increase water supply in the region.

- It is recommended that Region B support the grass-roots regional water planning process enacted by SB1 and strongly encourages the process be continued with adequate state funding for all planning efforts including administrative activities, data collection, and Groundwater Availability Modeling (GAM).

- It recommended that Region B support State funding for agricultural water use data collection and agricultural water use management/conservation projects.

- Senate Bill 1 requires future projects to be consistent with the approved regional water plan to be eligible for TWDB funding and TNRCC permitting. It is recommended that surface water uses that will not have a significant impact on the region's water supply and water supply projects that do not involve the development of or connection to a new water source should be deemed consistent with the regional water plan even though not specifically recommended in the plan.