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Chapter 6: IMPACTS OF THE REGIONAL WATER PLAN AND CONSISTENCY WITH PROTECTION OF RESOURCES

2026 Initially Prepared Plan

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APPENDICES

Appendix 6-A: TWDB Socioeconomic Impact Analysis (to be released in August 2025)



LIST OF ABBREVIATIONS

ABBREVIATION	DESCRIPTION
ETRWPA	East Texas Regional Water Planning Area
IPP	Initially Prepared Plan
RWP	Regional Water Plan
TAC	Texas Administrative Code
TWDB	Texas Water Development Board
WMS	Water Management Strategy
WUG	Water User Group



6 IMPACTS OF THE REGIONAL WATER PLAN AND CONSISTENCY WITH PROTECTION OF RESOURCES

The development of viable strategies to meet the demand for water is a primary focus of regional water planning. However, another important goal of water planning is the long-term protection of resources that contribute to water availability, and to the quality of life in the State. The purpose of this chapter is to describe how the 2026 Regional Water Plan (2026 Plan) is consistent with the long-term protection of the State’s water resources, agricultural resources, and natural resources. The requirement to evaluate the impact of the regional water plan and its consistency with protection of resources is found in 31 Texas Administrative Code (TAC) Chapter 357.40 & 41, which requires the following:

- A description of potential impacts of the regional water plan regarding agricultural resources; other water resources; threats to agricultural and natural resources; third-party social and economic impacts resulting from voluntary redistributions of water; major impacts of recommended water management strategies (WMS) on key water quality parameters; and, effects on navigation. (§357.40(b))
- A description of how the 2026 Plan is consistent with the long-term protection of the state’s water resources, agricultural resources, and natural resources. (§357.41)
- A summary of identified water needs that remain unmet by the plan. (§357.40(c))
- A description of the socioeconomic impacts of not meeting identified water needs in the region. (§357.40(a))

These requirements are addressed by providing general descriptions of how the plan is consistent with protection of water resources, agricultural resources, and natural resources.

Additionally, the chapter will specifically address consistency of the 2026 Plan with the State’s water planning requirements.

6.1 IMPACTS OF WATER MANAGEMENT STRATEGIES

As required, the 2026 East Texas Regional Water Plan (ETRWP) describes how the implementing WMSs described in Chapter 5 may impact the following categories:

1. Agricultural resources
2. Other water resources of the state including other strategies and groundwater and surface water inter-relationships
3. Threats to agricultural and natural resources
4. Third party social and economic impacts resulting from moving water from rural and agricultural areas
5. Major impacts on key parameters of water quality in Texas
6. Effects on navigation

The impacts of each WMS with regard to these categories are described and quantified in the Project Evaluation section of each WMS Technical Memorandum (Appendix 5B-A). Each WMS Technical Memorandum presents a quantitative rating for the potential impacts of the strategy on a scale of 1 to – 5 (1 equating to the highest impact, 5 equating to no impact and/or positive impact) for each category described and a brief explanation of these impacts. Appendix 5B-B provides a summary of the methodology behind the quantitative rating system for each category presented in each Project Evaluation and a matrix summarizing the ratings for each category quantified for all WMSs.

6.1.1 Impact to Key Water Quality Parameters in the State

Most WMSs in the 2026 Plan are anticipated to have minimal to no impact to key water quality parameters



and thus, received a rating of a 4 or above for this evaluation category. There are a few exceptions detailed below:

The LNVA Neches-Trinity Interconnect, LNVA Purchase from SRA (Toledo Bend), and UNRMWA Neches Run-of-River with Lake Palestine WMSs each received a rating of 3 (low to medium impacts) for this category because they involve transfers of water between river basins. Lake Columbia reservoir receives a score of 2 due to transfers of water between river basins and potential impacts from land inundation. Its These strategies therefore have the potential to cause changes in water chemistry, temperature, nutrients, organic particulates, and sediment in source and potentially receiving basins, depending on how the water is being used. Additional study will be required to assess the potential water quality impacts from these interbasin transfers.

6.1.2 Third-Party Socioeconomic Impacts from Moving Water from Agricultural and Rural Areas

The majority of WMSs in the 2026 Plan do not involve moving water from agricultural and/or rural areas and thus, received a rating of a 4 or above for this evaluation category. There are several exceptions detailed below:

WMSs that involve voluntary transfers of water (i.e., purchase of water) from wholesale water providers to serve non-municipal uses (manufacturing, mining) each received a rating of 4 (low impacts) for this category because this water could be used to serve either local rural municipal and/or agricultural water users. Although, moving water to these non-municipal users will provide economic benefits to those rural areas.

The ANRA Lake Columbia and UNRMWA Neches Run-of-River with Lake Palestine WMSs each received a rating of 2 (medium impacts) for this category because they each could involve transfer of supply outside of the Neches River Basin to the Trinity River Basin for uses that are not rural or agricultural. However, substantial portions of supply from Lake Columbia are anticipated to be used by rural users in the Neches River Basin within the ETRWPA. Similarly, some supply developed from the Neches Run-of-River with Lake Palestine WMS could be used to serve rural and/or agricultural users in the Neches River Basin.

6.2 CONSISTENCY WITH THE LONG-TERM PROTECTION OF THE STATE

To be considered consistent with long-term protection of the State's water, agricultural, and natural resources, the ETRWP must also be in compliance with provisions of 31 TAC Chapter 357. The information, data, evaluation, and recommendations included in Chapters 1 through 5C, Chapters 7 through 10 of the 2026 Plan collectively demonstrate compliance with these regulations. Protection of Water Resources

The water resources in the East Texas Regional Water Planning Area (ETRWPA) include portions of three river basins providing surface water, and portions of four aquifers providing groundwater. The three major river basins within the ETRWPA boundaries are the Sabine River Basin (Basin 5), the Neches River Basin (Basin 6), and the Trinity River Basin (Basin 8). The respective boundaries of these basins are depicted in Figure 1.11, in Chapter 1.

The region's groundwater resources include, primarily, the Gulf Coast and Carrizo-Wilcox aquifers. Lesser amounts of water are also drawn from the Sparta aquifer, Queen City aquifer, and localized aquifers, such as the Yegua-Jackson. The extents of these aquifers within the region are depicted on Figures 1.7 and 1.8, in Chapter 1.

Surface water accounts for approximately 85% of the total available water in the region. Sources within the region include 13 reservoirs in the Neches River Basin, six in the Sabine River Basin, and one in the Trinity River Basin. If constructed, Lake Columbia and the West Beaumont Reservoir would be located in the Neches River Basin. Currently, the majority of the available surface water supply used in the ETRWPA



comes from the Neches River Basin.

The Carrizo-Wilcox aquifer and Gulf Coast aquifers are, by far, the most important groundwater resources in the ETRWPA, accounting for approximately 79% of the available groundwater. Significant water level declines have been observed in the Carrizo-Wilcox aquifer around the cities of Tyler, Lufkin, and Nacogdoches over the past two decades. Lufkin and Nacogdoches are both considering development of new surface water sources to meet projected shortages. The City of Tyler already relies largely on surface water supplies.

Protection of surface water resources and groundwater resources necessarily involves understanding potential impacts to the interrelationship between groundwater and surface water. This is particularly important in aquifer recharge (i.e., outcrop) areas and contributing zones to recharge areas. The Carrizo-Wilcox Aquifer outcrops in the northeastern area of the region, predominantly in Panola, Shelby, and Rusk counties. In addition, the Queen City Aquifer outcrop is found in the northwestern area of the region, mostly in Henderson, Smith, Cherokee, and Anderson counties. All of these counties support surface water supplies that are likely located on a portion of an aquifer outcrop.

Hence, water management impacts on surface water sources could affect supplies in these important groundwater supplies. Strategies to manage impacts in the ETRWPA need to consider protection of the groundwater-surface water interfaces, where it may be possible to do so.

To be consistent with the long-term protection of water resources, the 2026 Plan must recommend strategies that minimize threats to the region's sources of water over the planning period. The WMSs identified in Chapter 5B were evaluated for threats to water resources. The recommended strategies represent a comprehensive plan for meeting the needs of the region while effectively minimizing threats to water resources. Threats to water resources are minimized in the 2026 Plan in the following ways:

- **Water conservation.** Strategies for water conservation have been recommended that will help reduce the demand for water, thereby reducing the impact on the region's groundwater and surface water sources. Water conservation practices by Region I WUGs are expected to save approximately 24,000 ac-ft of water annually by 2080, reducing impacts on both groundwater and surface water resources. The plan also assumes up to 2.9% savings in municipal demands due to the implementation of plumbing codes. Water conservation benefits the State's water resources by reducing the volumes of water withdrawals necessary to support human activity. This can benefit surface water, groundwater, and groundwater-surface water relationships.
- **Development of Lake Columbia.** This strategy will increase surface water supplies available for cities, industry, and agriculture in the ETRWPA.
- **Interbasin Transfers.** The ETRWP includes several recommended WMSs that involve interbasin transfers. These transfers will have impacts to environmental flows in the basin of origin, but these impacts will be limited through prescribed environmental flow standards and where applicable, the permitting process through the TCEQ.
- **Optimized use of existing surface water resources.** WMSs that involve existing surface water resources work to optimize the utilization of these resources. The Water Availability Model, a part of the regional planning process, assesses how the increased use of surface water resources will impact the Region's water resources. The Water Availability Models developed for the ETRWPA indicate adequate availability of surface water in the region [to be confirmed in final plan]. As with conservation, optimized use of existing surface water resources can help protect groundwater-surface water relationships where surface waters extend across an aquifer outcrop.
- **Optimized use of groundwater.** This strategy has generally been recommended for entities with sufficient groundwater supply available to meet needs, but currently without adequate



infrastructure (i.e., well capacity). Groundwater availability reported in the plan is based on the long-term sustainability of the aquifer. No strategies are recommended to use water above currently identified sustainable levels, e.g., Modeled Available Groundwater.

6.2.1 Consistency with Protection of Agricultural Resources

Agriculture is an important economic cornerstone of the ETRWPA. Even with adequate rainfall, irrigation is a critical aspect of some agriculture in the region. Rice irrigation in the coastal counties is supplied by Lower Neches Valley Authority, primarily, with water from the Rayburn/Steinhagen system. The Water Availability Models indicate adequate availability of surface water to meet most of the projected irrigation demands for the planning period. Localized groundwater use from aquifers in the ETRWPA can meet any remaining projected irrigation demands not met through surface water. A WMS is recommended for irrigation water users in Trinity County to drill additional groundwater wells in the Yegua-Jackson Aquifer to address any potential water supply needs. Additionally, the Neches-Trinity Basin Interconnect WMS will enable LNVA to provide water supply to agricultural users in Chambers and Liberty County [to be confirmed in final plan].

Most WMSs in the ETRWPA are estimated to have a small permanent acreage impact and will have minimal to no impact to agricultural acreage. Any potential impacts to agricultural acreage could be mitigated during planning and design of individual projects. Both recommended reservoir WMSs, the West Beaumont Reservoir and Lake Columbia, impact substantial acreage on a permanent basis, some of which could be agricultural land. Additional study will be needed to assess these impacts and determine potential mitigation efforts during planning and design phases of these projects.

6.2.2 Consistency with Protection of Natural Resources

The ETRWPA contains many natural resources including threatened or endangered species; local, state, and federal parks and public land; and energy/mineral reserves. Following is a brief discussion of how the 2026 Plan is consistent with the long-term protection of these resources.

Threatened/Endangered Species. A list of species (contained in Appendix 1-A) of special concern, including threatened or endangered species, located within the ETRWPA includes 10 species of birds, 9 mammals, 8 reptiles, 6 fish, 7 mollusks, and 8 plants.

In general, most WMSs planned for the ETRWPA will not affect threatened or endangered species. Development of new reservoirs in the region could affect threatened or endangered species and their habitats. However, the development of any reservoir requires extensive environmental impact studies that address potential effects on threatened or endangered species. Any such impacts indicated by these studies would need to be mitigated in accordance with federal and state environmental regulations in order for the reservoir project to be allowed.

Parks and Public Lands. The ETRWPA contains national forests, wildlife refuges, and a preserve, as well as state parks, forests, and wildlife management areas. In addition, there are numerous local (e.g., city or county) parks, recreational facilities, and other local public lands located throughout the region. None of the WMSs currently proposed for the ETRWPA are expected to adversely impact state or local parks or public land [to be confirmed in final plan].

In general, federal lands (i.e., national forests, wildlife refuges, or preserves) cannot be subjugated by state or local projects. Therefore, a proposed WMS for the ETRWPA would not be permitted to adversely impact such properties unless adequate mitigation measures were planned, and the plans approved by the appropriate federal agencies.

Timber Resources. Timber is an important economic resource for the ETRWPA. Although the



development of Lake Columbia would inundate some forested areas, this loss in timber resources would be partially offset by gains in wetland areas, aquatic habitat and water recreation areas. A full environmental assessment is part of the planning process for development of reservoirs. The results of such environmental assessments identify any significant effects on timber resources and propose mitigation, as necessary.

Energy Reserves. Numerous oil and gas wells are located within the ETRWPA, including the East Texas Oil Field, and four of the top 10 producing gas fields in the state. Producing oil wells and top producing oil fields are depicted in Chapter 1 Figures 1.18 and 1.19, respectively. In addition, significant lignite coal resources can be found in the ETRWPA under portions of 12 counties. Lignite coal resources are depicted in Figure 1.20. These resources represent an important economic base for the region. None of the WMSs is expected to significantly impact oil, gas, or coal production in the region.

6.3 UNMET MUNICIPAL NEEDS

Texas Water Development Board (TWDB) guidance requires for any unmet municipal needs included in the 2026 Plan to include:

1. documentation that all potentially feasible WMS were considered to meet the need, including drought management WMS;
2. explanations as to why additional conservation and/or drought management WMS were not recommended to address the need;
3. descriptions of how, in the event of a repeat of the drought of record, the Water User Group (WUG) associated with the unmet need shall ensure the public health, safety, and welfare in each planning decade with an unmet need; and,
4. explanation as to whether there may be an occasion, prior to the development of the next IPP, to amend the RWP to address all or a portion of the unmet municipal need.

The ETRWPA is a water-rich region and therefore has no unmet municipal or non-municipal needs after accounting for existing supplies and recommended WMSs in the 2026 Plan. An unmet need is shown for the steam electric power WUG in Henderson County; however, there is no longer a water demand or need associated with this WUG. As discussed in Chapter 5B, the demand projected for the steam electric power WUG in Henderson County is associated with a planned facility, the Halyard Henderson Energy Center, that is cancelled.

6.4 SOCIOECONOMIC IMPACTS OF NOT MEETING IDENTIFIED NEEDS

This section will be updated upon the release of the Socioeconomic Impact Report by TWDB in August 2025.

Administrative rules in 31 TAC §357.10 require regional water planning groups to evaluate socioeconomic impacts of not meeting water needs as a part of the regional water planning process. The TWDB conducts a comprehensive socioeconomic analysis to assess the impacts of failing to meet projected water needs within the region. This analysis calculates the impacts of a severe drought occurring in a single year at each decadal period within Region I. Notable findings from the TWDB socioeconomic impact analysis will be summarized in this section as part of the final plan.

The full socioeconomic impact analysis performed by the TWDB will be attached as Appendix 6-A upon completion.