

TO: Board Members

THROUGH: Kevin Patteson, Executive Administrator
Les Trobman, General Counsel
Jeff Walker, Deputy Executive Administrator, Water Supply & Infrastructure

FROM: Lann Bookout, Planner, Regional Water Planning

DATE: December 4, 2015

SUBJECT: Approval of the 2016 Region I Regional Water Plan

ACTION REQUESTED

Approve the 2016 Regional Water Plan for the East Texas (Region I) Regional Water Planning Area.

BACKGROUND

In accordance with §16.051 of the Texas Water Code (TWC), the Texas Water Development Board (TWDB) is required to develop and adopt a comprehensive state water plan every five years that incorporates the regional water plans developed and approved in accordance with TWC §16.053. Pursuant to 31 TAC §357.50, regional water planning groups are required to submit their adopted regional water plans to the Board for approval every five years.

In accordance with 31 TAC §357.50, the Board is required to consider approval of submitted regional water plans and may approve a regional water plan (RWP) only after it has determined that the RWP complies with statute and rules including TWC §16.053, 31 TAC Chapters 355, 357, and 358.

In accordance with TWC §16.053, the Board may approve a regional water plan only after it has determined that:

- all interregional conflicts involving the regional water planning area, if any, have been resolved;
- the plan includes water conservation practices and drought management measures; and
- the plan is consistent with long-term protection of the state's water resources, agricultural resources, and natural resources.

Our Mission : **Board Members**

To provide leadership, information, education, and support for planning, financial assistance, and outreach for the conservation and responsible development of water for Texas :
: Bech Bruun, Chairman | Kathleen Jackson, Member
:
: Kevin Patteson, Executive Administrator

The Executive Administrator (EA) has conducted a review of the final adopted Region I Regional Water Plan related to all applicable legal and contractual requirements including related to the following key issues:

1. Determinations of whether the plans were developed according to the general provisions for planning included in statute, rule, and guidance.
2. Determination that there are no interregional conflicts associated with the plan.
3. Determination that environmental planning criteria, including consideration of environmental flow standards adopted by the Texas Commission on Environmental Quality, related to instream and bay and estuary inflows were followed appropriately in evaluations of water management strategies utilizing surface water.
4. Determination that existing and recommended water supplies would be available under a repeat of the historic drought of record.
5. Determination that impacts to agricultural resources were quantified.
6. Determination that cost estimates developed in the plan were prepared in general accordance with the provisions of the contract.
7. Determination that water conservation and drought management was considered as a means to meet all identified water needs.
8. Determination that all comments received by the regional water planning groups on the initially prepared plans from the TWDB have been satisfactorily addressed.
9. Determination that, in aggregate, the plan was found to meet the requirements related to:
 - consideration of a balance of economic, social, and ecological viability as well as consideration of the interests of the state and entities providing water.
 - providing 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, and further economic development.
10. Determination that the plan is consistent with long-term protection of:
 - state and regional water resources
 - state and regional agricultural resources
 - state and regional natural resources

Summary data of the projected population, existing supplies, demands, needs, and strategy supplies for water user groups in the Region I Regional Water Planning Area are included as Attachment 1. The water management strategy projects recommended in the 2016 Region I Regional Water Plan are included as Attachment 2.

KEY ISSUES

The recommended strategies in the 2016 Region I Regional Water Plan meet all identified needs in the plan except for approximately 5,000 acre-feet per year associated with irrigation and manufacturing uses in 2020 and approximately 5,000 acre-feet per year associated with irrigation, electric power generation uses, and a portion of the City of Athens needs in 2070. These needs were left unmet by the planning group due to limited, feasible water supply options. An unmet need in a regional plan does not prevent an associated entity from pursuing development of additional water supplies. In some instances, the underlying future increase in demand associated with an unmet need may actually shift to a less water-scarce location.

The unmet municipal needs in 2070 are attributed to modeled available groundwater limitations. The planning group anticipates that the current development of the next desired future condition for the area will increase the modeled available groundwater volumes and will reflect current permits held by Athens Municipal Water Authority. Through recommended conservation strategies to reduce unmet needs, the planning group anticipates that the available future supplies will be protective of the public health and safety of Athens residents.

The total cost of the recommended projects in the 2016 Region I Regional Water Plan is \$2.8 billion.

The EA has verified that the plan was formally adopted on November 5, 2015.

The EA has reviewed the adopted 2016 Region I Regional Water Plan and determined that the plan complies with statute and rules.

The EA has reviewed the Region I Regional Water Plan for interregional conflicts and has found none.

RECOMMENDATION

The Executive Administrator recommends approval of the 2016 Region I Regional Water Plan.

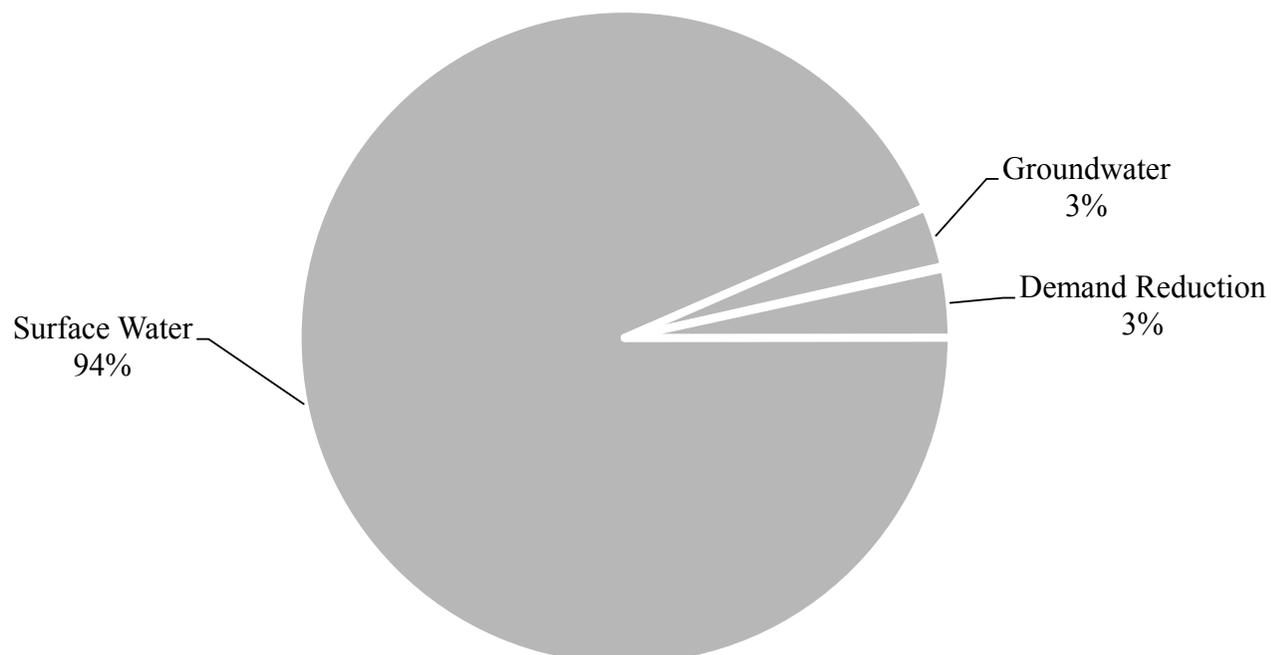
Attachment 1 – Summary of the Water User Groups in the 2016 Region I Regional Water Plan

Attachment 2 – Recommended water management strategy projects

Summary of Water User Groups in the 2016 Region I Regional Water Plan

Year	2020	2030	2040	2050	2060	2070
Population Projections	1,152,000	1,234,000	1,310,000	1,389,000	1,470,000	1,554,000
Existing Water Supply	1,028,000	1,134,000	1,155,000	1,174,000	1,195,000	1,217,000
Municipal	158,000	165,000	171,000	180,000	190,000	200,000
County-Other	30,000	32,000	33,000	35,000	37,000	39,000
Manufacturing	609,000	801,000	839,000	875,000	909,000	946,000
Mining	28,000	25,000	18,000	15,000	13,000	12,000
Irrigation	178,000	188,000	195,000	198,000	195,000	192,000
Steam Electric Power	82,000	96,000	112,000	132,000	157,000	185,000
Livestock	24,000	26,000	27,000	30,000	32,000	33,000
Total Water Demands	1,109,000	1,333,000	1,395,000	1,465,000	1,533,000	1,607,000
Municipal	100	500	1,000	4,000	7,000	10,000
County-Other	0	0	0	700	2,000	3,000
Manufacturing	195,000	287,000	309,000	329,000	349,000	369,000
Mining	10,000	7,000	3,000	2,000	2,000	2,000
Irrigation	4,000	4,000	4,000	5,000	5,000	5,000
Steam Electric Power	25,000	33,000	43,000	56,000	80,000	108,000
Livestock	3,000	4,000	6,000	7,000	10,000	10,000
Total Water Needs	237,100	335,500	366,000	403,700	455,000	507,000
Municipal	8,000	59,000	81,000	89,000	91,000	70,000
County-Other	0	4,000	4,000	5,000	6,000	4,000
Manufacturing	199,000	295,000	317,000	338,000	357,000	377,000
Mining	10,000	7,000	3,000	3,000	3,000	3,000
Irrigation	3,000	4,000	4,000	4,000	5,000	5,000
Steam Electric Power	45,000	59,000	72,000	82,000	103,000	125,000
Livestock	5,000	6,000	7,000	9,000	11,000	11,000
Total Strategy Supplies	270,000	434,000	488,000	530,000	576,000	595,000

Recommended water management strategies by water resource (2070)



Sponsor Region	Sponsor	Recommended Water Management Strategy Project	Capital Cost	Online Decade
I	ALTO RURAL WSC	CHE-ALT - NEW WELLS IN CARRIZO WILCOX	\$2,682,000	2050
I	ANGELINA & NECHES RIVER AUTHORITY	ANRA-GW-NEW GROUNDWATER WELLS INFRASTRUCTURE	\$26,023,000	2020
I	ANGELINA & NECHES RIVER AUTHORITY	CHER-MIN-INFRASTRUCTURE	\$4,214,000	2020
I	ANGELINA & NECHES RIVER AUTHORITY	ANRA-WTP-WTP CONSTRUCTION	\$117,250,000	2030
I	ANGELINA & NECHES RIVER AUTHORITY	ANRA-COL - LAKE COLUMBIA CONSTRUCTION	\$344,498,000	2030
I	ANGELINA NACOGDOCHES WCID #1	LAKE-STRIKER-DREDGING	\$23,716,000	2040
I	ANGELINA NACOGDOCHES WCID #1	STRIKER-VOLUMETRIC SURVEY	\$25,000	2020
I	ATHENS MUNICIPAL WATER AUTHORITY	AMWA-WTP - ATHENS MWA BOOSTER PS IMPROVEMENTS	\$2,900,000	2020
I	BEAUMONT	BEAU ENHANCED WATER LOSS CONTROL PROGRAM	\$52,623,000	2030
I	BULLARD	SMTH-BLD-INFRASTRUCTURE	\$5,260,000	2020
I	CENTER	CENT-REU-PIPELINE FROM WWTP TO LAKE CENTER	\$13,579,000	2020
I	CENTER	CENT-TOL-TOLEDO BEND TO CENTER	\$27,775,000	2040
I	CHANDLER	HDSN-CHN - PURCHASE FROM TYLER	\$1,886,000	2020
I	COUNTY-OTHER, JEFFERSON	JEFF-CTR INFRASTRUCTURE	\$14,236,000	2050
I	COUNTY-OTHER, NACOGDOCHES	NACN-LK - LAKE NACONICHE INFRASTRUCTURE	\$34,492,000	2040
I	CRYSTAL SYSTEMS INC	SMTH-CYS - INFRASTRUCTURE	\$2,021,000	2020
I	D&M WSC	NACW-DMW - NEW WELLS IN CARRIZO AQUIFER	\$3,484,000	2020
I	G M WSC	GM-WSC-WATER SYSTEM EXPANSION	\$1,990,490	2020
I	G M WSC	GM-WSC-WATERLINE IMPROVEMENTS	\$2,680,400	2020
I	G M WSC	GM-WSC-ELEVATED TANK	\$745,500	2020
I	G M WSC	GM-WSC-SURFACE WATER PLANT IMPROVEMENTS	\$2,483,000	2020
I	HOUSTON COUNTY WCID #1	HCWC-GW INFRASTRUCTURE	\$22,793,000	2020
I	IRRIGATION, HOUSTON	HOUS-IRR INFRASTRUCTURE	\$12,926,000	2020
I	IRRIGATION, ORANGE	ORAN-IRR-INFRASTRUCTURE	\$13,281,000	2020
I	IRRIGATION, TRINITY	TRTY-IRR INFRASTRUCTURE	\$2,174,000	2020
I	JACKSONVILLE	JACK-COL	\$20,645,000	2030
I	LINDALE	SMTH-LDL-INFRASTRUCTURE	\$5,803,000	2020
I	LIVESTOCK, NACOGDOCHES	NACW-LTK - NEW WELLS IN CARRIZO WILCOX	\$23,770,000	2020
I	LIVESTOCK, SHELBY	SHEL-LTK INFRASTRUCTURE	\$25,238,000	2020
I	LOWER NECHES VALLEY AUTHORITY	LNVA-SRA INFRASTRUCTURE	\$399,955,000	2040
I	LOWER NECHES VALLEY AUTHORITY	LNVA-JEFF - CONSTRUCTED LEVY	\$34,989,000	2020
I	LUFKIN	LUFK-RAY PHASE 1	\$49,368,000	2030
I	LUFKIN	LUFK-RAY PHASE 3	\$2,760,000	2050
I	LUFKIN	LUFK-RAY PHASE 2	\$37,863,000	2040
I	MANUFACTURING, JASPER	JASP-MFG INFRASTRUCTURE	\$33,497,000	2030
I	MANUFACTURING, JEFFERSON	JEFF-MFG INFRASTRUCTURE	\$312,255,000	2020
I	MANUFACTURING, ORANGE	ORAN-MFG	\$42,621,000	2020
I	MANUFACTURING, SMITH	SMTH-MFG-INFRASTRUCTURE	\$7,272,000	2020
I	MINING, ANGELINA	ANGL-MIN-INFRASTRUCTURE	\$4,005,000	2020
I	MINING, NACOGDOCHES	NACW-MIN-INFRASTRUCTURE	\$12,465,000	2020
I	MINING, RUSK	RUSK-MIN	\$14,158,000	2020
I	MINING, SAN AUGUSTINE	SAUG-MIN-INFRASTRUCTURE	\$21,064,000	2020
I	MINING, SMITH	SMTH-MIN-INFRASTRUCTURE	\$3,103,000	2020
I	NACOGDOCHES	NACP-COL	\$35,829,000	2040
I	OVERTON	OVER ENHANCED WATER LOSS CONTROL PROGRAM	\$2,105,000	2040
I	PORT ARTHUR	PORT ENHANCED WATER LOSS CONTROL PROGRAM	\$50,075,000	2020
I	SABINE RIVER AUTHORITY	SRA-INF - PUMPSTATION FOR SRA	\$72,832,675	2020
I	STEAM ELECTRIC POWER, ANDERSON	AND-SEP1 - PIPELINE FROM LAKE PALESTINE - CONTRACT WITH CITY OF PALESTINE	\$44,576,000	2020
I	STEAM ELECTRIC POWER, CHEROKEE	CHER-SEP INFRASTRUCTURE	\$16,735,000	2020
I	STEAM ELECTRIC POWER, JEFFERSON	JEFF-SEP INFRASTRUCTURE	\$54,518,000	2020
I	STEAM ELECTRIC POWER, NACOGDOCHES	NACW-SEP2 - NEW WELLS IN CARRIZO WILCOX	\$16,021,000	2070
I	STEAM ELECTRIC POWER, NACOGDOCHES	NACW-SEP1 - LAKE COLUMBIA INFRASTRUCTURE	\$25,805,000	2030
I	STEAM ELECTRIC POWER, NEWTON	NEWT-SEP INFRASTRUCTURE	\$38,170,000	2020
I	STEAM ELECTRIC POWER, ORANGE	ORAN-SEP	\$15,847,000	2020
I	STEAM ELECTRIC POWER, RUSK	RUSK-SEP INFRASTRUCTURE	\$57,718,000	2050
I	TYLER	TYL-PAL - PALESTINE INFRASTRUCTURE	\$93,050,000	2030
I	UPPER NECHES RIVER MUNICIPAL WATER AUTHORITY	UNM-ROR-NECHES RUN OF RIVER INFRASTRUCTURE	\$444,085,000	2020
			Total	\$2,753,935,065