

TO: Board Members

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

FROM: Temple McKinnon, Manager, Regional Water Planning

DATE: December 4, 2015

SUBJECT: Approval of the 2016 Region D Regional Water Plan

ACTION REQUESTED

Approve the 2016 Regional Water Plan for the North East Texas (Region D) 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 D 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 D Regional Water Planning Area are included as Attachment 1. The water management strategy projects recommended in the 2016 Region D Regional Water Plan are included as Attachment 2.

KEY ISSUES

The recommended strategies in the 2016 Region D Regional Water Plan meet all identified needs in the plan except for approximately 9,000 acre-feet per year associated with irrigation, electric power generation, and mining uses in 2020 and approximately 107,000 acre-feet per year in 2070 associated primarily with manufacturing in Harrison County, but also irrigation, electric power generation, and mining uses. 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 total cost of the recommended projects in the 2016 Region D Regional Water Plan is \$1.2 billion.

The EA has verified that the plan was formally adopted on November 18, 2015.

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

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

RECOMMENDATION

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

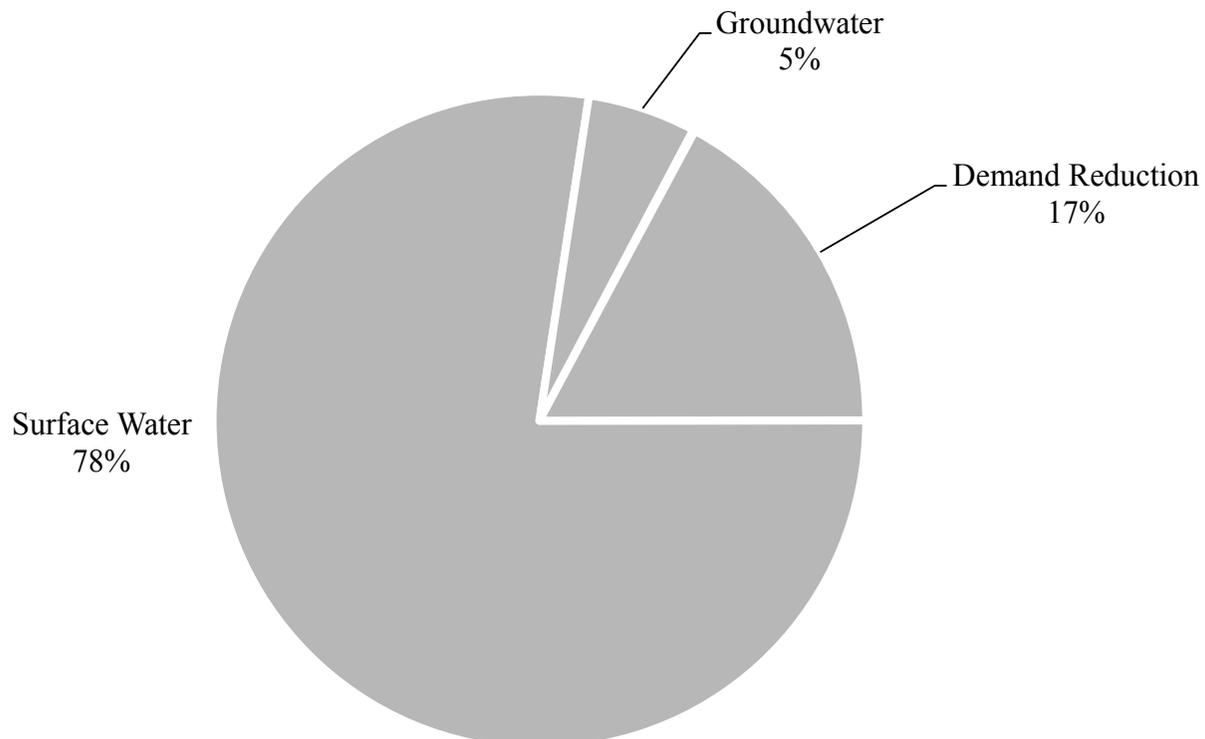
Attachment 1 – Summary of the Water User Groups in the 2016 Region D Regional Water Plan

Attachment 2 – Recommended water management strategy projects

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

Year	2020	2030	2040	2050	2060	2070
Population Projections	831,000	908,000	989,000	1,089,000	1,212,000	1,370,000
Existing Water Supply	675,000	681,000	676,000	682,000	695,000	661,000
Municipal	114,000	121,000	129,000	141,000	155,000	174,000
County-Other	20,000	21,000	23,000	26,000	29,000	34,000
Manufacturing	332,000	355,000	377,000	396,000	426,000	457,000
Mining	7,000	8,000	8,000	7,000	7,000	7,000
Irrigation	41,000	41,000	40,000	40,000	39,000	39,000
Steam Electric Power	97,000	113,000	133,000	157,000	187,000	223,000
Livestock	23,000	23,000	23,000	23,000	23,000	23,000
Total Water Demands	634,000	682,000	733,000	790,000	866,000	957,000
Municipal	22,000	25,000	28,000	31,000	35,000	44,000
County-Other	100	500	1,000	2,000	4,000	8,000
Manufacturing	62,000	72,000	87,000	101,000	120,000	176,000
Mining	3,000	3,000	3,000	2,000	2,000	1,000
Irrigation	31,000	31,000	30,000	30,000	30,000	29,000
Steam Electric Power	33,000	45,000	64,000	88,000	117,000	153,000
Livestock	0	0	0	0	0	0
Total Water Needs	151,100	176,500	213,000	254,000	308,000	411,000
Municipal	24,000	29,000	32,000	43,000	45,000	70,000
County-Other	300	1,000	2,000	3,000	5,000	9,000
Manufacturing	87,000	95,000	107,000	114,000	144,000	100,000
Mining	3,000	4,000	4,000	4,000	4,000	3,000
Irrigation	26,000	26,000	26,000	26,000	26,000	25,000
Steam Electric Power	34,000	49,000	98,000	104,000	111,000	161,000
Total Strategy Supplies	174,300	204,000	269,000	294,000	335,000	368,000

Recommended water management strategies by water resource (2070)



Sponsor Region	Sponsor	Recommended Water Management Strategy Project	Capital Cost	Online Decade
D	BI COUNTY WSC	DRILL NEW WELLS (BI COUNTY WSC, QUEEN, CYPRESS, CAMP, 2060)	\$1,320,000	2060
D	BI COUNTY WSC	DRILL NEW WELLS (BI COUNTY WSC, QUEEN, CYPRESS, CAMP, 2070)	\$912,000	2070
D	BI COUNTY WSC	DRILL NEW WELLS (BI COUNTY WSC, QUEEN, CYPRESS, UPSHUR, 2060)	\$510,000	2060
D	CANTON	CANTON INDIRECT REUSE	\$6,803,000	2020
D	CANTON	DRILL NEW WELLS (CANTON, CARRIZO-WILCOX, SABINE)	\$863,000	2020
D	CELESTE	DRILL NEW WELLS (CELESTE, WOODBINE, SABINE, 2050)	\$1,275,000	2050
D	CELESTE	DRILL NEW WELLS (CELESTE, WOODBINE, SABINE, 2070)	\$1,275,000	2070
D	CLARKSVILLE	CONTRACT WITH TEXARKANA AND TREATED WATER PIPELINE TO DEKALB (CLARKSVILLE, SULPHUR)	\$10,053,000	2040
D	COUNTY-OTHER, HUNT	GREENVILLE TIE-IN PIPELINE (COUNTY-OTHER HUNT, SABINE)	\$25,670,000	2070
D	COUNTY-OTHER, HUNT	DRILL NEW WELLS (COUNTY-OTHER HUNT, NACATOCH, SABINE, 2030)	\$2,396,000	2030
D	COUNTY-OTHER, HUNT	DRILL NEW WELLS (COUNTY-OTHER HUNT, NACATOCH, SABINE, 2040)	\$2,396,000	2040
D	COUNTY-OTHER, HUNT	DRILL NEW WELLS (COUNTY-OTHER HUNT, NACATOCH, SABINE, 2050)	\$2,396,000	2050
D	COUNTY-OTHER, HUNT	DRILL NEW WELLS (COUNTY-OTHER HUNT, NACATOCH, SABINE, 2060)	\$2,396,000	2060
D	CRYSTAL SYSTEMS INC	DRILL NEW WELLS (CRYSTAL SYSTEMS INC, QUEEN, SABINE, 2020)	\$2,330,000	2020
D	CRYSTAL SYSTEMS INC	DRILL NEW WELLS (CRYSTAL SYSTEMS INC, QUEEN, SABINE, 2050)	\$2,330,000	2050
D	CRYSTAL SYSTEMS INC	DRILL NEW WELLS (CRYSTAL SYSTEMS INC, QUEEN, SABINE, 2040)	\$1,212,000	2040
D	CRYSTAL SYSTEMS INC	DRILL NEW WELLS (CRYSTAL SYSTEMS INC, QUEEN, SABINE, 2070)	\$1,212,000	2070
D	CUMBY	DRILL NEW WELLS (CUMBY, NACATOCH)	\$772,000	2030
D	GILMER	DRILL NEW WELLS (GILMER, QUEEN, CYPRESS)	\$1,051,000	2030
D	GREENVILLE	TOLEDO BEND TIE-IN PIPELINE (GREENVILLE, SABINE)	\$42,470,000	2070
D	GREENVILLE	CHAPMAN RAW WATER PIPELINE AND NEW WTP (GREENVILLE, SULPHUR)	\$193,438,000	2050
D	GREENVILLE	WTP EXPANSION (GREENVILLE, SABINE)	\$36,074,000	2020
D	HICKORY CREEK SUD	DRILL NEW WELLS (HICKORY CREEK SUD, WOODBINE, SABINE, 2070)	\$3,210,000	2070
D	HICKORY CREEK SUD	DRILL NEW WELLS (HICKORY CREEK SUD, TRINITY, TRINITY, 2050)	\$1,607,000	2050
D	HICKORY CREEK SUD	DRILL NEW WELLS (HICKORY CREEK SUD, TRINITY, TRINITY, 2060)	\$1,607,000	2060
D	HICKORY CREEK SUD	DRILL NEW WELLS (HICKORY CREEK SUD, TRINITY, TRINITY, 2070)	\$1,607,000	2070
D	HICKORY CREEK SUD	DRILL NEW WELLS (HICKORY CREEK SUD, WOODBINE, SABINE, 2040)	\$1,705,000	2040
D	HICKORY CREEK SUD	DRILL NEW WELLS (HICKORY CREEK SUD, WOODBINE, SABINE, 2050)	\$1,705,000	2050
D	HICKORY CREEK SUD	DRILL NEW WELLS (HICKORY CREEK SUD, WOODBINE, SABINE, 2060)	\$1,705,000	2060
D	IRRIGATION, BOWIE	DRILL NEW WELLS (BOWIE IRRIGATION, CARRIZO-WILCOX, SULPHUR)	\$2,021,000	2020
D	IRRIGATION, BOWIE	DRILL NEW WELLS (BOWIE IRRIGATION, NACATOCH, RED)	\$1,466,000	2020
D	IRRIGATION, HARRISON	DRILL NEW WELLS (IRRIGATION HARRISON, CARRIZO-WILCOX, CYPRESS)	\$1,092,000	2020
D	IRRIGATION, HARRISON	DRILL NEW WELLS (IRRIGATION HARRISON, CARRIZO-WILCOX, SABINE)	\$377,000	2020
D	IRRIGATION, HOPKINS	SULPHUR SPRINGS RAW WATER PIPELINE (IRRIGATION HOPKINS, SULPHUR)	\$4,758,000	2020
D	IRRIGATION, HOPKINS	DRILL NEW WELLS (IRRIGATION HOPKINS, CARRIZO-WILCOX, CYPRESS)	\$33,000	2020
D	IRRIGATION, HOPKINS	DRILL NEW WELLS (IRRIGATION HOPKINS, CARRIZO-WILCOX, SABINE)	\$681,000	2020
D	IRRIGATION, HUNT	DRILL NEW WELLS (IRRIGATION HUNT, NACATOCH, SABINE)	\$282,000	2020
D	IRRIGATION, LAMAR	PAT MAYSE RAW WATER PIPELINE (IRRIGATION LAMAR, RED)	\$3,717,000	2020
D	IRRIGATION, VAN ZANDT	DRILL NEW WELLS (IRRIGATION VAN ZANDT, QUEEN, NECHES)	\$227,000	2020
D	LINDALE	DRILL NEW WELLS (LINDALE, QUEEN, SABINE, 2020)	\$3,470,000	2020
D	LINDALE	DRILL NEW WELLS (LINDALE, QUEEN, SABINE, 2060)	\$2,395,000	2060
D	LINDALE	DRILL NEW WELLS (LINDALE, QUEEN, SABINE, 2030)	\$1,278,000	2030
D	LINDALE	DRILL NEW WELLS (LINDALE, QUEEN, SABINE, 2040)	\$1,278,000	2040
D	LINDALE	DRILL NEW WELLS (LINDALE, QUEEN, SABINE, 2050)	\$1,278,000	2050
D	LINDALE	DRILL NEW WELLS (LINDALE, QUEEN, SABINE, 2070)	\$1,278,000	2070
D	MANUFACTURING, CASS	DRILL NEW WELLS (MANUFACTURING CASS, CARRIZO-WILCOX, CYPRESS)	\$894,000	2020
D	MANUFACTURING, HARRISON	TOLEDO BEND INTAKE AND RAW WATER PIPELINE (MANUFACTURING HARRISON, SABINE)	\$498,773,000	2020
D	MANUFACTURING, LAMAR	DRILL NEW WELLS (MANUFACTURING LAMAR, BLOSSOM, RED)	\$76,000	2070
D	MANUFACTURING, RED RIVER	DRILL NEW WELLS (MANUFACTURING RED RIVER, TRINITY, SULPHUR)	\$136,000	2040
D	MANUFACTURING, TITUS	DRILL NEW WELLS (MANUFACTURING TITUS, QUEEN, CYPRESS)	\$113,000	2020
D	MANUFACTURING, UPSHUR	DRILL NEW WELLS (MANUFACTURING UPSHUR, QUEEN, CYPRESS, 2020)	\$2,151,000	2020
D	MANUFACTURING, UPSHUR	DRILL NEW WELLS (MANUFACTURING UPSHUR, QUEEN, CYPRESS, 2060)	\$703,000	2060
D	MANUFACTURING, VAN ZANDT	DRILL NEW WELLS (MANUFACTURING VAN ZANDT, CARRIZO-WILCOX, NECHES, 2020)	\$489,000	2020
D	MANUFACTURING, VAN ZANDT	DRILL NEW WELLS (MANUFACTURING VAN ZANDT, CARRIZO-WILCOX, NECHES, 2050)	\$245,000	2050
D	MARSHALL	INCREASE EXISTING CONTRACT (MARSHALL, CYPRESS)	\$4,738,000	2060
D	MARTIN SPRINGS WSC	DRILL NEW WELLS (MARTIN SPRINGS WSC, CARRIZO-WILCOX, SABINE, 2060)	\$922,000	2060
D	MARTIN SPRINGS WSC	DRILL NEW WELLS (MARTIN SPRINGS WSC, CARRIZO-WILCOX, SABINE, 2070)	\$922,000	2070
D	MINING, GREGG	DRILL NEW WELLS (MINING GREGG, CARRIZO-WILCOX, CYPRESS)	\$377,000	2020
D	MINING, GREGG	DRILL NEW WELLS (MINING GREGG, CARRIZO-WILCOX, SABINE, 2020)	\$1,045,000	2020
D	MINING, GREGG	DRILL NEW WELLS (MINING GREGG, CARRIZO-WILCOX, SABINE, 2030)	\$524,000	2030
D	MINING, HARRISON	DRILL NEW WELLS (MINING HARRISON, CARRIZO-WILCOX, SABINE)	\$5,994,000	2020
D	MINING, HARRISON	DRILL NEW WELLS (MINING HARRISON, CARRIZO-WILCOX, CYPRESS, 2020)	\$526,000	2020
D	MINING, HARRISON	DRILL NEW WELLS (MINING HARRISON, CARRIZO-WILCOX, CYPRESS, 2030)	\$526,000	2030
D	MINING, HARRISON	DRILL NEW WELLS (MINING HARRISON, CARRIZO-WILCOX, CYPRESS, 2040)	\$526,000	2040
D	MINING, HUNT	DRILL NEW WELLS (MINING HUNT, NACATOCH, SABINE)	\$254,000	2020
D	MINING, MARION	DRILL NEW WELLS (MINING MARION, QUEEN CITY, CYPRESS, 2020)	\$1,043,000	2020
D	MINING, MARION	DRILL NEW WELLS (MINING MARION, QUEEN CITY, CYPRESS, 2030)	\$526,000	2030
D	MINING, SMITH	DRILL NEW WELLS (MINING SMITH, QUEEN, SABINE)	\$607,000	2060
D	MINING, UPSHUR	DRILL NEW WELLS (MINING UPSHUR, QUEEN, CYPRESS/SABINE, 2020)	\$2,785,000	2020
D	MINING, UPSHUR	DRILL NEW WELLS (MINING UPSHUR, QUEEN, CYPRESS/SABINE, 2030)	\$2,785,000	2030
D	NORTH HUNT SUD	DELTA COUNTY PIPELINE (NORTH HUNT SUD, SULPHUR)	\$1,774,000	2060
D	R-P-M WSC	DRILL NEW WELLS (R-P-M WSC, CARRIZO-WILCOX, NECHES, 2020)	\$959,000	2020
D	R-P-M WSC	DRILL NEW WELLS (R-P-M WSC, CARRIZO-WILCOX, NECHES, 2030)	\$959,000	2030
D	R-P-M WSC	DRILL NEW WELLS (R-P-M WSC, CARRIZO-WILCOX, NECHES, 2050)	\$959,000	2050
D	R-P-M WSC	DRILL NEW WELLS (R-P-M WSC, CARRIZO-WILCOX, NECHES, 2060)	\$959,000	2060
D	TEXARKANA	RIVERBEND STRATEGY (TEXARKANA)	\$117,116,000	2020
D	TEXARKANA	DREDGE WRIGHT PATMAN (TEXARKANA)	\$205,862,000	2050
D	WASKOM	DRILL NEW WELLS (WASKOM, CARRIZO-WILCOX, CYPRESS, 2020)	\$445,000	2020
D	WASKOM	DRILL NEW WELLS (WASKOM, CARRIZO-WILCOX, CYPRESS, 2050)	\$445,000	2050
D	WASKOM	DRILL NEW WELLS (WASKOM, CARRIZO-WILCOX, CYPRESS, 2060)	\$445,000	2060
D	WASKOM	DRILL NEW WELLS (WASKOM, CARRIZO-WILCOX, CYPRESS, 2070)	\$445,000	2070
D	WINONA	DRILL NEW WELLS (WINONA, QUEEN, SABINE)	\$695,000	2050

Sponsor Region	Sponsor	Recommended Water Management Strategy Project	Capital Cost	Online Decade
D	WOLFE CITY	DRILL NEW WELLS (WOLFE CITY, WOODBINE, SULPHUR, 2060)	\$2,066,000	2060
D	WOLFE CITY	DRILL NEW WELLS (WOLFE CITY, TRINITY, TRINITY, 2070)	\$1,155,000	2070
D	WOLFE CITY	DRILL NEW WELLS (WOLFE CITY, WOODBINE, SULPHUR, 2050)	\$1,155,000	2050
			Total	\$1,241,050,000