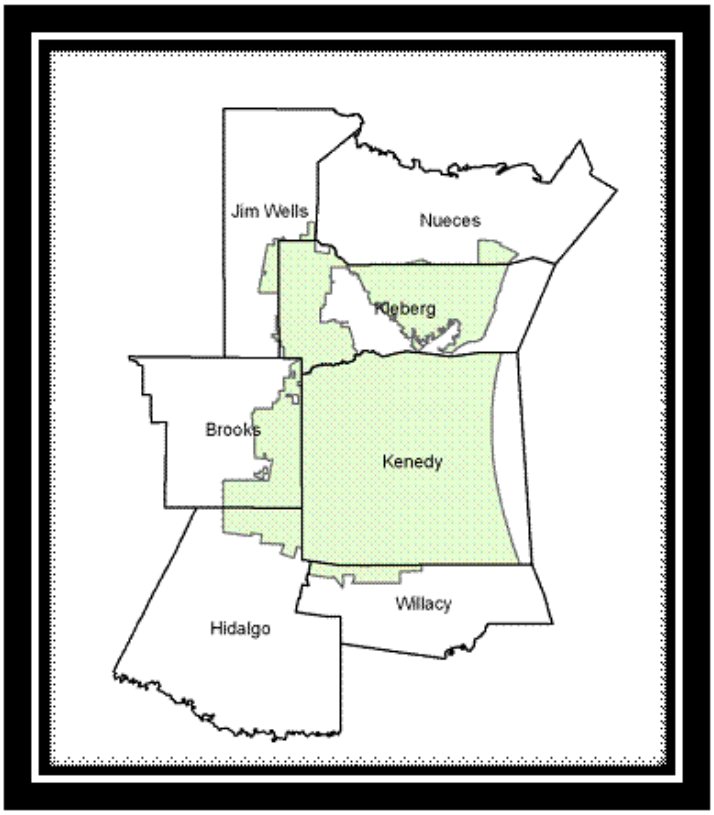
Kenedy County Groundwater Conservation District's Management Plan



Original Plan Adopted by KCGCD: July 6, 2007
Original Plan Approved by TWDB: September 11, 2007
2012 Plan Adopted by KCGCD: July 25, 2012
2012 Plan Approved by TWDB:
2017 Plan Adopted by KCGCD: May 24, 2017
2017 Plan Approved by TWDB:

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KENEDY COUNTY GROUNDWATER CONSERVATION DISTRICT'S MANAGEMENT PLAN

I. DISTRICT MISSION

The Kenedy County Groundwater Conservation District's (District) mission is to develop and implement an efficient, economical and environmentally sound groundwater management program to manage, protect and conserve the groundwater resources of the District, consistent with Texas Water Code Section 36.0015. The District's policies and actions will be consistent with the fact that a landowner owns the groundwater below the surface of the landowner's land as real property.

II. PURPOSE OF THE MANAGEMENT PLAN

Senate Bill 1 (SB 1), enacted in 1997, and Senate Bill 2 (SB 2), enacted in 2001, established a comprehensive statewide planning process, including requirements for groundwater conservation districts under Texas Water Code Chapter 36 to provide conservation, preservation, protection, recharging and prevention of waste for the groundwater resources of the State of Texas. This legislation requires that each groundwater conservation district develop a management plan that defines the district's water needs and supply within the district and establishes goals that the district will use to manage groundwater in order to meet those needs.

House Bill 1763, enacted in 2005, requires joint planning among districts that are in the same Groundwater Management Area (GMA). These districts must establish the desired future conditions of the aquifers within their respective GMAs. Through this process, the districts will submit the desired future conditions to the executive administrator of the Texas Water Development Board (TWDB). The TWDB will calculate the modeled available groundwater in each groundwater district within the management area based on the desired future conditions of the aquifers in the GMA. Once this has been accomplished, each district must include this information in its groundwater management plan.

Further, the District is required to adopt rules necessary to implement the management plan. The District must consider whether permits are consistent with the management plan. Production limits must be consistent with the plan.

III. DISTRICT INFORMATION

A. Creation

The District was created in 2003 by the 78th Texas Legislature under H.B. 3374. It was confirmed by an election held on November 2, 2004. As of January 2011, the District has received petitions from landowners in Brooks, Hidalgo, Jim Wells, Kleberg, and Willacy counties requesting annexation into the District. These petitions were approved by the Board. The maps on the cover and in Exhibit A depict the current boundaries of the District.

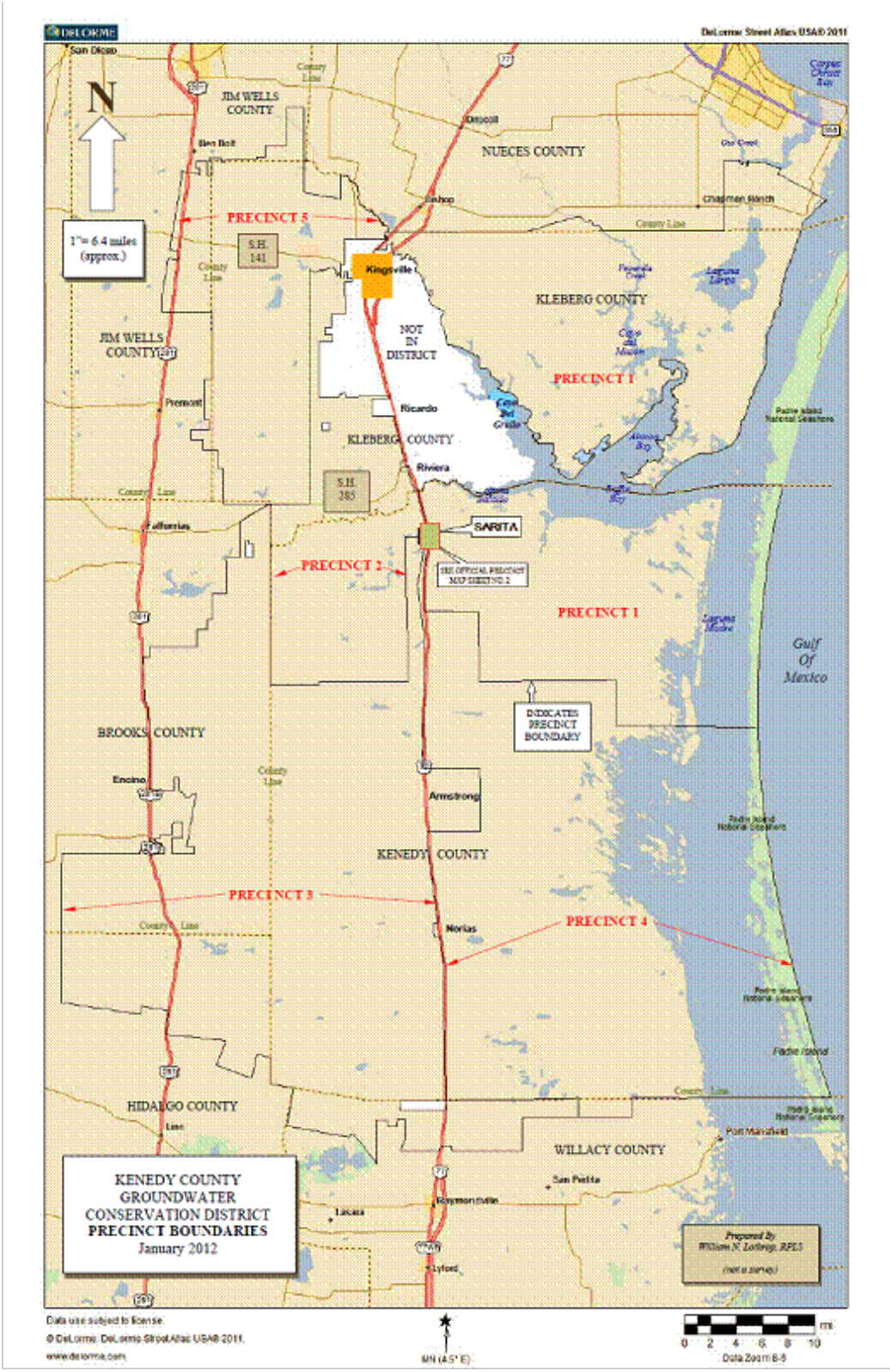
B. Directors

The Board of Directors consists of five members - one Director from each Precinct. These five directors are elected by the voters of their Precinct and serve four-year terms. Precinct 1 consists of Kenedy County's Precinct 1 and the King Ranch Laureles Division. Precinct 2 consists of Kenedy County's Precinct 2, part of Kleberg County north of Precinct 2, and the Southeast section of the Santa Gertrudis ISD. Precinct 3 consists of Kenedy County's Precinct 3 and all of the annexed tracts of land in Brooks and Hidalgo counties and westernmost part of Willacy County. Precinct 4 consists of Kenedy County's Precinct 4 and the annexed tracts of land in the easternmost part of Willacy County. Precinct 5 consists of the Santa Gertrudis ISD, less the southeastern section thereof, and all of the annexed tracts of land in Jim Wells and Kleberg County, except for the portion that is part of Precinct 2. Director four-year terms are staggered with a two year interval. Directors from Precincts 1 and 5 serve the same term, while directors from Precincts 2, 3, and 4 serve the same term. Elections are held in November in even numbered years. See Exhibit A for a map of the District showing the five Precincts.

C. Taxing Authority

The District has the taxing authority provided by its enabling legislation and Texas Water Code, Chapter 36, specifically section 36.020. The levy of a maintenance tax at a rate not to exceed 5 cents for each $100 of assessed valuation was approved by the voters on November 2, 2004. To date, the tax rate has not exceeded 5 cents for each $100 of assessed valuation.

Exhibit A: District Map Showing Directors' Precincts



C. Authority

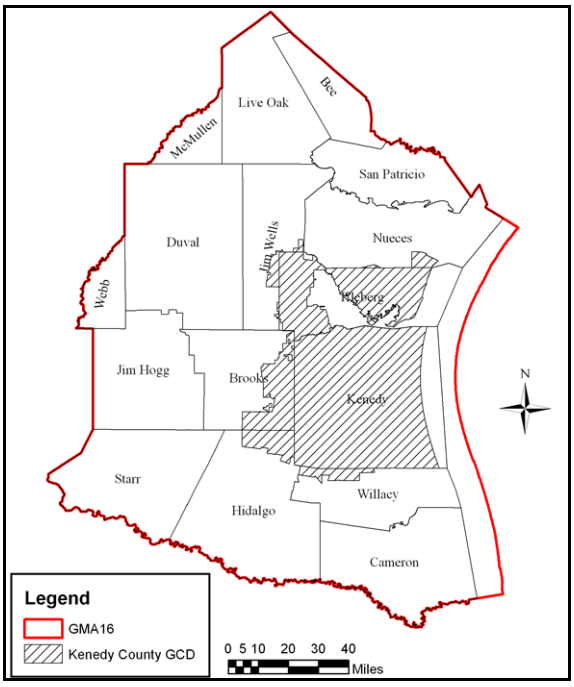
According to its enabling legislation, the District has all of the powers, authority, and duties of a Texas Water Code Chapter 36 groundwater conservation district. Therefore, it has the duty to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater, and to control subsidence. Under Chapter 36 it has the duty to develop this groundwater management plan to express how the District will meet those duties.

Under Chapter 36 the District has the authority to adopt and enforce rules, including rules to limit groundwater production, to provide for conserving, preserving, protecting, and recharging groundwater, to control subsidence, to prevent degradation of water quality, and to prevent waste of groundwater. The District has many other powers that are enumerated in Chapter 36 allowing it to accomplish its duties.

D. General Description of the District

The District includes all territory located within Kenedy County and parts of Brooks, Hidalgo, Jim Wells, Kleberg, Nueces, and Willacy counties. The boundaries are shown in Exhibit B. The District encompasses approximately 3,028 square miles and is part of groundwater management area 16 (GMA-16)**.** The primary economic activities within the District are oil and gas production and agriculture, primarily livestock. While the District does not include a large-sized city or township, it is close to the City of Kingsville, which has traditionally relied on groundwater supplies.

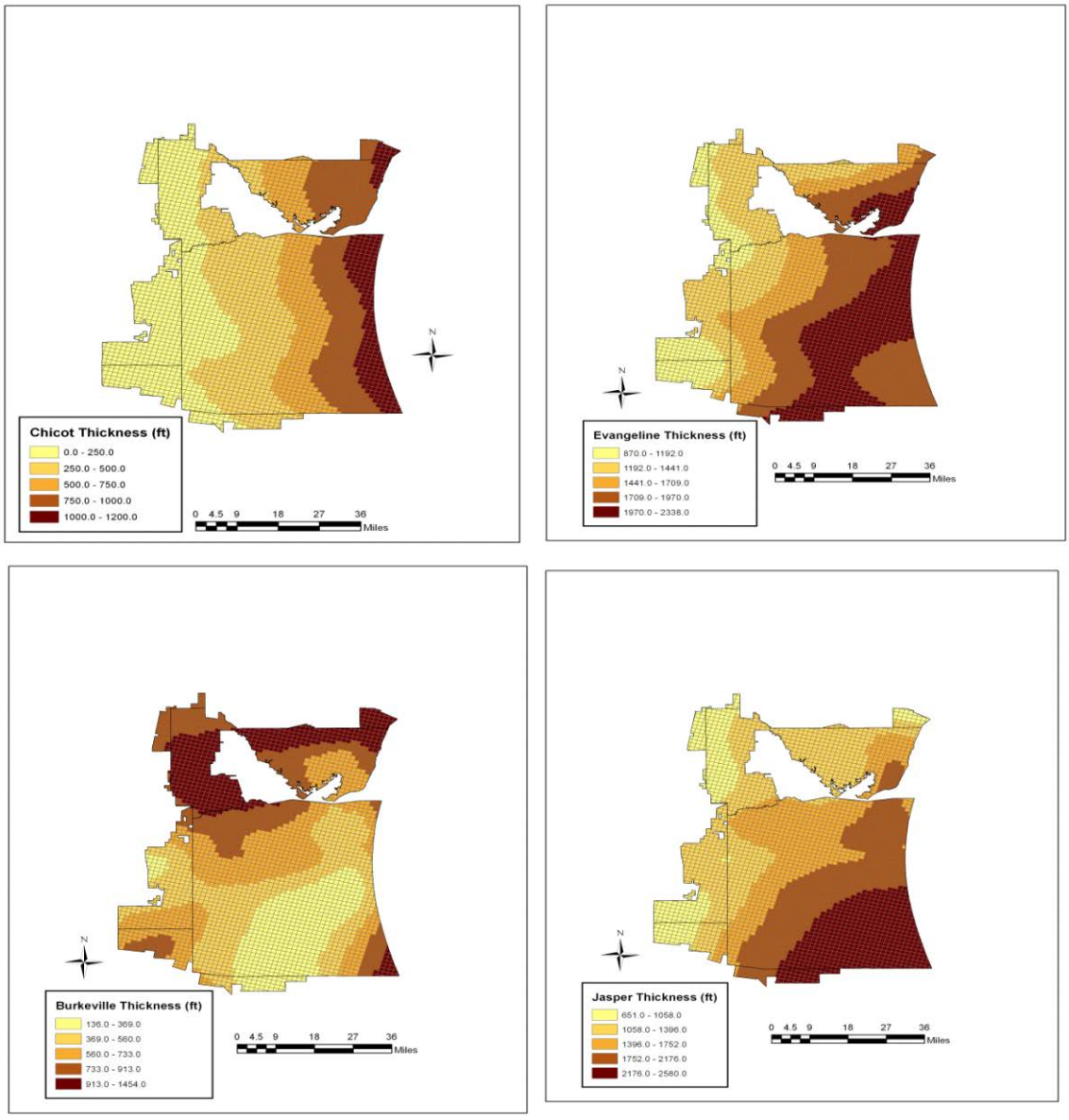
Exhibit B: Kenedy County GCD and GMA-16 (February 2012)



E. Aquifer and Stratigraphic Units

The District is underlain by the Gulf Coast Aquifer, which is a large, leaky aquifer system that spans along the Gulf of Mexico. The aquifer consists of interbedded deposits of sands, silt and clay. The Gulf Coast aquifer is sometimes further classified into four major aquifers: the Chicot, Evangeline, Burkeville confining unit and Jasper aquifers (Baker, 1979).

Exhibit C:
Aquifer Thickness of the Gulf Coast Aquifer Units in Kenedy County GCD
Based on Data in GMA-16 GAM Model (Hutchison et al. 2011)



The thicknesses of the aquifers found within the District are depicted in Exhibit C, which is based on the conceptualization used in GMA-16 GAM model (Hutchison et al., 2011). In addition, select cross-sectional maps and general information regarding the thicknesses of these aquifers, their variability and the extent of sand thicknesses have been summarized by Chowdhury and Mace (2007) and Waterstone (2004).

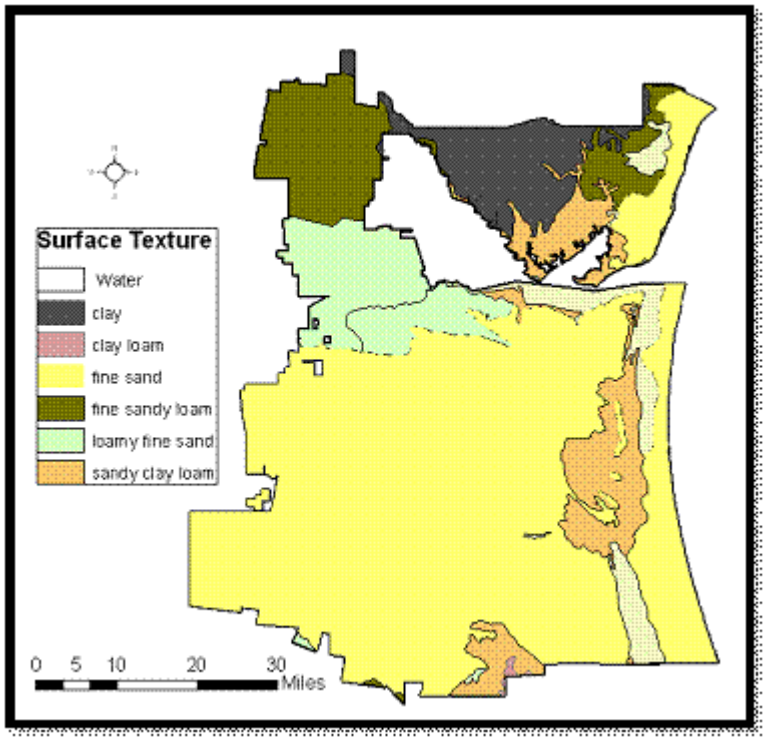
As can be seen from Exhibit C, the thicknesses of the aquifers increase eastward towards the coast (Baker, 1979). The Chicot aquifer covers the surface of the District and is the aquifer that is directly recharged by precipitation. The thickness of the Chicot aquifer is very small: 20 – 100 feet in the western sections of the District. The water quality of this aquifer is characterized by high total dissolved solids (TDS), especially near the coast. As result, this aquifer currently is not used for major water supply purposes. Based on the thicknesses, groundwater supply wells tap into Chicot and Evangeline aquifers along the eastern sections of the District, while major water supply wells tap into Evangeline and possibly Jasper aquifers along the western sections of the District.

F. Surficial Soil Texture Characteristics

A surficial soil texture map for the District was prepared using the USDA STATSGO database and is depicted in Exhibit D.

Exhibit D: Surficial Soils

Updated February 2012



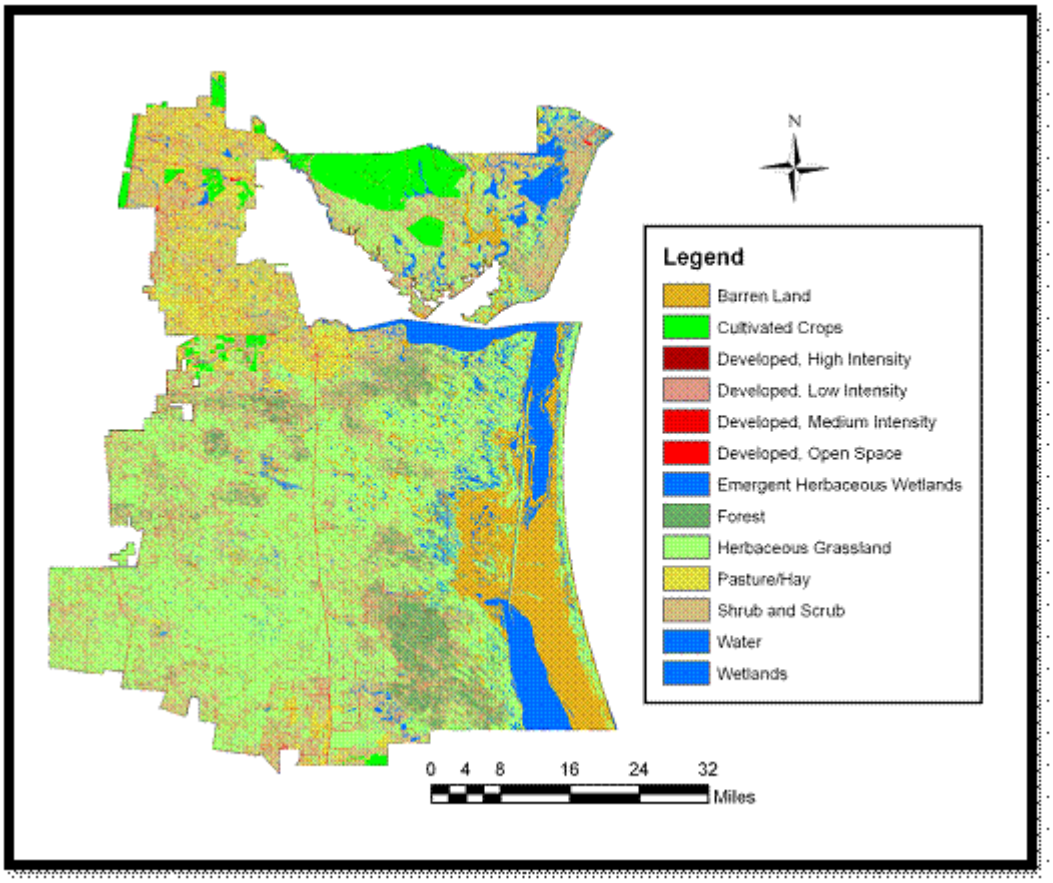
The surficial soils within the District range from clayey soils to fine sands. The silt and clay deposits are commonly referred to as the Beaumont Clay and Lissie Formation and they outcrop in the eastern sections of Kleberg, Kenedy and Nueces counties. Most of the District is overlain by tan to white, unfossilferous, fine to very fine sand deposits that are intermixed with clay and sandy clay that are referred to as South Texas eolian plain deposits. They are primarily comprised of windblown sediments (Shafer and Baker, 1973). The barrier island and beach deposits of the Pleistocene age crop out in an area 4 to 8 miles wide bordering the landward side of the Laguna Madre and are mostly comprised of fine sands (Shafer and Baker, 1973). Beaumont and Lissie clay formations can be found in the southeastern portions of Kenedy County.

While a major portion of the District is covered by fine sandy deposits, these deposits are predominantly windblown and are underlain by Beaumont clays and Lissie formations (consisting of clays, silts and sands). As a result, recharge to the underlying aquifer is expected to be fairly limited. Most of the infiltrated water in these sandy deposits is hypothesized to flow laterally eastwards towards the Gulf of Mexico, especially when it encounters tight clayey units.

G. Land Use and Land Cover Characteristics

The District consists predominantly of range land supporting a mixture of herbaceous and woody vegetation. The District has no urban areas. (See Exhibit E). Agriculture and livestock demands are of critical importance within the District, although there is minimal irrigated agriculture within the District. In addition to livestock and agricultural uses, groundwater supplies for oil and natural gas production are important as well, although to date groundwater use for this purpose has been small. While the District does not include a large-sized city or township, it is close to the City of Kingsville, which has traditionally relied on groundwater supplies. Model results (Chowdhury et al., 2004; Hutchison et al., 2011) indicate a cone of depression around the Kingsville area, indicating that groundwater could be flowing out of the District boundaries, especially in the northwestern sections of the District.

Exhibit E: Land Use Cover Characteristics [based on 2006 USGS Multi-Resolution Land Cover (MRLC) Dataset.]

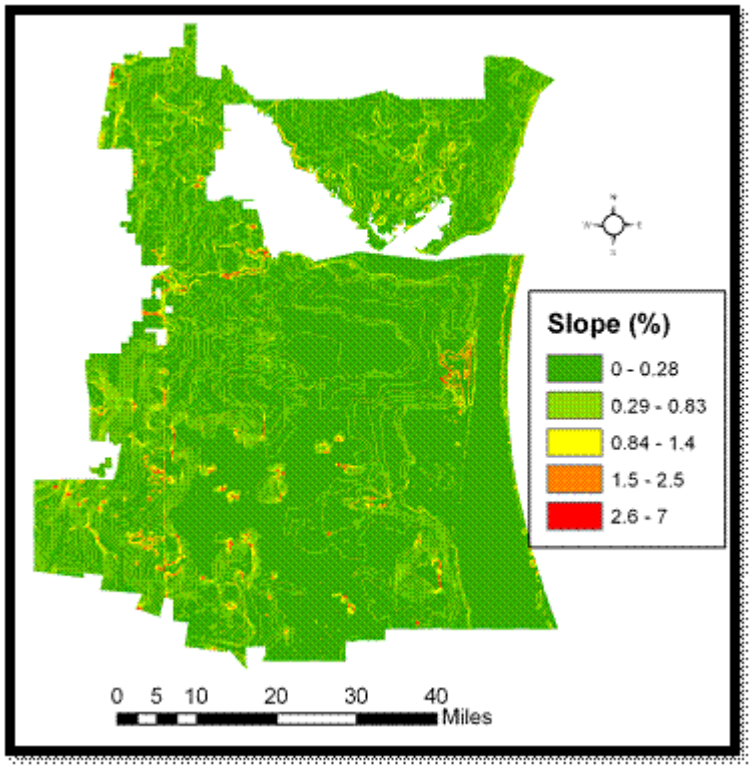


H. Land Slopes

Land slopes were calculated using ArcGIS Spatial Analyst extension using 1:250K Digital Elevation Models (DEM) and are depicted in Exhibit F. The District consists primarily of gently rolling plains with a relatively flat topography especially near the coast. The regional-scale slopes are typically less than 1%. Greater slopes may be found at scales smaller than the one used for this assessment. The gentle slopes are again indicative of relatively small groundwater-surface water interaction.

Exhibit F: Calculated Slopes

Updated February 2012

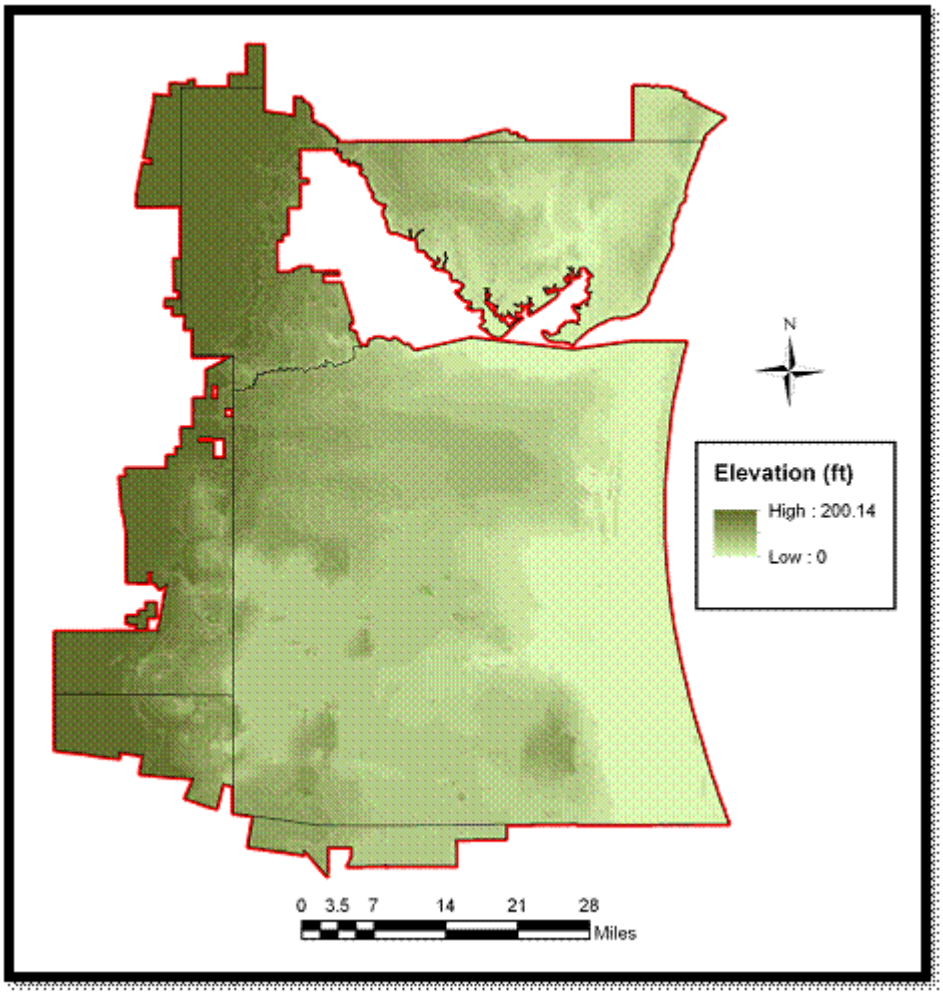


I. Topography

The topographic digital elevation map (DEM) was intersected for the District and is depicted in Exhibit G. The elevation within the District slopes in the east-south-east direction. The elevation ranges from roughly 200 feet in the western sections of the District to about mean sea level in the eastern sections of Nueces, Kleberg and Kenedy counties. The gently sloping topography indicates the general direction of groundwater flow in the aquifers (moving in northwest to southeastern directions).

Exhibit G: Topography.

Updated February 2012



IV. STATEMENT OF GUIDING PRINCIPLES

The District recognizes that its groundwater resources are of vital importance. The use of this most valuable resource can be managed in a prudent and cost effective manner through education, cooperation and development of a comprehensive understanding of the aquifers in the District. The greatest threat to the District's ability to achieve its stated mission is the inappropriate management of its groundwater resources due to a lack of understanding of local conditions. The District's management plan is intended to to provide focus to the District's Board of Directors and staff, who must implement the District's duties and authority under Texas Water Code Chapter 36 and the District's enabling legislation.

V. CRITERIA FOR PLAN CERTIFICATION

A. Planning Horizon

This 2017 Plan becomes effective upon adoption by the District Board of Directors (Board) and subsequent approval by the Texas Water Development Board (TWDB). This Plan uses a ten-year planning horizon. As required by Texas Water Code §36.1072(e), the plan will be reviewed and readopted, with or without revisions, every five years. The plan may be reviewed and revised annually as necessary to address any changes in law, new or revised data, Groundwater Availability Models, or District management strategies. Under Texas Water Code § 36.1082(b)(5), enacted in 2011, the Plan must be reviewed and revised within two years of the adoption of desired future conditions for GMA-16. This revision fulfills both the required five-year update and the post-DFC adoption update.

B. Board Resolution

Certified copy of the Kenedy County Groundwater Conservation District resolution adopting the 2017 Plan, as required by 31 TAC §356.6(a)(2).

A certified copy of the Kenedy County Groundwater Conservation District resolution adopting the 2017 Plan is attached as Appendix A – Board Resolution.

C. Plan Adoption

Evidence that the plan was adopted after notice and hearing, as required by 31 TAC §356.6(a)(4).

Public notice documenting that the 2017 Plan was adopted following appropriate public notice and hearing is attached as Appendix B – Notice of Hearing.

D. Coordination with Surface Water Management Entities

Evidence that following notice and hearing the District coordinated in the development of its management plan with surface water management entities, as required by Texas Water Code § 36.1071(a).

There are no surface water management entities within the District. Letters transmitting a draft of this 2017 Plan for comments by Region M (Rio Grande Regional Water Planning Area) and Region N (Coastal Bend Regional Water Planning Group) are included in Appendix C – Letter to Surface Water Management Entities/Regional Water Planning Groups. Appendix C also includes letters transmitting the adopted 2017 Plan to these Regional Water Planning Groups.

VI. TECHNICAL INFORMATION REQUIRED BY TEXAS WATER CODE §36.1071 AND 31 TAC § 356.5

A. Modeled available groundwater

Estimate of the modeled available groundwater in the District based on the desired future condition of the aquifers developed under Texas Water Code § 36.108, as required by Texas Water Code § 36.1071(e)(3)(A) and 31 TAC § 356.5(a)(5)(A).

Modeled available groundwater is defined in the Texas Water Code, Section 36.001, Subsection (25), as "the amount of water that the executive administrator determines may be produced on an average annual basis to achieve a desired future condition established under Section 36.108." Under Texas Water Code § 36.108(d), the desired future condition may only be determined through joint planning with other GCDs in the same GMA. The District is located in GMA-16. See Exhibit B. As part of the first round of joint planning, GMA-16 adopted a desired future condition on August 30, 2010. A series of model runs were performed using the GMA-16 GAM developed by the TWDB (Hutchison et al., 2011) during the GMA-16 joint planning process. The Groundwater Availability Modeling (GAM) Run 09-008, Scenario 10, was used as the basis for developing the desired future condition for the Gulf Coast Aquifer. Details of the Modeled Available Groundwater are presented in TWDB Report GAM Run 10-047 MAG (Hassan and Jigmond, 2011). The Modeled Available Groundwater for GMA-16 is estimated to be 358,100 acre-ft/year. The MAG corresponding to Kenedy County Groundwater Conservation District is 97,335 acre-feet/year.

The exempt groundwater use in the district for domestic and livestock purposes was estimated to be approximately 2,500 acre-feet/year. Subtracting this exempt use from the Modeled Available Groundwater and dividing it by the district area of 3,028 sq. miles, results in a correlative right of 0.587 acre-inches/acre/year of groundwater production.

B. Annual groundwater use

Estimate of the amount of groundwater being used within the District on an annual basis, as required by Texas Water Code § 36.1071(e)(3)(B) and 31 TAC § 356.5(a)(5)(B). (All site-specific information relied upon in developing this estimate has previously been provided to the Executive Administrator for comment, as required by Texas Water Code §36.1071(b) and 31 TAC § 356.5(b)).

Historical estimates of the amount of groundwater being used within the District on an annual basis were developed based on county-wide estimates for groundwater use that were provided by the Texas Water Development Board (Allen, 2017; Appendix D) and used in the 2017 State Water Plan, which is the most recently approved Water Plan. Because the District encompasses only portions of some counties and site-specific measurements were not available, the county-wide water use was apportioned based on the fraction of the land area within the District. The land fractions were also provided by Allen (2017) and district wide apportionments were provided by Allen (2017) in the

April 18, 2017 report (included in Appendix D). Based on the groundwater use data (most recent 15 years for which data are available) presented in Exhibit H, the amount of groundwater used in the District is estimated to be approximately 8,600 acre-feet/year.

Exhibit H: Total Groundwater Use in the District in acre-feet/year (Based on data from 2017 State Water Planning Dataset as Reported in Allen, April 18, 2017; Please refer to Appendix D)[1]

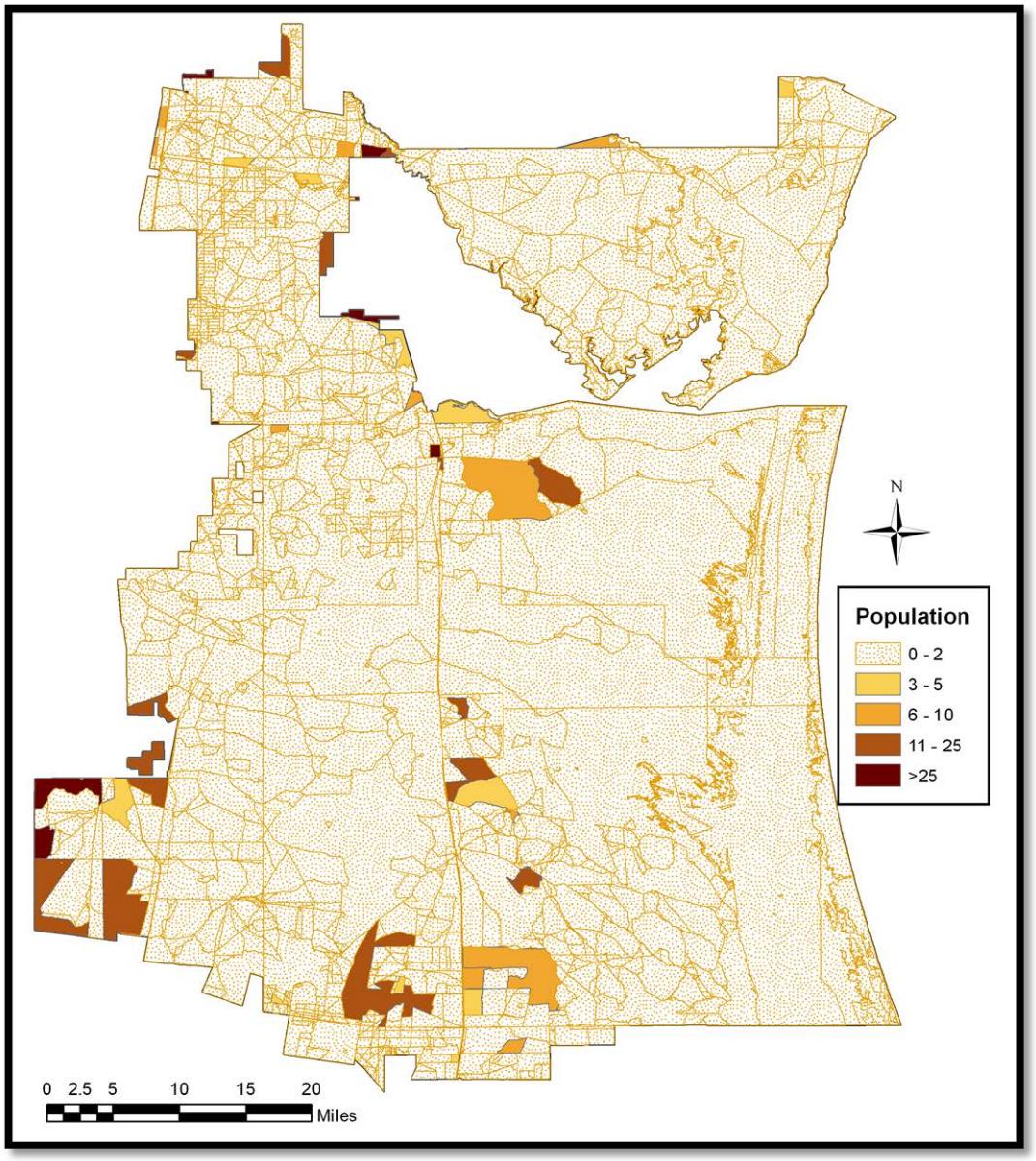
	Portions of the County within the GCD							
Year	Brooks (27.98%)	Hidalgo (7.2%)	Jim Wells (5.14%)	Kenedy (100%)	Kleberg (81.75%)	Nueces (4.04%)	Willacy (10.92%)	Total
2000	578	867	328	330	6707	73	7	8890
2001	591	729	258	308	6724	72	7	8689
2002	594	684	263	317	6328	83	8	8277
2003	672	616	278	193	5301	153	8	7221
2004	639	557	295	187	4736	166	9	6589
2005	792	649	336	778	7160	178	20	9913
2006	792	529	358	782	6038	168	24	8691
2007	665	548	249	545	5826	143	26	8002
2008	825	633	229	1040	5505	184	31	8447
2009	1437	947	259	868	5446	196	62	9215
2010	872	736	230	967	3181	300	112	6398
2011	999	1051	256	961	3363	370	100	7100
2012	797	971	218	831	5248	326	101	8492
2013	747	1000	215	719	4919	261	93	7954
2014	648	1124	218	675	5489	218	94	8466
2015	538	1011	171	671	4173	208	58	6830

As depicted in Exhibit I, the District is predominantly rural. Groundwater is the major source of water supply for the residents of the District. In addition, the District is in close proximity to the City of Kingsville, which historically has relied on groundwater supplies for its municipal use. The City of Kingsville uses nearly 3,500 acre-feet of water annually, which is extracted from the Evangeline (Goliad sands) aquifer formation. There are also mining and oil and gas activities both within the District and in the vicinity of the District that rely on groundwater resources. Hence, it is important to measure and evaluate groundwater levels in the District. Long-term monitoring of groundwater levels

[1] Numbers in parenthesis represent the fraction of land area of the county that is within the District. The numbers presented are apportioned for the land area within the District.

is also necessary to evaluate compliance with the adopted desired future conditions (DFCs).

Exhibit I: Population Distribution in the District
(Based on Census 2010 Data in units of persons/census block)

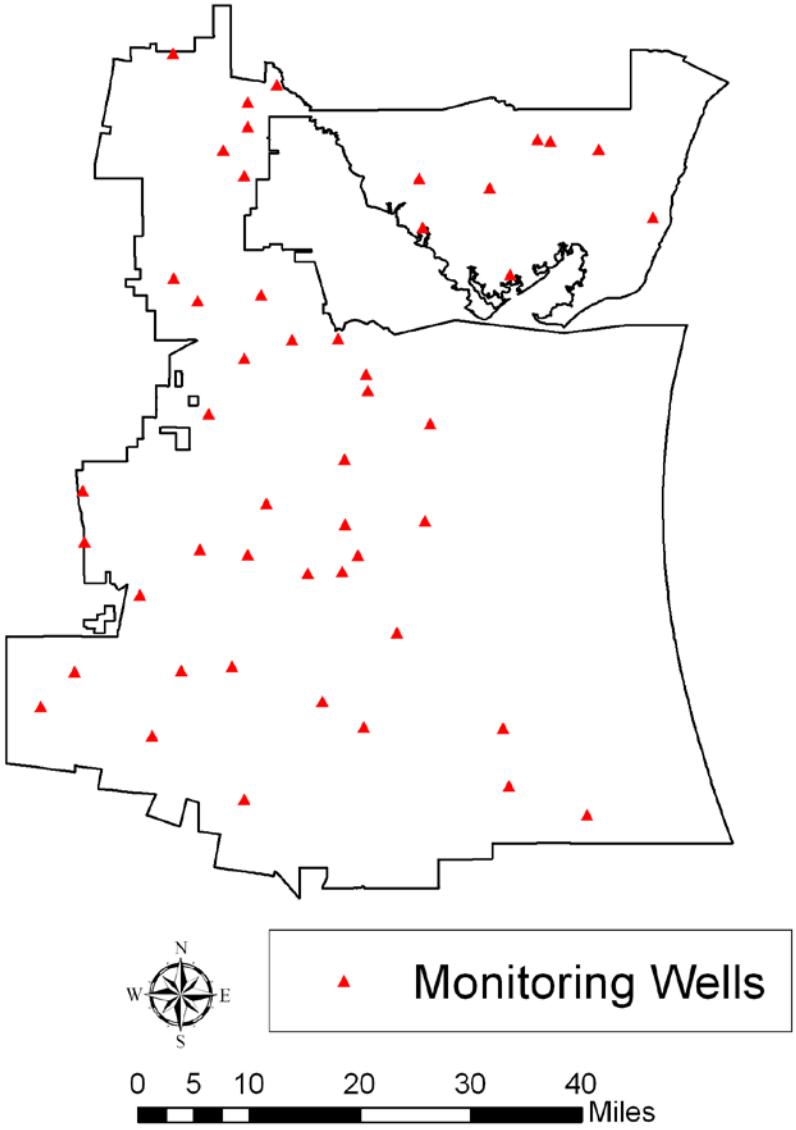


The District has established a groundwater monitoring program with the goal of measuring groundwater levels semi-annually in a network of more than 45 water wells. Exhibit J depicts the location of these monitored wells. Beginning in 2012, the District will be performing water quality analyses on a subset of at least 25 of these wells. Water from this subset of monitored wells will be analyzed for electrical conductivity, total dissolved solids, and pH to develop a basic understanding and historical record of water quality in the aquifers. The network provides a comprehensive coverage of the District.

The lack of wells in the network along the coast is reflective of limited groundwater production in that area but efforts are underway to identify additional wells for inclusion in the network.

In addition to the long-term monitoring network, the District undertook the collection of water level measurements and water quality samples in 11 water wells as part of a project to establish background water quality data prior to initiation of uranium exploration under a Railroad Commission permit issued for land within the District. These samples were analyzed for metals and uranium, anions, alkalinity, ammonia, Radium 226, and gross alpha and beta activity. This information is available from the District upon request.

Exhibit J: District's Groundwater Level Monitoring Network as of January 2012

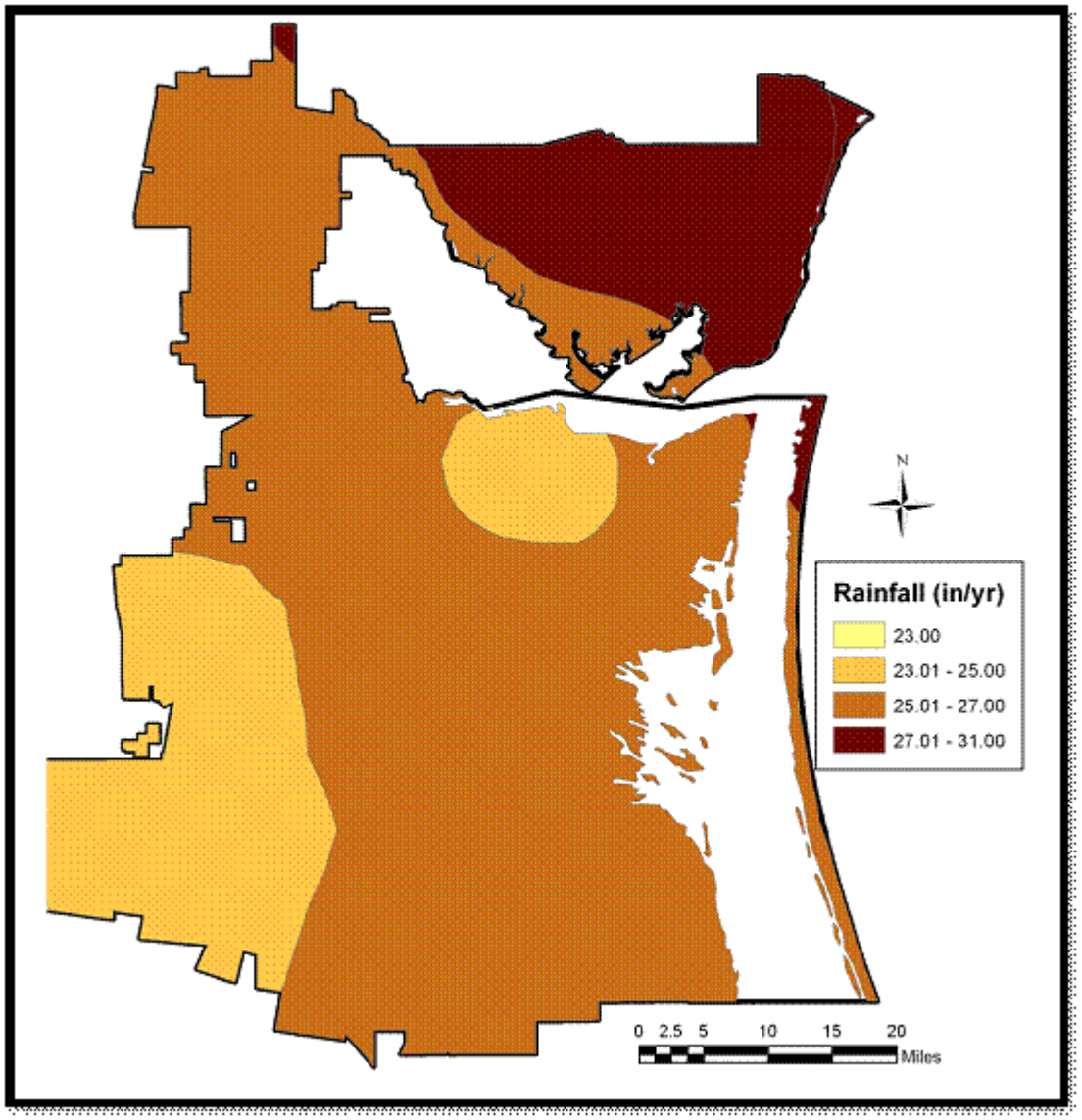


C. Annual recharge from precipitation

Estimate of the annual amount of recharge from precipitation to the groundwater resources within the District, as required by Texas Water Code § 36.1071(e)(3)(C) and 31 TAC § 356.5(a)(5)(C). No site-specific information was used in developing this estimate.

Exhibit K: Long-Term Average Precipitation Profile

Updated February 2012

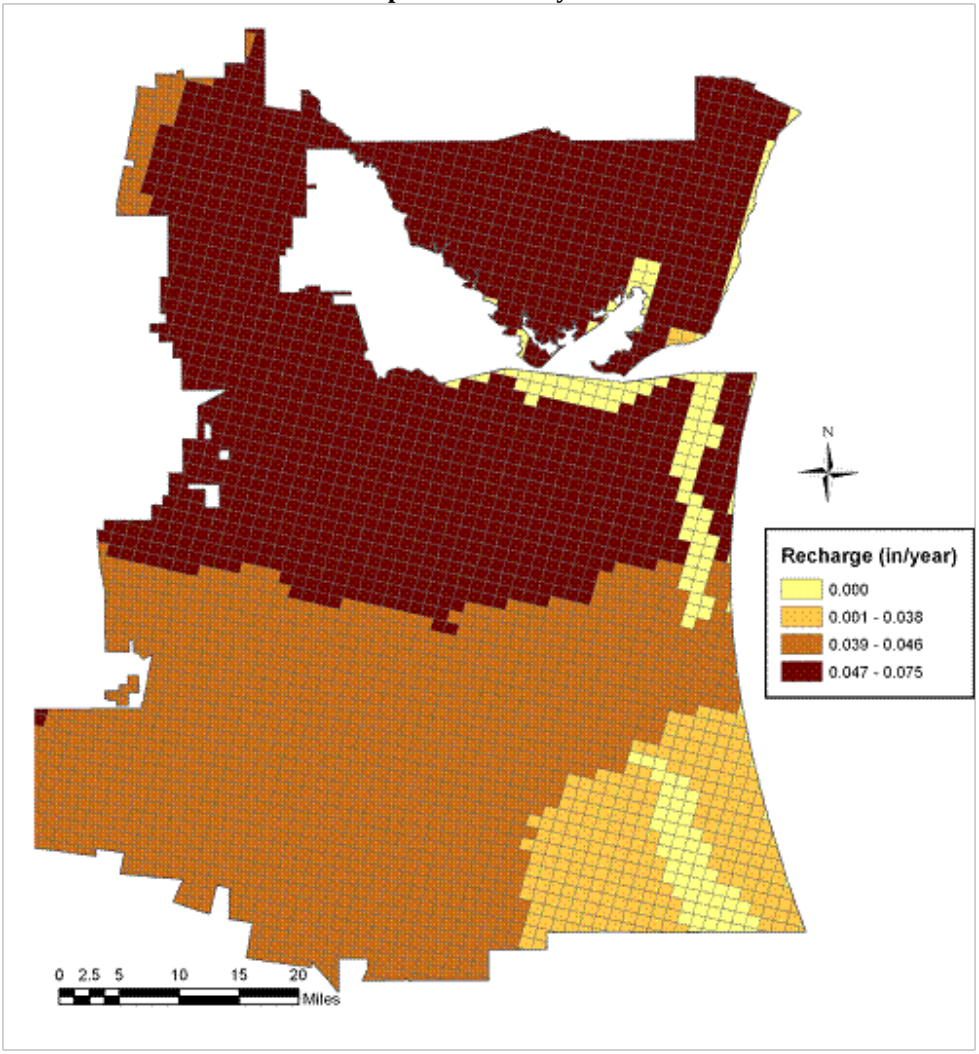


Precipitation information was used in conjunction with soils information to derive recharge characteristics. The climate in South Texas is characterized by mild winters and dry summers. The long term average precipitation data were used to develop the

precipitation contour map depicted in Exhibit K. The average annual precipitation is roughly 24 in/yr indicating that the recharge to the shallow aquifer is probably in the order of 0.024 in/yr. Field measured values for recharge specific to the District could not be found. The estimate is consistent with Groschen (1985), where a recharge value of 0.05 in/yr was used for the unconfined portions of the Evangeline aquifer covering from San Patricio to Jim Hogg counties. Chowdhury and Mace (2003) estimated recharge from precipitation to vary between 0.08 in/yr (toward the coast) to about 0.14 in/yr in the region covered by the District. Recently Hutchinson et al. (2011) developed a GMA-16 GAM that was calibrated over the period of 1963 – 1999. A map of the calibrated recharge values corresponding to the year 1999 (the last year of calibration) was developed and is presented as Exhibit L. The calibrated recharge values are consistent with the estimates presented in earlier studies. As can be seen from Exhibit L, recharge values reflect considerable variability in the District with higher values in the northern sections of the District.

Exhibit L: Recharge Estimates based on GMA-16 GAM (Data corresponds to the last calibrated year of 1999)

Prepared February 2012



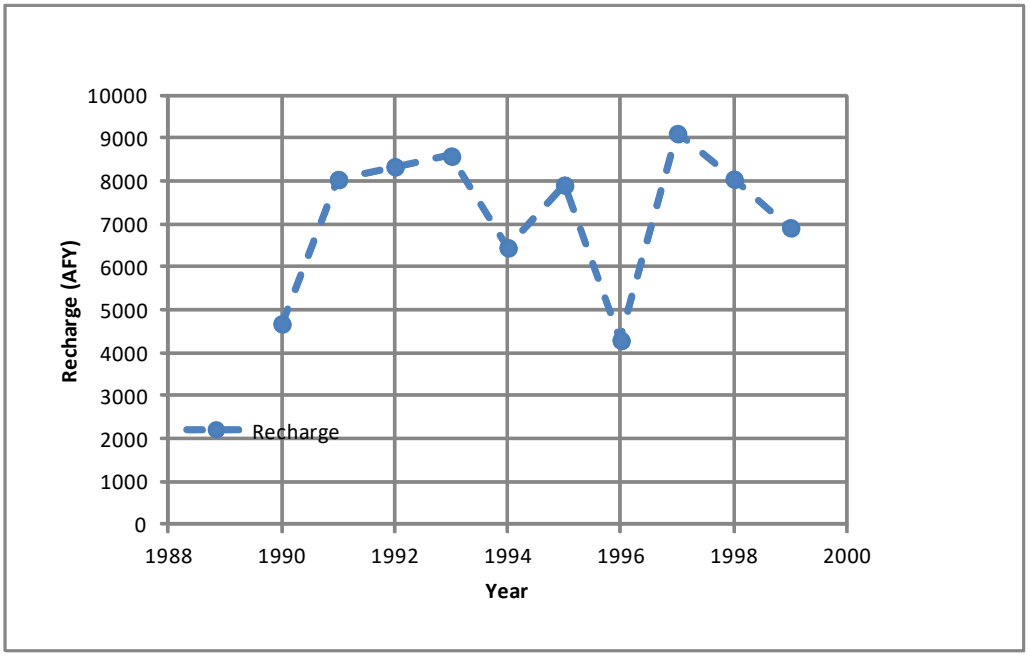
Groundwater model run, GAM Run GR16-009, was performed by the TWDB (Goswami, 2016; Appendix E) to obtain estimates pertaining to groundwater flow in the District. The GMA-16 GAM (Hutchison et al., 2011) was used to obtain the necessary estimates. As stated in Exhibit M, the recharge from precipitation is estimated to be around 6,000 acre-feet/year. The calibrated recharge values during 1980 – 1999 are used to derive these estimates. See Goswami, 2016; Appendix E, which includes a copy of GAM Run GR16-009.

Exhibit M: Estimated Recharge from Precipitation using GMA-16 Groundwater Availability Model (Data obtained from Goswami, 2016; Appendix E).

Parameter	Estimate (AFY)	Remarks
Recharge from Precipitation	5,998	Obtained as average of 1980-1999

The average estimate of recharge was divided by the area of the District to obtain an approximate average recharge rate of 0.04 inches/year (< 0.2% of average annual rainfall). As seen from exhibit L, there is considerable spatial variability within the District. The water budgets presented by Hutchison et al., 2011, indicate that recharge from precipitation also varies considerably from year to year and is affected by climatic fluctuations. The temporal variations in recharge due to precipitation are summarized in Exhibit N.

Exhibit N: Temporal Variability in Recharge from Precipitation (in acre-feet/year) Estimated using Water Budgets presented in Hutchison et al., 2011.

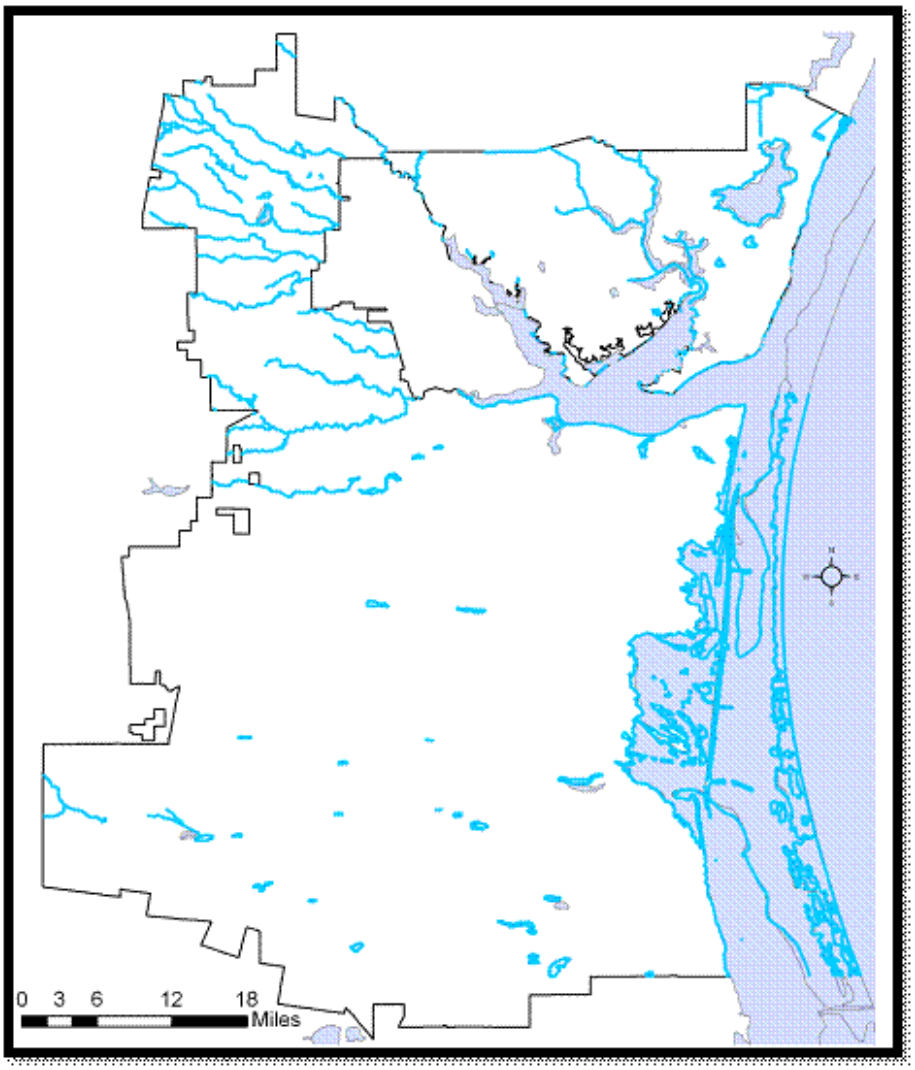


D. Annual Discharge to Surface Water Bodies

For each aquifer in the District, estimate the annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers, as required by Texas Water Code § 36.1071(e)(3)(D) and 31 TAC §356.5(a)(5)(D). No site-specific information was used in developing this estimate.

No major inland surface water bodies exist within the District (Exhibit O). However, sensitive coastal water bodies like Baffin Bay and Laguna Madre abut the District. Research carried out by Texas A&M University-Kingsville, funded through the National Oceanic and Atmospheric Administration (NOAA), indicates that a significant amount of groundwater (on the order of 1 cm/day) discharges into Baffin Bay. Hence, coastal groundwater interactions are of significance.

Exhibit O: Major Surface Water Bodies in KCGCD



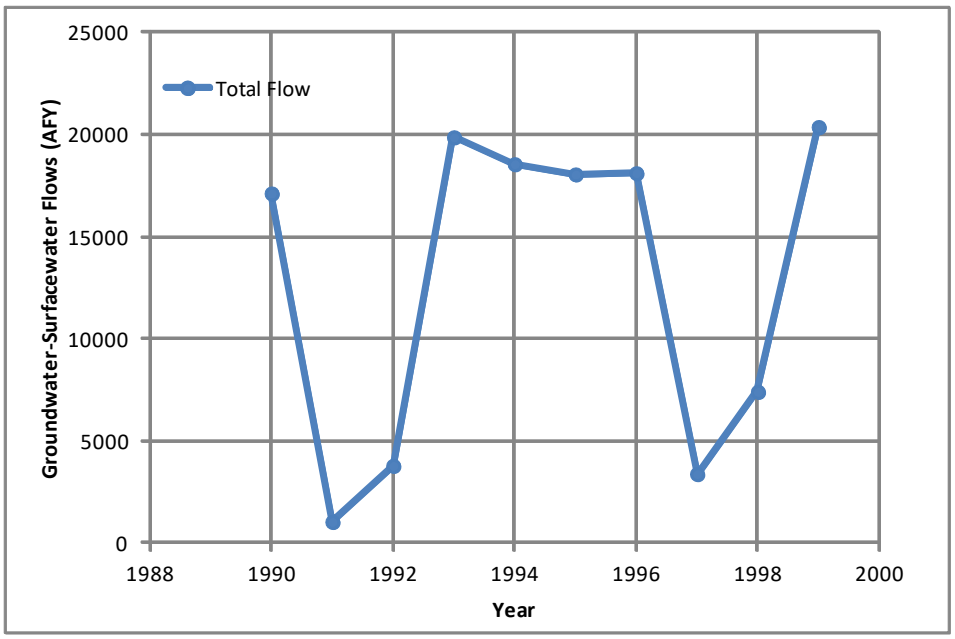
While there are no major water bodies present, there are several creeks and streams, primarily in the western and northeastern sections of the District. In addition, there are springs arising from artesian flow conditions in the District. Recharge to the shallow aquifer can also occur when rainwater is channelized through gullies and streams. The District did not perform field measurements quantifying stream-aquifer interactions. Stream gain-loss studies could be performed to better estimate groundwater-surface water interactions. In the absence of field data, surface water-groundwater interactions have been ascertained using model derived groundwater budgets summarized in Exhibit P.

Exhibit P: Estimated Groundwater Discharges to Surface Water Bodies using GMA-16 Groundwater Availability Model (Data obtained from Goswami, 2016; Appendix E).

Parameter	Estimate (AFY)	Remarks
Estimated Annual Volume of Water that Discharges from the aquifer to springs and any surface water body including lakes, streams and rivers	20,643	Obtained as average of 1980-1999

As with recharge, groundwater discharges to surface water bodies also exhibit considerable temporal variability. Exhibit Q depicts the temporal variability over the last 10 years of the calibration period. As can be seen, the groundwater discharges are significantly curtailed during dry periods.

Exhibit Q: Temporal Variability of Groundwater Discharges to Surface Water Bodies (in acre-feet/year) in KCGCD using GMA-16 GAM (Data obtained from Hutchison et al., 2011 for the period of 1990-1999).



E. Groundwater Flow Into and Out of the District and Between Aquifers in the District

Estimate of the annual volume of flow into and out of the District within each aquifer, and between aquifers, in the District, if a groundwater availability model is available, as required by Texas Water Code § 36.1071(e)(3)(E) and 31 TAC § 356.5(a)(5)(E). No site-specific information was used in developing this estimate.)

The groundwater flows into and out of the District are estimated using the horizontal exchange components of the GAM water budget. Generally, flows into the District occur along the western boundaries. The water budget results indicate that there is a net gain from all the inflows into the District under ambient conditions. This result is to be expected because a significant portion of the District lies in the down-dip areas of the Gulf Coast Aquifer. However, it is important to recognize that large-scale groundwater withdrawals in neighboring areas can alter groundwater flow patterns and cause greater amounts of groundwater to leave the District. Exhibit R presents the average annual inflows and outflows from the District. The values are obtained from the water budgets of the GMA-16 GAM and represent an average over the 1980-1999 period.

Exhibit R: Estimated Groundwater Discharges along District Boundaries Calculated using GMA-16 Groundwater Availability Model (Data obtained from Goswami, 2016; Appendix E).

Parameter	Estimate (AFY)	Remarks
Estimated annual volume of flow into the district within each aquifer of the district	41,396	Obtained as average of 1980-1999
Estimated annual volume of flow out of the district within each aquifer of the district	32,644	Obtained as average of 1980-1999

Exhibit S: Net Annual Flow Between Each Aquifer within the District (Data obtained from Goswami, 2016; Appendix E)

Parameter	Estimate (AFY)	Remarks
Estimated net annual volume of flow between each aquifer in the district	1,216	From Gulf Coast Aquifer System to brackish water containing formations. GAM model does not simulate the interaction between the Gulf Coast Aquifer system and the underlying units

The Gulf Coast Aquifer is the major aquifer formation underlying the District. While the Gulf Coast formation is sometimes differentiated as Chicot, Evangeline, Burkeville Confining Unit and Jasper aquifer formations (Baker, 1979) the Gulf Coast Aquifer is represented as a single aquifer unit in State and Regional Water Planning Process. Most Groundwater Availability Models do not explicitly model the interaction between the Gulf Coast Aquifer System and underlying units. Currently, only the shallow sections of the Gulf Coast Aquifer are used within the District. Because of the thickness of the Gulf Coast Aquifer in most of the District, anthropogenic influences are unlikely to have a major influence on cross-aquifer flows. Flows within the different formations of the Gulf Coast Aquifer, however, could be locally significant.

F. Projected Surface Water Supply

Estimate of the projected surface water supply within the District, according to the most recently adopted state water plan, as required by Texas Water Code § 36.1071(e)(3)(F) and 31 TAC § 356.5(a)(5)(F).

Exhibit T presents the projected surface water supply data. These data were estimated from the basin-wide data made available by the TWDB in the report dated April 18, 2017 (Allen, 2017; Appendix D), which appears in the 2017 State Water Plan. only the county-wide water user group (WUG) data values (county other, manufacturing, steam electric power, irrigation, mining and livestock) are modified using the multiplier. WUG values for municipalities, water supply corporations, and utility districts are not apportioned; instead, their full values are retained when they are located within the district, and eliminated when they are located outside the district.

Exhibit T: Projected Surface Water Supply Data within KCGCD Based on 2017 State Water Plan (Data Obtained from Allen, April 18, 2017; Please refer to Appendix D; All Values in Acre-ft/Yr)

Year	2020	2030	2040	2050	2060	2070
Brooks	45	45	45	45	45	45
Hidalgo	116,982	117,013	117,027	117,023	117,012	116,993
JimWells	4,212	4,445	4,663	4,932	5,195	5,441
Kenedy	0	0	0	0	0	0
Kleberg	799	928	1,059	1,369	1,705	2,029
Nueces	72,218	76,817	79,563	81,251	85,589	83,534
Willacy	7,136	7,081	7,041	7,013	6,955	6,970

G. Projected Demand for Water

Estimate of the projected total demand for water within the District according to the most recently adopted state water plan, as required by Texas Water Code § 36.1071(e)(3)(G) and 31 TAC § 356.5(a)(5)(G). (No site-specific information was relied upon in developing this estimate. It is taken from the 2017 State Water Plan.)

The apportioned county-wide projected water demands as per the 2017 State Water Plan were obtained from the Texas Water Development Board (TWDB) (Allen, 2017; Appendix D). The demands for each county within the District were then aggregated over all water user groups and presented in Exhibit U. As can be seen, demands are expected to increase considerably in Hidalgo, Nueces, and Willacy counties in the long-term planning horizon covered by the State Water Plan. The projected water supply needs for various counties in which KCGCD exists are also presented in Appendix D.

The projected demands presented in Exhibit U were estimated by apportioning any county-wide water user group estimates only the county-wide water user group (WUG) data. Values (county other, manufacturing, steam electric power, irrigation, mining and livestock) are modified using the multiplier. WUG values for municipalities, water supply corporations, and utility districts are not apportioned; instead, their full values are retained when they are located within the district, and eliminated when they are located outside the district. TWDB relies on GCDs to make this determination

Exhibit U: Estimate of Total Demands in Acre-ft/year Obtained from TWDB Based on 2017 SWP (Data from Allen, April 18, 2017; Please refer to Appendix D)

Year	2020	2030	2040	2050	2060	2070
Brooks	2,545	2,612	2,682	2,771	2,855	2,940
Hidalgo	201,765	232,887	264,725	297,139	330,283	365,506
JimWells	5,784	6,107	6,408	6,778	7,137	7,475
Kenedy	1,006	1,028	998	975	951	935
Kleberg	6,890	7,217	7,537	7,901	8,289	8,671
Nueces	74,377	78,953	81,669	83,438	85,268	86,731
Willacy	10,808	11,083	11,373	11,715	12,075	12,439

VII. CONSIDERATION OF ADOPTED STATE WATER PLAN

Consideration of water supply needs and water management strategies that are included in the adopted state water plan, as required by Texas Water Code § 36.1071(e)(4) and 31 TAC § 356.5(a)(7).

The District reviewed the 2017 State Water Plan for comparisons of water demands and supply estimates on a county-by-county basis prepared by Region M (Rio Grande Regional Water Planning Area) and Region N (Coastal Bend Regional Water Planning Group). The District identified potential water deficits and management strategies that could have an impact on the groundwater resources within the District (Exhibit V). In addition to covering the entire Kenedy County, the District partially covers several counties (Brooks, Hidalgo, Jim Wells, Kleberg, Nueces, and Willacy). As stated earlier, the projected deficits in the parts of these counties that are not within the District, were also evaluated because groundwater from within the District could potentially be tapped for meeting these deficits.

A county-by-county analysis of the demands for different water use groups was carried out with an emphasis on groundwater related strategies (which are summarized in Exhibit V). As can be seen, there is a growing interest in using groundwater or brackish groundwater in the Lower Rio Grande Valley areas. The District will continue to track the progress of water management strategies in the regional water planning process and evaluate new proposals and projects as appropriate. A detailed tabulation of all projected water management strategies can be found in Appendix D.

Exhibit V: Impacts of Regional Water Management Strategies on Regional Groundwater Resources (Based on 2017 State Water Plan; Data from Allen, April 18, 2017; Refer to Appendix D for additional information; All values in units of Acre-ft/Year)

Year	2020	2030	2040	2050	2060	2070
Aquifer Supplies						
Hidalgo	3283	3283	3283	3283	3283	3283
Willacy	1	1	1	1	7	46
Brackish Groundwater Desalination						
Jim Wells	3,363	3,363	3,363	3,363	3,363	3,363
Willacy	1120	1120	1120	1120	1120	1120

VIII. MANAGEMENT OF GROUNDWATER SUPPLIES

The District will manage the supply of groundwater within the District in order to utilize the resource while seeking to maintain the economic viability of all resource user groups, public and private. The District will:

- identify and engage in such activities and practices, that, if implemented, would manage groundwater resources in the District while considering the economic and cultural activities occurring within the District;
- maintain and expand its water monitoring network in order to monitor changing groundwater quality and storage conditions of groundwater supplies within the District;
- make a regular assessment of water supply and groundwater storage conditions and report those conditions to the Board and to the public;
- continue to undertake, as necessary, and co-operate with evaluations of the groundwater resources within the District, including those associated with uranium exploration and mining; and
- make the results of evaluations available to the public upon adoption by the Board.

The District adopted rules based on its original management plan. The first set of rules became effective October 8, 2008 and implemented the management plan. The rules covering registration and permitting of wells and production limits were amended, effective November 4, 2009. District Rules allow issuance of operating permits for perpetual terms. The production allowed for a new non-exempt well is based on surface acreage reflecting the GMA-16 adopted desired future condition. The District has prohibited waste of groundwater; has required all water wells to be registered; has issued operating permits to all existing non-exempt wells; and considers all applications for new operating permits based on surface acreage production limit. Under District Rules, the District may, at the Board's discretion, amend or revoke any permits after notice and hearing based on certain criteria listed in the Rules, including aquifer conditions. The District will enforce the terms and conditions of permits and the rules of the District by

enjoining the permit holder in a court of competent jurisdiction as provided for in Texas Water Code § 36.102.

The District will continue to employ all technical resources at its disposal to evaluate the resources available within the District and to determine the effectiveness of regulatory or conservation measures.

Uranium ore deposits are present within the District and its immediate vicinity. Groundwater is used for exploration and extraction of uranium. Groundwater is also affected by the associated reclamation and restoration activities. These activities can impact groundwater quality and quantity. The District monitors all applications for uranium exploration within and in close proximity to the District. If an exploration or mining permit is issued by the Texas Railroad Commission and Texas Commission on Environmental Quality, the District plays an active role in reviewing and commenting on those authorizations and performs background groundwater measurement collection prior to initiation of those activities.

The District will continue to monitor State law to ensure it is protective of groundwater resources within the District.

IX. ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION

Detailed description of actions, procedures, performance and avoidance necessary to effectuate the management plan, including specifications and proposed rules, as required by Texas Water Code § 36.1071(e)(2) and 31 TAC § 356.5(a)(4).

The District will implement the provisions of this plan and will utilize the provisions of this plan as a guidepost for determining the direction or priority for all District activities. All operations of the District, all agreements entered into by the District and any additional planning efforts in which the District may participate will be consistent with the provisions of this plan.

The district has adopted rules relating to the permitting of wells and the production of groundwater. The most current version of the District's Rules are found on the District's website at: http://www.kenedygcd.com/Forms_Rules/rules.aspx. All rules adopted by the District are pursuant to TWC chapter 36 and the provisions of this plan. All rules will be adhered to and enforced. The promulgation and enforcement of the rules will be based on the best technical evidence available. The District is currently revising its Rules to make them consistent with new changes in state law applicable to the District; to make them consistent with the adopted desired future condition for GMA-16; and to address issues of groundwater management that may not have been anticipated by the existing Rules. Once the Rules are amended, the amended Rules will be found on the District's website at the web address provided above.

The District will treat all citizens equally. Citizens may apply to the District for discretion in enforcement of the rules on grounds of adverse economic effect or unique local conditions. In granting a variance to any rule, the Board shall consider the potential for adverse effect on adjacent landowners.

The District will seek the cooperation from other entities in order to implement this plan and to manage groundwater supplies within the District. All activities of the District will be undertaken in cooperation and coordination with the appropriate state, regional or local water management entity. To this end, the District will continue to be actively engaged with the GMA-16 Joint Planning Committee; Regions N and M Water Planning Groups; the TWDB; Texas Alliance of Groundwater Districts; Texas Water Conservation Association; Texas A&M University-Kingsville; USDA-Natural Resources Conservation Service; Kleberg-Kenedy Soil and Water Conservation District; and Texas AgriLife Extension.

Rules

The District adopted rules based on its original management plan. The first set of rules became effective October 8, 2008 and implemented the management plan. The rules covering registration and permitting of wells and production limits were amended, effective November 4, 2009. The Rules have been amended in 2016 to implement legislative requirements enacted since November 4, 2009, and to more accurately reflect the procedures and practices of the District.
The District has rules covering the following:

- Well Registration, Drilling Permits, and Operating Permits
    - As required by Texas Water Code 36.117(h), the District requires all wells to be registered, regardless of when they were drilled and whether they have been plugged. All previous oil and gas wells for which the operator submitted a RRC P-13 indicating conversion to use as a water well, must also be registered. The District Rules implement the exemptions from permitting set out in § 36.117 and establish additional exemptions reflecting the large area and small population of the District. The District Rules include the criteria for consideration and approval of operating permits and production limits, as authorized by §§ 36.101(a) and 36.116.

- Fees
    - Because the District is financed through ad valorem taxes, it does not impose fees for activities associated with water wells, such as registration fees, application fees, production fees, or export fees.

- Well Construction and Completion Standards
    - The District has adopted well construction and completion standards, at a minimum requiring that construction of all wells and installation of all pumps located within the District must be in accordance with the Texas Occupations Code Chapter 1901, “Water Well Drillers” and Chapter 1902,

"Water Well Pump Installers," as amended, and the Administrative Rules of the Texas Department of Licensing and Regulation, 16 Texas Administrative Code ("TAC"), Chapter 76, as amended. Additional standards include requiring a sampling port on all new wells. In evaluating each operating permit application, the District evaluates whether additional standards are needed to protect water quality in the area of the well.

- Reporting and Recordkeeping
    - The District has established annual recordkeeping and reporting for water production from all wells with an operating permit and for all temporary rig supply wells. Well owners/water well drillers are also required to submit well drilling and completion reports, pump reports, and other reports that may be helpful to the District in fulfilling its statutory duties. Permitted wells must report all water quality data obtained for raw water from the wells. Uranium exploration companies must submit all water quality data required by statute and District Rule. All data is included in the District Water Well Database.

- Plugging, Sealing, and Capping of Wells
    - The District Rules include the requirement that a deteriorated or abandoned well shall be plugged in accordance with Texas Department of Licensing and Regulation, 16 Texas Administrative Code, Chapter 76, as amended. The rules will also address circumstances requiring the sealing and capping of wells. If a landowner becomes aware of a plugged well, or if a P-13 is filed with the Railroad Commission to convert an oil and gas well (usually a dry hole) into a water well, these are considered water wells under District Rules and must be registered with the District.

- Well Spacing
    - The District has adopted the spacing requirements of the Water Well Driller's rules, 16 Texas Administrative Code Section 76.1000, as amended. The District has also adopted spacing from property boundaries based on the capacity of the proposed water well.

- Enforcement
    - The District has adopted rules setting out its enforcement authority and policies, as authorized by Texas Water Code §§ 36.101 and 36.102. The rules authorize entry onto property as authorized by Texas Water Code §36.123. They also establish the process by which the District will undertake an enforcement action and the steps to be followed.

- Procedural Rules
    - The District has adopted procedural rules establishing required notice and hearing for various District activities such as approval of rules, including emergency rules; actions on operating permits; permit actions requiring a

contested case hearing; and enforcement matters. These rules have recently been updated to implement changes in state law applicable to the District.

- Prohibition Against Waste
    - The District prohibits waste of groundwater.

X. GOALS, MANAGEMENT OBJECTIVES AND PERFORMANCE STANDARDS

Identify the performance standards and management objectives for effecting the plan, as required by Texas Water Code § 36.1071(e)(1) and 31 TAC § 356.5(a)(2) & (3).

A. Efficient Use of Groundwater

Management objectives and performance standards for providing the most efficient use of groundwater, as required by Texas Water Code § 36.1071(a)(1) and 31 TAC §356.5(a)(1)(A).

1. Objective: The District will continue to register all new wells and locate and register any existing well that may not yet have been registered.

1. Performance Standard: All registered wells are entered into the District's water well database. This includes information from the registration forms, the registration certificate, and for new wells, the drilling log. All information reported to the District regarding each registered well will be entered into the District's water well database. The number of registered wells will be presented in the District's annual report.

4. Objective: The District will continue to require an operating permit for all non-exempt wells.

4. Performance Standard: All permitted non-exempt wells with be entered into the District's water well database, including the application, the permit, annual water use reports, any water quality reports, the driller's log, and any other information available to the District about the wells. The number of wells permitted by the District will be noted in the District annual report.

5. Objective: The District will develop a method of tracking acreage associated with all wells permitted under District Rules as "new wells" under the District's correlative rights production limits.

5. Performance Standard: The District will provide a certificate to each permittee designating the total acreage allocated to each permit. A copy of these certificates will be entered into the District database for each of these permitted wells. The number of such certificates that are issued will be included in the District annual report.

6. Objective: Each year, the district will contact all water well service companies doing business in the District and will provide written educational information about District rules and policies.

6. Performance Standard: The Board of Directors will approve the content of each year's letter based on activities and emerging issues within the District. A file copy of these letters will be kept in the District Office. Each year, the District's annual report will include a list of licensed water well drillers and pump installers doing business in the District and a copy of the educational information provided.

7. Objective: The District will continue to maintain a database that is current with all data acquired by the District about all registered and permitted wells in the District.

7. Performance Standard: Each year, the District's annual report pertinent to items A.1 through A.5 will be derived from the database. Additionally, the report will contain an evaluation of the software being used for the database, and any recommendations regarding needed changes.

B. Preventing Waste of Groundwater

Management objectives and performance standards for controlling and preventing waste of groundwater, as required by Texas Water Code § 36.1071(a)(2) and 31 TAC §356.5(a)(1)(B).

1. Objective: The District will conduct an on-site investigation within two working days of receiving a report of waste of groundwater.

1. Performance Standard: If the District receives a report of waste of groundwater, the General Manager will prepare a written report of the outcome of the investigation and will present it to the Board of Director's at the next Board meeting. A discussion of the waste of groundwater observed by the District, including the number of reports of waste received during the year and the District's response to the reports will be included in the District's annual report.

C. Controlling Subsidence

Management objectives and performance standards for controlling and preventing subsidence, as required by Texas Water Code § 36.1071(a)(3) and 31 TAC §356.5(a)(1)(C).

1. Objective: The Gulf Coast Aquifer contains sufficient amounts of clays interbedded within fairly prolific sand and gravel formations to be vulnerable to subsidence. The current groundwater uses, especially near the coastal areas of the District, are not sufficient to cause dewatering from the clay with a resultant loss of support pressure. The District will evaluate possible subsidence impacts of any near coast, large-scale groundwater production proposal (greater than 100 acre-feet/year).

1. Performance Standard: As part of the Operating Permit Application process, the District will be appropriately evaluate possible subsidence impacts of any near coast, large-scale groundwater production proposal (greater than 100 acre-feet/year). The evaluation will be presented to the Board of Directors during the Operating Permit Application consideration. The number and a description of any near coast, large-scale groundwater production proposals will be presented in the District's annual report, and will include the District's evaluation for possible subsidence impacts from the proposals.

D. Conjunctive Surface Water Management

Management objectives and performance standards for addressing conjunctive surface water management issues, as required by Texas Water Code § 36.1071(a)(4) and 31 TAC §356.5(a)(1)(D).

1. Objective: Each year the District will participate in the regional planning process by attending a minimum of two meetings of the Region N Regional Water Planning Group per fiscal year.

1. Performance Standard: The District representative will give an oral report at the District Board meeting following the Region N meeting and the report will be reflected in the minutes of that Board meeting. Additionally, the District's annual report will include the number of Region N meetings attended during the year and the dates of those meetings.

E. Natural Resource Issues and Groundwater

Management objectives and performance standards for addressing natural resource issues that impact the use and availability of groundwater and which are impacted by the use of groundwater, as required by Texas Water Code § 36.1071(a)(5) and 31 TAC §356.5(a)(1)(E).

1. Objective: The District will continue to require registration of and a plugging report on all wells that are plugged each year. Additionally the District will require a landowner to register all plugged wells when the landowner becomes aware of their existence.

1. Performance Standard: The number of plugging reports received by the District will be noted in the District annual report. All registered plugged wells will be entered into the District's water well database, including the registration application, the registration certificate, and the plugging report, if the well is newly plugged.

2. Objective: The District will require registration of all wells covered by a P-13 submitted to the Railroad Commission. When an oil and gas operator abandons an oil and gas well and desires to convert it into a potential water well, he must submit a P-13.

These wells are considered to be water wells under District Rules, regardless of whether water is ever produced from them.

2. Performance Standard: After approval of this management plan, the District will include information about this requirement in the first annual education letter to all water well service companies and to all oil and gas operators doing business in the District. The District will also study the feasibility of identifying P-13 wells by working with the Railroad Commission. The number of P-13 wells registered with the District will be noted in the District annual report.

3. Objective: Once each year, the District will monitor temperature, total dissolved solids, pH, and electric conductivity by taking measurements of at least 25 wells through the voluntary monitoring project described in A.8.

3. Performance Standard: The number of wells to be measured may be increased as necessary. The water quality data will be entered into the District's water well database. The results of each round of annual measurement events will be provided to the Board of Directors within 30 days after completion of measurement collection and analysis and included in the annual report.

F. Drought Conditions

Management objectives and performance standards for addressing drought conditions, as required by Texas Water Code § 36.1071(a)(6) and 31 TAC §356.5(a)(1)(F).

1. Objective: Links to NOAA Climate Monitoring web-page (http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/palmer.html) and to the Texas Water Development Drought page (http://www.twdb.state.tx.us/data/drought) will be maintained on the District website to provide short-term and long-term drought information.

1. Performance Standard: At least quarterly, the website will be checked to ensure that the links are still current. The General Manager will assess the status of drought in the District and prepare a quarterly briefing to the Board showing the impact of drought or weather conditions on water levels. The District's annual report will include the downloaded PDSI maps, Situation Reports, and copies of the quarterly briefing.

G. Conservation Measures

Management objectives and performance standards for addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, brush control where appropriate and cost effective, as required by Texas Water Code § 36.1071(a)(7) and 31 TAC §356.5(a)(1)(G).

1.a. Conservation Objective: The District will collaborate with the local USDA-Natural Resources Conservation Service (NRCS) field office and submit an article on water conservation for publication each year to at least one newspaper of general circulation in the District and post it on the District website.

1.a. Conservation Performance Standard: A copy of the published article on conservation will be included in the District's annual report.

1.b. Conservation Objective: The General Manager will be available to present water conservation programs to schools, 4-H clubs, scouting units and community groups on a request basis. These programs will be scheduled through the District office and will be appropriate for the various audiences. Depending on availability, the District will make every effort to distribute, on an annual basis, conservation education materials to schools that serve students from the District.

1.b. Conservation Performance Standard: A summary of programs presented, content and audience group will be included in the annual report. A bibliography of any conservation literature provided to the audience by the District will be included in the report with the summary.

1.c. Conservation Objective: The General Manager will monitor all continuing education classes on drought and conservation that would be beneficial and attend with the Board's approval.

1.c. Conservation Performance: A summary of classes attended will be included in the annual report.

2. Recharge Enhancement Objective: The District, with the services of a consultant, will attempt to identify recharge areas within the District and present them in connection with the biennial report on water monitoring results.

2. Recharge Performance Standard: All recharge areas identified within the District will be listed in the annual report.

3. Rainwater Harvesting: This management goal category is not applicable to the District due to a low population number.

4. Precipitation Enhancement: The District has no plans to participate in precipitation enhancement because it has not been proven to be cost effective and is not feasible for the District.

5. Brush Control Objective: Annually, the District will contact the USDA-NRCS and the Kleberg-Kenedy Soil and Water Conservation District (SWCD) offices to obtain information about brush control and make that information available to the public.

5. Brush Control Performance Standard: All information on brush control obtained from the USDA-NRCS and the Kleberg-Kenedy SWCD offices and provided to the public will be reported in the District's annual report and posted on the website.

H. Desired Future Conditions

Management objectives and performance standards for addressing the desired future condition of the groundwater resources in the District (if available from the districts in the groundwater management area), as required by Texas Water Code § 36.1071(a)(8) and 31 TAC §356.5(a)(1)(H).

As per Resolution No. 2017-001 adopted on January 17, 2017, the authorized voting representatives for Groundwater Management Area 16 established a desired future condition (DFC) of the Gulf Coast aquifer system which was an area-wide average drawdown of approximately 62 feet in December 2060 from estimated year 2010 condition. The DFC established for the Kenedy County GCD was a drawdown not to exceed 40 feet in December 2060 from estimated year 2010 conditions.

1. Objective: The District-wide, voluntary monitoring project will be maintained and includes biennial measurements of hydrostatic levels from approximately 50 wells and the hydrostatic level to bottom of screen measurements in those wells where the screen depth is known.

1. Performance Standard: The number of wells to be included in the monitoring project may be increased as necessary. The respective hydrostatic levels and other related data will be entered into the District's water well database. The results of each round of biennial measurements will be provided to the Board of Directors within 30 days of completion of the measuring round. The number of wells involved in the project and the respective static levels will be included in the District's annual report.

2. Objective: The District will monitor groundwater withdrawals in the District to evaluate compliance with the desired future condition.

2. Performance Standard: As part of the biennial report on water level measurements from the monitoring program described in A.8, above, the General Manager will include in his written report to the Board an evaluation of the drawdown relative to the DFC.

XI. METHODOLOGY FOR TRACKING PROGRESS

Methodology for tracking progress in meeting management goals, objectives, and performance standards, as required by 31 TAC § 356.5(a)(6).

As mentioned in the management objectives and performance standards above, written reports will be presented to the Board of Directors on a timely manner, based on the objective. Additionally, as described in section X, all data related to water wells in the District will be entered into the District's water well database.

The General Manager will prepare and present to the board of directors (BOD) an Annual Report covering District performance in achieving management goals and objectives for the preceding fiscal year. The report will be presented to the BOD in January of the following year. The District will maintain the report in its files and will have copies available to the public. Once the report is approved by the Board, it will be posted on the website.

Appendix A

Resolution Adopting the 2017 Kenedy County Groundwater Conservation District Groundwater Management Plan

Kenedy County Groundwater Conservation District
Certification Of Resolution

I, Andres Garza, General Manager of the Kenedy County Groundwater Conservation District, hereby certify that the attached Resolution adopting the Kenedy County Groundwater Conservation District Management Plan is a true and correct copy of the Resolution adopting the Kenedy County Groundwater Conservation District Management Plan; that on May 24, 2017, the Kenedy County Groundwater Conservation District Board of Directors, by majority vote, passed and approved said Resolution.

SIGNED on May 24, 2017

Andres Garza

RESOLUTION
ADOPTING KENEDY COUNTY
GROUNDWATER CONSERVATION DISTRICT
2017 MANAGEMENT PLAN
May 24, 2017

WHEREAS, on April 12, 2017, the Kenedy County Groundwater Conservation District Board of Directors directed that Notice of a Public Hearing to be held on May 24, 2017, at 10:45 AM at the Kenedy County Courthouse in Sarita, TX regarding the adoption of the proposed 2017 District Management Plan to be posted in a place readily accessible to the public at the District office; by publishing in one or more newspapers of general circulation in the counties of the District which include Nueces, Kleberg, Kenedy, Brooks, Jim Wells, Hidalgo and Willacy counties; by providing notice to individuals who requested notice; and by making a copy of the proposal accessible to the public during normal hours at the District office; and

WHEREAS, on May 24, 2017, the Kenedy County Groundwater Conservation District Board of Directors, with a quorum being present, held the May 24, 2017, Public Hearing regarding the adoption of the proposed 2017 Kenedy County Groundwater Conservation District Management Plan; and

WHEREAS, the Kenedy County Groundwater Conservation District Board of Directors, after the Public Hearing was held, convened to consider the adoption of the proposed 2017 Kenedy County Groundwater Conservation District Management Plan; and

The Kenedy County Groundwater Conservation District Board of Directors, after a motion being made and seconded, it was unanimously passed and it was

RESOLVED that the 2017 Kenedy County Groundwater Conservation District Management Plan be ADOPTED as presented as is more particularly described in the Kenedy County Groundwater Conservation District 2017 Management Plan attached hereto and made part hereof for all purposes.

DATED this 24th day of May, 2017.

Attested by: _____

_____
Chuck Burns
President

Appendix B

Notice of Hearing on the 2017 Kenedy County Groundwater Conservation District Groundwater Management Plan

NOTICE OF PUBLIC HEARING
Kenedy County Groundwater Conservation District's
Amended Management Plan

The Kenedy County Groundwater Conservation District will hold a Public Hearing regarding the adoption of the proposed Kenedy County Groundwater Conservation District's Amended Management Plan.

The Public Hearing will be held on May 24, 2017, at 10:45 AM at the Kenedy County Courthouse Courtroom in Sarita, TX.

A proposed District Amended Management Plan may be obtained at the District Office located at 365 La Parra Avenue, Sarita, TX; phone 361-294-5336.

Andres Garza

Andres Garza
General Manager

FILED FOR RECORD
AT 2:01 o'clock P. M

MAY 04 2017

VERONICA VELA
COUNTY CLERK KENEDY COUNTY
By Veronica Vela DEPUTY

PUBLISHER'S AFFIDAVIT

STATE OF TEXAS
COUNTY OF CAMERON

I, Odelia Ramon being duly sworn on his/her oath states that he/she is a Representative of the Valley Morning Star and that the attached notice appeared in the following issues:

Account Name Kenedy County Groundwater

Account Number 4000 8814

Date: 5/8, 5/15

Insertion Order
Number: 30045361 Groundwater Conservation

Odelia Ramon

Odelia Ramon

Subscribe and sworn to before me on this the 15 day of May, **2017**

Luise Richards

LUISE RICHARDS
Notary Public, State of Texas
Comm. Expires 05-05-2020
Notary ID 130651178

Luise Richards
Notary Public, Cameron County
State of Texas

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102 Bid Notices | 102 Bid Notices | 305 Pets & Supplies | Lower Valley Rentals | 602 Houses Unfurnished

NOTICE OF PUBLIC HEARING
Kenedy County Groundwater Conservation District's Amended Management Plan

The Kenedy County Groundwater Conservation District will hold a Public Hearing regarding the adoption of the proposed Kenedy County Groundwater Conservation District's Amended Management Plan on May 24, 2017, at 10:45 a.m. at the Kenedy County Courthouse Courtroom in Sarita, Texas.

A copy of the proposed amended District Management Plan may be obtain at the District Office located at 365 La Parra Avenue in Sarita, Texas. District Office phone number is 361-294-5336.

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PUBLISHER'S AFFIDAVIT

State of Texas }
County of Nueces }

LEO VILLARREAL ATTORNEY AT LAW
Ad # 1598916
PO #

Before me, the undersigned, a Notary Public, this day personally came G. Lawson, who being first duly sworn, according to law, says that she is LEGAL SALES REPRESENATIVE AND EMPLOYEE OF THE PUBLISHER, namely, the *Corpus Christi Caller-Times*, a daily newspaper published at Corpus Christi in said City and State, generally circulated in Aransas, Bee, Brooks, Duval, Jim Hogg, Jim Wells, Kleberg, Live Oak, Nueces, Refugio, and San Patricio, Counties, and that the publication of Notice of Public Hearing Kenedy Coun which the annexed is a true copy, was inserted in the *Corpus Christi Caller-Times* on:

CC-Corpus Christi Caller-Times	05/04/17 Thu
CC-Internet - caller.com	05/04/17 Thu

LEGAL SALES REPRESENTATIVE

On this 8 day of May, 2017 I certify that the attached document is a true and exact copy made by publisher.

Notary Public, State of Texas

MICHELLE JOYCE CABRERA
My Notary ID # 124864183
Expires March 19, 2020

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Caller Times | caller.com

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Account Number: 820703 ()

Company Name: LEO VILLARREAL ATTORNEY AT LAW

Contact Name:

Email:

Address: PO BOX 1433, SARITA, TX, 78385

Phone: (361) 592-9347 Fax: (361) 592-9364

> Insertion Information

This is a proof of your ad scheduled to run on the dates indicated below.

Please confirm placement prior to deadline by contacting your account rep at (361) 886-4307 .

Ad Id: 1598916 P.O. Number: Total Cost: $126.10

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Start Date: 05/04/17 Stop Date: 05/04/17

Number of Times: 1 Class: 16130 - Legals

Publications: CC-Corpus Christi Caller-Times, CC-Internet - caller.com

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I agree this ad is accurate and as ordered.

Notice of Public Hearing

Kenedy County Groundwater Conservation District's Amended Management Plan

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A copy of the proposed amended District Management Plan may be obtain at the District Office located at 365 La Parra Avenue in Sarita, Texas. District Office phone number is 361-294-5336.

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Office of the Maintenance and Transportation Director
Flour Bluff I.S.D. Maintenance Office 2510 Waldron Road
Corpus Christi, Texas 78418

The contractors can schedule on-site visits with Clayton Pocius at (361) 694-9706 or cpocius@flourbluffschools.net.

The contractors can request the site plan drawing to utilize for photo-metric calculations (point-by-point) from Michael Kesterson at the office of the Engineer, Stridde, Callins and Associates, Inc., 342 S. Navigation Blvd., Corpus Christi, Texas, 78405, (361) 883-9199, m.kesterson@scaengineering.com.

The Owner reserves the right to waive any informality or to reject any or all Proposals. Alteration or modification of the Proposal Forms shall be cause for rejection of the Proposal.

No Bidder may withdraw his Proposal within thirty (30) days after the actual date of the opening thereof.

Mathis Independent School District

REQUEST FOR BID

Department for Service and Operations Date 5/2/2017

Competitive Sealed Bids are requested on the items listed below. Please list all prices individually and turnkey.
SCOPE OF WORK
Site:
Remove concrete curbs and abandoned foundations
Re-pave parking lot
New security fencing
New electrical service
Water and sewer service

Legals

Notice of Public Hearing

Kenedy County Groundwater Conservation District's Amended Management Plan

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Legals

Appendix C

2017 Letters to the Relevant Regional Water Planning Groups

KENEDY COUNTY GROUNDWATER CONSERVATION DISTRICT

P. O. Box 212
SARITA, TEXAS 78385

May 9, 2017

Mr. Tomas Rodriguez
C/O Debbie Morales
Region M Water Planning Group
301 W. Railroad St.
Weslaco, TX 78596

Dear Mr. Rodriguez,

I am the General Manager of the Kenedy County Groundwater Conservation District headquartered in Sarita, Kenedy County, TX. The Board of Directors approved a draft amended management plan on April 12, 2017. Because part of the District lies within Region M, the directors have instructed me to send you a courtesy copy of this draft. The District invites your feedback on the enclosed draft.

A public hearing will be held on May 24, 2017 in Sarita, TX to review the proposed amended management plan. Once the plan is adopted by the District and approved by the Texas Water Development Board, a copy will be sent to you as required by section 36.1071(b) of the Texas Water Code.

Please call at 361-294-5336 if you have any questions.

Sincerely,

Andy Garza

Andy Garza
General Manager

Andres Garza, General Manager
Phone: 361-294-5336
Fax: 361-294-5336
E-Mail: General_manager@kenedygcd.com

Chuck Burns, President
P. O. Box 458, Raymondville, Texas 78580
Phone: (956) 227-0554
E-Mail: cburns25@aol.com

KENEDY COUNTY GROUNDWATER CONSERVATION DISTRICT

P. O. BOX 212
SARITA, TEXAS 78385

May 9, 2017

Ms. Rocky Freund
Nueces River Authority
Region N Water Planning Group
400 Mann Street, Ste. 1002
Corpus Christi, TX 78401

Dear Ms. Freund,

I am the General Manager of the Kenedy County Groundwater Conservation District headquartered in Sarita, Kenedy County, TX. The Board of Directors approved a draft amended management plan on April 12, 2017. Because part of the District lies within Region N, the directors have instructed me to send you a courtesy copy of this draft. The District invites your feedback on the enclosed draft.

A public hearing will be held on May 24, 2017 in Sarita, TX to review the proposed amended management plan. Once the plan is adopted by the District and approved by the Texas Water Development Board, a copy will be sent to you as required by section 36.1071(b) of the Texas Water Code.

Please call at 361-294-5336 if you have any questions.

Sincerely,

Andy Garza

Andy Garza
General Manager

Andres Garza, General Manager
Phone: 361-294-5336
Fax: 361-294-5336
E-Mail: General_manager@kenedygcd.com

Chuck Burns, President
P. O. Box 458, Raymondville, Texas 78580
Phone: (956) 227-0554
E-Mail: cburns25@aol.com

Appendix D

Estimated Historical Groundwater Use and 2017 State Water Plan Datasets – Kenedy County Groundwater Conservation District, Dated April 18, 2017 (Author: Stephen Allen, 2017)

Estimated Historical Groundwater Use And 2017 State Water Plan Datasets:

Kenedy County Groundwater Conservation District

by Stephen Allen
Texas Water Development Board
Groundwater Division
Groundwater Technical Assistance Section
stephen.allen@twdb.texas.gov
(512) 463-7317
April 18, 2017

GROUNDWATER MANAGEMENT PLAN DATA:

This package of water data reports (part 1 of a 2-part package of information) is being provided to groundwater conservation districts to help them meet the requirements for approval of their five-year groundwater management plan. Each report in the package addresses a specific numbered requirement in the Texas Water Development Board's groundwater management plan checklist. The checklist can be viewed and downloaded from this web address:

http://www.twdb.texas.gov/groundwater/docs/GCD/GMPChecklist0113.pdf

The five reports included in this part are:

1. Estimated Historical Groundwater Use (checklist item 2)

   from the TWDB Historical Water Use Survey (WUS)
2. Projected Surface Water Supplies (checklist item 6)
3. Projected Water Demands (checklist item 7)
4. Projected Water Supply Needs (checklist item 8)
5. Projected Water Management Strategies (checklist item 9)

   from the 2017 Texas State Water Plan (SWP)

Part 2 of the 2-part package is the groundwater availability model (GAM) report for the District (checklist items 3 through 5). The District should have received, or will receive, this report from the Groundwater Availability Modeling Section. Questions about the GAM can be directed to Dr. Shirley Wade, shirley.wade@twdb.texas.gov, (512) 936-0883.

DISCLAIMER:

The data presented in this report represents the most up-to-date WUS and 2017 SWP data available as of 4/18/2017. Although it does not happen frequently, either of these datasets are subject to change pending the availability of more accurate WUS data or an amendment to the 2017 SWP. District personnel must review these datasets and correct any discrepancies in order to ensure approval of their groundwater management plan.

The WUS dataset can be verified at this web address:

http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/

The 2017 SWP dataset can be verified by contacting Sabrina Anderson (sabrina.anderson@twdb.texas.gov or 512-936-0886).

The values presented in the data tables of this report are county-based. In cases where groundwater conservation districts cover only a portion of one or more counties the data values are modified with an apportioning multiplier to create new values that more accurately represent conditions within district boundaries. The multiplier used in the following formula is a land area ratio: (data value * (land area of district in county / land area of county)). For two of the four SWP tables (Projected Surface Water Supplies and Projected Water Demands) only the county-wide water user group (WUG) data values (county other, manufacturing, steam electric power, irrigation, mining and livestock) are modified using the multiplier. WUG values for municipalities, water supply corporations, and utility districts are not apportioned; instead, their full values are retained when they are located within the district, and eliminated when they are located outside (we ask each district to identify these entity locations).

The remaining SWP tables (Projected Water Supply Needs and Projected Water Management Strategies) are not modified because district-specific values are not statutorily required. Each district needs only "consider" the county values in these tables.

In the WUS table every category of water use (including municipal) is apportioned. Staff determined that breaking down the annual municipal values into individual WUGs was too complex.

TWDB recognizes that the apportioning formula used is not perfect but it is the best available process with respect to time and staffing constraints. If a district believes it has data that is more accurate it can add those data to the plan with an explanation of how the data were derived. Apportioning percentages that the TWDB used are listed above each applicable table.

For additional questions regarding this data, please contact Stephen Allen (stephen.allen@twdb.texas.gov or 512-463-7317) or Rima Petrossian (rima.petrossian@twdb.texas.gov or 512-936-2420).

Estimated Historical Water Use
TWDB Historical Water Use Survey (WUS) Data

Groundwater and surface water historical use estimates are currently unavailable for calendar year 2016. TWDB staff anticipates the calculation and posting of these estimates at a later date.

BROOKS COUNTY

27.98% (multiplier)

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2015	GW	378	0	0	0	65	95	538
	SW	0	0	0	0	0	51	51
2014	GW	441	0	3	0	112	92	648
	SW	0	0	1	0	0	50	51
2013	GW	445	0	2	0	207	93	747
	SW	0	0	0	0	0	50	50
2012	GW	511	0	4	0	210	72	797
	SW	0	0	0	0	0	39	39
2011	GW	544	0	48	0	325	82	999
	SW	0	0	42	0	0	44	86
2010	GW	515	0	50	0	225	82	872
	SW	0	0	44	0	0	44	88
2009	GW	614	0	49	0	676	98	1,437
	SW	0	0	43	0	0	53	96
2008	GW	502	0	48	0	183	92	825
	SW	0	0	42	0	0	50	92
2007	GW	459	0	0	0	87	119	665
	SW	0	0	0	0	0	64	64
2006	GW	508	0	0	0	158	126	792
	SW	0	0	0	0	0	68	68
2005	GW	488	0	0	0	175	129	792
	SW	0	0	0	0	0	69	69
2004	GW	444	0	0	0	175	20	639
	SW	0	0	0	0	0	177	177
2003	GW	456	0	0	0	199	17	672
	SW	0	0	0	0	0	152	152
2002	GW	505	0	0	0	68	21	594
	SW	0	0	0	0	0	186	186
2001	GW	543	0	0	0	7	41	591
	SW	0	0	0	0	0	365	365
2000	GW	550	0	0	0	7	21	578
	SW	0	0	0	0	0	188	188

HIDALGO COUNTY

7.2% (multiplier)

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2015	GW	896	0	46	39	9	21	1,011
	SW	6,922	193	0	485	17,992	31	25,623
2014	GW	1,012	0	50	0	42	20	1,124
	SW	7,627	136	1	0	29,505	31	37,300
2013	GW	927	0	48	0	4	21	1,000
	SW	8,227	128	1	10	21,776	31	30,173
2012	GW	885	0	49	0	16	21	971
	SW	8,168	123	1	17	35,640	32	43,981
2011	GW	949	0	77	0	0	25	1,051
	SW	8,451	134	64	15	49,584	39	58,287
2010	GW	628	0	84	0	0	24	736
	SW	6,916	161	73	0	29,160	36	36,346
2009	GW	677	0	131	0	110	29	947
	SW	8,213	157	71	21	44,285	43	52,790
2008	GW	513	1	89	0	5	25	633
	SW	7,827	162	84	1	43,956	38	52,068
2007	GW	388	1	55	0	82	22	548
	SW	6,764	181	0	79	37,342	33	44,399
2006	GW	378	1	52	0	75	23	529
	SW	7,456	169	0	66	38,114	35	45,840
2005	GW	371	1	52	84	120	21	649
	SW	8,804	175	0	33	36,842	31	45,885
2004	GW	298	1	52	82	109	15	557
	SW	7,588	161	0	87	22,486	27	30,349
2003	GW	240	1	52	163	144	16	616
	SW	7,481	160	9	6	20,024	28	27,708
2002	GW	260	1	52	108	248	15	684
	SW	5,515	173	36	16	24,567	26	30,333
2001	GW	256	1	52	135	269	16	729
	SW	5,848	170	36	49	28,014	29	34,146
2000	GW	342	3	53	128	321	20	867
	SW	5,475	157	38	8	26,724	29	32,431

JIM WELLS COUNTY

5.14% (multiplier)

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2015	GW	75	4	0	0	68	24	171
	SW	190	0	0	0	11	17	218
2014	GW	95	4	0	0	65	23	187
	SW	214	0	0	0	5	16	235
2013	GW	107	4	0	0	81	23	215
	SW	224	0	0	0	17	16	257
2012	GW	135	4	0	0	57	22	218
	SW	236	0	0	0	21	15	272
2011	GW	150	4	1	0	65	36	256
	SW	240	0	1	0	24	24	289
2010	GW	115	4	1	0	75	35	230
	SW	203	0	2	0	6	23	234
2009	GW	121	6	0	0	100	32	259
	SW	379	0	0	0	18	21	418
2008	GW	115	6	0	0	78	30	229
	SW	354	0	0	0	17	20	391
2007	GW	102	6	0	0	109	32	249
	SW	213	0	0	0	10	22	245
2006	GW	125	6	0	0	196	31	358
	SW	287	0	0	0	0	21	308
2005	GW	122	6	0	0	176	32	336
	SW	368	0	0	0	13	22	403
2004	GW	109	6	0	0	176	4	295
	SW	162	0	0	0	13	51	226
2003	GW	108	5	0	0	161	4	278
	SW	193	0	0	0	12	54	259
2002	GW	117	5	0	0	137	4	263
	SW	223	0	0	0	3	52	278
2001	GW	128	10	0	0	117	3	258
	SW	273	0	0	0	2	34	309
2000	GW	128	6	0	0	188	6	328
	SW	303	0	0	0	4	49	356

KENEDY COUNTY

100% (multiplier)

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2015	GW	86	0	0	0	0	585	671
	SW	0	0	0	0	0	31	31
2014	GW	93	0	1	0	0	581	675
	SW	0	0	0	0	0	31	31
2013	GW	123	0	1	0	0	595	719
	SW	0	0	0	0	0	31	31
2012	GW	113	0	2	0	0	716	831
	SW	0	0	0	0	0	38	38
2011	GW	118	0	44	0	0	799	961
	SW	0	0	16	0	0	42	58
2010	GW	109	0	60	0	0	798	967
	SW	0	0	22	0	0	42	64
2009	GW	132	0	47	0	0	689	868
	SW	0	0	17	0	0	36	53
2008	GW	126	0	34	0	0	880	1,040
	SW	0	0	13	0	0	46	59
2007	GW	112	0	0	0	0	433	545
	SW	0	0	0	0	0	23	23
2006	GW	253	0	0	0	0	529	782
	SW	0	0	0	0	0	28	28
2005	GW	250	0	0	0	0	528	778
	SW	0	0	0	0	0	28	28
2004	GW	123	0	0	0	0	64	187
	SW	0	0	0	0	0	577	577
2003	GW	131	0	0	0	0	62	193
	SW	0	0	0	0	0	562	562
2002	GW	133	0	0	0	107	77	317
	SW	0	0	0	0	0	699	699
2001	GW	116	0	0	0	107	85	308
	SW	0	0	0	0	0	765	765
2000	GW	133	0	0	0	107	90	330
	SW	0	0	0	0	0	811	811

KLEBERG COUNTY

81.75% (multiplier)

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2015	GW	2,939	713	18	0	45	458	4,173
	SW	504	0	2	0	0	24	530
2014	GW	3,335	1,479	44	0	180	451	5,489
	SW	561	0	7	0	0	24	592
2013	GW	3,285	777	186	0	203	468	4,919
	SW	428	0	2	0	0	25	455
2012	GW	3,695	568	159	0	293	533	5,248
	SW	392	0	2	0	0	28	422
2011	GW	947	906	220	0	695	595	3,363
	SW	3,210	0	47	0	0	31	3,288
2010	GW	787	1,042	317	0	471	564	3,181
	SW	2,510	0	139	0	0	29	2,678
2009	GW	3,624	1,020	306	0	0	496	5,446
	SW	410	0	128	0	0	26	564
2008	GW	3,395	920	327	0	235	628	5,505
	SW	324	0	117	0	0	33	474
2007	GW	2,962	979	251	0	198	1,436	5,826
	SW	378	0	0	0	0	76	454
2006	GW	2,995	1,114	211	0	460	1,258	6,038
	SW	609	0	0	0	0	66	675
2005	GW	3,832	1,590	173	0	429	1,136	7,160
	SW	240	0	0	0	0	60	300
2004	GW	2,786	1,265	168	0	388	129	4,736
	SW	579	0	0	0	0	1,166	1,745
2003	GW	3,066	1,590	129	0	388	128	5,301
	SW	27	0	0	0	0	1,153	1,180
2002	GW	3,987	1,654	130	0	425	132	6,328
	SW	441	0	0	0	4	1,190	1,635
2001	GW	3,981	1,996	235	0	357	155	6,724
	SW	844	0	0	0	3	1,398	2,245
2000	GW	4,004	1,731	2	0	815	155	6,707
	SW	699	0	0	0	4	1,398	2,101

NUECES COUNTY

4.04% (multiplier)

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2015	GW	63	95	29	0	11	10	208
	SW	1,648	1,328	0	83	3	0	3,062
2014	GW	67	98	28	0	15	10	218
	SW	2,085	1,289	0	16	0	0	3,390
2013	GW	78	110	32	0	30	11	261
	SW	2,065	1,363	0	16	0	0	3,444
2012	GW	69	100	147	0	1	9	326
	SW	2,308	1,466	0	14	61	0	3,849
2011	GW	85	108	138	0	26	13	370
	SW	2,632	1,328	13	16	0	0	3,989
2010	GW	62	131	34	0	60	13	300
	SW	2,055	1,255	16	16	0	0	3,342
2009	GW	44	93	33	0	10	16	196
	SW	2,945	1,329	26	8	0	0	4,308
2008	GW	32	91	33	0	13	15	184
	SW	2,404	1,371	23	5	0	0	3,803
2007	GW	28	65	14	0	28	8	143
	SW	1,896	1,380	10	67	0	0	3,353
2006	GW	34	67	21	0	35	11	168
	SW	2,306	1,558	11	0	0	0	3,875
2005	GW	33	101	21	0	12	11	178
	SW	2,677	1,417	10	5	4	0	4,113
2004	GW	32	110	15	0	5	4	166
	SW	2,087	1,442	22	5	3	7	3,566
2003	GW	32	98	15	0	4	4	153
	SW	2,329	1,237	21	6	10	8	3,611
2002	GW	29	49	0	0	1	4	83
	SW	2,521	1,444	51	30	59	7	4,112
2001	GW	24	43	0	0	1	4	72
	SW	2,393	1,516	52	115	69	8	4,153
2000	GW	29	39	0	0	1	4	73
	SW	2,392	1,597	54	145	67	7	4,262

WILLACY COUNTY

10.92% (multiplier)

All values are in acre-feet

Year	Source	Municipal	Manufacturing	Mining	Steam Electric	Irrigation	Livestock	Total
2015	GW	46	0	0	0	3	9	58
	SW	262	0	0	0	4,177	13	4,452
2014	GW	66	0	0	0	18	10	94
	SW	307	0	0	0	5,789	15	6,111
2013	GW	82	0	0	0	2	9	93
	SW	311	0	0	0	5,818	14	6,143
2012	GW	91	0	0	0	0	10	101
	SW	302	0	0	0	7,644	15	7,961
2011	GW	87	0	2	0	0	11	100
	SW	305	0	1	0	10,877	17	11,200
2010	GW	99	0	2	0	0	11	112
	SW	308	0	2	0	4,914	17	5,241
2009	GW	51	0	1	0	0	10	62
	SW	383	0	1	0	6,519	14	6,917
2008	GW	20	0	0	0	0	11	31
	SW	382	0	0	0	6,476	16	6,874
2007	GW	12	0	0	0	0	14	26
	SW	355	0	0	0	6,274	21	6,650
2006	GW	12	0	0	0	0	12	24
	SW	358	16	0	0	6,224	19	6,617
2005	GW	10	0	0	0	0	10	20
	SW	371	16	0	0	6,282	15	6,684
2004	GW	6	0	0	0	0	3	9
	SW	333	13	0	0	4,075	24	4,445
2003	GW	5	0	0	0	0	3	8
	SW	337	14	0	0	3,839	24	4,214
2002	GW	5	0	0	0	0	3	8
	SW	342	0	0	0	4,211	27	4,580
2001	GW	5	0	0	0	0	2	7
	SW	342	11	0	0	4,615	17	4,985
2000	GW	5	0	0	0	0	2	7
	SW	324	3	0	0	2,803	15	3,145

Projected Surface Water Supplies
TWDB 2017 State Water Plan Data

BROOKS COUNTY

27.98% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
N	LIVESTOCK, BROOKS	NUECES-RIO GRANDE	NUECES-RIO GRANDE LIVESTOCK LOCAL SUPPLY	45	45	45	45	45	45
	Sum of Projected Surface Water Supplies (acre-feet)			**45**	**45**	**45**	**45**	**45**	**45**

HIDALGO COUNTY

7.2% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
M	AGUA SUD	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	4,257	4,260	4,261	4,261	4,264	4,264
M	AGUA SUD	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	559	559	560	560	559	560
M	ALAMO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1,603	1,603	1,603	1,603	1,603	1,603
M	ALTON	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1,286	1,286	1,286	1,286	1,286	1,286
M	COUNTY-OTHER, HIDALGO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	232	232	232	232	232	232
M	COUNTY-OTHER, HIDALGO	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	6	6	6	6	6	6
M	DONNA	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	2,975	2,975	2,975	2,975	2,975	2,975
M	EDCOUCH	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	330	330	330	330	330	330
M	EDINBURG	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	9,046	9,046	9,046	9,046	9,046	9,046
M	ELSA	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	910	909	909	909	908	908
M	HIDALGO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	12	12	12	12	12	12
M	HIDALGO	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1	1	1	1	1	1

Projected Surface Water Supplies
TWDB 2017 State Water Plan Data

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
M	HIDALGO COUNTY MUD #1	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	272	272	272	272	272	272
M	IRRIGATION, HIDALGO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	16,678	16,644	16,611	16,577	16,543	16,509
M	IRRIGATION, HIDALGO	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	695	694	692	691	689	688
M	LA JOYA	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	439	439	439	439	439	439
M	LA JOYA	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	117	117	117	117	117	117
M	LA VILLA	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	246	246	246	246	246	246
M	LIVESTOCK, HIDALGO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	74	74	74	74	74	74
M	LIVESTOCK, HIDALGO	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	7	7	7	7	7	7
M	MANUFACTURING, HIDALGO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	86	86	86	86	86	86
M	MCALLEN	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	28,196	28,196	28,196	28,196	28,196	28,196
M	MERCEDES	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1,287	1,287	1,287	1,287	1,287	1,287
M	MILITARY HIGHWAY WSC	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	319	329	338	343	346	348
M	MILITARY HIGHWAY WSC	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	12	12	13	13	13	13
M	MINING, HIDALGO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	55	55	55	55	55	54
M	MINING, HIDALGO	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	4	4	4	4	4	4
M	MISSION	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	12,099	12,099	12,099	12,099	12,099	12,099
M	MISSION	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	7	7	7	7	7	7

Projected Surface Water Supplies
TWDB 2017 State Water Plan Data

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
M	NORTH ALAMO WSC	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	14,003	14,057	14,094	14,120	14,141	14,155
M	PALMHURST	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	578	578	578	578	578	578
M	PALMVIEW	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	640	640	640	640	640	640
M	PENITAS	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	520	520	520	520	520	520
M	PHARR	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	6,739	6,739	6,739	6,739	6,739	6,739
M	PHARR	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	2	2	2	2	2	2
M	PROGRESO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	127	127	127	127	127	127
M	SAN JUAN	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	3,167	3,167	3,167	3,167	3,167	3,167
M	SHARYLAND WSC	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	4,985	4,985	4,985	4,985	4,985	4,985
M	STEAM ELECTRIC POWER, HIDALGO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	197	197	197	197	197	197
M	SULLIVAN CITY	RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	469	469	469	469	469	469
M	WESLACO	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	3,745	3,745	3,745	3,745	3,745	3,745
	Sum of Projected Surface Water Supplies (acre-feet)			**116,982**	**117,013**	**117,027**	**117,023**	**117,012**	**116,993**

JIM WELLS COUNTY

5.14% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
N	ALICE	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	2,096	2,212	2,321	2,456	2,587	2,710

Projected Surface Water Supplies
TWDB 2017 State Water Plan Data

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
N	ALICE	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	2,096	2,213	2,322	2,456	2,588	2,711
N	LIVESTOCK, JIM WELLS	NUECES	NUECES LIVESTOCK LOCAL SUPPLY	3	3	3	3	3	3
N	LIVESTOCK, JIM WELLS	NUECES-RIO GRANDE	NUECES-RIO GRANDE LIVESTOCK LOCAL SUPPLY	17	17	17	17	17	17
	Sum of Projected Surface Water Supplies (acre-feet)			**4,212**	**4,445**	**4,663**	**4,932**	**5,195**	**5,441**

KLEBERG COUNTY

81.75% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
N	KINGSVILLE	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	229	283	338	482	637	787
N	KINGSVILLE	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	229	284	339	482	638	788
N	RICARDO WSC	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	170	180	191	202	215	227
N	RICARDO WSC	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	171	181	191	203	215	227
	Sum of Projected Surface Water Supplies (acre-feet)			**799**	**928**	**1,059**	**1,369**	**1,705**	**2,029**

NUECES COUNTY

4.04% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
N	AGUA DULCE	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	66	69	71	72	74	75
N	AGUA DULCE	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	66	70	72	73	74	75
N	ARANSAS PASS	SAN ANTONIO-NUECES	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	1	1	1	1	1	1
N	ARANSAS PASS	SAN ANTONIO-NUECES	TEXANA LAKE/RESERVOIR	2	2	2	2	2	2
N	BISHOP	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	176	193	202	209	215	220

Projected Surface Water Supplies
TWDB 2017 State Water Plan Data

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
N	BISHOP	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	176	193	202	209	216	220
N	CORPUS CHRISTI	NUECES	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	5,174	5,502	5,546	5,547	5,546	5,529
N	CORPUS CHRISTI	NUECES	TEXANA LAKE/RESERVOIR	12	13	156	268	380	476
N	CORPUS CHRISTI	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	59,487	63,263	63,775	63,778	63,766	63,576
N	CORPUS CHRISTI	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	143	153	1,793	3,087	4,372	5,477
N	COUNTY-OTHER, NUECES	NUECES	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	3	3	3	3	3	3
N	COUNTY-OTHER, NUECES	NUECES	NUECES RUN-OF-RIVER	1	1	1	1	1	1
N	COUNTY-OTHER, NUECES	NUECES	TEXANA LAKE/RESERVOIR	3	3	3	3	3	3
N	COUNTY-OTHER, NUECES	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	3	4	4	4	4	4
N	COUNTY-OTHER, NUECES	NUECES-RIO GRANDE	NUECES RUN-OF-RIVER	5	5	5	5	5	5
N	COUNTY-OTHER, NUECES	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	4	4	4	4	4	5
N	DRISCOLL	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	52	55	56	57	58	59
N	DRISCOLL	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	53	55	57	57	58	59
N	IRRIGATION, NUECES	NUECES-RIO GRANDE	NUECES-RIO GRANDE RUN-OF-RIVER	0	0	0	0	0	0
N	IRRIGATION, NUECES	SAN ANTONIO-NUECES	NUECES-RIO GRANDE RUN-OF-RIVER	0	0	0	0	0	0
N	LIVESTOCK, NUECES	NUECES	NUECES LIVESTOCK LOCAL SUPPLY	1	1	1	1	1	1
N	LIVESTOCK, NUECES	NUECES-RIO GRANDE	NUECES-RIO GRANDE LIVESTOCK LOCAL SUPPLY	0	0	0	0	0	0
N	MANUFACTURING, NUECES	NUECES	COLORADO RUN-OF-RIVER	49	50	51	53	52	53

Projected Surface Water Supplies
TWDB 2017 State Water Plan Data

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
N	MANUFACTURING, NUECES	NUECES	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	8	16	29	36	30	25
N	MANUFACTURING, NUECES	NUECES	TEXANA LAKE/RESERVOIR	49	47	41	36	30	25
N	MANUFACTURING, NUECES	NUECES-RIO GRANDE	COLORADO RUN-OF-RIVER	769	780	792	826	815	826
N	MANUFACTURING, NUECES	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	147	281	480	559	473	385
N	MANUFACTURING, NUECES	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	767	741	647	561	472	390
N	MINING, NUECES	NUECES	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	9	14	18	21	25	31
N	NUECES WSC	NUECES	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	8	9	9	9	9	10
N	NUECES WSC	NUECES	TEXANA LAKE/RESERVOIR	9	9	9	10	10	10
N	NUECES WSC	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	158	168	175	179	182	184
N	NUECES WSC	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	158	169	175	178	182	184
N	PORT ARANSAS	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	1,125	1,216	1,274	1,307	1,333	1,351
N	PORT ARANSAS	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	1,126	1,218	1,274	1,307	1,334	1,352
N	RIVER ACRES WSC	NUECES	NUECES RUN-OF-RIVER	426	450	463	470	479	486
N	ROBSTOWN	NUECES	NUECES RUN-OF-RIVER	1	1	1	1	1	1
N	ROBSTOWN	NUECES-RIO GRANDE	NUECES RUN-OF-RIVER	1,373	1,349	1,336	1,329	1,320	1,313
N	STEAM ELECTRIC POWER, NUECES	NUECES	COLORADO RUN-OF-RIVER	209	212	215	225	222	225
N	STEAM ELECTRIC POWER, NUECES	NUECES	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	24	87	166	257	295	316
N	STEAM ELECTRIC POWER, NUECES	NUECES	TEXANA LAKE/RESERVOIR	233	245	260	276	295	316

Projected Surface Water Supplies
TWDB 2017 State Water Plan Data

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
N	STEAM ELECTRIC POWER, NUECES	NUECES-RIO GRANDE	COLORADO RUN-OF-RIVER	64	64	65	68	67	68
N	STEAM ELECTRIC POWER, NUECES	NUECES-RIO GRANDE	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM	7	27	50	78	90	96
N	STEAM ELECTRIC POWER, NUECES	NUECES-RIO GRANDE	TEXANA LAKE/RESERVOIR	71	74	79	84	90	96
	Sum of Projected Surface Water Supplies (acre-feet)			**72,218**	**76,817**	**79,563**	**81,251**	**82,589**	**83,534**

WILLACY COUNTY

10.92% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	Source Name	2020	2030	2040	2050	2060	2070
M	COUNTY-OTHER, WILLACY	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	16	16	16	16	16	16
M	EAST RIO HONDO WSC	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	5	4	5	4	4	4
M	IRRIGATION, WILLACY	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	2,165	2,162	2,158	2,155	2,118	2,147
M	LIVESTOCK, WILLACY	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	37	37	37	37	37	37
M	LYFORD	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	588	588	588	588	588	588
M	MANUFACTURING, WILLACY	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	9	9	9	9	9	9
M	NORTH ALAMO WSC	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	576	525	488	464	443	429
M	RAYMONDVILLE	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	3,402	3,402	3,402	3,402	3,402	3,402
M	SAN PERLITA	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	134	134	134	134	134	134
M	SEBASTIAN MUD	NUECES-RIO GRANDE	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	204	204	204	204	204	204
	Sum of Projected Surface Water Supplies (acre-feet)			**7,136**	**7,081**	**7,041**	**7,013**	**6,955**	**6,970**

Projected Water Demands
TWDB 2017 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

BROOKS COUNTY

27.98% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	COUNTY-OTHER, BROOKS	NUECES-RIO GRANDE	91	97	104	111	119	126
N	FALFURRIAS	NUECES-RIO GRANDE	1,677	1,712	1,755	1,813	1,865	1,915
N	IRRIGATION, BROOKS	NUECES-RIO GRANDE	504	529	555	583	612	643
N	LIVESTOCK, BROOKS	NUECES-RIO GRANDE	173	173	173	173	173	173
N	MINING, BROOKS	NUECES-RIO GRANDE	100	101	95	91	86	83
	Sum of Projected Water Demands (acre-feet)		**2,545**	**2,612**	**2,682**	**2,771**	**2,855**	**2,940**

HIDALGO COUNTY

7.2% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
M	AGUA SUD	NUECES-RIO GRANDE	4,941	5,954	7,005	8,090	9,206	10,300
M	AGUA SUD	RIO GRANDE	649	782	920	1,062	1,208	1,352
M	ALAMO	NUECES-RIO GRANDE	3,231	3,909	4,607	5,326	6,064	6,787
M	ALTON	NUECES-RIO GRANDE	2,071	2,524	2,990	3,464	3,943	4,413
M	COUNTY-OTHER, HIDALGO	NUECES-RIO GRANDE	347	426	507	589	670	750
M	COUNTY-OTHER, HIDALGO	RIO GRANDE	9	11	13	16	18	20
M	DONNA	NUECES-RIO GRANDE	2,610	3,126	3,660	4,219	4,802	5,375
M	EDCOUCH	NUECES-RIO GRANDE	358	419	484	554	630	705
M	EDINBURG	NUECES-RIO GRANDE	13,113	15,899	18,772	21,714	24,721	27,667
M	ELSA	NUECES-RIO GRANDE	811	963	1,121	1,289	1,466	1,641
M	HIDALGO	NUECES-RIO GRANDE	1,842	2,233	2,637	3,051	3,473	3,887
M	HIDALGO	RIO GRANDE	17	21	25	28	32	36
M	HIDALGO COUNTY MUD #1	NUECES-RIO GRANDE	570	682	801	923	1,049	1,174
M	IRRIGATION, HIDALGO	NUECES-RIO GRANDE	44,214	42,146	39,914	37,380	34,737	34,737
M	IRRIGATION, HIDALGO	RIO GRANDE	1,842	1,756	1,663	1,558	1,447	1,447
M	LA JOYA	NUECES-RIO GRANDE	515	619	726	838	954	1,068
M	LA JOYA	RIO GRANDE	137	164	193	222	253	283
M	LA VILLA	NUECES-RIO GRANDE	275	328	385	443	504	564
M	LIVESTOCK, HIDALGO	NUECES-RIO GRANDE	54	54	54	54	54	54
M	LIVESTOCK, HIDALGO	RIO GRANDE	5	5	5	5	5	5
M	MANUFACTURING, HIDALGO	NUECES-RIO GRANDE	393	425	458	486	524	564
M	MCALLEN	NUECES-RIO GRANDE	38,728	47,219	55,875	64,722	73,748	82,563

Projected Water Demands
TWDB 2017 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
M	MERCEDES	NUECES-RIO GRANDE	2,223	2,648	3,091	3,558	4,049	4,531
M	MILITARY HIGHWAY WSC	NUECES-RIO GRANDE	1,780	2,157	2,542	2,938	3,345	3,745
M	MILITARY HIGHWAY WSC	RIO GRANDE	61	74	87	101	115	128
M	MINING, HIDALGO	NUECES-RIO GRANDE	190	242	280	322	369	429
M	MINING, HIDALGO	RIO GRANDE	15	19	22	25	29	34
M	MISSION	NUECES-RIO GRANDE	20,201	24,690	29,274	33,935	38,662	43,281
M	MISSION	RIO GRANDE	11	14	16	19	22	24
M	NORTH ALAMO WSC	NUECES-RIO GRANDE	24,015	29,240	34,598	40,064	45,625	51,069
M	PALMHURST	NUECES-RIO GRANDE	932	1,149	1,369	1,591	1,813	2,030
M	PALMVIEW	NUECES-RIO GRANDE	743	897	1,056	1,220	1,388	1,554
M	PENITAS	NUECES-RIO GRANDE	603	732	865	1,001	1,139	1,275
M	PHARR	NUECES-RIO GRANDE	9,920	11,929	14,017	16,178	18,410	20,601
M	PHARR	RIO GRANDE	3	4	4	5	5	6
M	PROGRESO	NUECES-RIO GRANDE	722	868	1,020	1,177	1,339	1,498
M	SAN JUAN	NUECES-RIO GRANDE	6,152	7,448	8,782	10,154	11,561	12,940
M	SHARYLAND WSC	NUECES-RIO GRANDE	8,026	9,722	11,460	13,252	15,094	16,896
M	STEAM ELECTRIC POWER, HIDALGO	NUECES-RIO GRANDE	1,019	1,191	1,401	1,657	1,969	2,341
M	SULLIVAN CITY	RIO GRANDE	544	647	755	869	989	1,107
M	WESLACO	NUECES-RIO GRANDE	7,873	9,551	11,271	13,040	14,852	16,625
	Sum of Projected Water Demands (acre-feet)		**201,765**	**232,887**	**264,725**	**297,139**	**330,283**	**365,506**

JIM WELLS COUNTY

5.14% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	ALICE	NUECES-RIO GRANDE	4,192	4,425	4,643	4,912	5,175	5,421
N	COUNTY-OTHER, JIM WELLS	NUECES	21	22	23	25	26	27
N	COUNTY-OTHER, JIM WELLS	NUECES-RIO GRANDE	114	120	125	132	139	146
N	IRRIGATION, JIM WELLS	NUECES	19	20	21	22	23	24
N	IRRIGATION, JIM WELLS	NUECES-RIO GRANDE	110	115	121	127	134	140
N	LIVESTOCK, JIM WELLS	NUECES	9	9	9	9	9	9
N	LIVESTOCK, JIM WELLS	NUECES-RIO GRANDE	44	44	44	44	44	44
N	MINING, JIM WELLS	NUECES	0	0	0	0	0	0
N	MINING, JIM WELLS	NUECES-RIO GRANDE	3	4	3	2	1	1

Projected Water Demands
TWDB 2017 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	ORANGE GROVE	NUECES-RIO GRANDE	376	400	422	447	471	494
N	PREMONT	NUECES-RIO GRANDE	710	752	792	841	886	929
N	SAN DIEGO	NUECES-RIO GRANDE	186	196	205	217	229	240
	Sum of Projected Water Demands (acre-feet)		**5,784**	**6,107**	**6,408**	**6,778**	**7,137**	**7,475**

KENEDY COUNTY

100% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	COUNTY-OTHER, KENEDY	NUECES-RIO GRANDE	244	261	262	263	264	264
N	LIVESTOCK, KENEDY	NUECES-RIO GRANDE	644	644	644	644	644	644
N	MINING, KENEDY	NUECES-RIO GRANDE	118	123	92	68	43	27
	Sum of Projected Water Demands (acre-feet)		**1,006**	**1,028**	**998**	**975**	**951**	**935**

KLEBERG COUNTY

81.75% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	COUNTY-OTHER, KLEBERG	NUECES-RIO GRANDE	491	521	555	595	632	668
N	IRRIGATION, KLEBERG	NUECES-RIO GRANDE	491	515	541	568	596	626
N	KINGSVILLE	NUECES-RIO GRANDE	4,232	4,483	4,738	5,025	5,336	5,636
N	LIVESTOCK, KLEBERG	NUECES-RIO GRANDE	1,043	1,043	1,043	1,043	1,043	1,043
N	MINING, KLEBERG	NUECES-RIO GRANDE	292	294	278	265	252	244
N	RICARDO WSC	NUECES-RIO GRANDE	341	361	382	405	430	454
	Sum of Projected Water Demands (acre-feet)		**6,890**	**7,217**	**7,537**	**7,901**	**8,289**	**8,671**

NUECES COUNTY

4.04% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	AGUA DULCE	NUECES-RIO GRANDE	132	139	143	145	148	150
N	ARANSAS PASS	SAN ANTONIO-NUECES	3	3	3	3	3	3
N	BISHOP	NUECES-RIO GRANDE	594	628	646	660	673	682
N	CORPUS CHRISTI	NUECES	5,186	5,515	5,702	5,815	5,926	6,005
N	CORPUS CHRISTI	NUECES-RIO GRANDE	59,630	63,416	65,568	66,865	68,138	69,053
N	COUNTY-OTHER, NUECES	NUECES	12	13	13	14	14	14

Projected Water Demands
TWDB 2017 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	COUNTY-OTHER, NUECES	NUECES-RIO GRANDE	50	58	63	66	69	70
N	DRISCOLL	NUECES-RIO GRANDE	105	110	113	114	116	118
N	IRRIGATION, NUECES	NUECES	2	2	3	3	3	3
N	IRRIGATION, NUECES	NUECES-RIO GRANDE	15	16	17	18	19	20
N	IRRIGATION, NUECES	SAN ANTONIO-NUECES	0	0	0	0	0	0
N	LIVESTOCK, NUECES	NUECES	2	2	2	2	2	2
N	LIVESTOCK, NUECES	NUECES-RIO GRANDE	11	11	11	11	11	11
N	MANUFACTURING, NUECES	NUECES	122	130	137	143	153	164
N	MANUFACTURING, NUECES	NUECES-RIO GRANDE	1,909	2,029	2,146	2,246	2,404	2,574
N	MINING, NUECES	NUECES	26	31	34	37	41	45
N	MINING, NUECES	NUECES-RIO GRANDE	2	2	3	3	3	4
N	MINING, NUECES	SAN ANTONIO-NUECES	1	1	2	2	2	2
N	NUECES WSC	NUECES	17	18	18	19	19	20
N	NUECES WSC	NUECES-RIO GRANDE	316	337	350	357	364	368
N	PORT ARANSAS	NUECES-RIO GRANDE	2,251	2,434	2,548	2,614	2,667	2,703
N	RIVER ACRES WSC	NUECES	426	450	463	470	479	486
N	ROBSTOWN	NUECES	3	3	3	3	3	3
N	ROBSTOWN	NUECES-RIO GRANDE	2,954	2,894	2,845	2,840	2,836	2,836
N	STEAM ELECTRIC POWER, NUECES	NUECES	466	545	641	758	901	1,070
N	STEAM ELECTRIC POWER, NUECES	NUECES-RIO GRANDE	142	166	195	230	274	325
	Sum of Projected Water Demands (acre-feet)		**74,377**	**78,953**	**81,669**	**83,438**	**85,268**	**86,731**

WILLACY COUNTY

10.92% (multiplier)

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
M	COUNTY-OTHER, WILLACY	NUECES-RIO GRANDE	7	8	9	10	11	12
M	EAST RIO HONDO WSC	NUECES-RIO GRANDE	6	6	7	7	8	8
M	IRRIGATION, WILLACY	NUECES-RIO GRANDE	7,562	7,543	7,528	7,514	7,507	7,507
M	LIVESTOCK, WILLACY	NUECES-RIO GRANDE	29	29	29	29	29	29
M	LYFORD	NUECES-RIO GRANDE	291	314	338	368	400	432
M	MANUFACTURING, WILLACY	NUECES-RIO GRANDE	15	15	15	15	15	15
M	MINING, WILLACY	NUECES-RIO GRANDE	5	6	4	3	2	1
M	NORTH ALAMO WSC	NUECES-RIO GRANDE	987	1,091	1,197	1,315	1,432	1,548

Projected Water Demands
TWDB 2017 State Water Plan Data

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
M	RAYMONDVILLE	NUECES-RIO GRANDE	1,522	1,652	1,784	1,944	2,115	2,286
M	SAN PERLITA	NUECES-RIO GRANDE	235	260	286	315	344	371
M	SEBASTIAN MUD	NUECES-RIO GRANDE	149	159	176	195	212	230
	Sum of Projected Water Demands (acre-feet)		**10,808**	**11,083**	**11,373**	**11,715**	**12,075**	**12,439**

Projected Water Supply Needs
TWDB 2017 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

BROOKS COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	COUNTY-OTHER, BROOKS	NUECES-RIO GRANDE	124	103	80	53	26	1
N	FALFURRIAS	NUECES-RIO GRANDE	1,020	985	942	884	832	782
N	IRRIGATION, BROOKS	NUECES-RIO GRANDE	500	410	315	216	112	3
N	LIVESTOCK, BROOKS	NUECES-RIO GRANDE	0	0	0	0	0	0
N	MINING, BROOKS	NUECES-RIO GRANDE	3	0	20	36	52	62
	Sum of Projected Water Supply Needs (acre-feet)		**0**	**0**	**0**	**0**	**0**	**0**

HIDALGO COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
M	AGUA SUD	NUECES-RIO GRANDE	-684	-1,694	-2,744	-3,829	-4,942	-6,036
M	AGUA SUD	RIO GRANDE	-90	-223	-360	-502	-649	-792
M	ALAMO	NUECES-RIO GRANDE	-1,004	-1,682	-2,380	-3,099	-3,837	-4,560
M	ALTON	NUECES-RIO GRANDE	-785	-1,238	-1,704	-2,178	-2,657	-3,127
M	COUNTY-OTHER, HIDALGO	NUECES-RIO GRANDE	-1,326	-2,425	-3,552	-4,683	-5,814	-6,922
M	COUNTY-OTHER, HIDALGO	RIO GRANDE	-39	-63	-93	-123	-152	-182
M	DONNA	NUECES-RIO GRANDE	365	-151	-685	-1,244	-1,827	-2,400
M	EDCOUCH	NUECES-RIO GRANDE	-28	-89	-154	-224	-300	-375
M	EDINBURG	NUECES-RIO GRANDE	-4,016	-6,802	-9,675	-12,617	-15,624	-18,570
M	ELSA	NUECES-RIO GRANDE	99	-54	-212	-380	-558	-733
M	HIDALGO	NUECES-RIO GRANDE	-358	-749	-1,153	-1,567	-1,989	-2,403
M	HIDALGO	RIO GRANDE	-2	-6	-10	-13	-17	-21
M	HIDALGO COUNTY MUD #1	NUECES-RIO GRANDE	-298	-410	-529	-651	-777	-902
M	IRRIGATION, HIDALGO	NUECES-RIO GRANDE	-376,535	-348,278	-317,742	-283,018	-246,784	-247,253
M	IRRIGATION, HIDALGO	RIO GRANDE	-15,687	-14,510	-13,239	-11,793	-10,281	-10,303
M	LA JOYA	NUECES-RIO GRANDE	394	290	183	71	-45	-159
M	LA JOYA	RIO GRANDE	105	78	49	20	-11	-41
M	LA VILLA	NUECES-RIO GRANDE	-29	-82	-139	-197	-258	-318
M	LIVESTOCK, HIDALGO	NUECES-RIO GRANDE	848	848	848	848	848	848
M	LIVESTOCK, HIDALGO	RIO GRANDE	47	47	47	47	47	47
M	MANUFACTURING, HIDALGO	NUECES-RIO GRANDE	-1,747	-2,195	-2,643	-3,042	-3,562	-4,122
M	MCALLEN	NUECES-RIO GRANDE	-7,297	-15,788	-24,444	-33,291	-42,317	-51,132
M	MERCEDES	NUECES-RIO GRANDE	-281	-706	-1,149	-1,616	-2,107	-2,589

Projected Water Supply Needs
TWDB 2017 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
M	MILITARY HIGHWAY WSC	NUECES-RIO GRANDE	-376	-703	-1,050	-1,426	-1,820	-2,213
M	MILITARY HIGHWAY WSC	RIO GRANDE	-12	-24	-34	-48	-62	-75
M	MINING, HIDALGO	NUECES-RIO GRANDE	-1,235	-1,956	-2,495	-3,072	-3,736	-4,575
M	MINING, HIDALGO	RIO GRANDE	-147	-204	-246	-292	-344	-410
M	MISSION	NUECES-RIO GRANDE	-8,019	-12,508	-17,092	-21,753	-26,480	-31,099
M	MISSION	RIO GRANDE	-3	-6	-8	-11	-14	-16
M	NORTH ALAMO WSC	NUECES-RIO GRANDE	-1,060	-6,197	-11,494	-16,918	-22,445	-27,865
M	PALMHURST	NUECES-RIO GRANDE	-354	-571	-791	-1,013	-1,235	-1,452
M	PALMVIEW	NUECES-RIO GRANDE	-103	-257	-416	-580	-748	-914
M	PENITAS	NUECES-RIO GRANDE	-83	-212	-345	-481	-619	-755
M	PHARR	NUECES-RIO GRANDE	-106	-2,115	-4,203	-6,364	-8,596	-10,787
M	PHARR	RIO GRANDE	0	-1	-1	-2	-2	-3
M	PROGRESO	NUECES-RIO GRANDE	-157	-303	-455	-612	-774	-933
M	SAN JUAN	NUECES-RIO GRANDE	-1,897	-3,193	-4,527	-5,899	-7,306	-8,685
M	SHARYLAND WSC	NUECES-RIO GRANDE	-3,041	-4,737	-6,475	-8,267	-10,109	-11,911
M	STEAM ELECTRIC POWER, HIDALGO	NUECES-RIO GRANDE	-1,948	-4,342	-7,259	-10,815	-15,151	-20,304
M	SULLIVAN CITY	RIO GRANDE	-75	-178	-286	-400	-520	-638
M	WESLACO	NUECES-RIO GRANDE	-3,076	-4,754	-6,474	-8,243	-10,055	-11,828
	Sum of Projected Water Supply Needs (acre-feet)		**-431,898**	**-439,406**	**-446,258**	**-450,263**	**-454,524**	**-497,403**

JIM WELLS COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	ALICE	NUECES-RIO GRANDE	0	0	0	0	0	0
N	COUNTY-OTHER, JIM WELLS	NUECES	117	97	77	53	28	4
N	COUNTY-OTHER, JIM WELLS	NUECES-RIO GRANDE	679	569	463	330	195	66
N	IRRIGATION, JIM WELLS	NUECES	137	119	100	80	59	37
N	IRRIGATION, JIM WELLS	NUECES-RIO GRANDE	663	556	444	326	202	72
N	LIVESTOCK, JIM WELLS	NUECES	0	0	0	0	0	0
N	LIVESTOCK, JIM WELLS	NUECES-RIO GRANDE	0	0	0	0	0	0
N	MINING, JIM WELLS	NUECES	0	0	1	2	3	3
N	MINING, JIM WELLS	NUECES-RIO GRANDE	3	0	18	32	45	54
N	ORANGE GROVE	NUECES-RIO GRANDE	451	427	405	380	356	333
N	PREMONT	NUECES-RIO GRANDE	1,098	1,056	1,016	967	922	879

Projected Water Supply Needs
TWDB 2017 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	SAN DIEGO	NUECES-RIO GRANDE	3	-7	-16	-28	-40	-51
	Sum of Projected Water Supply Needs (acre-feet)		**0**	**-7**	**-16**	**-28**	**-40**	**-51**

KENEDY COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	COUNTY-OTHER, KENEDY	NUECES-RIO GRANDE	61	44	43	42	41	41
N	LIVESTOCK, KENEDY	NUECES-RIO GRANDE	0	0	0	0	0	0
N	MINING, KENEDY	NUECES-RIO GRANDE	12	7	38	62	87	103
	Sum of Projected Water Supply Needs (acre-feet)		**0**	**0**	**0**	**0**	**0**	**0**

KLEBERG COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	COUNTY-OTHER, KLEBERG	NUECES-RIO GRANDE	3,032	2,996	2,954	2,905	2,860	2,816
N	IRRIGATION, KLEBERG	NUECES-RIO GRANDE	200	170	138	105	71	34
N	KINGSVILLE	NUECES-RIO GRANDE	356	214	69	69	69	69
N	LIVESTOCK, KLEBERG	NUECES-RIO GRANDE	0	0	0	0	0	0
N	MINING, KLEBERG	NUECES-RIO GRANDE	23	20	40	56	72	82
N	RICARDO WSC	NUECES-RIO GRANDE	0	0	0	0	0	0
	Sum of Projected Water Supply Needs (acre-feet)		**0**	**0**	**0**	**0**	**0**	**0**

NUECES COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	AGUA DULCE	NUECES-RIO GRANDE	0	0	0	0	0	0
N	ARANSAS PASS	SAN ANTONIO-NUECES	0	0	0	0	0	0
N	BISHOP	NUECES-RIO GRANDE	0	0	0	0	0	0
N	CORPUS CHRISTI	NUECES	0	0	0	0	0	0
N	CORPUS CHRISTI	NUECES-RIO GRANDE	0	0	0	0	0	0
N	COUNTY-OTHER, NUECES	NUECES	43	26	17	11	6	0
N	COUNTY-OTHER, NUECES	NUECES-RIO GRANDE	445	266	159	97	41	3
N	DRISCOLL	NUECES-RIO GRANDE	0	0	0	0	0	0
N	IRRIGATION, NUECES	NUECES	152	149	146	143	140	137

Projected Water Supply Needs
TWDB 2017 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
N	IRRIGATION, NUECES	NUECES-RIO GRANDE	110	91	71	50	27	4
N	IRRIGATION, NUECES	SAN ANTONIO-NUECES	0	0	0	0	0	0
N	LIVESTOCK, NUECES	NUECES	0	0	0	0	0	0
N	LIVESTOCK, NUECES	NUECES-RIO GRANDE	0	0	0	0	0	0
N	MANUFACTURING, NUECES	NUECES	0	0	0	-73	-618	-1,135
N	MANUFACTURING, NUECES	NUECES-RIO GRANDE	0	0	0	-1,832	-10,363	-18,468
N	MINING, NUECES	NUECES	0	0	0	0	0	0
N	MINING, NUECES	NUECES-RIO GRANDE	0	0	0	0	0	0
N	MINING, NUECES	SAN ANTONIO-NUECES	0	0	0	0	0	0
N	NUECES WSC	NUECES	0	0	0	0	0	0
N	NUECES WSC	NUECES-RIO GRANDE	0	0	0	0	0	0
N	PORT ARANSAS	NUECES-RIO GRANDE	0	0	0	0	0	0
N	RIVER ACRES WSC	NUECES	0	0	0	0	0	0
N	ROBSTOWN	NUECES	-2	-2	-2	-2	-2	-2
N	ROBSTOWN	NUECES-RIO GRANDE	-1,581	-1,545	-1,509	-1,511	-1,516	-1,523
N	STEAM ELECTRIC POWER, NUECES	NUECES	0	0	0	0	-2,183	-5,286
N	STEAM ELECTRIC POWER, NUECES	NUECES-RIO GRANDE	0	0	0	0	-663	-1,607
	Sum of Projected Water Supply Needs (acre-feet)		**-1,583**	**-1,547**	**-1,511**	**-3,418**	**-15,345**	**-28,021**

WILLACY COUNTY

All values are in acre-feet

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
M	COUNTY-OTHER, WILLACY	NUECES-RIO GRANDE	101	93	85	77	69	61
M	EAST RIO HONDO WSC	NUECES-RIO GRANDE	0	-1	-1	-2	-3	-4
M	IRRIGATION, WILLACY	NUECES-RIO GRANDE	-49,304	-49,158	-49,052	-48,963	-49,223	-48,956
M	LIVESTOCK, WILLACY	NUECES-RIO GRANDE	177	177	177	177	177	177
M	LYFORD	NUECES-RIO GRANDE	297	274	250	220	188	156
M	MANUFACTURING, WILLACY	NUECES-RIO GRANDE	-16	-16	-16	-16	-16	-16
M	MINING, WILLACY	NUECES-RIO GRANDE	0	-2	11	21	31	37
M	NORTH ALAMO WSC	NUECES-RIO GRANDE	-44	-231	-397	-554	-704	-844
M	RAYMONDVILLE	NUECES-RIO GRANDE	4,120	3,990	3,858	3,698	3,527	3,356
M	SAN PERLITA	NUECES-RIO GRANDE	-12	-37	-63	-92	-121	-148

Projected Water Supply Needs
TWDB 2017 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

RWPG	WUG	WUG Basin	2020	2030	2040	2050	2060	2070
M	SEBASTIAN MUD	NUECES-RIO GRANDE	55	45	28	9	-8	-26
	Sum of Projected Water Supply Needs (acre-feet)		**-49,376**	**-49,445**	**-49,529**	**-49,627**	**-50,075**	**-49,994**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

BROOKS COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
FALFURRIAS, NUECES-RIO GRANDE (N)							
MUNICIPAL WATER CONSERVATION (RURAL)	DEMAND REDUCTION [BROOKS]	91	224	360	508	649	786
		91	**224**	**360**	**508**	**649**	**786**
Sum of Projected Water Management Strategies (acre-feet)		**91**	**224**	**360**	**508**	**649**	**786**

HIDALGO COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
AGUA SUD, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - AGUA SUD	DEMAND REDUCTION [HIDALGO]	0	0	115	464	931	1,486
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	615	615	616	690	691	691
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	497	497	686	686	687	687
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	158	317	792	1,425	2,060	2,060
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	179	232	284	337	390	442
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	457	506	554	603	652	701
		1,906	**2,167**	**3,047**	**4,205**	**5,411**	**6,067**
AGUA SUD, RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - AGUA SUD	DEMAND REDUCTION [HIDALGO]	0	0	15	61	122	195
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	81	81	81	91	91	91
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	65	65	90	90	90	90
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	21	42	104	187	270	270
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	24	31	37	44	51	58

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	60	66	73	79	86	92
		251	**285**	**400**	**552**	**710**	**796**
ALAMO, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - ALAMO	DEMAND REDUCTION [HIDALGO]	0	0	159	403	722	1,097
ALAMO BGD PLANT	GULF COAST AQUIFER [HIDALGO]	1,000	1,000	1,000	1,000	1,000	1,000
ALAMO GROUNDWATER WELL	GULF COAST AQUIFER [HIDALGO]	1,120	1,120	1,120	1,120	1,120	1,120
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	1,000	1,000	1,000
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	100	166	232	297	363	429
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	50	50	50	50	50	50
		2,270	**2,336**	**2,561**	**3,870**	**4,255**	**4,696**
ALTON, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - ALTON	DEMAND REDUCTION [HIDALGO]	0	70	200	376	592	844
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	180	552	930	1,365	1,972	1,992
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	88	95	102	109	116	123
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	43	47	51	55	60	64
SHARYLAND WSC WELL AND RO UNIT AT WTP #2	GULF COAST AQUIFER [HIDALGO]	189	189	189	189	189	189
SHARYLAND WSC WELL AND RO UNIT AT WTP #3	GULF COAST AQUIFER [HIDALGO]	171	171	171	171	171	171
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	115	129	143	157	171	184
		786	**1,253**	**1,786**	**2,422**	**3,271**	**3,567**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
COUNTY-OTHER, HIDALGO, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - COUNTY-OTHER, HIDALGO	DEMAND REDUCTION [HIDALGO]	0	51	174	344	552	796
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	10	10	10	16	16	16
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	6	6	15	15	15	15
CAMERON COUNTY CONVERSION OF WRS	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	434	424	424	424	424	424
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	347	1,540	2,284	3,103	3,906	4,603
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	30	60	90	120	148	178
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	1	2	4	4	5
ERHWSC SURFACE WATER TREATMENT PLANT AND CONVERTED WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	5	5	5	5	5	5
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	146	236	327	420	511	603
HIDALGO COUNTY CONVERSION OF WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	269	756	1,294	1,912	2,569	2,569
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	9	10	11	12	12	13
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	10	13	16	18	22	25
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	3	4	6	9	11	12
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	51	57	61	66	71	77
MHWSC EXPAND EXISTING GW SUPPLIES - CAMERON COUNTY	GULF COAST AQUIFER [CAMERON]	3	3	3	3	3	3
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	101	102	102	102
		1,338	**3,196**	**4,846**	**6,597**	**8,398**	**9,510**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	4	4	4	4	4
NAWSC DELTA AREA RO WTP EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	2	2
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	36
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	1	1	1	1	1	1
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	6	6	8	8	8	8
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	8	9	10	11	12	13
		1,338	**3,196**	**4,846**	**6,597**	**8,398**	**9,510**

COUNTY-OTHER, HIDALGO, RIO GRANDE (M)

ADVANCED MUNICIPAL CONSERVATION - COUNTY-OTHER, HIDALGO	DEMAND REDUCTION [HIDALGO]	0	1	5	9	15	21
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	55	55	55	55	55	55
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	0	0	0	0	0	0
CAMERON COUNTY CONVERSION OF WRS	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	11	11	11	11	11
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	7	40	61	83	102	122
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	2	2	3	4	5
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
ERHWSC SURFACE WATER TREATMENT PLANT AND CONVERTED WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	6	9	11	14	16
HIDALGO COUNTY CONVERSION OF WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	20	34	51	68	68
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	1	1	2	2	2
MHWSC EXPAND EXISTING GW SUPPLIES - CAMERON COUNTY	GULF COAST AQUIFER [CAMERON]	0	0	0	0	0	0
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	3	3	3	3
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
NAWSC DELTA AREA RO WTP EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	0
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	1
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
		67	**136**	**181**	**228**	**274**	**304**
DONNA, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - DONNA	DEMAND REDUCTION [HIDALGO]	0	0	4	172	411	698
DONNA CONVERTED WATER RIGHTS AND WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	950	950	2,240	2,240	2,240	2,240
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	85	336	587	839	1,090	1,341
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	50	50	50	50	50
		1,035	**1,336**	**2,881**	**3,301**	**3,791**	**4,329**
EDCOUCH, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - EDCOUCH	DEMAND REDUCTION [HIDALGO]	0	0	0	0	1	35
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	40	40	40	100	100	100

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
EDCOUCH EMERGENCY GROUNDWATER SUPPLY	GULF COAST AQUIFER [HIDALGO]	500	500	500	500	500	500
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	22	36	50	64	78	92
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	50	50	50	50
		562	**576**	**640**	**714**	**729**	**777**

EDINBURG, NUECES-RIO GRANDE (M)

ADVANCED MUNICIPAL CONSERVATION - EDINBURG	DEMAND REDUCTION [HIDALGO]	0	83	790	1,809	3,125	4,662
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	200	2,100	3,500	5,500	8,000	8,000
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	2	2	3	4	4
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	1	1	1	2
EDINBURG NON-POTABLE REUSE	DIRECT REUSE [HIDALGO]	2,622	3,180	3,754	3,920	3,920	3,920
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	1	1	1	2	2
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,292	1,396	1,500	1,604	1,708	1,812
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	140	234	326	418	511	603
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	12	20	20	20
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	205	205	205	205	205	205
NAWSC DELTA AREA RO WTP EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	4	4
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	2
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	1	1	1	1	1	1
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	1	1	1	1	1

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
		4,462	**7,203**	**10,093**	**13,483**	**17,502**	**19,238**
ELSA, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - ELSA	DEMAND REDUCTION [HIDALGO]	0	0	0	11	79	163
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	100	150
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	62	101	141	180	220	259
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	200	200	200	200
		62	**101**	**341**	**391**	**599**	**772**
HIDALGO, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - HIDALGO	DEMAND REDUCTION [HIDALGO]	0	11	111	254	438	654
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	396	495	1,040	1,040	1,486	1,486
HIDALGO EXPAND EXISTING GROUNDWATER SUPPLY	GULF COAST AQUIFER [HIDALGO]	297	297	297	297	297	297
		693	**803**	**1,448**	**1,591**	**2,221**	**2,437**
HIDALGO, RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - HIDALGO	DEMAND REDUCTION [HIDALGO]	0	0	1	2	4	6
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	5	10	10	14	14
HIDALGO EXPAND EXISTING GROUNDWATER SUPPLY	GULF COAST AQUIFER [HIDALGO]	3	3	3	3	3	3
		7	**8**	**14**	**15**	**21**	**23**
HIDALGO COUNTY MUD #1, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - HIDALGO COUNTY MUD #1	DEMAND REDUCTION [HIDALGO]	0	0	0	0	0	56
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	500	500	500	1,500	1,500	1,500
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	203	219	235	252	268	284
HIDALGO COUNTY MUNICIPAL UTILITY DISTRICT NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	171	187	204	221	238	256
		874	**906**	**939**	**1,973**	**2,006**	**2,096**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
IRRIGATION, HIDALGO, NUECES-RIO GRANDE (M)							
ARRUNDO DONAX BIOLOGICAL CONTROL	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,876	2,066	2,250	2,424	2,586	2,776
BRUSH CONTROL	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	3,103	6,036	8,942	11,820	14,671	17,533
DELTA WATERSHED PROJECT - EDINBURG RESERVOIR	NUECES-RIO GRANDE RUN-OF-RIVER [HIDALGO]	1,739	1,739	1,739	1,739	1,739	1,739
DELTA WATERSHED PROJECT - NEW RESERVOIR	NUECES-RIO GRANDE RUN-OF-RIVER [HIDALGO]	1,878	1,878	1,878	1,878	1,878	1,878
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	812	3,201	5,570	7,920	10,246	12,580
ENGLEMAN ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	865	949	1,033	1,118	1,206	1,298
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2,473	4,053	5,616	7,165	8,699	10,241
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	8,890	9,594	10,270	10,939	11,597	12,276
HIDALGO COUNTY ID NO. 13 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	116	153	189	226	264	302
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,057	1,364	1,666	1,965	2,261	2,559
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2,605	4,319	6,013	7,693	9,355	11,028
HIDALGO COUNTY ID NO. 5 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,164	1,163	1,159	1,155	1,150	1,148
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,919	2,121	2,316	2,509	2,700	2,894
HIDALGO COUNTY MUNICIPAL UTILITY DISTRICT NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	41	45	49	53	57	60
		111,945	**122,924**	**133,758**	**144,507**	**155,152**	**165,933**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HIDALGO COUNTY WCID NO. 18 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	29	33	36	40	44	49
HIDALGO COUNTY WID NO. 19 (SHARYLAND) CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	531	563	593	623	653	684
HIDALGO COUNTY WID NO. 3 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	395	451	506	561	614	669
ON-FARM IRRIGATION CONSERVATION	DEMAND REDUCTION [HIDALGO]	75,226	75,226	75,226	75,226	75,226	75,226
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	3,590	3,912	4,229	4,549	4,871	5,210
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2,586	2,893	3,192	3,488	3,779	4,076
UNITED ID OFF-CHANNEL RESERVOIR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	640	651	660	669	679	688
VALLEY ACRES ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	410	514	626	747	877	1,019
		111,945	**122,924**	**133,758**	**144,507**	**155,152**	**165,933**

IRRIGATION, HIDALGO, RIO GRANDE (M)

ARRUNDO DONAX BIOLOGICAL CONTROL	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	78	86	94	101	108	116
BRUSH CONTROL	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	130	252	372	492	611	731
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	34	133	232	330	427	524
ENGLEMAN ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	36	40	43	47	50	54
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	103	169	234	299	362	427
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	370	399	429	456	483	511

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Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HIDALGO COUNTY ID NO. 13 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	5	6	8	9	11	13
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	44	57	69	82	94	107
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	109	180	251	321	390	459
HIDALGO COUNTY ID NO. 5 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	48	48	48	48	48	48
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	80	88	97	105	112	121
HIDALGO COUNTY MUNICIPAL UTILITY DISTRICT NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2	2	2	2	2	3
HIDALGO COUNTY WCID NO. 18 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	1	2	2	2	2
HIDALGO COUNTY WID NO. 19 (SHARYLAND) CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	22	23	25	26	27	28
HIDALGO COUNTY WID NO. 3 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	16	19	21	23	26	28
ON-FARM IRRIGATION CONSERVATION	DEMAND REDUCTION [HIDALGO]	3,134	3,134	3,134	3,134	3,134	3,134
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	150	163	176	190	203	217
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	108	121	133	145	157	170
UNITED ID OFF-CHANNEL RESERVOIR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	27	27	28	28	28	29
VALLEY ACRES ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	17	21	26	31	37	42
		4,514	**4,969**	**5,424**	**5,871**	**6,312**	**6,764**
LA JOYA, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - LA JOYA	DEMAND REDUCTION [HIDALGO]	0	0	0	0	44	99
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	20	20	20	26	26	26

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Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	14	14	36	36	36	36
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	39	50	62	72	83	95
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	13	15	17	17	19	21
		86	**99**	**135**	**151**	**208**	**277**
LA JOYA, RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - LA JOYA	DEMAND REDUCTION [HIDALGO]	0	0	0	0	12	26
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	5	5	5	7	7	7
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	4	4	9	9	9	9
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	10	14	16	20	22	25
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	4	4	5	5	5
		23	**27**	**34**	**41**	**55**	**72**
LA VILLA, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - LA VILLA	DEMAND REDUCTION [HIDALGO]	0	0	0	17	42	71
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	50	55	50	50	100	100
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	17	27	38	49	60	70
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	100	100	100	100
		67	**82**	**188**	**216**	**302**	**341**
LIVESTOCK, HIDALGO, NUECES-RIO GRANDE (M)							
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	35	69	103	136	170	204
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	42	68	95	122	149	175
		77	**137**	**198**	**258**	**319**	**379**

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Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
LIVESTOCK, HIDALGO, RIO GRANDE (M)							
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	7	10	14	17	21
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	7	10	12	15	18
		8	**14**	**20**	**26**	**32**	**39**
MANUFACTURING, HIDALGO, NUECES-RIO GRANDE (M)							
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	202	551	909	1,222	1,645	2,100
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	28	55	82	109	136	163
EDINBURG NON-POTABLE REUSE	DIRECT REUSE [HIDALGO]	1,298	740	166	0	0	0
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	15	17	18	19	21	22
HIDALGO COUNTY WID NO. 3 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	66	76	85	95	104	114
IMPLEMENTATION OF BEST MANAGEMENT PRACTICES	DEMAND REDUCTION [HIDALGO]	546	591	636	676	728	784
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	1
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	160	160	160	160	160	160
VALLEY ACRES ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	14	17	21	25	30	35
		2,329	**2,207**	**2,077**	**2,306**	**2,824**	**3,379**
MCALLEN, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - MCALLEN	DEMAND REDUCTION [HIDALGO]	1,674	5,608	10,888	17,372	23,904	29,468
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	800	800	2,200	4,700
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	542	586	629	673	716	760
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	359	595	832	1,068	1,305	1,541

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Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HIDALGO COUNTY WID NO. 3 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,802	2,063	2,324	2,585	2,846	3,107
MCALLEN BGD PLANT	GULF COAST AQUIFER [HIDALGO]	2,688	2,688	2,688	2,688	2,688	2,688
MCALLEN HCID NO. 1 RAW WATER LINE PROJECT	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	800	800	800	800	800	800
MCALLEN NORTH WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	0	0	1,120	2,000	2,000	2,000
MCALLEN SOUTH WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	0	2,000	2,500	3,500	3,500	3,500
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2,052	2,298	2,544	2,791	3,037	3,283
UNITED ID OFF-CHANNEL RESERVOIR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	133	135	137	140	142	144
		10,050	**16,773**	**25,262**	**34,417**	**43,138**	**51,991**
MERCEDES, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - MERCEDES	DEMAND REDUCTION [HIDALGO]	0	0	80	225	433	679
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	136	223	310	397	484	571
MERCEDES POTABLE REUSE	DIRECT REUSE [HIDALGO]	1,670	1,670	1,670	1,670	1,670	1,670
		1,806	**1,893**	**2,060**	**2,292**	**2,587**	**2,920**
MILITARY HIGHWAY WSC, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - MILITARY HIGHWAY WSC	DEMAND REDUCTION [HIDALGO]	0	51	148	288	470	682
CAMERON COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	3	4	4	5	5	6
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	95	354	595	854	1,103	1,415
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
ERHWSC SURFACE WATER TREATMENT PLANT AND CONVERTED WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	104	108	111	112	113	114
HARLINGEN ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	8	27	47	68	89	109

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Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HARLINGEN WWTP 2 POTABLE REUSE	DIRECT REUSE [CAMERON]	0	0	7	7	7	7
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
MHWSC EXPAND EXISTING GW SUPPLIES - CAMERON COUNTY	GULF COAST AQUIFER [CAMERON]	144	149	154	156	157	158
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	1	1	1	1
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	1	1	1	1	1
NAWSC DELTA AREA RO WTP EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	0
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	0
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	22	23	24	24	24	24
		376	**717**	**1,092**	**1,516**	**1,970**	**2,517**

MILITARY HIGHWAY WSC, RIO GRANDE (M)

ADVANCED MUNICIPAL CONSERVATION - MILITARY HIGHWAY WSC	DEMAND REDUCTION [HIDALGO]	0	2	5	10	16	23
CAMERON COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	3	13	20	29	38	49
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	1	1	1	1	2
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
ERHWSC SURFACE WATER TREATMENT PLANT AND CONVERTED WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	4	4	4	4	4
HARLINGEN ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	1	1	2	3	4
HARLINGEN WWTP 2 POTABLE REUSE	DIRECT REUSE [CAMERON]	0	0	0	0	0	0
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0

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Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
MHWSC EXPAND EXISTING GW SUPPLIES - CAMERON COUNTY	GULF COAST AQUIFER [CAMERON]	5	5	5	6	6	6
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
NAWSC DELTA AREA RO WTP EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	0
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	0
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	1	1	1	1	1	1
		13	**27**	**37**	**53**	**69**	**89**
MINING, HIDALGO, NUECES-RIO GRANDE (M)							
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	2	2	2	4	4	4
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	1	1	9	9	9	9
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	10	14	18	20	23	26
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	1	1	1	2	2
HIDALGO COUNTY WCID NO. 18 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	82	95	107	118	129	141
HIDALGO COUNTY WID NO. 3 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	10	12	13	15	16	18
IMPLEMENTATION OF BEST MANAGEMENT PRACTICES	DEMAND REDUCTION [HIDALGO]	264	336	389	447	513	596
		370	**461**	**539**	**614**	**696**	**796**
MINING, HIDALGO, RIO GRANDE (M)							
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	0	0	0	0	0	0
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	0	0	1	1	1	1
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	1	1	2	2	2
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0

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Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HIDALGO COUNTY WCID NO. 18 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	7	7	8	9	10	11
HIDALGO COUNTY WID NO. 3 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	1	1	1	1	1
IMPLEMENTATION OF BEST MANAGEMENT PRACTICES	DEMAND REDUCTION [HIDALGO]	21	26	31	35	40	47
		30	**35**	**42**	**48**	**54**	**62**
MISSION, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - MISSION	DEMAND REDUCTION [HIDALGO]	924	3,044	5,871	8,419	10,978	13,791
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	4	4	4	10	10	10
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	3	3	12	12	12	12
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	600	2,099	3,498	3,498	3,498
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	2	2	2	3	3
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	3	3	4	4	4	5
MISSION BGD PLANT	GULF COAST AQUIFER [HIDALGO]	2,687	2,686	2,687	2,686	2,686	2,687
MISSION WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	3,918	3,918	3,918	7,836	7,836	7,836
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2,051	2,297	2,543	2,789	3,035	3,281
UNITED ID OFF-CHANNEL RESERVOIR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	41	41	42	43	44	44
		9,632	**12,598**	**17,182**	**25,299**	**28,106**	**31,167**
MISSION, RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - MISSION	DEMAND REDUCTION [HIDALGO]	1	2	3	5	6	8
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	0	0	0	0	0	0
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	0	0	0	0	0	0
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	1	2	2	2

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Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
MISSION BGD PLANT	GULF COAST AQUIFER [HIDALGO]	1	2	1	2	2	1
MISSION WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	2	2	2	4	4	4
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	1	1	2	2	2
UNITED ID OFF-CHANNEL RESERVOIR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
		5	**7**	**8**	**15**	**16**	**17**
NORTH ALAMO WSC, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - NORTH ALAMO WSC	DEMAND REDUCTION [HIDALGO]	823	1,850	3,456	5,592	8,224	11,229
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	382	746	1,114	1,481	1,849	2,218
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	49	192	335	478	625	767
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	237	387	542	694	846	1,000
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	563	613	658	704	750	797
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	154	257	360	463	567	670
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	3,617	4,731	4,738	4,743
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	460	3,402	3,406	3,413	3,416	3,421
NAWSC DELTA AREA RO WTP EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	1,363	1,365
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	965
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	471	473	474	475	476	476

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	255	281	304	330	355	381
		3,394	**8,201**	**14,266**	**18,361**	**23,209**	**28,032**
PALMHURST, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - PALMHURST	DEMAND REDUCTION [HIDALGO]	57	166	306	472	659	861
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	39	118	195	285	432	438
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	40	44	47	50	53	57
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	20	22	24	25	27	29
SHARYLAND WSC WELL AND RO UNIT AT WTP #2	GULF COAST AQUIFER [HIDALGO]	90	90	90	90	90	90
SHARYLAND WSC WELL AND RO UNIT AT WTP #3	GULF COAST AQUIFER [HIDALGO]	72	72	72	72	72	72
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	53	59	66	72	78	85
		371	**571**	**800**	**1,066**	**1,411**	**1,632**
PALMVIEW, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - PALMVIEW	DEMAND REDUCTION [HIDALGO]	0	0	21	75	145	230
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	100	100	100	146	146	146
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	75	75	299	299	299	299
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	8	16	40	72	104	104
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	27	35	43	51	59	66
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	69	76	83	91	98	105
		279	**302**	**586**	**734**	**851**	**950**
PENITAS, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - PENITAS	DEMAND REDUCTION [HIDALGO]	0	5	39	86	147	218

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	81	81	81	123	123	123
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	61	61	240	240	240	240
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	8	20	36	52	52
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	22	28	35	41	47	54
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	56	62	68	74	79	85
		224	**245**	**483**	**600**	**688**	**772**
PHARR, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - PHARR	DEMAND REDUCTION [HIDALGO]	0	0	167	848	1,777	2,883
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	420	697	974	1,250	1,527	1,803
PHARR DIRECT POTABLE REUSE	DIRECT REUSE [HIDALGO]	6,719	6,719	6,719	6,719	6,719	6,719
		7,139	**7,416**	**7,860**	**8,817**	**10,023**	**11,405**
PHARR, RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - PHARR	DEMAND REDUCTION [HIDALGO]	0	0	0	0	0	1
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	1
PHARR DIRECT POTABLE REUSE	DIRECT REUSE [HIDALGO]	2	2	2	2	2	2
		2	**2**	**2**	**2**	**2**	**4**
PROGRESO, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - PROGRESO	DEMAND REDUCTION [HIDALGO]	0	0	7	55	122	202
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	34	139	227	321	460	573
ERHWSC SURFACE WATER TREATMENT PLANT AND CONVERTED WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	100	100	100	100	100	100
MHWSC EXPAND EXISTING GW SUPPLIES - CAMERON COUNTY	GULF COAST AQUIFER [CAMERON]	150	150	150	150	150	150
		284	**389**	**484**	**626**	**832**	**1,025**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
SAN JUAN, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - SAN JUAN	DEMAND REDUCTION [HIDALGO]	0	15	330	799	1,411	2,128
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	202	809	1,614	1,620	1,950	1,950
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	28	54	80	106	132	158
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	14	24	35	45	56
ERHWSC SURFACE WATER TREATMENT PLANT AND CONVERTED WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	5	5	5	5	5	5
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	17	28	39	50	61	72
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	15	16	18	19	20	21
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	144	240	335	431	526	622
MHWSC EXPAND EXISTING GW SUPPLIES - CAMERON COUNTY	GULF COAST AQUIFER [CAMERON]	5	5	5	5	5	5
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	227	735	735	735
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	12	230	230	230	230	230
NAWSC DELTA AREA RO WTP EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	800	800
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	70
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	52	52	52	52	52	52
SAN JUAN WTP UPGRADE AND EXPANSION TO INCLUDE BGD	GULF COAST AQUIFER [HIDALGO]	1,792	1,792	1,792	1,792	1,792	1,792
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	19	20	22	24	26	28
		2,295	**3,280**	**4,773**	**5,903**	**7,790**	**8,724**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
SHARYLAND WSC, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - SHARYLAND WSC	DEMAND REDUCTION [HIDALGO]	231	968	1,507	2,235	3,141	4,164
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	470	1,378	2,323	3,298	4,982	5,055
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	580	626	672	719	765	812
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	166	181	196	212	228	244
SHARYLAND WSC WELL AND RO UNIT AT WTP #2	GULF COAST AQUIFER [HIDALGO]	621	621	621	621	621	621
SHARYLAND WSC WELL AND RO UNIT AT WTP #3	GULF COAST AQUIFER [HIDALGO]	657	657	657	657	657	657
UNITED ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	441	494	547	600	653	706
UNITED ID OFF-CHANNEL RESERVOIR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	4	4	4	4	4
		3,170	**4,929**	**6,527**	**8,346**	**11,051**	**12,263**
STEAM ELECTRIC POWER, HIDALGO, NUECES-RIO GRANDE (M)							
CAMERON COUNTY CONVERSION OF WRS	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	813	1,484	2,048	3,021	2,578
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	318	1,743	3,753	6,987	10,638	14,249
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	34	37	39	42	45	48
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	16	17	19	20	22	24
HIDALGO STEAM-ELEC. ADDITIONAL GROUNDWATER WELLS	GULF COAST AQUIFER [HIDALGO]	100	100	100	100	100	100
IMPLEMENTATION OF BEST MANAGEMENT PRACTICES	DEMAND REDUCTION [HIDALGO]	1,415	1,655	1,946	2,302	2,735	3,251
VALLEY ACRES ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	67	83	102	121	143	166
		1,950	**4,448**	**7,443**	**11,620**	**16,704**	**20,416**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
SULLIVAN CITY, RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - SULLIVAN CITY	DEMAND REDUCTION [HIDALGO]	0	0	0	13	61	118
AGUA SUD EAST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	73	73	73	88	88	88
AGUA SUD WEST WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	55	55	279	279	279	279
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	8	16	40	72	104	104
HIDALGO COUNTY ID NO. 16 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	20	26	31	37	43	49
HIDALGO COUNTY ID NO. 6 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	50	56	61	66	72	77
		206	**226**	**484**	**555**	**647**	**715**
WESLACO, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - WESLACO	DEMAND REDUCTION [HIDALGO]	241	893	1,427	2,144	3,030	4,032
CONVERSION OF IRRIGATION WATER RIGHTS TO DMI	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	679	1,375	3,000	3,500	3,500	3,500
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	479	785	1,092	1,399	1,706	2,013
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	370	370	370	370	370	370
WESLACO GROUNDWATER DEVELOPMENT AND BLENDING	GULF COAST AQUIFER [HIDALGO]	560	560	560	560	560	560
WESLACO NORTH WWTP POTABLE REUSE	DIRECT REUSE [HIDALGO]	1,120	1,120	1,120	1,120	3,360	3,360
		3,449	**5,103**	**7,569**	**9,093**	**12,526**	**13,835**
Sum of Projected Water Management Strategies (acre-feet)		**178,407**	**218,388**	**268,510**	**322,695**	**376,762**	**421,128**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

JIM WELLS COUNTY

WUG, Basin (RWPG)

All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
ALICE, NUECES-RIO GRANDE (N)							
BRACKISH GROUNDWATER DEVELOPMENT - ALICE	GULF COAST AQUIFER [JIM WELLS]	3,363	3,363	3,363	3,363	3,363	3,363
GBRA LOWER BASIN OFF-CHANNEL RESERVOIR	GBRA LOWER BASIN OFF-CHANNEL LAKE/ RESERVOIR [RESERVOIR]	0	2,800	2,800	2,800	2,800	2,800
MUNICIPAL WATER CONSERVATION (RURAL)	DEMAND REDUCTION [JIM WELLS]	143	289	352	262	300	340
O.N. STEVENS WTP IMPROVEMENTS	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,204	0	0	0	0	0
PIPELINE REPLACEMENT PROGRAM (ALICE)	DEMAND REDUCTION [JIM WELLS]	0	173	460	576	576	576
REUSE - ALICE	DIRECT REUSE [JIM WELLS]	0	897	897	897	897	897
		4,710	**7,522**	**7,872**	**7,898**	**7,936**	**7,976**
ORANGE GROVE, NUECES-RIO GRANDE (N)							
MUNICIPAL WATER CONSERVATION (RURAL)	DEMAND REDUCTION [JIM WELLS]	18	49	83	120	159	183
		18	**49**	**83**	**120**	**159**	**183**
PREMONT, NUECES-RIO GRANDE (N)							
MUNICIPAL WATER CONSERVATION (RURAL)	DEMAND REDUCTION [JIM WELLS]	31	87	149	221	289	303
		31	**87**	**149**	**221**	**289**	**303**
SAN DIEGO, NUECES-RIO GRANDE (N)							
GULF COAST AQUIFER SUPPLIES - SAN DIEGO	GULF COAST AQUIFER [DUVAL]	0	33	33	34	35	35
MUNICIPAL WATER CONSERVATION (RURAL)	DEMAND REDUCTION [JIM WELLS]	6	20	25	25	26	27
		6	**53**	**58**	**59**	**61**	**62**
Sum of Projected Water Management Strategies (acre-feet)		**4,765**	**7,711**	**8,162**	**8,298**	**8,445**	**8,524**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

KENEDY COUNTY

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
COUNTY-OTHER, KENEDY, NUECES-RIO GRANDE (N)							
MUNICIPAL WATER CONSERVATION (SUBURBAN)	DEMAND REDUCTION [KENEDY]	17	40	60	79	97	113
		17	**40**	**60**	**79**	**97**	**113**
Sum of Projected Water Management Strategies (acre-feet)		**17**	**40**	**60**	**79**	**97**	**113**

KLEBERG COUNTY

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
COUNTY-OTHER, KLEBERG, NUECES-RIO GRANDE (N)							
MUNICIPAL WATER CONSERVATION (SUBURBAN)	DEMAND REDUCTION [KLEBERG]	13	24	15	15	14	15
		13	**24**	**15**	**15**	**14**	**15**
Sum of Projected Water Management Strategies (acre-feet)		**13**	**24**	**15**	**15**	**14**	**15**

NUECES COUNTY

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
BISHOP, NUECES-RIO GRANDE (N)							
MUNICIPAL WATER CONSERVATION (SUBURBAN)	DEMAND REDUCTION [NUECES]	16	39	27	23	23	23
		16	**39**	**27**	**23**	**23**	**23**
CORPUS CHRISTI, NUECES (N)							
MUNICIPAL WATER CONSERVATION (URBAN)	DEMAND REDUCTION [NUECES]	184	588	879	853	861	872
		184	**588**	**879**	**853**	**861**	**872**
CORPUS CHRISTI, NUECES-RIO GRANDE (N)							
MUNICIPAL WATER CONSERVATION (URBAN)	DEMAND REDUCTION [NUECES]	2,121	6,766	10,106	9,814	9,904	10,026
		2,121	**6,766**	**10,106**	**9,814**	**9,904**	**10,026**
MANUFACTURING, NUECES, NUECES (N)							
ADDITIONAL REUSE - CORPUS CHRISTI	DIRECT REUSE [NUECES]	0	1,211	1,211	1,211	1,211	1,211

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
GBRA LOWER BASIN OFF-CHANNEL RESERVOIR	GBRA LOWER BASIN OFF-CHANNEL LAKE/ RESERVOIR [RESERVOIR]	0	312	312	312	312	312
MANUFACTURING WATER CONSERVATION	DEMAND REDUCTION [NUECES]	30	33	35	38	40	43
O.N. STEVENS WTP IMPROVEMENTS	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,245	786	339	0	0	0
SEAWATER DESALINATION	GULF OF MEXICO [GULF OF MEXICO]	0	540	540	540	540	540
		1,275	**2,882**	**2,437**	**2,101**	**2,103**	**2,106**
MANUFACTURING, NUECES, NUECES-RIO GRANDE (N)							
ADDITIONAL REUSE - CORPUS CHRISTI	DIRECT REUSE [NUECES]	0	18,967	18,967	18,967	18,967	18,967
GBRA LOWER BASIN OFF-CHANNEL RESERVOIR	GBRA LOWER BASIN OFF-CHANNEL LAKE/ RESERVOIR [RESERVOIR]	0	4,888	4,888	4,888	4,888	4,888
MANUFACTURING WATER CONSERVATION	DEMAND REDUCTION [NUECES]	471	509	548	588	628	666
O.N. STEVENS WTP IMPROVEMENTS	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM [RESERVOIR]	19,494	12,309	5,317	0	0	0
SEAWATER DESALINATION	GULF OF MEXICO [GULF OF MEXICO]	0	8,460	8,460	8,460	8,460	8,460
		19,965	**45,133**	**38,180**	**32,903**	**32,943**	**32,981**
PORT ARANSAS, NUECES-RIO GRANDE (N)							
MUNICIPAL WATER CONSERVATION (SUBURBAN)	DEMAND REDUCTION [NUECES]	160	374	589	792	985	1,161
		160	**374**	**589**	**792**	**985**	**1,161**
RIVER ACRES WSC, NUECES (N)							
MUNICIPAL WATER CONSERVATION (SUBURBAN)	DEMAND REDUCTION [NUECES]	9	0	0	0	0	0
		9	**0**	**0**	**0**	**0**	**0**
ROBSTOWN, NUECES (N)							
LOCAL BALANCING RESERVOIR - ROBSTOWN	NUECES RUN-OF-RIVER [NUECES]	2	2	2	2	2	2
MUNICIPAL WATER CONSERVATION (SUBURBAN)	DEMAND REDUCTION [NUECES]	0	0	1	1	1	1
		2	**2**	**3**	**3**	**3**	**3**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
ROBSTOWN, NUECES-RIO GRANDE (N)							
LOCAL BALANCING RESERVOIR - ROBSTOWN	NUECES RUN-OF-RIVER [NUECES]	1,581	1,581	1,581	1,581	1,581	1,581
MUNICIPAL WATER CONSERVATION (SUBURBAN)	DEMAND REDUCTION [NUECES]	125	336	531	747	883	883
		1,706	**1,917**	**2,112**	**2,328**	**2,464**	**2,464**
STEAM ELECTRIC POWER, NUECES, NUECES (N)							
GBRA LOWER BASIN OFF-CHANNEL RESERVOIR	GBRA LOWER BASIN OFF-CHANNEL LAKE/ RESERVOIR [RESERVOIR]	0	3,068	3,068	3,068	3,068	3,068
MANUFACTURING WATER CONSERVATION	DEMAND REDUCTION [NUECES]	31	31	31	31	31	31
O.N. STEVENS WTP IMPROVEMENTS	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM [RESERVOIR]	5,588	3,529	1,524	0	0	0
SEAWATER DESALINATION	GULF OF MEXICO [GULF OF MEXICO]	0	3,390	3,390	3,390	3,390	3,390
		5,619	**10,018**	**8,013**	**6,489**	**6,489**	**6,489**
STEAM ELECTRIC POWER, NUECES, NUECES-RIO GRANDE (N)							
GBRA LOWER BASIN OFF-CHANNEL RESERVOIR	GBRA LOWER BASIN OFF-CHANNEL LAKE/ RESERVOIR [RESERVOIR]	0	932	932	932	932	932
MANUFACTURING WATER CONSERVATION	DEMAND REDUCTION [NUECES]	9	9	9	9	9	9
O.N. STEVENS WTP IMPROVEMENTS	CORPUS CHRISTI-CHOKE CANYON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,698	1,072	463	0	0	0
SEAWATER DESALINATION	GULF OF MEXICO [GULF OF MEXICO]	0	1,030	1,030	1,030	1,030	1,030
		1,707	**3,043**	**2,434**	**1,971**	**1,971**	**1,971**
Sum of Projected Water Management Strategies (acre-feet)		**32,764**	**70,762**	**64,780**	**57,277**	**57,746**	**58,096**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WILLACY COUNTY

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
COUNTY-OTHER, WILLACY, NUECES-RIO GRANDE (M)							
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	13	25	38	50	63	75
		13	**25**	**38**	**50**	**63**	**75**
EAST RIO HONDO WSC, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - EAST RIO HONDO WSC	DEMAND REDUCTION [WILLACY]	0	0	0	1	1	1
CAMERON COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	1	1	1	1	1
ERHWSC FM 2925 WATER TRANSMISSION LINE	DEMAND REDUCTION [WILLACY]	0	0	0	0	0	0
ERHWSC MUNICIPAL (UV DISINFECTION FM 510 WTP)	DEMAND REDUCTION [WILLACY]	0	0	0	0	0	0
ERHWSC SURFACE WATER TREATMENT PLANT AND CONVERTED WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1	0	0	0	0	0
HARLINGEN ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
HARLINGEN WWTP 2 POTABLE REUSE	DIRECT REUSE [CAMERON]	0	0	0	0	0	0
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	2	2	2	2	2	2
		4	**3**	**3**	**4**	**4**	**4**
IRRIGATION, WILLACY, NUECES-RIO GRANDE (M)							
ARRUNDO DONAX BIOLOGICAL CONTROL	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	212	243	279	320	368	397
BRUSH CONTROL	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	0	0	0	0
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	1,902	3,699	5,479	7,243	8,989	10,743
ON-FARM IRRIGATION CONSERVATION	DEMAND REDUCTION [WILLACY]	8,483	8,483	8,483	8,483	8,483	8,483
		10,597	**12,425**	**14,241**	**16,046**	**17,840**	**19,623**

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
LIVESTOCK, WILLACY, NUECES-RIO GRANDE (M)							
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	30	58	87	115	143	171
		30	**58**	**87**	**115**	**143**	**171**
LYFORD, NUECES-RIO GRANDE (M)							
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	51	100	148	197	245	294
LYFORD BRACKISH GROUNDWATER WELL AND DESALINATION	GULF COAST AQUIFER [WILLACY]	1,120	1,120	1,120	1,120	1,120	1,120
		1,171	**1,220**	**1,268**	**1,317**	**1,365**	**1,414**
MANUFACTURING, WILLACY, NUECES-RIO GRANDE (M)							
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	9	13	17	21	25
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	3	3	3	3	4	4
IMPLEMENTATION OF BEST MANAGEMENT PRACTICES	DEMAND REDUCTION [WILLACY]	14	14	14	14	14	14
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	1
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	85	85	85	85	85	85
WILLACY COUNTY CONVERSION OF WR	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2	4	7	9	10	10
		108	**115**	**122**	**128**	**134**	**139**
MINING, WILLACY, NUECES-RIO GRANDE (M)							
IMPLEMENTATION OF BEST MANAGEMENT PRACTICES	DEMAND REDUCTION [WILLACY]	5	5	4	3	2	1
		5	**5**	**4**	**3**	**2**	**1**
NORTH ALAMO WSC, NUECES-RIO GRANDE (M)							
ADVANCED MUNICIPAL CONSERVATION - NORTH ALAMO WSC	DEMAND REDUCTION [WILLACY]	34	69	120	184	258	340
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	16	28	39	49	58	67
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2	7	12	16	20	23

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	10	14	18	23	27	30
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	22	22	22	22	24	24
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	6	9	12	16	17	20
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	125	155	149	144
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	18	120	117	110	107	102
NAWSC DELTA AREA RO WTP EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	43	41
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	29
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	19	18	17	16	15	15
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	11	10	11	11	11	12
		138	**297**	**493**	**602**	**729**	**847**

RAYMONDVILLE, NUECES-RIO GRANDE (M)

ADVANCED MUNICIPAL CONSERVATION - RAYMONDVILLE	DEMAND REDUCTION [WILLACY]	0	0	34	107	208	324
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	297	577	858	1,139	1,420	1,701
		297	**577**	**892**	**1,246**	**1,628**	**2,025**

SAN PERLITA, NUECES-RIO GRANDE (M)

ADVANCED MUNICIPAL CONSERVATION - SAN PERLITA	DEMAND REDUCTION [WILLACY]	14	38	63	93	121	153
DELTA LAKE ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	4	7	11	14	18	21
DONNA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	2	3	5	6	7
HIDALGO AND CAMERON COUNTY ID NO. 9 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2	4	5	7	8	10
HIDALGO COUNTY ID NO. 1 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2	2	2	3	3	3

Projected Water Management Strategies
TWDB 2017 State Water Plan Data

WUG, Basin (RWPG) All values are in acre-feet

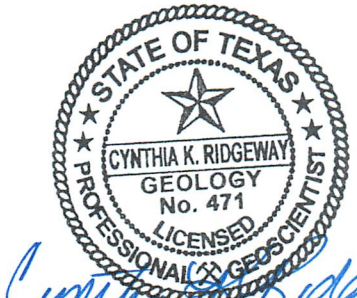
Water Management Strategy	Source Name [Origin]	2020	2030	2040	2050	2060	2070
HIDALGO COUNTY ID NO. 2 CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2	3	4	5,203	5	6
NAWSC CONVERTED WATER RIGHTS AND DELTA WTP EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	0	0	30	44	44	44
NAWSC CONVERTED WATER RIGHTS AND WTP NO. 5 EXPANSION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	2	30	30	30	30	30
NAWSC DELTA AREA RO WTP EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	19	19
NAWSC LA SARA RO PLANT EXPANSION	GULF COAST AQUIFER [WILLACY]	0	0	0	0	0	9
NORTH CAMERON REGIONAL WTP WELLFIELD EXPANSION	GULF COAST AQUIFER [CAMERON]	7	7	7	7	7	7
SANTA CRUZ ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	3	3	3	3	3	4
		36	**96**	**158**	**5,409**	**264**	**313**
SEBASTIAN MUD, NUECES-RIO GRANDE (M)							
LA FERIA ID CONSERVATION	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM [RESERVOIR]	62	63	63	64	65	66
		62	**63**	**63**	**64**	**65**	**66**
Sum of Projected Water Management Strategies (acre-feet)		**12,461**	**14,884**	**17,369**	**24,984**	**22,237**	**24,678**

Appendix E

GAM Run 11-016: Kenedy County Groundwater Conservation District Management Plan (Author: Rohit Raj Goswami 2016)

GAM Run 16-009: Kenedy County Groundwater Conservation District Management Plan

by Rohit Raj Goswami, Ph.D.
Texas Water Development Board
Groundwater Division
Groundwater Availability Modeling Section
March 18, 2016



Cynthia K. Ridgeway is the Manager of the Groundwater Availability Modeling Section and is responsible for oversight of work performed by Rohit R. Goswami under her direct supervision. The seal appearing on this document was authorized by Cynthia K. Ridgeway, P.G. 471 on March 18, 2016.

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GAM RUN 16-009: KENEDY COUNTY GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

by Rohit Raj Goswami, Ph.D.
Texas Water Development Board
Groundwater Resources Division
Groundwater Availability Modeling Section
March 18, 2016

EXECUTIVE SUMMARY:

Texas State Water Code, Section 36.1071, Subsection (h) (Texas Water Code), requires that, in developing its groundwater management plan, a groundwater conservation district shall use groundwater availability modeling information provided by the Executive Administrator of the Texas Water Development Board (TWDB) in conjunction with any available site-specific information provided by the district for review and comment to the Executive Administrator. Information derived from groundwater availability models that shall be included in the groundwater management plan includes:

- the annual amount of recharge from precipitation to the groundwater resources within the district, if any;
- the annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers; and
- the annual volume of flow into and out of the district within each aquifer and between aquifers in the district.

This report—Part 2 of a two-part package of information from the TWDB to the Kenedy County Groundwater Conservation District (District)—fulfills the requirements noted above. Part 1 of the two-part package is the Estimated Historical Water Use/State Water Plan data report. The District will receive this data report from the TWDB Groundwater Technical Assistance Section. Questions about the data report can be directed to Mr. Stephen Allen, stephen.allen@twdb.texas.gov, (512) 463-7317.

The groundwater management plan for Kenedy County Groundwater Conservation District should be adopted by the district on or before June 6, 2017 and submitted to the Executive Administrator of the TWDB on or before July 6, 2017. The management plan for the Kenedy Groundwater Conservation District expires on September 4, 2017.

This report discusses the methods, assumptions, and results from model runs using the model developed for Groundwater Management Area 16 (Hutchison and others, 2011). Table 1 summarizes the groundwater model data required by statute and Figure 1 shows the area of the model from which the values in the table were extracted. If, after review of Figure 1, Kenedy County Groundwater Conservation District determines that the district boundary used in the assessment does not reflect the current boundary, please notify the Texas Water Development Board immediately. This model run replaces the results of GAM Run 11-016 (Shi, 2012). GAM Run 16-009 meets current standards set after the release of GAM Run 11-016.

METHODS:

In accordance with the provisions of the Texas State Water Code, Section 36.1071, Subsection (h), the groundwater model for the Groundwater Management Area 16 for the Gulf Coast Aquifer System (Hutchison and others, 2011) was used for this analysis. Kenedy County Groundwater Conservation District water budgets were extracted for selected years of the historical model calibration period using ZONEBUDGET Version 3.01 (Harbaugh, 2009). The average annual water budget values for recharge, surface water outflow, inflow to the district, outflow from the district, net inter-aquifer flow (upper), and net inter-aquifer flow (lower) for the portion of the aquifer system located within the district are summarized in this report.

PARAMETERS AND ASSUMPTIONS:

Gulf Coast Aquifer System

- The alternative model developed by Hutchison and others (2011) contains the entire Groundwater Management Area 16 with Kenedy County Groundwater Conservation District, located approximately at the center of the model domain, while the model for the Central Gulf Coast Aquifer System (Chowdhury and others, 2004) and the model for the Gulf Coast Aquifer System in the Lower Rio Grande Valley (Chowdhury and Mace, 2007) only cover the northern and southern halves of the Kenedy County Groundwater Conservation District, respectively. As a result, the alternative

model developed by Hutchison and others (2011) was used for this management plan data analysis. The model was calibrated based on groundwater elevation data from 1963 to 1999; however, data was extracted only for the period from 1980 to 1999 to be consistent with the analysis completed for previous management plans.

- The model has six layers generally representing the following hydrogeologic units (from top to bottom): Chicot Aquifer (layer 1), Evangeline Aquifer (layer 2), Burkeville Confining Unit (layer 3), Jasper Aquifer (layer 4), Yegua-Jackson Aquifer and parts of the Catahoula Formation (layer 5), and Queen-City/Sparta/Carrizo-Wilcox aquifers (layer 6). However, the bottom two layers were not simulated in the Kenedy County Groundwater Conservation District.

- The model was run with MODFLOW-2000 (Harbaugh and others, 2000).

RESULTS:

A groundwater budget summarizes the amount of water entering and leaving the aquifer according to the groundwater availability model. Selected groundwater budget components listed below were extracted from the model results for the aquifer located within the district and averaged over the duration of 1980 through 1999 for the aquifers located within the district, as shown in Table 1:

- Precipitation recharge—The areally distributed recharge sourced from precipitation falling on the outcrop areas of the aquifers (where the aquifer is exposed at land surface) within the district.

- Surface water outflow—The total water discharging from the aquifer (outflow) to surface water features, such as springs, rivers, reservoirs, and the Gulf, inside or adjacent to the district.

- Flow into and out of district—The lateral flow within the aquifer between the district and adjacent counties.

- Flow between aquifers—The net vertical flow between aquifers or confining units. This flow is controlled by the relative water levels in each aquifer or confining unit and aquifer properties of each aquifer or confining unit that define the amount of leakage that occurs.

The information needed for the District's management plan is summarized in Table 1. It is important to note that sub-regional water budgets are not exact. This is due to the size of the model cells and the approach used to extract data from the model. To avoid double accounting, a model cell that straddles a political boundary, such as district or county boundaries, is assigned to one side of the boundary based on the location of the centroid of the model cell. For example, if a cell contains two counties, the cell is assigned to the county where the centroid of the cell is located. Figure 1 shows the active model cells used for this analysis.

LIMITATIONS:

The groundwater model used in completing this analysis is the best available scientific tool that can be used to meet the stated objective. To the extent that this analysis will be used for planning purposes and/or regulatory purposes related to pumping in the past and into the future, it is important to recognize the assumptions and limitations associated with the use of the results. In reviewing the use of models in environmental regulatory decision making, the National Research Council (2007) noted:

> "Models will always be constrained by computational limitations, assumptions, and knowledge gaps. They can best be viewed as tools to help inform decisions rather than as machines to generate truth or make decisions. Scientific advances will never make it possible to build a perfect model that accounts for every aspect of reality or to prove that a given model is correct in all respects for a particular regulatory application. These characteristics make evaluation of a regulatory model more complex than solely a comparison of measurement data with model results."

A key aspect of using the groundwater model to evaluate historic groundwater flow conditions includes the assumptions about the location in the aquifer where historic pumping was placed. Understanding the amount and location of historic pumping is as important as evaluating the volume of groundwater flow into and out of the district, between aquifers within the district (as applicable), interactions with surface water (as applicable), recharge to the aquifer system (as applicable), and other metrics that describe the impacts of that pumping. In addition, assumptions regarding precipitation, recharge, and streamflow are specific to a particular historic time period.

Because the application of the groundwater model was designed to address regional scale questions, the results are most effective on a regional scale. The TWDB makes

no warranties or representations relating to the actual conditions of any aquifer at a particular location or at a particular time.

It is important for groundwater conservation districts to monitor groundwater pumping and overall conditions of the aquifer. Because of the limitations of the groundwater model and the assumptions in this analysis, it is important that the groundwater conservation districts work with the TWDB to refine this analysis in the future given the reality of how the aquifer responds to the actual amount and location of pumping now and in the future. Historic precipitation patterns also need to be placed in context as future climatic conditions, such as dry and wet year precipitation patterns, may differ and affect groundwater flow conditions.

TABLE 1: SUMMARIZED INFORMATION FOR THE GROUNDWATER MANAGEMENT AREA 16 MODEL OF THE GULF COAST AQUIFER SYSTEM THAT IS NEEDED FOR KENEDY COUNTY GROUNDWATER CONSERVATION DISTRICT'S GROUNDWATER MANAGEMENT PLAN. ALL VALUES ARE REPORTED IN ACRE-FEET PER YEAR AND ROUNDED TO THE NEAREST 1 ACRE-FOOT.

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Gulf Coast Aquifer System	5,998
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Gulf Coast Aquifer System	20,643
Estimated annual volume of flow into the district within each aquifer in the district	Gulf Coast Aquifer System	41,396
Estimated annual volume of flow out of the district within each aquifer in the district	Gulf Coast Aquifer System	32,644
Estimated net annual volume of flow between each aquifer in the district *	From Gulf Coast Aquifer System to brackish water containing formations	1,216

*The Groundwater availability model does not simulate the interaction between the Gulf Coast Aquifer System and the underlying units.

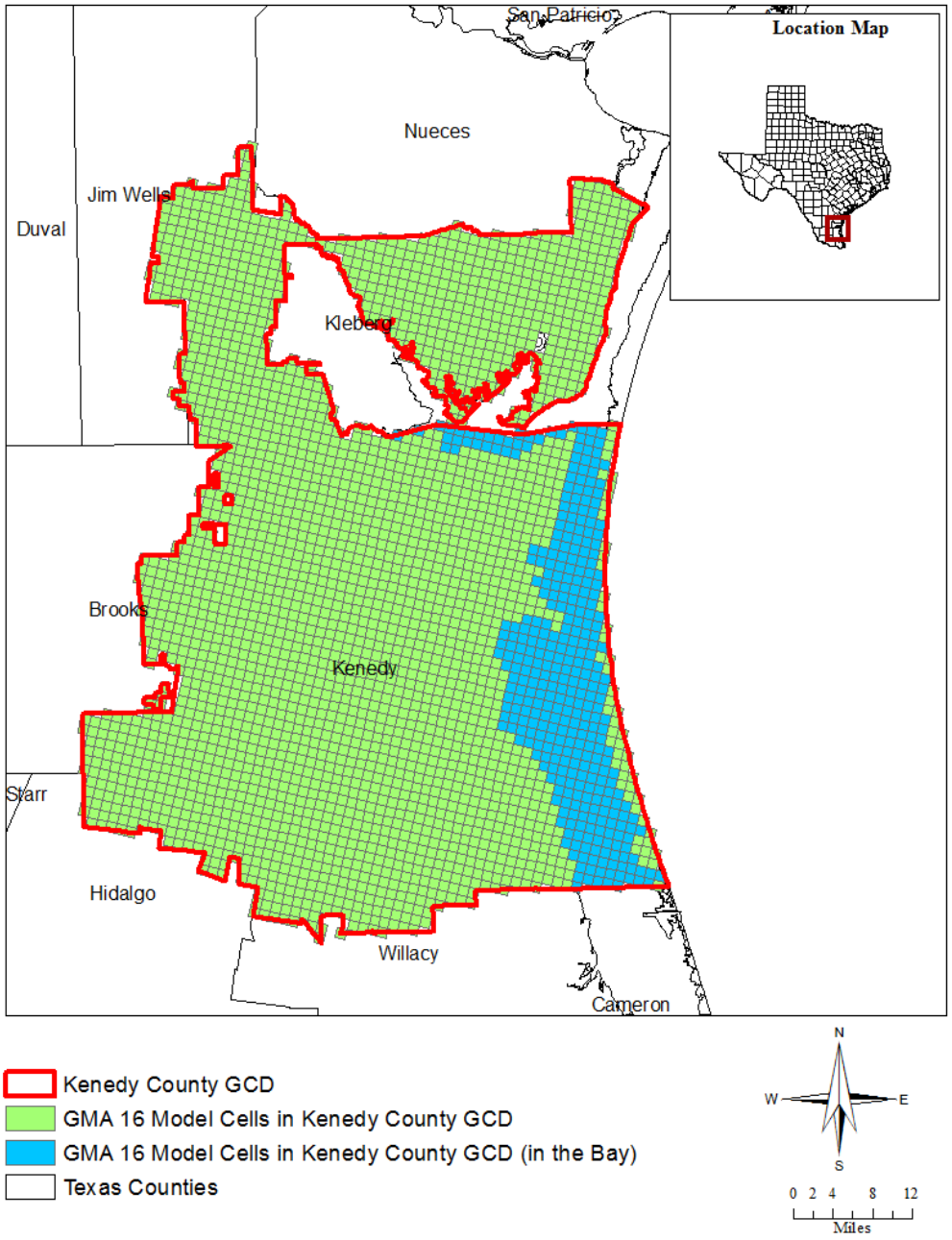

FIGURE 1: AREA OF ACTIVE MODEL CELLS FOR THE GULF COAST AQUIFER SYSTEM IN KENEDY COUNTY GROUNDWATER CONSERVATION DISTRICT (GCD) INCLUDING THE ACTIVE CELLS IN THE BAY FROM WHICH THE INFORMATION IN TABLE 1 WAS EXTRACTED (THE AQUIFER EXTENT WITHIN THE DISTRICT BOUNDARY). GROUNDWATER FLOW THROUGH CELLS IN THE BAY WAS INCLUDED IN CALCULATIONS OF FLOW TO SURFACE WATER BODIES.

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Appendix F

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