TCB | AECOM

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Mr. Kevin Ward
Executive Administrator
Texas Water Development Board
1700 N. Congress
P.O. Box 13231
Austin, Texas 78711

Re: Review of Red Sands Groundwater Conservation District Management Plan

Dear Mr. Ward,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to submit this Management Plan (Plan) to Texas Water Development Board (TWDB). We respectfully request that TWDB review this Plan for approval as required by Chapter 36, Texas Water Code and Chapter 356 of the TWDB Rules. If you have any questions regarding the Plan you may contact me at 457-7820.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

Red Sands Groundwater
Conservation District

District Management Plan

Adopted – December 14, 2006

Adopted As Amended – March 5, 2007

P.O. Box 229, Linn, TX 78563 *956/383-7566* *Fax: 956/383-7138*

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TCB

Mr. Armando Vela
President, Board of Directors
Red Sands Groundwater Conservation District
P.O. Box 229
Linn, Texas 78563

May 31, 2007

Re: Delivery of Groundwater Management Plan

Dear Mr. Vela,

TCB Inc. is pleased to deliver to the Red Sands Groundwater Conservation District (RSGCD) this Groundwater Management Plan (Plan) for submittal to the Texas Water Development Board (TWDB). The Plan has been developed in conjunction with the RSGCD Board of Directors. The simulations of the Gulf Coast aquifer to assess the projected effects of pumping in RSGCD that were performed using the TWDB Groundwater Availability Model for the Gulf Coast Aquifer aquifer in the Lower Rio Grande Valley that are described in the plan document were done under my supervison and direction.

The observations and assessments made in this Plan were based on data available from public sources or referenced published sources available at the time of the plan development. These values and observations include the values for recharge to the Gulf Coast aquifer, movement of groundwater within the Gulf Coast aquifer and discharge of the Gulf coast aquifer to surface water systems provided to RSGCD by the TWDB. The values describing groundwater availability presented in the Plan are based on the available data, reasonable methods of assessment and policy decisions by the RSGCD Board of Directors. If new or different data regarding groundwater conditions in RSGCD or Hidalgo County is made available, or if the adopted policies of the RSGCD Board are amended, those values presented in the Plan may change.

I have enjoyed working with the RSGCD in the development of the Plan and look forward to assisting RSGCD in the future.

Sincerely,

Charles R. Williams P.G.

STATE OF TEXAS
CHARLES R. WILLIAMS
GEOLOGY
No. 526
LICENSED PROFESSIONAL GEOSCIENTIST

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I. DISTRICT MISSION

The mission of the Red Sands Groundwater Conservation District (District) is to develop and implement an efficient, economical and environmentally sound groundwater management program to protect, to preserve for the future and enhance the water resources of the District.

II. PURPOSE OF THE MANAGEMENT PLAN

Senate Bill 1 (SB 1), enacted by the 75th Texas Legislature in 1997, and Senate Bill 2 (SB 2), enacted by the 77th Texas Legislature in 2001, established a comprehensive statewide planning process and the actions necessary for districts to manage and conserve the groundwater resources of the state of Texas. These bills required all underground water conservation districts to develop a management plan which defines the water needs and supply within each district and the goals each district will use to manage the underground water in order to meet their needs. In addition, the 79th Texas Legislature enacted HB 1763 in 2005 that 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) who will provide each district with the managed available groundwater in the management area based on the desired future conditions of the aquifers in the area. Technical information, such as the desired future conditions of the aquifers within the District's jurisdiction and the amount of managed available groundwater from such aquifers is required to be included in the District's management plan and will guide the District's regulatory and management policies.

The District's management plan satisfies the requirements of SB 1, SB 2, HB 1763, the statutory requirements of Texas Water Code (TWC) Chapter 36, and the rules and requirements of the TWDB.

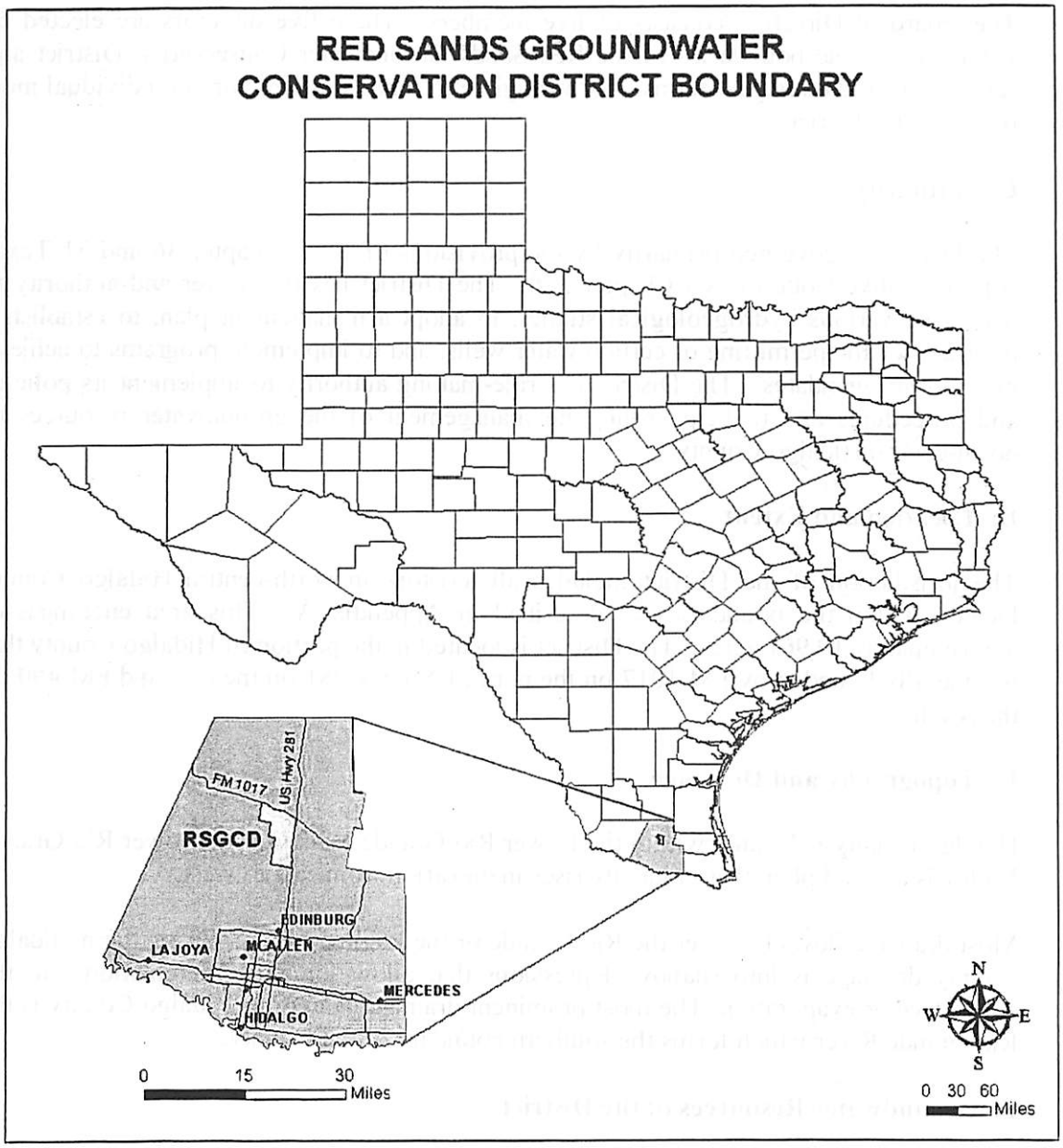
III. DISTRICT INFORMATION

A. Creation

Creation of the District was authorized in 1999 by the 76th Texas Legislature under SB 1911. The Red Sands GCD creation was ratified by Chapter 966, Acts of the 77th Legislature, Regular Session, 2001 (Senate Bill 2, Article 3, Part 8) The citizens of in Hidalgo County within the District confirmed creation of the District by an election held in November, 2002.

The District was formed to protect the underground water resources for the citizens of north-central Hidalgo County. Beyond its enabling legislation, the District is governed primarily by the provisions of Chapter 36 of the Texas Water Code, the District's Management Plan, and the District Rules.

Exhibit A – Location of the Red Sands Groundwater Conservation District



B. Directors

The Board of Directors consists of five members. These five directors are elected by voters within the boundaries of the Red Sands Groundwater Conservation District and serve staggered three year terms. To be eligible to serve as a director, an individual must reside in the district.

C. Authority

The District is governed primarily by the provisions of TWC Chapter 36 and 31 Texas Administrative Code (TAC) Chapter 356. The District has the power and authority to undertake various hydrogeological studies, to adopt a management plan, to establish a program for the permitting of certain water wells, and to implement programs to achieve its statutory mandates. The District has rule-making authority to implement its policies and procedures and to help ensure the management of the groundwater resources of north-central Hidalgo County.

D. Location and Extent

The jurisdiction of the District includes all territory in north-central Hidalgo County located within the boundaries as described in Appendix A. This area encompasses approximately 19,961 acres. The District is located in the portion of Hidalgo County that is generally bounded by FM 1017 on the north, US Hwy 281 on the east and FM 490 on the south.

E. Topography and Drainage

Hidalgo County is located within the Lower Rio Grande Valley. The Lower Rio Grande Valley is a broad plain that gradually rises in elevation from east to west.

Most drainage flows to either the Rio Grande or the Laguna Madre. In northern Hidalgo County drainage is into shallow depressions that allow for either percolation into the subsurface or evaporation. The most prominent drainage feature in Hidalgo County is the Rio Grande River which forms the southern boundary of the County.

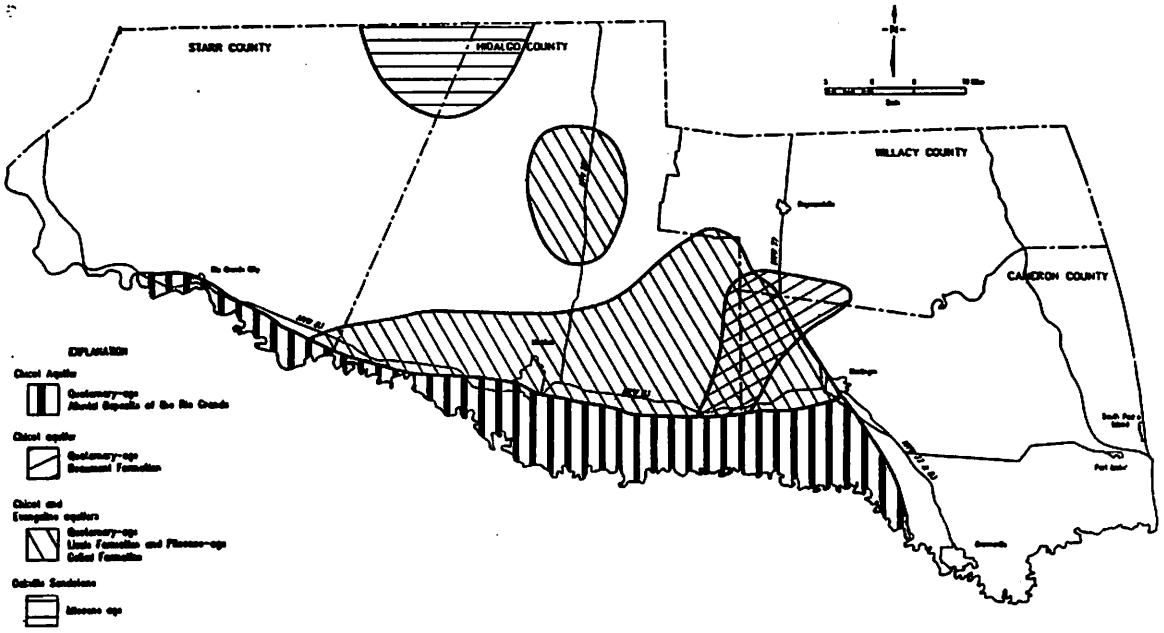
F. Groundwater Resources of the District

The District is located within the Lower Rio Grande area of the Gulf Coast aquifer. The aquifer receives recharge directly from precipitation on the land surface. Generally, the strata composing the Gulf Coast aquifer are viewed as a large, leaky artesian system where recharge can occur at formational boundaries which include permeable sands. The Chicot aquifer and Evangeline aquifer are the hydrologic units which make up this portion of the Gulf Coast aquifer. The groundwater in this portion of the Gulf Coast aquifer may be brackish with fresh water found in specific localities. In the past the groundwater system of the Lower Rio Grande area was classified to recognize four such

localized sources of fresh groundwater: the Lower Rio Grande groundwater reservoir; the Mercedes-San Sebastian shallow groundwater reservoir; the Linn-Faysville groundwater reservoir; and the Oakville Sandstone. (Mc Coy, 1990) The District is located within the (formerly recognized) Linn-Faysville groundwater reservoir. This source of fresh groundwater is locally recognized as the Red Sands aquifer.

Most wells found within the boundaries of the District are less than 100 feet deep. The individual sand beds which contain the groundwater are discontinuous creating a "hit or miss" scenario when drilling for a productive well. However, where the sand is rather permeable it is not uncommon to find wells yielding several hundred gallons per minute. Deep wells penetrate much thicker water-bearing sands than the shallow wells, and some may yield greater than 500 gallons per minute when pumped. The water produced from these wells may contain higher amounts of sodium, boron and chloride than in the shallow wells. (Follett and others, 1949) Aside from information in published reports relatively little information is available on the Red Sands aquifer, the District intends to gather additional information in the future to provide an improved basis for groundwater management decision making.

Exhibit B – Approximate Productive Areas of the Major Sources of Groundwater in the Lower Rio Grande Valley, from McCoy 1990



IV. STATEMENT OF GUIDING PRINCIPLES

The District recognizes that the groundwater resources in the north central Hidalgo County region are of vital importance. The preservation of this most valuable resource can be managed in a prudent and cost effective manner through education, cooperation and developing a comprehensive understanding of the aquifer. The greatest threat to the District in achieving its stated mission is the inappropriate management of its groundwater resources, based on a lack of understanding of local conditions. The District's management plan is intended to serve as a tool to focus the thoughts and actions of those given the responsibility for the execution of the District's activities.

V. CRITERIA FOR PLAN CERTIFICATION

A. Planning Horizon

The time period for this plan is 10 years from the date of approval by the executive administrator or, if appealed, on approval by the TWDB. This plan is being submitted as part of the five-year review and re-adoption process as required by TWC 36.1072(e). The District's Board of Directors adopted this groundwater management plan on December 14, 2006, re-adopted the management plan with amendment on March 5, 2007; and anticipates approval by the executive administrator of the TWDB in 2007. This management plan will remain in effect until a revised management plan is approved by the executive administrator or the TWDB. The Plan shall be reviewed (annually), and updated and readopted in accordance with the requirements of the Texas Water Code.

B. Board Resolution

A certified copy of the Red Sands Groundwater Conservation District resolution adopting the plan is located in Appendix B - District Resolution.

C. Plan Adoption

Public notices documenting that the plan was adopted following appropriate public meetings and hearings are located in Appendix C – Notice of Meetings.

D. Coordination with Surface Water Management Entities

A letter transmitting a copy of this plan to the surface water management entities with jurisdiction within the District are located in Appendix D – Letter to Surface Water Management Entities.

VI. ESTIMATES OF TECHNICAL INFORMATION REQUIRED BY TWC § 36.1071 / 31TAC 356.5

A. Managed available groundwater in the district based on the desired future condition established under TWC 36.108—TWC § 36.10701(e)(3)(A)

Managed available groundwater is defined in TWC §36.001 as "the amount of water that may be permitted by a district for beneficial use in accordance with the desired future condition of the aquifer." The desired future condition of the aquifer may only be determined through joint planning with other groundwater conservation districts (GCDs) in the same groundwater management area (GMA) as required by the 79th Legislature with the passage of HB 1763 into law. The District is located in GMA 16. The GCDs of GMA 16 have not completed the joint planning process to determine the desired future condition of the aquifers in the GMA. The District is unable to present a value for the managed available groundwater in the Gulf Coast (Red Sands) aquifer within the District area of Hidalgo County as of the date of this plan document.

Prior to the enactment of the GMA joint planning provision the District identified selected groundwater management conditions as a benchmark to establish groundwater availability in the major aquifers of the District. The identification of the selected local groundwater management conditions was accomplished using a process similar to the currently required GMA process. The District identified the local benchmark management conditions for the Red Sands portion of the Gulf Coast aquifer in preparation to meeting the requirement that the District's management plan to be submitted for approval by TWDB. The identified benchmark management conditions were applied to the TWDB groundwater availability models (GAM) for Rio Grande Valley Portion of the Gulf Coast aquifer in Hidalgo County. (Chowdhury and Mace, 2003) Using the GAM the District established groundwater availability value for the District, based on maintaining the identified local conditions. Future revisions to this plan will incorporate coordination with the other districts and joint planning in GMA 16. See Appendix E for a map of the GMA boundaries.

To determine groundwater availability, the District used information from the GAM supplied by the TWDB and also conducted simulations using the Rio Grande Gulf Coast aquifer GAM. The GAM simulations iteratively applied increasing amounts of pumping from the aquifer over a predictive period that included a repeat of the drought of record. Pumping was increased, until the amount of pumping that could be sustained by the aquifer without exceeding the selected management conditions during the worst year of the simulated drought of record was identified.

1. Gulf Coast (Red Sands) Aquifer

a. Selected Management Conditions

The selected management condition of the Gulf Coast (Red Sands) aquifer is based on maintaining the water level elevation of the Red Sands portion of the

Gulf Coast aquifer during a repeat of conditions similar to the 1950's drought of record. Under the drought of record conditions, maintaining a water level elevation of at least 56 feet above mean sea level (as measured in the central portion of the District) is preferred. The District conducted GAM simulations during the fall of 2006 to determine this minimum standard. Because relatively little information is available on the Red Sands aquifer, RSGCD has relied on the use of the TWDB GAM for this determination.

b. Groundwater Availability

Groundwater availability for the Gulf Coast (Red Sands) in the District is 2,000 acre-feet per year, which is based on the selected management conditions discussed above. In determining the groundwater available for permitting, 500 acre-feet per year is allocated for exempt well users. This leaves **1,500 acre-feet per year as the volume of groundwater available for permitting in the Gulf Coast (Red Sands) aquifer.**

B. Amount of groundwater being used within the district on an annual basis—31TAC356.5(a)(5)(B) (Implementing TWC §36.1071(e)(3)(B))

The amount of groundwater used in Hidalgo County during year 2003 is shown in the table below. Data from 1980 to 2003 is provided by the Texas Water Development Board from their Water Use Survey database.

County	Aquifer	Year	Municipal	Manufacturing	Steam Power - Electric	Mining	Irrigation	Livestock
Hidalgo	Gulf Coast	1980	3359	67	0	234	9000	158
Hidalgo	Gulf Coast	1984	5357	49	0	536	8850	107
Hidalgo	Gulf Coast	1985	4348	81	0	586	9957	94
Hidalgo	Gulf Coast	1986	5355	401	0	549	0	441
Hidalgo	Gulf Coast	1987	4782	430	0	614	0	89
Hidalgo	Gulf Coast	1988	5055	447	0	600	0	361
Hidalgo	Gulf Coast	1989	5122	563	0	586	10932	375
Hidalgo	Gulf Coast	1990	5739	773	0	586	20403	401
Hidalgo	Gulf Coast	1991	6044	428	0	632	19795	406
Hidalgo	Gulf Coast	1992	6119	360	0	640	8259	305
Hidalgo	Gulf Coast	1993	5637	304	0	633	12912	306
Hidalgo	Gulf Coast	1994	8041	701	0	342	14895	326
Hidalgo	Gulf Coast	1995	8641	779	16	253	13224	342
Hidalgo	Gulf Coast	1996	8859	442	1700	1354	8137	317
Hidalgo	Gulf Coast	1997	7845	849	719	1940	5783	321
Hidalgo	Gulf Coast	1998	7814	1060	1466	1136	11611	268
Hidalgo	Gulf Coast	1999	6252	452	684	1136	12017	304
Hidalgo	Gulf Coast	2000	5620	483	1780	1136	4458	273
Hidalgo	Gulf Coast	2001	6535	439	1878	844	4431	252
Hidalgo	Gulf Coast	2002	6170	439	1507	1209	4090	228
Hidalgo	Gulf Coast	2003	5624	443	2267	610	3453	242

Table 1. Estimated Groundwater Use of Hidalgo County

The land surface area of the District is approximately 1.9 percent of the area of Hidalgo County. For this reason the District developed an estimate of annual groundwater use based on site-specific data available to the District. The District site-specific estimate of annual groundwater use is approximately 1,800 acre –feet per year. The estimates of the categories of use are as follows:

- Exempt Use
  - Domestic – approximately 120 acre-feet per year
  - Stock – approximately 270 acre-feet per year
- Irrigation – approximately 1,330 acre-feet per year
- Manufacturing – approximately15 acre-feet per year
- Municipal (Public supply) – approximately 65 acre-feet per year

Details on the RSGCD estimate of annual groundwater use are given in Appendix F

C. Annual amount of recharge from precipitation to the groundwater resources within the district—31TAC356.5(a)(5)(C) (Implementing TWC §36.1071(e)(3)(C))

The estimate of the annual amount of recharge to the groundwater resources of the District is approximately 175 acre-feet per year. This estimate is taken from the GAM simulation 06-01 conducted by TWDB for the District.

D. For each aquifer, annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers— TWC §36.1071(e)(3)(D)

The estimates of the annual amount of water discharged to surface water systems by the groundwater resources of the District is 0 acre-feet per year. This estimate is taken from the GAM simulation 06-01 conducted by TWDB for the District.

E. 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 — TWC §36.1071(e)(3)(E)

The estimates of flow into and out of the District and between aquifers in the District are given in Table 2, below. These estimates are taken from the GAM simulation 06-01 conducted by TWDB for the District.

Aquifer	Inflow to District	Outflow from District	Cross-formation flow (upper)	Cross-formation flow (lower)
Chicot	226	-354	0	186
Evangeline	2,984	-2,848	-186	7
Burkeville	1	-2	-7	0
Jasper	104	-116	0	0

Table 2, Flow Into and Out of the District and Between Formations in the District

F. Projected surface water supply in the district, according to the most recently adopted state water plan— TWC §36.1071(e)(3)(F)

The most recently adopted state water plan is the 2007 State Water Plan (SWP). The estimates of the surface water supplies for Hidalgo County in the 2007 SWP are presented below in Table 3. These estimates are taken from Exhibit B, Table 5 of the 2007 SWP.

WUG	River Basin	Source Type	Source Name	2000	2010	2020	2030	2040	2050	2060
Alamo	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	1,203	1,804	1,804	1,804	1,804	1,804	1,804
Alton	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	1,096	3,346	4,153	2,615	2,637	2,653	2,666
Donna	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	4,190	4,190	4,190	4,190	4,190	4,190	4,190
Edcouch	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	1,340	1,340	1,340	1,340	1,340	1,340	1,340
Edinburg	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	7,981	10,225	10,225	10,225	10,225	10,225	10,225
Elsa	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	1,840	1,840	1,840	1,840	1,840	1,840	1,840
Hidalgo	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	13	13	13	13	13	13	13
La Joya	Rio Grande	SW	Amistad-Falcon Reservoir System	669	152	152	152	152	152	152
La Villa	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	500	500	500	500	500	500	500
McAllen	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	33,549	32,424	32,424	32,424	32,424	32,424	32,424
Mercedes	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	3,595	3,595	3,595	3,595	3,595	3,595	3,595
Mission	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	10,289	9,595	9,595	9,595	9,595	9,595	9,595
Palmview	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	313	869	1,199	1,570	1,967	1,967	1,967
Pharr	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	7,341	8,591	8,591	8,591	8,591	8,591	8,591
San Juan	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	2,346	3,023	3,023	3,023	3,023	3,023	3,023
Sullivan City	Rio Grande	SW	Amistad-Falcon Reservoir System	13	685	858	1,029	1,029	1,029	1,029
Weslaco	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	7,976	8,081	8,081	8,081	8,081	8,081	8,081
County-Other	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	36,532	8,780	8,714	8,612	8,515	8,418	8,327
County-Other	Rio Grande	SW	Amistad-Falcon Reservoir System	761	512	459	453	448	443	438

Manufacturing	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	3,718	3,240	3,240	3,240	3,240	3,240	3,240
Steam Electric Power	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	6,243	5,941	5,941	5,941	5,941	5,941	5,941
Steam Electric Power	Nueces-Rio Grande	Reuse	Direct Reuse	0	5,040	5,040	5,040	5,040	5,040	5,040
Mining	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	382	183	182	181	179	177	175
Mining	Rio Grande	SW	Amistad-Falcon Reservoir System	33	23	22	21	21	21	20
Irrigation	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	462,583	357,532	353,969	350,661	347,353	344,045	340,991
Irrigation	Nueces-Rio Grande	SW	Nueces-Rio Grande River Combined Run-of-River	0	79	79	79	79	79	79
Irrigation	Nueces-Rio Grande	Reuse	Direct Reuse	0	4,288	4,288	4,288	4,288	4,288	4,288
Irrigation	Rio Grande	SW	Amistad-Falcon Reservoir System	18,773	2,905	2,877	2,850	2,823	2,796	2,771
Irrigation	Rio Grande	Reuse	Direct Reuse	166	0	0	0	0	0	0
Livestock	Nueces-Rio Grande	SW	Livestock Local Supply	725	0	0	0	0	0	0
Livestock	Rio Grande	SW	Livestock Local Supply	38	0	0	0	0	0	0
La Joya	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	0	360	360	360	360	360	360
McAllen	Rio Grande	SW	Amistad-Falcon Reservoir System	0	4	4	4	4	4	4
Palmhurst	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	0	1,157	1,789	2,706	2,967	3,170	3,324
Penitas	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	0	162	163	163	164	164	164
Hidalgo County MUD #1	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	0	384	384	384	384	384	384
Military Highway WSC	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	0	1,396	1,396	1,396	1,396	1,396	1,396
North Alamo WSC	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	0	19,400	19,520	19,627	19,728	19,831	19,927
Sharyland WSC	Nueces-Rio Grande	SW	Amistad-Falcon Reservoir System	0	6,517	5,078	5,698	5,416	5,196	5,030
Total Projected Water Supplies (acre-feet per year) =				**614,208**	**508,176**	**505,088**	**502,291**	**499,352**	**496,015**	**492,934**

Table 3, Projected Surface Water Supplies of Hidalgo County

G. Projected total demand for water in the district according to the most recently adopted state water plan— TWC §36.1071(e)(3)(G)

The most recently adopted state water plan is the 2007 State Water Plan (SWP). The estimates of the total water demand in Hidalgo County in the 2007 SWP are presented below in Table 4. These estimates are taken from Exhibit B, Table 5 of the 2007 SWP.

WUG	River Basin	Category	2010	2020	2030	2040	2050	2060
Alamo	Nueces-Rio Grande	Municipal	2,319	3,022	3,808	4,675	5,667	6,684
Alton	Nueces-Rio Grande	Municipal	3,346	4,153	5,061	6,056	7,135	8,268
Donna	Nueces-Rio Grande	Municipal	2,309	2,565	2,842	3,156	3,521	3,924
Edcouch	Nueces-Rio Grande	Municipal	499	547	604	668	744	828
Edinburg	Nueces-Rio Grande	Municipal	8,274	10,428	12,967	15,528	18,583	21,717
Elsa	Nueces-Rio Grande	Municipal	1,099	1,134	1,182	1,232	1,303	1,383
Hidalgo	Nueces-Rio Grande	Municipal	1,016	1,387	1,786	2,225	2,729	3,247
La Joya	Rio Grande	Municipal	121	140	160	182	208	237
La Villa	Nueces-Rio Grande	Municipal	234	230	225	221	218	218
McAllen	Nueces-Rio Grande	Municipal	28,693	33,547	39,221	45,261	52,025	59,205
Mercedes	Nueces-Rio Grande	Municipal	1,890	1,956	2,048	2,142	2,285	2,453
Mission	Nueces-Rio Grande	Municipal	9,864	12,564	15,594	18,792	22,529	26,363
Palmview	Nueces-Rio Grande	Municipal	869	1,199	1,570	1,967	2,414	2,873
Pharr	Nueces-Rio Grande	Municipal	8,474	10,370	12,511	14,887	17,448	20,202
Progreso	Nueces-Rio Grande	Municipal	576	717	867	1,037	1,234	1,436
San Juan	Nueces-Rio Grande	Municipal	3,501	4,665	5,956	7,384	9,031	10,720
Sullivan City	Rio Grande	Municipal	526	672	845	1,016	1,226	1,440
Weslaco	Nueces-Rio Grande	Municipal	5,534	6,201	6,966	7,819	8,792	9,843
County - Other	Nueces-Rio Grande	Municipal	9,341	12,340	15,686	19,368	23,554	27,849
County - Other	Rio Grande	Municipal	545	732	940	1,168	1,427	1,693
Manufacturing	Nueces-Rio Grande	Manufacturing	3,236	3,559	3,851	4,143	4,403	4,742
Steam Electric Power	Nueces-Rio Grande	Power	10,355	14,151	16,545	19,462	23,018	27,354
Mining	Nueces-Rio Grande	Mining	1,291	1,398	1,462	1,526	1,589	1,644
Mining	Rio Grande	Mining	151	163	171	178	185	192
Irrigation	Nueces-Rio Grande	Irrigation	560,291	505,458	436,074	436,074	436,074	436,074
Irrigation	Rio Grande	Irrigation	22,739	20,513	17,698	17,698	17,698	17,698
Livestock	Nueces-Rio Grande	Livestock	647	647	647	647	647	647
Livestock	Rio Grande	Livestock	34	34	34	34	34	34
Hidalgo	Rio Grande	Municipal	42	57	73	91	112	133
La Joya	Nueces-Rio Grande	Municipal	287	331	378	431	492	560
McAllen	Rio Grande	Municipal	4	4	5	6	7	8
Palmhurst	Nueces-Rio Grande	Municipal	1,157	1,789	2,497	3,263	4,099	4,957
Penitas	Nueces-Rio Grande	Municipal	149	150	150	151	155	161
Hidalgo County MUD #1	Nueces-Rio Grande	Municipal	1,703	2,387	3,161	3,994	4,915	5,860
Military Highway WSC	Nueces-Rio Grande	Municipal	1,333	1,525	1,731	1,980	2,248	2,542
Military Highway WSC	Rio Grande	Municipal	13	15	17	20	23	26
North Alamo WSC	Nueces-Rio Grande	Municipal	11,675	15,158	19,046	23,352	28,297	33,369
Sharyland WSC	Nueces-Rio Grande	Municipal	4,893	5,469	6,095	6,747	7,492	8,365
Total Projected Water Demands (acre-feet per year)=			**709,030**	**681,377**	**640,474**	**674,581**	**713,561**	**754,949**

Table 4, Projected Water Demand in Hidalgo County

VII. CONSIDER THE WATER SUPPLY NEEDS AND WATER MANAGEMENT STRATEGIES INCLUDED IN THE ADOPTED STATE WATER PLAN— TWC §36.1071(E)(4)

The most recently adopted state water plan is the 2007 State Water Plan. In the 2007 State Water Plan, water management strategies (WMSs) were recommended for numerous Water User Groups (WUGs). The recommended WMS taken form Exhibit B, Table 12 of the State Water plan are below in Table 5. The District has identified no recommended WMS that would be affected by the District management of groundwater. The amounts of groundwater available for annual use in the District will not prevent the implementation of any recommended WMS or restrict the amount of groundwater considered available in the 2007 State Water Plan.

WUG	WUG County	River Basin	Water Management Strategy	Source County	Source Name	2010	2020	2030	2040	2050	2060
Alamo	Hidalgo	Nueces-Rio Grande	Reuse	Hidalgo	Direct Reuse	25	100	200	300	400	500
Alamo	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	25	400	800	1,300	1,700	2,100
Alamo	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	0	100	100	100	100	100
Alamo	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	0	73	263	436	832	1,255
Alamo	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	13	90	180	271	361	451
Donna	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	0	25	25	25	25	25
Donna	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	0	50	50	50	50	50
Edinburg	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Other Aquifer	0	0	25	25	25	25
Edinburg	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	1,631	3,114	4,591	6,619
Elsa	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	0	100	100	100	100	100
Hidalgo County MUD #1	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	1,253	1,903	2,638	3,430	4,304	5,202
Mercedes	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	0	560	560	560	560	560
Mercedes	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	560	560	560	560	560	560
Mission	Hidalgo	Nueces-Rio Grande	Reuse	Hidalgo	Direct Reuse	140	310	1,400	2,437	3,474	4,548
Mission	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	130	2,100	4,040	6,200	8,900	11,660
Mission	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	0	560	560	560	560	560

Edinburg	Hidalgo	Nueces-Rio Grande	Reuse	Hidalgo	Direct Reuse	0	0	500	1,500	3,000	4,000
Palmhurst	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	281	883	1,551
Palmview	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	425	860
Pharr	Hidalgo	Nueces-Rio Grande	Reuse	Hidalgo	Direct Reuse	50	50	50	50	50	50
Pharr	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	75	500	800	900	1,300
Pharr	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	100	100	100	100	100	100
Pharr	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	346	1,976	3,948	6,286	8,522
San Juan	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	454	1,560	2,786	4,143	5,708	7,312
Sharyland WSC	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	372	377	1,264	2,181	3,168
Sullivan City	Hidalgo	Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	186	390
Weslaco	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	0	0	0	0	0	500
Weslaco	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	0	35
Steam Electric Power	Hidalgo	Nueces-Rio Grande	Reuse	Hidalgo	Direct Reuse	0	1,000	2,000	4,000	7,000	10,000
Steam Electric Power	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	980	2,374	3,291	3,847	5,183
Manufactu ring	Hidalgo	Nueces-Rio Grande	Reuse	Hidalgo	Direct Reuse	0	0	0	0	100	200
Manufactu ring	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	0	0	0	0	100	200
Manufactu ring	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	55	194
Irrigation	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	49,050	98,120	103,023	107,928	112,832	117,735
Irrigation	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	21,478	42,973	64,447	85,925	107,415	128,889
Irrigation	Hidalgo	Rio Grande	Conservation	Hidalgo	Conservation	221	443	667	890	1,114	1,340
Irrigation	Hidalgo	Rio Grande	Conservation	Hidalgo	Conservation	505	1,005	1,065	1,118	1,171	1,224
Military Highway WSC	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	139	353	561	789
Hidalgo	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	110	235	334	427	506	585
Hidalgo	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	154	558	973

McAllen	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	726	4,083	5,317	7,216
McAllen	Hidalgo	Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	1	2	3	4
County-Other	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	0	1,089	1,887	3,861	4,098	4,389
County-Other	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	1,090	3,888	5,860	10,099	14,390
County-Other	Hidalgo	Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	187	409	652	927	1,210
North Alamo WSC	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	11,201	11,201	11,201	11,201	11,201	11,201
North Alamo WSC	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	0	902
McAllen	Hidalgo	Nueces-Rio Grande	Reuse	Hidalgo	Direct Reuse	0	0	0	2,349	5,287	9,893
McAllen	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	0	0	352	588	875	1,450
Alamo	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	2	5	10	14	19	24
Edinburg	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	86	164	242	348
Hidalgo	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	8	29	51
Hidalgo County MUD #1	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	66	100	139	181	227	274
McAllen	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	120	215	280	380
Military Highway WSC	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	5	14	16	18
North Alamo WSC	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	0	48
Palmhurst	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	15	46	82
Palmview	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	22	45
Pharr	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	18	104	208	331	449
San Juan	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	24	82	147	218	300	385

Sharyland WSC	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	20	20	67	115	167
Sullivan City	Hidalgo	Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	10	21
Weslaco	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	0	7
La Joya	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	2	87	185
Alamo	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	46	99	158	223	293	365
Alton	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	59	82	2,446	3,419	4,482	5,602
County-Other	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	94	257	395	554	736	925
Donna	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	15	32	51	72	95	118
County-Other	Hidalgo	Rio Grande	Conservation	Hidalgo	Conservation	50	100	200	300	400	500
Edcouch	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	3	7	11	16	21	26
Edinburg	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	121	262	420	591	777	969
Elsa	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	2	5	7	10	14	17
Hidalgo County MUD #1	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	14	30	48	68	89	112
Mercedes	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	7	14	23	32	43	53
Mission	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	116	252	405	570	750	934
North Alamo WSC	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	248	538	863	1,215	1,599	1,993
Palmhurst	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	32	68	110	155	203	254
Palmview	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	16	34	55	78	102	128
Penitas	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	0	1	1	1	2	2
Pharr	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	95	207	332	467	615	766
Progreso	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	11	24	38	54	71	89
San Juan	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	95	206	330	465	612	762
Sharyland WSC	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	29	62	100	141	186	231
Sullivan City	Hidalgo	Rio Grande	Conservation	Hidalgo	Conservation	11	25	39	55	73	91
Weslaco	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	29	63	101	143	188	234
Elsa	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Reservoir	Amistad-Falcon Lake/Reservoir System	0	0	0	0	50	50
Weslaco	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	100	100	100	100	100	100
Hidalgo	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	28	61	97	137	180	225

Hidalgo	Hidalgo	Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	0	15	16	23	44	65
La Joya	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	5	11	17	24	31	39
La Joya	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	50	50	91	70	44	15
La Joya	Hidalgo	Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	0	0	8	30	56	85
McAllen	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	156	337	541	761	1,002	1,249
McAllen	Hidalgo	Nueces-Rio Grande	New Surface Water or New Groundwater Source	Hidalgo	Gulf Coast Aquifer	3,360	3,360	5,600	5,600	7,841	7,841
Weslaco	Hidalgo	Nueces-Rio Grande	Reuse	Cameron	Indirect Reuse	1,120	1,120	1,120	1,120	1,120	1,120
Military Highway WSC	Hidalgo	Nueces-Rio Grande	Conservation	Hidalgo	Conservation	8	18	28	38	43	47
Military Highway WSC	Hidalgo	Nueces-Rio Grande	Existing Source or Expanded Use of an Existing Source	Hidalgo	Gulf Coast Aquifer	0	125	250	375	500	625
Military Highway WSC	Hidalgo	Rio Grande	Conservation	Hidalgo	Conservation	0	0	0	0	4	9
Total Projected Water Management Strategies (acre-feet per year) =						**91,327**	**175,547**	**226,566**	**282,249**	**343,417**	**408,195**

Table 5, Hidalgo County Water Management Strategies Recommended in the 2007 State Water Plan

VIII. MANAGEMENT OF GROUNDWATER SUPPLIES

TWC Section 36.0015 states that groundwater conservation districts (GCDs) are the state's preferred method of groundwater management and establishes that GCDs will manage groundwater resources through rules developed and implemented in accordance with TWC Chapter 36. Chapter 36 gives directives to GCDs and the statutory authority to carry out such directives, so that GCDs are provided the proper tools to protect and manage the groundwater resources within their boundaries.

The District will manage the supply of groundwater within the District in order to conserve the groundwater resources while seeking to maintain the economic viability of all groundwater user groups - public and private. In consideration of the economic and cultural activities occurring within the District, the District will identify and engage in such activities and practices which, if implemented, would result in a reduction of groundwater use. The existing observation network of groundwater wells will be used to monitor the changing conditions of the groundwater resources within the District. If necessary, the observation network may be expanded.

The regulatory tools granted to GCDs by TWC Chapter 36 enable GCD's to preserve historic and existing users of groundwater. The District protects historic and existing users by granting such groundwater users historic and existing use permits that have priority over operating permits. TWC Chapter 36 also allows GCDs to establish management zones within an aquifer or aquifer subdivision. The District's rules provide for the designation of management areas as needed to better manage and regulate the groundwater resources of the District.

The District may deny a water well drilling permit or limit groundwater withdrawals in accordance with the requirements stated in the rules of the District. In making a determination to deny a permit or limit groundwater withdrawals, the District will consider criteria identified in TWC Section 36.113.

In accordance with the District's mission of protecting the groundwater resources of the District, the District may require reduction of groundwater withdrawals to amounts that will not cause harm to the aquifer when considering the desired future condition of the District's aquifers and the amount of managed available groundwater within the District. To achieve this purpose, the District may, at the discretion of the Board, amend or revoke any permits after notice and hearing. The determination to seek the amendment or revocation of a permit by the District will be based on aquifer conditions as observed by the District. The District will enforce the terms and conditions of permits and the rules of the District by injunction or other appropriate relief in a court of competent jurisdiction as provided for in TWC §36.102.

A contingency plan to cope with the effects of water supply deficits due to climatic or other conditions may be developed by the District and adopted by the Board after notice and hearing. In developing the contingency plan, the District will consider the economic effect of conservation measures upon all water resource user groups, the local implications of the extent and effect of changes in water storage conditions, the unique hydrogeologic conditions of the aquifers within the District and the appropriate conditions under which the contingency plan will be implemented. The District will evaluate the groundwater resources available within the District and determine the effectiveness of regulatory or conservation measures. A public or private user may appeal to the Board for discretion in enforcement of the provisions of the water supply deficit contingency plan on grounds of adverse economic hardship or unique local conditions. The exercise of said discretion by the Board shall not be construed as limiting the power of the Board.

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

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.

Rules adopted by the District for the permitting of wells and the production of groundwater shall comply with TWC Chapter 36, including §36.113, and the provisions of this management 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 to the District.

X. METHODOLOGY FOR TRACKING DISTRICT PROGRESS IN ACHIEVING MANAGEMENT GOALS – 31 TAC 356.5(a)(6)

The District manager will prepare and present an Annual Report to the Board of Directors on District performance in regards to achieving management goals and objectives for the fiscal year. The report will be presented within 120 days following the completion of the District's fiscal year, beginning with FY08. The Board will maintain the report on file, for public inspection at the District's offices upon adoption.

XI. GOALS, MANAGEMENT OBJECTIVES and PERFORMANCE STANDARDS

The management goals, objectives, and performance standards of the District in the areas specified in 31TAC§356.5 are addressed below.

Management Goals

A. Providing the Most Efficient Use of Groundwater –31TAC 356.5(a)(1)(A) (Implementing TWC §36.1071(a)(1))

1. Objective: Each year, the District will require the registration of all wells within the District's jurisdiction.

   Performance Standard: Each year, beginning in FY 08, the number of new and existing wells registered with the District will be presented in the District's annual report.

B. Controlling and Preventing Waste of Groundwater –31TAC 356.5(a)(1)(B) ((Implementing TWC §36.1071(a)(2))

Objective: Each year, the District will disseminate educational information on eliminating and reducing the wasteful use of groundwater focusing on water quality protection. This may be accomplished annually by two of the following methods:

a. conduct an annual contest on water quality protection;
b. compile literature packets for distribution to schools in Hidalgo County;
c. conduct classroom presentations;
d. sponsor an educational program/curriculum;
e. post information on the District's web site;
f. provide newspaper articles for publication;
g. publish District newsletter;
h. conduct public presentations;
i. set up displays at public events;
j. distribute brochures/literature.

Performance Standard: The annual report will include a summary of the District activities during the year to disseminate educational information on eliminating and

reducing the wasteful use of groundwater focusing on water quality protection.

C. Addressing Conjunctive Surface Water Management Issues – 31TAC356.5 (a)(1)(D) ((Implementing TWC §36.1071(a)(4))

Objective: Each year, the District will participate in the regional planning process by attending at least one meeting of the Rio Grande Regional Water Planning Group (Region M) per fiscal year.

Performance Standard: Each year, attendance at Region M meetings by a representative of the District will be reflected in the District's annual report and will include the number of meetings attended and the dates.

D. Controlling and Preventing Subsidence – 31TAC§356.5 (a)(1)(C)

Objective: Each year, the District will manage the withdrawal of groundwater by reviewing any new water level data for the Red Sands aquifer in the District and comparing the new information with previous water-level measurements.

Performance Standard: Each year, the District will include in the District's annual report a summary of the water-level data and a determination whether the review found that any observed changes in aquifer conditions warranted further action by the District to control and prevent subsidence.

E. Addressing Natural Resource Issues which Impact the Use and Availability of Groundwater, and which are Impacted by the Use of Groundwater – 31TAC§356.5 (a)(1)(E) ((Implementing TWC §36.1071(a)(5))

Objective: Each year, the District will require permits for all non-exempt use of groundwater in the District as defined in the District rules, in accordance with adopted procedures.

Performance Standard: Each year, a summary of the number applications for the drilling of non-exempt wells, the number of applications for the permitted use of groundwater and the disposition of the applications will be will be presented in the District's annual report.

F. Addressing Drought Conditions – 31TAC356.5 (a)(1)(F) ((Implementing TWC §36.1071(a)(6))

1. Objective: Each month, the District will download the updated Palmer Drought Severity Index (PDSI) map and check for the periodic updates to the Drought Preparedness Council Situation Report (Situation Report) posted on the Texas Water Information Network website www.txwin.net.

   Performance Standard: Each year, the downloaded PDSI maps and Situation Reports will be included in the District Annual Report to the Board of Directors.

G. Addressing Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, or Brush Control, Where Appropriate and Cost-Effective – 31TAC356.5 (a)(1)(G) (Implementing TWC §36.1071(a)(7))

Precipitation enhancement is not an appropriate or cost-effective program for the District at this time because there is not an existing precipitation enhancement program operating in nearby counties in which the District could participate and share costs. The cost of operating a single-county precipitation enhancement program is prohibitive and would require the District to increase taxes in Hidalgo County.

1. Objective: Each year, the District will promote conservation by one of the following methods:
   a. conduct an annual contest on water conservation;
   b. distribute conservation literature packets to schools in Hidalgo County;
   c. conduct classroom conservation presentations;
   d. sponsor an educational conservation program/curriculum;
   e. post conservation information on the District's web site;
   f. provide a newspaper article on conservation for publication;
   g. publish an article on conservation in the District newsletter;
   h. conduct a public conservation presentation,
   i. set up a conservation display at a public event;
   j. distribute a conservation brochures/literature to the public.

   Performance Standard: Each year, the annual report will include a summary of the District activity during the year to promote conservation.

2. Objective: Each year, the District will promote rainwater harvesting by posting information on rainwater harvesting the District web site.

   Performance Standard: Each year, the annual report will include a copy of the information on rainwater harvesting that is provided on the District web site.

3. Objective: Each year, the District will provide information relating to recharge enhancement and brush control on the District web site.

Performance Standard: Each year, the District annual report will include a copy of the information that has been provided on the District web site relating to recharge enhancement and brush control.

H. Addressing in a Quantitative Manner the Desired Future Conditions of the Groundwater Resources – 31TAC (a)(1)(H) (Implementing TWC §36.1071(a)(8))

This category of management goal is not applicable to the District because the desired future condition of the groundwater resources in GMA 16 has not been defined.

The District intends to coordinate with other groundwater conservation districts in GMA 16 to define the desired future conditions of the aquifers, as required by TWC 36.108. The District also intends to review and evaluate the GAM simulation results from the southern part of the Gulf Coast aquifer GAM and other available data by September 1, 2010 to determine if revisions are needed regarding total aquifer storage and groundwater availability.

BIBLIOGRAPHY

Chowdhury, A.H. and Mace, R.E., 2003, A Groundwater Availability Model of the Gulf Coast Aquifer in the Lower Rio Grande Valley, Texas ; Numerical Simulations through 2050 : Texas Water Development Board, Model Summary Report.

Follett, C. R. et. al., 1949, Occurrence and Development of Ground Water in the Linn-Faysville area, Hidalgo County, Texas: Texas Board of Water Engineers.

McCoy, T. W., 1990, Evaluation of Ground-Water Resources in the Lower Rio Grande Valley, Texas: Texas Water Development Board Report 316.

Smith, R., 2006, Texas Water Development Board GAM Run 06-01

APPENDIX A

District Enabling Legislation

76(R) SB 1911 Enrolled version - Bill Text

AN ACT

relating to the creation, administration, powers, duties, operation, and financing of certain groundwater conservation districts.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. CREATION. (a) The following groundwater conservation districts are created:

(1) Cow Creek Groundwater Conservation District;

(2) Brazos Valley Groundwater Conservation District;

(3) Crossroads Groundwater Conservation District;

(4) Hays Trinity Groundwater Conservation District;

(5) Lone Wolf Groundwater Conservation District;

(6) Lost Pines Groundwater Conservation District;

(7) McMullen Groundwater Conservation District;

(8) Middle Pecos Groundwater Conservation District;

(9) Red Sands Groundwater Conservation District;

(10) Refugio Groundwater Conservation District;

(11) Southeast Trinity Groundwater Conservation District;

(12) Texana Groundwater Conservation District; and

(13) Tri-County Groundwater Conservation District.

(b) A district created under this section is a governmental agency and a body politic and corporate.

(c) Each district created under this section is created under and is essential to accomplish the purposes of Section 59, Article XVI, Texas Constitution.

SECTION 2. BOUNDARIES. (a) The boundaries of the following groundwater conservation districts are coextensive with county boundaries as follows:

(1) the boundaries of the Cow Creek Groundwater Conservation District are coextensive with the boundaries of Kendall County;

(2) the boundaries of the Brazos Valley Groundwater Conservation District are coextensive with the boundaries of Robertson and Brazos Counties;

(3) the boundaries of the Crossroads Groundwater Conservation District are coextensive with the boundaries of Victoria County;

(4) the boundaries of the Lone Wolf Groundwater

Conservation District are coextensive with the boundaries of Mitchell County;

(5) the boundaries of the Lost Pines Groundwater Conservation District are coextensive with the boundaries of Bastrop and Lee Counties, but if the voters of only one county confirm the creation of the district under Section 10 of this Act, the boundaries of the district are coextensive with the boundaries of that county;

(6) the boundaries of the McMullen Groundwater Conservation District are coextensive with the boundaries of McMullen County;

(7) the boundaries of the Middle Pecos Groundwater Conservation District are coextensive with the boundaries of Pecos County;

(8) the boundaries of the Refugio Groundwater Conservation District are coextensive with the boundaries of Refugio County;

(9) the boundaries of the Texana Groundwater Conservation District are coextensive with the boundaries of Jackson County; and

(10) the boundaries of the Tri-County Groundwater Conservation District are coextensive with the boundaries of Foard, Hardeman, and Wilbarger Counties.

(b) The boundaries of the Hays Trinity Groundwater Conservation District are coextensive with the boundaries of Hays County, excluding the part of the county within the boundaries of the Barton Springs-Edwards Aquifer Conservation District or the Edwards Aquifer Authority.

(c) The Red Sands Groundwater Conservation District includes all of the territory contained in the following described area:
A 19,232 acre tract more or less out of San Salvador Del Tule Grant as recorded in Volume 10, Page 58 of the Hidalgo County, Texas map records and out of the Santa Anita Grant as recorded in Volume 7, Page 38 of the Hidalgo County, Texas map records.
Commencing at the Southeast Corner of this here in described boundary tract, said point being the intersection of the centerline of U.S. Highway 281 and the centerline of Farm to Market Road number 490 (F.M. 490) (West Hargill Road) as shown in the map of San Salvador Del Tule Grant as recorded in Volume 10, Page 58 of the Hidalgo County map records. Said point is also the point of beginning.
Thence, Westerly along the center line of the F.M. 490, an approximate distance of 18,400 feet to a point on the West line of San Salvador Del Tule Grant, said point also being the intersection of the centerline of F.M. 490 and the West line of the San Salvador Del Tule Grant,

Thence, Northerly along the West line of the San Salvador Del Tule Grant and the East line of the Santa Anita Grant at an approximate distance of 21,300 feet to a point, said point being an inside corner of this herein described tract, and also being the Southeast corner of Redland Vineyards Subdivision as recorded in Volume 4, Page 51 of the Hidalgo County map records,
Thence, Westerly along the South line of the Redland Vineyards Subdivision, an approximate distance of 4,238 feet to a point, said point being an outside corner of this herein described tract, said point also being the Southwest corner of the Redland Vineyard Subdivision,
Thence, Northerly with the West line of Redland Vineyards Subdivision, at approximately 4,590.50 feet past a point, said point being the Northwest corner of Redland Vineyard Subdivision, and the Southwest corner of Delbridge Subdivision as recorded in Volume 5, Page 11, Hidalgo County map records, and continuing Northerly along the West line of Delbridge Subdivision for an approximate total distance of 6,646 feet to a point, said point being an inside corner of this herein described tract, and also being the Northwest corner of Delbridge Subdivision,
Thence, Westerly along the South line of a 196.37 acres tract, known as the A.B. De Kock Tract, an approximate distance of 3,500 feet past the Southeast corner of share 4, out of the 8,374.70 acre tract partition out of the Santa Anita Grant as recorded in Volume 7, Page 38, in the Hidalgo County map records and continuing Westerly for an approximate total distance of 6,500 feet to a point, said point being an outside corner of this herein described tract and also being the Southwest corner of share 4,
Thence, Northerly along the West line of share 4, an approximate total distance of 19,143 feet to a point, said point being the Northwest corner of this herein described tracts and, the intersection of the West line of share 4 and the centerline of Farm to Market Road number 1017, (F.M. 1017)
Thence, in a Southeasterly direction, with the Right-of-Way centerline of Farm to Market Road number 1017 (F.M. 1017) an approximate total distance of 27,800 feet to a point, said point being the Northeast corner of this herein described tract, and also being the intersection of the centerline of F.M. 1017 Right-of-Way and the center line of the U.S. Highway 281 Right-Of-Way,
Thence, in a Southerly direction, with the centerline of U.S. Highway 281 Right-Of-Way, an approximate distance of 7,500 feet past Floral Road, and at approximate 21,700 feet past Red Gate Road and at approximate 29,700 feet past Laguna Seca Road and for an approximate total distance of 39,300 feet to the point of beginning of this here in described tract, said tract contains 19.232 Acres, More or Less.

(d) The boundaries of the Southeast Trinity Groundwater Conservation District are coextensive with that part of Comal County located within the Hill Country Priority Groundwater Management Area designated by the Texas Natural Resource Conservation Commission by rule effective July 16, 1990.

SECTION 3. DEFINITION. In this Act, "district" means a groundwater conservation district created under Section 1 of this Act.

SECTION 4. FINDING OF BENEFIT. All of the land and other property included within the boundaries of a district will be benefited by the works and projects that are to be accomplished by the district under powers conferred by Section 59, Article XVI, Texas Constitution. The district is created to serve a public use and benefit.

SECTION 5. AUTHORITY OF TEMPORARY DIRECTORS. (a) Except as provided by Subsections (c) and (d) of this section or otherwise by this Act, the temporary directors of a district have the same permitting and general management powers as those granted to initial and permanent directors under Chapter 36, Water Code.

(b) The temporary directors or their designees have the authority to enter any public or private property located within the district to inspect a water well as provided by Section 49.221, Water Code.

(c) The temporary directors do not have the authority granted by the following provisions of Chapter 36, Water Code:

(1) Sections 36.017, 36.019, 36.020, and 36.059, relating to elections;

(2) Sections 36.105, 36.1071, 36.1072, 36.1073, and 36.108, relating to eminent domain and management plans;

(3) Sections 36.171-36.181, relating to bonds and notes;

(4) Sections 36.201-36.204, relating to taxes; and

(5) Sections 36.321-36.359, relating to annexation and consolidation.

(d) The temporary directors may regulate the transfer of groundwater out of the district as provided by Section 36.122, Water Code, but may not prohibit the transfer of groundwater out of the district.

SECTION 6. MORATORIUM ON ADOPTION OF LONG-TERM MANAGEMENT PLANS. To ensure consistency of district long-term management plans with the regional planning process authorized by Senate Bill No. 1 (Chapter 1010), Acts of the 75th Legislature, Regular Session, 1997, a district may not adopt the comprehensive management plan required by Section 36.1071, Water Code, before September 1, 2001.

SECTION 7. INITIAL BOARD OF DIRECTORS. The initial directors may not be elected until after September 1, 2001.

SECTION 8. TEMPORARY DIRECTORS. (a) Except as provided by Subsections (b) and (c) of this section, the commissioners court of a county containing territory included within the district shall appoint temporary directors in accordance with the provisions of Section 36.016, Water Code, relating to the appointment of temporary directors by county commissioners courts.

(b) For districts composed of more than one county, the county commissioners court of each county with territory in the district shall appoint an equal number of temporary directors, the total number of temporary directors appointed to be determined by the county commissioners courts except that the total number of directors may not be fewer than five or more than 11.

(c) The 90-day limit for the appointment of temporary directors under Section 36.016, Water Code, does not apply to the appointment of temporary directors under this Act.

SECTION 9. ORGANIZATIONAL MEETING. (a) As soon as practicable after the temporary directors are appointed as provided by this Act, the temporary directors shall hold the organizational meeting of the district and take office at that time.

(b) The temporary directors shall hold the meeting at a location within the district to which a majority of the temporary directors agree.

SECTION 10. CONFIRMATION AND INITIAL DIRECTORS' ELECTION. (a) Not earlier than September 1, 2001, the temporary board of directors shall call and hold an election to confirm the district and to elect the initial directors.

(b) At the confirmation and initial directors' election, the temporary board of directors shall have placed on the ballot the names of the candidates for each of the positions on the board. To qualify as a candidate for a position, a person must be a resident of the district.

(c) If the district is confirmed at the election, the temporary board of directors, at the time the vote is canvassed, shall:

(1) declare the qualified person who receives the most votes for each position to be elected as the initial director for that position; and

(2) include the results of the initial directors' election in the district's election report to the Texas Natural Resource Conservation Commission.

(d) The initial directors shall draw lots to determine their terms so that:

(1) one-half or a simple majority of the directors serve four-year terms that expire on the fourth anniversary of the

date the initial directors were elected; and

(2) the remaining directors serve two-year terms that expire on the second anniversary of the date the initial directors were elected.

(e) Subsection (a), Section 41.001, Election Code, applies to a confirmation and initial directors' election held as provided by this section.

(f) Except as provided by this section, a confirmation and initial directors' election must be conducted as provided by Subsections (b)-(h), Section 36.017, Water Code, and the Election Code.

(g) If the establishment of the district has not been confirmed at an election held under this section before the fourth anniversary of the effective date of this Act, the district is dissolved on that date, except that any debts incurred shall be paid and the organization of the district shall be maintained until all debts are paid.

SECTION 11. ELECTION OF PERMANENT DIRECTORS. Beginning in the second year after the year in which the district has held a confirmation election, an election shall be held in the district on the first Saturday in the month in which the initial directors were elected under Section 10 of this Act and every two years after that date to elect the appropriate number of directors to the board.

SECTION 12. ELECTIONS. Prior to September 1, 2001, the temporary directors of a district shall not hold an election for the imposition of a tax.

SECTION 13. MODIFICATION OF DISTRICT. A district created under this Act may be modified by subsequent acts of the Texas Legislature. The modification may be in response to the recommendations of an interim study or committee, including the possibility of adding additional area to the district or merging the district with other districts for the purposes of the efficient and effective management of a common groundwater resource.

SECTION 14. STATUTORY INTERPRETATION. Except as otherwise provided by this Act, if there is a conflict between this Act and Chapter 36, Water Code, this Act controls.

SECTION 15. RATIFICATION OF DISTRICT CREATION. (a) Notwithstanding the provisions of Section 10 of this Act, an election for the confirmation of the creation of a groundwater conservation district under this Act and for the selection of initial directors for such district shall not be held unless action is taken by the 77th Legislature in its Regular Session to ratify the creation of the district.

(b) Except as provided by Subsection (c) of this section, a groundwater conservation district created by this Act whose creation is not ratified by the 77th Legislature as provided by

Subsection (a) of this section is dissolved effective September 1, 2001.

(c) If a groundwater conservation district is dissolved under this section, the district has no further authority, except that any debts incurred shall be paid and the organization of the district shall be maintained until all debts are paid.

SECTION 16. FINDINGS RELATED TO PROCEDURAL REQUIREMENTS. (a) The proper and legal notice of the intention to introduce this Act, setting forth the general substance of this Act, has been published as provided by law, and the notice and a copy of this Act have been furnished to all persons, agencies, officials, or entities to which they are required to be furnished by the constitution and other laws of this state, including the governor, who has submitted the notice and Act to the Texas Natural Resource Conservation Commission.

(b) The Texas Natural Resource Conservation Commission has filed its recommendations relating to this Act with the governor, lieutenant governor, and speaker of the house of representatives within the required time.

(c) All requirements of the constitution and laws of this state and the rules and procedures of the legislature with respect to the notice, introduction, and passage of this Act are fulfilled and accomplished.

(d) The procedural requirements of this section relating to the provision of notice have been met by the provision of notice of the introduction of the proposed Acts of the 76th Legislature relating to the creation of the groundwater conservation districts now created by this Act.

SECTION 17. EFFECTIVE DATE. This Act takes effect September 1, 1999.

SECTION 18. EMERGENCY. The importance of this legislation and the crowded condition of the calendars in both houses create an emergency and an imperative public necessity that the constitutional rule requiring bills to be read on three several days in each house be suspended, and this rule is hereby suspended.

_____ _____

President of the Senate Speaker of the House

I hereby certify that S.B. No. 1911 passed the Senate on May 17, 1999, by a viva-voce vote; and that the Senate concurred in House amendments on May 28, 1999, by a viva-voce vote.

_____

Secretary of the Senate

I hereby certify that S.B. No. 1911 passed the House, with amendments, on May 26, 1999, by a non-record vote.

_____

Chief Clerk of the House

Approved:

_____

Date

_____

Governor

APPENDIX B

Resolution of the Board of Directors of the Red Sands Groundwater Conservation District Meeting Held March 5, 2007

A Resolution Adopting a Groundwater Management Plan

Whereas, The Red Sands Groundwater conservation District (the District) is a political subdivision of the State of Texas organized and existing under and by virtue of Article 26, Chapter 59, the Texas Constitution, and a groundwater conservation district acting under Chapter 36 of the Texas Water Code and the District's Enabling Act of the 76th Legislature, 1999.

Whereas, under the direction of the Board of Directors, and in accordance with the Texas Water Code Chapter 36, Section 36.1071 and 36.1072, Chapter 356 of the Texas Administrative Code, the District has developed a groundwater management plan.

Whereas, the District issued the appropriate notice and help a public hearing to receive public and written comment on the proposed management plan at the Volunteer Fire Department in Linn, Texas on December 4, 2006.

Whereas, the Board of Directors upon proper notice and hearing and in an open meeting adopted a management plan pursuant to Texas Water Code Section 36.1071(e), on December 14, 2006.

Whereas, the District submitted it's management plan to the TWDB Executive Administrator on December 18, 2006.

Whereas, the TWDB Executive Administrator has provided the District with comments on the management plan submitted on December 18, 2006.

Whereas, the District amended it's management plan to respond to the comments provided by the TWDB Executive Administrator.

Whereas, the Board of Directors believes the management plan meets all requirements of Chapter 36 of the Texas Water Code and Chapter 356, Title 31 of the Texas Administrative Code; and

Whereas, the Board of Directors upon proper notice and hearing and in an open meeting seeks to adopt it's amended management plan pursuant to Texas Water Code Section 36.1071(e).

Now Therefore Be It Resolved That:

The management plan with those changes responding to the comments provided on the management plan adopted by the Board of Directors on December 14, 2006 is hereby adopted before the Board of Directors and after formal action on this date by the District's Board of Directors.

The Board of Directors further instructs the District consultant to compile a final, adopted management plan, and file it with the TWDB Executive Administrator, pursuant to Texas Water Code Section 36.1071(e).

The Board of Directors and District consultant are further authorized to take any and all actions necessary to coordinate with the TWDB as may be required in furtherance of approval pursuant to the provisions of Section 36.1072 of the Texas Water Code.

And It Is So Ordered.

Upon this motion made by Director Guerra, and seconded by Director Baumbach, and upon discussion, the Board of Directors voted 3 in favor and 0 opposed and 0 abstained, and 2 absent, and the motion thereby PASSED on this 5th day of March, 2007

Red Sands Groundwater Conservation District

By:

Armando Vela

Armando Vela, Board President

Attest:

Shirley Baumbach

Board Member

APPENDIX C

Red Sands Groundwater Conservation District
Notice of Public Hearing

Time & Date: 5:00 p.m.
Monday, December 4th 2006

Place: Linn-San Manuel Volunteer Fire Department
North Highway 281, Linn, Texas 78563 (956) 383-7222

The district will meet to consider the following:

1) The presentation of the draft groundwater management plan

2) Receive public comment

TCB | AECOM

TCB
400 West 15th Street, Suite 500, Austin, Texas 78701
T 512.472.4519 F 512.472.7519 www.tcb.aecom.com

November 20, 2006

Steve Musick - Leader
Groundwater Planning and Assessment Team, MC 147
TCEQ - Water Supply Division
PO Box 13087
Austin, Texas 78711-3087

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Musick,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 6:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 R will be on the west side of the road, under the Philips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Veta
Board President
Red Sands Groundwater Conservation District

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400 West 15th Street, Suite 500, Austin, Texas 78701
T 512.472.4519 F 512.472.7519 www.tcb.aecom.com

November 20, 2006

Kevin Ward
Executive Administrator
Texas Water Development Board
1700 N. Congress Ave.
Austin, Texas 78701

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Ward,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Philips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

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400 West 15th Street, Suite 500, Austin, Texas 78701
T 512.472.4519 F 512.472.7519 www.tcb.aecom.com

November 20, 2006

Glenn Jarvis
Region M Chairman
c/o Lower Rio Grande Valley Development Council
311 N. 15th Street
McAllen, TX 78501-4705

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Jarvis,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Philips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

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TCB
400 West 15th Street, Suite 500, Austin, Texas 78701
T 512.472.4619 F 512.472.7519 www.tcb.aecom.com

November 20, 2006

George Noe
City Manager
Corpus Christi ASR Conservation District
1201 Leopard St.
Corpus Christi, Texas 78401

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Noe,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Philips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

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400 West 15th Street, Suite 500, Austin, Texas 78701
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November 20, 2006

Leo Villarreal
Attorney for KCGCD
Kenedy County Groundwater Conservation District
PO Box 37
Sarita, Texas 78385-0037

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Villarreal,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Philips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

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400 West 15th Street, Suite 500, Austin, Texas 78701
T 512.472.4519 F 512.472.7519 www.tcb.aecom.com

November 20, 2006

Lonnie Stewart
Manager
McMullen Groundwater Conservation District
PO Box 232
Tilden, Texas 78072

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Stewart,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Philips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

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TCB
400 West 15th Street, Suite 500, Austin, Texas 78701
T 512.472.4519 F 512.472.7519 www.tcb.aecom.com

November 20, 2006

Garrett Engelking
Manager
Refugio Groundwater Conservation District
PO Box 116
Refugio, Texas 78377

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Engelking,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Phillips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

TCB | AECOM

TCB
400 West 15th Street, Suite 500, Austin, Texas 78701
T 512.472.4519 F 512.472.7519 www.tcb.aecom.com

November 20, 2006

Barbara Smith
Manager
Goliad County Groundwater Conservation District
PO Box 562
Goliad, Texas 77963

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Ms.Smith,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Phillips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

TCB | AECOM

TCB
400 West 15th Street, Suite 500, Austin, Texas 76701
T 512.472.4519 F 512.472.7519 www.tcb.aecom.com

November 20, 2006

Mike Mahoney
General Manager
Evergreen Underground Water Conservation District
110 Wyoming Blvd.
Pleasanton, Texas 78064

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Mahoney,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Philips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

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Hydrogeologist

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Board President
Red Sands Groundwater Conservation District

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November 20, 2006

Lonnie Stewart
Manager
Bee Groundwater Conservation District
PO Box 682
Beeville, Texas 78104-0682

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Stewart,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Phillips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

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Hydrogeologist

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Board President
Red Sands Groundwater Conservation District

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November 20, 2006

Charles Browning
General Manager
North Alamo Water Supply Corporation
420 S. Doolittle Rd.
Edinburg, Texas 78539

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Browning,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Philips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

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Charles R. Williams

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

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November 20, 2006

Timothy Nicolls
General Manager
Sharyland Water Supply Corporation
PO Box 1868
Mission, Texas 78573-1868

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Nicolls,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Philips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

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Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

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400 West 15th Street, Suite 500, Austin, Texas 78701
T 512.472.4519 F 512.472.7519 www.tcb.aecom.com

November 20, 2006

Dan Tijerina
Director of Utilities
City of Edinburg City Hall
PO Box 1079
Edinburg, Texas 78540

Re: Notice of meeting for the Red Sands Groundwater Conservation District Draft Management Plan

Dear Mr. Tijerina,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, is pleased to announce the development of a Draft Groundwater Management Plan (Draft Plan). RSGCD is seeking public input on the development of the Draft Plan. The Draft Management Plan will be discussed at the December 5th board meeting, to be held at the Linn San Manuel Volunteer Fire Department Station at 5:00 pm. (Directions: Drive 18 miles north of Edinburg on Hwy 281. After passing FM 1017 it will be on the west side of the road, under the Phillips 66 sign.) Copies of the Draft Plan will be made available at the hearing.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

c: Armando Vela
Board President
Red Sands Groundwater Conservation District

APPENDIX D

TCB | AECOM

TCB
[illegible] Austin, Texas [illegible]
[illegible] F 512.472.7519 [illegible]

December 15, 2006

Mr. Dan Tijerina
Director of Utilities
City of Edinburg City Hall
Edinburg, TX 78540

Re: Red Sands Groundwater Conservation District Request for Coordination in the Development of a Groundwater Management Plan

Dear Mr. Tijerina,

On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, requests the coordination of surface water management entities in the development of a Groundwater Management Plan (Plan). This request is pursuant to Section 36.1071(a) of the Texas Water Code "evidence that after notice and hearing the district coordinated in the development of its management plan with surface water management entities." Please find enclosed a copy of the Plan for your review. If you have any questions or comments on the Plan you may contact me by telephone at (512) 457-7820 or in writing at the address above. You may also contact Mr. Armando Vela, Board President of RSGCD at (956) 383-3695.

Sincerely,

Charles R. Williams, P.G.
Hydrogeologist

TCB | AECOM

TCB
400 West 15th Street Suite 950 Austin Texas 78701
T 512.472.4519 F 512.472.7519 www.tcbaecom.com

December 15, 2006

Mr. Charles Browning
General Manager
North Alamo Water Supply Corporation
420 S. Doolittle Rd.
Edinburg, TX 78539

Re: Red Sands Groundwater Conservation District Request for Coordination in the Development of a Groundwater Management Plan

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On behalf of the Red Sands Groundwater Conservation District (RSGCD) TCB, as consultant to RSGCD, requests the coordination of surface water management entities in the development of a Groundwater Management Plan (Plan). This request is pursuant to Section 36.1071(a) of the Texas Water Code "evidence that after notice and hearing the district coordinated in the development of its management plan with surface water management entities." Please find enclosed a copy of the Plan for your review. If you have any questions or comments on the Plan you may contact me by telephone at (512) 457-7820 or in writing at the address above. You may also contact Mr. Armando Vela, Board President of RSGCD at (956) 383-3695.

Sincerely,

Charles R. Williams

Charles R. Williams, P.G.
Hydrogeologist

TCB | AECOM

TCB
[illegible]

December 15, 2006

Mr. Timothy Nicolls
General Manager
Sharyland Water Supply Corporation
P.O. Box 1868
Mission, TX 78573-1868

Re: Red Sands Groundwater Conservation District Request for Coordination in the Development of a Groundwater Management Plan

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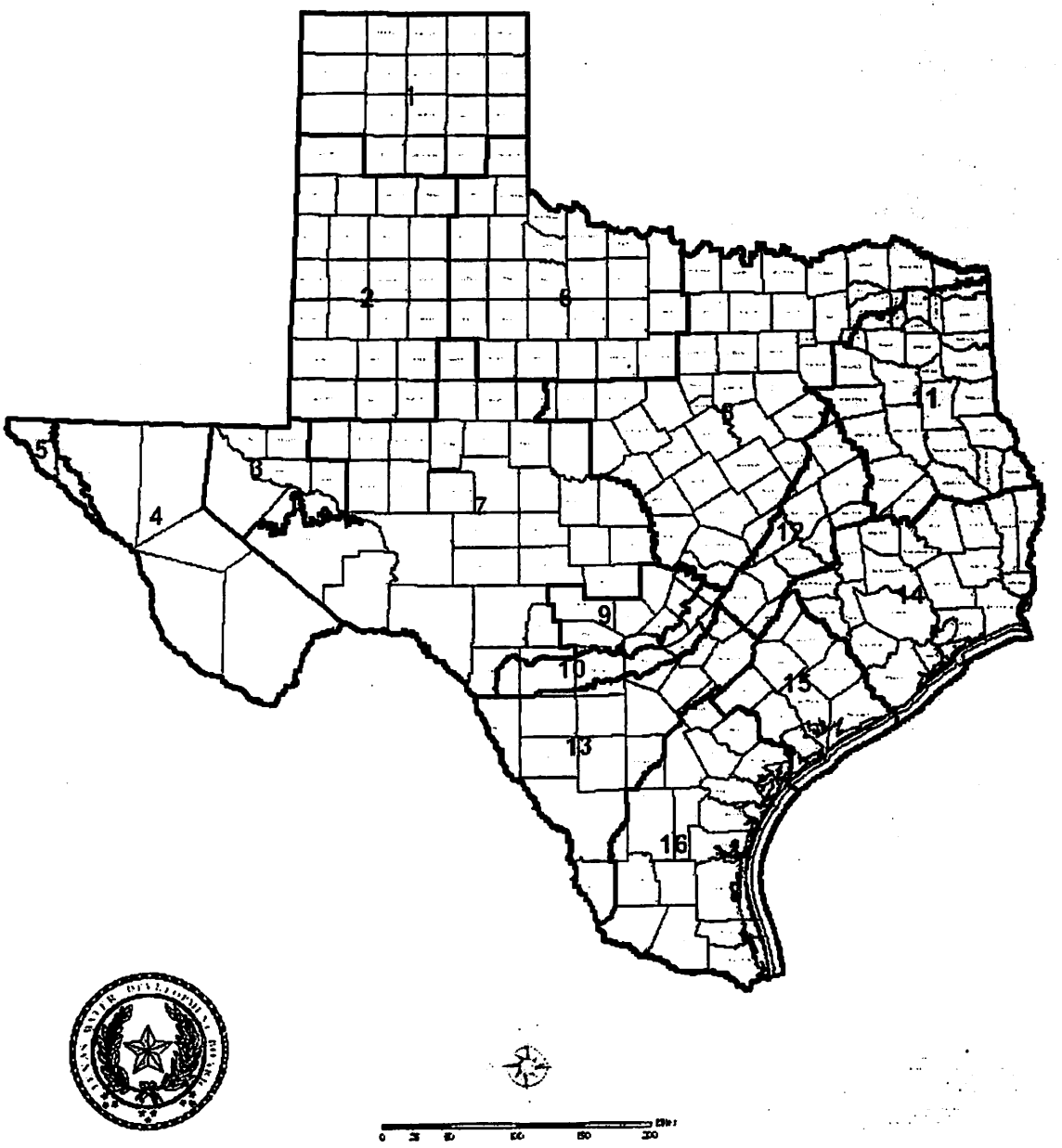
Sincerely,

Charles R. Williams

Charles R. Williams, P.G.
Hydrogeologist

APPENDIX E

Groundwater Management Areas In Texas



APPENDIX F

Details on the District Estimate of Annual Groundwater Use Using Site Specific Data Available to the District

The estimated annual domestic well use was derived from the Year 2000 U.S. Census population data for Hidalgo County, Texas and an assumptive domestic consumption rate of 110 gallons per day per person. The year 2000 census data for Hidalgo County gives the average household occupancy as 3.6 persons per household. The Census Blocks covering the area of the District were consulted to determine the number of persons living within the boundaries of the Red Sands Groundwater Conservation District. Census Blocks used were 1138, 1184, 1185, 1186, 1187, 1188, 1189, 1300, 1301, 1352, 1353, 1354, 1356, 1357, 1358, 1359, 1360, 1403, 1404, 1405, 1406, 1407, 1418, 1419, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553. Of the Census Blocks used to determine the population of the District; four were not entirely within the District. The population reported for these Blocks were apportioned by the percentage of area of the Block within the District. The percentages of the population used for each of the Blocks are as follows: 3% of Block 1136; 69% of Block 1137; 47% of Block 1183; and 54% of Block 1355 was used. The total population of the District as estimated from the Census Block data is 936. The total estimated population of 937 was divided by 3.6 persons per household to arrive at an estimated total of 260 domestic wells. The estimated annual domestic well use the estimated number of well is determined by the following formula:
((260 domestic wells x (110 gallons per day per person x 3.6 persons per household)) x 365 days per year)/ 325,851 gallons (acre-foot)

The estimate of annual domestic well use is 115 acre-feet per year.

The estimated annual stock use was determined from the estimated number of stock wells and an assumptive use rate of 1.1 gallons per minute over 24 hours per day (1584 gallons per day) per stock well. The estimated number of stock wells within the RSGCD is 150 wells. This estimate is based on the personal experience of Carlos X. Guerra a long-time resident of the District and RSGCD Director. The following formula is used to estimate the stock use in the District:
((150 stock wells x 1,584 gallons per day) x 365 days per year) / 325,851 gallons (acre-foot)

The estimated total stock well use is 267 acre-feet per year.

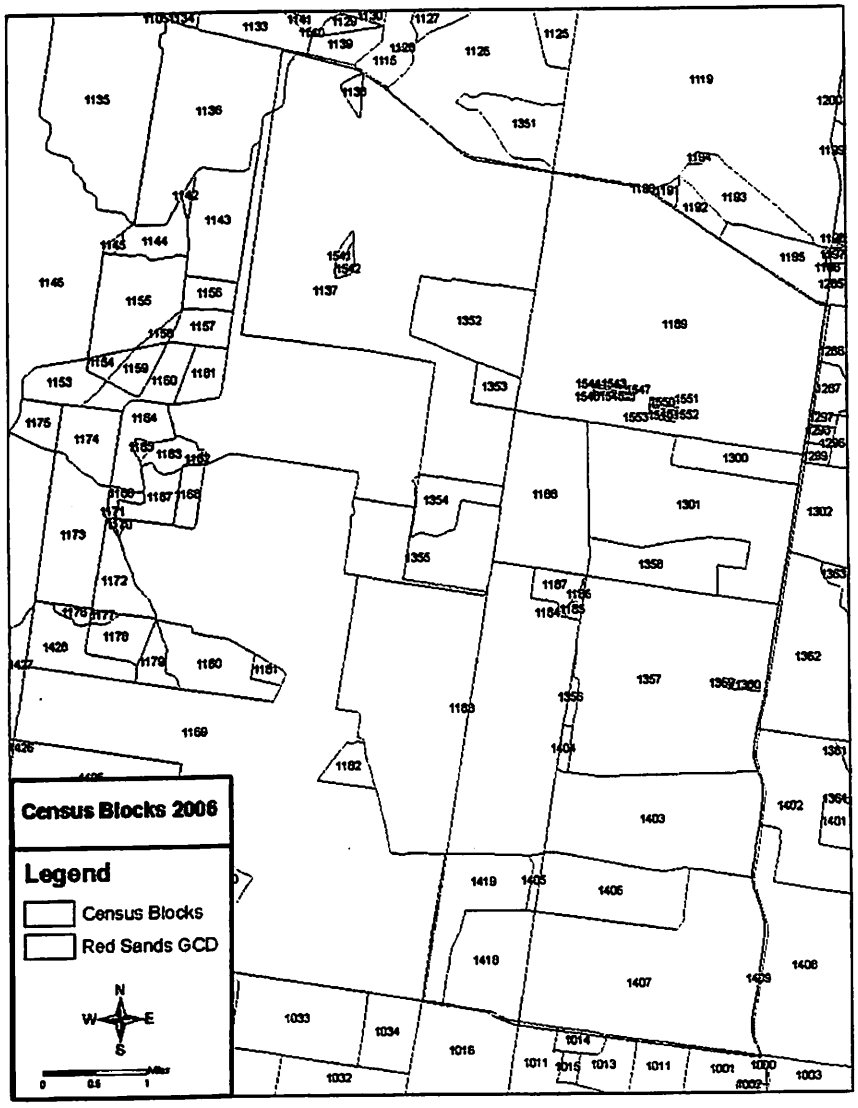
The estimated annual irrigation well use was derived from the number of irrigated acres and an application rate per crop. Mike Denison of the U. S. Department of Agriculture - Natural Resource Conservation Service (NRCS) in Hidalgo County indicated the two crops found within the RSGCD boundaries are 100 acres of watermelon and 200 acres of grass (hay). According to NRCS, watermelons require an annual application rate of 20 inches/acre, and grass requires an annual application rate of 25 inches/acre. The following formula used is used to estimate crop irrigation:
(Number of acres) x (application rate)
The estimated annual crop irrigation use is of 584 acre-feet per year. The Baney Nursery

reported, in a personal communication with Armando Vela, RSGCD Board President, that the nursery uses approximately 450 gpm on a 24 hour/day basis over 365 days per year. This reported use equates to an annual rate of 726 acre-feet per year. The estimated total annual irrigation use is approximately 1,310 acre-feet per year.

Jonton Alcohol is an industrial user within the RSGCD. In year 2001 Jonton Alcohol reported producing 1.2 million gallons of ethanol. U.S. Water News, in a June 2006 online article, stated the ratio of water used to ethanol produced per year is three to one. The following formula is used to estimate the annual industrial use in the District:
(Annual reported ethanol production x 3 / 325,851 gallons (acre-foot)
The estimated total industrial use is approximately 11 acre-feet per year.

The District has located only one municipal user, the Lazy Palms Ranch. Based on Census data, the TCEQ List of Texas Public Water Systems in Hidalgo County, and the migratory nature of its residents, the population may range from 42 to 500 people. To estimate the potential annual municipal use in the District, the high end of the population range is used. The following formula is used to estimate municipal use:
((110 gallons per day per person x 500) x 365 days per year) /325,851 gallons (acre-foot)
The total estimated annual municipal use is approximately 62 acre-feet per year.

Map of Census Block used to Estimate District Population



Correspondence with NRCS in Hidalgo County

Good morning Beckie,
Answers to your questions in the order you asked:

1. grass and watermelons

2. 200 acres grass and 100 acres watermelons

3. 20 inches for watermelons and 25 inches for the grass

4. Do not know name of subdivision and 1 to 2 houses being built

5. 2

6. Goats 100 animals

If there is anything else I can help you with please let me know.

Mike Denison

From: Morris, Beckie [mailto:Beckie.Morris@tcb.aecom.com]
Sent: Wednesday, November 08, 2006 3:48 PM
To: Denison, Mike - Edinburg, TX
Cc: Williams, Randy
Subject: Questions for the Red Sands GCD

Mr. Denison,
Thank you so much for your help today. I certainly gained a better understanding of the Red Sands Groundwater Conservation District (RSGCD). If you would, please again answer the questions we discussed over the phone such as:

1) What are the crop types?

2) What are the number of acres per crop?

3) What are the application rates for those crops?

4) What is the name of the new subdivision on Floral Rd., and how many houses have been built?

5) How many stock wells?

6) What kind of livestock are in the RSGCD, and in what numbers?

Approximate boundaries as provided by the RSGCD are N - Hwy 1017, E - Hwy 281, S - Hwy 490, W - From 490 north on Laguna Seca to northeast corner of Laguna Seca Ranch, then west to east boundary

of Buena Aires Ranch, then north to northeast corner.

Thank you for taking the time to provide this information.

Sincerely,

Beckie J. Morris
Environmental Specialist II
Direct 512.457-7824

TCB
400 W. 15th St., Suite 500
Austin, Texas 78701
T 512.472.4519 F 512.472.7519
beckie.morris@tcb.aecom.com