GATEWAY GROUNDWATER CONSERVATION DISTRICT

MANAGEMENT PLAN

DISTRICT MISSION

The mission of the Gateway Groundwater Conservation District is to manage, protect, and conserve the groundwater resources of the District for the citizens, economy, and environment of the District; while protecting personal property rights, and promoting the constructive and beneficial uses of the available groundwater in the District.

STATEMENT OF GUIDING PRINCIPLES

The District recognizes the vital importance of groundwater resources in the region. The District is committed to the following principles, which we believe will maximize the benefits of these water resources for the citizens of the District. The goals of the Management Plan are consistent with those of the Region A, Region B, and the Region O Water Plans.

1. Citizens of the District should be benefited economically and aesthetically by the natural resources of the District.
2. These natural resources should be preserved for present and future generations.
3. A better understanding of the amount of available groundwater, the quality of the groundwater, and factors affecting the sustainable use of the groundwater will be necessary to achieve the District's mission.
4. Landowner property rights should be honored, and landowners will be partners with the District in managing and protecting groundwater resources. Groundwater resources should be managed by local interest.
5. All citizens will be treated equally, without preference or prejudice.
6. The District will coordinate with the Regional Water Planning Groups, other affected water planning groups, private or public water supply entities, and State water management agencies.
7. The District does not wish to become a tax burden on the citizens. The water resources should not be over-managed so as to become an impediment to the beneficial uses of groundwater.

GENERAL DESCRIPTION

The District was created by the Citizens of Hardeman and Foard Counties through election on February 1, 2001. The original name of the District was Tri-county Groundwater Conservation District, because the District anticipated including at least part of Wilbarger County in the future. Since that time, the citizens of Childress and Cottle Counties have elected to join the District, and the new name of Gateway Groundwater Conservation District has been adopted. Motley County joined the District

after approval in an election on 3 November 2009. The District has a ten member Board of Directors, with two directors for each of the five counties. Current officers are Johnny Kajs – President, and Jason Poole – Secretary. Other members are H. L. Ayers, Weldon Tabor, Rick Husband, Bill Haseloff, Ben Blount, Jeff Adams, William Luckett, and Marisue B. Potts-Powell.

The District comprises an area of 3967 square miles, containing all of Cottle, Foard, Hardeman & Motley counties, and approximately 94% of Childress County. These counties are located in the northern low rolling plains area of Texas. Much of the area is rough rangeland not suitable for cultivated crops. Cropland production is limited by low rainfall (an average of about 23 inches annually) and low water infiltration for the heavy clay soils in large parts of the District. The District is within the Red River Watershed. The topography of the Foard and Hardeman County area consists of level to rolling plains farmland in the eastern parts of these counties to the rough, juniper covered hills of the Blaine Escarpment in western Foard and Hardeman Counties. The ground surface elevation generally slopes downward from west to east. The highest land surface elevations are in Motley County, located above the "Caprock" of the Llano Estacado plateau. There are areas of cultivation in the northwest part of Motley County, with smaller areas scattered throughout the county. Cottle, Foard and Motley Counties have the largest percentages of rough land suitable only for range land (approximately 70%), while only about 40% of Childress and Hardeman Counties is restricted to rangeland.

The economy is dominated by agriculture; primarily beef cattle, wheat and cotton production. Sport hunting has increased significantly in recent years, and has been a boost to the otherwise generally depressed agricultural economy. Land leases to power companies for possible wind energy development has been another recent source of income for landowners. A slow but steady decline in population for the counties in the District and a slight decline in irrigation water use indicates that future water use demand is unlikely to increase. However, as water shortages increase in other areas, there may be potential for District landowners to sell water outside the District.

About 75% of the groundwater use in the District is for agriculture. Compared to other groundwater districts, the groundwater use and economic impact of groundwater use in Gateway Groundwater Conservation District is small.

Gateway GCD is located within the State designated Groundwater Management Area 6. Gateway GCD coordinates with and participates in planning meetings of the Groundwater Management Area.

Gateway GCD is located within the State designated Regional Water Planning Groups A (Childress County), B (Cottle, Foard & Hardeman Counties), and O (Motley County).

GROUNDWATER RESOURCES

The District has two significant groundwater sources: the Blaine Aquifer in the western parts of Foard County and Hardeman County & the eastern parts of Cottle County and

Childress County; and the Seymour Aquifer located in eastern Hardeman County, northeastern Foard County, and northern Motley County. There is a limited source of groundwater from the Ogallala & Dockum Aquifers in southwestern Motley County.

SEYMOUR AQUIFER

The geologic and hydrologic character of the Seymour Aquifer is quite variable. Typically, wells are 30 to 60 feet deep and are completed in the lower part of the formation, which consists of sand and gravel. Well yields average 270 gallons per minute and can be as high as 1300 gallons per minute. Saturated thickness is typically between 20 and 40 feet.

The Seymour Aquifer is frequently disconnected hydraulically from one area to another. Since it is an alluvial aquifer, porosity and continuity is quite variable. Artificial recharge by pumping would probably not be an efficient way to store water in this aquifer, except in areas where the formation is fairly uniform. However, there may be effective ways to increase recharge from rainwater. Furrow diking is an experimental farming method used to increase soil infiltration into the root zone of cultivated crops. It creates small water pockets in the furrows after rainfall and reduces runoff. This method should also increase infiltration into the shallow Seymour Aquifer, especially in the lighter soils. Other methods may be building small berms to trap runoff water in shallow ponds to allow more time for infiltration. Mesquite is a costly invader in the rangelands of the District. Brush control to remove or kill mesquite will increase groundwater recharge, because the large amount of deep soil moisture taken by mesquite would be reduced.

Nearly all recharge to the Seymour Aquifer is by direct infiltration of precipitation on the land surface. The RWPG-B report estimates that the annual recharge to be from 5% to 7% of the rainfall on the aquifer outcrop area. The outcrop area is directly above the aquifer; therefore local rainfall determines the amount of recharge. The average annual recharge to the Seymour Aquifer in the District is estimated to be 48,643 acre-feet per year (GAM 10-007).

The water quality in the Seymour aquifer is variable. The dissolved solids content varies from about 50 milligrams per liter to about 300 mg/l. Dissolved solids are typically lower for the more prolific wells in the high infiltration rate sands of the major recharge and irrigation areas. Therefore, the dissolved solid concentrations are normally not a problem for irrigation or for public supplies. However, nitrate levels often exceed the State standard of 10 mg/l recommended for public water supplies. These high nitrate concentrations are the result of leaching of natural soil nitrogen and nitrogen fertilizers from the land above the Seymour Aquifer.

BLAINE AQUIFER

The Blaine Aquifer consists of water stored in cavities of gypsum and limestone rock. This aquifer is typically encountered about 100 to 150 feet below the ground surface and has a saturated thickness less than 300 feet. The primary source of recharge to the Blaine

Aquifer is precipitation that falls on the outcrop area. The openings and fractures in the gypsum provide access for water to percolate downward. The RWPG-B report estimates the annual recharge to be from 5% to 7% of the rainfall on the aquifer outcrop area. The average annual recharge to the Blaine Aquifer in the District is estimated to be 47,067 acre-feet per year (GAM 10-007). Artificial recharge might be achieved by creating small ponds to retain runoff. Controlling mesquite and juniper in the outcrop area should increase recharge. Furrow diking may also help.

The Blaine Aquifer water is high in dissolved solids, typically about 3000 mg/l. This salinity is too high for public water supply use. However, it can and has been used to irrigate cotton. Local farmers report that it has been used to irrigate cotton fields since the 1950's without significant problems due to salinity buildup in the soil. The high solids results from the natural dissolving of the gypsum and limestone rock of the aquifer, therefore there are no feasible methods to reduce the dissolved solids levels.

OGALLALA AQUIFER

The Ogallala Aquifer is present in the southwest corner of Motley County. The formation thickness at the western edge of the county is approximately 100 feet. The formation thins rapidly to the east, and does not reach the North-South Texas 70 Highway. The maximum saturated thickness is about 30 feet, in the western portion. The sediments are primarily sands with silt and clay. A gravel conglomerate is often present at the base. The formation is highly eroded and the topography is not suitable for wide spread irrigation activities. Water quality is generally good, Reported water production rates are generally less than 300 GPM.

DOCKUM GROUP AQUIFERS

The Dockum Aquifer underlies the Ogallala Aquifer and extends farther to the east where it is exposed on the surface. The sediments are primarily sandstones, conglomerates and sandy shales. Irrigation wells completed in the Dockum Group formations have had yields as high as 700 GPM in the past. Current yields are generally lower. Water quality is good to fair.

REQUIRED AQUIFER INFORMATION CALCULATED BY TWDB

The following information for the Blaine, Dockum, Ogallala, and Seymour Aquifers was calculated by the TWDB and Reported in GAM report 10-007 (July 16, 2010).

Annual recharge from precipitation:

Seymour	48,643	acre-feet per year
Blaine	47,067	acre-feet per year
Ogallala	404	acre-feet per year
Dockum	619	acre-feet per year

Annual discharge from springflow:

Seymour	5,191	acre-feet per year
Blaine	17,164	acre-feet per year
Ogallala	0	acre-feet per year
Dockum	1,160	acre-feet per year

Annual flow across District boundaries into the District:

Seymour	792	acre-feet per year
Blaine	18,811	acre-feet per year
Ogallala	1,895	acre-feet per year
Dockum	1,190	acre-feet per year

Annual flow across District boundaries out from the District:

Seymour	7,145	acre-feet per year
Blaine	13,795	acre-feet per year
Ogallala	2,742	acre-feet per year
Dockum	760	acre-feet per year

Annual net flow between aquifers:

From Ogallala into Dockum	133	acre-feet per year
Into Seymour from Blaine & other Permian units	8,046	acre-feet per year
From Blaine into Seymour	7,056	acre-feet per year
From Blaine to other Permian units	14,026	acre-feet per year

GAM Run 10-007, Table 2, page 8, Note 1: A mass balance error of one percent or less is normally considered acceptable for water budgets extracted from numerical flow models (Anderson and Woessner, 1992); however, the water budgets for some stress periods of the groundwater availability model for the Seymour and Blaine aquifers exceeded one percent. After investigating the cause and several alternative approaches to defining the water budget it was determined that, after averaging all 240 stress periods together, the results are reasonable and appropriate for the purposes of the district's management plan. (Seymour & Blaine Aquifers)

GAM Run 10-007, Table 4, page 10, Notes: 1) Irrigation return flow was accounted for in the model by a direct reduction in agricultural pumping as described in Blandford and others (2003). This value is higher than what was reported in Groundwater Availability Model Run 08-47 (Oliver, 2008) due to the correction associated with irrigation return flow.
2) The model does not include any major springs, lakes, streams, or rivers within the district. (These 2 notes apply to the Ogallala Aquifer Model)

OTHER AQUIFERS

The Whitehorse, Clear Fork, El Reno Groups and various alluvium yield groundwater in localized areas. Annual recharge to those areas was calculated by the District to be approximately 10,231 acre feet per year.

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PROJECTED SURFACE WATER SUPPLIES

Currently Available Surface Water Supplies – Reservoirs Region A

There are 2 lakes in Childress with limited potential for water supply. The following was extracted from the Region A Water Plan, 2006:

"Baylor Lake is on Baylor Creek in the Red River Basin, ten miles northwest of Childress in western Childress County. The drainage area above the dam is forty square miles. The reservoir is owned and operated by the city of Childress. Although the City has water rights to divert up to 397 acre-feet per year from the reservoir (TWDB, 1999), there is currently no infrastructure remaining to divert water for municipal use. Construction of the earth fill dam was started on April 1, 1949, and completed in February 1950. Deliberate impoundment of water was begun in December 1949. Baylor Lake has a capacity of 9,220 acre-feet and a surface area of 610 acres at the operating elevation of 2,010 feet above mean sea level. (Breeding, 1999).

Lake Childress is eight miles northwest of Childress in Childress County. This reservoir, built in 1923 on a tributary of Baylor Creek, in the Red River Basin, had an original capacity of 4,600 acre-feet; it is adjacent to Baylor Lake. In 1964 it was still part of the City of Childress' water supply system, as was the smaller Williams Reservoir to the southeast [Breeding, 1999]. There are no water rights shown for the lake in TCEQ's water rights database (TCEQ, 2000)."

From the above, there may be up to 397 acre-feet per year available should the necessary infrastructure be reconstructed.

Currently Available Surface Water Supplies – Reservoirs Region B (ac-ft per year)

Lake Pauline is located in Hardeman County. The lake was previously used for power plant cooling water. The power plant has been dismantled. There is no infrastructure to divert water from the lake. The following information was extracted from the Region B Water plan.

Year	2000	2010	2020	2030	2040	2050	2060
Acre-feet / year	1,284	1,284	1,284	1,284	1,284	1,284	1,284

Should the necessary infrastructure be constructed, there may be up to 1,284 acre-feet per year available from this source.

No Currently Available Surface Water Supplies – Reservoirs were identified in Region O (Motley County)

The 2007 State Water Plan lists one surface water Reservoir in the District. Baylor Lake is shown to have a 2010 safe yield of zero acre-feet, and a conservation storage value of 9,220 acre-feet.

The 2007 State Water plan projected Surface Water Supply information is attached at Appendix 1.

PROJECTED TOTAL WATER DEMAND ac-ft per year (2007 State Water Plan)

County Name	Category	2010	2020	2030	2040	2050	2060
CHILDRESS	IRRIGATION (all)	10,046	9,789	9,273	8,243	7,213	6,698
	Less Mesquite Dist @ 67%	3,315	3,230	3,060	2,720	2,380	2,210
CHILDRESS	LIVESTOCK	292	348	353	359	366	372
CHILDRESS	MANUFACTURING	0	0	0	0	0	0
CHILDRESS	MINING	17	16	16	16	16	16
CHILDRESS	MUNICIPAL	1,653	1,680	1,704	1,712	1,713	1,669
CHILDRESS	STEAM ELECTRIC	0	0	0	0	0	0
CHILDRESS Total		**5,277**	**5,274**	**5,133**	**4,807**	**4,475**	**4,267**
COTTLE	IRRIGATION	4,301	4,172	4,047	3,925	3,808	3,808
COTTLE	LIVESTOCK	387	387	387	387	387	387
COTTLE	MANUFACTURING	0	0	0	0	0	0
COTTLE	MINING	25	27	28	30	30	30
COTTLE	MUNICIPAL	395	376	353	329	310	301
COTTLE	STEAM ELECTRIC	0	0	0	0	0	0
COTTLE Total		**5,108**	**4,962**	**4,815**	**4,671**	**4,535**	**4,526**
FOARD	IRRIGATION	4,829	4,684	4,543	4,407	4,275	4,275
FOARD	LIVESTOCK	289	289	289	289	289	289
FOARD	MANUFACTURING	0	0	0	0	0	0
FOARD	MINING	24	24	25	26	27	27
FOARD	MUNICIPAL	393	378	362	343	330	313
FOARD	STEAM ELECTRIC	0	0	0	0	0	0
FOARD Total		**5,535**	**5,375**	**5,219**	**5,065**	**4,921**	**4,904**
HARDEMAN	IRRIGATION	4,849	4,704	4,563	4,426	4,293	4,293
HARDEMAN	LIVESTOCK	480	480	480	480	480	480
HARDEMAN	MANUFACTURING	374	398	424	452	480	480
HARDEMAN	MINING	3	3	2	2	2	2
HARDEMAN	MUNICIPAL	832	783	750	699	662	604
HARDEMAN	STEAM ELECTRIC	1,000	1,000	1,000	1,000	1,000	1,000
HARDEMAN Total		**7,538**	**7,368**	**7,219**	**7,059**	**6,917**	**6,859**
MOTLEY	IRRIGATION	8,894	8,628	8,372	8.121	7,877	7,641
MOTLEY	LIVESTOCK	636	647	659	671	684	698
MOTLEY	MANUFACTURING	6	6	6	6	6	6
MOTLEY	MINING	9	4	3	1	0	0
MOTLEY	MUNICIPAL	377	360	330	295	272	259
MOTLEY	STEAM ELECTRIC	0	0	0	0	0	0
MOTLEY Total		**9,922**	**9,645**	**9,370**	**9,094**	**8,839**	**8,604**
		2010	**2020**	**2030**	**2040**	**2050**	**2060**
GATEWAY GCD	TOTALS	33,380	32,624	31,756	30,696	29,687	29,160

NOTE: County Other Use included in Municipal Value

TOTAL DISTRICT GROUNDWATER SUPPLY AND USE

The Historic Groundwater Use, extracted from the TWDB Water use Survey, is shown in the Table below.

HISTORICAL GROUNDWATER USE BY CATEGORY, YEAR and COUNTY

County	Year	Municipal	Manufacturing	Irrigation	livestock	Total	District Total
Childress County total	2000	109		7890	28		
less Mesquite GCD	2000	0		5286	2		
NET - Gateway GCD	2000	109		2604	26	2739	
Cottle	2000	435		4201	50	4686	
Foard	2000	37		3889	28	3954	
Hardeman	2000	115		5330	192	5637	
Motley	2000	362	5	9159	41	9567	26583
Childress County total	2001	159		11404	26		
less Mesquite GCD	2001	0		7640	2		
NET - Gateway GCD	2001	159		3764	24	3947	
Cottle	2001	464		4369	49	4882	
Foard	2001	50		3981	30	4061	
Hardeman	2001	137		5541	204	5882	
Motley	2001	294	2	3837	42	4175	22947
Childress County total	2002	194		12498	26		
less Mesquite GCD	2002	0		8374	2		
NET - Gateway GCD	2002	194		4124	24	4342	
Cottle	2002	441		5136	49	5626	
Foard	2002	48		4965	29	5042	
Hardeman	2002	92		7687	187	7966	
Motley	2002	239	1	9175	41	9456	32432
Childress County total	2003	188		10168	35		
less Mesquite GCD	2003	0		6813	2		
NET - Gateway GCD	2003	188		3355	33	3576	
Cottle	2003	414		3569	52	4035	
Foard	2003	65		3636	32	3733	
Hardeman	2003	189		5126	184	5499	
Motley	2003	266	2	10234	36	10538	27381
Childress County total	2004	175		10681	35		
less Mesquite GCD	2004	0		7156	2		
NET - Gateway GCD	2004	175		3525	33	3733	
Cottle	2004	224		4548	50	4822	
Foard	2004	49		4351	34	4434	
Hardeman	2004	106		5451	184	5741	
Motley	2004	222	1	9943	37	10203	28933

District Annual Total Groundwater Used	2000	26583
	2001	22947
	2002	32432
	2003	27381
	2004	28933
Annual Average Use for 5 year period		27655

All values extracted from TWDB Water Use Survey

No mining or steam electric groundwater use was reported

Groundwater values in acre-feet
Mesquite GCD values for Childress County were taken from the Mesquite GCD Management Plan

MANAGED AVAILABLE GROUNDWATER

Managed available groundwater is defined in TWC Chapter 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 is determined through joint planning with other groundwater conservation districts in the same groundwater management area. Gateway GCD is in GMA 6. The desired future conditions for the Blaine, Dockum, Ogallala, and Seymour aquifers within the District were adopted July 22, 2010. The Managed Available Groundwater values have not been determined. When the Managed Available groundwater estimates are received from the TWDB, this plan will be amended to include them.

PROJECTED WATER SUPPLY NEEDS (2007 State water Plan)

Region A (Childress County): No Water Supply Needs were identified in the Region A Water Plan.

Region B (Cottle, Foard & Hardeman counties): No Water Supply Needs were identified in the Region B Water Plan.

Region O (Motley County): A shortage of 1025 ac-ft in for irrigation water in 2060 was identified in the Region O water plan and the 2007 State Water Plan.

WATER MANAGEMENT STRATEGIES

The Water Management Strategies in the table below were extracted from the 2007 State Water Plan.[1]

County	Strategy	2010	2020	2030	2040	2050	2060
Childress [2] (Region A)	Irrigation Conservation	265	335	404	474	543	593
Cottle, Foard, Hardeman (Region B)	There are no projected water shortages in these counties and no strategies were identified.	0	0	0	0	0	0
Motley (Region O)	Municipal Conservation	20	37	49	57	63	62
District Totals		285	372	453	531	606	655

Notes: 1. All data from 2007 State Water plan
2. Childress values = 33 % of county total
3. units = ac-ft

The District has estimated that 1/3 of the irrigation in Childress County is within the Gateway GCD. Therefore, the Childress values in the table reflect 33 percent of the Childress county values listed in the 2007 State Water Plan. The remaining Childress County irrigation use is located within the Mesquite Groundwater Conservation District.

MANAGEMENT OF GROUNDWATER SUPPLIES

This management plan has been adopted by the Board in accordance with Section 36.1071 of the Texas Water Code and will remain in effect for a period of five years unless modified by the Board prior to the end of the planning period. The District, in partnership with the landowners of the District, will manage the groundwater within the District in accordance with its mission and goals while seeking to maintain the economic viability of all resource user groups, public and private. The District will strive to identify and implement practices which will result in the sustainability of the groundwater resources within the District, including reductions of groundwater use where necessary to achieve that result.

The District will implement monitoring programs and collect any available information to increase our understanding of the groundwater resources and help determine any trends in groundwater availability and quality.

The District will have rules which may regulate groundwater withdrawals by means of production limits and fees, spacing regulations, and export fees and requirements. The District may deny a well construction permit or limit groundwater withdrawals in accordance with District rules. In making a determination to deny a permit or limit groundwater withdrawals or export, the District will weigh the public benefit against individual hardship after considering all appropriate testimony. However, the conservation and preservation of the groundwater resource is a major consideration in any such determination.

In pursuit of the District's mission of preserving and protecting the resource, the District will enforce the terms and conditions of permits and the rules of the District by enjoining the permit holder in a court of competent jurisdiction, as provided for in Texas Water Code Chapter 36.102, if necessary.

MANAGEMENT ISSUES

The total amount of water supply within the District remains greater than the projected water demands. The challenge for the District will be to protect and conserve the available water supply.

Even though the estimated sustainable use for the District is higher than the current use, conservation and avoidance of water wasteful practices will be a concern of the District. Localized areas of high irrigation use can exceed supply, especially in the Seymour aquifer. Permeability through the Seymour alluvium is variable and typically slow. Farmers report that their wells draw down during prolonged dry spells. Certain areas are more prone to well drawdown and pumping limitations than other areas nearby. There are some areas within the Seymour Aquifer that do not appear to be well connected hydraulically with other nearby areas. Proper management will be difficult in these areas. Avoidance of waste will help to maximize the sustainable benefits of the groundwater resource and will be a District goal.

Another challenge for the District will be to prevent degradation of the water quality in the aquifers. Primary concerns are

(1) Contamination of the Blaine and Seymour Aquifer water resulting from improperly plugged or capped abandoned wells, due to inflow from the surface or other water bearing strata.
(2) Increasing nitrate concentrations in the Seymour Aquifer due to leaching of nitrates from fertilizer, nitrogen fixing crops, or naturally occurring nitrogen.

Another management concern for the District is the operating expenses of the District. These aquifers have been used for many years without becoming depleted, without significant avoidable deterioration in water quality, and without serious conflicts between water users. If the District cannot provide positive benefits to the District's citizens, then we believe that we should spend a minimum of tax dollars in this effort. Litigation expenses are out of proportion to the economy and the life styles of the citizens and landowners of the District. We will not commit our citizens to these type expenses, and we are concerned that the State mandated management of these Groundwater Districts amounts to an unfunded State mandate, and we will not be an economic burden upon our own citizens.

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 guidelines for determining the direction or priority for all District activities. All operations of

the District, all agreements entered into by the District, and any additional planning efforts in which the District may participate will be consistent with the provisions of this plan.

The District has adopted District rules relating to the permitting of wells and the production of groundwater, a copy of the rules may be obtained on the District website at http://gatewaygroundwater.com.. The District rules shall be as required by the Water Code the provisions of this plan. All District rules will be enforced. The promulgation and enforcement of the District rules will be based on the best technical evidence available.

The District will treat all citizens equally. Citizens may apply to the District for a waiver in the enforcement of one or more of the District rules on the grounds of adverse economic effects or unique local conditions. In granting or denying any waiver to the District rules, the Board shall consider the potential for adverse effects on adjacent landowners. The exercise of discretion in granting or denying of any waiver by the Board shall not be construed as limiting the power of the Board.

In the implementation of this plan and in the management of groundwater resources within the District, the District will seek the cooperation of all residents, landowners, and well owners of the District. All activities of the District will be undertaken in cooperation and coordination with any appropriate state, regional, or local water management entity.

MANAGEMENT GOALS AND PERFORMANCE STANDARDS

METHODOLOGY FOR TRACKING: the progress in achieving management goals will be addressed by providing an annual report to the Board of Directors.

1. GOAL: To gather and publicize the necessary information to enable the District to promote water conservation. To initiate collection of information through monitoring and assembling existing information and create a data base to help define existing conditions of the aquifers, concerning water availability and quality; and to provide a base line to help determine any future trends in water use, water level drawdown, and water quality.

1.1 MANAGEMENT OBJECTIVE: Construct comprehensive maps of the District showing all major permitted wells. Information on the wells including well logs will be keyed to map locations. Obtain and include other available information on wells in the District from the Texas Water Development Board and other water resource agencies.

1.1.1. PERFORMANCE STANDARDS: Report annually to the Board on the progress of the maps and data base, the number of requests for information, and the usefulness of the information on the maps and data base.

1.2 MANAGEMENT OBJECTIVE: Install four flow meters on selected irrigation wells in the District, install a rain gage, and establish an observation well for monitoring representative irrigation well water use in relationship to water use,

rainfall, and static water levels.

1.2.1. PERFORMANCE STANDARD: Installation within one year after the adoption of this plan.

1.3 MANAGEMENT OBJECTIVE: Collect well log and location of new wells drilled within the District. Construct a data base with the available well information which includes a District map with major irrigation wells located.

1.3.1. PERFORMANCE STANDARD: Report annually to the Board on the progress of the District map and the available data.

1.4. MANAGEMENT OBJECTIVE: Analyze information as necessary to recognize harmful trends and management concerns, including the relationship between drought and water availability.

1.4.1. PERFORMANCE STANDARDS: Timely identification and attention to problems and concerns as they arise.

1. GOAL: To prevent waste and to assure the sustainability of the beneficial uses in the District.

2.1 MANAGEMENT OBJECTIVE: Review District rules as necessary to evaluate their applicability to preventing problems such as water table drawdown, interference between wells, and degradation of water quality.

2.1.1. PERFORMANCE STANDARDS: Review District rules at least once per year and report to the District Board incidences of complaints and problems concerning overuse, water waste, interference between wells, water quality problems and other problems.

2.1.2. PERFORMANCE STANDARD: Post available information on the District's Web Site at least once per year promoting the efficient uses and avoidance of waste of groundwater.

3. GOAL: To implement management strategies to promote most efficient uses of groundwater.

3.1. MANAGEMENT OBJECTIVE: To encourage and help farmers in the District to convert their irrigation systems to more efficient systems by assistance through Federal cost share programs such as EQIP.

3.1.1 PERFORMANCE STANDARD: Post information on the District's Web Site at least once per year containing information about assistance available to farmers in the District to improve the efficiency of their irrigation systems.

4. GOAL: Implement management strategies to prevent and protect against degradation of groundwater quality.

4.1. MANAGEMENT OBJECTIVE: Enforce District rules concerning capping and plugging of abandoned wells, and other actions as necessary to protect the quality of the groundwater in the District.

4.1.1 PERFORMANCE STANDARD: Report to the Board on the number of complaints, reports, and actions taken concerning groundwater quality.

4.2. MANAGEMENT OBJECTIVE: Disseminate information concerning the requirements and recommended practices to prevent the contamination of groundwater.

4.2.1. PERFORMANCE STANDARD: Post information on the District's Web Site at least once per year concerning the prevention of contamination of groundwater.

5. GOAL: To implement management strategies to promote the additional beneficial and economic uses of groundwater in the District.

5.1. MANAGEMENT OBJECTIVE: Disseminate information from the A&M University system, Texas Water Development Board, and other sources to promote the additional beneficial and economic uses of groundwater in the District.

5.1.1 PERFORMANCE STANDARD: Post available information on the District's Web Site concerning the additional beneficial and economic uses of groundwater.

6. GOAL: Encourage stretching of high quality surface water through conjunctive use with lower quality groundwater.

6.1. MANAGEMENT OBJECTIVE: Support and assist efforts to implement conjunctive surface water and groundwater projects within the District, providing that such projects are consistent with District goals. (Lake Pauline may be a good possibility)

6.1.1 PERFORMANCE STANDARD: Attend at least one meeting per year of the Red River Water Authority of Texas and the Greenbelt Municipal and Industrial Water Authority.

7. Goal: Address Natural Resource issues that impact the use and availability of groundwater and which are impacted by the use of groundwater.

7.1 .MANAGEMENT OBJECTIVE: Assist wildlife and conservation groups, by providing groundwater use estimates and other District information that may be useful in determining the effects of increased groundwater use on spring flow

and other natural resources.

7.1.1 PERFORMANCE STANDARD: Attend at least once per year a meeting of a natural resource conservation association.

8. GOAL: Provide service to citizens when possible and promote citizen participation in the activities of the District.

8.1. MANAGEMENT OBJECTIVE: Coordinate District activities with stakeholders within the District, and help landowners as requested, if requests are consistent with District goals.

8.1.1. PERFORMANCE STANDARD: Attend at least once per year a meeting of a Citizens group such as the Lions Club, Rotary Club, Chamber of Commerce, Farm Bureau, or a wildlife association and give a presentation of the activities of the District.

9. GOAL: Provide information to assist with drought preparedness.

9.1 MANAGEMENT OBJECTIVE: Provide Drought Severity information.

9.1.1. PERFORMANCE STANDARD: Post the Palmer Drought severity index value on the District Web Site bi-monthly.

10. GOAL: Support Brush Control

10.1 MANAGEMENT OBJECTIVE: Support the NRCS Brush Control conferences and workshops.

10. 1.1 PERFORMANCE STANDARD: At least once per year attend the NRCS Brush Control conference.

11. GOAL: Rainwater Harvesting

11.1 MANAGEMENT OBJECTIVE: Develop a project implementation plan to demonstrate the feasibility of rainwater harvesting. The plan will be reviewed for effectiveness and needed updates annually.

11.1.1 PERFORMANCE STANDARD: A report summarizing the findings of the annual review of the District rainwater harvesting feasibility plan will be included in the District annual report.

12. GOAL: MONITOR DESIRED FUTURE CONDITION STATUS

12.1 MANAGEMENT OBJECTIVE: The District will annually measure water levels in at least one monitoring well in Seymour Aquifer Pod 3; at least one monitoring well in

each of the counties in Seymour Aquifer Pod 4; at least one monitoring well in the Ogallala/Dockum area of Motley County, and at least one monitoring well in each of the counties in the Blaine Aquifer.

12.1.1 PERFORMANCE STANDARD: The District will construct water level tracking charts using the annual water level measurements, prepare annual water level trend analysis, compare the trend results to the desired future conditions of each aquifer subdivision, and provide the results in the District Annual report.

SB-1 MANAGEMENT GOALS DETERMINED NOT APPLICABLE

The following goals, although mandated to be addressed, have been determined not to apply to the Gateway Groundwater Conservation District for the reasons stated below.

1.0 Control and prevention of subsidence.

Subsidence in the District is caused by groundwater dissolving the gypsum commonly found in the Blaine formation, forming local sinkholes. There are no available measures to prevent groundwater from dissolving gypsum, so this goal is not applicable.

2.0 Addressing Precipitation Enhancement.

Presently not cost effective, so it is not applicable.

3.0 Addressing Recharge Enhancement

Not applicable due to limitations of topography and soil conditions.

APPROVAL AND ADOPTION

Be it resolved that the Board of Directors of the Gateway Groundwater Conservation District does hereby approve and adopt this Groundwater Management Plan in open meeting on April XX, 2010.

_____	_____
President	Member
_____	_____
Vice-President	Member
_____	_____
Secretary	Member
_____	_____
Member	Member
_____	_____
Member	Member

APPENDIX 1

PROJECTED SURFACE WATER SUPPLY
INFORMATION

from the

2007 STATE WATER PLAN

2007 State Water Plan
Projected Surface Water Supplies
Gateway GCD
Groundwater Conservation District-Specific Data

Childress County[1]

RWPG	Water User Group	County	River Basin	Source Name	2010	2020	2030	2040	2050	2060
A	Childress	Childress	Red	Greenbelt Lake/Reservoir	1,457	1,481	1,502	1,509	1,510	1,471
A	**County Other[1]**	Childress	Red	Greenbelt Lake/Reservoir	**184**	**187**	**190**	**191**	**191**	**186**
A	**Irrigation[1]**	Childress	Red	Red River Run-of-River Irrigation	**26**	**26**	**26**	**26**	**26**	**26**
A	**Livestock[1]**	Childress	Red	Livestock Local Supply	**282**	**282**	**282**	**282**	**282**	**282**
A	**Mining[1]**	Childress	Red	Other Local Supply	**20**	**20**	**20**	**20**	**20**	**20**
Total Projected Surface Water Supplies (acre-feet per year) =					**1,969**	**1,996**	**2,020**	**2,028**	**2,029**	**1,985**

Source: Volume 3, 2007 State Water Planning Database
(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

1/5/2010

1. Values apportioned 94% of county value to Gateway GCD and 6% to Mesquite GCD

Cottle County[2]

RWPG	Water User Group	County	River Basin	Source Name	2010	2020	2030	2040	2050	2060
B	Irrigation	Cottle	Red	Red River Combined Run-of-River Irrigation	11	11	11	11	11	11
B	Livestock	Cottle	Red	Livestock Local Supply	449	449	449	449	449	449
Total Projected Surface Water Supplies (acre-feet per year) =					**460**	**460**	**460**	**460**	**460**	**460**

Source: Volume 3, 2007 State Water Planning Database (http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

1/5/2010

[2] Since the District includes all of Cottle County no data apportionment is necessary. Total county-wide data are sufficient.

Foard County[3]

RWPG	Water User Group	Cnty	River Basin	Source Name	2010	2020	2030	2040	2050	2060
B	Crowell	Foard	Red	Greenbelt Lake/Reservoir	332	317	302	289	280	269
B	County Other	Foard	Red	Greenbelt Lake/Reservoir	68	68	68	68	68	68
B	Livestock	Foard	Red	Livestock Local Supply	251	251	251	251	251	251
Total Projected Surface Water Supplies (acre-feet per year) =					**651**	**636**	**621**	**608**	**599**	**588**

Source: Volume 3, 2007 State Water Planning Database (http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

1/5/2010

[3] Since the District includes all of Foard County no data apportionment is necessary. Total county-wide data are sufficient.

Hardeman County[4]

RWPG	Water User Group	County	River Basin	Source Name	2010	2020	2030	2040	2050	2060
B	Chillicothe	Hardeman	Red	Greenbelt Lake/Reservoir	61	55	53	51	50	49
B	Quanah	Hardeman	Red	Greenbelt Lake/Reservoir	652	612	589	544	511	463
B	County Other	Hardeman	Red	Greenbelt Lake/Reservoir	210	210	210	210	210	210
B	Irrigation	Hardeman	Red	Red River Combined Run-of-River Irrigation	116	116	116	116	116	116
B	Livestock	Hardeman	Red	Livestock Local Supply	288	288	288	288	288	288
B	Manufacturing	Hardeman	Red	Greenbelt Lake/Reservoir	449	478	509	542	576	576
B	Mining	Hardeman	Red	Other Local Supply	7	7	7	7	7	7
B	Steam Electric Power	Hardeman	Red	Pauline/Groesbeck Lake/ Reservoir	1,284	1,284	1,284	1,284	1,284	1,284
Total Projected Surface Water Supplies (acre-feet per year) =					**3,067**	**3,050**	**3,056**	**3,042**	**3,042**	**2,993**

Source: Volume 3, 2007 State Water Planning Database 1/5/2010
(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

[4] Since the District includes all of Hardeman County no data apportionment is necessary. Total county-wide data are sufficient.

Motley County[5]

RWPG	Water User Group	County	River Basin	Source Name	2010	2020	2030	2040	2050	2060
O	Livestock	Motley	Red	Livestock Local Supply	636	647	659	671	684	698
Total Projected Surface Water Supplies (acre-feet per year) =					**636**	**647**	**659**	**671**	**684**	**698**

Source: Volume 3, 2007 State Water Planning Database 1/22/2010
(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

[5] Since the District includes all of Motley County no data apportionment is necessary. Total county-wide data are sufficient.