Post Oak Savannah Groundwater Conservation District



Milano, Texas 76556

Phone: 512-455-9900 Fax: 512-455-9909

Email: posgcd@tconline.net Website: www.posgcd.org

Gary Westbrook, General Manager

August 12, 2010

Mr. J. Kevin Ward, Executive Administrator Texas Water Development Board P.O. Box 13231 Austin, Texas 78711-3231

Sent via U.S. Mail Certified # 7009 3410 0000 9242 3156

Dear Mr. War

On behalf of the Groundwater Conservation Districts (GCDs) of Groundwater Management Area 12 (GMA 12), I am pleased to submit the enclosed packet of required information concerning formal adoption of GMA 12 Desired Future Conditions (DFCs) which took place at an appropriately noticed and posted meeting of the GCDs of GMA 12 on August 11, 2010. This packet contains all of the information as required by Chapter 36, Texas Water Code, and the Texas Water Development Board (TWDB) checklist as provided in TWDB's publication, "How to Submit Desired Future Conditions to the Texas Water Development Board."

I will also serve as contact for GMA 12 for this purpose. Should you have any questions or require additional information, please do not hesitate to contact me at the address listed above.

Sincerely,

Gary Westbrook

General Manager

Post Oak Savannah GCD

RESOLUTION TO ADOPT DESIRED FUTURE CONDITIONS

FOR AQUIFER(S) IN GROUNDWATER MANAGEMENT AREA 12

THE STATE OF TEXAS	§
GROUNDWATER MANAGEMENT AREA 12	§ §
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GROUNDWATER CONSERVATION DISTRICTS	8

WHEREAS, Texas Water Code § 36.108 requires the groundwater conservation districts located in whole or in part in a groundwater management area ("GMA") designated by the Texas Water Development Board to adopt desired future conditions for the relevant aquifers located within the management area;

WHEREAS, the groundwater conservation districts located wholly or partially within Groundwater Management Area 12 ("GMA 12"), as designated by the Texas Water Development Board, as of the date of this resolution are as follows: Mid-East Texas Groundwater Conservation District, Brazos Valley Groundwater Conservation District, Post Oak Savannah Groundwater Conservation District, Lost Pines Groundwater Conservation District, and Fayette County Groundwater Conservation District (collectively hereinafter "the GMA 12 Districts");

WHEREAS, the GMA 12 Districts are each governmental agencies and bodies politic and corporate operating under Chapter 36, Water Code;

WHEREAS, the GMA 12 Districts desire to fulfill the requirements of Texas Water Code § 36.108 through mutual cooperation and joint planning efforts;

WHEREAS, the GMA 12 Districts have had numerous public meetings, including a Stakeholder meeting for the specific purpose of receiving comments and input from stakeholders within GMA 12, at which they have engaged in joint planning efforts to promote more comprehensive management of the aquifers located in whole or in part in Groundwater Management Area 12;

WHEREAS, the GMA 12 Districts may establish different desired future conditions for: (1) each aquifer, subdivision of an aquifer, or geologic strata located in whole or in part within the boundaries of GMA 12; or (2) each geographic area overlying an aquifer in whole or in part or subdivision of an aquifer within the boundaries of GMA 12;

WHEREAS, the GMA 12 Districts recognize that GMA 12 includes a geographically and hydrologically diverse area with a variety of land uses and a diverse mix of water users;

WHEREAS, the GMA 12 Districts have considered the relevant aquifers, subdivisions thereof, and geologic strata located in whole or in part within the boundaries of GMA 12, and

WHEREAS, in establishing these desired future conditions for the aquifer(s) set forth under Appendix B, the GMA 12 Districts have considered all of the criteria required by Chapter 36 of the Texas Water Code and other information, including without limitation groundwater availability models and runs of those models to determine the effects of various conditions and parameters, hydrogeologic reports available for the relevant aquifers, and other technical data and information;

WHEREAS, many of the groundwater availability models, runs, hydrogeologic reports, and other technical data and information considered and determined to be reliable sources of information by the GMA 12 Districts in establishing these desired future conditions for the aquifer(s) have been attached hereto or referenced in the documents attached hereto under Appendix B;

WHEREAS, in establishing these desired future conditions for the aquifer(s) set forth under Appendix B, the GMA 12 Districts have considered the uses and conditions of the aquifer(s) in different geographic areas within GMA 12 and what the effects and impacts of adopting such desired future conditions will have upon the condition of the aquifer(s) and the uses and users of groundwater from the aquifer(s) both now and in the future;

WHEREAS, after considering such anticipated effects and impacts these desired future conditions will have on the aquifer(s), uses, and users of groundwater, and considering all of the other criteria required by Chapter 36 of the Texas Water Code, including without limitation the groundwater resource management duties and responsibilities of the GMA 12 Districts individually and collectively, the GMA 12 Districts have determined that the desired future conditions for the aquifer(s) set forth under Appendix B are reasonable;

NOW, THEREFORE, BE IT RESOLVED BY THE AUTHORIZED VOTING REPRESENTATIVES OF THE GMA 12 DISTRICTS AS FOLLOWS:

- 1. The above recitals are true and correct.
- 2. The authorized voting representatives of the GMA 12 Districts hereby establish the desired future conditions of the aquifer(s) as set forth in Appendix B by the vote reflected in the above recitals.
- 3. The GMA 12 Districts and their agents and representatives, individually and collectively, are further authorized to take any and all actions necessary to implement this resolution.
- 4. The desired future conditions of the aquifer(s) adopted by the GMA 12 Districts and attached hereto shall be effective immediately and shall continue in effect until amended, superseded, or repealed.

have further considered the hydrogeologic characteristics of the same, as well as the various uses and users of groundwater produced from such aquifers, subdivisions, and strata;

WHEREAS, GMA 12 Districts held a meeting, which was open to the public, at 10:00 a.m. on Wednesday, August 11, 2010, in the Milano Community and Civic Center located at 120 West Avenue E, Milano, Texas;

WHEREAS, notice of said August 11, 2010, meeting was properly given by each and all of the GMA 12 Districts in accordance with Chapter 36, Water Code, and Chapter 551, Government Code, and a true and correct copy of each of the notices has been attached hereto in Appendix A and is incorporated herein for all purposes;

WHEREAS, at least two-thirds of the GMA 12 Districts had a voting representative in attendance at said August 11, 2010, meeting in accordance with Section 36.108, Texas Water Code; to wit, the following districts had a voting representative in attendance at said meeting: Mid-East Texas Groundwater Conservation District, Brazos Valley Groundwater Conservation District, Post Oak Savannah Groundwater Conservation District, Lost Pines Groundwater Conservation District, and Fayette County Groundwater Conservation District;

WHEREAS, it is the intent and purpose of the GMA 12 Districts by adoption of this resolution to fulfill the requirements of Texas Water Code § 36.108, including establishing "desired future conditions for the relevant aquifers" within GMA 12 for the specific aquifer(s) and desired future conditions described under "Appendix B" attached hereto and incorporated herein for all purposes;

WHEREAS, at said August 11, 2010, meeting, after a motion was duly made and seconded that the GMA 12 Districts adopt this resolution establishing desired future conditions for the aquifer(s) described under "Appendix B", the motion prevailed by the following vote:

5 Ayes, 0 Nays; Hooper 5 Ayes, 0 Nays; Simsboro 5 Ayes, 0 Nays; Carrizo 5 Ayes, 0 Nays; Calvert Bluff 5 Ayes, 0 Nays; **Queen City** 5 Ayes, 0 Nays; Sparta 5 Ayes, 0 Nays; Yegua-Jackson 5 Ayes, 0 Nays; Brazos Alluvium

AND IT IS SO ORDERED. PASSED AND ADOPTED on this 11th day of August, 2010. ATTEST:

Fayette County Groundwater Conservation District

Mid-East Texas Groundwater Conservation District

Brazos Valley Groundwater Conservation District

Lost Pines Groundwater Conservation District

Post Oak Savannah Groundwater Conservation District

ATTACHMENTS

Appendix A: Copies of notices of August 11, 2010, meeting

Appendix B: Adopted Desired Future Conditions and supporting information

APPENDIX B GMA 12 DESIRED FUTURE CONDITIONS August 11, 2010

Sparta, Queen City, Carrizo, Calvert Bluff, Simsboro, Hooper Aquifers

GMA 12 member Groundwater Conservation Districts (GCDs) submitted Desired Future Conditions (DFCs) as average drawdowns that occur between January 2000 and December 2059. Table B-1 lists the final set of DFCs submitted by each district for the Sparta, Queen City, Carrizo, Calvert Bluff, Simsboro, and Hooper Aquifers.

Table B-1. Adopted Desired Future Conditions for GMA 12

Groundwater Conservation	Average Aquifer Drawdown (Ft) Measured From January 2000 To December 2059					
District or County	SPARTA	QUEEN CITY	CARRIZO	CALVERT BLUFF	SIMSBORO	HOOPER
BRAZOS VALLEY	15	12	47	106	270	170
FAYETTE COUNTY	60	60	60	-	-	-
LOST PINES	7	13	47	99	237	129
MID-EAST TEXAS	0	0	55	70	115	95
POST OAK SAVANNAH	30	30	65	140	300	180
FALLS COUNTY	-	-	-	-	0	20
LIMESTONE COUNTY	-	-	-	9	43	40
NAVARRO COUNTY	-	-	-	0	1	1
WILLIAMSON COUNTY				-10	50	55

GMA 12 predicted future drawdown by using version 2.2 of the Central Queen City and Sparta GAM (Kelley and others, 2004). One reason that GMA 12 performed predictive simulations was to demonstrate that the DFCs are compatible and physically possible. Table B-2 presents average drawdowns simulated using the GAM and a MODFLOW pumping file created by GMA 12 (called Run GAM12_7B). The pumping file for Run GAM12_7B was submitted to the TWDB under a separate cover.

Table B-2. Calculated Average Drawdowns Based from a Predicted Simulation Using the Central Queen City and Sparta GAM and Pumping File Run GAM_7B

Groundwater Conservation District or	Average Drawdown (ft) in Each Aquifer Calculated from the Start of Year 2000 to the Start of Year 2060					
County	SPARTA	QUEEN CITY	CARRIZO	CALVERT BLUFF	SIMSBORO	HOOPER
BRAZOS VALLEY	14	12	48	109	271	177
FAYETTE COUNTY	59	58	59	126	220	172
LOST PINES	4	13	47	94	236	133
MID-EAST TEXAS	0	-3	53	67	114	96

POST OAK SAVANNAH	28	28	61	137	298	178
FALLS COUNTY	-	-	-	-	-1	20
LIMESTONE COUNTY	-	-	-	9	43	40
NAVARRO COUNTY	-	-	-	-1	1	1
WILLIAMSON COUNTY	-		-	-11	47	56

Based on the principle of using the GAM as a joint planning tool and the fact that the GAM predictions contain uncertainty, GMA 12 considered the DFCs to be compatible and physically possible if the difference between modeled drawdown results for model Run 12_7B and the DFC drawdown targets were within 5 feet or 5 percent of the DFC drawdown targets. Factors considered for determining tolerance criteria include:

- model calibration results and statistics,
- information used to calibrate the GAM,
- aquifer and recharge information collected since the GAM was developed,
- sensitivity of the GAM calibration and GAM predictions to changes in the model parameters, and
- range of uncertainty in the model parameters including historical and future pumping, and temporal variation in recharge distribution and magnitude.

Reference:

Kelley, V. A., Deeds, N. E., Fryar, D. G., and Nicot, J-P, 2004. Groundwater Availability Models for the Queen City and Sparta Aquifers, prepared for the Texas Water Development Board. Austin, Texas

Yegua-Jackson Aquifer

GMA-12 adopted DFCs for its member districts based on the average aquifer drawdown (ft) from January 2000 or January 2010 to January 2060. All GCDs except Brazos Valley GCD considered the Jackson Aquifer and Yegua Aquifer as a single unit. Therefore a single DFC was adopted for the Yegua-Jackson Aquifer. Brazos Valley GCD adopted separate DFCs for the Jackson Aquifer and the the Yegua Aquifer. Table B-3 lists the final set of DFCs submitted by each district. Lost Pines GCD did not submit a DFC for the Yegua-Jackson Aquifer because the district declared it as a non-relevant aquifer.

Table B-3. Adopted Desired Future Conditions for GMA 12 for the Yegua and Jackson Aquifers

District	Aquifer(s)	Time Period	Average Aquifer Drawdown (ft)
DD 4700 VALLEY	Yegua	2010 += 2060	70
BRAZOS VALLEY	Jackson	2010 to 2060	110
FAYETTE COUNTY	Yegua-Jackson	2010 to 2060	75
LOST PINES	Yegua-Jackson	-	declared as non-relevant
MID-EAST TEXAS	Yegua-Jackson	2000 to 2060	0
POST OAK SAVANNAH	Yegua-Jackson	2010 to 2060	100

Brazos Alluvium Aquifer

In the GMA-12, the Brazos Alluvium Aquifer is lies within two GCDs in GMA 12: the Post Oak Savannah GCD and the Brazos Valley GCD. GMA-12 adopted DFCs for Post Oak Savannah as listed in Table B-4. GMA-12 agreed to delay adoption of a DFC for BVGCD pending results from additional studies of that aquifer.

Table B-4. Adopted Desired Future Conditions for GMA 12 for the Brazos Alluvium
Aquifer in POSGCD

County	DFC Statement
Milam County	A decrease of 5 ft in the average saturated thickness over the period from 2010 to 2060. The baseline average saturated thickness for 2010 is estimated at 24.5 feet and is based on an analysis of historical water level data and well depth values
Burleson County	A decrease of 6 ft in the average saturated thickness over the period from 2010 to 2060. The baseline average saturated thickness for 2010 is estimated at 38.5 feet and is based on an analysis of historical water level data and well depth values

August 11, 2010 – 10:30 a.m. Milano Community and Civic Center 120 West Ave. E Milano, Texas

AGENDA

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- 4. Agenda items for future meetings
- 5. Date, Time, and Place for next meeting
- 6. Public Comment
- 7. Adjourn

Signed this 22nd day of July, 2010.

Elaine Gerren, Administrative Assistant, POSGCD

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Elaine Gerren, Administrative Assistant, POSGCD

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Elaine Gerren, Administrative Assistant, POSGCD

At 7:407

County Clark, Milam County. Texas

Deputy

August 11, 2010 – 10:00 a.m.

Milano Community and Civic Center

120 West Ave. E

Milano, Texas

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Elaine Gerren, Administrative Assistant, POSGCD

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- 5. Adjourn

Signed this 26th day of August, 2010.

David M. Bailey, General Manager

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Mid-East Texas GCD

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MARIY LYNN WHITE Clerk County, County, Transcounty, Trans

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Mid-East Texas GCD

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David M. Bailey, General Manager of

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Elaine Gerren, Administrative Assistant, POSGCD

POST OAK SAVANNAH GROUNDWATER CONSERVATION DISTRICT Groundwater Management Area 12 Meeting

Milano Community and Civic Center 120 West Avenue E Milano, Texas 76556 August 11, 2010 – 10:00 a.m.

MINUTES

Name Entity

Please see attached or included list of attendees

1. Welcome and introductions

Nathan Ausley with the Post Oak Savannah GCD, serving as chair person, opened the meeting at 10:05 a.m. and invited those seated at the head table to introduce themselves, and reminded all who were in attendance to sign the sign-in sheet at the from door.

2. Minutes of May 26, 2010 GMA 12 Second Meeting

Nathan Ausley moved to approve the minutes from the May 26, 2010 Second Meeting. The motion was 2nd by David Van Dresar. The motion carried unanimously.

- 3. Presentation of proposed desired future conditions (DFCs) and amendments to previously adopted DFCs, for aquifers and formations in GMA 12 and amendments to previous submissions of DFCs for GMA 12 to Texas Water Development Board
 - a. Brazos Valley GCD- Wayne Wilson presented an updated list of DFCs for BVGCD which was amended from the document previously presented on May 26, 2010. A copy of that document is attached to, and included in, these minutes. The DFCs for BVGCD are expressed as an average drawdown across the District for the period through the year 2060 when compared to the year 2000 average hydraulic head and are as follows: Sparta 15 feet, Queen City 12 feet, Carrizo 47 feet, Calvert Bluff 106 feet, Simsboro 270 feet, and Hooper 170 feet, while adding Jackson 70 feet, Yegua 110 feet, and noted that the DFCs for BVGCD Yegua and Jackson formations are expressed as an average drawdown across the District for the period through the year 2060 when compared to the year 2010 average hydraulic head.
 - b. Fayette County GCD- David Van Dresar presented a list of DFCs for FCGCD. A copy of FCGCD's document is attached to, and included in, these minutes. The Preliminary DFCs for FCGCD are expressed as an average drawdown across the District for the period through the year 2060 when compared to the year 2000 average hydraulic head and are as follows: Sparta 60 feet, Queen City 60 feet, Carrizo 60 feet, Yegua-Jackson 75, and noted that the DFCs for FCGCD Yegua-Jackson formations are expressed as an average drawdown across the District for the period through the year 2060 when compared to the year 2010 average hydraulic head.

- c. Lost Pines GCD- Joe Cooper presented an updated list of DFCs for LPGCD which was amended from the document previously presented on May 26, 2010. A copy of that document is attached to, and included in, these minutes. The Preliminary DFCs for LPGCD are expressed as an average drawdown across the District for the period through the year 2060 when compared to the year 2000 average hydraulic head and are as follows: Sparta 7 feet from 10 feet previously, Queen City 13 feet, Carrizo 47 feet, Simsboro 237 feet, Calvert Bluff 99 feet, and Hooper 129 feet. Yegua Jackson is not relevant.
- d. Mid-East Texas GCD- David Bailey presented an updated list of DFCs for METGCD which was amended from the document previously presented on May 26, 2010. A copy of that document is attached to, and included in, these minutes. The DFCs for METGCD are expressed as an average drawdown across the District for the period through the year 2060 when compared to the year 2000 average hydraulic head and remain as follows: Sparta 0 feet, Queen City 0 feet, Carrizo 55 feet, Simsboro 115 feet, Calvert Bluff 70 feet, and Hooper 95 feet, adding Yegua Jackson 0 feet.
- e. Post Oak Savannah GCD- Gary Westbrook noted that POSGCDs DFCs have had minor amendments since the May 26, 2010 GMA 12 meeting. A copy of POSGCD's document is attached to, and included in, these minutes. The Preliminary DFCs for POSGCD are expressed as an average drawdown across the District for the period through the year 2060 when compared to the year 2000 average hydraulic head and are as follows: Sparta 30 feet, Queen City 30 feet from 40 feet, Carrizo 65 feet from 70 feet, Simsboro 300 feet, Calvert Bluff 140 feet from 150 feet, and Hooper 180 feet, while adding Yegua Jackson 100 feet, and noted that the DFCs for POSGCD Yegua-Jackson formations are expressed as an average drawdown across the District for the period through the year 2060 when compared to the year 2010 average hydraulic head, and Brazos Alluvium as addressed in Table B-4 of Appendix B of August 11, 2010.
- f. DFCs for counties in GMA 12 not included in a GCD- Based on model results of GAM 12_7B resulting impacts are as follows for these counties:

Falls- Simsboro 0 feet, Hooper 20 feet Limestone- Calvert Bluff 9 feet, Simsboro 43 feet, Hooper 40 feet Navarro- Calvert Bluff 0 feet, Simsboro 1 foot, Hooper 1 foot Williamson- Calvert Bluff -10 feet, Simsboro 50 feet, Hooper 55 feet

Gary Westbrook recapped the process leading up to this meeting concerning the need for clarification from TWDB as it applies to the adopted DFCs, and read the recommended additional tolerance statement to be added to the DFC submission for GMA 12.

4. Public hearing and possible action to adopt desired future conditions (DFCs) and amendments to previously adopted DFCs, for aquifers and formations in GMA 12 and amendments to previous submissions of DFCs for GMA 12 to Texas Water Development Board.

Chairman Nathan Ausley opened the public hearing and invited comments on the proposed desired future conditions of GMA 12.

Steve Box of Environmental Defense presented a resolution of recommended language to include in adoptions of DFCs for GMA 12, and encouraged GMA 12 to consider the resolution.

Steve Young reminded all that there are current studies in environmental flows in the state and that as these studies progress GMA 12 can consider them at an appropriate time.

Nathan Ausley asked for further comments or presentations during the hearing. No one responded or came forward.

Nathan Ausley closed the Public Hearing.

Nathan Ausley recessed the meeting at 10:42 am.

Nathan Ausley resumed the meeting at 11:12 and moved back into item 4.

Nathan Ausley introduced a summary document for the voting members to consider entitled Appendix B and noted corrections.

Wayne Wilson moved to approve Appendix B and the Resolution as amended and corrected to adopt amended DFCs as presented by the GCDs in GMA 12 as the DFCs for GMA 12. Joe Cooper seconded that motion. The motion passed unanimously.

5. Adjourn

The meeting adjourned at 11:18 a.m.

THE ABOVE MINUTES OF THE MEETING OF GROUNDWATER MANAGEMENT AREA 12 HELD ON AUGUST 11, 2010 WERE APPROVED AND ADOPTED BY GMA 12 AT A MEETING LATER ON AUGUST 11, 2010

ATTEST:	
Sil M. Saile	
Mid-East Texas Groundwater Conservation District	
Dala. Van Pan	
Fayette County Groundwater Conservation District	

Wape Aulson
Brazos Valley Groundwater Conservation District

Jul Day

Lost Pines Groundwater Conservation District

Post Oak Savannah Groundwater Conservation District

ATTACHMENTS

Appendix A: Copies of notices of May 26, 2010, meeting

Appendix B: Adopted Desired Future Conditions and supporting information

Groundwater Management Area 12

Board Meeting

Milano Community Center 120 West Avenue E Milano, TX

August 11, 2010

PLEASE PRINT YOUR NAME

NAME	ORGANIZATION
Gary Westbrook	Post-Oak Savannah GCI
Elaine Gerren	· · · · · · · · · · · · · · · · · · ·
Nothan Ausley	
Drew Gholson	((
Steve Young	InterA
James Beach	LBG-Guyton
STEFAN SOHUSTOR	DBS &A
James Miller	City of Bastray
Matt Uliana	METGCS
John Seifort	LB6-buylon Assoc
	FaxeTte Co SuA
DAVID A. VAI Dags	L FAYETTE CONSTY GCD.

Groundwater Management Area 12

Board MeetingMilano Community Center 120 West Avenue E Milano, TX

August 11, 2010

PLEA	SE PRINT YOUR NAME
NAME	ORGANIZATION
ALICE DARNELL	LPGCD
Kaith HANSBERGER	LPGCD
Robert Bradly	TWDB
•	lost ping groud Water District
TRAVIS MEPHAUL	L PGCD
RAUPH CRUM	BUGCD
STEVE BUX	Environmental Stewardship
Davin Bailey	METGCO
JACKIE Scott	BRA
Bob Kier	RSKC/LPGCO
Chad Morris	[PWD]
Jannifer Walker	Sieva Olub

Groundwater Management Area 12

Board Meeting

Milano Community Center 120 West Avenue E Milano, TX August 11, 2010

PLEASE PRINT YOUR NAME

	SETRICT TOOK WILL
NAME	ORGANIZATION
MIKE BROWN	Rockdale Reporter
Scott Carkon	Metapolita Water Co. La
DAVID COLEMAN	City of College Station
STEVE BEACHY	Brazos Volley GCD
John Burle	Agua
WayneWilson	Brazes Valley GCD
Joe Cooper	LPGCD

GMA-12 Meeting August 10, 2010 Milano Community and Civic Center

<u>Post Oak Savannah GCD Desired Future Conditions for Brazos Alluvium Aquifer and Yegua-</u> Jackson Aquifer

On May 11, the POSGCD DFC committee recommended and the POSGCD board subsequently adopted DFCs for the Yegua-Jackson aquifer and the Brazos Alluvium Aquifer.

Brazos Alluvium Aquifer

For Milam County, the DFC is a decrease of 5 ft in the average saturated thickness over the period from 2010 to 2060. The baseline average saturated thickness for 2010 is estimated at 24.5 feet and is based on an analysis of historical water level data and well depth values.

For Burleson County, the DFC is a decrease of 6 ft in the average saturated thickness over the period from 2010 to 2060. The baseline average saturated thickness for 2010 is estimated at 38.5 feet and is based on an analysis of historical water level data and well depth values.

Yegua-Jackson Aquifer

For Burleson County, the preliminary DFC is an average drawdown of 100 feet over the period of 2010 to 2060.

Deeds, N. E., Yan, T, Singh, A, Jones, T. J., Kelley, V.A., Knox, P. R., and Young, S.C., 2010. Final Report Groundwater Availability Model for the Yegua-Jackson Aquifer, prepared by INTERA Incorporated, prepared for the Texas Water Development Board, Austin, TX

Estimates of Desired Future Conditions for Brazos Valley Groundwater Conservation District

Introduction

The Brazos Valley Groundwater Conservation District (BVGCD) has been working within Groundwater Management Area 12 (GMA-12) to develop estimates of desired future conditions (DFCs). This effort has occurred over the past approximately 7 months regarding the Yegua-Jackson aquifer in cooperation with other groundwater conservation districts within GMA-12.

Considerations During Formulation of Yegua-Jackson Aquifer DFCs

The development of DFCs take into consideration previous estimates of groundwater availability within the BVGCD and surrounding counties provided by the Texas Water Development Board and the Region G Planning Group. The effects of pumping from the Yegua-Jackson aquifer were considered along with results obtained from the utilization of the Yegua Jackson Groundwater Availability Model (GAM) to simulate the future effects of groundwater withdrawal, both locally and regionally. The effects of groundwater pumping on existing groundwater users were also considered in developing DFCs. Based on the principal of using the GAM as a planning tool and the fact that the GAM predictions contain uncertainty, the BVGCD considers the DFCs to be physically possible, and acceptable if the difference between model simulation drawdown results and DFC drawdown targets are within 5 feet or 5 percent, whichever is greater, of the DFC drawdown targets.

Recommended Preliminary Desired Future Conditions

Desired future conditions were estimated for the Yegua and Jackson aquifers for the period up through year 2060. Groundwater model runs with the GAM were used as a tool in estimating the desired future conditions. The desired future conditions were estimated on an average drawdown basis for the BVGCD.

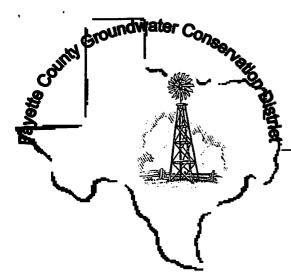
Jackson Aquifer

The average drawdown by the year 2060 of the hydraulic head in the Jackson aquifer within the District shall not exceed 70 feet when compared to the year 2010 average head.

Yegua Aquifer

The average drawdown by the year 2060 of the hydraulic head in the Yegua aquifer within the District shall not exceed 110 feet when compared to the year 2010 average head.

August 9, 2010



255 Svoboda Lane, Room 115 La Grange, Texas 78945 Telephone: (979) 968-3135 Fax: (979) 968-3194

Revisions to the Desired Future Conditions for the Aquifers within the Fayette County Groundwater Conservation District as Approved by the Board of Directors on August 2, 2010

On August 2, 2010, our Board of Directors approved the following revisions to the desired future conditions previously submitted to GMA 12 for consideration on May 26, 2010. These revisions stem from comments received by the TWDB at a meeting of the GMA 12 consultants on July 16, 2010 and, for the Yegua Jackson, based on recommendations by our consulting geologist dated July 27, 2010.

Carrizo Aquifer – No change from the May 26, 2010 submittal. Limit the drawdown of the water levels to an average of 60 feet for the year 2000 conditions.

Queen City Aquifer – Revised. Limit the drawdown to an average of 60 feet of the year 2000 conditions.

Sparta Aquifer – Revised. Limit the drawdown to an average of 60 feet of the year 2000 conditions.

Yegua Jackson Aquifer – Revised. Limit the drawdown to an average of 75 feet based on available conditions.

Colorado Alluvium – Remove desired future condition statements as this is not a designated aquifer and deemed non-relevant at this time.

David A. Van Dresar, General Manager

Directors:

Robert Leer - Precinct 1 Charles Richter - Precinct 3 Leo Wick, Sr - At Large L. J. Calley - Precinct 2 Leo Kainer - Precinct 4

INITIALLY PROPOSED DESIRED FUTURE CONDITIONS (DFCs)- LOST PINES GROUNDWATER CONSERVATION DISTRICT

June 24, 2009 Revised February 10, 2010 Revised May 26, 2010 Revised August 11, 2010

Introduction

GMA 12 has decided to specify a single value of allowable drawdown throughout each district for each aquifer within GMA 12 as the Desired Future Conditions (DFC). Managed Available Groundwater (MAG) will then be determined by the TWDB or by the GMA, with confirmation by the TWDB. The MAG provides the basis for issuing permits within each district. The DFC, established by the GMA, however, is the basis for managing groundwater within each district. DFCs have to be physically possible, individually and collectively, if different DFCs are stated for different geographic areas overlying an aquifer or subdivision of an aquifer.

While DFCs must be a set of conditions of the aquifers within the GMA that the districts believe are desirable, there has to be some basis for setting or arriving at those DFCs, especially one that will stand up through the petition process. Simply to say that no amount of drawdown is acceptable is unacceptable, because it is impossible to produce groundwater without inducing drawdowns. Given enough time and pumpage, drawdowns related to pumpage from the confined portions of the aquifer can become rather widespread. While it is viewed by some as "reverse engineering" the DFCs must protect the existing users and yet consider the future demands for groundwater within the district; where will the water come from to meet growing demands if it doesn't come from within the district. Good conservation will mitigate the amount of demands, but demands are bound to grow as the population within the district grows. The district has no control over growth. Approximately 90% of the LPGCD is served by rural water supply corporations, which are legally obligated to meet the demands within their CCNs.

Considerations LPGCD Took Into Account

The LPGCD has used the municipal and non-municipal water demand projections for 2000-2060 that were obtained from the 2006 Regional Water Plans for Regions K and G. However, at the time the original model file was developed, only the Initially Prepared Plan (IPP) was available for Region G and those demand projections were used to develop the original LPGCD model file. There are minor differences in a couple of the demand categories between the 2006 Region G IPP and the approved 2006 Region G plan. These differences are at most 6% for a given decade and are well within an acceptable range of accuracy as determined by LPGCD.

The 2006 Regional Water Plans were used to develop the 2007 State Water Plan. However, the 2007 State Water Plan tabulates concisely only in-GCD demands. To determine out-of-GCD demands from the State Water Plan would be very difficult, and it might not be possible unless one knew every single potential destination of groundwater sourced from a GCD. That would be possible only if the

groundwater source were properly referenced by the receiving county. Nonetheless, LPGCD has used the 2007 State Water Plan demand estimates as a basis for projecting demands for groundwater within Bastrop and Lee counties and as a basis for setting the initial DFCs for consideration by GMA-12. These estimates of future demands are largely related to entities that already withdraw groundwater from within the district; out of district transfers or speculative demands included in the 2007 State Water Plan demand estimates compose a relatively small amount of the estimated pumpage. No amount of demand was allocated for potential water marketers beyond that in the state's demand estimates. No currently existing or pending non-exempt well permits in LPGCD were specifically used to determine LPGCD's DFC numbers; there has been an analysis of the relationship between non-exempt and exempt pumpage within the district as compared to the 2007 State Water Plan numbers.

The Colorado River alluvium is not modeled separately in the currently available GAM; no springs are modeled, nor can they be with the currently available GAM. Most of the upland springs are related to the hard pans that occur in the sandy soils and on which there is perched groundwater; the perched water is not simulated in the GAM. The model does simulate discharge to major surface water courses, but does a poor job; the amounts and timing are not considered reliable or accurate. Nevertheless, these amounts and particular changes in the amounts are being evaluated to discern trends.

The Yegua-Jackson GAM has just been released by the TWDB in the last week or so. LPGCD is not aware of any groundwater wells within the District that are completed in any of the aquifer formations included in this newly released GAM. Therefore, LPGCD will not be setting DFCs for the Yegua-Jackson Aquifers as the aquifers are considered non-relevant for this district.

Process Taken Within LPGCD

As stated, LPGCD has used the 2006 Regional Water Plans for Regions K and G and subsequently the 2007 State Water Plan estimates as a basis for anticipated water demands in the district through 2060. The State Water Plan demand estimates do not distinguish between surface and groundwater usage; however, the distinction is relatively simple for the LPGCD and only estimated demands for groundwater were incorporated into the Queen City/Sparta GAM model. ArcGIS was used to extract the drawdowns following a method suggested by Shirley Wade at TWDB. Based on the location of the centroid of each model grid cell, the model cells were assigned to a GCD and to a county. The model grid cell assignments provided by the Texas Water Development Board are available at http://www.twdb.state.tx.us/Gam/qc_sp/qc_sp.htm.

Originally, when the GMA12_3b pumping file was used by LPGCD to determine the DFCs, all cells were included in the methodology to determine average drawdown including zero cells and negative cells except as follows:

- There were 2 cells in Bastrop County in Layer 8 (Hooper) (out of 1455 cells total) that apparently went dry (values of the drawdowns were on the order of -99500). The large negative drawdowns were not included in the averaging of drawdowns by county and within the district as a whole. Similarly, large negative drawdowns occurred in layers 1 (Sparta, 2 cells) and 7 (Simsboro, 3 cells) in Bastrop County were excluded. The number of these cells is so small that the impact is not significant.
- There were 5 cells that appeared to be part of Lee County in Layers 7 and 8 (Simsboro and Hooper) that were attributed by the TWDB to Post Oak Savannah GCD. The discrepancy may be an artifact of the GCD cell assignments used by TWDB for the ArcGIS analysis. For the purpose

- of determining drawdowns and to be consistent with the TWDB, these cells were assigned to POSGCD.
- Zero cells reported in Layer 7 (Simsboro) for Bastrop County were not included in the average drawdown calculation. Inspection showed that there were no zero drawdowns in Bastrop County. The zero values that appeared in the model output corresponded to cell locations that were inactive. Except as described above, however, negative values, were included in the averaging.

After LPGCD had run the GAM with the GMA12_3b pumping file from December 31, 2000 through December 31, 2060 and used ArcGIS to determine the modeled drawdowns at the end of 2060, LPGCD's DFC committee met to review the model outputs and to discuss any possible modifications to the direct model drawdown outputs. In most cases, the modeled county-wide average drawdown in 2060 was simply rounded to the next whole number and that rounded number is LPGCD's proposed DFC. One exception to this methodology is Layer 7 (Simsboro) in Lee County. As there is already significant demand both in the LPGCD and neighboring districts for groundwater from the confined part of the Simsboro, LPGCD wanted to take a more conservative stance with this aquifer.

After discussions with the TWDB, the GMA 12 managers and consultants decided that GMA-wide methodologies must be employed to continue the DFC determination process. These GMA-12-wide directives include using the time periods of January 1, 2000 to January 1, 2060 to calculate drawdowns, employing a method (comparable to the GIS method described above) to calculate drawdown for every model cell which results in cells assigned to the same counties as TWDB would assign them. The consultants in GMA12 initially decided to use the elevation of the base of the cell as the head in dry cells and use that head for the drawdown calculation. However, the total number of dry cells within the Lost Pines GCD is very small; at most, there are five dry cells in a single layer (the Sparta) which amounts to 0.8% of the total number of cells for this layer. Layers 3, 5, and 6 have no dry cells and Layers 7 and 8 have 1 and 2 dry cells, respectively, which amount to 0.1% of the total cells for each of these layers. Since the number of dry cells is so small, there is a negligible difference between counting them and ignoring them. Therefore, for the sake of simplicity, they were ignored in the actual calculation in LPGCD.

Continued communication and work between members of GMA-12 allowed for a new, updated model well file called GMA12_910 or GMA12_7a. The outputs from the GMA12_910 well file indicated that initially there was some disparity between LPGCD's proposed DFCs and those of neighboring POSGCD's DFCs, especially in the Simsboro Aquifer. As a compromise, LPGCD's Board of Directors voted in April 2010 to increase the recommended 2060 DFC for the Simsboro from 212 ft (average drawdown as compared to 2000) to 237 ft (average drawdown as compared to 2000). This adjustment allows POSGCD to achieve their DFC of 300 ft (average drawdown as compared to 2000). In turn, POSGCD adjusted their proposed DFCs in the Carrizo Aquifer to meet LPGCD's DFCs in the Carrizo Aquifer.

Additionally, Lost Pines GCD will not be recommending DFCs for the District for the Yegua-Jackson Aquifer. While the Yegua Jackson Aquifer does receive recharge from direct precipitation, this aquifer is not known to be used by either exempt or nonexempt wells within the District, therefore, LPGCD considers the Yegua Jackson Aquifer to be a non-relevant aquifer at this time.

As LPGCD and the surrounding districts monitor water levels and learn about how the Simsboro aquifer responds to pumping, especially in the confined portion, LPGCD anticipates that its recommended DFCs are likely to change somewhat over time with the objective of achieving sustainability in perpetuity as stated in the district's Management Plan.

Recommendations of LPGCD DFCs

The numbers LPGCD is presenting for DFCs are county-wide and district-wide average drawdowns in feet in 2060 for each aquifer unit. Drawdowns are calculated as compared to 2000 measured water levels.

Geologic Unit/Aquifer Unit	County	Calculated District- wide LPGCD DFC in 2060 (Average drawdown in ft)	Recommended DFC in 2060 (County-wide Average drawdown in ft)
Sparta	Bastrop	7	7
	Lee	-	7
Queen City	Bastrop	13	10
220011 0101	Lee	-	15
Carrizo	Bastrop	47	30
G011125	Lee	-	60
Calvert Bluff	Bastrop	99	65
Carver Bran	Lee	-	135
Simsboro	Bastrop	237	145
J	Lee	-	345
Hooper	Bastrop	129	90
110000	Lee	•	180

Within its district, LPGCD proposes the 2060 district-wide drawdown numbers be adopted as initial DFCs by GMA-12, and then LPGCD plans to further divide the recommended DFCs by county in the District's Management Plan; LPGCD feels that this will better handle the major difference in geologic units in the two counties (*i.e.*, Lee County has a much thicker confined part of the Carrizo-Wilcox aquifer than Bastrop County). Additionally, DFCs will be further divided in Bastrop and Lee counties to reflect different numbers for the outcrop (the water table part of the aquifer) and the confined portion of each aquifer. These subdivisions of the proposed DFCs will be reflected in LPGCDs Management Plan. It is also likely that LPGCD will create a ramp up schedule so that it can reach the final 2060 number at a set rate and not all up front at one time and to better allow the district to achieve its Management Plan goal of sustainability in perpetuity. It is anticipated that the ramp up schedule will correspond to the decadal MAGs provided by the TWDB in its MAG report to GMA 12.

LPGCD is assembling a system of monitoring wells that will be used to assess conformance with whatever DFCs are established. The district has already conceptualized how this will be done, with each monitoring well representing a specified area. As more monitoring wells are brought into LPGCD's monitoring system, the area represented by each monitoring well will be changed to refine the area it represents. The currently available GAM is calibrated to water levels in each of the aquifers; therefore, DFCs must reflect allowable changes in those water levels. We must play to the strengths of the model, not its weaknesses. The bottom line for LPGCD is that if by monitoring the water levels it feels that the aquifer is responding differently than the GAM predicted, the district has the opportunity to revisit the DFC numbers every 5 years. LPGCD is confident that with more valuable water level data monitoring, it will be able to protect its valuable groundwater resource.

Yegua-Jackson Aquifer Desired Future Conditions for the Mid East Texas Groundwater Conservation District

11 August 2010

Introduction

As decided by all member districts in GMA12, the Mid-East Texas Groundwater Conservation District (METGCD) Desired Future Conditions (DFCs) will be stated as average drawdowns throughout the entire district per aquifer from 2000 to 2060. Estimates of current Yegua-Jackson pumping within the district, historical groundwater level data, and the Yegua-Jackson Groundwater Availability Model (YJGAM) were used to estimate present drawdowns from current use and predict potential future drawdowns within the district. The procedures and results are presented below.

Considerations and Procedure Used

Historic Data

The original YJGAM simulates groundwater flow and water levels in the aquifer from the years 1900 through 1997. The total pumping in METGCD built into the final year of the model is 1,121 acft/yr, with all but 4 acft/yr in Madison County. Estimates of current pumping from the Yegua-Jackson aquifer in METGCD, based on 2010 population estimates and assuming per-capita water usage of 100 to 140 gallons per day, range from about 460 to 650 acft/yr, suggesting that the pumping inputs in the model are reasonable and conservative. The population in Madison County has experienced an almost negligible 3% growth over the previous decade, suggesting that groundwater use has not changed much over that period. A review of historical water level data from the TWDB water well database (see Figure 1) indicates that water levels in Yegua-Jackson wells in Madison County have remained steady over the past decade, suggesting that current pumping rates have resulting in negligible drawdowns throughout the district.

Model Results

The pumping rates and pumping distribution in the final stress period of the YJGAM were extended out to model year 2060, and the model was run to calculate drawdowns over that period. Average model-calculated drawdowns in METGCD from 2000 to 2060, using the original well pumping inputs, are negligible (see Table 1).

METGCD Proposed Desired Future Conditions

Based on the model results and water level trends over the last decade, the Mid East Texas Groundwater Conservation District proposes a Yegua-Jackson Aquifer DFC of zero average district-wide drawdown over the predictive period of 2000-2060. Based on predictive uncertainty of the model, METGCD considers the DFCs to be compatible and physically possible if the difference between modeled drawdown results and the DFC drawdown targets are within 5 feet or 5 percent of the DFC drawdown targets.

Table 1. YJGAM-calculated average drawdowns (in ft) by county and for the entire district with the original TWDB well file.

County/GCD	Avg. Drawdown
Leon	0.2
Madison	0.1
Entire District	0.1

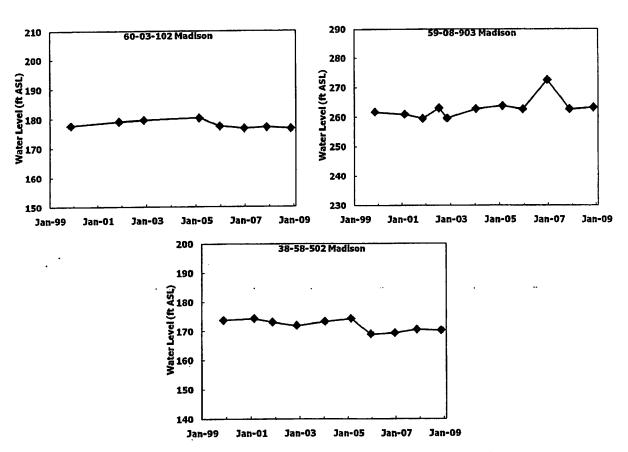


Figure 1. Water levels in Madison County wells completed in the Yegua-Jackson Aquifer

NOTICE OF MEETING GROUNDWATER MANAGEMENT AREA 12

August 11, 2010 – 10:30 AM Milano Community and Civic Center 120 West Ave. E Milano, Texas

Agenda

Notice is hereby given that the groundwater conservation districts located wholly or partially within Groundwater Management Area (GMA) 12, as designated by the Texas Water Development Board, consisting of the Post Oak Savannah Groundwater Conservation District (GCD), Fayette County GCD, Lost Pines GCD, Mid-East Texas GCD, and Brazos Valley GCD, will hold a Joint Planning meeting at 10:30 a.m. on Wednesday, August 11, 2010, in the Milano Community and Civic Center, located at 120 West Ave. E, Milano, Texas. The meeting will be open to the public. The subjects to be discussed or considered, or upon which any formal action may be taken, are as listed below. Items may or may not be taken in the same order as shown on this meeting notice.

- 1. Minutes of earlier August 11, 2010, 10:00 a.m. GMA 12 Meeting
- 2. Process for Setting Desired Future Conditions of the Aquifers and formations in GMA 12
- 3. Improvements to current Central Queen City/Sparta/Carrizo Groundwater Availability Model
- 4. Agenda items for future meetings
- 5. Date, Time, and Place for next meeting
- 6. Public Comment
- 7. Adjourn

Signed this 26th day of July, 2010.

David M. Bailey, General Manager

Mid-East Texas GCD

Original Filed At 2:20 o'clock

JUL 2 6 2010

Charolotte Barrett, Madison Gounty Clerk

Copies NOT Compared

NOTICE OF MEETING GROUNDWATER MANAGEMENT AREA 12

August 11, 2010 – 10:00 AM Milano Community and Civic Center 120 West Ave. E Milano, Texas

Agenda

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- 1. Welcome and introductions
- 2. Minutes of May 26, 2010 GMA 12 second Meeting
- 3. Presentation of proposed desired future conditions (DFCs), and amendments to previously adopted DFCs, for aquifers and formations in GMA 12 and amendments to previous submissions of DFCs for GMA 12 to Texas Water Development Board
- 4. <u>Public hearing</u> and possible action to adopt desired future conditions (DFCs) and amend DFCs for the aquifers and formations in GMA 12 as described above, and amendments to previous submissions of DFCs for GMA 12 to Texas Water Development Board.
- 5. Adjourn

Signed this 26th day of August, 2010.

David M. Bailey, General Manager

Mid-East Texas GCD

Original Filed
At 2:20 o'clock f. M

JUL 2 6 2010

Charolotte Barrett, Madison County Clerk
By Deputy
Copies NOT Compared

NOTICE OF MEETING **GROUNDWATER MANAGEMENT AREA 12** August 11, 2010 - 10:30 a.m. Milano Community and Civic Center 120 West Ave. E Milano, Texas

AGENDA

Notice is hereby given that the groundwater conservation districts located wholly or partially within Groundwater Management Area (GMA) 12, as designated by the Texas Water Development Board, consisting of the Post Oak Savannah Groundwater Conservation District (GCD), Fayette County GCD, Lost Pines GCD, Mid-East Texas GCD, and Brazos Valley GCD, will hold a Joint Planning meeting at 10:30 a.m. on Wednesday August 11, 2010, in the Milano Community and Civic Center, located at 120 West Ave. E, Milano, Texas. The meeting will be open to the public.

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- 4. Agenda items for future meetings
- 5. Date, time, and place for next meeting
- Public Comment
- 7. Adjourn.

Date: July 24, 2010

Lost Pines GCD

FILED

NOTICE OF MEETING GROUNDWATER MANAGEMENT AREA 12 August 11, 2010 - 10:00 a.m. Milano Community and Civic Center

o Community and Civic Center 120 West Ave. E Milano, Texas

AGENDA

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5. Adjourn

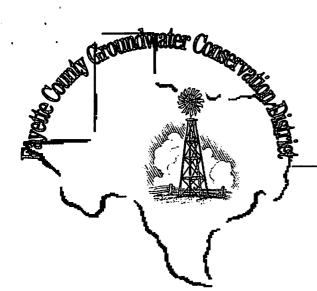
Date: July 24, 2010

Peggy Campion, Administrative Assistant

Lost Pines GCD

FILED

JUL' 26 2010



255 Svoboda Lane, Room 115 La Grange, Texas 78945 Telephone: (979) 968-3135 Fax: (979) 968-3194 THE ORIGINAL INSTRUMENT WAS

FILED IN FAYETTE COUNTY, TEXAS ON

July 26, 2010, at

(0:30 q.m.

5.6.

COPY

NOTICE OF MEETING GROUNDWATER MANAGEMENT AREA 12

August 11, 2010 – 10:00 a.m.

Milano Community and Civic Center
120 West Ave. E
Milano, Texas

AGENDA

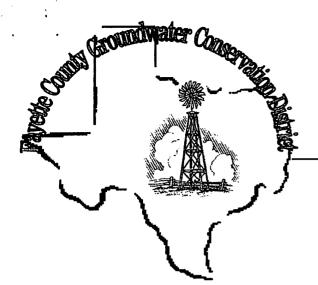
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- 5. Adjourn

Directors:

Robert Leer - Precinct 1 Charles Richter - Precinct 3 Leo Wick, Sr - At Large L. J. Calley - Precinct 2 Leo Kainer - Precinct 4



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Charles Richter - Precinct 3
Leo Wick, Sr - At Large

L. J. Calley - Precinct 2 Leo Kainer - Precinct 4



BRAZOS VALLEY GROUNDWATER CONSERVATION DISTRICT

P.O. Box 528 · Hearne, TX 77859 · (979)279-9350 · Fax: (979)279-0035 WWW.BRAZOSVALLEYGCD.ORG

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Signed this 28th day of July, 2010

Office Manager



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Signed this 28th day of July 2010

Cynthia Lopez
Office Manager



Brazos Valley Indwater Conservation District

P.O. Box 528 Hearne, TX, 77859 Ph: 979/279-9350

Fax: 979/279-0035

Website: www.brazosvallevocd.org

Date: 7-28-2010

Pages: 2 (Including Cover Page)

To:

Karen McQueen

(979) 361-4124

(979) 361-4125 Fax

From:

Cynthia Lopez

Office Manager

Subject:

Groundwater Management Area 12

Meeting Notices

Please post the two attached meeting notices!

Please feel free to call or email me if you have questions or concerns at 979-279-9350 or clopez@brazosyalleygcd.org

Also, could you please fax back once you have stamped them.

Thank you!

Board of Directors

Wayne Wilson John Hicks Pete Brien David Stratta

Steve Beachy Kent Watson Dan Kyle Tom McDonald



BRAZOS VALLEY GROUNDWATER CONSERVATION DISTRICT

P.O. Box 528 · Hearne, TX 77859 · (979)279-9350 · Fax: (979)279-0035 WWW.BRAZOSVALLEYGCD.ORG

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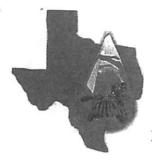
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Signed this 28th day of July, 2010

Cynthia Lopez Office Manager : BVGCD



BRAZOS VALLEY GROUNDWATER CONSERVATION DISTRICT

P.O. BOX 528 · HEARNE, TX 77859 · (979)279-9350 · FAX: (979)279-0035 WWW.BRAZOSVALLEYGCD.ORG

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Office Manager





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- Adjourn

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Cynthia Lopez

Office Manager

FILED FOR RECORD
COUNTY COUNTY
TX
TO SEE 28 AN IO: 19

Post Oak Savannah Groundwater Conservation District



Milano, Texas 76556

Phone: 512-455-9900 Fax: 512-455-9909

Email: posgcd@tconline.net Website: www.posgcd.org

Gary Westbrook, General Manager

August 26, 2010

Mr. J. Kevin Ward, Executive Administrator Texas Water Development Board P.O. Box 13231 Austin, Texas 78711-3231

RECEIVED

AUG 3 0 2010

TWDB

Sent via U.S. Mail Certified # 7009 3410 0000 9242 3477

Dear Mr. Ward,

On behalf of the Groundwater Conservation Districts (GCDs) of Groundwater Management Area 12 (GMA 12), I am pleased to submit the enclosed packet of required information concerning formal adoption of GMA 12 Desired Future Conditions (DFCs) which took place at an appropriately noticed and posted meeting of the GCDs of GMA 12 on August 25, 2010. This packet contains all of the information as required by Chapter 36, Texas Water Code, and the Texas Water Development Board (TWDB) checklist as provided in TWDB's publication, "How to Submit Desired Future Conditions to the Texas Water Development Board."

I will also serve as contact for GMA 12 for this purpose. Should you have any questions or require additional information, please do not hesitate to contact me at the address listed above.

Sincerely,

Gary Westbrook **General Manager**

Post Oak Savannah GCD

POST OAK SAVANNAH GROUNDWATER CONSERVATION DISTRICT Groundwater Management Area 12 Meeting

Milano Community and Civic Center 120 West Avenue E Milano, Texas 76556 August 25, 2010 – 10:00 a.m.

MINUTES

Name

Entity

Please see attached or included list of attendees

1. Welcome and introductions

Nathan Ausley with the Post Oak Savannah GCD, serving as chair person, opened the meeting at 10:00 a.m. and invited those seated at the head table to introduce themselves, and reminded all who were in attendance to sign the sign-in sheet at the front door.

2. Minutes of August 11, 2010 GMA 12 Second Meeting

David Van Dresar moved to approve the minutes from the August 11, 2010 Second Meeting. The motion was 2nd by Ralph Crum. The motion carried unanimously.

3. Presentation of proposed desired future conditions (DFCs) and amendments to previously adopted DFCs, for aquifers and formations in GMA 12 and amendments to previous submissions of DFCs for GMA 12 to Texas Water Development Board

Brazos Valley GCD- Ralph Crum reminded GMA 12 that at the August 11, 2010 GMA 12 meeting, GMA 12 had agreed to delay adoption of a DFC for BVGCD in the Brazos Alluvium pending results from additional studies of that aquifer. He then presented a Resolution from BVGCD stating that after these evaluations, BVGCD views the Brazos Alluvium as not relevant within the BVGCD to the joint planning process of GMA 12, and requests GMA 12 adopt this statement into the DFCs for GMA 12.

4. <u>Public hearing</u> and possible action to adopt desired future conditions (DFCs) and amendments to previously adopted DFCs, for aquifers and formations in GMA 12 and amendments to previous submissions of DFCs for GMA 12 to Texas Water Development Board.

Chairman Nathan Ausley opened the public hearing and invited comments on the proposed BVGCD Resolution of 8-24-10.

There was no comment.

Nathan Ausley closed the Public Hearing.

Joe Cooper moved that GMA 12 view the Brazos Alluvium as not relevant within the BVGCD to the joint planning process of GMA 12, and to submit this statement on behalf of GMA 12 as part of the joint planning process. David Bailey seconded. Nathan Ausely asked for discussion. There was none. The motion carried unanimously, with all five representatives listed below voting for the motion.

5. Adjourn

The meeting adjourned at 10:06 a.m.

THE ABOVE MINUTES OF THE MEETING OF GROUNDWATER MANAGEMENT AREA 12 HELD ON AUGUST 25, 2010 WERE APPROVED AND ADOPTED BY GMA 12 AT A MEETING LATER ON AUGUST 25, 2010

ATTEST:
Sid M. Baile
Mid-East Texas Groundwater Conservation District
Data. Ohn Dom
Fayette County Groundwater Conservation District
Ralph Cru
Brazos Valley Groundwater Conservation District
- Charlion
Lost Pines Groundwater Conservation District
I land Pelling
Post Oak Savannah Groundwater Conservation District

ATTACHMENTS

Appendix A: Copies of notices of May 26, 2010, meeting

Appendix B: Adopted Desired Future Conditions and supporting information

NOTICE OF MEETING GROUNDWATER MANAGEMENT AREA 12

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- 5. Adjourn

Signed this 20th day of August, 2010.

Gary Westbrook, General Manager, POSGCD

Sary teston

in 2010, At 10:40 A M BARBARA VANSA

County Clerk, Milam County, Tex

Deputy

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Faryles

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Signed this 20th day of August, 2010.

AUG 2 0 2010

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TEX

Gary Westbrook, General Manager, POSGCD

Groundwater Management Area 12

Board Meeting

Milano Community Center 120 West Avenue E Milano, TX August 25, 2010

PLEASE PRINT YOUR NAME

NAME	ORGANIZATION
Drw Cholson	POSGCD
Gary Westbrook	POSGCD
James Miller	City of Bastron
DAVID BAiley	METGCD
RAUN CRUM	BVGCD
KETH HANSBEBEER	LP5 <d< td=""></d<>
TRAWS MEPHAUL	LPGCD
ALICE DARVELL	LOSTPINES GCD
GLENN MARBURGER	?
Josh Grimes	LPGCN
John Sor Cont	CBL. Con Jon Disoc
Scott Carlan	

Groundwater Management Area 12

Board MeetingMilano Community Center 120 West Avenue E Milano, TX August 25, 2010

PLEASE PRINT YOUR NAME

NAME	ORGANIZATION
JACKIE SCH	13 R A
Mike Thornhill	TGI
DAVIDA. VAT DRESAR	[CGCD
•	POSGCD
Nathan Ausley Joe Cooper	LPGCD
<u> </u>	
·	

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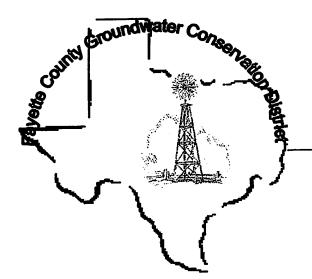
eggy Campion, Administrative Assistant

Lost Pines GCD

FILED

AUG 20 2010 9:53A

Rose Pietsch Bastrop County Clerk



255 Svoboda Lane, Room 115 La Grange, Texas 78945 Telephone: (979) 968-3135 Fax: (979) 968-3194 THE DESCRIPTION OF THE COUNTY, TEXAS ON QUE JO JOIL AT QUE S. M. S.

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AGENDA

Notice is hereby given that the groundwater conservation districts located wholly or partially within Groundwater Management Area (GMA) 12, as designated by the Texas Water Development Board, consisting of the Post Oak Savannah Groundwater Conservation District (GCD), Fayette County GCD, Lost Pines GCD, Mid-East Texas GCD, and Brazos Valley GCD, will hold a *Joint Planning meeting at* 10:00 a.m. on Wednesday, August 25, 2010, in the Milano Community and Civic Center, located at 120 West Ave. E, Milano, Texas. The meeting will be open to the public.

The subjects to be discussed or considered, or upon which any formal action may be taken, are as listed below. Items may or may not be taken in the same order as shown on this meeting notice.

- 1. Welcome and introductions
- 2. Minutes of August 11, 2010 GMA 12 second Meeting
- 3. Presentation of proposed desired future conditions (DFCs), and amendments to previously adopted DFCs, for aquifers and formations in GMA 12 and amendments to previous submissions of DFCs for GMA 12 to Texas Water Development Board
- 4. <u>Public hearing</u> and possible action to adopt desired future conditions (DFCs) and amend DFCs for the aquifers and formations in GMA 12 as described above, and amendments to previous submissions of DFCs for GMA 12 to Texas Water Development Board.
- 5. Adjourn

Signed this 20th, day of August, 2010

Cyntllia Lopez
Office Manager



BRAZOS VALLEY GROUNDWATER CONSERVATION DISTRICT

P.O. BOX 528 · HEARNE, TX 77859 · (979)279-9350 · FAX: (979)279-0035 WWW.BRAZOSYALLEYGCD.ORG

NOTICE OF MEETING GROUNDWATER MANAGEMENT AREA 12

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Cyntilia Lopez
Office Manager

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Mid-East Texas Groundwater Conservation District

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August 25, 2010 – 10:00 AM Milano Community and Civic Center 120 West Ave. E Milano, Texas

Agenda

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Signed this 20th day of August, 2010.

David M. Bailey, General Manager

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Mid-East Texas GCD

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FILED FOR RECORD

MARY LYNN WHITE
Clerk Dounty Opurt, Freestone County, Texas

Mid-East Texas Groundwater Conservation District

NOTICE OF MEETING GROUNDWATER MANAGEMENT AREA 12

August 25, 2010 – 10:00 AM Milano Community and Civic Center 120 West Ave. E Milano, Texas

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David M. Bailey, General Manager

Mid-East Texas GCD

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Mid-East Texas Groundwater Conservation District

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Signed this 20th day of August, 2010.

David M. Bailey, General Manager

Mid-East Texas GCD

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Charolotte Barrett, Madison County Clerk
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NOV 02 2010

Mr. J. Kevin Ward, Executive Director Texas Water Development Board P.O. Box 13231 Austin, Texas 78711-3231

TWDB

Re: Completing the record of the GMA 12 meeting on August 11, 2010 in which the Desired Future Conditions were adopted – Environmental Stewardship comments.

Dear Mr. Ward:

We are providing the attached letter addressed to Groundwater Management Area 12 Board of Directors dated August 11, 2010, in order to complete the record of the meeting in which the Desired Future Conditions were adopted. The attached letter and verbal comments were provided during the public hearing but were not included with the minutes and other records provided to the Texas Water Development Board. We believe it is important that these comments be included in the record so that the TWDB and others reviewing these proceeding have the opportunity to understand the concerns raised by Environmental Stewardship and others throughout the last several years.

Specifically, Environmental Stewardship urged the Groundwater Management Area 12 Board of Directors to:

- Add additional language to the currently accepted desired future conditions to protect the Carrizo-Wilcox Aquifer and Colorado River relationship in the desired future conditions (see attached), and
- 2. Publish to the public a "water budget" for the GMA-12 that itemizes by county, aquifer, and decade through 2060 precipitation recharge, surface water inflow and outflow, lateral inflow and outflow, inter-aquifer flow, wells, and change in storage.

Based on the information presented by state and regional entities over the past several years, it appears likely that the desired future conditions adopted by GMA-12 to establish managed available groundwater may result in irreversible changes in the river—aquifer relationship. Given the importance of these water resources to our region, we believe it is imperative that actions be taken to monitor for such impacts and take corrective actions should they occur.

We are hereby requesting that these documents be made part of the public record at the Texas Water Development Board and posted on the TWDB website along with the other documents entitled "Desired Future Conditions adopted – August 11, 2010." Please feel free to contact me should you have any questions.

Respectfully submitted, Environmental Stewardship

Steve Box

Executive Director

Environmental Stewardship is a charitable nonprofit organization whose purposes are to meet current and future needs of the environment and its inhabitants by protecting and enhancing the earth's natural resources; to restore and sustain ecological services using scientific information; and to encourage public stewardship through environmental education and outreach. We are a Texas nonprofit 501(c) (3) public charity headquartered in Bastrop, Texas. For more information visit our website http://Environmental-Stewardship.org/.



Board of Directors Groundwater Management Area-12 c/o Post Oak Savannah GCD 310 East Ave. C Milano, Texas 76556

Re: Urging GMA-12 to protect the Carrizo-Wilcox Aquifer and Colorado River groundwatersurface water relationship in the desired future.

Dear Board of Directors:

Environmental Stewardship urges the Groundwater Management Area 12 Board of Directors to:

- Add additional language to the currently accepted desired future conditions to protect the Carrizo-Wilcox Aquifer and Colorado River relationship in the desired future conditions (see attached), and
- 4. Publish to the public a "water budget" for the GMA-12 that itemizes by county, aquifer, and decade through 2060 precipitation recharge, surface water inflow and outflow, lateral inflow and outflow, inter-aquifer flow, wells, and change in storage. Examples include: GAM Runs 04-01 and 06-09 by Mid-East Texas GCD; GAM Run 08-70 for GMA-9.

The attached provides justification for our requests, describe actions that we request be taken, and contains paragraphs we would like to be included in <u>current and future</u> Groundwater Management Area 12 desired future conditions. Based on the information presented by state and regional entities over the past several years, it appears likely that the desired future conditions being submitted by GMA-12 to establish managed available groundwater may result in irreversible changes in the river—aquifer relationship. Given the importance of these water resources to our region, we believe it is imperative that actions be taken to monitor for such impacts and take corrective actions should they occur.

We appreciate the efforts of the GMA-12 to protect these natural resources by balancing the human demand for water against environmental needs. We look forward to working with the member Districts in planning, funding, and implementing the requested program over the next few years. Please feel free to contact me should you have any questions.

Respectfully submitted, Environmental Stewardship

Steve Box

Executive Director

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Urging and requesting that the following language to be included in the Desired Future Conditions for Groundwater Management Area 12

Protective Groundwater-Surface Water Safeguards – Having considered the water needs of Central Texas and the potential water available from the aquifers under the jurisdiction of Groundwater Management Area 12 (GMA-12), and in consideration of the potential irreversible changes that might result from implementation of the desired future conditions described herein, the GMA-12 is committed to working with member Districts to investigate and install monitoring programs that will provide an early warning of potential unintended impacts to the Colorado River, streams and springs within Bastrop, Lee, and other counties as determined to be appropriate.

Realizing the social, economic and ecological value of these surface water resources to Bastrop, Lee and other counties, it is important that these resources be monitored in order to detect significant changes in the historical groundwater—surface water relationships that might have unintended adverse impacts. Historical records¹ and recent studies² indicate that the Colorado River has been, and remains, a gaining river as it passes through the river segment associated with the Carrizo-Wilcox aquifer group, especially the Simsboro outcrop. The historical low-flow studies conducted by the USGS¹ in1918 and flow-duration curve generated by Dutton¹ in 2003 indicate that these groundwater formations contribute a volume of water that approximates 25,000 acre-feet per year to the Colorado River (26,100 acre-feet per year was used to calibrate the Carrizo-Wilcox groundwater availability model). The Lower Colorado Regional Water Planning Group (Region K) estimates that over-pumping of these aquifers could cause this historical relationship to change from a "gaining" to a "losing" river by 2050³, and recent GAM studies⁴ of the region have shown a recent decline in surface water outflows. It is reasonable and prudent therefore that the GMA-12 take appropriate actions to monitor and protect against such impacts should they start to occur.

Monitoring of the groundwater—surface water relationship of the Colorado River and the Gulf Coast aquifer has been accomplished in the coastal portion of the basin providing a model for a potential monitoring project. The LCRA-SAWS ^{5,6,7} Water Project developed and implemented such a program in Wharton and Matagorda counties where the river is associated with the Gulf Coast Aquifer. Such a project, where shallow wells are placed in close proximity to existing river and stream gage stations, would likely provide an adequate means of monitoring this relationship. The information gained would likewise be helpful in guiding remedial actions should they be needed in order to protect the integrity of the aquifers and surface waters. Therefore, the GMA-12 will evaluate this program and determine whether it would be suitable for our segment of the basin and, if appropriate, install a similar system in the region.

Action levels are an important element of any program that is designed to provide early warning along with an opportunity to take remedial actions to prevent unintended impacts from occurring. As such, the GMA-12 will work with member Districts to set action levels that are linked to management actions to be taken in the event the action levels are met. These action levels and management actions will be incorporated into the management plans and rules of the Districts. These action levels and management practices will be a part of the District's ongoing adaptive management practices that can be adjusted as experience is gained in monitoring and studying the groundwater-surface water relationship.

^{1.} Dutton, Alan R., Bob Harden, Jean-Philippe Nicot, and David O'Rourke. February 2003. Groundwater Availability Model for the Central Part of the Carrizo-Wilcox Aquifer in Texas, Appendix B – Surface Water- Groundwater Interaction in the Central Carrizo-Wilcox Aquifer.

^{2.} Saunders, Geoffrey P. June 2009. Low-Flow Gain-Loss Study of the Colorado River in Bastrop County, Texas.

^{3.} Lower Colorado Regional Water Planning Group. January 2006. Adopted Region "K" Water Plan for the Lower Colorado Regional Water Planning Group.

^{4.} Hutchinson, Bill. November 18, 2009. Presentation to the Lost Pines Groundwater Conservation District Board: Joint Planning in Groundwater Management Area 12.

^{5.} LSWP Groundwater for Agriculture Team: URS Corporation, Baer Engineering and Environmental Consulting, Inc. June 2006. Shallow Monitoring Well Installation Wharton and Matagorda Counties, Texas.

LSWP Groundwater for Agriculture Team: URS Corporation, Baer Engineering and Environmental Consulting, Inc. March 2008. Monitoring Data Report from April 2006 to December 2007 for the LSWP Shallow Wells Installed in Wharton and Matagorda Counties, Texas.

^{7.} URS Corporation, INTERA, and Baer Engineering and Consulting. April 2009. Development of the LCRB Groundwater Flow Model for the Chicot and Evangeline Aquifers in Colorado, Wharton, and Matagorda Counties.

WHEREAS, there are a number of State, Regional, County, and local government and public stakeholder organizations that are charged with protecting these resources for today and the future including the Lower Colorado Regional Water Planning Group, the Lower Colorado River Authority, Groundwater Management Area 12, the member Groundwater Conservation Districts, and county and city governments; and

WHEREAS, the currently contemplated desired future conditions of GMA-12 do not adequately consider the potential impact of over-pumping on spring flow or other interactions between groundwater and surface water as required by the Texas Administrative Code Section 356.45 (i)(3); and

WHEREAS the current desired future conditions and the rules of the GMA-12 member Districts do not, before granting or denying a permit or permit amendment, adequately consider whether the proposed use of water unreasonably affects existing groundwater and surface water resources or existing permit holders, as required by the Texas Water Code Section 36.113 (d)(2); and

WHEREAS Section 36.108 (p) of the Texas Water Code provides that Districts located within the same groundwater management areas or in adjacent management areas may contract to jointly conduct studies or research, or to construct projects, under terms and conditions that the districts consider beneficial, and these joint efforts may include studies of ... the interaction of groundwater and surface water; and

WHEREAS, the currently contemplated desired future conditions of GMA-12 do not provide for monitoring, triggers, and rules to protect these valuable resources from the potential impact of over-pumping on the groundwater—surface water relationship; and

WHEREAS, the Groundwater Management Area-12 Board of Directors desire that these important groundwater and surface water resources be protected from unintended impacts to the extent reasonably available within the context of the laws, regulations, and codes of the State of Texas.

NOW, THEREFORE, WE URGE and REQUEST THAT:

- 1. The Groundwater Management Area-12 Districts include the attached paragraphs, or substantively equivalent language, as an addition to their desired future conditions; and
- 2. The Groundwater Management Area-12 Districts cooperate in taking all reasonable actions necessary to establish monitoring, pumping triggers, and rules, as described in the attached paragraphs, to ensure that the Colorado River and associated streams and springs of the region are adequately protected.

GMA-12 DFC Hearing Comments

URGING GMA-12 TO PROTECT THE CARRIZO-WILCOX AQUIFER & COLORADO RIVER GROUNDWATER-SURFACE WATER RELATIONSHIP IN THE DESIRED FUTURE CONDITIONS OF GROUNDWATER MANAGEMENT AREA-12

WHEREAS, the Carrizo-Wilcox Major Aquifer and the Colorado River are important natural water resources to the ecology, citizens and economic viability of the Lost Pines Region; and

WHEREAS, the groundwater conservation districts of Groundwater Management Area 12 (collectively GMA-12) are required by Sec. 36.108. Water Code to work jointly to adopt desired future conditions for each aquifer within their jurisdictions; and

WHEREAS, Texas Parks and Wildlife Department, the National Wildlife Federation, Lone Star Chapter of the Sierra Club, Environmental Defense Fund, and Environmental Stewardship have urged that the five groundwater conservation districts in the GMA-12 protect the groundwater—surface water relationship between the Carrizo-Wilcox Major Aquifer and the Colorado and Brazos rivers, and their associated streams and springs; and

WHEREAS, the citizens of Bastrop County in Opportunity Bastrop County, an initiative of the Bastrop County Commissioners' Court recognize the importance of the groundwater and surface water resources to the near- and long-term future of our region (adopted by the Court on December 10, 2007 and by the city of Smithville on May 13, 2008); and

WHEREAS, the environmental goal of Opportunity Bastrop County is to retain and enhance the rural character of Bastrop County while encouraging growth that is in balance with human and environmental needs, both today and in the future; and

WHEREAS, the Colorado River gains water from the Simsboro and other aquifers formations as it passes through Bastrop County^{1,2,3}; and

WHEREAS, the Colorado Regional Water Planning Group (Region K), which includes Bastrop County, has predicted that with currently planned groundwater pumping in the region³ the Colorado River will become a "losing river" by 2050; and

WHEREAS, the Colorado Regional Water Planning Group (Region K), passed a resolution in support of sustainable management of the groundwater resources of the region discouraging over-pumping of the aquifers³; and

WHEREAS, the Carrizo-Wilcox Aquifer is an artesian aquifer, and that artesian pressure creates springs and seeps that provide surface water outflows; and

WHEREAS, the Carrizo-Wilcox Aquifer is a sand aquifer where only 3-5% of precipitation over the outcrop area creates recharge, which means it will take hundreds or possibly thousands of years to recover should over-pumping occur; and