RESOLUTION TO ADOPT DESIRED FUTURE CONDITIONS

FOR AQUIFER(S) IN GROUNDWATER MANAGEMENT AREA 12

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

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:

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	5 Ayes, 0 Nays;

AND IT IS SO ORDERED.

PASSED AND ADOPTED on this 11th day of August, 2010.

ATTEST:

Mid-East Texas Groundwater Conservation District

Fayette County 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 District or County	Average Aquifer Drawdown (Ft) Measured From January 2000 To December 2059					
	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 County	Average Drawdown (ft) in Each Aquifer Calculated from the Start of Year 2000 to the Start of Year 2060					
	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)
BRAZOS VALLEY	Yegua	2010 to 2060	70
	Jackson		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