Groundwater Resources Division

1. **Purpose of meeting**: Annual Groundwater Availability Modeling Technical Advisory Group meeting
2. **Date and location of meeting**: April 20, 2007, Room 170, Stephen F. Austin Building
3. **TWDB staff in attendance**: Bill Mullican, Robert Mace, Cindy Ridgeway, Roberto Anaya, Ali Chowdhury, Andy Donnelly, Scott Hamlin, Ian Jones, Richard Smith, and Shirley Wade
4. **Who was in attendance:** See Table 1
5. **Senators/Representatives/other VIPs in attendance**: None
6. **Meeting report filed by:** Cindy Ridgeway
7. **Date of meeting report filing:** April 23, 2007, updated May 1, 2007
8. **Agenda/Outcomes/Comments:**

Purpose of the meeting:

To discuss (1) joint planning in Groundwater Management Areas and Groundwater Availability Modeling, (2) current status of Groundwater Availability Model and initiatives, (3) proposed work for Groundwater Availability Modeling team, and (4) TWDB responses to comments collected from the August 18, 2005, Groundwater Availability Modeling Technical Advisory Group meeting.

Agenda:

- Introduction (Bill Mullican: 5 minutes)
- Welcome from elected Groundwater Availability Modeling Technical Advisory Group Presiding Officer (Alan Dutton: 5 minutes)
- Responses to comments from August 15, 2005, Groundwater Availability Modeling Technical Advisory Group meeting (Cindy Ridgeway 15 minutes)
- Groundwater Availability Modeling Technical Advisory Group rules (Robert Mace: 10 minutes)
- Joint Planning in Groundwater Management Areas (Robert Mace: 20 minutes)
- Current status of Groundwater Availability Models (Cindy Ridgeway: 5 minutes)
- Initiatives—Source geodatabase, pumpamatic, and predictive simulations (Scott Hamlin: 20 minutes
- Initiatives—Migrating Groundwater Availability Models to Groundwater Vistas and Groundwater Availability Modeling quick references (Andy Donnelly: 10 minutes)
- Initiatives—Isotopes and geochemical studies (Ali Chowdhury: 5 minutes)
- Proposed schedule to complete Groundwater Availability Models (Cindy Ridgeway: 25 minutes)

Questions and Answers from April 20, 2007, Groundwater Availability Modeling Technical Advisory Group meeting:

Welcome:

1. What is the general perception of the legislature towards groundwater availability modeling? *Answer: Having the tool in place has been a powerful resource for legislature. Although there are still critics. The foundation of the process is updating and improving the groundwater availability models. Members of legislature, especially the House Natural Resource Committee, are supportive.*

Responses to August 18, 2005, Groundwater Availability Modeling Technical Advisory Group meeting:

2. Is there a schedule for converting contract groundwater availability modeling reports to board reports/publications? *Answer: In order to do this, portions will need to be broken out and additional resources will be required to bring reports up to publication standards. So at this point the answer is no.*

Technical Advisory Group rules comments:

3. Should we leave the annual meetings open or limited? *Suggestions: Is it possible to wait and think about it. Can we give this process a chance to work before changing it? Have the comments and inputs been useful to the program? [Answer: Yes] Consensus seems to be to maintain current rules.*
4. Term limits for presiding officer? *Response: Proposal to have election for presiding officer. Call for nominations. Alan Dutton nominated. No other nominations. Unanimous vote for Alan Dutton to remain presiding officer.*
5. Is there a way to distribute the rules? *Answer: Yes, Cindy will send it out. [See Attachment A]*
6. [Are the Technical Advisory Group meetings] subject to open meetings act? *Answer: We, will check into it and let the group know. [Legal finding: The Advisory Group neither controls nor supervises public business or policy. The Board and staff take independent actions. The guidance provided by the Advisory Group is for the ultimate use and benefit of other governmental bodies. Consequently the Advisory Group does not need to adhere to the Act.]*

Joint planning in Groundwater Management Areas:

7. Was there a change in boundaries this last year? *Answer: Walker County between Groundwater Management Areas 11 and 14. A change has been requested between Groundwater Management Areas 15 and 16. Also there may be a request for a small change in Bastrop County.*
8. How many Groundwater Management Areas appear ready to submit desired future conditions? *Answer: A month or so ago, around nine; however, this is a moving target and not as many districts now appear to be able to meet this deadline.*
9. What type of guidance is the board giving to do the desired future condition process? *Answer: TWDB is respectful of local decisions. The TWDB tries to make sure it is really a desired future condition. Some districts want to jump straight to managed available groundwater estimates rather than desired future condition statements. TWDB tries to encourage a broader regional view rather than local county view.*
10. Scale issues with models. How can the groundwater availability models address local issues? If the groundwater availability models can't do spring flow and folks want spring flow, what will the TWDB do? *Answer: It will have to be a case-by-case basis. Give us your draft desired future condition statements, we will look at them, and use the best scientific tool available. If springs are not in the model, we will need to look at other tools. For example, historical spring flow compared with historical pumping.*

11. Groundwater Management Area 9 would like to use old regional plan numbers. *Answer: That would not be a desired future condition.*
12. Is it possible, if you have a couple of districts in a Groundwater Management Area that want to move ahead and others wanting to wait, for desired future conditions to be submitted separately? *Answer: No, if they are in the same aquifer they must be submitted together. If they are in different aquifers then they can submit them separately.*
13. Can desired future conditions be changed in the future? If so, how can they be changed? *Answer: The law states that desired future conditions should be revisited every five years. You could submit a desired future condition last week, change your mind, re-vote, and submit a new desired future condition the following week. TWDB's view is that the same process to change is the same process to create them in the first place. But it will need to be timed correctly to be in the regional water plans.*
14. Is the procedure to provide desired future conditions to regional water plans defined clearly? It seems vague? *Answer: Districts submit desired future conditions to TWDB. TWDB calculates managed available groundwater based on desired future conditions or reviews consultants managed available groundwater estimates, then TWDB provides managed available groundwater to districts and regional water planning groups. [If submitted in time], then TWDB expects to see managed available groundwater estimates in the regional water plans.*
15. Observation from audience: Situation can be very complicated. Fayette County has two Groundwater Management Areas and four aquifers.
16. If a Groundwater Management Area submits a desired future condition with a managed available groundwater estimate then TWDB will see if they can replicate results. Then what will TWDB provide to the region? *Answer: TWDB is encouraging consultants to meet with them. [Some clarification may be needed to make sure the interpretation of the desired future condition agrees with the initial intent of the groundwater management area. TWDB will be providing managed available groundwater estimates at the district level and/or geographic extent determined by the groundwater management area to the groundwater management area and districts. TWDB will be providing managed available groundwater estimates to the regions at the county, basin, region, aquifer level.]*
17. If a consultant converts [a volume/demand/managed available groundwater estimate] into a desired future condition and it changes over time, is that OK? *Answer: Yes, [managed available groundwater estimates] can change over time.*

Current status of GAMs:

18. It has been suggested that Colorado River alluvium may be considered a minor aquifer. Is there a possibility of a model being developed for it? *Answer: Aquifers are defined in the state water plan and require a research project prior to consideration by TWDB as an official aquifer.*

Source geodatabase, pumpamatic, and predictive projects:

19. Is pumpamatic based on ArcGIS spatial analyst? *Answer: Yes [Correction: You do not need Spatial Analyst to use the pumpamatic. The pumpamatic uses only vector spatial data and the Spatial Analyst is for raster data. However, in practice Spatial Analyst is very useful when working with remote sensing data, such as land use. In order to the run the pumpamatic you do need an ESRI ArcINFO license, not just ArcView, but you do not need the Spatial Analyst extension]*.
20. Time frame for predictive pumping? *Answer: Should be done end of the year.*
21. Are there plans to use well locations from districts? *Answer: Yes, districts will be contacted and additional research will be done.*
22. Will districts be required/encouraged to use ArcGIS? *Answer: Up to districts.*

23. Do we distinguish between dryland and irrigated farming on landuse? *Answer: Depends on the model and land use data that we have.*

Migrating Groundwater Availability Models to Groundwater Vistas and quick reference projects:

24. During QA/QC did you identify problems that interfere with the December groundwater management area deadlines? *Answer: Actively working with groundwater management areas to handle deadline issues.*

Isotopes and geochemical studies:

25. Have you come to any conclusions on age dates of the waters in the Trinity Hill Country aquifer? *Answer: We have done work in this area, but we caution that geochemical processes affect carbon ratios in groundwater. Corrections for these reactions need to be performed before developing a corrected age-date for the waters.*
26. Have you done that? *Answer: Yes we have and have gotten a wide range of ages from very modern to 16,000 years.*
27. Have you made any contour maps of carbon values? *Answer: We have but we use with caution because control points are widely spaced and multiple affecting variables exist. We do see a trend of apparent old waters in the northwest and apparent young waters in the southeast.*

Proposed schedule to complete Groundwater Availability Models:

28. What is the Marathon Aquifer? *Answer: Small minor aquifer in Brewster County*
29. Any updates on contract to combine Groundwater Availability Models and Water Availability Models? *Answer: That contract is nearing completion and the conclusion was that it is not possible to do with the existing models. Additional research and model design is needed. Water Availability Models and Groundwater Availability Models are very different in the way they are put together and the way they work.*
30. Will we be addressing interconnecting Water Availability Models and Groundwater Availability Models in the future? *Answer: We are doing that and already have a passive link between the Guadalupe River Water Availability Model and the Edwards Aquifer Groundwater Availability Model. We recognize that this is something we need to do at least for some of the models.*
31. Groundwater Management Area 9, the Hill Country Trinity Aquifer model does not yet have a layer for the Lower Trinity. How can they develop their desired future condition on time? *Answer: We are working hard to get the layer added in time and expect to this update completed by this fall.*

Table 1. April 20, 2007, Groundwater Availability Modeling Technical Advisory Group attendee list. Highlighted records indicate 11 members or delegated attendees of the Groundwater Availability Modeling Technical Advisory Group advisory group attended the 2007 meeting. The core Groundwater Availability Modeling Technical Advisory Group advisory group has a total of 25 representatives.

	First_Name	Last_Name	Affiliation
1	Matt	Alexander	RW Harden
2	Mary	Ambrose	Texas Commission on Environmental Quality
3	Roberto	Anaya	TWDB
4	James	Beach	LBG-Guyton
5	Richard	Bowers	Central Texas GCD
6	John	Burke	AQUA WCS, Region K, Lost Pines UWCD
7	Ali	Chowdhury	TWDB
8	Andy	Donnelly	TWDB
9	Alan	Dutton	University of Texas San Antonio
10	Richard	Eyster	Texas Department of Agriculture
11	William	Gamblin	Daniel B. Stephens and Associates
12	Herb	Grubb	HDR, delegated for High Plains UWCD
13	Scott	Hamlin	TWDB
14	Bill	Hutchison	El Paso Water Utilities
15	Ian	Jones	TWDB
16	Van	Kelley	INTERA
17	LARRY	LAND	HDR Eng.
18	Randy	Larkin	Lost Pines
19	Angang (Al)	Liu	EAA
20	CINDY	LOEFFLER	TPWD
21	Robert	Mace	TWDB
22	Laura	Marbury	Environmental defense
23	Tom	Michel	Harris-Galveston Coastal Subsidence District
24	Kelly	Mills	TCEQ
25	Steve	Musick	Texas Commission on Environmental Quality
26	Dan	Opdyke	TWPD
27	Darrell	Peckham	Thornhill Group Inc.
28	Cindy	Ridgeway	TWDB
29	Stefan	Schuster	Freese and Nichols
30	Jack	Sharp	University of Texas - Austin
31	Haskell	Simon	Coastal Plains
32	Brian	Smith	Barton Springs GCD
33	Richard	Smith	TWDB
34	Kevin	Spencer	RW Harden
35	Ned	Troshanov	EAA
36	Venki	Uddameri	Texas A&M
37	Shirley	Wade	TWDB
38	Randy	Williams	TC&B
39	Feather	Wilson	Private

ATTACHMENT A
GAM TAG RULES

§379.2. General Provisions.
(a) These rules are adopted in accordance with the Texas Government Code, Chapter 2110, to define the membership, purpose, task, and expiration date of advisory committees to the board.
(b) An advisory committee shall select from among its members a presiding officer. The presiding officer shall preside over the advisory committee and report to the executive administrator or staff of the board.
(c) An advisory committee must be composed of a reasonable number of members not to exceed 24 members.

Adopted effective February 11, 1994 Amended effective January 4, 2000

§379.3. Groundwater Availability Modeling (GAM) Technical Advisory Group
(a) Purpose and task. The GAM Technical Advisory Group is created to provide technical guidance to the agency regarding the development and evaluation of groundwater availability models used in the regional and state water planning process. The group will advise and assist on developing guidelines on the development and documentation of groundwater flow models and on the evaluation of groundwater availability
(b) Composition. Members of this group will include experts in the fields of groundwater modeling, geographic information system, and hydrogeology. It will also include individuals currently involved with groundwater conservation district and regional water planning issues
(c) Manner of reporting. The GAM Technical Advisory Group will report to the agency in writing or orally their advice and recommendations
(d) Expiration date. This committee is automatically abolished on September 1, 2007, unless the board amends this subsection to establish a different date.