

**Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting
LCRA Dalchau Service Center, Conference Room A504
December 13, 2017**

1. Teresa Lutes called meeting to order at 10:02 a.m.

2. Attendees (21)
 - Teresa Lutes – Region K Water Modeling Committee Chair, Municipalities Rep
 - Jason Ludwig – Region K, Electric Generating Utilities Rep
 - David Wheelock – Region K, River Authority Rep
 - Barbara Johnson – Region K, Industries Rep
 - Jennifer Walker – Region K, Environmental Rep
 - Mike Reagor – Region K, Small Municipalities Rep
 - Jim Brasher – Region K, GMA-15 Rep
 - David Lindsay – Region K, Recreation Rep (Alternate)
 - Jeff Fox – Region K, Municipalities Rep (Alternate)
 - David Bradsby – TPWD (Region K non-voting member)
 - Lann Bookout – TWDB (Region K non-voting member)
 - Jaime Burke – AECOM
 - Alicia Smiley – AECOM
 - James Kowis – James Kowis Consulting, LLC
 - Joe Trungale – Trungale Engineering
 - Rebecca Batchelder – LCRA
 - Leonard Oliver – LCRA
 - Helen Gerlach – Austin Water
 - Richard Hoffpauir – Hoffpauir Consulting
 - Jordan Furnans – LRE Water, LLC
 - Cindy Smiley – Smiley Law Firm

3. Public Comments
 - a. Jordan Furnans – LRE Water, LLC
 - i. Heard that LCRA might be working on extending the naturalized hydrology data set for the Colorado Basin through 2016, and asked if anyone could confirm.

4. Purpose of Water Modeling Committee
 - a. Water Availability
 - i. Surface water and groundwater availability modeling issues
 1. In previous cycle, committee covered both surface and groundwater, but previous cycle had limited groundwater modeling due to Modeled Available Groundwater numbers (MAGs) being provided by TWDB, based on submitted Desired Future Conditions (DFCs) from groundwater conservation districts (GCDs) and groundwater management areas (GMAs). Groundwater coordination mainly occurred by reaching

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out to Groundwater Conservation Districts for input. Discussion of specifics on methodologies to be used this planning round was tabled for future discussion.

- a. MAGs are being updated and may be available for this round of planning.
 2. MAG (Modeled Available Groundwater) Peak Factor is a new TWDB concept that this Committee may want to address or may want to pass to another Committee for 2021 RWP. Using it allows for a range of MAG fluctuation during particularly wet/dry years. This may be similar to a temporary over drafting concept included in some limited situations in past Region K plans.
 3. Role of Committee:
 - a. Evaluate previous modeling assumptions and recommend changes needed for 2021 Regional Water Plan (RWP).
 - b. Review request to TWDB for approval to use alternative modeling assumptions and make recommendations to the Region K Regional Water Planning Group (RWPG).
 - c. Review results of modeling and recommend actions to RWPG.
 - d. Committee consensus was to have role include review of modeling and availability information for both groundwater and surface water.
 - b. Water Management Strategies
 - i. Role of Committee:
 1. Evaluate previous modeling assumptions and recommend changes needed for 2021 RWP.
 2. Review request to TWDB requesting approval to use alternative modeling assumptions and make recommendations to the RWPG.
 3. Work with Water Management Strategies Committee to evaluate results of strategy modeling.
 4. Committee consensus was to have role include review of modeling related to water management strategies for both groundwater and surface water, where applicable.
5. TWDB Guidelines for Surface Availability Modeling
- a. On December 7, TWDB published proposed revisions to regional water planning rules and proposed revisions to the contractual guidance document *First Amended General Guidelines for Fifth Cycle of Regional Water Plan Development (Exhibit C)* for public comment, due by January 31, 2018. Rules will be in flux during analysis work so we will plan to monitor the process to see if and how any rule changes may affect any technical aspects of modeling.
 - b. Reviewed guidelines (Chapter 3: Water Availability and Existing Water Supplies)
 - i. Standard model and anticipated sedimentation
 - ii. "Firm" availability for reservoirs and run-of-river

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- iii. Estimation for domestic and livestock use
 - iv. Standard criteria and assumptions
 - v. Hydrologic variances
6. Region K Cutoff Model and assumptions from previous cycle
- a. Region K Cutoff Model
 - i. James Kowis explained the history of the WAM (Water Availability Model) Cutoff Model. TCEQ WAM Run 3 – the water availability model used by TCEQ and TWDB – is a full basin model that does not include effects of real world operational practices between the upper and lower Colorado River basin. The WAM Cutoff Model, in which all of the water rights located at Lake O.H. Ivie and upstream and at Lake Brownwood and upstream maintain their relative priority order but are all given seniority in the model over water rights downstream, has been used in previous Plan Cycles to better simulate real-world operational practices. During the 2016 Plan Cycle, the Cutoff Model developed during the 2011 Plan cycle was updated and the hydrology of the model was extended from 1940-1998 to 1940-2013.
 - b. Combined agenda items 6 and 7 to review 2016 Plan assumptions and determine updates needed simultaneously.
 - i. Update Table A – Summary of Region K WAM Modeling Assumptions. Bolded text indicates recommended changes from previous cycle.
 - 1. Item 1 – Use TCEQ Full-Basin WAM Run 3 without modification for new appropriation water supply strategies analysis
 - a. No change.
 - b. Joe Trungale asked if LCRA will provide the Cutoff Model for this cycle. David Wheelock confirmed and stated that updated models will be sent to Jaime Burke.
 - 2. Item 2 – All rights at and above Ivie/Brownwood senior to downstream rights (maintaining relative date priority in rights upstream)
 - a. No change.
 - 3. Item 3 – Use Expanded 1940-2009 naturalized flows [Note that during the course of the last planning cycle the naturalized flows were further extended through 2013]
 - a. Revise to “Use Expanded 1940-**2016** Naturalized Flows”
 - 4. Item 4 – Determine firm yield for Buchanan-Travis Reservoir System
 - a. No change.
 - b. Discussion of Ar buckle Reservoir (formerly Lane City Reservoir). It will not be included as part of the calculation of the combined firm yield for Lakes Buchanan-Travis, but will be included in the WAM as part of the analysis.
 - 5. Item 5 – Use sediment-adjusted future reservoir storage by decade
 - a. No change.
 - 6. Item 6 – Use 2010 Water Management Plan environmental flow criteria
 - a. Revise to “Use **2015** Water Management Plan Environmental Flow Criteria”

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- b. Add an asterisk in Column 1 with a footnote explaining that firm water allocated for environmental purposes is 33,440 AFY (10-year average).
- 7. Item 7 – Set all water right demands at authorized diversion amounts
 - a. No change.
- 8. Item 8 – Include provisions of LCRA-STP 2006 Settlement Agreement
 - a. No change.
- 9. Item 9 – Include Operating Rules for Lakes Buchanan and Travis to maintain consistent levels of drawdown in the lakes
 - a. Revise to “Include Operating Rules for Lakes Buchanan and Travis to **reflect combined firm yield operation.**”
 - b. David Wheelock offered to answer questions on this recommended change, as needed.
- 10. Item 10 – Include latest approved LCRA Permits and Amendments
 - a. Revise to “Include latest approved LCRA Permits and Amendments **as of December 2017**”
- 11. Item 11 – Include 2010 Water Management Plan Highland Lakes interruptible water
 - a. Revise to “Include **2015** Water Management Plan Highland Lakes Interruptible Water”
- 12. Item 12 – Adjust 2010 Water Management Plan environmental flow triggers
 - a. Revise to “Adjust **2015** Water Management Plan Environmental Flow Triggers (decadal)”
- 13. Item 13 – Set all Region M&I water right demands at projected future demand amounts by decade
 - a. Revise to “Set all Region K **Municipaland Industrial** water right demands at projected future demand amounts by decade”
- 14. Item 14 – Modify curtailment of Highland Lakes’ interruptible water as necessary to satisfy LCRA future firm M&I demands
 - a. Revise to “Modify curtailment of Highland Lakes’ interruptible water as necessary to satisfy LCRA future firm **Municipaland Industrial** demands.”
- 15. Item 15 – Set LCRA Lower Basin irrigation demands equal to projected future weather-variable demands by decade
 - a. Revise to “Set LCRA Lower Basin irrigation demands equal to projected future demands by decade”
 - b. “weather-variable” demand was deleted.
- 16. Item 16 – Include LCRA irrigation return flows to the Colorado River
 - a. No change.
 - b. Only incorporated into model as a water management strategy.
- 17. Item 17 – Include return flows from Austin wastewater treatment plants
 - a. No change.
 - b. Only incorporated into model as a water management strategy.

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18. Item 18 – Include other M&I return flows
 - a. Revise to “Include other **Municipal and Industrial** return flows.”
 - b. Only incorporated into model as a water management strategy.
19. Item 19 – Include reuse provisions and environmental flow requirements of LCRA-Austin 2007 Settlement Agreement
 - a. No change.
 - b. Only incorporated into model as a water management strategy.

- ii. Teresa Lutes mentioned that consideration of potential impacts from future climate uncertainty is an area of planning that this committee and the full group will likely want to have some discussion about in this planning cycle. At various times in the past the planning group has had some discussion about ways to approach addressing consideration of this issue. It was briefly discussed that there may be ways through drought planning and water management strategies evaluation part of the process to look at climate uncertainty.
- iii. Committee consensus is to review and comment on revisions to assumptions and the hydrologic variance request electronically. Committee will plan to hold another meeting prior to the January 10th 2018 Region K meeting, at 9:00 am, to further review and consider a vote to recommend the revised assumptions and the hydrologic variance request to the full RWPG. The Committee meeting will also include an educational session to help interested RWPG members and the public better understand surface water modeling and the WAM Cutoff Model.

7. Timeline

- a. RWPG to consider a vote on approval of submitting a hydrologic variance request to TWDB at the January 10th full Region K Regional Water Planning Group (RWPG) meeting.
- b. If approved by RWPG, after submittal of hydrologic variance request, TWDB may take up to 60 days to review and approve the request. After receiving TWDB approval, modeling efforts can begin.
- c. LCRA anticipates having extended naturalized hydrology data (through 2016) available for use with the Region K Cutoff Model in the April-May timeframe.
- d. Technical Memorandum that incorporates water availability data into the needs analysis is due September 10, 2018. RWPG will need to review and approve the technical memorandum at a meeting prior to that date.

8. Next meeting

- a. The next Region K Water Modeling Committee will be held on January 10, 2018 at 9:00 AM, prior to the full Region K meeting (to be held at LCRA Dalchau Service Center). The meeting will include an information session about modeling. During the meeting, Water Modeling Committee will consider action to recommend the revised Region K Cutoff Model Modeling Assumptions and the hydrologic variance request to the RWPG for approval and submittal to TWDB.

9. New / Other Business

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a. None.

10. Public Comments

a. No public comments.

11. Teresa Lutes adjourned the meeting at 12:51 p.m.