

**Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting
LCRA Dalchau Service Center, Conference Room A504
January 10, 2018**

1. Teresa Lutes called meeting to order at 9:08 a.m.

2. Attendees (26)
 - 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
 - Jennifer Walker – Region K, Environmental Rep
 - Mike Reagor – Region K, Small Municipalities Rep
 - Ron Fieseler – Region K, GMA-9 Rep
 - David Lindsay – Region K, Recreation Rep (Alternate)
 - Ann McElroy – Region K, Environmental Rep
 - Jeff Fox – Region K, Municipalities Rep (Alternate)
 - Lann Bookout – TWDB (Region K non-voting member)
 - Jaime Burke – AECOM
 - Alicia Smiley – AECOM
 - James Kowis – James Kowis Consulting, LLC
 - Joe Trungale – Trungale Engineering
 - Matt Nelson – TWDB
 - Temple McKinnon – TWDB
 - Rebecca Batchelder – LCRA
 - Stacy Pandey - LCRA
 - Leonard Oliver – LCRA
 - Helen Gerlach – Austin Water
 - Richard Hoffpauir – Hoffpauir Consulting
 - Jordan Furnans – LRE Water, LLC
 - Cindy Smiley – Smiley Law Firm
 - Stefan Schuster – Public
 - Ken Cunningham – STP Nuclear Operating Co.
 - JoKarr Tedder – CTWC

3. Public Comments
 - a. No public comments.

4. Minutes Approval
 - a. Draft of December 13, 2017
 - i. Ron Fieseler motioned to approve minutes. David Lindsay seconded. Committee approved minutes.

5. Surface Availability Modeling and Region K Cutoff Model Presentation

**Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting
LCRA Dalchau Service Center, Conference Room A504
January 10, 2018**

- a. Surface Water Modeling 101, presented by Joe Trungale
 - i. All Regional Water Planning Groups (RWPG) shall evaluate water source availability and existing water supplies during drought conditions. The water availability shall be based on Water Availability Model (WAM) runs.
 - 1. A WAM is a computer-based simulation predicting the amount of water that would be in a river or stream under a specified set of conditions. Comprised of two parts:
 - a. The modeling program, "WRAP"(Water Rights Analysis Package), which is maintained by Dr. Ralph Wurbs at Texas A&M.
 - b. Text input files that contain basin-specific information for WRAP to process (input file or WAM). The text input files are maintain by TCEQ.
 - ii. RWPG required to use Texas Commission on Environmental Quality's (TCEQ) WAM Run 3, unless approval is given to use alternative model.
 - 1. Unmodified Run #3
 - a. All water rights at full authorization
 - b. All applicable permit conditions, such as flow requirements
 - c. No return flows
 - d. Used to evaluate applications for perpetual water rights and amendments
 - e. Includes no sedimentation of authorized reservoir storage capacity
 - iii. WAM Simulation
 - 1. Water rights are ranked and watershed parameters are determined for watersheds
 - 2. Annual and Monthly Simulation Loop
 - a. Considers naturalized flow, net evaporation rates and water rights
 - i. Water Right Priority Loop
 - 1. Considers water right activities such as water availability for diversion or refilling storage, streamflow to meet instream flow targets, or hydropower release targets.
 - ii. Ann McElroy asked whether domestic and livestock (D&L) water uses are included in the model, as it would affect water availability. Generally D&L historical diversions are reflected in the naturalized flows prior to considering state water rights, although they are not explicitly modeled in the WAM. Committee decided this could be followed-up on more at a later date.
 - iv. More information on WRAP and the WAM models can be found on Texas A&M's and TCEQ's websites.
- b. Region K Cutoff Model, presented by Jaime Burke
 - i. In 2006, Region K initially calculated availability of existing surface water using WAM Run #3. However, Region F developed a modified model called the "No Call" WAM Run #3 that both Regions K and F adopted, which allowed water to be available for the upstream Region F.
 - ii. In 2011, Region K received funding to review the "No Call" model.

**Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting
LCRA Dalchau Service Center, Conference Room A504
January 10, 2018**

1. As a result of the study (which can be found on TWDB's website), the Region K WAM Run 3 Cutoff Model (Region K Cutoff Model) was selected.
 - a. Assumes all water rights in the upper half of the Colorado River basin are senior to the water rights in the lower basin. (Above O.H. Ivie and Lake Brownwood dams)
 - b. Water rights are still evaluated in the same priority order within their respective basins (above O.H. Ivie, above Lake Brownwood, and in the remaining lower basin downstream).
- iii. Region K Cutoff Model
 1. Applied modeling assumptions are more representative of the basin's real world operation.
 2. Different assumptions used in planning models versus permitting models do not imply the other is not a correct representation of the model for its own task.
 3. Model can be updated each planning cycle using the latest version of the TCEQ WAM Run 3 and modifying assumptions using the best available information.
- iv. 2016 Region K Water Plan
 1. TWDB approved use of Region K Cutoff Model for the surface water availability and water management strategies.
 2. Updated naturalized flow data by extending period from 1940-1998 to 1940-2013.
 3. Assumptions such as return flows and interruptible water supplies were used in the strategy model.
- v. 2021 Region K Water Plan
 1. RWPG is considering requesting use of Region K Cutoff Model again. Updated assumptions discussed at previous Water Modeling Committee meeting on December 13th.
6. Discussion and consider action to recommend updated assumptions to Region K Cutoff Model and hydrologic variance request to RWPG
 - a. Timeline: TWDB needs 60 days to approve request before modeling work can begin. Technical memorandum is due in September, which includes modeling results and associated water supplies.
 - b. David Lindsay asked for clarification on Assumption No. 11 (no interruptible water included in supply analysis, only as a strategy), asking why it is not used in supply analysis. Teresa Lutes says it is in sync with the conceptual analysis approach, calculating firm yield based on water rights attempting to divert their fully authorized amount with no return flows, so interruptible water would not be available. Each water right is modeled at its fully authorized amount so, by definition, interruptible water would not be expected to be included in the calculation. Interruptible water will be modeled when evaluating water management strategies.
 - c. Mike Reagor motioned to approved recommending Table A (handout), which includes updated variance requests for the Region K Water Availability analysis, to the full planning group for consideration for submittal to TWDB. Jennifer Walker seconded. Committee approved the motion.

**Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting
LCRA Dalchau Service Center, Conference Room A504
January 10, 2018**

7. Public Comments
 - a. Jordan Furnans from LRE Water has separately completed a water availability modeling analysis. Jordan suggested that to calculate the firm yield of the Highland Lakes, you should include all stipulations in the LCRA Water Management Plan. What his model shows is that if interruptible water was included in the firm yield model, the firm yield overall would be reduced.
8. Next Committee Meeting
 - a. Next committee meeting will be in mid-to-late February.
 - b. All communications must go through Jaime Burke to help in compliance with the Open Meetings Act requirements.
9. Teresa Lutes adjourned the meeting at 9:58 a.m.