

**Lower Colorado Regional Water Planning Group
Water Management Strategies Meeting
AECOM, Treaty Oak Conference Room
October 31, 2019**

1. Lauri Gillam called meeting to order at 12:14 p.m.

2. Attendees (21)
Committee Members:
Lauri Gillam – Region K, Small Municipalities Rep, Water Management Strategies Committee Chair
Ann McElroy – Region K, Environmental Rep
Daniel Berglund – Region K, Small Business Rep
David Wheelock – Region K, River Authority Rep
Doug Powell – Region K, Recreation Rep
Jennifer Walker – Region K, Environmental Rep
Karen Haschke – Region K, Public Rep
Teresa Lutes – Region K, Municipalities Rep

Additional Attendees:
John Burke – Region K, Utilities Rep
David Lindsay – Region K, Recreation Rep (Alternate)
Christianne Castleberry – Region K, Water Utilities Rep (Alternate)
Jaime Burke – AECOM
Alicia Smiley – AECOM
Helen Gerlach – Austin Water
Richard Hoffpauir – Hoffpauir Consulting
Joe Trungale – Trungale Engineering
Leonard Oliver – LCRA
Rebecca Batchelder – LCRA
Stacy Pandey – LCRA
Adam Conner – Freese and Nichols
Daniel Bulovas – Central Texas Water Coalition

3. Public Comments
 - a. None.

4. Minutes Approval
 - a. Draft of October 3, 2019
 - i. David Wheelock requested to add Leonard Oliver to attendance sheet.
 - ii. David Wheelock motioned to approve the minutes. Lauri Gillam seconded. Committee passed with a hearty “argh.”

5. Status Update on Water Management Strategy Evaluations
 - a. 42 strategies under RWPG or committee review.
 - b. 16 strategies in progress/WUG review.
 - c. 0 strategies not started.

6. Draft Strategy Review
 - a. First drafts of strategy write-ups were previously presented to WMS committee for: Hays County Pipeline, Brush Management, Mining Conservation, and Irrigation Drought Management. Consultant incorporated comments from discussion.
 - i. Irrigation Drought Management – Teresa Lutes requested that cost language be clarified as not being the cost of implementing strategy, but opportunity cost.
 - b. Daniel Berglund motioned to send the additional strategies to the RWPG for review. Doug Powell seconded. Committee passed with a hearty “argh.”
 - c. Consultant met with Alicia Reinmund-Martinez and Blake Neffendorf to update BS/EACD Aquifer Storage and Recovery projects. Write-ups to be provided to the RWPG.

7. Austin Water Management Strategy Evaluations
 - a. Discussed Austin Brackish Groundwater Desalination, Austin Blackwater and Greywater Reuse, Austin Decentralized Direct Non-Potable Reuse, and Austin Onsite Rainwater and Stormwater Harvesting + Community-Scale Stormwater Harvesting. Write-ups were not presented as handouts because strategies are still in review with Austin Water.
 - b. Austin Brackish Groundwater Desalination
 - i. No discussion.
 - c. Austin Blackwater and Greywater Reuse
 - i. David Wheelock noted there was an inconsistency between strategy costing and the costing for the Rainwater Harvesting strategy, which says costs are borne by the individuals, making the project a “community cost” rather than a WUG cost. Teresa said Austin Water would likely provide an incentive in the form of a rebate, which is a cost to the WUG, but specifics have not yet been determined. RWPG to ask Lann Bookout if the TWDB prefers to see WUG cost or total cost. Strategy costing for these strategies will be revised for consistency.
 - ii. John Burke asked if developers would make Municipal Utility Districts (MUDs) for developments to receive incentive payments. Austin Water is working on permit to allow such process.
 - d. Austin Decentralized Direct Non-Potable Reuse
 - i. Daniel Berglund asked for strategy to clarify that the costs are based on the 2070 decade when a high yield is expected.
 - e. Austin Onsite Rainwater and Stormwater Harvesting + Community-Scale Stormwater Harvesting
 - i. Teresa Lutes confirmed that rainwater was originally sent to RWPG with rebate costs. Austin Water is refining costs.

- ii. David Lindsay noted strategy assumes adequate rainfall. Teresa Lutes responded that potable backup is available for critical needs. Leonard Oliver asked for consultant to confirm that the 236 ac-ft/yr yield is the drought rainfall yield rather than the average.
 - f. Austin Water provided new costs for the Off-Channel Reservoir, Aquifer Storage and Recovery, Indirect Potable Reuse, and Capture Local Inflows to Lady Bird Lake strategies.
- 8. LCRA Water Management Strategy Evaluations
 - a. Expand Use of Groundwater in Bastrop County
 - i. Online: 2030
 - ii. Project Yield: 30 ac-ft/yr
 - iii. Project Costs: Total Project Costs: \$331,000; Annual Cost: \$25,000; Unit Cost: \$833/ac-ft
 - iv. David Wheelock said that because LCRA is currently in the process of permitting for this strategy, it may need to be included as an alternate strategy. Despite small yield, though, it should be included in the RWP because it reflects reality.
 - v. Teresa Lutes asked why environmental considerations read there were “*no unreasonable impacts to surface water,*” and requested a revision to no impact.
 - b. Groundwater Supply for Fayette Power Plant (on-site)
 - i. Online: 2040
 - ii. Project Yield: 40 ac-ft/yr
 - iii. Project Costs: Total Project Costs: \$342,000; Annual Cost: \$27,000; Unit Cost: \$675/ac-ft
 - iv. Alternative strategy assumes volume of groundwater used would exceed the MAG. Project Yield: 700 ac-ft/yr (online 2030); Unit Cost: \$117/ac-ft
 - v. David Wheelock asked if the yield was same as 2016 RWP. Consultant confirmed yield.
 - c. Groundwater Supply for Fayette Power Plant (off-site)
 - i. Online: 2030
 - ii. Project Yield: 2,500 ac-ft/yr
 - iii. Project Costs: Total Project Costs: \$33,618,000; Annual Cost: \$3,142,000; Unit Cost: \$1,257/ac-ft
 - iv. No discussion.
 - d. Baylor Creek Reservoir
 - i. Online: 2040
 - ii. Project Yield: 18,000 ac-ft/yr
 - iii. Project Costs: Total Project Costs: \$219,883,000; Annual Cost: \$16,333,000; Unit Cost: \$907/ac-ft
 - iv. Teresa Lutes asked if it would be operated similarly to Arbuckle Reservoir. David Wheelock said yes, levels would fluctuate.
 - e. Alternative LCRA Supplement Bay & Estuary Inflows with Brackish Groundwater
 - i. Online: 2030

- ii. Project Yield: 12,000 ac-ft/yr
 - iii. Project Costs: Total Project Costs: \$47,269,000; Annual Cost: \$6,381,000; Unit Cost: \$532/ac-ft
 - iv. *“Timing and location of delivery of brackish groundwater could have equal or possibly more effective impacts to the bay than releases from Highland Lakes’ storage.”*
 - 1. David Wheelock requested replacing *“impacts”* with *“benefits.”*
 - v. *“This strategy could be used by LCRA to help meet environmental needs that would otherwise be met from stored water releases from the Highland Lakes, potentially increasing availability of interruptible water supply by up to 12,000 ac-ft/yr.”*
 - 1. David Wheelock requested removing *“interruptible.”*
 - vi. David Wheelock requested removing water right royalty payment.
- f. Import Return Flows from Williamson County
- i. Online: 2030
 - ii. Project Yield: 5,460 – 25,000 ac-ft/yr
 - iii. Project Costs: Total Project Costs: \$75,734,000; Annual Cost: \$6,080,000; Unit Cost: \$243/ac-ft
 - iv. Jennifer asked if the strategy was recommended last cycle. Jaime Burke responded that it was an alternative, but it could be recommended this cycle because there are no interregional conflicts with Region G. The project location is downstream of Austin, it is not affected by the discharge ban on the Highland Lakes.
- g. Alternative LCRA Brackish Groundwater Desalination
- i. Online: 2040
 - ii. Project Yield: 22,400 ac-ft/yr
 - iii. Project Costs: Total Project Costs: \$229,006,000; Annual Cost: \$31,199,000; Unit Cost: \$1,393/ac-ft
 - iv. No discussion.
- h. Alternative LCRA Groundwater Importation from Carrizo-Wilcox Aquifer
- i. Online: 2040
 - ii. Project Yield: 35,000 ac-ft/yr
 - iii. Project Costs: Total Project Costs: \$256,382,000; Annual Cost: \$29,031,000; Unit Cost: \$829/ac-ft
 - iv. No discussion.
- i. LCRA Amendments to Water Management Plan
- i. Online: 2020; Offline: 2050
 - ii. Project Yield: 63,405 – 0 ac-ft/yr
 - iii. Unit Cost: \$37 – 60/ac-ft
 - iv. Leonard Oliver noted that this strategy appears different than how LCRA manages their water because it does not include return flows (which is referenced in another section).

- v. Jennifer Walker asked why strategy is necessary. Daniel Berglund responded that this strategy sheds light on visibility of availability. Amendments do not fit the definition of a water supply in Chapter 3, so it must be included in Chapter 5 as a recommended change. The outcome is to acknowledge Run-of-River interruptible water from the Highland Lakes.
- vi. Joe Trungale noted this is with modifications to trigger levels, so it does not match the current LCRA Water Management Plan. Leonard suggested maybe showing the period of record water for information only.

9. Wharton Water Supply

- a. Strategy Definition and Cost
 - i. The 2017 Regional Water Supply Study for the City of Wharton and East Bernard recommended the use of additional groundwater; incorporated into Expand Use of Local Groundwater for Gulf Coast aquifer.
 - ii. Online: 2030
 - iii. Project Yield: 3,000 ac-ft/yr
 - iv. Project Costs: Total Project Costs: \$9,100,000; Annual Cost: \$817,000; Unit Cost: \$272/ac-ft
- b. No discussion – strategy approved to send to RWPG.

10. Water Purchase and Contracts

- a. LCRA New Contracts/Contract Amendments
 - i. Jennifer Walker asked if the WUGs requested these strategies and if environmental impacts were considered. Many WUGs did request the strategy, and new contracts were only recommended accounting for LCRA availability.
- b. New Water Purchase
 - i. WUGs in the region purchase water from water providers other than the three Major Water Providers.
 - 1. Hays (purchase from Buda): 70 ac-ft/yr (2060); 140 ac-ft/yr (2070)
 - 2. Hays County Mining (purchase from Buda reuse): 500 ac-ft/yr (2040)
 - 3. Windermere (purchase from Blue Water): 2,016 ac-ft/yr (2030)
 - ii. Project Costs
 - 1. Assumed water is sold at retail cost, except for Hays infrastructure
 - 2. Total Project Costs - Hays: \$213,000
 - 3. Annual Cost: Hays (\$215,000), Hays County Mining (\$798,335), Windermere (\$2,351,758)
 - 4. Unit Cost: Hays (\$1,536/ac-ft), Hays County Mining (\$1,597/ac-ft), Windermere (\$1,167/ac-ft)
 - iii. No discussion – strategy approved to send to RWPG.
- c. Water Purchase Amendments
 - i. WUGs in the region purchase water from water providers other than the three Major Water Providers.

1. Barton Creek WSC (purchase from Travis County MUD 4): 90 ac-ft/yr (2020)
 2. Creedmoor-Maha WSC (purchase from Aqua WSC): 335 ac-ft/yr (2040)
 3. Travis County MUD 14 (purchase from Aqua WSC): 35 ac-ft/yr (2050)
- ii. Project Costs
 1. Assumed water is sold at retail cost
 2. Annual Cost: Barton Creek WSC (\$146,633), Creedmoor-Maha WSC (\$409,350), Travis County MUD 14 (\$42,768)
 3. Unit Cost: Barton Creek WSC (\$1,629/ac-ft), Creedmoor-Maha WSC (\$1,222/ac-ft), Travis County MUD 14 (\$1,222/ac-ft)
 - iii. No discussion – strategy approved to send to RWPG.

11. Irrigation Conservation

- a. Tail Water Recovery
 - i. Daniel Berglund requested that the RWPG not recommend this strategy. Other strategies utilize rainfall and water more efficiently so that there is less tailwater to recover. Jennifer Walker agreed, noting that return flows from irrigation are beneficial to the streams.
 - ii. Stacy Pandey commented that it's important to have it in the plan somewhere. Alicia Smiley responded that it would be in a section describing strategies that were considered, but not recommended.
- b. Sprinkler Irrigation
 - i. Costs were updated to account for higher maintenance costs.
- c. Drip Irrigation for Non-Rice Crops
 - i. No changes since last meeting – strategy is only applied to Mills County.
- d. On-Farm Conservation
 - i. Measures updated based on discussion with Stacy Pandey and Daniel Berglund. Write-up provided for committee to later review.
- e. Real-Time Monitoring
 - i. New strategy includes the installation of meters that automatically record and transfer flow data at 15-minute intervals. Strategy assumes 3,500 meters at \$6,000 each with a water savings of 0.3 ac-ft/ac.
 - ii. David Lindsay suggested revising the name of the strategy for clarification. Suggestions included such as Real-Time Use Metering and Monitoring and Real-Time Flow Metering.
- f. Irrigation Operations Conveyance Improvements
 - i. Strategy improvements to the efficiency of the canal system that deliver water to the individual irrigator includes canal lining, vegetation control, gate automation, and other measures.
 - ii. Stacy Pandey explained that this is a much different strategy than last cycle. Components have been removed and included under other strategies.

12. Remaining Draft Strategy Evaluations

- a. Goldthwaite Strategy Request
 - i. The water right permit amendment and expansion of Goldthwaite's reservoir storage capacity cannot be recommended as a strategy in the RWP, as the yield is 0 ac-ft/yr during drought of record.
 - ii. David Lindsay noted there's value in having it in the plan as as considered.
- b. Reservoir Capacity Expansion
 - i. During times of drought, Llano installs a flashboard system downstream along the Llano River Lake to raise the reservoir level above the fixed spillway crest level.
 - ii. Joe Trungale modeled strategy; assuming the flashboard system added 100 ac-ft capacity, Llano's yield did not change in drought conditions.
 - iii. Lauri Gillam noted that the strategy could be considered but cannot be recommended due to the lack of yield.
- c. Development of New Groundwater Supplies – Yegua-Jackson Aquifer
 - i. Smithville was added to strategy.
- d. Water Supply Infrastructure Development
 - i. No discussion.

13. Remaining Strategy Evaluations in Progress

- a. Alliance Regional Water Authority Pipeline
- b. LCRA Mid-Basin Off-Channel Reservoir
- c. LCRA Excess Flows Off-Channel Reservoir
- d. LCRA Enhance Recharge and Conjunctive Use
- e. LCRA Amendments to Existing Water Rights/Permits
- f. LCRA Aquifer Storage and Recovery (ASR) in Carrizo-Wilcox
- g. LCRA Prairie Site Off-Channel Reservoir
- h. Austin Centralized Direct Non-Potable Reuse
- i. Austin Return Flows

14. Austin Strategy Edits

- a. Daniel Berglund motioned to accept comments provided by Austin Water. Karen Haschke seconded. Committee passed with a hearty "argh."

15. New / Other Business

- a. None.

16. Next Meeting

- a. The next RWPG meeting will be November 13, 2019 at 10:00 a.m. at the LCRA Dalchau Service Center.

17. Public Comments

a. None.

18. Lauri Gillam adjourned at 4:19 p.m.