

Region K Public Meeting

October 9, 2019

Lower Colorado Regional Water Planning Group
(Region K)



October 9, 2019

Agenda

1. Call to Order
2. Welcome and Introductions
3. Receive Public Comments
4. Attendance Report
5. Approval of Minutes from July 10, 2019 meeting
6. TWDB Update
7. Committee Reports – Legislative, WMS, and possible others

Agenda Item 7a

WATER MANAGEMENT STRATEGIES COMMITTEE REPORT

7a. Water Management Strategies Committee Report

▼ Committee meeting on August 8th

- Discussion of strategy water modeling options
- Presentation and discussion of draft water management strategy evaluations ready for Committee review
 - Municipal Conservation
 - BS/EACD Edwards/Middle Trinity ASR and Saline Edwards ASR
 - Rainwater Harvesting
- Update and discussion of draft Expand Use of Local Groundwater and Development of New Groundwater Supplies water management strategy evaluations.
- Update and discussion of draft Irrigation Conservation strategy evaluations

7a. Water Management Strategies Committee Report

- ▼ Committee meeting on September 16th
 - Discussion of new request for strategies from Goldthwaite
 - Review of changes to draft strategies based on committee comments
 - Presentation and discussion of draft water management strategy evaluations ready for Committee review
 - Expand Use of Local GW and Develop New GW
 - Ocean Desalination
 - Direct Reuse
 - Downstream Return Flows
 - Update and discussion of draft Irrigation Conservation strategy evaluations
 - Update and discussion of several LCRA strategies
 - Update and discussion of contract and purchase strategies

7a. Water Management Strategies Committee Report

- ▼ Committee meeting on October 3rd
 - Review of changes to draft strategies based on committee comments
 - Presentation and discussion of draft water management strategy evaluations ready for Committee review
 - Direct Potable Reuse
 - Non-Municipal Conservation
 - Irrigation Drought Management
 - Hays County Groundwater Importation
 - Brush Management
 - Wharton Water Supply
 - Discussion of committee definition of “significant water needs”
 - Discussion of potential amendment to Task 5A Scope of Work

Agenda Item 7b

LEGISLATIVE AND POLICY COMMITTEE REPORT

7b. Legislative and Policy Committee Report

- ▼ Committee meeting on August 29th
 - Meeting to review legislative/policy recommendations from 2016 Plan, review if edits were needed for this cycle, and determine if any new recommendations should be made.
 - Committee identified which member should be responsible for which updates.
 - Committee left with tasks to make updates to recommendations.
- ▼ Committee meeting on October 9th
 - Committee met to start discussing proposed edits to:
 - Management of Surface Water Resources: Inter-Basin Transfers and Model Linking
 - Groundwater
 - Coordination of Planning Cycles for Determination of Desired Future Conditions by GCDs and Generation of the Regional Water Plan by RWPGs
 - Inflows to Highland Lakes

Agenda Item 8

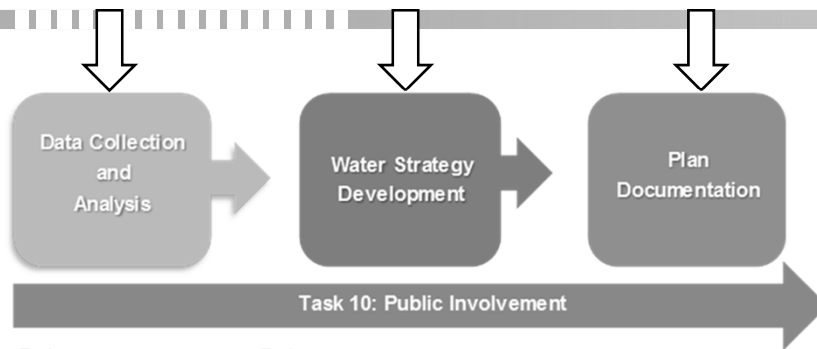
CONSULTANT STATUS REPORT

Region K

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8. Consultant Status Report



Task:

- 2A – Non-population demand
- 2B – Population demand
- 3 – Water supply analysis
- 4A – Water needs

Task:

- 4B – Potentially feasible strategies
- 4C – Technical memorandum
- 5A – Evaluation of strategies
- 5B – Conservation recommendations

Task:

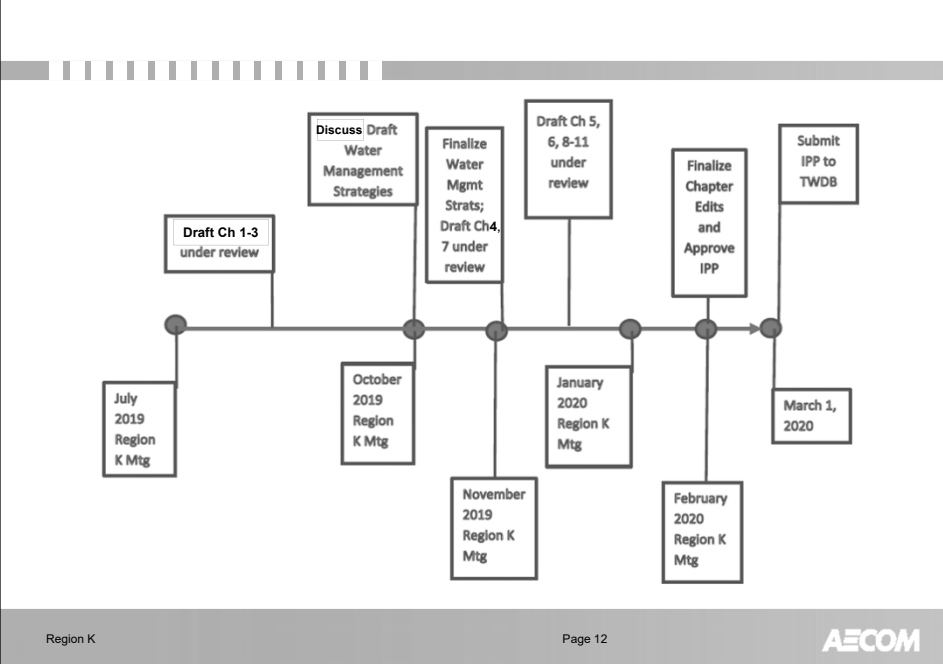
- 1 – Regional description
- 6 – Impacts of strategies
- 7 – Drought response
- 8 – Unique sites and policy recommendations
- 9 – Financing
- 11 – Implementation and comparison
- 12 – Prioritization of projects



8. Consultant Status Report



8. Consultant Status Report



8. Consultant Status Report
Effort since last meeting (July 10, 2019)

- ▼ Chapter 3 of 2021 Plan – Water Availability and Supplies
 - Out to Water Modeling Committee for review
 - Received comments/suggested edits from LCRA and Dave Lindsay
 - Working to address all comments before sending to RWPG
 - Water Modeling Committee will be meeting to discuss some of the comments

8. Consultant Status Report
Effort since last meeting (July 10, 2019)

- ▼ Water Management Strategies
 - All of the scoped strategies have ready-for-review or in-progress draft water management strategy evaluations.
 - Goldthwaite has requested three strategies be included for them. Committee heard presentation. Strategies can be included under already scoped items. Waiting on information from Goldthwaite.
 - Trungale Engineering has developed the strategy version of the Region K Cutoff Model, and is working on strategy evaluations.
 - Three WMS committee meetings held.

8. Consultant Status Report Effort since last meeting (July 10, 2019)

- ▼ Drought Response, Information, and Activities:
 - Drought Preparedness Council recommendations have been released.
 - Finalizing drought management strategies that need to be included in Chapter 7 before the draft will be ready for review.
 - May have Drought Committee meet once, if needed.
- ▼ Implementation and Comparison
 - Received Implementation Survey documentation from TWDB. Preparing a request for information to send out to the project sponsors.

8. Consultant Status Report Upcoming effort

- ▼ Finish draft strategies
 - Meet with WMS Committee one more time before November Region K meeting
 - Get drafts out to RWPG to review before November Region K meeting.
 - Allow RWPG to make initial decision on Recommended vs. Alternative vs. Considered strategies for 2021 Plan at November meeting.
- ▼ Finish addressing Chapter 3 (Water Availability and Supplies) comments after meeting with Water Modeling Committee and get draft chapter out to RWPG for review.
- ▼ Finish Draft Chapter 4 (Water Needs) after meeting with Water Modeling Committee to address Chapter 3 comments and get draft chapter to RWPG for review.
- ▼ Finish Draft Chapter 7 (Drought Response) and send out for review.
- ▼ Send Implementation Survey out to WUGs/WWPs.

Agenda Item 9

DISCUSSION OF DRAFT 2021 PLAN CHAPTERS OUT FOR REVIEW AND COMMENTS RECEIVED

9. Draft 2021 Plan Chapters out for Review and Comments Received

- ▼ Chapter 2 – Population and Water Demands
 - Discussed comments received from LCRA and Dave Lindsay at July meeting.
 - No additional comments have been received yet.
 - Working on addressing comments.

9. Draft 2021 Plan Chapters out for Review and Comments Received

- ▼ Chapter 1 – Regional Water Planning Area Description
 - Out for RWPG Review (electronic documents emailed)
 - Anticipating comments soon from LCRA.
 - Dave Lindsay is working on an update to Appendix 1B that will be provided when ready.

- ▼ Chapter 3 – Water Availability and Supplies
 - Have received comments on Chapter 3 from Water Modeling Committee.
 - Working on addressing comments.
 - Will send out to RWPG once comments have been addressed.

Agenda Item 10

PRESENTATION AND DISCUSSION OF DRAFT WATER MANAGEMENT STRATEGIES READY FOR RWPG REVIEW

10. Draft Water Management Strategies for RWPG Review

- These strategies have been discussed and reviewed by the Water Management Strategies Committee and are ready for RWPG review.
- No action today, only presentation/discussion and providing documentation for RWPG members to review and comment on. Comments will be discussed and incorporated.
- Presented at July 10, 2019 Meeting (13)
 - Municipal Drought Management
 - Burnet County Regional Projects
 - Buena Vista; East Lake Buchanan; Marble Falls System
 - Austin
 - Aquifer Storage and Recovery; Off-Channel Reservoir with Evaporation Suppressant; Onsite Rainwater and Stormwater Harvesting; Capture Local Inflows to Lady Bird Lake; Indirect Potable Reuse through Lady Bird Lake; Lake Austin Operations; Austin Conservation
 - STPNOC (Matagorda Steam-Electric)
 - Alternate Canal Delivery; Brackish Surface Water Blending

10. Draft Water Management Strategies for RWPG Review

- Today's Agenda (10)
 - a) BS/EACD Edwards/Middle Trinity ASR
 - b) BS/EACD Saline Edwards ASR
 - c) Municipal Conservation
 - d) Rainwater Harvesting
 - e) Downstream Return Flows
 - f) Oceanwater Desalination
 - g) Expand Use of Local Groundwater
 - h) Development of New Groundwater Supplies
 - i) Direct Reuse
 - j) Direct Potable Reuse

10a. BS/EACD Edwards/Middle Trinity ASR

- ▼ Strategy to use water from the Edwards-BFZ Aquifer and store it in the Middle Trinity Aquifer for later use.
 - Update to 2016 Plan strategy
 - Buda (Hays County)
 - Buda has completed a feasibility study and expects to begin a pilot study in fall 2019. Facilities expected online in 2020.
 - Infrastructure includes extraction wells from the Edwards-BFZ Aquifer with transmission lines, new treatment facilities (minimal treatment), injection-extraction wells for the Middle Trinity Aquifer, and transmission pump stations and pipelines.
 - Yield: 150 ac-ft/yr (2020); 600 ac-ft/yr (2030-2070)

10a. BS/EACD Edwards/Middle Trinity ASR

- Costs:
 - Total Project Costs: \$9,986,000
 - Annual Cost: \$1,044,000
 - Unit Cost: \$1,740/ac-ft
- Environmental / Ag Impacts
 - Environmental permitting needed; may remove water from the aquifer during non-drought years that otherwise wouldn't be removed. Negligible impacts during drought.
 - Negligible impacts to agriculture and other natural resources

10b. BS/EACD Saline Edwards ASR

- ▼ Strategy to use water from the Edwards-BFZ Aquifer and store it in the Saline Edwards Aquifer for later use. Recovered water will be blended with water directly from the Saline Edwards to increase yield.
 - Update to 2016 Plan strategy
 - Joint project for Buda (Hays County) and Hays County-Other
 - Online 2040
 - ASR location assumed to be Texas Disposal Systems site in Creedmoor, TX.
 - Infrastructure includes extraction wells from the fresh Edwards BFZ Aquifer with transmission lines and pump station, new injection treatment facilities (minimal treatment), injection wells for the Saline Edwards Aquifer, extraction wells for the recovered water and from the Saline Zone water, desalination treatment facilities, concentrate injection wells in to the Saline Zone, and transmission pump stations and pipelines.

10b. BS/EACD Saline Edwards ASR

- Yield: Buda – 800 ac-ft/yr; Hays County-Other – 500 ac-ft/yr
- Costs
 - Total Project Costs: Buda – \$12,655,500; Hays County-Other – \$7,922,500
 - Annual Cost: Buda – \$2,206,000; Hays County-Other – \$1,381,000
 - Unit Cost: \$2,759/ac-ft
- Environmental / Ag Impacts
 - Environmental permitting needed; may remove water from the aquifer during non-drought years that otherwise wouldn't be removed. Negligible impacts during drought. Desalination facilities require greater energy demands and produce more greenhouse gas emissions. Brine concentrate.
 - Negligible impacts to agriculture and other natural resources

10c. Municipal Conservation

▼ Previous Discussions:

- March 4, 2019 WMS Committee Meeting – Committee voted on methodology.
- April 10, 2019 WMS Committee Meeting – Committee presented with table showing reduction numbers. Committee recommended sending methodology and numbers to RWPG.
- April 24, 2019 Region K Meeting – RWPG presented with methodology and reductions.
- June 6, 2019 WMS Committee Meeting – Committee received costing assumptions and provided feedback.
- July 10, 2019 Region K Meeting – RWPG presented with detailed costing.

10c. Municipal Conservation

▼ Draft strategy evaluation write-up includes:

- Methodology
- Table on outdoor watering restrictions
 - Shown for information – in some cases, savings are greater than water savings assumed for strategy yield
- Conservation measures (with capital and non-capital costs)
- Table showing water savings by WUG
- Costs broken into multiple tables – Leak Detection and Repair, Advanced Metering Infrastructure, and Total Costs (includes non-capital measures)
- Environmental impacts

▼ Received comments from Lakeway MUD, but have not yet incorporated

10d. Rainwater Harvesting

- ▼ Rebates provided to private homeowners who construct large-scale rainwater harvesting system on their property. Rebates are not assumed to cover the cost of the entire system.
 - Considered for municipal WUGs other than Austin: Hays County-Other, Dripping Springs WSC, Hays (Hays County), Sunset Valley (Travis County)
 - Yield & Costs
 - Assumption that 10 percent of households will implement the strategy by 2030.

WUG	County	River Basin	Yield (ac-ft/yr)							Project Cost	Unit Cost (\$/ac-ft)
			2020	2030	2040	2050	2060	2070			
County-Other	Hays	Colorado	0	16	24	31	36	50	\$447,000	\$634	
Dripping Springs WSC	Hays	Colorado	0	34	44	57	73	81	\$733,000	\$634	
Hays	Hays	Colorado	0	3	4	4	6	7	\$62,000	\$639	
Sunset Valley	Travis	Colorado	0	2	2	3	3	4	\$225,000	\$4,069	

10e. Downstream Return Flows

- ▼ Return flows from Pflugerville.
 - Assumed 60 percent of total demand, after removing drought management and conservation savings. Reduced yield further by 10 percent to account for channel losses and evaporation.
 - Yield: 3,985 – 8,267 ac-ft/yr (online 2020)
 - Costs
 - No facilities costs, only energy costs
 - Annual Cost: \$89,000
 - Unit Cost: \$11/ac-ft
 - Notes
 - Return flows provide a positive impact to instream flows as the travel to the point of diversion.
 - Negligible or positive impact to agriculture, depending on ultimate diversion point.

10f. Oceanwater Desalination

- ▼ Divert seawater from the Gulf of Mexico near the Matagorda Bay, treat the water using reverse osmosis (RO) filtration, and deliver treated water serve industrial users in and around Bay City.
 - No project sponsor
 - Yield: 22,400 ac-ft/yr (online 2060)
 - Costs
 - Total Project Costs: \$575,331,000
 - Annual Cost: \$79,072,000
 - Unit Cost: \$3,530/ac-ft
 - Environmental Impacts
 - Environmental permitting and studies will be required to determine the impact of the intake structure on marine ecosystems. Oceanwater intakes, especially surface-level intakes, are prone to entrainment of aquatic organisms and their propagules (eggs, larvae, and spores), which leads to organism mortality. A number of threatened and/or endangered species are present in the project area.

10g. Expand Use of Local Groundwater

- ▼ Expand Local Use of Groundwater involves pumping additional groundwater from an aquifer that the WUG is currently using as a source, either using the WUG's existing wells or drilling additional wells.
 - Yield methodology reviewed previously by WMS committee & presented to RWPG at July 10, 2019 meeting.
 - Aquifers:
 - Carrizo-Wilcox
 - Edwards-BFZ
 - Ellenburger-San Saba
 - Gulf Coast
 - Sparta
 - Trinity
 - Yegua-Jackson
 - Impacts
 - Strategy assumes drawdown stays within the Desired Future Conditions (DFC) except strategy identified as "Alternative".
 - In areas with agricultural users, the drafting of aquifers has the potential to draw down the static and pumping water levels and increase the cost of production for agricultural users.

10g. Expand Use of Local Groundwater

▼ Carrizo-Wilcox Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Carrizo-Wilcox	Aqua WSC	Bastrop	Brazos (to Colorado)	0	100	250	500	800	800	\$9,163,000	\$1,001
Carrizo-Wilcox	Aqua WSC	Bastrop	Colorado	0	200	100	50	0	0	\$9,163,000	\$1,001
Carrizo-Wilcox	Elgin	Bastrop	Colorado	0	0	0	0	50	50	\$0	\$80

– For WUGs in the Lost Pines GCD, a \$11.40/acre-foot production fee was assumed.

– Alternative strategies

- Consultant developed additional alternative strategies for entities with groundwater strategies that exceed the Modeled Available Groundwater (MAG).
- When applying alternative strategies, the DFC may be exceeded.

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Carrizo-Wilcox	Aqua WSC	Bastrop	Brazos (to Colorado)	0	0	0	0	0	5,736	\$37,682,000	\$221
Carrizo-Wilcox	Aqua WSC	Bastrop	Colorado	0	5,500	5,500	5,500	13,385	13,385	\$37,682,000	\$221

10g. Expand Use of Local Groundwater

▼ Edwards-BFZ Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Edwards-BFZ	Pflugerville	Travis	Colorado	0	0	20	20	20	20	\$0	\$50
Edwards-BFZ	Sunset Valley	Travis	Colorado	0	0	50	50	50	50	\$0	\$120

– For WUGs in the Barton Springs/Edwards Aquifer GCD, a \$0.17 per 1,000 gallons (approximately \$55.39 per acre-foot) production fee was assumed.

10g. Expand Use of Local Groundwater

▼ Ellenburger-San Saba Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Ellenburger-San Saba	Johnson City	Blanco	Colorado	0	100	100	100	100	100	\$2,386,000	\$2,030
Ellenburger-San Saba	Bertram	Burnet	Colorado (to Brazos)	0	750	2,000	2,000	2,000	2,000	\$20,829,000	\$1,235
Ellenburger-San Saba	Mining	Burnet	Colorado	0	1,300	1,300	1,300	1,300	1,300	\$7,097,000	\$455

10g. Expand Use of Local Groundwater

▼ Gulf Coast Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Gulf Coast	Irrigation	Colorado	Brazos-Colorado	2,500	2,500	2,500	2,500	2,500	2,500	\$4,482,000	\$177
Gulf Coast	Corix Utilities Texas Inc.	Colorado	Colorado	0	0	0	1	2	4	\$0	\$50
Gulf Coast	County-Other	Colorado	Colorado	0	133	133	133	133	133	\$2,003,000	\$1,218
Gulf Coast	Irrigation	Colorado	Colorado	550	550	550	550	550	550	\$1,424,000	\$249
Gulf Coast	Irrigation	Colorado	Lavaca	5,000	5,000	5,000	5,000	5,000	5,000	\$8,774,000	\$171
Gulf Coast	County-Other	Fayette	Lavaca	41	41	41	41	41	41	\$0	\$49
Gulf Coast	Bay City	Matagorda	Brazos-Colorado	0	75	75	75	75	75	\$0	\$53
Gulf Coast	Irrigation	Matagorda	Colorado-Lavaca	300	300	300	300	300	300	\$1,431,000	\$430
Gulf Coast	Irrigation	Wharton	Brazos-Colorado	5,000	5,000	5,000	5,000	5,000	5,000	\$8,325,000	\$170
Gulf Coast	Wharton	Wharton	Brazos-Colorado	0	3,000	3,000	3,000	3,000	3,000	\$9,100,000	\$272
Gulf Coast	Irrigation	Wharton	Colorado	600	600	600	600	600	600	\$1,293,000	\$208

10h. Expand Use of Local Groundwater

▼ Sparta Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Sparta	County-Other	Fayette	Colorado	0	40	98	145	180	204	\$2,638,000	\$1,127

- Per Fayette County GCD requirements, a \$1/acre-foot production fee was assumed.
- Treatment costs for the removal of iron and manganese are assumed for manufacturing and municipal WUGs developing new sources of groundwater.

10g. Expand Use of Local Groundwater

▼ Trinity Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Trinity	County-Other	Hays	Colorado	0	0	0	0	0	200	\$2,674,000	\$1,180
Trinity	Dripping Springs WSC	Hays	Colorado	0	0	300	300	300	300	\$3,507,000	\$1,023
Trinity	Mining	Hays	Colorado	600	600	600	600	600	600	\$2,409,000	\$373
Trinity	Irrigation	Mills	Brazos	300	300	300	300	300	300	\$1,323,000	\$403
Trinity	Garfield WSC	Travis	Colorado	0	0	0	7	26	47	\$0	\$85
Trinity	Manville WSC	Travis	Colorado	0	0	0	0	0	703	\$5,035,000	\$643

10g. Expand Use of Local Groundwater

▼ Yegua-Jackson Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Yegua-Jackson	Mining	Fayette	Colorado	760	760	0	0	0	0	\$3,176,000	\$355

10h. Development of New Groundwater

- ▼ Development of New Groundwater involves drilling wells to pump groundwater from an aquifer that the WUG is currently not using as a source.
 - Yield methodology reviewed previously by WMS committee & presented to RWPG at July 10, 2019 meeting.
 - Storage tanks costed for strategies for municipal WUGs.
 - Transmission line lengths and need for pump stations varied depending on water use category.
 - Aquifers:
 - Ellenburger-San Saba
 - Gulf Coast
 - Hickory
 - Marble Falls
 - Sparta
 - Trinity
 - Yegua-Jackson
 - Impacts
 - Strategy assumes drawdown stays within the Desired Future Conditions (DFC).
 - In areas with agricultural users, the drafting of aquifers has the potential to draw down the static and pumping water levels and increase the cost of production for agricultural users.

10h. Development of New Groundwater

▼ Ellenburger-San Saba Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Ellenburger-San Saba	Mining	Burnet	Brazos	0	0	0	300	400	700	\$4,495,000	\$534

10h. Development of New Groundwater

▼ Gulf Coast Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Gulf Coast	Irrigation	Matagorda	Colorado	510	510	510	510	510	510	\$1,195,000	\$180

10h. Development of New Groundwater

▼ Hickory Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Hickory	Mining	Burnet	Colorado	0	1,000	1,000	1,000	1,000	1,000	\$4,863,000	\$432

10h. Development of New Groundwater

▼ Marble Falls Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Marble Falls	Mining	Burnet	Colorado	0	0	1,000	1,000	1,000	1,000	\$3,345,000	\$307

10h. Development of New Groundwater

▼ Sparta Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)					Project Cost	Unit Cost (\$/ac-ft)	
				2020	2030	2040	2050	2060			2070
Sparta	County-Other	Fayette	Lavaca (from Colorado)	400	400	400	400	400	400	\$4,948,000	\$1,498

- Per Fayette County GCD requirements, a \$1/acre-foot production fee was assumed. Additionally, treatment costs for the removal of iron and manganese are assumed for manufacturing and municipal WUGs developing new sources of groundwater.

10h. Development of New Groundwater

▼ Trinity Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)					Project Cost	Unit Cost (\$/ac-ft)	
				2020	2030	2040	2050	2060			2070
Trinity	Hays	Hays	Colorado	0	100	100	100	100	100	\$3,719,000	\$3,830
Trinity	Elgin	Travis (Need in Bastrop)	Colorado	0	0	0	0	1,000	1,825	\$14,774,000	\$953
Trinity	Sunset Valley	Travis	Colorado	0	0	300	300	300	300	\$5,401,000	\$2,063
Trinity	Travis County MUD 10	Travis	Colorado	0	100	100	100	100	100	\$3,719,000	\$3,830

- Treatment costs for the removal of iron and manganese are assumed for manufacturing and municipal WUGs developing new sources of groundwater.

10h. Development of New Groundwater

▼ Yegua-Jackson Aquifer

Aquifer	WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
				2020	2030	2040	2050	2060	2070		
Yegua-Jackson	Manufacturing	Fayette	Lavaca	0	100	100	100	100	100	\$3,425,000	\$3,580

- Per Fayette County GCD requirements, a \$1/acre-foot production fee was assumed. Additionally, treatment costs for the removal of iron and manganese are assumed for manufacturing and municipal WUGs developing new sources of groundwater.

10i. Direct Reuse

▼ Direct (non-potable) involves the reuse of treated wastewater without first being diluted in a natural body of water.

- Considered for municipal WUGs other than Austin: Blanco, Buda, Dripping Springs WSC, Fredericksburg, Horseshoe Bay, Lago Vista, Lakeway MUD, Marble Falls, Meadowlakes, Travis County WCID 17, and West Travis County PUA.
- Coordinated with WUG representatives to include individualized details for each project as shown in the write-up.
- Costs
 - Distribution level costs are not included in regional water planning.
- Environmental and agricultural impacts vary somewhat from WUG to WUG.

10i. Direct Reuse

▼ Direct Non-Potable Reuse (11):

WUG	County	River Basin	Yield (ac-ft/yr)						Project Cost	Unit Cost (\$/ac-ft)
			2020	2030	2040	2050	2060	2070		
Blanco	Blanco	Guadalupe	0	146	146	146	146	146	\$3,700,000	\$2,171
Horseshoe Bay	Burnet, Llano	Colorado	0	154	154	154	154	154	\$4,231,000	\$2,238
Marble Falls	Burnet	Colorado	0	100	200	300	400	500	\$4,785,000	\$850
Meadowlakes	Burnet	Colorado	75	75	75	75	75	75	\$0	\$0
Fredericksburg	Gillespie	Colorado	0	132	132	132	132	132	\$10,175,000	\$5,977
Buda	Hays	Colorado	100	1,120	1,120	1,120	1,680	1,680	\$15,299,000	\$796
Dripping Springs WSC	Hays	Colorado	0	390	460	531	601	672	\$5,800,000	\$774
West Travis County PUA	Hays, Travis	Colorado	0	224	224	224	224	224	\$6,446,000	\$2,455
Lago Vista	Travis	Colorado	0	224	336	448	560	673	\$5,879,000	\$835
Lakeway MUD	Travis	Colorado	0	450	450	900	900	900	\$11,619,000	\$1,118
Travis County WCID 17	Travis	Colorado	0	510	510	510	510	510	\$10,737,000	\$1,700

10j. Direct Potable Reuse

▼ Reclamation and treatment of water from wastewater to drinking water quality.

- Buda, Dripping Springs, West Travis County PUA (WTCPUA)
- Yield = Buda – 2,240 ac-ft/yr; Dripping Springs – 560 ac-ft/yr; WTCPUA – 336 ac-ft/yr (online 2030)
- Costs
 - Cost estimate includes infrastructure improvements, but not the purchase of the treated water, as no water purchase cost has been identified.
 - Total Project Costs: Buda (\$33,503,000), Dripping Springs (\$12,119,000), WTCPUA (\$7,788,000)
 - Annual Cost: Buda (\$4,399,000), Dripping Springs (\$1,446,000), WTCPUA (\$972,000)
 - Unit Cost: Buda (\$1,964/ac-ft), Dripping Springs (\$2,582/ac-ft), WTCPUA (\$2,893/ac-ft)
- Notes
 - DPR implementation for Buda, the Total Dissolved Solids (TDS) concentration of the DPR residual return flows to the receiving Plum Creek watershed would be increased
 - Strategy would reduce effluent discharge flows into the tributaries of Plum Creek by up to 2,240 ac-ft/yr

10. Working Draft Water Management Strategies

▼ Under Committee Review:

- Non-Municipal Conservation and Drought Management
 - Irrigation Drought Management
 - Irrigation Conservation
 - Mining Conservation
- Hays County Groundwater Importation
 - Hays County Pipeline
 - Alliance Regional Water Authority Pipeline
- Brush Management
- Wharton Water Supply
- Water Purchase/Water Purchase Amendments

– LCRA Water Management Strategies

- LCRA Expand Groundwater in Bastrop County
- LCRA Groundwater for Fayette Power Plant – onsite (smaller yield within MAG)
- LCRA Alternative Groundwater for Fayette Power Plant – onsite (larger yield exceeding MAG)
- LCRA Groundwater for Fayette Power Plant – offsite
- LCRA Baylor Creek Reservoir
- Alternative LCRA Supplement Environmental Flows with Brackish Groundwater

10. Working Draft Water Management Strategies

▼ In Progress:

- LCRA Water Management Strategies
 - New LCRA Contracts
 - New LCRA Contracts with Infrastructure
 - LCRA Contract Amendments
 - LCRA Contract Amendments with Infrastructure
 - LCRA Prairie Site Off-Channel Reservoir
 - LCRA Mid-Basin Off-Channel Reservoir
 - LCRA Excess Flows Off-Channel Reservoir
 - Amendments to LCRA Water Management Plan

- LCRA Import Return Flows from Williamson County
- LCRA Enhance Recharge and Conjunctive Use
- LCRA Amendments to Existing Water Rights/Permits
- LCRA Aquifer Storage and Recovery (ASR) in Carrizo-Wilcox
- LCRA Brackish Groundwater Desalination
- LCRA Groundwater Importation from Carrizo-Wilcox

10. Working Draft Water Management Strategies

▼ In Progress:

– Austin Water Management Strategies

- Austin Blackwater and Greywater Reuse
- Austin Community-Scale Stormwater Harvesting
- Austin Centralized Direct Non-Potable Reuse
- Austin Brackish Groundwater Desalination
- Austin Decentralized Direct Non-Potable Reuse
- Austin Onsite Rainwater and Storm Water Harvesting
- Austin Return Flows

- Austin Amendments to Existing Water Rights/Permits

– Goldthwaite Strategy Request

- Amendment to Existing Water Rights/Permits
- Reservoir Capacity Expansion
- Reuse

– Llano

- Reservoir Capacity Expansion

10. Significant Water Needs

- ▼ If a RWPA has significant identified water needs, the RWP shall provide a specific assessment of the potential for aquifer storage and recovery projects to meet those needs.

- *The threshold(s) for “significant” identified water needs are to be defined by the RWPG; however, RWPGs must clearly articulate in their RWP how they determined the threshold of significant water needs for this requirement. If an RWPG determines that water needs are significant, the RWPG shall generally assess ASR potential to the best of its ability based on the remaining budget resources currently under contract and as an assessment specific to their region. Some RWPGs may have already assessed ASR feasibility as part of their strategy evaluations to meet needs and should clearly document this.*

- ▼ >10,000 ac-ft/yr

Irrigation (Colorado, Matagorda, Wharton),
Aqua WSC, Austin, West Travis County PUA

- ▼ >15,000 ac-ft/yr

Irrigation (Colorado, Matagorda, Wharton),
Aqua WSC

Agenda Item 11

POTENTIAL TASK 5A SCOPE OF WORK AMENDMENT FOR EVALUATION OF WATER MANAGEMENT STRATEGIES

Region K

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AECOM

11. Scope of Work Amendment

- ▼ Was considering possible needed additional strategy scope of work items to be added, but determined none are needed at this point.
- ▼ Discussed possible need for requesting additional funding from allocated \$ for reuse strategy at last meeting.
 - When determining original budget, underestimated the number of WUGs that would want direct reuse and direct potable reuse.
 - 11 direct reuse
 - 3 direct potable reuse
 - Effort has required coordination with WUGs and individualized strategy infrastructure and costing details, and strategy descriptions.
 - Requesting for budget increase for reuse strategy from \$14,000 original to \$28,000.

Region K

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AECOM

11. Scope of Work Amendment

- ▼ After Austin Conservation strategy scope and budget was submitted to TWDB for approval, TWDB needed us to pull two of the measures out as separate strategies.
 - Austin Blackwater and Greywater Reuse
 - Austin Onsite Rainwater and Stormwater Harvesting
- ▼ No additional budget was allocated at the time. We split the \$4,000 for Austin Conservation to give \$2,000 to Austin Conservation and \$1,000 to the other two.
- ▼ Requesting to increase the budget for all three items to accommodate this change.
 - Austin Conservation (Increase from \$2,000 to \$3,000)
 - Austin Blackwater and Greywater Reuse (Increase from \$1,000 to \$2,500)
 - Austin Onsite Rainwater and Stormwater Harvesting (Increase from \$1,000 to \$2,500)

11. Scope of Work Amendment

- ▼ Task 5A Scope of Work Budget Amendment Request
 - Reuse (\$14,000 --> \$28,000)
 - Austin Conservation (\$2,000 --> \$3,000)
 - Austin Blackwater and Greywater Reuse (\$1,000 --> \$2,500)
 - Austin Onsite Rainwater and Stormwater Harvesting (\$1,000 --> \$2,500)
- ▼ Total budget increase request: \$18,000
- ▼ Previous Unallocated Task 5A Budget: \$25,178
- ▼ Remaining Unallocated Task 5A Budget: \$7,178

11. Scope of Work Amendment

- ▼ RWPG Discussion
- ▼ Receive Public Comments
- ▼ Consider and take action on amending the Task 5A Scope of Work for evaluating water management strategies for potential additional scope of work item(s) and budget reallocations; and authorize LCRA to submit a request to the TWDB for the amendment and to execute the subsequent contract amendment.

Agenda

12. Agenda items for next meeting
13. New / Other Business
14. Public Comments
15. Adjourn