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Agenda

1. Call to Order
2. Welcome and Introductions
3. Receive public comments
4. Approval of meeting minutes

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Agenda Item 5

STATUS UPDATE OF WATER MANAGEMENT STRATEGY EVALUATIONS

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5. Status Update on Strategy Evaluations - Review

Strategy	WUG	Strategy Type	New, Update, or Limited Update	Date Started	Status
Drought Management	All municipal WUGs and irrigation with needs	Drought Management	New	7-Mar-19	Municipal under RWPG review Irrigation ready for committee review
Advanced Water Conservation	Municipal utilities other than City of Austin and several irrigation measures	Conservation	New	7-Mar-19	Municipal under Committee review; several irrigation measures ready for committee review
Aquifer Storage and Recovery	Marville WSC	Aquifer Storage and Recovery	New		No longer requesting - no other project sponsors
BS/EACD – Edwards/Middle Trinity ASR	Buda, Sunset Valley	Aquifer Storage and Recovery	Update	5/15/2019	Under Committee review
BS/EACD – Saline Edwards ASR	Buda, Hays County-Other	Aquifer Storage and Recovery and Desalination	Update	5/15/2019	Under Committee review
East Lake Buchanan Project	Burnet County-Other	Surface water infrastructure	Limited Update	4/16/2019	under RWPG review
Buena Vista Regional Project	Burnet County WUGs (County-Other and potential others)	Surface water infrastructure	Limited Update	4/16/2019	under RWPG review
Marble Falls Regional Project	Marble Falls, Burnet County-Other, other potential WUGs	Surface water infrastructure	Update	4/16/2019	under RWPG review
City of Austin Conservation	Austin	Conservation	Update	4/22/2019	under RWPG review
City of Austin Onsite Rainwater and Storm Water Harvesting	Austin	Rainwater harvesting	Update	4/22/2019	under RWPG review
Capture Local Inflows to Lady Bird Lake	Austin	Other surface water	Limited Update	4/17/2019	under RWPG review
Lake Austin Operations	Austin	Drought Management	Limited Update	4/17/2019	under RWPG review
Reduced Lake Evaporation	Austin, potentially others with a reservoir	Other	Update / New	4/17/2019	Austin - under RWPG review, others not identified yet
STP Nuclear Operating Company (STPNOC) Alternate Canal Delivery	Steam-Electric (Matagorda Co.)	Other surface water	Limited Update	4/18/2019	under RWPG review
STPNOC Brackish Surface Water Blending	Steam-Electric (Matagorda Co.)	Other surface water	Limited Update	4/18/2019	under RWPG review
City of Austin Off-Channel Reservoir and Evaporation Suppression	Austin	Off-Channel Reservoir	New	5/1/2019	under RWPG review
Rainwater Harvesting	Municipal utilities other than City of Austin	Other surface water	New	7/1/2019	Under Committee review
Reuse (Indirect Potable Reuse through Lady Bird Lake)	Austin	Indirect Potable Reuse	Update	4/30/2019	under RWPG review

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5. Status Update on Strategy Evaluations - Review

Strategy	WUG	Strategy Type	New, Update, or Limited Update	Date Started	Status
City of Austin ASR	Austin	Aquifer Storage and Recovery	Update	5/1/2019	under RWPG review
Expand Use of Groundwater	Multiple	Expand use of existing GW supply sources	New	5/15/2019	Under Committee review
Development of New Groundwater Supplies	Multiple	Development of multiple aquifers.	New	5/15/2019	Under Committee review
Oceanwater Desalination	TBD	Seawater desalination	New	7/15/2019	Under Committee review
Reuse (direct reuse)	Marble Falls	Reuse	Update	4/22/2019	Under Committee review
	Horseshoe Bay	Reuse	Update	4/22/2019	Under Committee review
	Buda	Reuse	Update	4/22/2019	Under Committee review
	Burnet	Reuse	New	4/22/2019	Under Committee review
	Blanco	Reuse	New	4/22/2019	Under Committee review
	Dripping Springs WSC	Reuse	New	4/22/2019	Under Committee review
	Fredericksburg	Reuse	New	4/22/2019	Under Committee review
	Lago Vista	Reuse	New	4/22/2019	Under Committee review
	Lake way MUD	Reuse	New	4/22/2019	Under Committee review
	Meadowlakes	Reuse	New	4/22/2019	Under Committee review
	Travis County WCID 17	Reuse	New	4/22/2019	Under Committee review
	West Travis County PUA	Reuse	New	4/22/2019	Under Committee review
Downstream Return Flows	LCRA	Other surface water	Update	6/7/2019	Under Committee review
Water Supply Infrastructure Development or Expansion	Any WUG with sufficient sw or gw contracts/permits, but lacking infrastructure to deliver the water	Water Supply Infrastructure (Other WMS)	New	8/15/2019	No project sponsors identified
Groundwater Importation – Hays County Pipeline	West Travis County PUA, Hays County-Other, and other potential WUGs	Groundwater Development	Update	8/1/2019	ready for committee review - still waiting on Region L for yield confirmation
Groundwater Importation – Alliance Regional Water Authority Pipeline	Buda and potential other Hays County WUGs	Groundwater Development	Update to 2016 Plan HCPUA Pipeline Strategy		ready for committee review - still waiting on Region L for total project costs and updated yields by decade
Reuse (Direct Potable Reuse)	West Travis County PUA	Direct Potable Reuse	New	8/1/2019	ready for committee review
	Dripping Springs WSC	Direct Potable Reuse	New	5/2/2019	ready for committee review
City of Wharton Water Supply Strategy	Buda	Direct Potable Reuse	Update	4/22/2019	ready for committee review
Brush Management	Wharton	Groundwater Development	Update	6/10/2019	ready for committee review
	County-Other	Other WMS	Limited Update	8/15/2019	ready for committee review

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5. Status Update on Strategy Evaluations – In Progress

Strategy	WUG	Strategy Type	New, Update, or Limited Update	Date Started	Status
Advanced Water Conservation	Irrigation in Lower Basin	Conservation	New	7-Mar-19	Real-time monitoring and conveyance improvements still in progress. Other measures ready for committee review
Brackish Groundwater Desalination	Austin	Groundwater Development	New	5/13/2019	internal review
City of Austin Blackwater and Greywater Reuse	Austin	Reuse	Update to 2016 Plan Other Reuse strategy with new component	4/22/2019	pending data from Austin
City of Austin Decentralized Direct Non-Potable Reuse	Austin	Reuse	Update to 2016 Plan Other Reuse strategy with new components	5/9/2019	pending data from Austin
Community-Scale Stormwater Harvesting	Austin	Other surface water	New	5/1/2019	pending data from Austin
LCRA - Prairie Site Off-Channel Reservoir	LCRA	New Major Reservoir	Update	6/25/2019	in progress
City of Austin Return Flows	Austin, Irrigation, Steam-Electric, LCRA	Other surface water	Update (requires modeling and coordination with Austin)	8/15/2019	in progress
New LCRA Contracts	Need to determine	Other	New	9/3/2019	internal review
New LCRA Contracts Requiring Infrastructure	Need to determine	Other	New	9/3/2019	internal review
LCRA Contract Amendments	Need to determine	Other	New	9/3/2019	internal review
LCRA Contract Amendments Requiring Infrastructure	Need to determine	Other	New	9/3/2019	internal review
New Water Purchase Strategy	Need to determine	Other	New	9/3/2019	internal review
New Water Purchase Strategy Requiring Infrastructure	Need to determine	Other	New	9/3/2019	internal review
Water Purchase Amendments	Need to determine	Other	New	9/3/2019	internal review
Water Purchase Amendments Requiring Infrastructure	Need to determine	Other	New	9/3/2019	internal review
LCRA Baylor Creek Reservoir	LCRA	Off-Channel Reservoir	Limited Update	8/15/2019	internal review
Supplement Bay and Estuary Inflows with Brackish Groundwater Thereby Replacing Demands on LCRA Highland Lakes Firm Yield	LCRA	Brackish Groundwater Development	Limited Update	8/15/2019	internal review
LCRA groundwater expansion/development strategies	LCRA	Groundwater Development	Update	8/6/2019	internal review
LCRA Aquifer Storage and Recovery (ASR) in Carrizo-Wilcox	LCRA	Aquifer Storage and Recovery	Update	9/18/2019	in progress
Brackish Groundwater Desalination	LCRA	Groundwater Development	New	9/18/2019	in progress
Groundwater Importation – Carrizo-Wilcox to LCRA System	LCRA	Groundwater Development	Update	9/18/2019	in progress
City of Austin Centralized Direct Non-Potable Reuse	Austin	Reuse	Update	9/18/2019	in progress
Reservoir Capacity Expansion	Llano, Goldthwaite	Other surface water	New	9/18/2019	in progress
Amendment to Existing Water Rights/Permits	LCRA, Goldthwaite	Other	Update	9/18/2019	in progress
LCRA - Mid-Basin Off-Channel Reservoir	LCRA	New Major Reservoir	Update	9/18/2019	in progress
LCRA - Excess Flows Off-Channel Reservoir	LCRA	New Major Reservoir	Update	9/18/2019	in progress
Amendments to LCRA Water Management Plan	LCRA, Irrigation (interruptible water)	Other	Update	9/23/2019	in progress
Import Return Flows from Williamson County	LCRA	Other surface water	Update	9/23/2019	in progress
Enhanced Bersease and Colocative Use	LCRA	Other	Update	9/23/2019	in progress

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TASK 5A SCOPE OF WORK AMENDMENTS

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18. Scope of Work Amendments

▼ Potential New Strategy

– Subordination

- Strategy would make Llano's water rights more senior than downstream water rights, allowing them to increase their firm availability during drought conditions. Yield will be determined using the Region K Cutoff Model under DOR conditions.

▼ SubTask Budget Amendments

- Reuse (\$14,000 > \$28,000)
- Brush Management (\$1,000 > \$2,500)
- 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)

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UPDATE TO DRAFT STRATEGIES BASED ON COMMITTEE COMMENTS

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6. Update to Draft Strategies Based on Committee Review

▼ Changes Based on Meeting Discussion September 16, 2019

- Expand Use of Local Groundwater/Development of New Groundwater Supplies
 - Added GCD permit fees, DFC decade, and iron/manganese treatment for municipal & manufacturing WUGs
 - Added language to agricultural impacts describing additional pumping costs due to drawdown
 - Specific Write-up changes:
 - Expand Local Use of Carrizo-Wilcox: environmental language updated
 - Develop New Groundwater in Yegua-Jackson: land acquisition increased, peaking factor changed
 - Expand Local Use of Gulf Coast: added language associating expand use of local groundwater with the Wharton Water Supply project
 - Expand Local Use of Ellenburger-San Saba: Bertram yield updated to 2,000 AFY. Received development projections from Bertram

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6. Update to Draft Strategies Based on Committee Review

▼ Changes Based on Meeting Discussion September 16, 2019

- Oceanwater Desalination
 - Revised by removing references to LCRA to make strategy more general and amended agricultural impacts
- Direct Reuse
 - Increased project yield, per Lakeway MUD's request
 - Infrastructure added: high service pumps, additional transmission mains to service neighboring WUGs
- Downstream Return Flows
 - Added cost for additional intake pumping

▼ Are these ready to move to RWPG review?

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Agenda Item 7

PRESENTATION AND DISCUSSION OF DIRECT POTABLE REUSE

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7. 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
 - 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

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Agenda Item 8

UPDATE AND DISCUSSION OF LCRA WATER MANAGEMENT STRATEGY EVALUATIONS

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8. LCRA Strategy Evaluations

- ▼ Strategies under LCRA review; comments received 10/2/19 (6)
 - 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
- ▼ Revised Strategies (1)
 - LCRA Downstream Return Flows

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8. LCRA Strategy Evaluations

- ▼ Strategies in-progress (14)
 - New LCRA Contracts (finalizing WUGs with remaining needs)
 - New LCRA Contracts with Infrastructure (finalizing WUGs with remaining needs)
 - LCRA Contract Amendments (finalizing WUGs with remaining needs)
 - LCRA Contract Amendments with Infrastructure (finalizing WUGs with remaining needs)
 - LCRA Prairie Site Off-Channel Reservoir (pending modeling)
 - LCRA Mid-Basin Off-Channel Reservoir (pending modeling)
 - LCRA Excess Flows Off-Channel Reservoir (pending modeling)
 - Amendments to LCRA Water Management Plan (pending modeling)
 - LCRA Import Return Flows from Williamson County (pending modeling)
 - LCRA Enhance Recharge and Conjunctive Use (pending modeling)
 - LCRA Amendments to Existing Water Rights/Permits (pending modeling)
 - LCRA Aquifer Storage and Recovery (ASR) in Carrizo-Wilcox (pending modeling)
 - LCRA Brackish Groundwater Desalination (coordinating with LCRA)
 - LCRA Groundwater Importation from Carrizo-Wilcox (coordinating with LCRA)

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UPDATE AND DISCUSSION OF AUSTIN WATER MANAGEMENT STRATEGY EVALUATIONS

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9. Austin Strategy Evaluations

- ▼ Strategies with Austin comments ready for Committee review
 - Conservation
 - Lake Austin Operations
 - Austin IPR
 - Austin Capture local Inflows to LBL
 - Austin Off-Channel Reservoir
 - Austin Aquifer Storage and Recovery
 - Austin Centralized Direct Non-Potable Reuse
 - Austin Brackish Groundwater Desalination
 - Austin Decentralized Direct Non-Potable Reuse
 - Austin Onsite Rainwater and Storm Water Harvesting
 - Austin Drought Management
- ▼ Austin reviewing and/or pending data from Austin
 - Austin Blackwater and Greywater Reuse
 - Austin Community-Scale Stormwater Harvesting
- ▼ In Progress
 - Austin Return Flows
 - Austin Amendments to Existing Water Rights/Permits

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Agenda Item 10

UPDATE AND DISCUSSION OF CONTRACT/CONTRACT AMENDMENTS / WATER PURCHASE/WATER PURCHASE AMENDMENTS STRATEGY EVALUATIONS

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10. LCRA New Contracts/Contract Amendments

- ▼ Looking at which WUGs might benefit from new or additional LCRA water after groundwater options were reviewed.
- ▼ Evaluating which ones would need new or additional infrastructure to implement.
- ▼ Need to ensure that LCRA has sufficient strategy volumes to meet the needs.

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10. Water Purchase/Water Purchase Amendments

- ▼ WUGs in the region purchase water from water providers other than the three Major Water Providers. Assuming water is sold at retail cost, so there is no additional cost to the WUG.
 - Previously discussed
 - Barton Creek WSC
 - Purchase Amendment from Travis County MUD 4
 - Creedmoor Maha WSC
 - Purchase Amendment from Aqua WSC
 - Travis County MUD 14
 - Purchase Amendment from Aqua WSC
 - Hays County Mining
 - New Purchase from Buda (reuse) - Included in 2016 RWP
 - New strategies in-progress
 - Hays
 - New Purchase from Buda; Infrastructure required
 - Windermere
 - Coordination with WUG

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Agenda Item 11

PRESENTATION AND DISCUSSION OF NON- MUNICIPAL CONSERVATION + DROUGHT MANAGEMENT STRATEGY EVALUATIONS

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11. Irrigation Conservation

Strategies	Considered in 2016?	Full, Limited or Initial Evaluation?	Status
Tail Water Recovery	No	Full	Draft write-up ready for committee
Sprinkler Irrigation	Yes	Limited	Draft write-up ready for committee
Irrigation Operations Conveyance Improvements	Yes	Limited	Draft write-up in progress – coordinating with LCRA
Real-Time Monitoring	No	Initial	Draft write-up in progress – coordinating with Daniel Berglund
Drip Irrigation for Non-Rice Crops	No	Initial	Draft write-up ready for committee
On-Farm Conservation	Yes	Full	Draft write-up ready for committee

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11. Irrigation Drought Management

- ▼ Irrigation drought management assumes half of rice farmers will only grow a first (main) crop and not a second (ratoon) crop in years where growth of the main crop impede the ability to grow the ratoon crop.
 - Irrigation WUGs (Colorado, Matagorda, Mills, Wharton)
 - Yield = 40,592 ac-ft/yr (online 2020)
 - Costs
 - Based on TWDB Socioeconomic Impact Analysis of Unmet Needs from the 2016 Region K Water Plan (will be updated for 2021 plan when report is released)
 - Unit Cost: Colorado (\$132/ac-ft), Matagorda (\$193/ac-ft), Mills (\$183/ac-ft), Wharton (\$203/ac-ft)
 - Notes
 - Not supplying water to meet irrigation needs has negative economic impacts to the entire agriculture economy and rural local economies
 - Strategy would reduce irrigation return flows by up to 9,300 ac-ft/yr and reduce the acreage of potential feedstock for migratory birds by approximately 19,000

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11. Mining Conservation

- ▼ Mining conservation involves taking the existing pumped groundwater, once used, letting it settle, and then recycling it for additional use rather than pumping additional groundwater from the aquifer.
 - Mining WUGs (Bastrop, Burnet)
 - Yield
 - Bastrop Mining: 2 ac-ft/yr (2020); 243 ac-ft/yr (2030); 308 ac-ft/yr (2040); 233 ac-ft/yr (2050)
 - Burnet Mining: 1,000 ac-ft/yr (2020); 1,500 ac-ft/yr (2070)
 - Costs
 - Assumed no facilities cost; energy costs included
 - Annual Cost: Bastrop Mining (\$5,000), Burnet Mining (\$45,000)
 - Unit Cost: Bastrop Mining (\$16/ac-ft), Burnet Mining (\$30/ac-ft)
 - Notes
 - Negligible impact to environment/agriculture

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Agenda Item 12

PRESENTATION AND DISCUSSION OF HAYS COUNTY GROUNDWATER IMPORTATION STRATEGIES

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12. Groundwater Importation: Alliance Regional Water Authority Pipeline

- ▼ Withdrawal and transport of groundwater from the Carrizo-Wilcox aquifer in Gonzales County to 1-35 Corridor area near San Marcos, Kyle, and Buda; primarily Region L strategy.
 - Buda
 - Yield = 762 - 2,467 ac-ft/yr (online 2030)
 - Costs
 - Region L to provide updated costing
 - Total Project Costs: \$34,996,869
 - Annual Cost: \$4,751,402
 - Unit Cost: \$1,926/ac-ft
 - Notes
 - Cagle's map turtle (protected species) located within the project area
 - Socioeconomic impacts – Importing groundwater from a more rural area to a more populated area may limit growth in the supplying area
 - No impacts to agriculture

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12. Groundwater Importation: Hays County Pipeline

- ▼ Withdrawal and transport of groundwater from the Carrizo-Wilcox aquifer in Kyle area to western Hays County; strategy shared with Region L.
 - Hays County-Other, West Travis County PUA (WTCPUA)
 - Yield
 - Hays County Other: 1,000 ac-ft/yr (online 2030)
 - WTCPUA: 3,000 ac-ft/yr (online 2030)
 - Costs
 - Total Project Costs: Hays County-Other \$7,616,500; WTCPUA \$22,939,500
 - Annual Cost: Hays County-Other \$646,250; WTCPUA \$1,938,750
 - Unit Cost: \$646/ac-ft
 - Notes
 - Negligible impacts to agriculture
 - Socioeconomic impacts – Importing groundwater from a more rural area to a more populated area may limit growth in the supplying area
 - Local groups potentially concerned about project

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PRESENTATION AND DISCUSSION OF BRUSH MANAGEMENT

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13. Brush Management

- ▼ Convert land that is covered with brush (juniper, mesquite, saltcedar) to grasslands, increasing water availability through reduced extraction of soil water for transpiration and increased recharge to shallow groundwater and emergent springs.
 - Blanco, Hays, Gillespie, and Travis County-Other
 - Yield in DOR conditions = 5,571 ac-ft/yr (online 2030)
 - Costs
 - Total Project Costs: \$29,707,000
 - Annual Cost: \$2,379,000
 - Unit Cost: \$427/ac-ft
 - Notes
 - 2000 Pedernales River/Lake Travis watershed assessment and feasibility study
 - Brush management for water supply enhancement must be viewed favorably by the RWPG as a recommended or alternative Water Management Strategy or as a Policy Recommendation. Otherwise, the application is considered not to qualify for funding (State Water Supply Enhancement Plan, TSSWCB, July 2014)

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Agenda Item 14

UPDATE AND DISCUSSION OF WHARTON WATER SUPPLY EVALUATION

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14. Wharton Water Supply

▼ Requested from Wharton

- Wharton believes that its proximity to the Houston urban area and the new I-69 corridor will increase its water demands during the next fifty years beyond those otherwise anticipated in regional water planning

▼ Regional Water Supply Study for the City of Wharton and East Bernard

- Published April 2017
- Detailed three alternative supply sources to provide additional water: surface water, additional groundwater, and aquifer storage and recovery
- The study recommended the use of additional groundwater; incorporated into Expand Use of Local Groundwater for Gulf Coast aquifer

▼ Strategy

- Project Yield (2030): 3,000 ac-ft/yr
- Total Project Costs: \$9,100,000; Annual Cost: \$817,000; Unit Cost: \$272/ac-ft

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REMAINING DRAFT STRATEGY EVALUATIONS

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15. Remaining Draft Strategy Evaluations

- ▼ Goldthwaite Strategy Request
 - Water Right Permit Amendment and expansion of Goldthwaite’s reservoir storage capacity cannot be recommended as a strategy, as the yield is 0 ac-ft/yr during drought of record

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AUSTIN COMMENTS/EDITS TO STRATEGIES

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Agenda Item 17

SIGNIFICANT WATER NEEDS

Per HB807, “if a RWPA has significant identified water needs, provides a specific assessment of the potential for **aquifer storage and recovery** projects to meet those needs” (TWC § 16.053(e)(10)).

>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

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Agenda

- 19. New / Other Business
- 20. Schedule next meeting
- 21. Public Comments
- 22. Adjourn