

# Region K Public Meeting

July 10, 2019

Lower Colorado Regional Water Planning Group  
(Region K)



July 10, 2019

## Agenda

1. Call to Order
2. Welcome and Introductions
3. Receive Public Comments
4. Attendance Report
5. Approval of Minutes from April 24, 2019 meeting
6. Discuss / take action on Jim Luther for Counties interest (Burnet County)
7. TWDB Update

## Agenda

8. Discuss / take possible action on nominations for new Interregional Planning Council required by HB 807
9. Discuss / take action on approving LCRA to execute an amendment to TWDB contract for additional committed funds.
10. Committee Reports – WMS and possible others

Agenda Item 10a

## **WATER MANAGEMENT STRATEGIES COMMITTEE REPORT**

## 10a. Water Management Strategies Committee Report

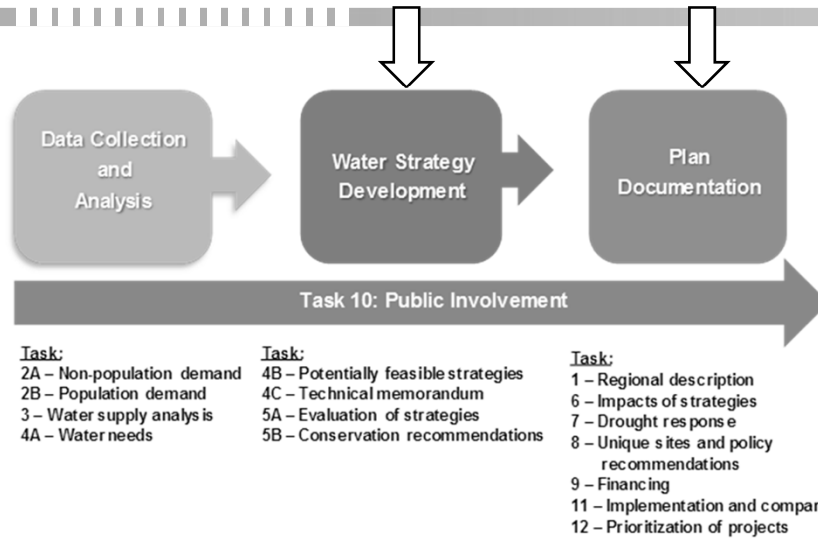
### ▼ Committee meeting on June 17<sup>th</sup>

- Presentation and discussion of draft water management strategy evaluations ready for Committee review
  - Municipal Drought Management
  - Burnet County Regional Projects
    - Buena Vista; East Lake Buchanan; Marble Falls System
  - Austin requested strategies
    - 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) requested strategies
    - Alternate Canal Delivery; Brackish Surface Water Blending
- Discussion of costing assumptions for Municipal Conservation
- Committee request for progress status and timeline

Agenda Item 11

## CONSULTANT STATUS REPORT

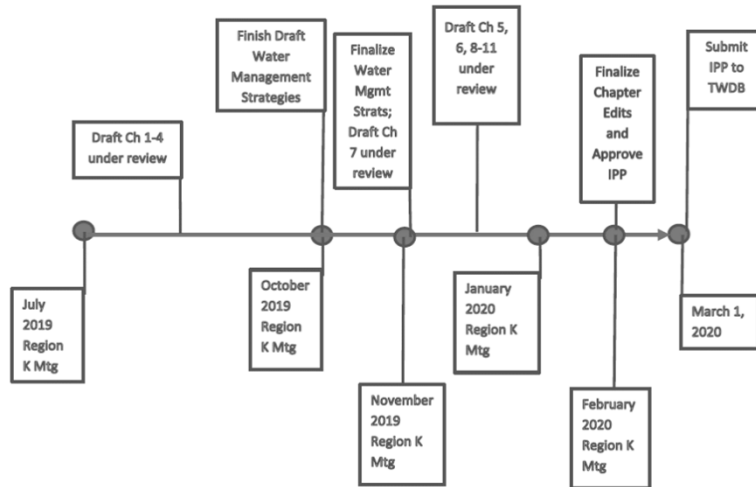
## 11. Consultant Status Report



## 11. Consultant Status Report



## 11. Consultant Status Report



## 11. Consultant Status Report Effort since last meeting (April 24, 2019)

- ▼ Chapter 1 of 2021 Plan – Regional Water Planning Description
  - Introduction and Background
  - Description of the Lower Colorado Regional Water Planning Area
    - Location, geology, climate, vegetation, water resources, economic conditions, etc.
  - Population and Municipal Water Use
  - Non-Municipal Water Use
  - Water Supply Sources and Providers
  - Water Quality and Natural Resources
  - Existing Water Plans
  - Water Loss Audit
  - Appendix 1B and 1C still being updated.
- ▼ Sent electronic version out to RWPG for review. Have hard copies available for members that would like one.

**11. Consultant Status Report  
Effort since last meeting (April 24, 2019)**

- ▼ Chapter 2 of 2021 Plan – Population and Demand Projections
  - Provided to RWPG for review at April 24<sup>th</sup> Region K meeting.
  - Have received some comments to date.
    - Will discuss in more detail in next agenda item.

**11. Consultant Status Report  
Effort since last meeting (April 24, 2019)**

- ▼ Chapter 3 of 2021 Plan – Water Availability and Supplies
  - Introduction
  - Identification of Surface Water Sources
    - Reservoirs, Run-of-River, Reclaimed Water, Local Surface Water Supplies
  - Surface Water Availability
    - Region K Cutoff Model and other methodologies
  - Identification of Groundwater Sources
    - Major and minor aquifers
  - Groundwater Availability
    - MAG and non-relevant aquifer methodologies
  - Total Regional Water Availability
  - Major Water Providers
  - Water Supplies
- ▼ Electronic version sent to Water Modeling Committee for review

## 11. Consultant Status Report Effort since last meeting (April 24, 2019)

### ▼ Water Management Strategies

- Approximately half of the scoped strategies have in-progress or completed draft water management strategy evaluations.
- Trungale Engineering has started developing the strategy version of the Region K Cutoff Model
  - Strategies that may require WAM modeling
    1. ASR (new since 2016 Plan), depending on source of water.
    2. LCRA ASR in Carrizo-Wilcox
    3. Austin Off-Channel Reservoir with Evaporation Suppressant
    4. Reservoir Capacity Expansion (for Llano and possibly others)
    5. Austin Return Flows
    6. Austin ASR
    7. LCRA New Contracts and Contract Amendments
    8. Amendments to Existing Water Rights/Permits
    9. LCRA Mid-Basin Off-Channel Reservoir
    10. LCRA Prairie Site Off-Channel Reservoir
    11. LCRA Excess Flows Off-Channel Reservoir
    12. Amendments to LCRA Water Management Plan (Interruptible Water)
    13. Import Return Flows from Williamson County
    14. Enhanced Recharge and Conjunctive use

## 11. Consultant Status Report Effort since last meeting (April 24, 2019)

### ▼ Water Management Strategies

- Questions for WAM modeling (discussion)
  - Austin has done extensive modeling for their strategies as part of the Austin Water Forward Plan development. Do we need to do modeling as well with the Region K Cutoff Model for these?
  - Environmental Impacts
    - A number of strategies are diverted under existing water rights, although in some cases water right amendments will be needed.
    - TCEQ environmental flow standards are embedded in the modeling.
    - TWDB wants to see numerical quantitative impacts.
    - How do we show impacts?
      - » Negligible?
      - » Last cycle we stated that the impact was that the strategy allowed up to a certain amount of water to be diverted from the river that otherwise wouldn't have been.
      - » Positive impacts could be shown that water diverted during wetter times and stored means less water needs to be diverted during drier times.

## 11. Consultant Status Report Effort since last meeting (April 24, 2019)

- ▼ Drought Response, Information, and Activities:
  - Waiting on Drought Preparedness Council recommendations to be released.
  - Need to know all drought management strategies to include in Chapter 7 before the draft will be ready for review.
  - May have Drought Committee meet once, if needed.
- ▼ Implementation and Comparison
  - Preparing comparison of 2016 Plan and 2021 Plan as part of draft Chapter 11.
  - Received Implementation Survey documentation from TWDB. Preparing a request for information to send out to the project sponsors.

## 11. Consultant Status Report Upcoming effort

- ▼ Finish draft water management strategy evaluations.
  - Continue to work with the Water Management Strategies Committee.
  - Meet with Water Modeling Committee, as needed.
  - Aiming to complete draft evaluations for strategies by September/October. Inter-regional coordination may delay some strategies.
- ▼ Complete Draft Chapter 4 (Water Needs), and send to the RWPG for review.
- ▼ Receive comments from Water Modeling Committee on Draft Chapter 3 (Water Availability and Supplies) and send to RWPG for review.
- ▼ Implementation Survey
- ▼ Legislative and Policy Committee to start meeting.



## 11. Consultant Status Report Upcoming effort

### ▼ Incorporation of new HB 807 requirements

- RWPGs should identify unnecessary or counterproductive variations in specific drought response strategies, including outdoor watering restrictions, among user groups in the regional water planning area (RWPA) that may confuse the public or otherwise impede drought response efforts.
  - *Document what drought response strategies are determined to be “unnecessary or counterproductive” in Chapter 7 of the RWP.*
- 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.*

## 11. Consultant Status Report Upcoming effort

### ▼ Incorporation of new HB 807 requirements

- The RWP shall “set one or more specific goals for gallons of water use per capita per day in each decade of the period covered by the plan for the municipal water user groups in the RWPA.”
  - *GPCD goals may be a specific GPCD, or ranges of GPCD; may be based on specific municipal WUGs, or groupings of municipal WUGs as determined appropriate by the RWPG. This information should be included in Subchapter 5B of the RWP.*
- The RWP shall assess the progress of the RWPA in encouraging cooperation between water user groups for the purpose of achieving economies of scale and otherwise incentivizing strategies that benefit the entire region.
  - *Based on information collected during plan development, RWPGs shall include in Chapter 11 of their RWPs documentation of the RWPG’s general assessment of progress of the RWPA in encouraging cooperation between WUGs for the purpose of achieving economies of scale and otherwise incentivizing strategies that benefit the entire region.*
- RWPGs should make legislative recommendations for any other changes that the members of the planning group believe would improve the water planning process.
  - *As part of Task 8 of the planning scope of work (Recommendations regarding Legislative and Regional Policy Issues), RWPGs should include any legislative recommendations that members of the planning group believe would improve the regional and state water planning process.*

Agenda Item 12

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

### **12. Draft 2021 Plan Chapters out for Review and Comments Received**

#### ▼ Chapter 2 – Population and Water Demands

- Comments received from LCRA and Dave Lindsay
- LCRA Comments
  - Agree with most of the recommended changes
  - Need to coordinate edits on page 2-12 with Dave Lindsay's edits
  - Edits on Story/History of Matagorda Bay (pages 2-21 through 2-27)
    - This section is not officially part of the scope of work for Chapter 2
    - Can make suggested edits to text and figures, but want to make sure RWPG wants to keep this section in Chapter 2.
  - Austin vs. City of Austin
    - Since the municipal WUGs are no longer city-based, we're trying to refer to them without including "City". (We missed a few spots in Chapter 2.)
- Dave Lindsay Comments
  - HB 807 GPCD requirement to be discussed in Chapter 5, per TWDB guidance (pg. 2-7)
  - BRA demands and Corpus Christi demands are in other regions and not included in our plan. (2-7)
  - Irrigation demand methodology comments on pg 2-13
    - Need to coordinate with LCRA Comments (LCRA pg 2-12)
    - Agree with most of the recommended changes.

## 12. Draft 2021 Plan Chapters out for Review and Comments Received

- ▼ Chapter 1 – Regional Water Planning Area Description
  - Out for RWPG Review (electronic documents emailed)
  - Hard copies available, if desired.
  - Would like initial comments back by October Region K meeting.
  
- ▼ Chapter 3 – Water Availability and Supplies
  - Out for Water Modeling Committee Review (electronic documents emailed)
  - Hard copies available, if desired.
  - Would like Committee comments back by August 16<sup>th</sup>.
  - Will then send out to RWPG for review (comments back by October Region K meeting.)

Agenda Item 13

## PRESENTATION AND DISCUSSION OF DRAFT WMS READY FOR RWPG REVIEW

### 13. Draft Water Management Strategies for RWPG Review

- These strategies have been discussed and reviewed by the Water Modeling Committee, and are ready for RWPG review.
- No action today, only presentation/discussion and providing documentation for RWPG members to review and comment on. (see meeting materials)
- Send me any comments you have, and we'll bring them to the October Region K meeting.
  - Municipal Drought Management
  - Burnet County Regional Projects
    - Buena Vista; East Lake Buchanan; Marble Falls System
  - Austin requested strategies
    - 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) requested strategies
    - Alternate Canal Delivery; Brackish Surface Water Blending

Agenda Item 13a

## DRAFT MUNICIPAL DROUGHT MANAGEMENT WATER STRATEGY EVALUATION

### 13a. Municipal Drought Management

- ▼ Update to strategy recommended in 2016 Plan.
- ▼ Drought management is considered for all municipal WUGs.
  - Defer to a WUG’s Drought Contingency Plan and reduce demands based on “severe” drought triggers, when possible. Temporary (short-term) measures to reduce GPCD.
  - 20% minimum reduction for GPCD > 100
  - 5% minimum reduction for GPCD ≤ 100
  - Consider whether mandatory water use restrictions were in place in 2011.
  - Consider levels of conservation that have been implemented since 2011.
  - Yields in 2020-2070 (Reductions are applied post-conservation)

### 13a. Municipal Drought Management

- ▼ Costs
  - Updated costs from 2016 Plan, based on example of public outreach costs to reduce water use. \$66/ac-ft
  - Will be including costs to the utilities based on reduced water sold, once the TWDB prepares and releases the Socioeconomic Impact Analysis of Unmet Needs.
  - No capital costs.
- ▼ Negligible impacts to the environment and agriculture.

Agenda Item 13b

## **DRAFT BURNET COUNTY REGIONAL PROJECT STRATEGY EVALUATIONS**

### **13b.1. Buena Vista**

- ▼ One of three projects from a Burnet-Llano County Study done in 2011. Update to 2016 Plan strategy based on survey responses.
  - The yields were reallocated based on survey responses.
  - Costs were updated
- ▼ Project would use Burnet's existing raw water intake, water treatment plant, and 18" transmission main. The RWI, WTP, and pump station would be expanded to serve Burnet and County-Other communities in Burnet County. LCRA contracts or contract amendments are needed.
- ▼ New/additional transmission mains would be extended to serve County-Other communities and Burnet. Additional infrastructure to carry the raw water to the WTP, and a new ground storage tank and booster pump will be needed.

### 13b.1. Buena Vista

#### ▼ Project Yields in Burnet County:

- Burnet: Online 2030 (1,000 ac-ft/yr); 2,000 ac-ft/yr by 2040
- County-Other (Brazos): Online 2030 (500 ac-ft/yr); 1,000 ac-ft/yr by 2040
- County-Other (Colorado): Online 2030 (565 ac-ft/yr); 1,884 ac-ft/yr by 2040

#### ▼ Costs

- From the Burnet-Llano County Study, and updated using the TWDB Costing Tool.
- Total costs allocated by WUG proportional to yield.
- Total annual cost = \$5,546,000
- Unit cost = \$1,136 / ac-ft

### 13b.1. Buena Vista

#### ▼ Environmental and Agricultural Considerations

- Removal of up to 5,000 ac-ft/yr of water from Highland Lakes with no return flows.
- Several miles of construction. Impacts should be limited to construction period.
- Removal of water from Highland Lakes potentially decreases the amount of interruptible water available for agriculture.

## 13b.2. East Lake Buchanan

- ▼ Strategy to provide surface water to portions of County-Other in Burnet County whose current groundwater supplies are unreliable and contaminated with radionuclides. Update to strategy from 2016 Plan.
  - New raw water intake would pump to a regional water treatment plant near Bonanza Beach, along the northeast side of Lake Buchanan. Pump station and transmission mains would deliver water to Council Creek Village and other participants in the area.
  - Assumes new LCRA Contract needed.
  - Yield for County-Other in Burnet County, Colorado Basin:
    - Online 2030 (498 ac-ft/yr)
    - 2040 – 2070 (935 ac-ft/yr)

## 13b.2. East Lake Buchanan

- ▼ Costs
  - From the Burnet-Llano County Study, and updated using the TWDB Costing Tool.
  - Total annual cost = \$1,830,000
  - Unit cost = \$1,957 / ac-ft
- ▼ Environmental and Agricultural Considerations
  - Removal of up to 935 ac-ft/yr of water from Highland Lakes with no return flows.
  - Several miles of construction. Impacts should be limited to construction period.
  - Impacts to agriculture should be minimal.



### 13b.3. Marble Falls System

- ▼ Strategy to serve growth in Burnet County for Marble Falls and portions of County-Other (Colorado Basin). Update to 2016 Plan strategy.
  - New raw water intake, pump stations, and water treatment plant upstream of Max Starcke Dam. New transmission mains and new storage tanks to serve future developments.
  - LCRA contracts or contract amendments will be needed.
  - Project Yields in Burnet County:
    - Marble Falls: Online 2030 (4,000 ac-ft/yr)
    - County-Other (Colorado): Online 2030 (1,578 ac-ft/yr)

### 13b.3. Marble Falls System

- ▼ Costs
  - From the Burnet-Llano County Study, and updated using the TWDB Costing Tool.
  - Total costs allocated by WUG proportional to yield.
  - Total annual cost = \$8,010,000
  - Unit cost = \$1,436 / ac-ft
- ▼ Environmental and Agricultural Considerations
  - Removal of up to 5,600 ac-ft/yr of water from Highland Lakes with no return flows.
  - Several miles of construction. Impacts should be limited to construction period.
  - Removal of water from Highland Lakes potentially decreases the amount of interruptible water available for agriculture.

Agenda Item 13c

## **DRAFT AUSTIN-REQUESTED WATER MANAGEMENT STRATEGY EVALUATIONS**

### **13c.1. Aquifer Storage and Recovery**

- ▼ Austin plans to store surplus treated Colorado River water in an aquifer during non-drought years, for use during times of drought when other supplies are less available.
  - Water right amendments are likely to be required.
  - Looking at storage in the Carrizo-Wilcox Aquifer
    - Storage volume of 60,000 AF (2040), and 120,000 AF (2070)
  - Expected online by 2040 with a yield of 7,900 AFY (2040) – 15,800 AF (2070)
  - Capital costs provided by Austin Water Forward Plan. We used the TWDB Cost Estimating Tool to develop annual and unit costs in September 2018 \$.
    - Annual Cost = \$35,300,000
    - Unit Cost = \$2,234/ac-ft

### 13c.1. Aquifer Storage and Recovery

#### ▼ Environmental Considerations

- Permitting needed
- Water quality testing of native water
- Water is diverted under existing water rights and unused amounts of stored water under the 1999 contract with LCRA. 1999 contract water is only used when the combined storage of lakes Buchanan/Travis is above 1.4 million ac-ft to minimize lake level impacts.
- SB3 and LCRA WMP environmental flow standards are met. ASR is given a junior priority to these required flows. As a result, minimal impacts to environmental flows.

#### ▼ Impacts to Agriculture should be negligible based on diversion during non-drought years.

### 13c.2. Off-Channel Reservoir and Evaporation Suppressant

#### ▼ Austin strategy for a new off-channel reservoir in the Austin area.

- Capture Colorado Run-of-River flows when available under water right authorization and contract water and stored for later use. Likely that water right amendment will be required.
- Diversion point downstream of Longhorn Dam and upstream of Austin WWTPs discharge points.
- Yield is 25,827 ac-ft/yr. (827 AFY is from evaporation suppressant) Online by 2070.
- Use of an evaporation suppressant during summer months to reduce water loss. Various options would be considered.
- Strategy would act as a “water bank”. Accumulate water in wetter years and provide supplemental supply during times of drought.

## 13c.2. Off-Channel Reservoir and Evaporation Suppressant

### ▼ Costs

- Capital and O&M costs provided by Austin Water Forward Plan. Annual costs were developed using the TWDB Costing Tool. September 2018 \$.
- Annual Cost = \$25,444,000. Unit Cost = \$985 / ac-ft.

### ▼ Environmental Impacts

- Reservoir location, junior priority, and maintenance of environmental flow standards (SB3 and LCRA WMP) intended to conservatively estimate water availability and avoid impacts to streamflow.
- Up to 25,000 ac-ft/yr removed from Colorado River during non-drought years.
- Environmental studies and permits may be needed to address evaporation suppressant.

## 13c.2. Off-Channel Reservoir and Evaporation Suppressant

### ▼ Agriculture Impacts

- Limited due to diversion during non-drought years, although could cause less interruptible water to be available as firm demands increase.

### ▼ Recreational Impacts

- Evaporation suppressant could impact recreational use for the reservoir. Monitoring may be necessary to ensure public safety.

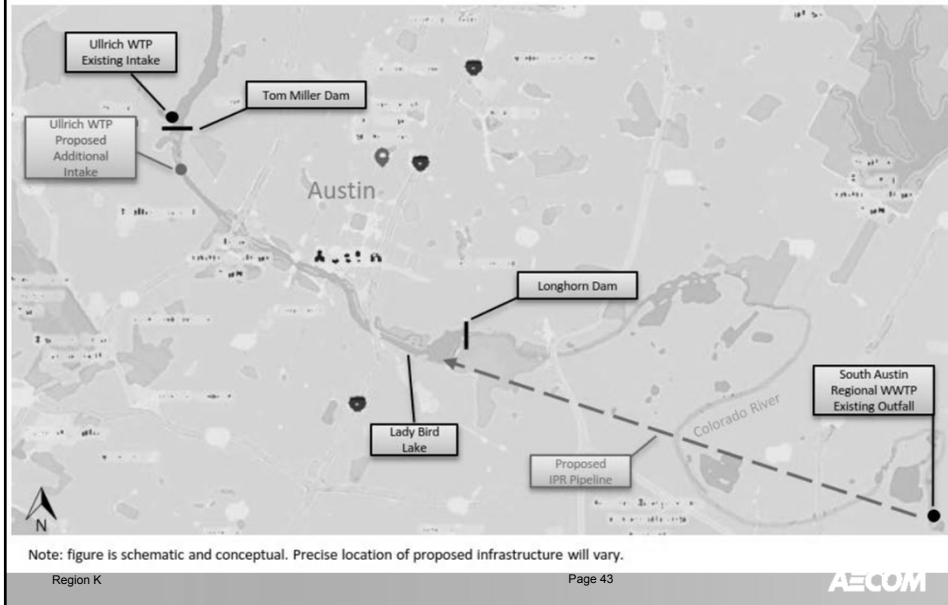
### 13c.3. Onsite Rainwater and Stormwater Harvesting

- ▼ Lot / building scale rainwater and stormwater harvesting to supply onsite demands.
  - Capture and storage of roof water and other impervious surfaces.
  - Multi family residential or commercial developments
    - Existing developments would supply outdoor use only
    - New developments would supply outdoor use and indoor non-potable.
    - Commercial developments would also supply cooling water uses.
  - Online by 2040. Supplying 1,880 ac-ft/yr in 2040, increasing each decade, reaching 4,900 ac-ft/yr in 2070. Confirming yields with Austin for DOR conditions.
  - Costs based on \$5,000 rebate per site. Full system costs would be borne by developer.
    - Annual Cost = \$16,394,000. Unit Cost = \$3,346 / ac-ft.
  - No environmental and agricultural impacts.

### 13c.4. Capture Local Inflows to Lady Bird Lake

- ▼ Limited update to Austin strategy from 2016 Plan
  - Associated with Indirect Potable Reuse through Lady Bird Lake strategy
  - Captures spring flows and storm flows in LBL when they are not needed downstream.
  - Capture would be intermittent and seasonal (November – February).
  - Online by 2040. Drought yield of 1,000 ac-ft/yr. (May change to 3,000)
  - Infrastructure required is included under the Indirect Potable Reuse through Lady Bird Lake strategy, so no capital costs.
  - O&M Costs only for proportion of yield from this strategy. Annual cost = \$213,000. Unit cost = \$213 / ac-ft.
  - Minimal reduction to instream flows and possibly bay and estuary inflows, but required flows would be passed. Negligible ag and water resource impacts.

### 13c.4. and 13c.5. Schematic figure for Capture Local Inflows to LBL and Indirect Potable Reuse through LBL



### 13c.5. Indirect Potable Reuse through Lady Bird Lake

- ▼ Austin strategy for water supply during extreme drought conditions.
  - When combined storage of Lakes Buchanan and Travis are below emergency levels.
  - Improvements at SAR WWTP for a portion of the effluent to have additional treatment before discharge into Lady Bird Lake.
  - Water intake and pump station to pull water from Lady Bird Lake to be treated at Ullrich WTP.
  - Infrastructure associated with pulling water from Lady Bird Lake can also be used with the Capture Local Inflows to Lady Bird Lake strategy.
  - Yield of 11,000 ac-ft/yr (2040), increase to 20,000 ac-ft/yr in 2070.
  - Permitting/engineering analyses, water quality modeling, TCEQ permitting, and public education needed.

### 13c.5. Indirect Potable Reuse through Lady Bird Lake

#### ▼ Costs

- Capital costs from Austin Water Forward Plan (2018). Proportional O&M costs included with remaining O&M costs included under the Austin Capture Local Inflows to Lady Bird Lake strategy.
- Annual and unit costs developed using the TWDB Costing Tool.
  - Annual cost = \$9,147,000
  - Unit cost = \$457 / ac-ft

#### ▼ Environmental Considerations

- Additional nutrient removal may be required for water being discharged.
- Environmental flows impact analysis compares impact of return flow minus reuse to the impact of no return flows. (Availability modeling assumes 100% reuse / no return flows.)

### 13c.5. Indirect Potable Reuse through Lady Bird Lake

▼ No impacts to agriculture expected.

▼ Public education and outreach will be needed to address perceptions of IPR.

## 13c.6. Lake Austin Operations

- ▼ Limited update to Austin strategy from 2016 Plan.
  - Per Austin Water Forward Plan, this strategy would allow Lake Austin to be operated with a varying level in the event that Lake Travis and Buchanan combined storage falls below 600,000 ac-ft.
  - Local flows could be captured during storm events and stored for use.
  - Level could vary by 3 feet outside of peak recreational months.
  - No capital costs. No new permits needed.
  - Available yield by 2020 of 2,500 ac-ft/yr.
  - Annual and unit costs calculated from Austin Water Forward Plan (2018)
    - Annual = \$545,000
    - Unit = \$218/ac-ft
  - Negligible environmental and agricultural impacts. Possible reduced water quality from storm flows.

## 13c.7. Austin Conservation

- ▼ Conservation strategy specific to Austin
  - Austin has a more aggressive conservation program than most WUGs, and has made significant advances in reducing per capita water use.
  - Details taken from Austin Water Forward Plan. Some measures had to be pulled out and included under separate strategies, per TWDB.
  - Yields are from the Austin Water Forward Plan, minus the measures that were pulled out. Yields may need to be modified to better reflect savings based on Regional Water Planning GPCDs.
    - Online 2020 (4,910 ac-ft/yr), increasing each decade to reach 40,620 ac-ft/yr of water savings in 2070.
  - Capital and O&M costs were provided by the Austin Water Forward Plan. Annual and unit costs were developed using the TWDB Costing Tool.
    - Costs were calculated to represent a variety of conservation measures.



### 13c.7. Austin Conservation

– Costs continued

- Annual Cost = \$54,569,000
- Unit Cost = \$1,343 / ac-ft
- Costs include capital and non-capital measures.

– Environmental and Agriculture Considerations

- Conservation can cause changes to wastewater concentrations over time.
- No adverse impacts to environmental flows.
- Conservation could leave up to the amount of water savings in the lakes and aquifers each year.
- Negligible impacts to agriculture.

Agenda Item 13d

## DRAFT STPNOC STRATEGY EVALUATIONS

### 13d.1. Alternate Canal Delivery

- ▼ Limited update to STPNOC strategy from 2016 Plan.
  - Strategy that will allow higher quality water to be pulled from the Colorado River and transported to the STPNOC cooling tower reservoir.
  - STPNOC's current contract with LCRA allows for diversion upstream of the Bay City dam, but currently no infrastructure in place.
  - Use existing LCRA pump station and irrigation canals. Construct pipeline and pump station to get from irrigation canals to reservoir. May be a regulatory issue with using existing pump station that would need to be resolved.
  - Yield of 12,727 ac-ft/yr. Assumed online by 2030.
  - Costs updated from 2016 Plan to 2018 \$ using TWDB Costing Tool.
    - Capital costs = \$18,127,000
    - Annual cost = \$3,384,000
    - Unit cost = \$266 / ac-ft
  - Minimal environmental impacts by meeting required environmental flows first.
  - Negligible impacts to agriculture

### 13d.2. Brackish Surface Water Blending

- ▼ Keep 2016 Plan STPNOC strategy.
  - During an emergency, STPNOC and LCRA will pursue relief from TCEQ to be able to pump brackish surface water to blend in with the existing fresh water in the STPNOC reservoir.
  - Yield of 3,000 ac-ft/yr. Online in 2020.
  - No costs.
  - No environmental impacts.
  - No agricultural impacts.

Agenda Item 14

## **UPDATE ON ADDITIONAL WATER MANAGEMENT STRATEGIES**

Region K

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**AECOM**

### **14a. Municipal Conservation – Working Draft**

#### **▼ Previous Discussions:**

- March 4, 2019 WMS Committee Meeting – Committee voted to use the following methodology:
  - If the 2020 GPCD is greater than 140, apply a 10% GPCD reduction per decade until 140 GPCD is reached.
  - If the 2020 GPCD is less than 140, no conservation considered.
  - Defer to individual utility Water Conservation Plan goals, if applicable.
- April 10, 2019 WMS Committee Meeting – Committee presented with table showing reduction numbers. Committee recommended sending methodology and numbers to RWPG.
- June 6, 2019 WMS Committee Meeting – Committee received costing assumptions and provided feedback.

Region K

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**AECOM**

## 14a. Municipal Conservation – Working Draft

### ▼ Capital Cost Measure Assumptions

- Advanced Metering Infrastructure (Smart Meters)
  - 3 people per household
  - 100% of households will install smart meters in the next 50 years
  - Anticipated demand reduction of 5%
  - Smart meter cost is \$270
  - Requirement of an online portal to track usage in real time
- Assumptions for Leak Detection and Replacement
  - 10% of pipeline is replaced (pipe length from TWDB Water Loss Audit)
    - Urban: 80% of the replaced pipeline is 8", 20% is 12"
    - Rural: 60% of the replaced pipeline 8", 40% is 6"
  - Anticipated demand reduction of 3%
  - O&M costs are assumed to be 0% as no additional maintenance costs are incurred by replacing lines.

### ▼ Non-Capital Costs: \$250/ac-ft saved

## 14b. Reuse – Working Draft

- ### ▼ Reuse opportunities include: centralized direct non-potable; decentralized direct non-potable; direct potable; and indirect.
- Austin Centralized Direct Non-Potable Reuse, Decentralized Direct Non-Potable Reuse, and Blackwater/Greywater Reuse pulled out as separately scoped strategies.
  - Reuse (direct non-potable) being evaluated for: Blanco, Buda, Burnet, Dripping Springs WSC, Fredericksburg, Horseshoe Bay, Lago Vista, Lakeway MUD, Marble Falls, Meadowlakes, Travis County WCID 17, and West Travis County PUA.
  - Direct Potable Reuse being evaluated for: Buda and West Travis County PUA.
  - Coordinating with WUG representatives to include individualized details for each project.
  - Due to number of new project evaluations, may need to consider budget amendment for this strategy to add some funding from remaining unallocated \$25,000.

## 14c. Expand Use of Local Groundwater – Working Draft

- ▼ 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.
  
- ▼ Methodology:
  - Listed all WUGs with a demonstrated need (demand>supplies)
  - Identified all aquifers the WUG could access
    - If WUG currently uses aquifer, classified as “Expand Use of Local Groundwater”
    - If WUG does not draw from aquifer, classified as “Development of New Groundwater Supplies”
  - Individual Considerations:
    - Source water balance
    - Requested by WUG
    - Strategy listing in 2016 RWP
    - Other strategy options

## 14d. Development of New Groundwater Supplies – Working Draft

- ▼ Development of New Groundwater involves drilling wells to pump groundwater from an aquifer that the WUG is currently not using as a source.
  
- ▼ Methodology:
  - Listed all WUGs with a demonstrated need (demand>supplies)
  - Identified all aquifers the WUG could access
    - If WUG currently uses aquifer, classified as “Expand Use of Local Groundwater”
    - If WUG does not draw from aquifer, classified as “Development of New Groundwater Supplies”
  - Individual Considerations:
    - Source water balance
    - Requested by WUG
    - Strategy listing in 2016 RWP
    - Other strategy options

## 14e. Wharton Water Supply Strategy – Working Draft

- ▼ Wharton Water Supply Strategy in 2016 RWP (Considered)
  - Convert an existing large groundwater irrigator to surface water through combination In-Channel Detention and Off-Channel Storage – 20,000 AFY
  - New wellfield and pipeline – 5,603 AFY
  - Aquifer Storage and Recovery – 1,100 AFY
- ▼ April 2017 – Regional Water Supply for the City of Wharton, Texas
  - Enter a firm water supply contract with LCRA – 5,700 AFY (approx.)
    - Requires infrastructure including a pump station, pipelines, water treatment plant, and storage/distribution
  - Drill additional wells or develop a shared regional well field – 5,700 AFY (approx.)
  - Aquifer Storage and Recovery – 5,700 AFY (approx.)

## Agenda

15. Presentation on Brackish Resources Aquifer Characterization System (BRACS) study mapping and characterizing brackish groundwater in the Hill Country Trinity Aquifer
16. Update on the upper Colorado rainfall-runoff study
17. Agenda items for next meeting
18. New / Other Business
19. Public Comments
20. Adjourn