



# **BRAZOS G REGIONAL WATER PLANNING GROUP**

**July 10, 2019**

**10:00 A.M.**

**Brazos River Authority Central Office  
4600 Cobbs Drive, Waco, Texas 76710**



- 1. CALL THE MEETING TO ORDER**
- 2. INVOCATION**
- 3. NOTICE OF MEETING**
- 4. ATTENDANCE AND ANNOUNCEMENTS**
- 5. PUBLIC INPUT**



- 6.1. Report and possible discussion from Texas Water Development Board (TWDB) staff.**

# The 86<sup>th</sup> Texas Legislature: Updates Relevant to Regional Water Planning\*

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**Aaron Waters**

Water Use, Projections, & Planning

Texas Water Development Board

*10 July 2019*

*\*Unless specifically noted, this presentation does not necessarily reflect official Board positions or decisions.*

# Legislative Update

During the regular session, the Legislature passed three bills directly relevant to regional water planning and significant bills related to flood planning and project funding. This update covers the following bills:

- HB 807
- HB 721
- HB 723
- SB 7 and SB 8 (flood)

# House Bill 807

- TWDB required to appoint an interregional planning council (based on RWPG nominations) consisting of one member from each RWPG during each five-year planning cycle prior to the adoption of a new state water plan.
- Adds several new requirements to the development of RWPs (listed on next slide).

# House Bill 807

1. Identify unnecessary or counterproductive variations in drought response strategies.
2. Provide a specific assessment for ASR projects to meet significant water needs identified in the RWPA.
3. Set specific GPCD goals for each decade for municipal WUGs.
4. Assess the progress in encouraging cooperation between WUGs to develop WMSs that achieve economies of scale and benefit the entire region.
5. Recommend legislative changes to improve the water planning process.

# House Bill 807

## *Implementation:*

- TWDB is currently working on the logistics for the planning council nomination process and will send more information soon.
- Rulemaking will be initiated to address HB 807 requirements.
- Preliminary input on rulemaking will be solicited from RWPG stakeholders.



# House Bill 807

- **Texas Water Code (TWC) §16.053(e)(3)(E)** —  
Unnecessary or counterproductive variations in drought response strategies
- **TWDB Guidance**
  - *RWPGs should review information collected through current requirements outlined in [31 TAC §357.42\(c\) and \(i\)](#) and Section 7.5 of [Exhibit C](#).*
  - *Drought response strategies determined to be “unnecessary or counterproductive” should be documented in Chapter 7 of the RWP.*

# House Bill 807

- **TWC §16.053(e)(10)** — Specific assessment of Aquifer Storage and Recovery (ASR) potential if significant identified needs
- **TWDB Guidance**
  - *The threshold(s) for “significant” identified water needs are to be defined by the RWPG.*
  - *RWPGs must clearly articulate in their RWP how they determined the threshold of significant water needs for this requirement.*
  - *If significant needs, the RWPG shall generally assess ASR potential to the best of its ability.*
  - *TWDB will provide a list of the agency’s currently available and relevant information on ASR for the RWPGs to consider.*

# House Bill 807

- **TWC §16.053(e)(11)** — Setting Gallons Per Capita Daily (GPCD) goal(s) for each planning decade
- **TWDB Guidance**
  - *TWDB will provide a list of municipal WUGs in each RWPG as well as supporting information.*
  - *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.*
  - *To be included in Subchapter 5B of the RWP.*

# House Bill 807

- **TWC §16.053(e)(12)** — Assess progress of “regionalization”
- **TWDB Guidance**
  - *RWPGs shall include 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.*
  - *To be included in Chapter 11 of the RWP.*

# House Bill 807

- **TWC §16.053(i)** — Recommendations on process improvements
- **TWDB Guidance**
  - *RWPGs should include any legislative recommendations that members of the planning group believe would improve the regional and state water planning process.*
  - *To be included in Chapter 8 of the RWP.*

# House Bill 721

Requires TWDB to:

1. Conduct studies of ASR projects and aquifer recharge projects in the SWP or identified by interested persons, and report on the results of those studies to RWPGs and interested persons.
2. Conduct a statewide survey to identify the relative suitability of various major and minor aquifers for use in ASR projects or aquifer recharge projects and prepare a report of the survey.

# House Bill 721

## *Anticipated Implementation:*

- Complete first feasibility study by September 2020.
- Statewide survey report due to state leadership December 15, 2020.

# House Bill 723

- Requires the Texas Commission on Environmental Quality (TCEQ) to obtain or develop updated WAMs for the Brazos, Neches, Red, and Rio Grande River Basins.
- TCEQ to obtain or develop WAM updates by December 1, 2022.



# Senate Bill 7 (Flood Funding)

Aimed at providing funding through multiple funds and accounts for:

- Flood planning/protection/mitigation
- Data collection and modeling
- Hurricane Harvey Projects (through TDEM)

# Senate Bill 8 (Flood Planning)

- Establishes a state and regional flood planning process administered by TWDB.
- Flood planning regions will be by river basin.
- First regional flood plans due January 10, 2023.
- First state flood plan due September 1, 2024.
- Requires the State Soil and Water Conservation Board to prepare a 10-year dam repair, rehabilitation, and maintenance plan for flood control dams under their jurisdiction.

# Flood Stakeholder Input

- TWDB is planning stakeholder meetings around the state to gather preliminary input on SB7 and SB 8 implementation.
- These meetings will provide input for rulemaking.
- Contact [Flood@twdb.texas.gov](mailto:Flood@twdb.texas.gov) with questions.
- Sign up for TWDB updates to keep informed:

<http://www.twdb.texas.gov/newsmedia/signup.asp>

# Questions?

## TWDB is hiring!

<http://www.twdb.texas.gov/jobs/index.asp>

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### Aaron Waters

Project Manager

Water Use, Projections, & Planning

Texas Water Development Board

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## **6.2 Report, discussion and possible action from the Brazos G Water Policy Committee.**



## **6.3. Discussion and possible action on HDR planning tasks.**

**6.3.1. Presentation on updated water management strategy evaluations.**

**6.3.2. Discussion and possible action on other HDR planning tasks.**

**6.3.3. Presentation of the timeline to develop the 2021 Brazos G Regional Water Plan.**



# Update on Water Management Strategy Evaluations

Agenda Item 6.3.1A (WilCo)

July 10, 2019



# Background

- Task 5A involves the evaluation of Water Management Strategies to meet the projected needs of Region G Water User Groups (WUGs)
- Updates have commenced on the following tasks
  1. Williamson County Strategies
  2. Miscellaneous Groundwater Strategies
  3. Bosque County Regional Project
  4. Reservoir Strategies



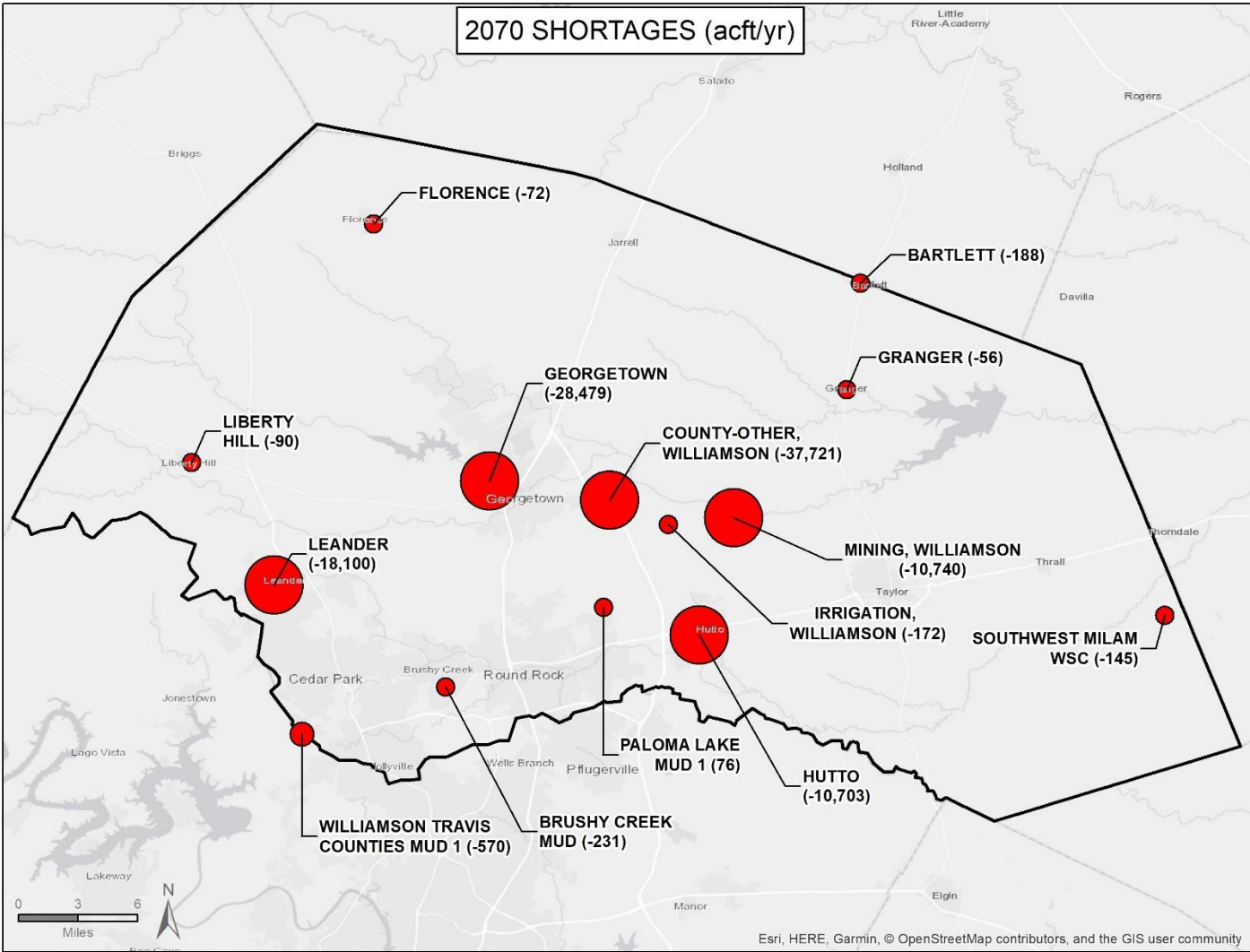


# DRAFT Williamson County Municipal Water Needs (acft/yr)

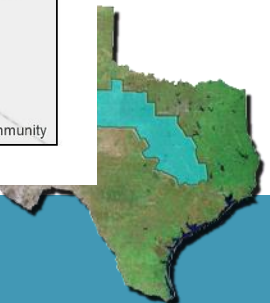
	2020	2030	2040	2050	2060	2070
BARTLETT	(100)	(99)	(102)	(117)	(134)	(151)
BRUSHY CREEK MUD	(187)	(206)	(191)	(193)	(210)	(231)
FLORENCE	(35)	(38)	(42)	(50)	(59)	(72)
GEORGETOWN	(7,633)	(13,300)	(17,878)	(23,128)	(32,459)	(43,080)
GRANGER	21	13	2	(14)	(33)	(56)
HUTTO	(907)	(3,046)	(3,304)	(5,437)	(8,596)	(10,703)
LEANDER	(129)	(3,446)	(6,520)	(9,612)	(13,497)	(18,100)
LIBERTY HILL	(90)	(90)	(90)	(90)	(90)	(90)
PALOMA LAKE MUD 1	(168)	(243)	(198)	(123)	(25)	76
ROUND ROCK	2,351	(1,815)	(8,181)	(15,520)	(15,821)	(16,172)
SOUTHWEST MILAM WSC	351	188	76	46	(35)	(145)
WILCO COUNTY-OTHER	(498)	1,457	(3,535)	(8,146)	(23,801)	(37,721)
<b>Total Needs</b>	<b>(9,647)</b>	<b>(22,183)</b>	<b>(39,939)</b>	<b>(62,313)</b>	<b>(94,626)</b>	<b>(126,370)</b>



# DRAFT Williamson County Water Needs(acft/yr)



\\s-austin\adriver\projects\330711062970017\_10\_gis\_models\1\_2\_Work\_in\_Progress\Map\_Docs\Williamson\_Shortages.mxd



# DRAFT Williamson County Municipal Water Needs (acft/yr) with Treatment Constraints Removed

	2020	2030	2040	2050	2060	2070
BARTLETT	(100)	(99)	(102)	(117)	(134)	(151)
BRUSHY CREEK MUD	(187)	(206)	(191)	(193)	(210)	(231)
FLORENCE	(35)	(38)	(42)	(50)	(59)	(72)
GEORGETOWN	10,006	4,094	(727)	(6,223)	(15,798)	(26,663)
GRANGER	21	13	2	(14)	(33)	(56)
HUTTO	(907)	(3,046)	(3,304)	(5,437)	(8,596)	(10,703)
LEANDER	(129)	(3,446)	(6,520)	(9,612)	(13,497)	(18,100)
LIBERTY HILL	(90)	(90)	(90)	(90)	(90)	(90)
PALOMA LAKE MUD 1	(168)	(243)	(198)	(123)	(25)	76
ROUND ROCK	21,819	17,516	11,014	3,539	3,102	2,614
SOUTHWEST MILAM WSC	351	188	76	46	(35)	(145)
WILCO COUNTY-OTHER	(498)	1,457	(3,535)	(8,146)	(23,801)	(37,721)
<b>Total Needs</b>	<b>(2,014)</b>	<b>(7,069)</b>	<b>(14,607)</b>	<b>(29,888)</b>	<b>(62,144)</b>	<b>(93,933)</b>



# DRAFT Williamson County Municipal Water Needs (acft/yr) with Highland Lakes Supplies

	2020	2030	2040	2050	2060	2070
Sum of Municipal Needs	(2,014)	(7,069)	(14,607)	(29,888)	(62,144)	(93,933)
Sum of Municipal Surpluses	54,352	45,156	32,812	25,012	23,603	21,936
Municipal Water Balance	52,238	37,987	18,103	(4,992)	(38,675)	(71,997)
Additional Highland Lakes Supplies (2016 Plan)	46,072	46,072	46,072	46,072	46,072	46,072
Remaining Municipal Water Balance	96,843	82,631	62,957	39,945	6,348	(26,875)

County municipal supply is adequate through 2060,  
but water is not always where you need it.



# DRAFT MAG Available Burleson County (acft/yr)

County	Aquifer	River Basin	2020	2030	2030	2050	2060	2070
BURLESON	BRAZOS RIVER ALLUVIUM AQUIFER	BRAZOS	2930	2,876	2,872	2,872	2,872	2,871
BURLESON	CARRIZO-WILCOX AQUIFER	BRAZOS	188	643	668	795	570	507
BURLESON	QUEEN CITY AQUIFER	BRAZOS	166	197	197	197	197	197
BURLESON	SPARTA AQUIFER	BRAZOS	750	2,546	4,117	5,239	5,239	5,239
BURLESON	YEGUA-JACKSON AQUIFER	BRAZOS	11,552	9,584	9,572	9,486	9,334	9,334
<b>Total</b>			15,586	15,846	17,426	18,589	18,212	18,148



# DRAFT MAG Available Lee County (acft/yr)

County	Aquifer	River Basin	2020	2030	2030	2050	2060	2070
LEE	CARRIZO-WILCOX AQUIFER	BRAZOS	6,476	5,850	5,978	6,779	4,279	4,279
LEE	CARRIZO-WILCOX AQUIFER	COLORADO	0	0	0	0	0	0
LEE	QUEEN CITY AQUIFER	BRAZOS	0	0	0	0	0	0
LEE	QUEEN CITY AQUIFER	COLORADO	48	61	75	89	102	102
LEE	SPARTA AQUIFER	BRAZOS	1,007	1,002	997	991	984	984
LEE	SPARTA AQUIFER	COLORADO	204	213	221	230	238	238
LEE	TRINITY AQUIFER	BRAZOS	0	0	0	0	0	0
LEE	TRINITY AQUIFER	COLORADO	0	0	0	0	0	0
LEE	YEGUA-JACKSON AQUIFER	BRAZOS	157	157	157	157	157	157
LEE	YEGUA-JACKSON AQUIFER	COLORADO	216	216	216	216	216	216
<b>Total</b>			8,108	7,499	7,644	8,462	5,976	5,976



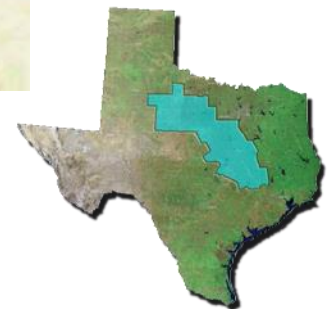
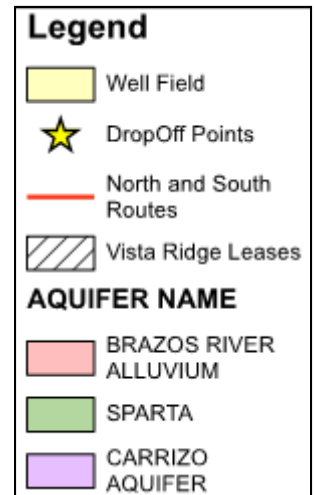
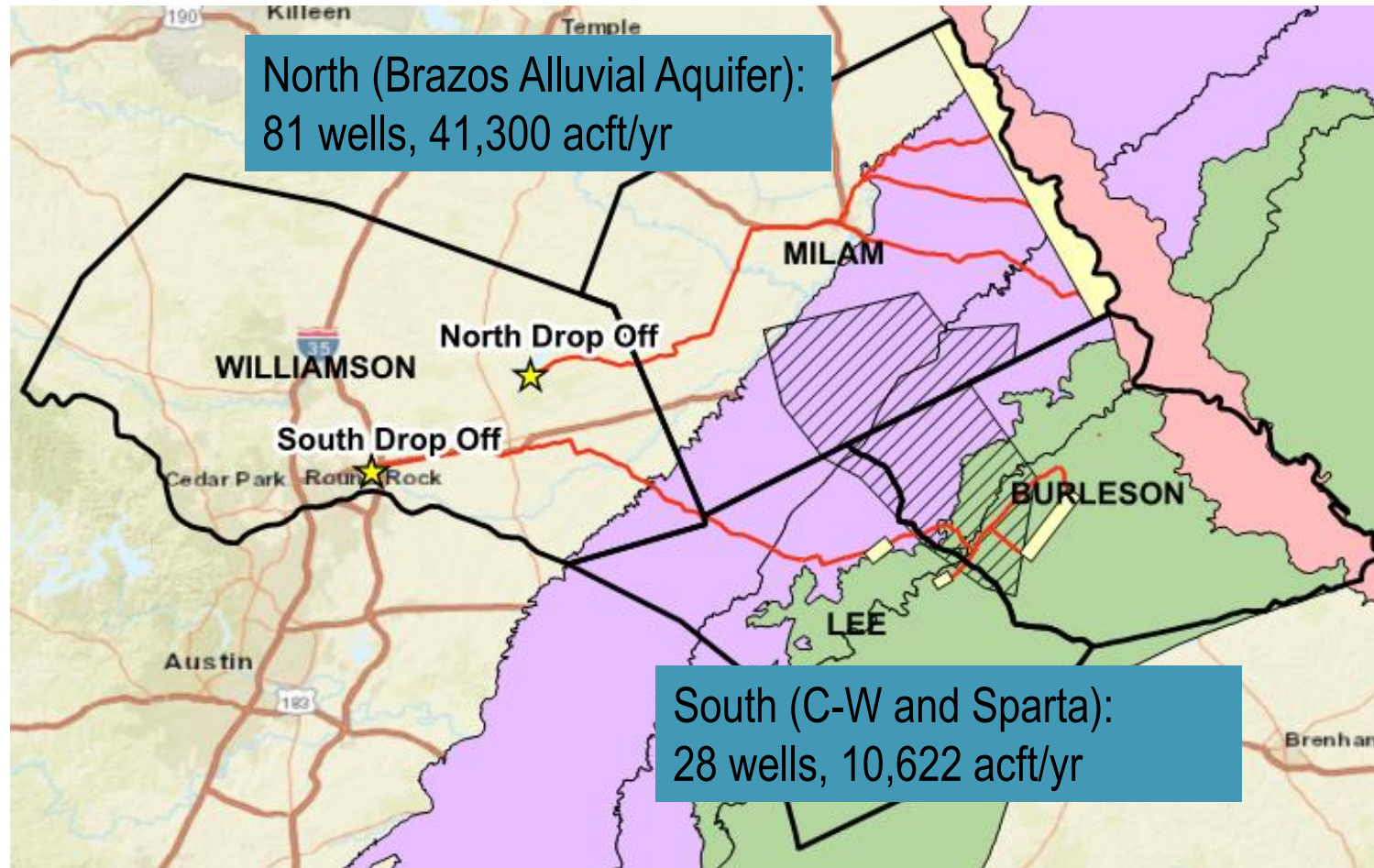
# DRAFT MAG Available Milam County (acft/yr)

County	Aquifer	River Basin	2020	2030	2030	2050	2060	2070
MILAM	BRAZOS RIVER ALLUVIUM AQUIFER	BRAZOS	43,157	42,585	41,960	42,249	42,162	41,951
MILAM	CARRIZO-WILCOX AQUIFER	BRAZOS	0	0	199	250	250	240
MILAM	QUEEN CITY AQUIFER	BRAZOS	0	0	0	0	0	0
MILAM	TRINITY AQUIFER	BRAZOS	0	0	0	0	0	0
<b>Total</b>			43,157	42,585	42,159	42,499	42,412	42,191





# Potential GW Supplies to Meet Needs





# DRAFT Williamson County Municipal Water Needs (acft/yr) with Highland Lakes Supplies

	2020	2030	2040	2050	2060	2070
Sum of Municipal Needs	(2,014)	(7,069)	(14,607)	(29,888)	(62,144)	(93,933)
Sum of Municipal Surpluses	54,352	45,156	32,812	25,012	23,603	21,936
Municipal Water Balance	52,238	37,987	18,103	(4,992)	(38,675)	(71,997)
Additional Highland Lakes Supplies (2016 Plan)	46,072	46,072	46,072	46,072	46,072	46,072
Remaining Municipal Water Balance	96,843	82,631	62,957	39,945	6,348	(26,875)

County municipal supply is adequate through 2060,  
but water is not always where you need it.



# Next Steps

- Refine needs to be met – develop Williamson County Plan
  - Can existing supplies be used more effectively?
  - How will additional Highland Lakes supplies be used?
  - Develop cooperative supply plan
  - Refine groundwater strategy to meet remaining needs



Questions?



HDR



# Update on Water Management Strategy Evaluations

Agenda Item 6.3.1B

July 10, 2019



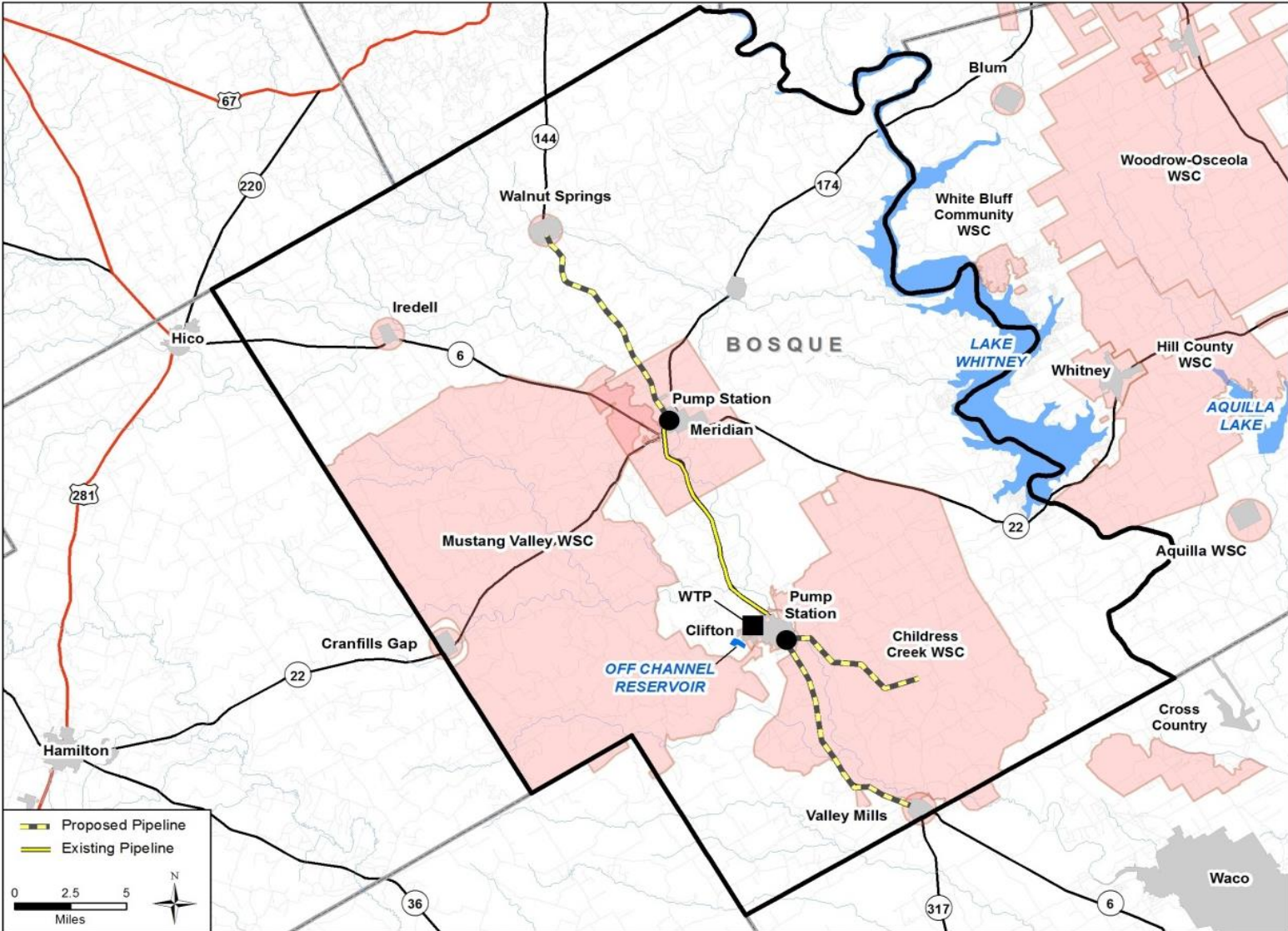
# **Interconnection of Bosque County Systems**

# Background

- Bosque County Regional Study (2004) – identified several regional strategies to supply entities in Bosque County
- Recommended WMS in 2006, 2011 and 2016
  - Childress Creek WSC
  - Valley Mills
  - Meridian
  - Walnut Springs
  - Clifton
- Increase storage/yield of Clifton Off-Channel Reservoir and transmit supply to participating entities
- Clifton to Meridian water line been implemented – still confirming status of other projects
- Updated costs from 2016 Plan



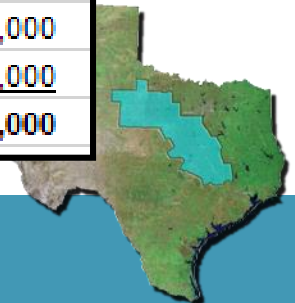
# Interconnection of Bosque County Systems





# Bosque County – Overall Program Costs

Cost Estimate Summary Water Supply Project Option September 2018 Prices Bosque County Regional Project			
Cost based on ENR CCI 11170.28 for September 2018 and a PPI of 202.4 for September 2018			
Item			Estimated Costs for Facilities
<b>CAPITAL COST</b>			
Dam and	<b>Summary</b>	<b>Cost/Yield</b>	\$8,082,000
Primary			\$1,854,000
Transmis			\$5,325,000
Transmis	<b>Available Project Yield (acft/yr)</b>	<b>1,070</b>	\$1,600,000
Water Tr			\$1,000,000
<b>TOTAL CO</b>	<b>Total Annual Cost</b>	<b>\$2,566,000</b>	<b>\$17,861,000</b>
Engineer	<b>Annual Cost of Water (\$/acft/yr)</b>	<b>\$2,398</b>	\$5,985,000
and Con			\$980,000
Environn	<b>Annual Cost of Water (\$/1000 gal)</b>	<b>\$7.36</b>	\$574,000
Land Ac			\$700,000
Interest			<u>\$700,000</u>
Interest during construction (5% for 1 years with a 0.5% ROI)			
<b>TOTAL COST OF PROJECT</b>			<b>\$26,100,000</b>



Questions?



# Miscellaneous Groundwater Strategies

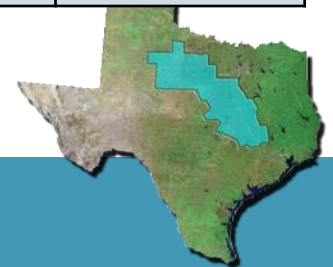
# Overview

- Many municipal WUGs rely on groundwater and simply need one or more additional wells to meet projected needs
- Needs were compared to remaining MAG
- Approximately 8 WUGs from 2016 Plan do not have sufficient remaining MAG in 2021 Plan
- Well depth and capacity based on data from existing wells in the area
- Peaking factor of 2.0 was used in estimating number of wells needed to develop and supply
- Municipal strategies only are presented today; county-aggregated strategies next meeting



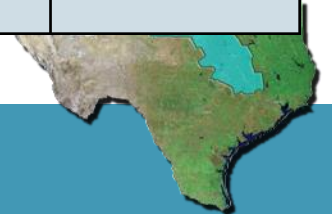
# Miscellaneous Groundwater Strategies

Water User Group	Aquifer	Supply (acft/yr)	# Wells	Total Capital Cost	Unit Cost (\$/acft)	Unit Cost (\$/1000 gal)
ASPERMONT	SEYMOUR	81	1	\$185,395	\$297	\$0.91
BAYLOR SUD	SEYMOUR	113	1	\$134,514	\$167	\$0.51
BRENHAM	GULF COAST	496	2	\$1,209,632	\$294	\$0.90
CENTRAL WASHINGTON COUNTY WSC	GULF COAST	202	1	\$767,951	\$469	\$1.44
CLIFTON	TRINITY	142	1	\$632,630	\$554	\$1.70



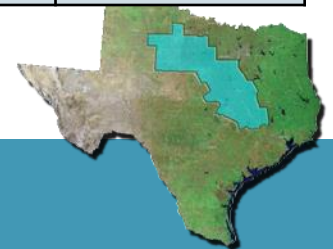
# Miscellaneous Groundwater Strategies

Water User Group	Aquifer	Supply (acft/yr)	# Wells	Total Capital Cost	Unit Cost (\$/acft)	Unit Cost (\$/1000 gal)
CORIX UTILITIES TEXAS INC	GULF COAST	678	4	\$2,098,759	\$362	\$1.11
EAST CRAWFORD WSC	TRINITY	138	1	\$740,445	\$658	\$2.02
ELM CREEK WSC	BRAZOS RIVER ALLUVIUM	242	1	\$1,241,885	\$617	\$1.89
ERATH COUNTY-OTHER	TRINITY	356	1	\$1,212,656	\$407	\$1.25
FORT BELKNAP WSC	CROSS TIMBERS	178	1	\$147,777	\$122	\$0.37



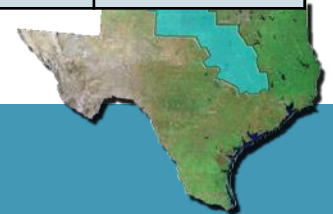
# Miscellaneous Groundwater Strategies

Water User Group	Aquifer	Supply (acft/yr)	# Wells	Total Capital Cost	Unit Cost (\$/acft)	Unit Cost (\$/1000 gal)
GORDON	TRINITY	145	1	\$464,628	\$392	\$1.20
HEWITT	TRINITY	1,695	3	\$4,586,645	\$312	\$0.96
HIGHLAND PARK WSC	TRINITY	89	1	\$659,240	\$894	\$2.74
JAYTON	SEYMOUR	129	1	\$134,562	\$179	\$0.55
KEMPNER WSC	MARBLE FALLS	1,458	10	\$4,117,482	\$337	\$1.04



# Miscellaneous Groundwater Strategies

Water User Group	Aquifer	Supply (acft/yr)	# Wells	Total Capital Cost	Unit Cost (\$/acft)	Unit Cost (\$/1000 gal)
LAMPASAS	MARBLE FALLS	648	5	\$1,832,394	\$342	\$1.05
MART	TRINITY	324	2	\$1,914,847	\$687	\$2.11
MULTI COUNTY WSC	TRINITY	363	1	\$705,459	\$236	\$0.72
NORTH BOSQUE WSC	TRINITY	162	1	\$784,767	\$597	\$1.83
ROBINSON	TRINITY	1,698	4	\$6,107,533	\$420	\$1.29





# Miscellaneous Groundwater Strategies

Water User Group	Aquifer	Supply (acft/yr)	# Wells	Total Capital Cost	Unit Cost (\$/acft)	Unit Cost (\$/1000 gal)
ROTAN	BLAINE	124	2	\$280,871	\$293	\$0.90
THE BITTER CREEK WSC	DOCKUM	162	2	\$414,482	\$313	\$0.96
THROCKMORTON	CROSS TIMBERS	178	1	\$147,777	\$122	\$0.37
WICKSON CREEK SUD	SPARTA	888	2	\$3,415,054	\$441	\$1.35



Questions?



HDR



# Evaluations of New Reservoirs

Agenda Item 6.3.1C

July 10, 2019



# Reservoir Site Evaluations

- Only updates from previous evaluations – 2001, 2006, 2011 and/or 2016 Plans
  - Supply update
  - Cost update
  - Check/confirm impacts to habitat and threatened/endangered species
- WUGs identified are preliminary only
- 2021 Brazos G Plan report sections will contain more detail



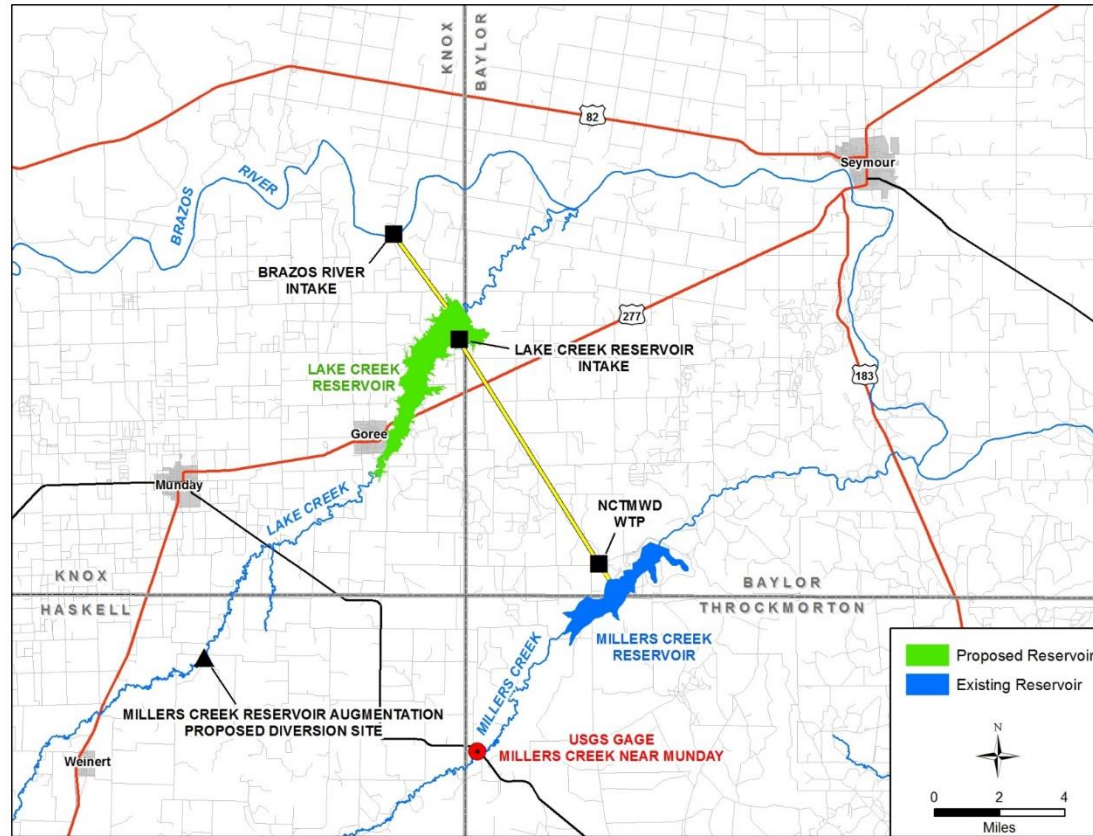
# Strategy Evaluation Considerations

- Supply Availability – Brazos WAM Run 3
  - Subject to SB3 Environmental Flows
- Environmental Impacts
  - Flow Changes
  - Habitat / Species Impacts
  - Cultural Resources Impacts
- Cost - September 2018 Dollars
  - Structural
  - Non-Structural
    - Land Acquisition
    - Relocations
    - Mitigation
    - Engineering
  - Annual
    - Power Costs \$0.08/kW-hr
    - Debt Service – 3.5% for 40 years
    - Operation and Maintenance
    - Compensation for subordination agreements (if applicable)



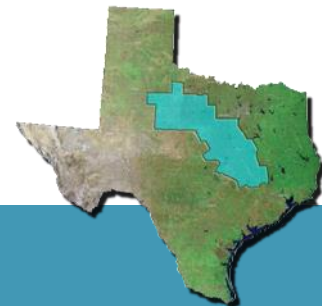
# Lake Creek Reservoir

- ❑ Proposed location: Knox County
- ❑ Firm Yield: 12,900 acft/yr
- ❑ Impound Lake Creek streamflow
- ❑ Supplemental streamflow diverted from Brazos River during high flow periods
- ❑ Potential entities to supply water:
  - North Central Texas Municipal Water Authority (NCTMWA)



## Reservoir Characteristics

Capacity	58,560 acft
Surface Area	2,866 acres



# Lake Creek Reservoir – Water Availability Assumptions

- Possum Kingdom Reservoir subordination to Lake Creek impoundments
- Brazos River diversions are interruptible portion of BRA System Operations water
  - Diversions only occur during flood flow periods when interruptible water is available and water quality is adequate for storage in Lake Creek Reservoir
  - Requires amendment to System Operations permit
- Lake Creek Reservoir impoundments and Brazos River diversions are subject to TCEQ environmental flow standards





# Lake Creek Reservoir

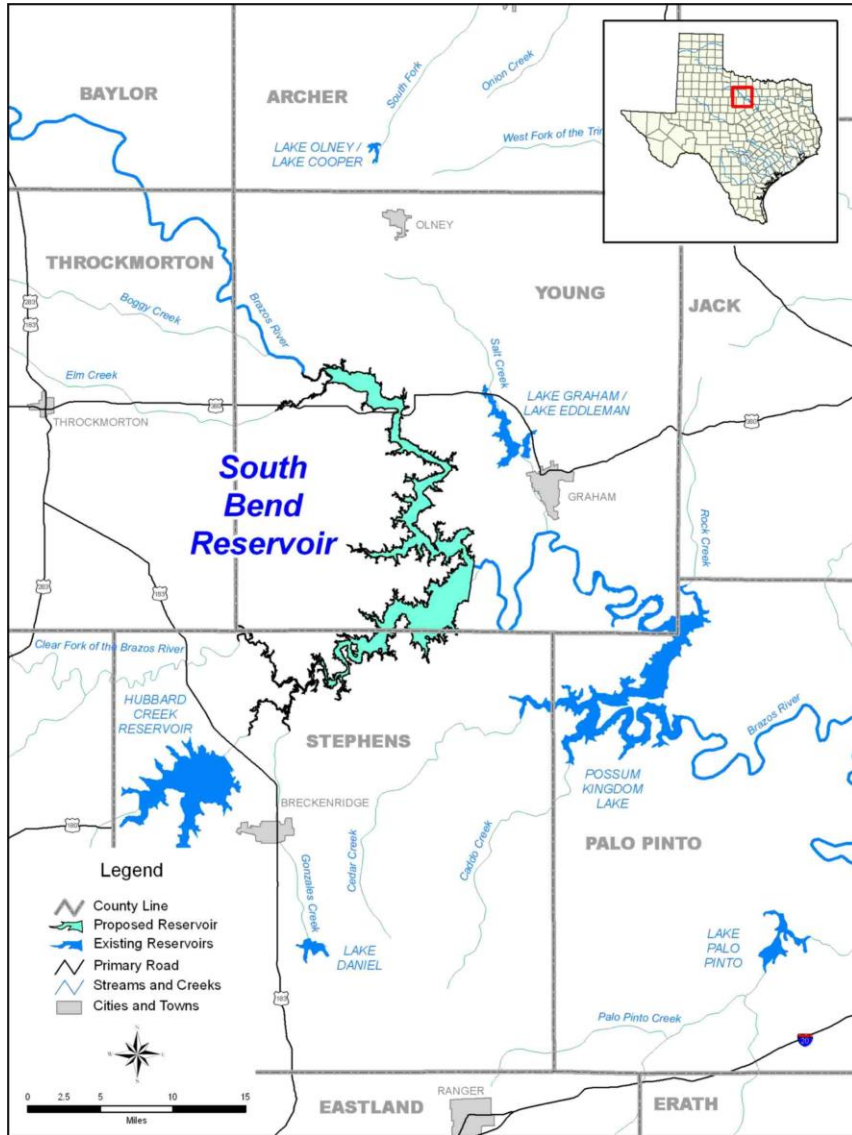
- ❑ Project facilities other than reservoir
  - ❑ Brazos River Intake, Pump Station, and Channel Dam (258 MGD)
  - ❑ Transmission Pipeline from Brazos River to Lake Creek Reservoir (120 in., 3 miles)
  - ❑ Transmission Pipeline from Lake Creek to WTP/Millers Creek Reservoir (30 in,8 miles)
  - ❑ Lake Creek Reservoir Intake Pump Station (12.1 MGD)
  - ❑ WTP Expansion (12.1 MGD)

<b>Cost Estimate Summary<sup>1</sup></b>	
Total Capital Costs	\$168,986,000
Total Project Cost	\$257,334,000
Annual Cost	\$20,948,000
Available Project Yield	12,900 acft/yr
Annual Unit Cost of Water	\$1,624 /acft

<sup>1</sup>Costs do not currently include purchase of BRA System Operations interruptible water



# South Bend Reservoir



- ❑ Proposed location: Young County
- ❑ Firm Yield
  - Stand-Alone: 14,800 acft/yr
  - BRA System Yield Increase: 58,000 acft/yr
- ❑ Possible entities to supply water:
  - BRA Customers

<b>Reservoir Characteristics</b>	
Normal Pool WSEL	1,090 ft-msl
Capacity	771,604 acft
Surface Area	29,877 acres
Drainage Area	13,168 sq-mi

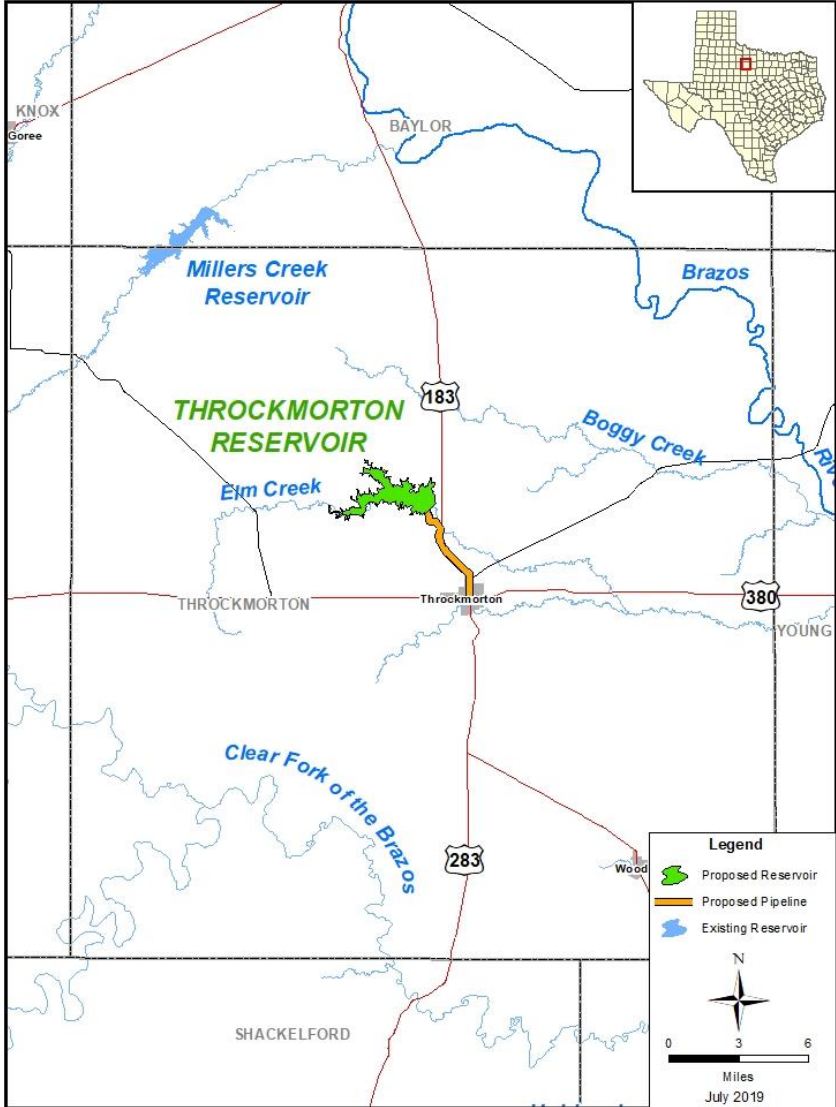
# South Bend Reservoir

<b>Reservoir Cost Estimate Summary</b>	
Total Capital Costs	\$202,806,000
Total Project Cost	\$532,213,000
Annual Cost	\$29,749,000
Available Project Yield <sup>1</sup>	58,000 acft/yr
Annual Unit Cost of Water	\$513 /acft

<sup>1</sup>Increase to BRA System Yield



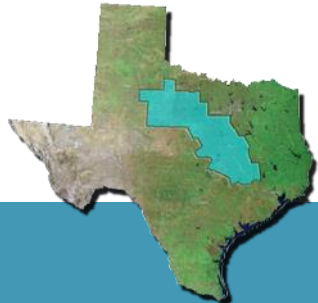
# Throckmorton Reservoir



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- Proposed location: 5 miles northwest of the City of Throckmorton
- 1-Year Safe Yield: 3,500 acft/yr
- Requires subordination agreement with BRA/Possum Kingdom Reservoir
- Possible entities to supply water: City of Throckmorton

Reservoir Characteristics	
Capacity	15,900 acft
Surface Area	1,161 acres



# Throckmorton Reservoir

- ❑ Project facilities other than reservoir:
  - ❑ Intake and Pump Station at Throckmorton Reservoir (3.3 MGD)
  - ❑ Transmission Pipeline from Throckmorton Reservoir to new WTP (14 in. dia., 5 miles)
  - ❑ New Water Treatment Plant (3.3 MGD)

<b>Reservoir Cost Estimate Summary</b>	
Total Capital Costs	\$41,506,000
Total Project Cost	\$68,103,000
Annual Cost	\$5,906,000
Available Project Yield <sup>1</sup>	3,500 acft/yr
Annual Unit Cost of Water	\$1,687 /acft

<sup>1</sup>11-Year Safe Yield



Questions?



HDR



# Update on Water Conservation Evaluations

Agenda Item 6.3.2

July 10, 2019





# Background

- March 20, 2019 – Brazos G adopted methodology for determining recommended water conservation savings
  - Municipal
  - Irrigation, Mining and Manufacturing
  - Steam-electric – tabled for later
- Today:
  - Present summary of results of **municipal** conservation savings
  - Request modification for 57 WUGs, based on more aggressive individual 5-year and 10-year goals
- Next meeting – present conservation summary for other uses



# Municipal Conservation Approach

Target efficiency: 140 gpcd (same as 2016 Plan)

- Reduce gpcd by 1% annually until 140 gpcd met, then hold constant
- Williamson County – 120 gpcd target by 2070
- All WUGs with gpcd > 140

BMP recommendations (modification from 2016 Plan)

- Use TWDB reports to identify BMPs typically used in Brazos G Area
  - Vary by utility size and rural/urban/suburban classification
- Use Municipal Water Conservation Planning Tool
  - Develop generalized conservation savings and costs for typical utility classifications
- Consider water loss audits for calculating replacement costs for WUGs reporting > 15% water losses

Benefits:

- Consistent with previous planning cycles
- Improves information regarding conservation savings and costs
- Incorporates practices specific to Brazos G
- Continues to not “prescribe” a specific set of BMPs



# TWDB Conservation Data

- TWDB compiled BMPs and GPCD targets for utilities submitting water conservation plans dated 2013 through 2017
- 57 WUGs in Brazos G indicated 5-year and 10-year water conservation targets (GPCD reduction) that are more aggressive than Brazos G methodology
- HDR suggests utilizing those revised targets for consistency with the goals of those local utilities



# Summary of Brazos G Water Conservation

	Savings (acft/year)					
	2020	2030	2040	2050	2060	2070
<i>Municipal Conservation Strategy # 1 (Brazos C</i>	0	17,139	30,638	43,013	55,835	64,365
Savings for Municipal Entities at Target 140 G	0	7,832	17,190	25,954	36,429	46,974
Savings for Williamson County Municipal Enti						
<b>Total Savings- Municipal Conservation Strat</b>	<b>0</b>	<b>24,971</b>	<b>47,829</b>	<b>68,967</b>	<b>92,264</b>	<b>111,339</b>
<i>Municipal Conservation Strategy # 2 (Based o</i>						
Savings for the 57 WUGs with WCP 5 year an						
Savings for all other municipal WUGs based o						
<b>Total Savings- Municipal Conservation Strat</b>	<b>0</b>	<b>11,902</b>	<b>11,906</b>	<b>13,004</b>	<b>14,718</b>	<b>16,732</b>
	0	21,389	42,392	62,411	84,946	102,988
	<b>0</b>	<b>33,292</b>	<b>54,299</b>	<b>75,415</b>	<b>99,664</b>	<b>119,720</b>

Utilization of conservation targets more aggressive than standard Brazos G target results in greater than 8,000 acft/yr additional conservation savings.



# Suggested Action

“The Brazos G Regional Water Planning Group directs HDR to utilize water conservation savings goals compiled by the Texas Water Development Board in lieu of the default Brazos G approach when those goals will result in greater conservation savings.”



HDR



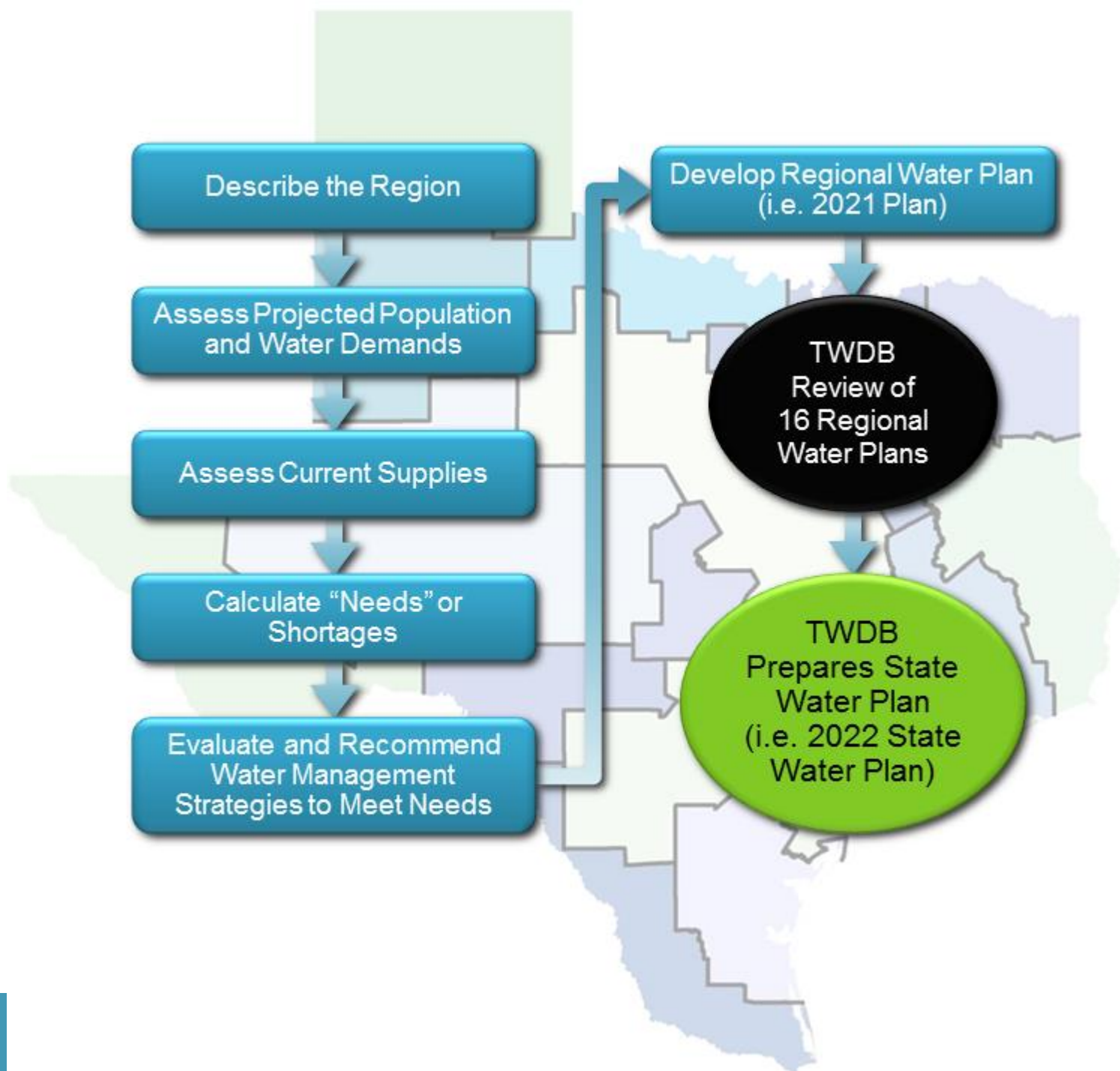
# Schedule to Develop the 2021 Brazos G Plan

Agenda Item 6.3.3

July 10, 2019



# Regional Water Planning Process







# Working Schedule for the 2021 Planning Cycle

## ▪ September '19 – March '20 – develop 2021 Plan

### ○ September Brazos G mtg

- Review WMS evaluations
- Review draft Chapters 2 (demands), 3 (supplies) and 4 (needs)
- Review draft information for Chapter 7 Drought Preparations
- Review/approve Emergency Interconnections
- Review Policy Recommendations?
- Review initial plans for some WUGs and WWP

### ○ November Brazos G mtg

- Review WMS evaluations
- Review initial plans for most WUGs and WWP
- Review Chapter 1 Description of Region
- Finalize Chapters 2-4 and 7
- Review policy recommendations

### ○ December Brazos G mtg

- Finalize Chapter 1 Description of Region
- Review final WMS evaluations
- Finalize plans for most WUGs/WWP
- Adopt policy recommendations for Chapter 8

### ○ January '20 Brazos G mtg

- Clean up for remaining tasks

### ○ January '20 Sub-regional meetings?

### ○ February '20 Brazos G mtg

- Review/approve Initially Prepared Plan

## ▪ March 3, 2020 – Initially Prepared Plan



HDR



**6.4. Authorization for the BRA (as Brazos G Administrative Agent) to execute contract amendment No.6 with the TWDB and subsequent amendment to contract with HDR Engineering, Inc.**



# **TWDB Contract Amendment No. 6 HDR Contract Amendment No. 4**

Agenda Item 6.4

July 10, 2019



# Brazos G 2021 Plan Funding Summary

	Base Contract	Second Round of Funds	Third Round of Funds	Final Round of Funds	Total Contracted Funds
<b>TWDB Contract</b>	<b>\$187,800.00</b>	TWDB Amendment No. 3 <b>\$667,002</b>	TWDB Amendment No. 4 <b>\$667,002</b>	TWDB Amendment No. 6 <b>\$333,501</b>	<b>\$1,855,305.00</b>
<b>HDR Contract</b>	<b>\$157,748.16</b>	HDR Contract Amendment No. 1 <b>\$622,002</b>	HDR Contract Amendment No. 2 <b>\$667,002</b>	HDR Contract Amendment No. 4 <b>\$333,501</b>	<b>\$1,780,253.16</b>



## Possible Action

- The Brazos G Regional Water Planning Group authorizes the Brazos River Authority, as the Administrative Agent for Brazos G, to execute contract amendment No. 6 with the Texas Water Development Board to commit final funding and update guidance documents for the development of the 2021 Brazos G Regional Water Plan.
- Further, The Brazos G authorizes the Brazos River Authority to execute contract amendment No. 4 with HDR Engineering, Inc. to increase funding for continued technical work for the development of the 2021 Brazos G Regional Water Plan.





- 6.5. Report and possible discussion on updates from other regional water planning groups (Regions B, C, F,H, K, L & O).**





**6.6. Report and possible discussion on Groundwater Management Area (GMA) activities.**



**6.7. Report and possible discussion on agency communication and information.**



## **6.8 Discussion and possible action on report by Brazos G Administrator.**



## **6.9 Report and possible discussion from Brazos G Chair.**



- 7. DISCUSSION AND POSSIBLE ACTION ON  
NEW BUSINESS TO BE CONSIDERED AT  
NEXT MEETING**
- 8. CONFIRMATION OF NEXT MEETING  
DATE**
- 9. ADJOURN**