



# Region I

East Texas Regional  
Water Planning Group



## Technical Committee Meeting

[etexwaterplan.org](http://etexwaterplan.org)

November 20, 2024

# East Texas Technical Committee Meeting

1. Call to Order
2. Roll Call
3. Public Comments (Limited to 3 minutes per speaker)

# Item 4

Report from Consultant Team with  
Discussion by Technical Committee  
Members

# Today's Discussion

- a) Schedule
- b) Updates on Water Management Strategies (Task 5B)
- c) Updates on Water Conservation (Task 5C)
- d) Updates on Unique Stream Segments, Unique Reservoir Sites, and Legislative Recommendations (Task 8)

**Abbreviations:**

TWDB = Texas Water Development Board

# Review of 6th Cycle Water Planning Schedule



# 2026 Plan Short-Term Schedule

Date	Schedules Events/Tasks
March 4, 2024 – March 3, 2025	Prepare and revise Initial Prepared Plan (IPP) Chapters
	<b>Next RWPG Meetings:</b>
Jan 7, 2025	RWPG Meeting: IPP Review
Feb 6, 2025	RWPG Meeting: IPP Approval (2-week notice)

# Updates on Water Management Strategies - Task 5B



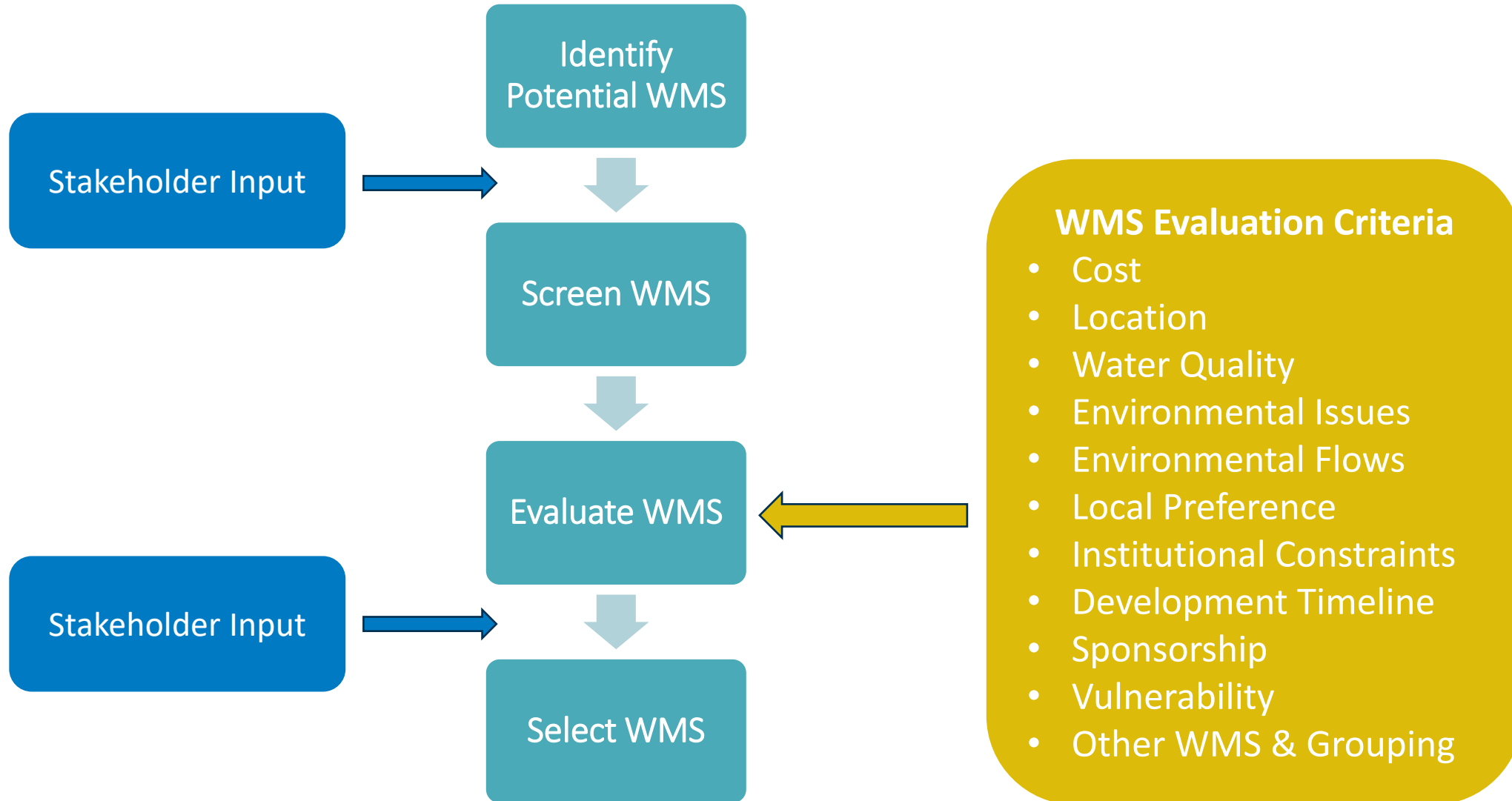
# Chapter 5B Overview

- Evaluation of Water Management Strategies (WMSs) for all WUGs and MWP
- Summary of counties and MWPs
  - Recommended and alternative WMSs (quantities, cost estimate)
  - Shortage/surplus discussion
- WMS Technical Memoranda
  - Project description
  - Customers
  - Supply development
  - Environmental and permitting considerations
  - Cost estimate
  - Project evaluation

# Chapter 5B Evaluation

- 24 WUGs with identified needs
  - 8 municipal, 16 non-municipal
  - Identified and evaluated WMSs for each
- Four WUGs without an identified need in requested WMS in survey (e.g., new GW well)
- Coordinated with MWPs regarding WMSs
- Coordinated with other regions (C, D, H) regarding interregional WMSs

# Chapter 5B Evaluation



# Chapter 5B Evaluation

## WMS Cost Estimates

- Developed cost estimates in accordance with TWDB guidelines for regional water planning
  - Estimates developed for September 2023 indices
  - Interest during construction: 3.5% annual interest less 0.5% rate of return
  - Debt service: 3.5% for 20 years (non-reservoirs), 3.5% for 40 years (reservoirs)
  - Operation and maintenance
    - ✓ Pipelines – 1% of construction cost
    - ✓ Pump stations – 2.5% of construction cost
    - ✓ Storage tanks – 1% of construction cost
  - Engineering and contingencies: 30% for pipelines, 35% for all other facilities

# Chapter 5B Evaluation

## WMS Cost Estimates

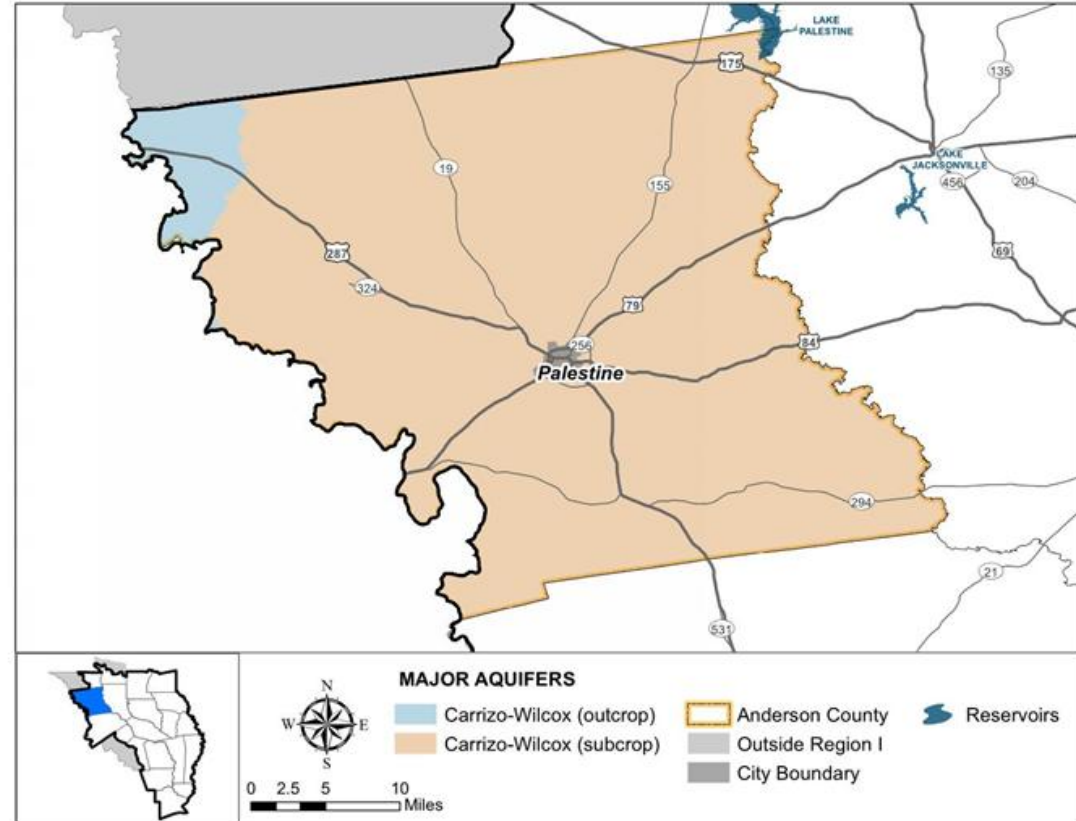
- Used TWDB Uniform Costing Model (UCM)
  - Updated March 2024
- Project-specific detailed cost estimates used (if available from sponsors)
- Purchase water costs included where applicable (generalized)

Purchased Water Costs Used in the Water Management Strategy Evaluations (\$/1000 gal)			
Category of Use	Water Source Type		
	Raw Surface Water	Treated Surface Water	Groundwater
Municipal	\$1.00	\$3.00	\$2.00
Irrigation	\$0.10	NA	-
Manufacturing	\$1.00	NA	-
Mining (Oil/Gas)	\$3.00	NA	-
Mining (Other)	NA	NA	-
Steam Electric	\$1.00	NA	-
Livestock	\$1.00	NA	-

# Chapter 5B – WUG WMS by County

## Anderson County

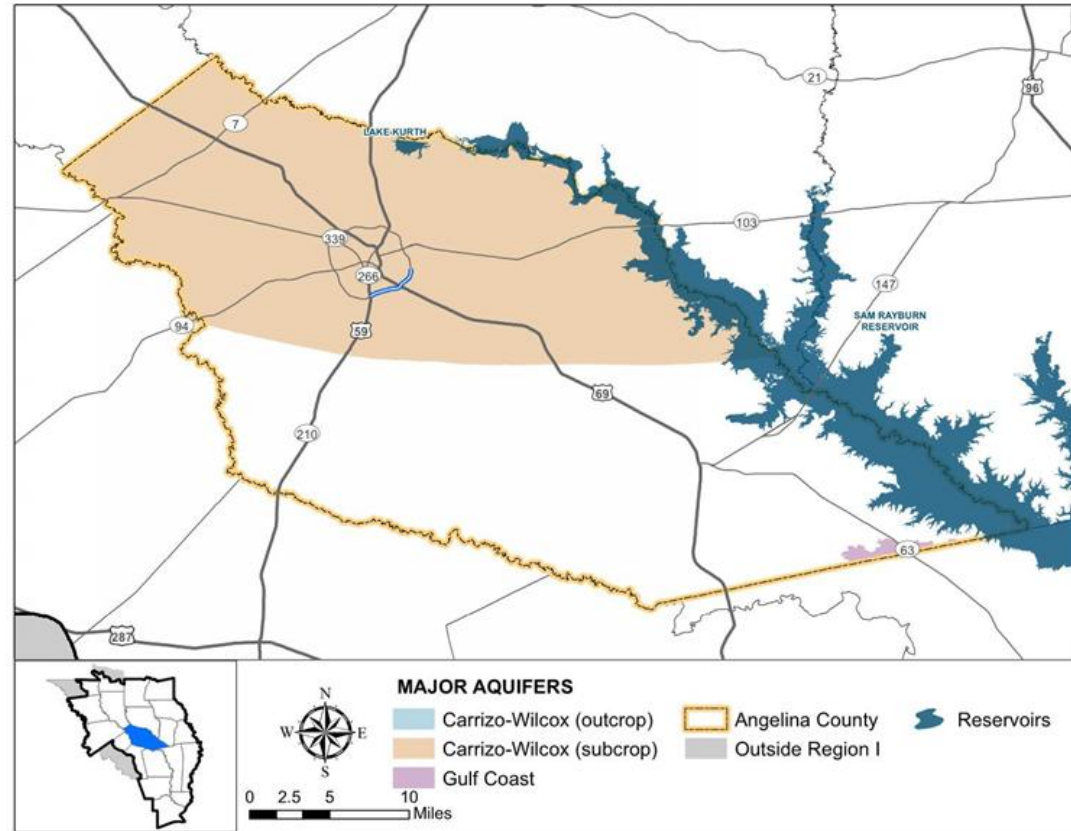
- B C Y WSC (*no need identified*)
  - New groundwater wells (Carrizo-Wilcox)
- Steam Electric Power
  - New groundwater wells (Carrizo-Wilcox)



# Chapter 5B – WUG WMS by County

## Angelina County

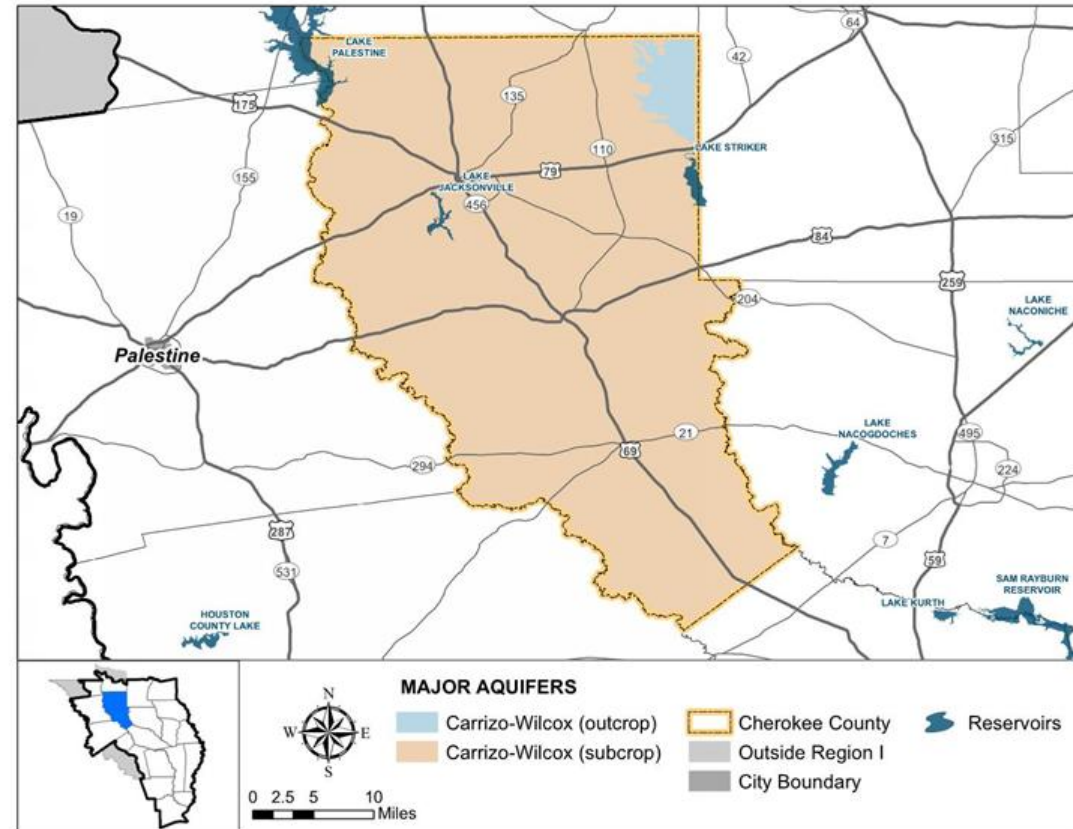
- Lufkin (MWP)
  - Develop Sam Rayburn water supply
- Manufacturing
  - Purchase from Lufkin
- Mining
  - Purchase from ANRA (Run-of-River, Angelina)



# Chapter 5B – WUG WMS by County

## Cherokee County

- Alto Rural WSC
  - New groundwater wells (Carrizo-Wilcox)
- Jacksonville (MWP)
  - Raw water transmission system from Lake Columbia

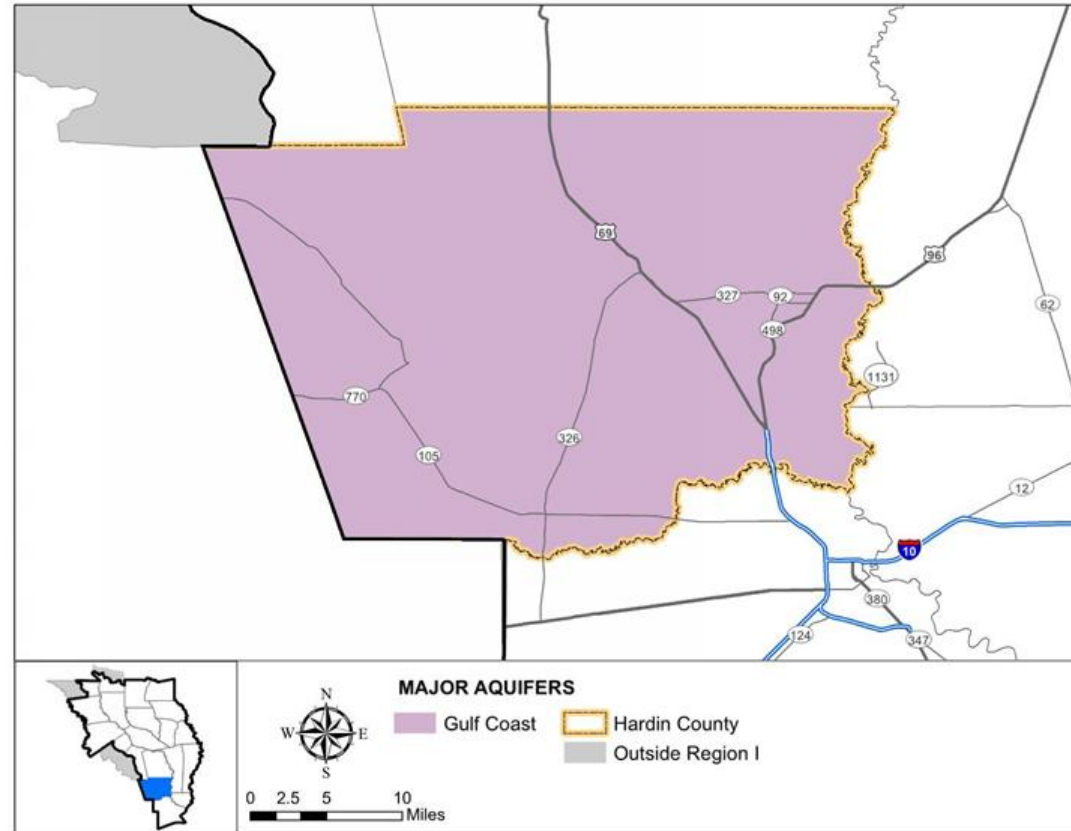




# Chapter 5B – WUG WMS by County

## Hardin County

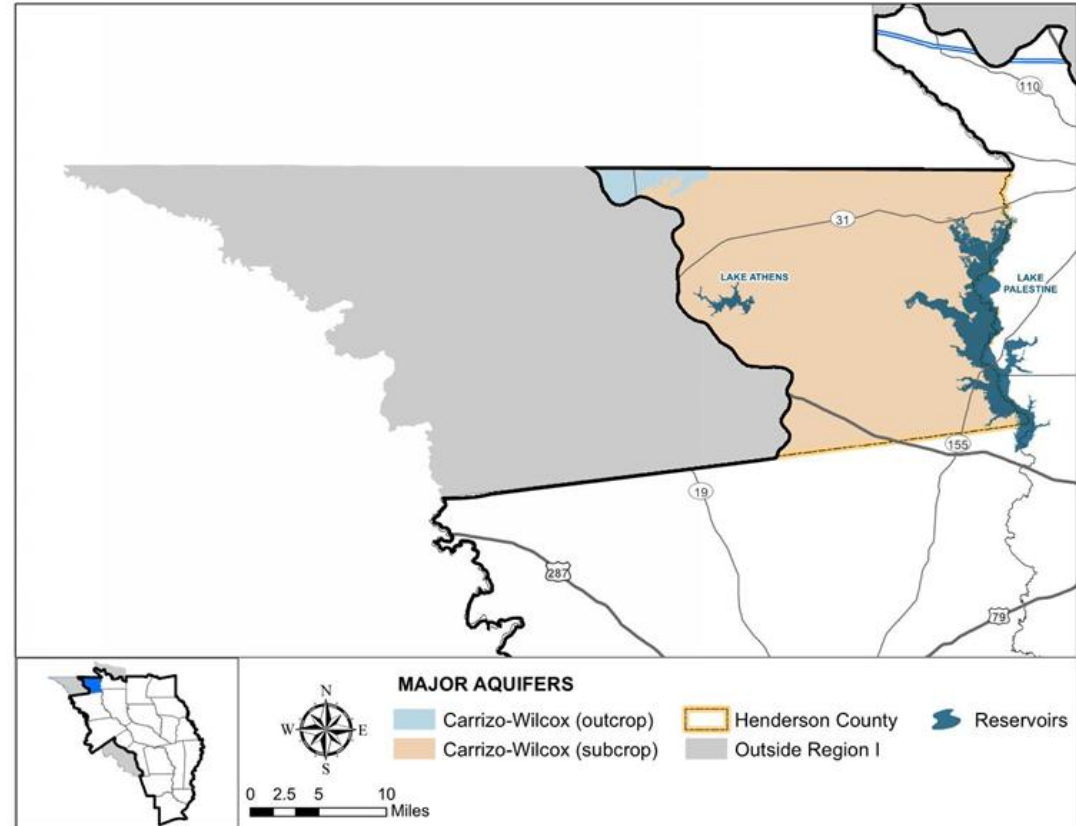
- No unmet needs – no WMSs evaluated



# Chapter 5B – WUG WMS by County

## Henderson County

- Athens/Athens MWA (MWP)
  - Fish hatchery reuse
  - WTP Booster PS Improvement
  - *New groundwater wells (Carrizo-Wilcox)*
- Edom WSC
  - New groundwater wells (Carrizo-Wilcox) - Region D
- Chandler
  - Purchase from Tyler (Lake Palestine)
  - *New groundwater wells (Carrizo-Wilcox)*

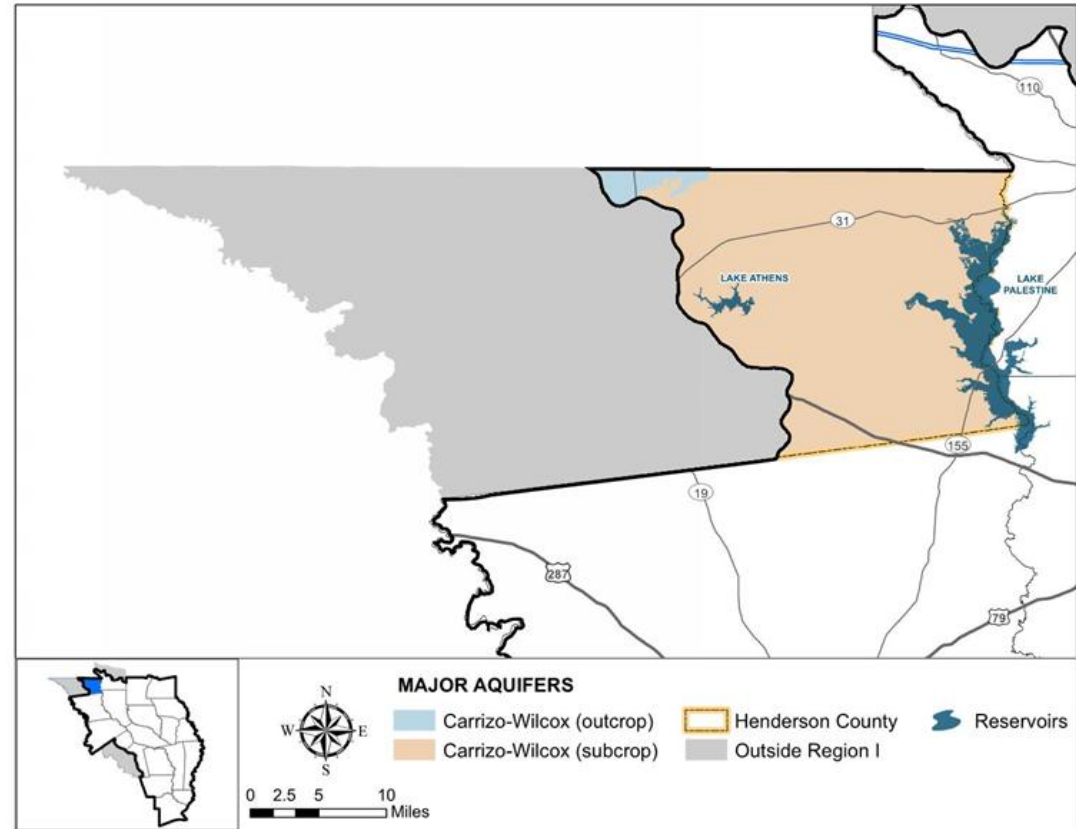


*\*Italics indicate alternative WMS. Alternative WMS in Henderson County are due to limited MAG.*

# Chapter 5B – WUG WMS by County

## Henderson County (Continued)

- Livestock
  - *New groundwater wells (Carrizo-Wilcox)*
- Mining
  - *New groundwater wells (Carrizo-Wilcox)*
- Steam Electric Power
  - *New groundwater wells (Carrizo-Wilcox)*

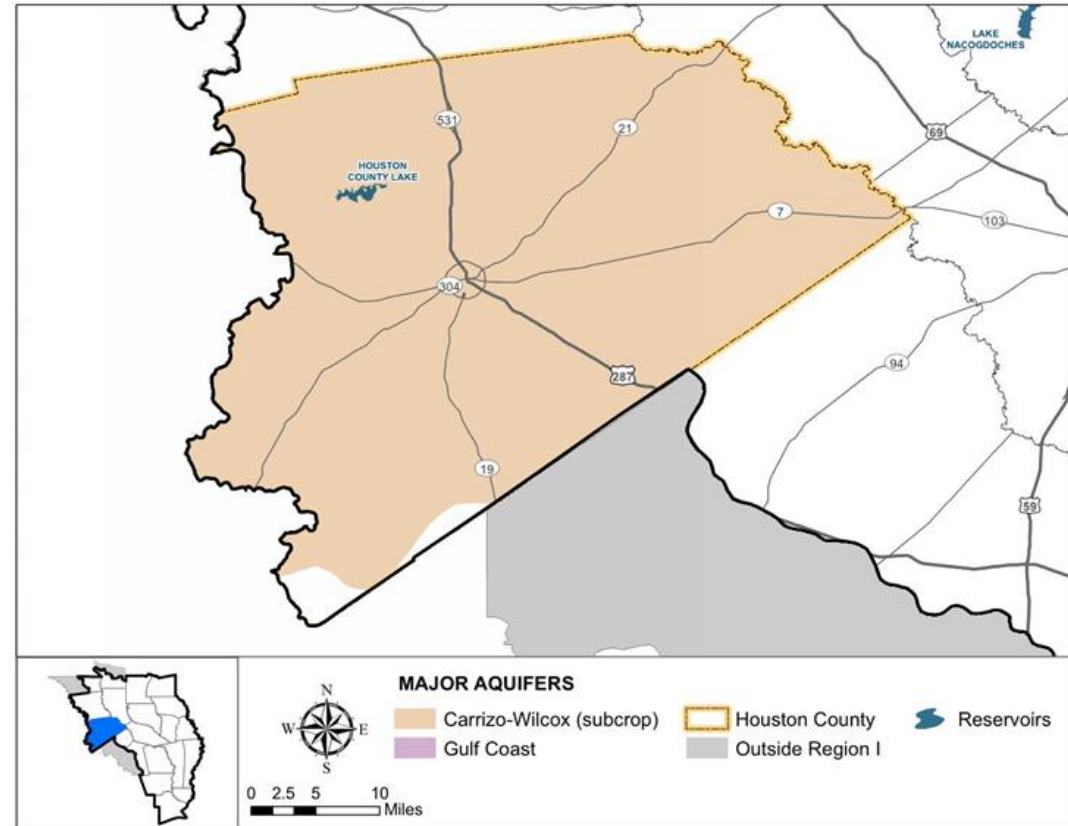


*\*Italics indicate alternative WMS. Alternative WMS in Henderson County are due to limited MAG.*

# Chapter 5B – WUG WMS by County

## Houston County

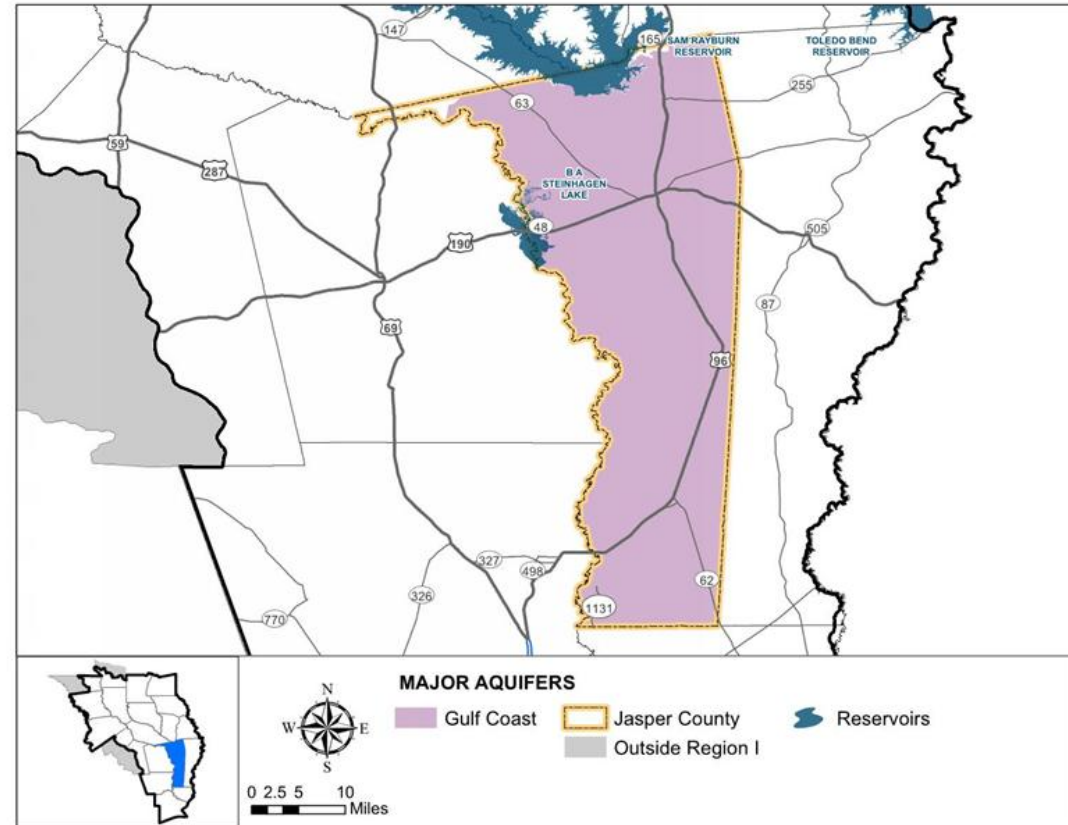
- TDCJ Eastham Unit
  - New groundwater wells (Carrizo-Wilcox)
- Livestock
  - New groundwater wells (Carrizo-Wilcox)



# Chapter 5B – WUG WMS by County

## Jasper County

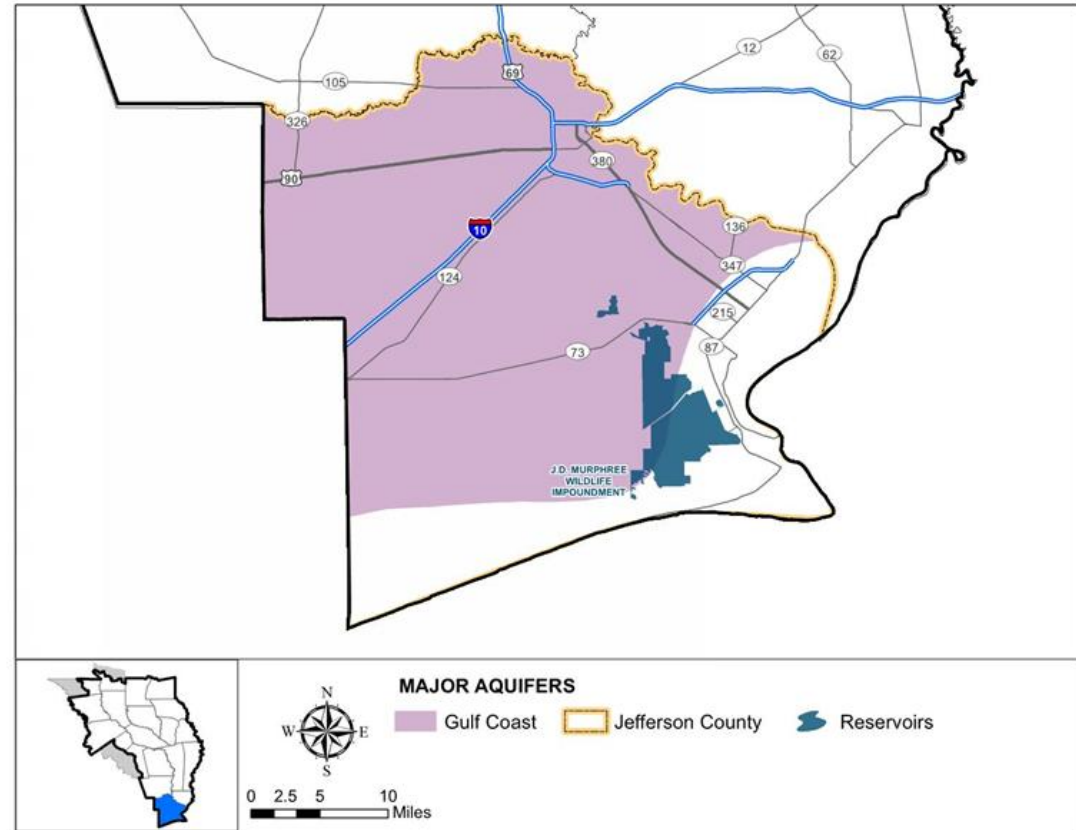
- South Jasper WSC (*no need identified*)
  - New groundwater wells (Gulf Coast)
- Manufacturing
  - Purchase from LNVA (Rayburn/Steinhagen System)



# Chapter 5B – WUG WMS by County

## Jefferson County

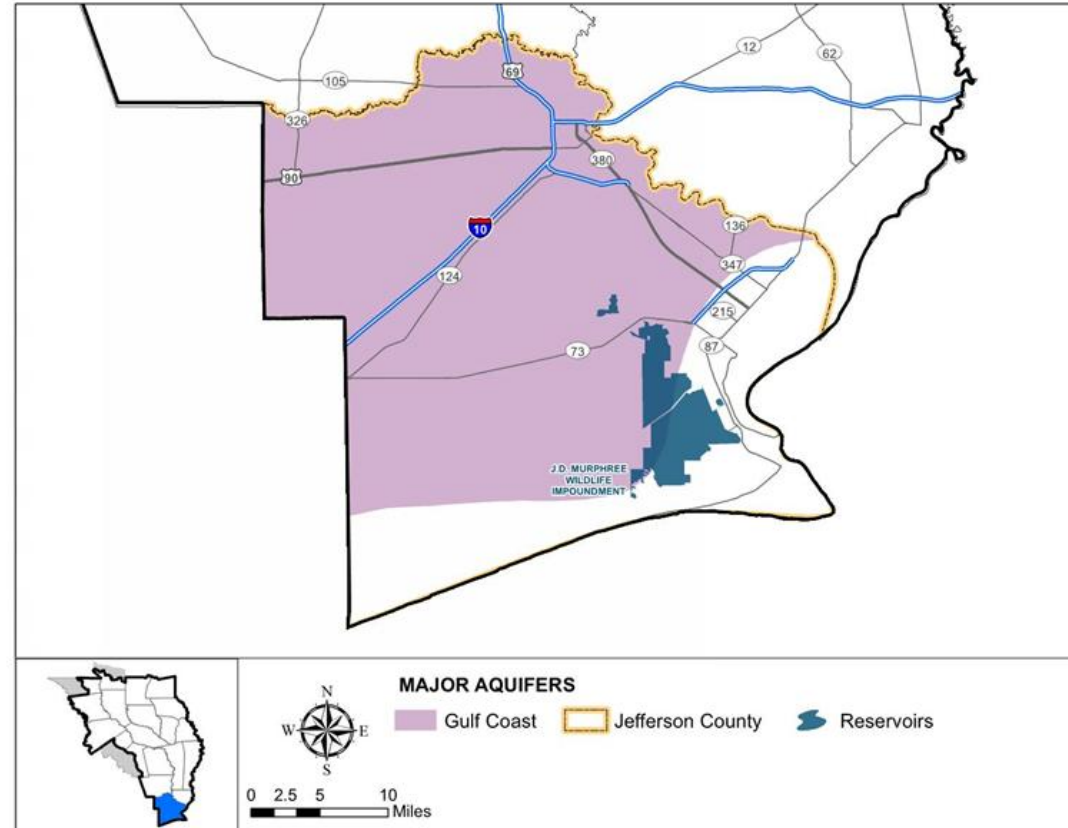
- **Beaumont (MWP)**
  - Amend supplemental contract with LNVA
- **China (*no need identified*)**
  - New groundwater wells (Gulf Coast)
- **Port Arthur (MWP)**
  - Water conservation



# Chapter 5B – WUG WMS by County

## Jefferson County (Continued)

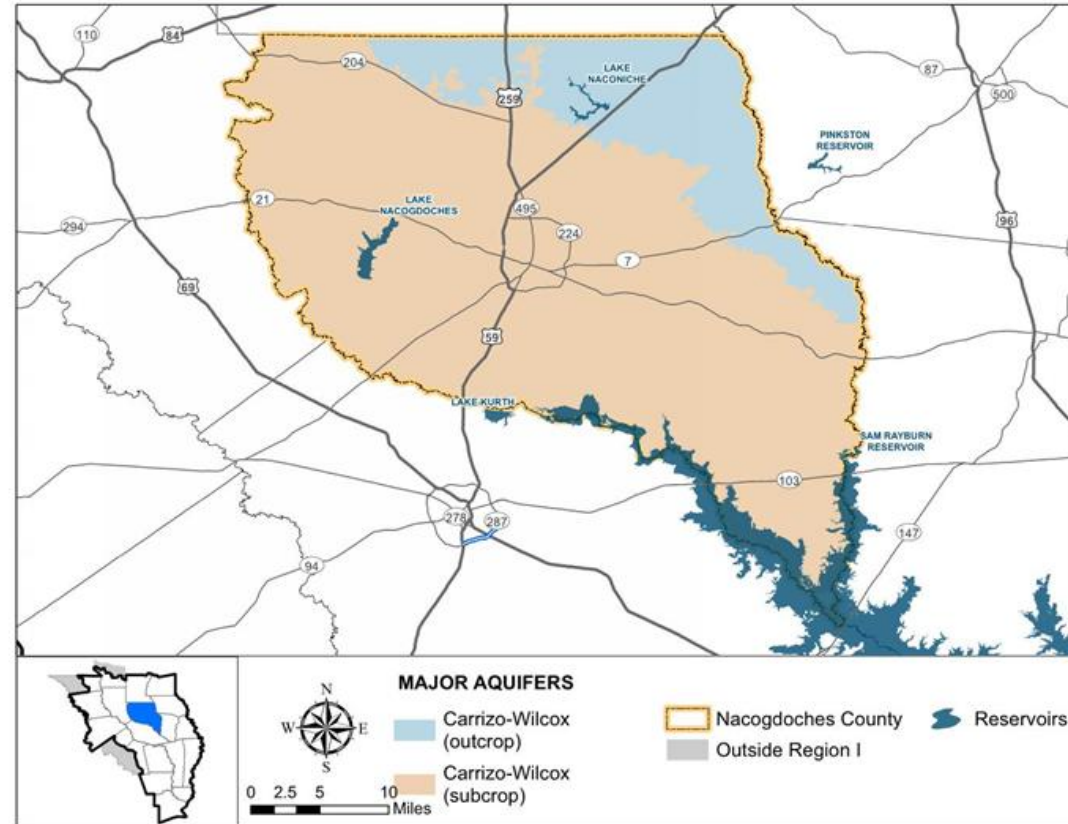
- Trinity Bay Cons. District
  - Water conservation (Region H)
- Manufacturing
  - Purchase from LNVA (Rayburn/Steinhagen System)



# Chapter 5B – WUG WMS by County

## Nacogdoches County

- D & M WSC
  - New groundwater wells (Carrizo-Wilcox)
- Nacogdoches (MWP)
  - Raw water transmission system from Lake Columbia\*



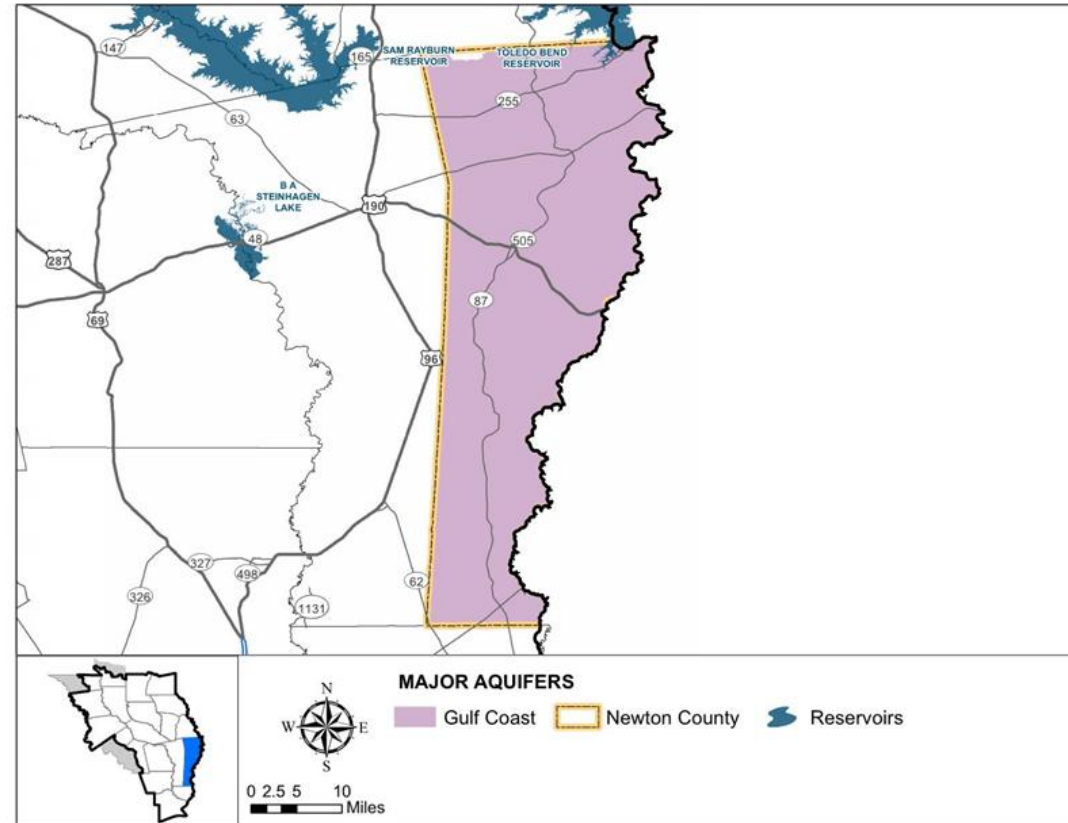
\*Pending coordination



# Chapter 5B – WUG WMS by County

## Newton County

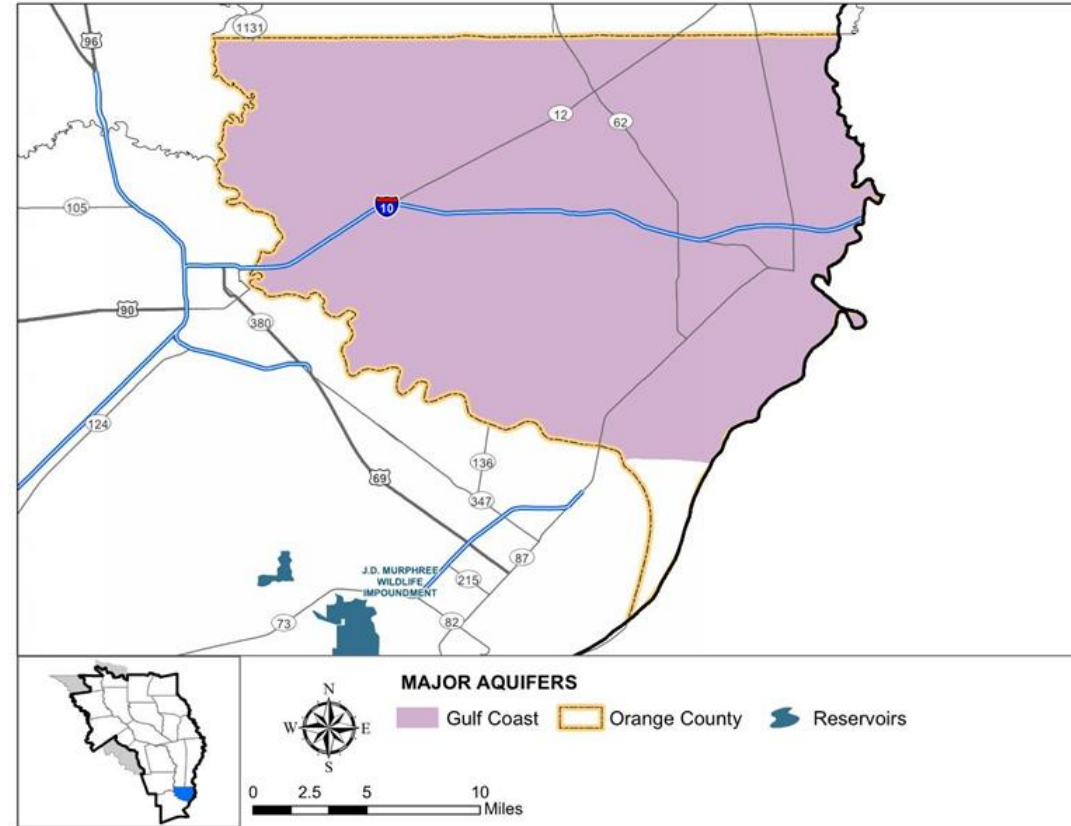
- No unmet needs – no WMSs evaluated



# Chapter 5B – WUG WMS by County

## Orange County

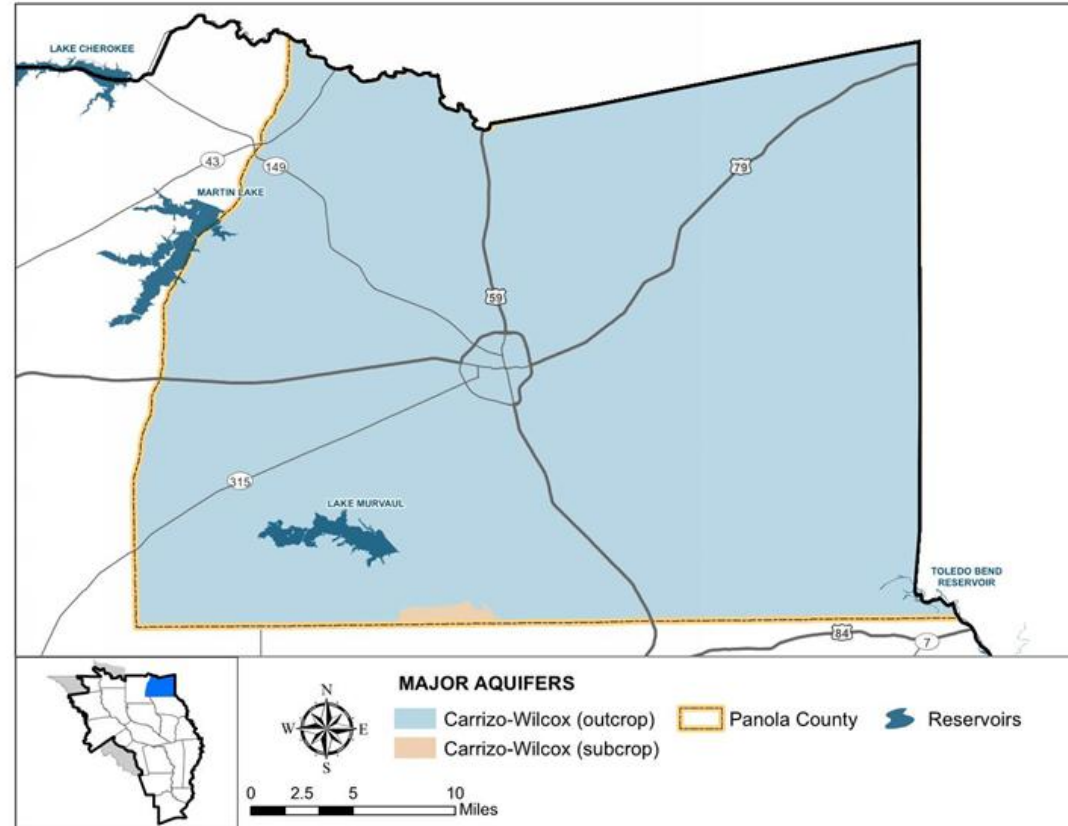
- Orange County WCID 1 (*no need identified*)
  - New groundwater wells (Gulf Coast)
- Steam Electric Power
  - Purchase from SRA (Toledo Bend)



# Chapter 5B – WUG WMS by County

## Panola County

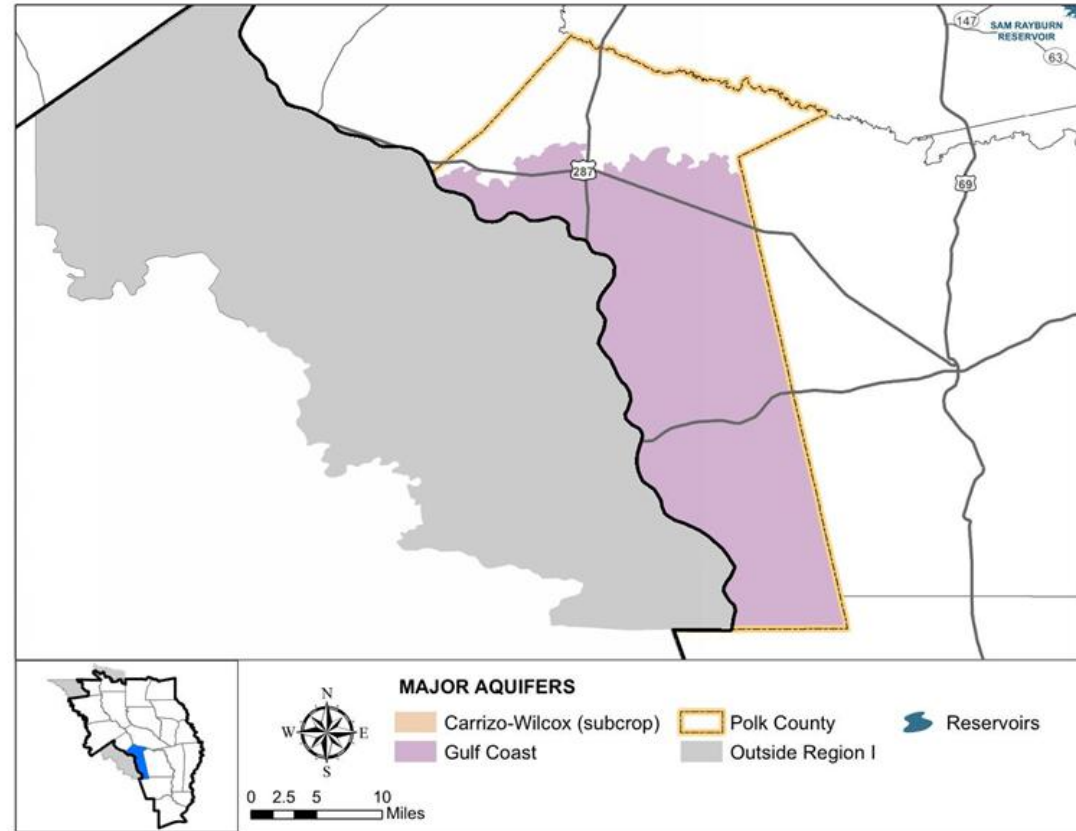
- Carthage (MWP)
  - No unmet needs – no WMS evaluated
- No unmet needs – no WMSs evaluated



# Chapter 5B – WUG WMS by County

## Polk County

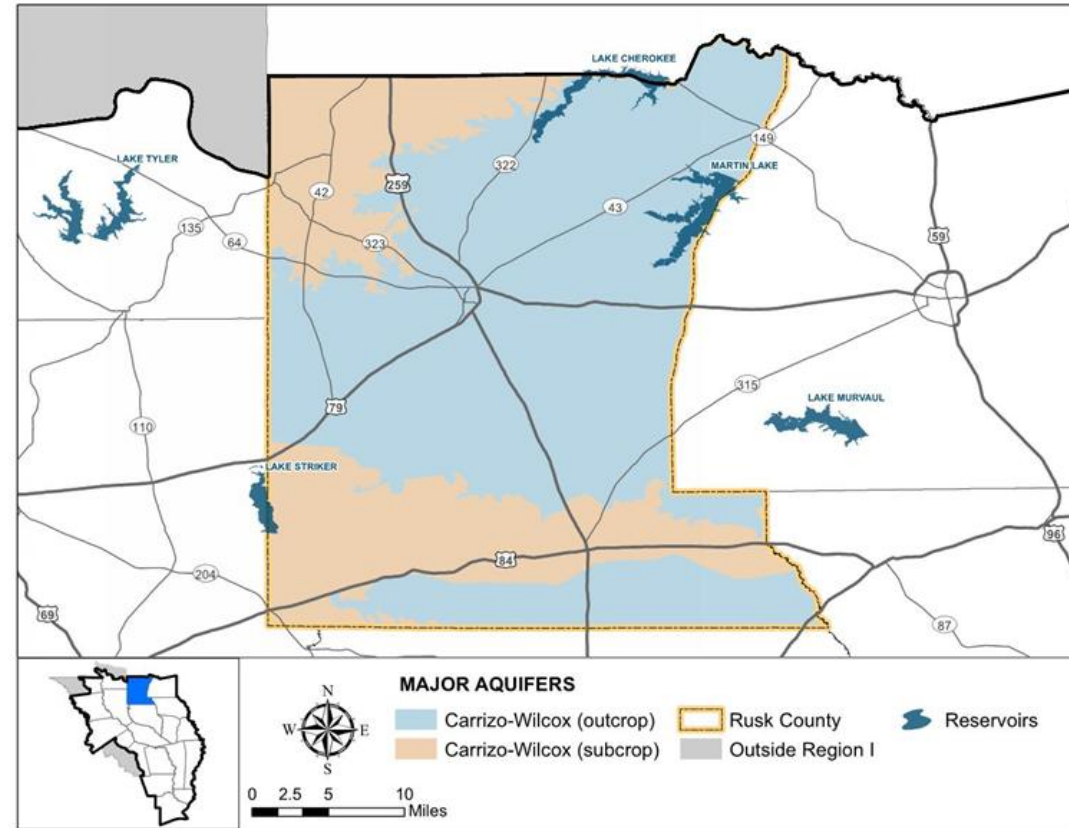
- No unmet needs – no WMSs evaluated



# Chapter 5B – WUG WMS by County

## Rusk County

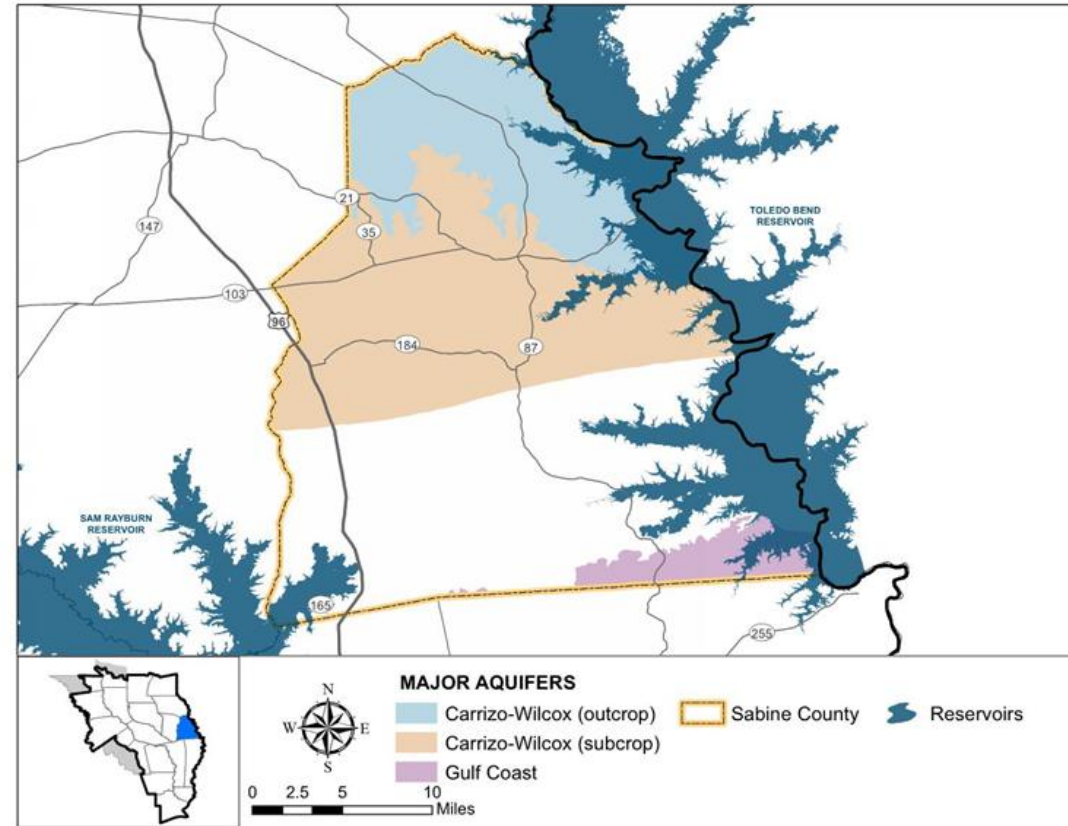
- Gaston WSC (*no need identified*)
  - New groundwater wells (Carrizo-Wilcox)
- Jacobs WSC
  - New groundwater wells (Carrizo-Wilcox)
- West Gregg SUD
  - Region D WMS



# Chapter 5B – WUG WMS by County

## Sabine County

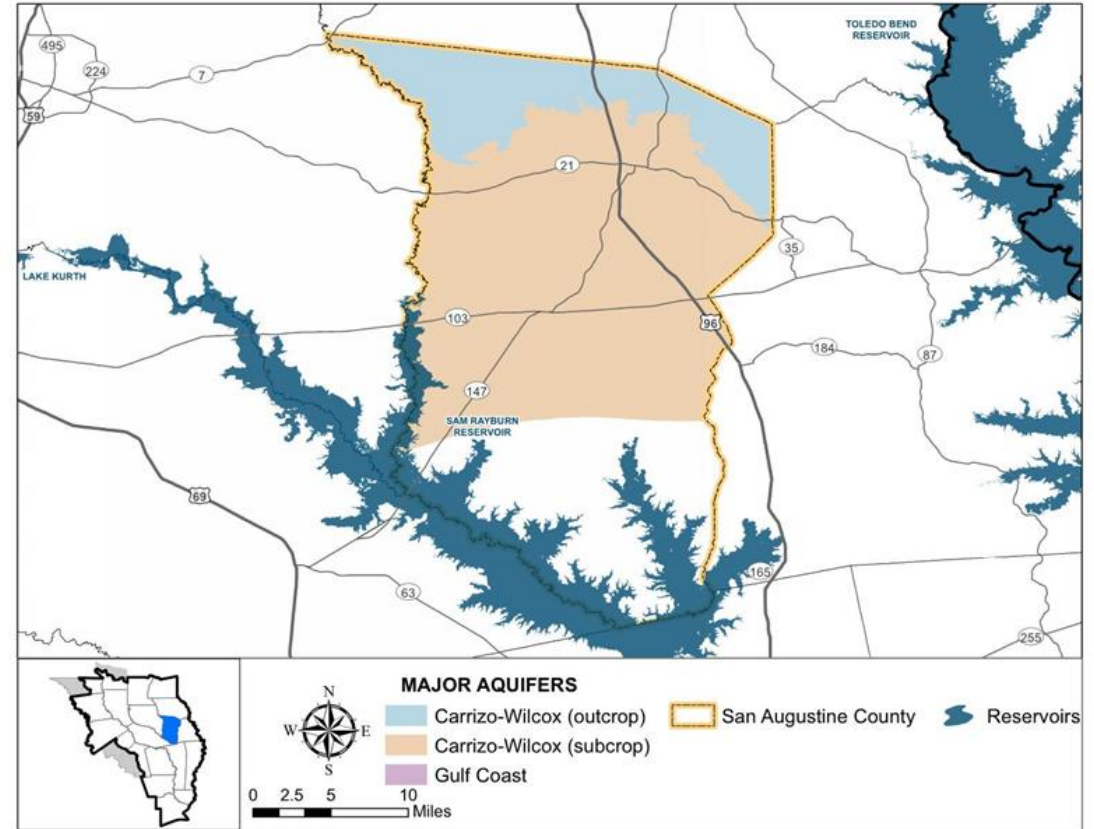
- Livestock
  - New groundwater wells (Yegua Jackson)



# Chapter 5B – WUG WMS by County

## San Augustine County

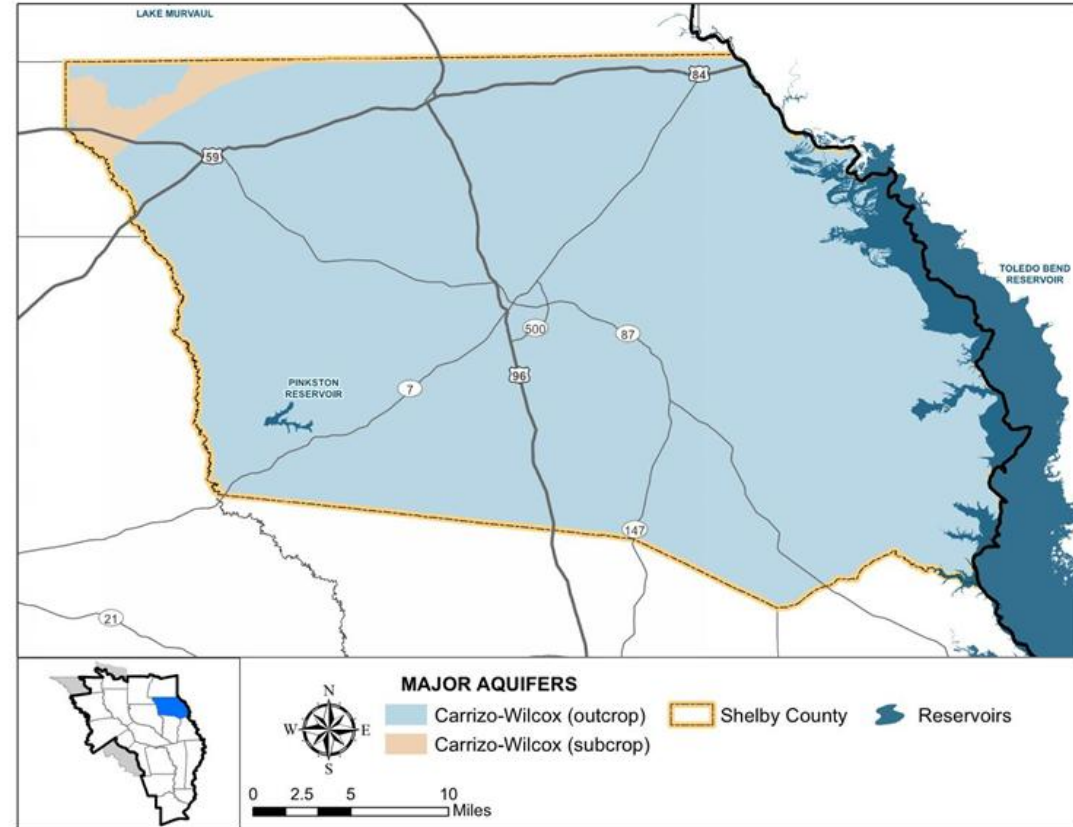
- No unmet needs – no WMSs evaluated



# Chapter 5B – WUG WMS by County

## Shelby County

- Center (MWP)
  - Reuse pipeline to industrial customer
- Manufacturing
  - Purchase from Center

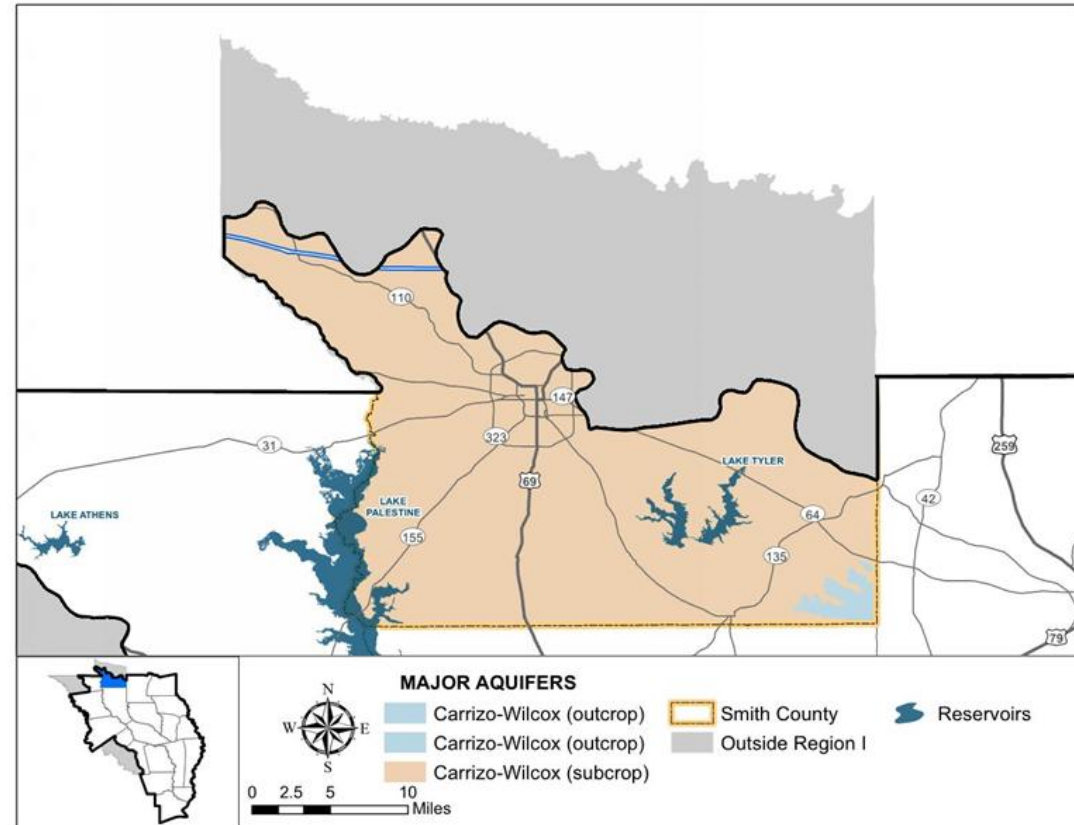




# Chapter 5B – WUG WMS by County

## Smith County

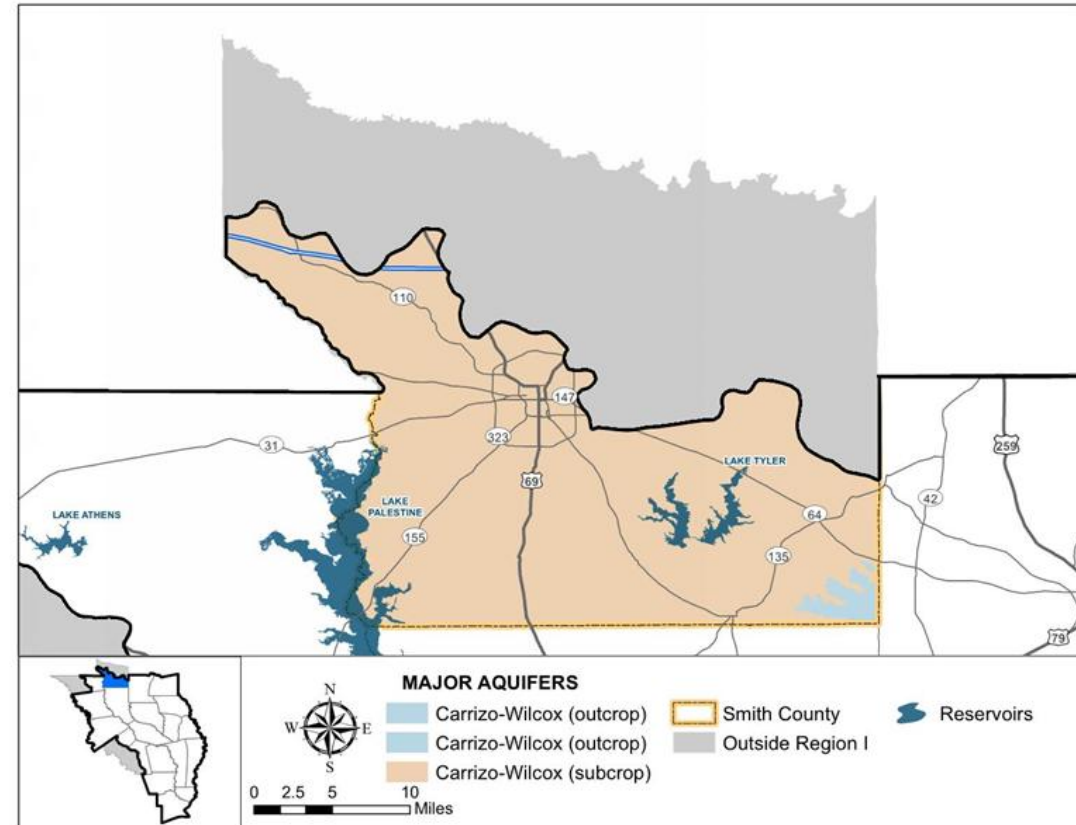
- Liberty Utilities Silverleaf
  - Region D WMS
- Southern Utilities
  - Purchase from Tyler
- Tyler (MWP)
  - Lake Palestine infrastructure expansion
- County-Other
  - Purchase from Tyler



# Chapter 5B – WUG WMS by County

## Smith County (Continued)

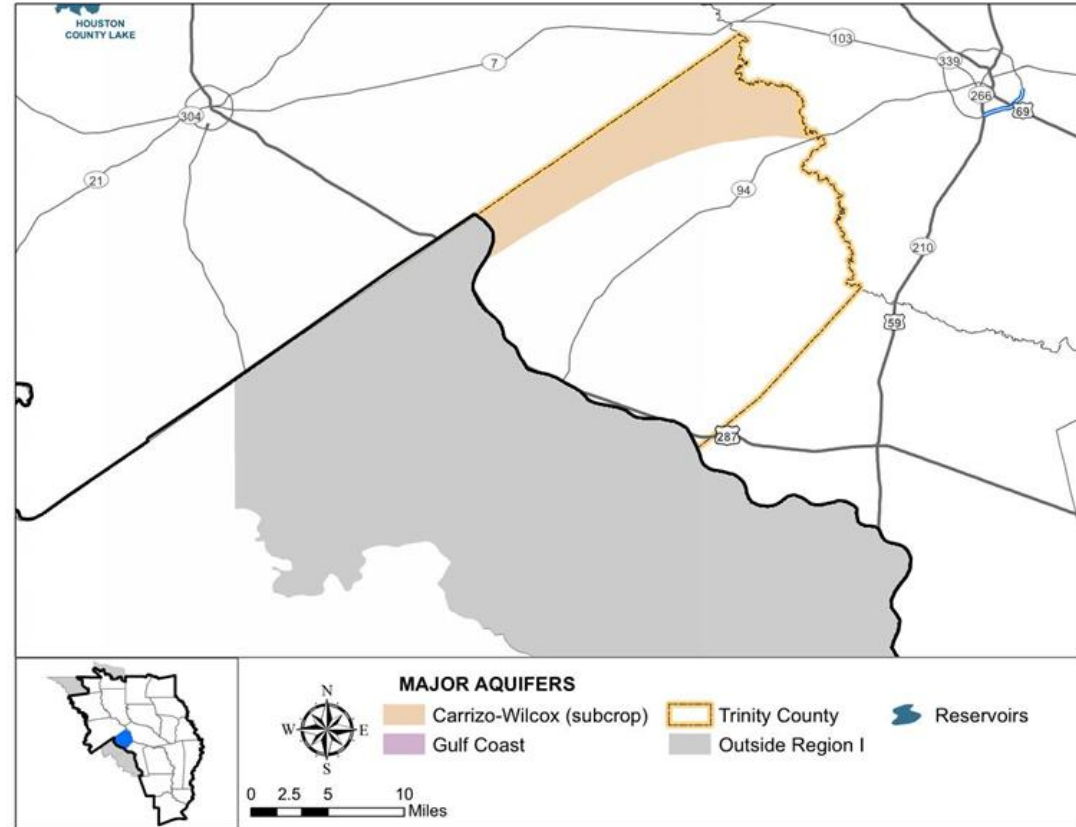
- Manufacturing
  - Purchase from Tyler
- Mining
  - Purchase from Tyler
  - Region D WUG



# Chapter 5B – WUG WMS by County

## Trinity County

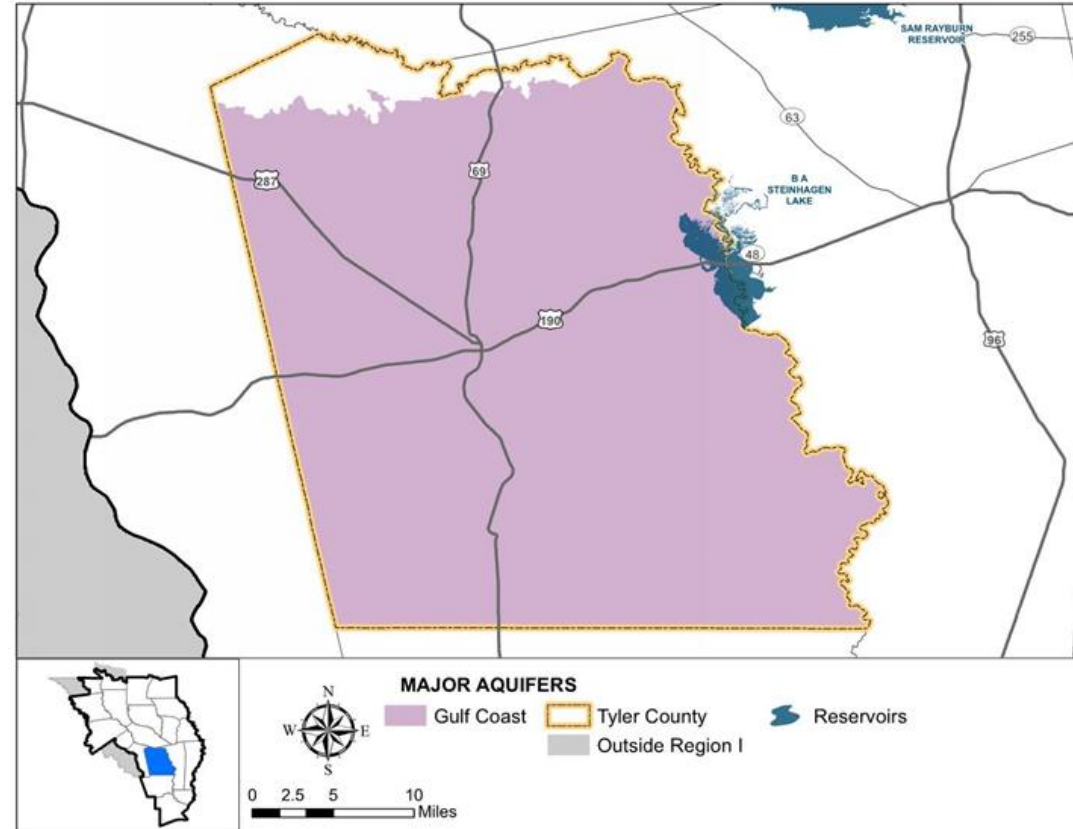
- Irrigation
  - New groundwater wells (Yegua Jackson)



# Chapter 5B – WUG WMS by County

## Tyler County

- Irrigation
  - New groundwater wells (Gulf Coast)



# Chapter 5B – MWP WMS

- ANRA
  - Construction of Lake Columbia
  - Treatment plant and distribution system
- AN WCID #1
  - Lake Striker hydraulic dredging
- Houston County WCID #1
  - New groundwater wells (Carrizo-Wilcox)
- LNVA
  - Devers Pump Station Relocation (Region H)
  - Neches Pump Station Fuel Diversification
  - Beaumont West Regional Reservoir
  - Neches-Trinity Interconnect
  - Purchase from SRA (Toledo Bend)
- Panola County FWSD
  - No unmet needs – no WMS identified

# Chapter 5B – MWP WMS

- SRA-TX
  - WMS coordination pending
- UNRMWA
  - Neches Run-of-River with Lake Palestine

# Chapter 5B – WMS Summary Table by County

Table 5B.1 2021 Needs, Recommended, and Alternative Water Management Strategies for Water User Groups									
NEEDS	RECOMMENDED STRATEGY	ALTERNATIVE STRATEGY	BALANCE (Does not include Alternative totals)						
County	WUG	2021 Needs and Strategies	2020	2030	2040	2050	2060	2070	Strategy Source
<b>ANDERSON</b>		No need identified							
<b>ANGELINA</b>	<b>MANUFACTURING</b>	Identified Need	-1,449	-1,625	-1,625	-1,625	-1,625	-1,625	
		New Wells (Yegua Jackson)	1,449	1,625	1,625	1,625	1,625	1,625	CT
		Purchase from Lufkin (Lake Kurth)	6,000	6,000	6,000	6,000	6,000	6,000	WWP
	<b>MINING</b>	Purchase from Lufkin (Sam Rayburn)	0	6,167	7,471	8,628	9,863	11,195	WWP
		Identified Need	-473	-572	-397	-299	-224	-167	
		Purchase from ANRA (Run of River, Angelina)	473	572	397	299	224	167	WWP
<b>CHEROKEE</b>	<b>ALTO RURAL WSC</b>	Identified Need	0	0	0	-65	-137	-215	
		Municipal Conservation	0	0	0	11	20	24	CT
	<b>RUSK</b>	New Wells (Carrizo-Wilcox)	0	0	0	54	117	191	CT
		Identified Need	0	0	0	0	0	-122	
		New Wells (Carrizo-Wilcox)	0	0	0	0	0	100	CT
	<b>MINING</b>	Municipal Conservation	0	0	0	0	0	22	CT
		Identified Need	-238	-247	-210	-147	-84	-40	
		Purchase from ANRA (Run of River, Angelina)	238	247	210	147	84	40	WUG & WWP
<b>HARDIN</b>		No need identified							
<b>HENDERSON</b>	<b>CHANDLER</b>	Identified Need	0	0	0	0	0	-118	
		Municipal Conservation	0	0	0	0	0	17	CT
	<b>MOORE STATION WSC</b>	New Wells (Carrizo-Wilcox)	0	0	0	0	0	101	CT
		Identified Need	0	0	0	0	-38	-111	
	<b>MINING</b>	New Wells (Carrizo-Wilcox)	0	0	0	0	38	111	CT
New Wells (Carrizo-Wilcox)		-10	-19	-10	0	0	0		
		New Wells (Carrizo-Wilcox)	10	19	10	0	0	0	CT
<b>HOUSTON</b>	<b>TDCJ EASTHAM UNIT</b>	Identified Need	-221	-211	-202	-198	-197	-197	
		Municipal Conservation	16	25	27	29	30	32	CT
		Expand Existing Supply	205	186	175	169	167	165	WUG
<b>JASPER</b>	<b>LIVESTOCK</b>	Identified Need	-8,932	-8,932	-8,932	-8,932	-8,932	-8,932	
		New Wells (Gulf Coast)	8,932	8,932	8,932	8,932	8,932	8,932	CT
		Identified Need	0	0	-1,102	-3,372	-5,627	-8,230	

Example table above obtained from the 2021 RWP.

# Chapter 5B – WMS Summary Table by MWP

Table 5B.2 2021 Needs and Water Management Strategies for Wholesale Water Providers (ac-ft per year)							
RECOMMENDED STRATEGY		ALTERNATIVE STRATEGY					
WWP	2021 Needs and Strategies	2020	2030	2040	2050	2060	2070
<b>ANRA</b>	Identified Needs	-21,176	-62,569	-71,812	-71,387	-71,126	-101,097
	Lake Columbia	0	75,720	75,640	75,560	75,480	75,400
	ANRA Treatment and Distribution System	0	0	0	0	0	0
	Run of River, Neches (New Application)	20,000	20,000	20,000	20,000	20,000	20,000
	Run of River, Neches (Submitted Application)	10,000	10,000	10,000	10,000	10,000	10,000
	New wells (Wilcox Aquifer)	5,600	5,600	5,600	5,600	5,600	5,600
	<b>BALANCE</b>	14,424	48,751	39,428	39,773	39,954	9,903
<b>AN WCID#1</b>	Identified Needs						
	Hydraulic Dredging (Includes Volumetric Survey and Normal Pool Elevation Adjustment)	0	0	5,600	5,600	5,600	5,600
	<b>BALANCE</b>						
<b>ATHENS MWA</b>	Identified Needs	349	-29	-257	-591	-3258	-6,437
	Municipal Conservation	59	98	119	144	277	457
	Amendment of Fish Hatcheries Permit for Reuse	2,872	2,872	2,872	2,872	2,872	2,872
	Additional Carrizo-Wilcox Groundwater	600	600	2,415	2,415	2,415	4,830
	<b>BALANCE</b>	3,880	3,541	5,149	4,840	2,306	1,722
<b>BEAUMONT</b>	Identified Needs	0	0	-1,248	-3,843	-6,357	-9,218
	Municipal Conservation	-	3,238	5,341	7,047	8,579	9,966
	<b>BALANCE</b>	-	3,238	4,093	3,204	2,222	748
<b>CARTHAGE</b>	No strategies were identified						
<b>CENTER</b>	Identified Need						
	Indirect Reuse Pipeline to Lake Center	1,121	1,121	1,121	1,121	1,121	1,121
	Transfer from Toledo Bend to Lake Center	0	0	2,242	2,242	2,242	2,242
	Municipal Conservation	0	28	48	54	60	67
	<b>BALANCE</b>						
<b>HOUSTON CO WCID #1</b>	Identified Needs	0	0	0	0	0	0
	Permit Amendment - Houston County Lake	3,500	3,500	3,500	3,500	3,500	3,500
	<b>BALANCE</b>	3,500	3,500	3,500	3,500	3,500	3,500
<b>JACKSONVILLE</b>	Identified Needs						
	Supply from Lake Columbia	0	0	1,700	1,700	1,700	1,700

Example table above obtained from the 2021 RWP.



# Updates on Water Conservation in Region I - Task 5C

# Municipal Water Conservation Approach

✓ Categorize municipal WUGs and determine their associated GPCD thresholds

✓ Identify conservation package

 Review conservation recommendation criteria

- Water Use Reduction WMSs & Water Loss Mitigation WMSs

 Quantify conservation saving and set associated GPCD Goals

# GPCD Threshold From Previous RWP Meeting (Sep 2024)

Category	25 <sup>th</sup> Percentile	GPCD Threshold
County Others	93	N/A
1 - Less than 1,000	144	N/A
2 - Between 1,000 and 10,000	104	104
3 - Between 10,000 and 100,000	105	105
4 - Between 100,000 and 500,000	226	140



- Conservation not recommended for:
  - Small utilities (less than 1,000 population) and county other WUGs due to lack of resources
  - WUGs without **Needs**
  - WUGs with a baseline GPCD below GPCD threshold
    - ✓ 25<sup>th</sup> percentile of the GPCD distribution by population category
    - ✓ Consistent with the 2021 Plan, cap at 140 GPCD

# Water Conservation Package

Water Use Reduction WMSs

- BMP 3.1 – Water Conservation Pricing
- BMP 6.0 – Education and Public Awareness Program
- BMP 4.2 – System Water Audit and Water Loss Control

Water Loss Mitigation WMS with a capital cost

# Water Use Reduction WMSs

# Funding Considerations

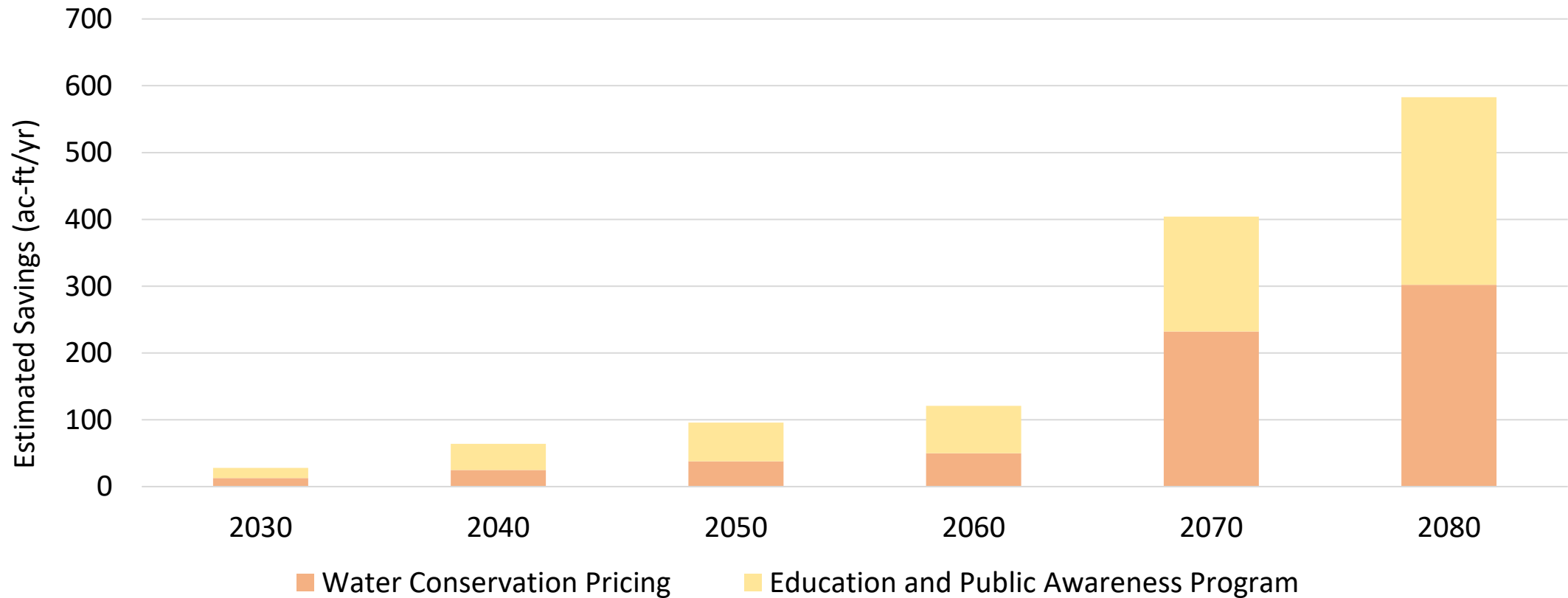
- SWIFT Funding

- “Eligible SWIFT projects are recommended water management strategy projects with an associated **nonzero capital cost** in the most recently adopted state water plan at the time abridged applications are due to TWDB for consideration.” – TWDB website
- Water Use Reduction WMSs are not eligible for SWIFT funding.

- Other Current Funding Opportunities

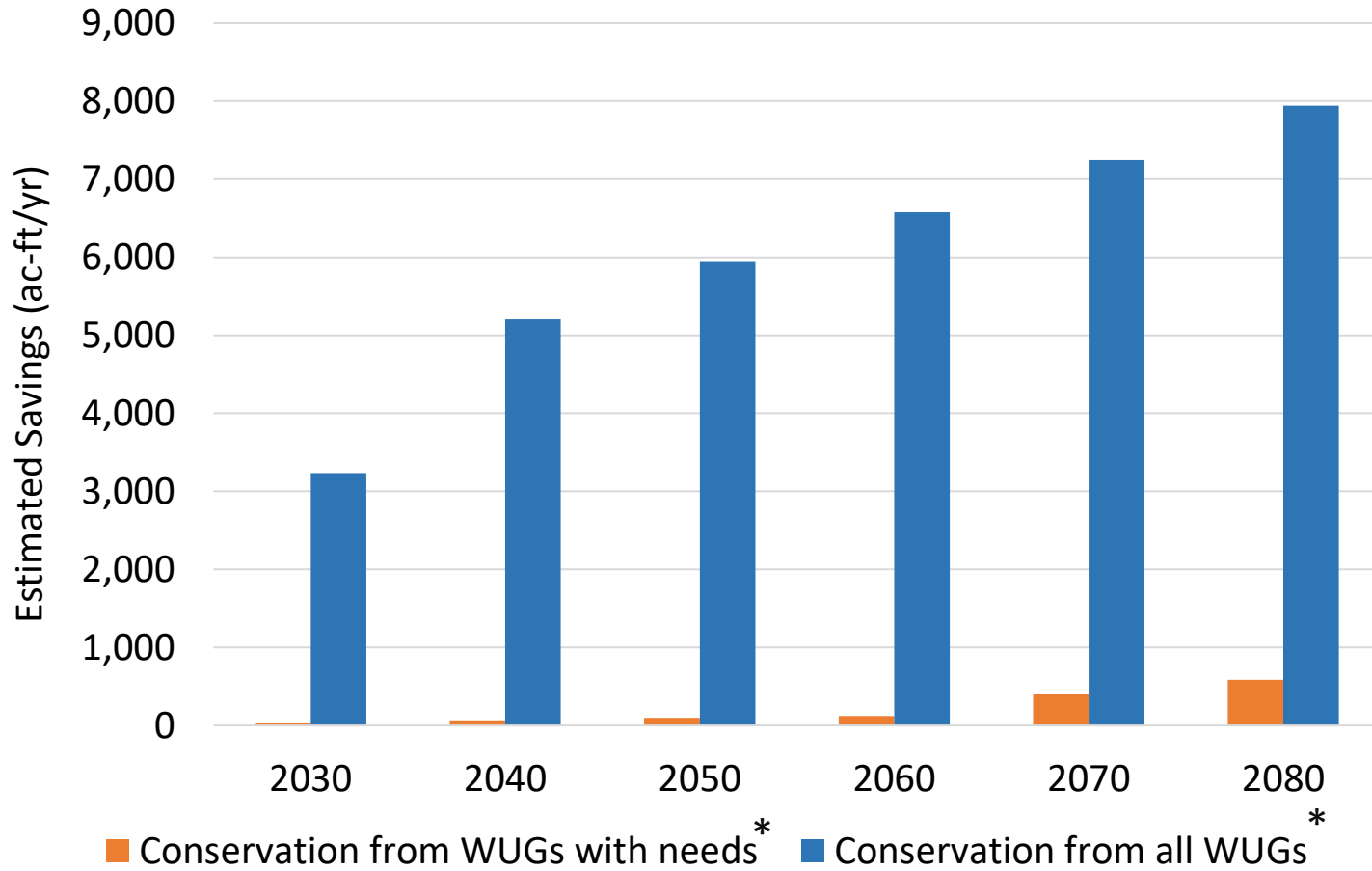
- Not linked to regional water planning effort

# Estimated Savings from WUGs with Needs from Water Use Reduction WMSs



\*Note: conservation analysis are draft; the numbers above are subject to change.

# Estimated Saving Comparison from Water Use Reduction WMSs



If limiting conservation to WUGs with needs, savings will be reduced by more than **90%**.

**Technical Committee to advise on whether limiting these strategies to WUGs with needs**

*\*Conservation not recommended for:*

- Small utilities (less than 1,000 population) and county other WUGs due to lack of resources
- WUGs with a baseline GPCD below GPCD threshold

Note: conservation analysis are draft; the numbers above are subject to change.

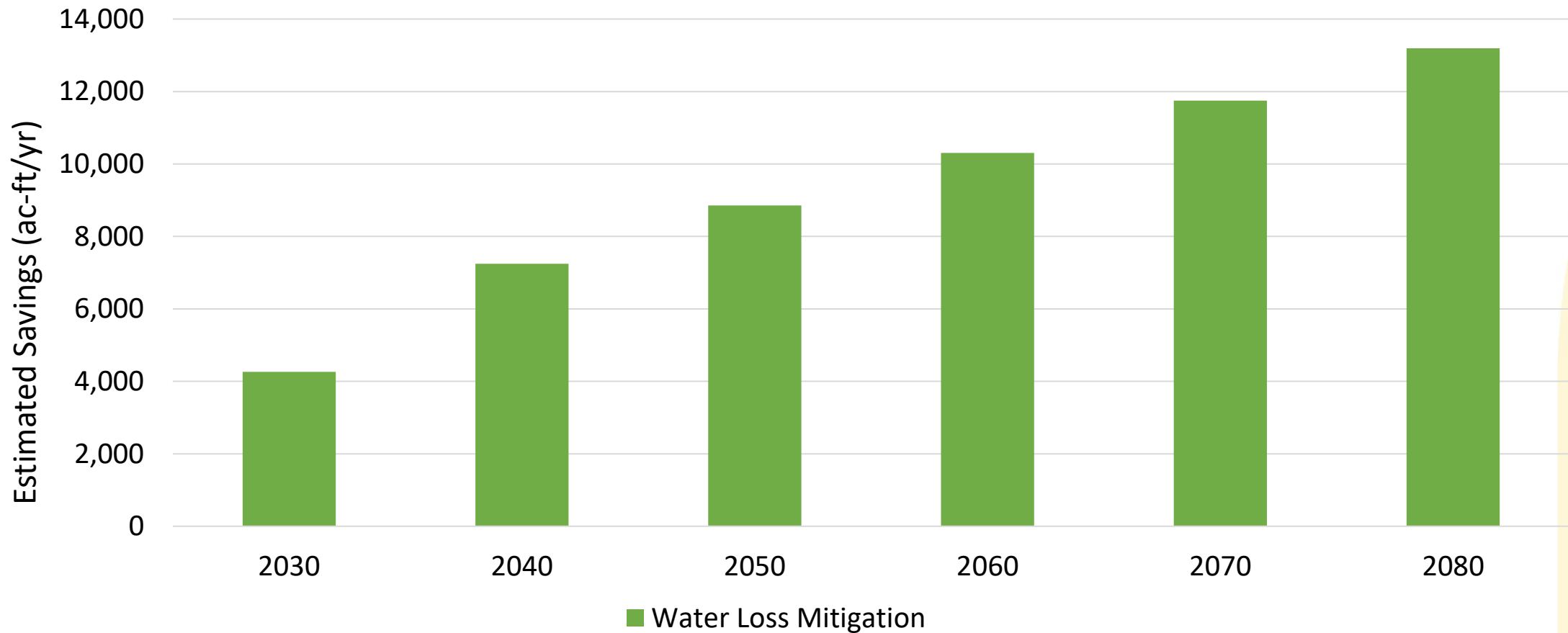


# Water Loss Mitigation WMSs

# Considerations

- SWIFT Funding Eligibility
  - Water Loss Mitigation WMSs expected to qualify for SWIFT funding
- Recommendation
  - Suggest Water Loss Mitigation WMSs for all municipal WUGs
- Limitations
  - Cost and yield analysis is conducted for municipal WUGs with complete water loss audits from 2018 to 2022
    - ✓ 99 out of 187 municipal non-county other WUGs

# Estimated Savings from Water Loss Mitigation



\*Note: conservation analysis are draft; the numbers above are subject to change.

# Municipal Conservation Recommendation Criteria Summary

Strategy	Small and County-Other WUGs (a)	Baseline GPCD <u>below</u> Thresholds	Identified Needs
Water Use Reduction WMSs	X	X	?*
Water Loss Mitigation WMSs	<b>Recommended for All WUGs</b>		

(a) Small WUGs = WUGs with a current population of less than 1,000.

**\*To be determined by the Technical Committee**

# Non-municipal Conservation

- Consistent with the 2021 RWP, conservation is not recommended for non-municipal users.
  - Manufacturing
    - ✓ Conservation is industry- and site-specific
    - ✓ ETRWPG lacks data for evaluation or recommendation
  - Irrigation
    - ✓ LNVA (i.e., the largest water provider) has implemented several conservation measures
    - ✓ Site-specific strategies encouraged; no further recommendations due to data gaps
  - Other Industries (Steam-electric, livestock, and mining)
    - ✓ Account for 11% of 2030 demand
    - ✓ Conservation not economically beneficial

# Updates on Unique Stream Segments, Unique Reservoir Sites, and Legislative Recommendations - Task 8

# Status of Legislative Recommendation

- Comments Summary
  - A total of 3 comments received
- Recommendations Review
  - Most recommendations from the previous cycle remain relevant, except those already addressed
- New Recommendations
  - Provide funding for Groundwater Management Areas to support the development of Desired Future Conditions (DFCs)

# Questions Received Regarding Survey

- *“There still remains the seven stream segments eliminated from further reservoir consideration, even with program protections, is the Region actually designating these as unique stream segments?” – Question from Terry Stelly*
  - The RWP **did not recommend any unique stream segment designation** in the 2021 RWP

At its regularly scheduled meeting in January 2015, the ETRWPG considered the above information and voted not to recommend any stream segments in the region for unique status. The ETRWPG concluded that sufficient programs are already in place to protect the regions streams from inappropriate reservoir construction. In addition, the ETRWPG prefers to allow the TWDB to study issues associated with unique stream segment designation before further considering potential designations in the ETRWPA. The ETRWPG did not rescind this determination from the January 2015 meeting during the current round of planning.

*Excerpt from the 2021 RWP*



# Questions Received Continued

- Potential Clarification regarding TWDB's response below:

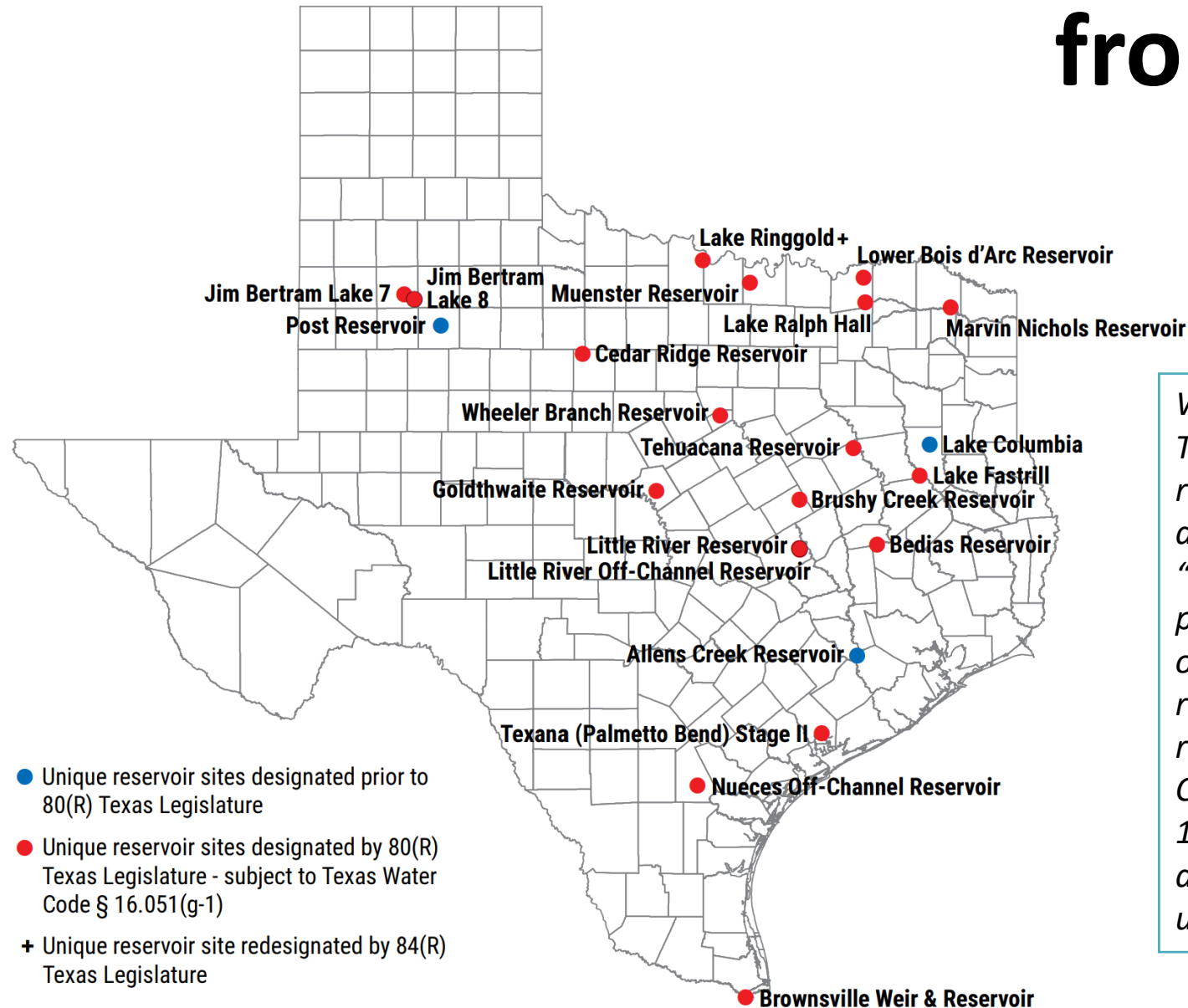
**Recommendation:** The ETRWPG recommends that the designation of unique reservoir site for Lake Columbia and Lake Fastrill be retained through the current planning horizon, 2070.

**Status update:** Incorporated into the 2022 SWP.

**Response from TWDB Region I representative:** Lake Columbia was designated as a URS by the 78th Texas Legislature in 2003. Lake Fastrill was designated by the 80th Texas Legislature in 2007, subject to the following provision: “unless there is an affirmative vote by a proposed project sponsor to make expenditures necessary in order to construct or file applications for permits required in connection with the construction of the reservoir under federal or state law”.

# Recommendations from the 2022 SWP

Figure 2-2. Unique reservoir sites previously designated by the Texas Legislature



With the passage of Senate Bill 3 in 2007, the 80th Texas Legislature designated an additional 19 reservoir sites with a provision whereby the designations would expire on September 1, 2015, “unless there is an affirmative vote by a proposed project sponsor to make expenditures necessary in order to construct or file applications for permits required in connection with the construction of the reservoir under federal or state law” (Texas Water Code § 16.051[g-1]). With the passage of House Bill 1042 in 2015, the 84th Texas Legislature re-designated the Lake Ringgold reservoir site as unique. – 2022 State Water Plan (SWP)

# Questions?



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