



Agenda Item No. 9

Report from consultant team – Rex Hunt, Cynthia Syvarth, Dexter May and Spandana Tummuri

Enclosed for your review:

- a. Review of 5th Cycle Water Planning schedule
- b. Update on current 5th Cycle Water Planning activities:
 - County Review: Cherokee, Jasper, Jefferson, Newton, and Smith Counties
 - Chapter 3: Evaluation of Current Water Supplies in the Region
 - Chapter 4: Comparison of Water Demands with Water Supplies to Determine Needs

Agenda
Item No.
9

Recommendation:

No Action Required



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Consultant Team Report Agenda

- **Planning Schedule – where are we today? Where are we headed?**
- **Update on activities:**
 - **Review of projections for Cherokee, Jasper, Jefferson, Newton, and Smith Counties**
 - **Review of Chapters 3, 4, and 10**



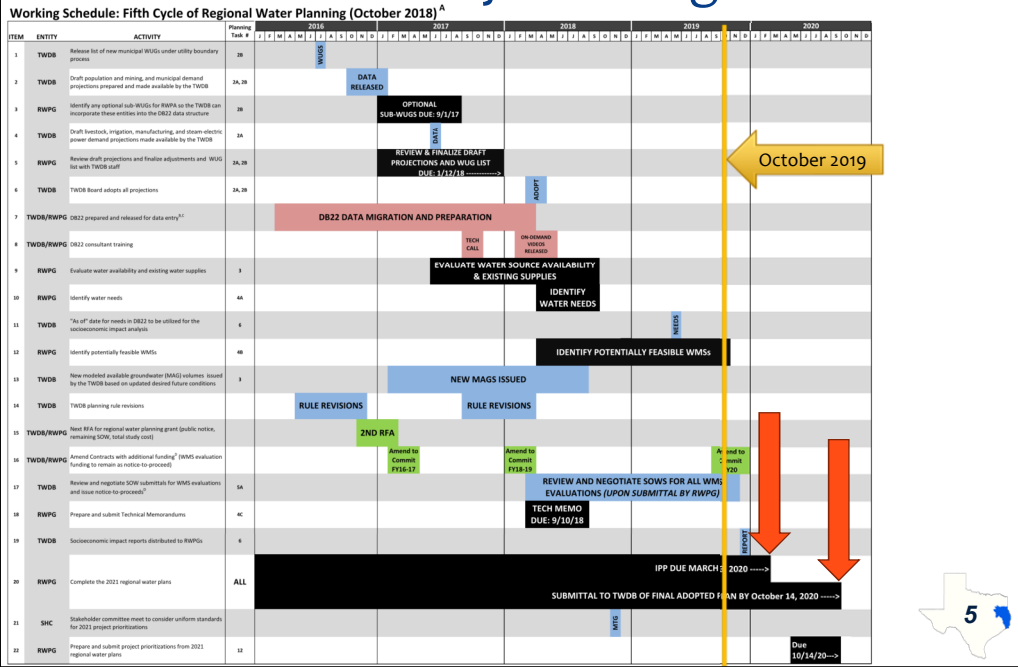
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Update on the 5th Round Planning Cycle: Project Schedule



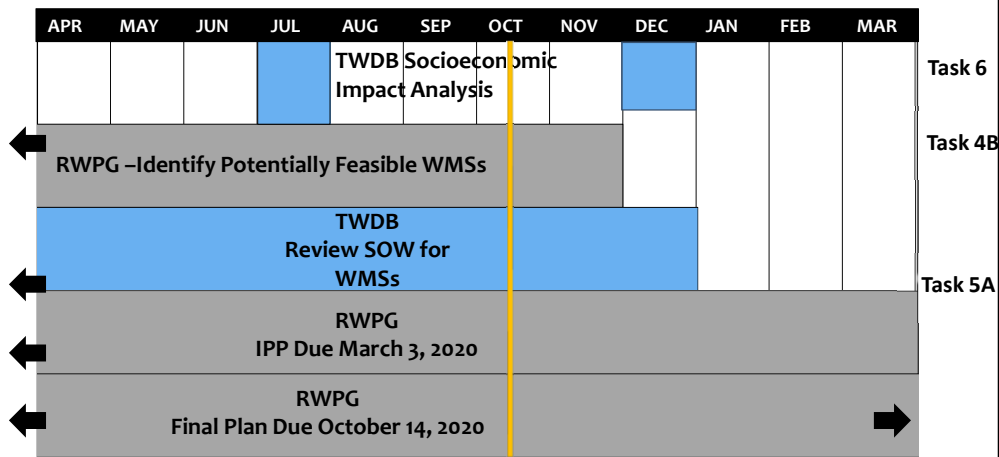
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TWDB Preliminary Working Schedule



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2019-2020 Project Schedule



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2019-2020 RWPG Meeting Schedule

Year	Quarter	Agenda Items		RWPG Mtg. Date
		Chapter	County-Other	
2019	Q2	1, 2 <small>(Needs must be finalized May 2020)</small>	4 Counties	April 17, 2019
	Q3	6, 8	6 Counties	July 17, 2019
	Q4 a	3, 4, 10	5 Counties	October 15, 2019
	Q4 b	5	5 Counties	November 20, 2019
2020	Q1 a	ES, 7, 9, 11		January 15, 2020
	Q1 b	Initially Prepared Plan Approval <small>(IPP due 03/03/20)</small>		February 19, 2020
	Q3 a	Review Public Comments, Prioritization		July 15, 2020
	Q3 b	Final Plan Approval <small>(Final Plan due 10/14/20)</small>		September 16, 2020
ES - Executive Summary				



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County Summaries

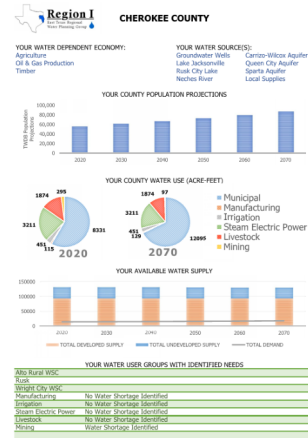


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County Projections Review

Cherokee County

- Steady population growth throughout the planning period
- Primary water uses are municipal and steam electric power
- Developed supply far exceeds total demand throughout the planning cycle
- Shortage for three WUGs (Alto Rural WSC, Rusk, and Wright City WSC) and mining identified.

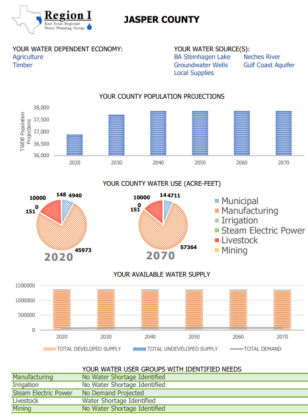


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County Projections Review

Jasper County

- Population growth in initial decades and then tapers off
- Primary water use is manufacturing
- Total developed supply greater than total demand
- Total supply significantly exceeds total demand
- Livestock WUG with identified needs, strategy to develop GW supplies to meet needs

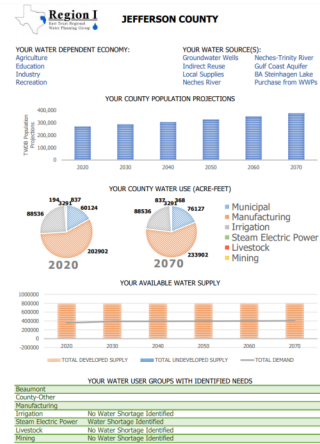


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County Projections Review

Jefferson County

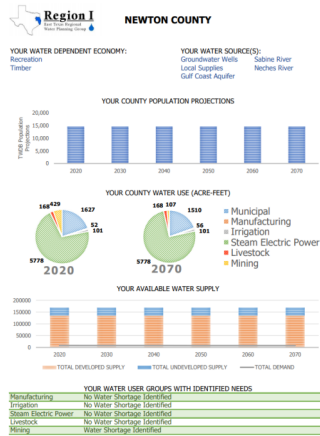
- Steady population growth
- Primary water uses are manufacturing, municipal and irrigation
- Total developed supply exceeds demands
- Municipal, manufacturing, and steam electric power identified with needs
- Strategies to develop surface water supplies and purchase water from WWP to meet needs



County Projections Review

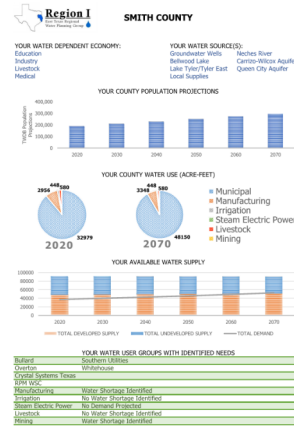
Newton County

- No population growth
- Primary water use is steam electric power
- Total developed supply greater than total demand
- Total supply significantly exceeds total demand
- Mining WUG with identified needs, strategy to develop GW supplies to meet needs



County Projections Review Smith County

- Significant population growth projected over planning period
- Primary water use is municipal
- Current developed supply exceeds demand, future decades may need to tap into undeveloped supply
- Significant amount of undeveloped supply
- Shortage identified for six WUGs (Bullard, Overton, Crystal Systems Texas, RPM WSC, Southern Utilities, Whitehouse) and manufacturing and mining.

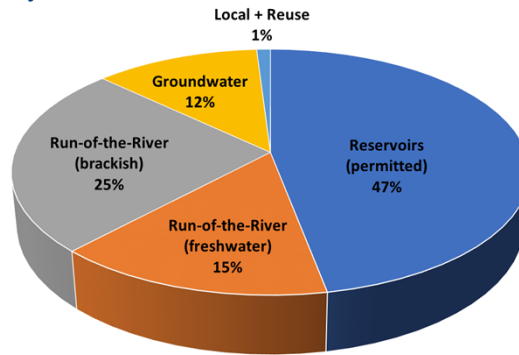


Chapter 3: Water Supply Analyses



Chapter 3 – Evaluation of Current Water Supplies in the Region

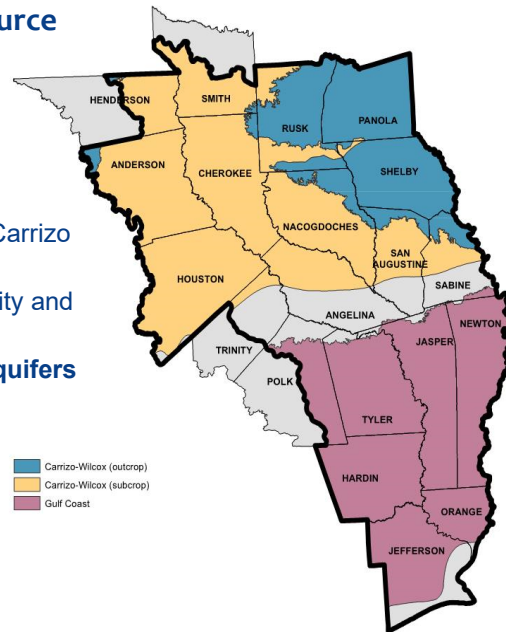
- Water availability modeling by source
 - Groundwater
 - Surface Water
 - Reuse
 - Water Systems
- Water availability by user
 - Water user groups
 - Wholesale water providers
- Model assumptions and variances



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Chapter 3 – Water Availability by Groundwater Source

- Groundwater is very important resource, about 12% of region's supply
 - **Major Aquifers** – Gulf Coast and Carrizo Wilcox – Major Aquifers
 - **Minor Aquifers** – Sparta, queen City and Yegua-Jackson
 - **Non-Relevant and Other Local Aquifers**

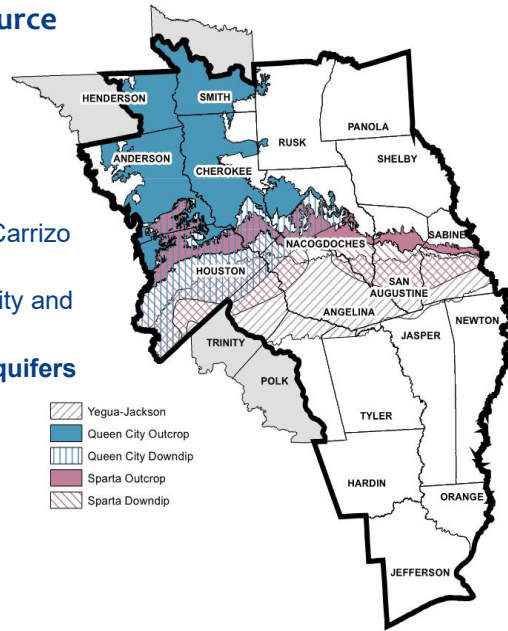


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Chapter 3 – Water Availability by Groundwater

Source

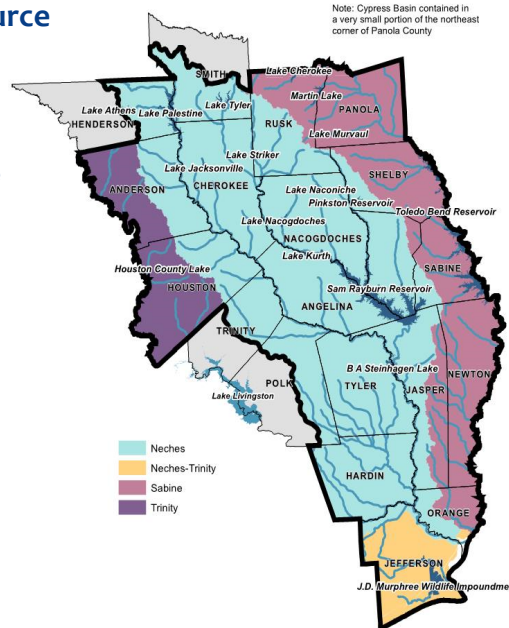
- Groundwater is very important resource, about 12% of region's supply
 - Major Aquifers** – Gulf Coast and Carrizo Wilcox – Major Aquifers
 - Minor Aquifers** – Sparta, queen City and Yegua-Jackson
 - Non-Relevant and Other Local Aquifers**



Chapter 3 – Water Availability by Surface Water

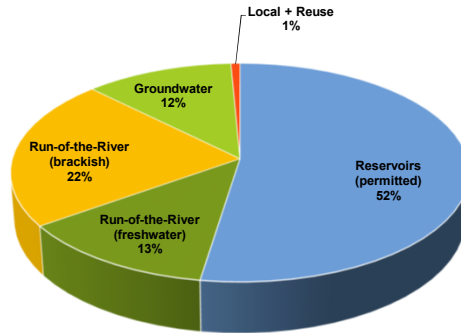
Source

- Surface Water is major source of region's supply (>85%)
 - Reservoir Supplies
 - Run-of-River Supplies
 - Local Supplies
 - Reuse



Chapter 3 – Water Availability by Source

Source of Supply	2020	2070
Reservoirs (permitted)	2,434,137	2,393,432
Run-of-the-River (freshwater)	588,603	594,258
Run-of-the-River (brackish)	1,036,462	1,036,462
Groundwater	519,429	519,429
Local Supplies	19,367	19,367
Reuse	13,986	14,052
Total	4,640,723	4,606,056



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Chapter 3 – Reservoir Supply Availability

Reservoir	Water Right Numbers	Priority Date	Basin	County	Permitted Diversion	Currently Available Supply	
						2020	2070
Lake Athens	CA- 3256	1/17/1955	Neches	Henderson	8,500	5,950	5,520
Bellwood Lake	CA-3237	11/10/1915 10/10/1978	Neches	Smith	2,200	996	996
Lake Kurth	CA-4393	9/1/1957	Neches	Angelina	19,100	18,500	18,500
Lake Columbia	CA-4537	1/22/1985	Neches	Cherokee	85,507	75,800	75,400
Lake Jacksonville	CA-3274	6/13/1955	Neches	Cherokee	6,200	6,200	6,200
Lake Nacogdoches	CA-4864	5/24/1988	Neches	Nacogdoches	22,000	16,200	14,200
Lake Palestine system	CA-3254	01/05/1970 06/27/1977	Neches	Anderson	238,110	197,710	189,010
Lake Tyler/Tyler East	CA-4853	Multiple	Neches	Smith	40,325	34,830	34,010
Pinkston Reservoir	CA-4404	2/7/1972	Neches	Shelby	3,800	3,800	3,800
Rusk City Lake	CA-4219	6/1/1982	Neches	Cherokee	160	40	40
San Augustine City Lake	CA-4409	11/1/1957	Neches	San Augustine	1,285	1,285	1,285
Sam Rayburn & Steinhagen System	CA-4411	Multiple	Neches	Jasper	820,000	820,000	820,000



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Chapter 3 – Reservoir Supply Availability

Reservoir	Water Right Numbers	Priority Date	Basin	County	Permitted Diversion	Currently Available Supply	
						2020	2070
Striker Lake	CA-4847	1/10/1984	Neches	Rusk	20,600	20,340	14,690
Lake Timpson	A-4399	5/9/1955	Neches	Shelby	350	350	350
Lake Cherokee ¹	CA-4642	10/5/1946	Sabine	Cherokee/ Gregg	62,400	31,456	30,720
Lake Center	CA-4657	08/04/1922 08/14/1952	Sabine	Shelby	1,460	1,874	1,874
Lake Murvaul	CA-4654	7/19/1956	Sabine	Panola	22,400	21,367	17,963
Martin Lake	CA-4649	7/19/1971	Sabine	Rusk	25,000	25,000	25,000
Toledo Bend	CA-4658	03/05/1958 01/22/1986	Sabine	Sabine	750,000	750,000	750,000
Houston County Lake	CA-5097	03/03/0965	Trinity	Houston	3,500	3,500	3,500
Total – Permitted Reservoirs						2,035,198	2,013,058



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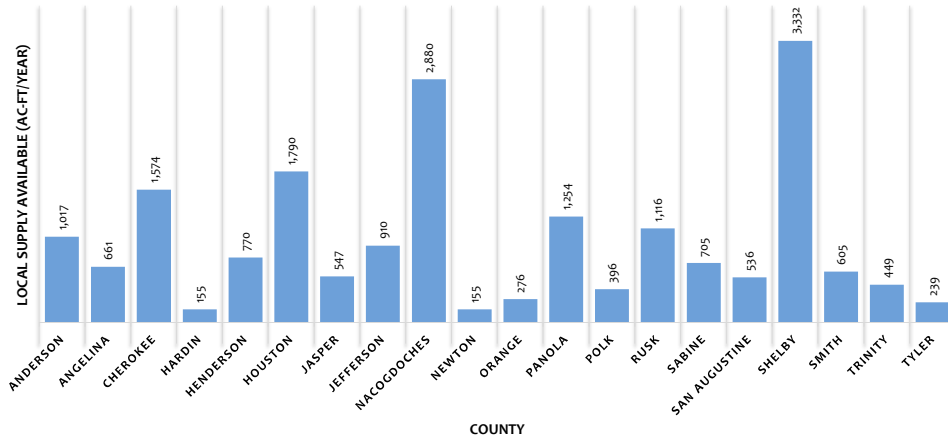
Chapter 3 – Run-of-River Supply Availability

County	Freshwater Supply (ac-ft/yr)	Brackish Supply (ac-ft/yr)
Anderson	1,452	0
Angelina	46	0
Cherokee	108	0
Hardin	57	0
Houston	2,730	0
Jasper	382,553	0
Jefferson	67,207	752,152
Nacogdoches	69	0
Newton	133,128	0
Orange	28	284,310
Panola	688	0
Rusk	218	0
Sabine	178	0
Smith	50	0
Trinity	3	0
Tyler	88	0
TOTAL	588,603	1,036,462



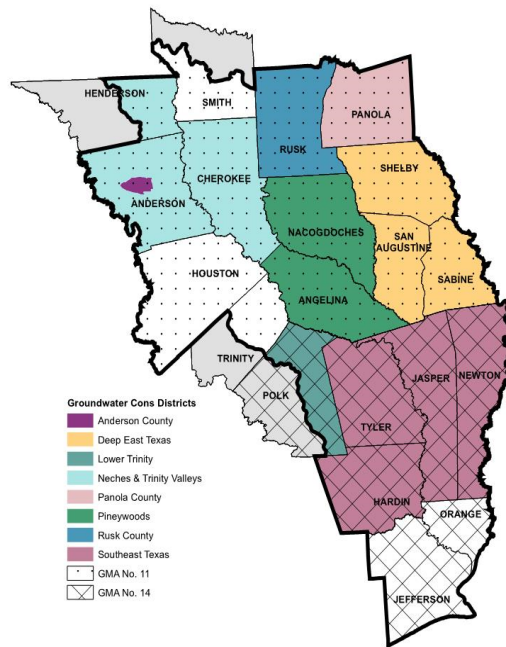
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Chapter 3 – Local Supply Availability



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Chapter 3 – Groundwater Conservation Districts



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Chapter 3 – Groundwater Supply Desired Future Conditions

County	Carrizo-Wilcox	Queen City	Sparta	County	Chicot Aquifer	Evangeline Aquifer	Burkeville Confining Unit	Jasper Aquifer
Anderson	90	9	NRS	Hardin	21	27	29	89
Angelina	48	16	NRS	Jasper	23	41	46	40
Cherokee	99	14	NRS	Jefferson	15	17	0	0
Henderson	50	5	NP	Newton	35	45	44	37
Houston	80	6	3	Orange	14	16	0	0
Nacogdoches	29	4	5	Polk	26	10	15	73
Panola	3	NP	NP	Tyler	42	35	30	62
Rusk	23	NRS	NP					
Sabine	9	NP	1					
San Augustine	7	NP	2					
Shelby	1	NP	NP					
Smith	119	17	NP					
Trinity	51	NRS	9					

NP – Not Present
 NRS – Not Relevant as Size is Less Than 200 Square Miles
 Numbers shown are aquifer drawdown in feet



Chapter 3 – Groundwater Supply Availability

Region	Carrizo-Wilcox	Queen City	Sparta	Gulf Coast	County	Basin	Other Aquifers (Acre-Feet/Yr)
TOTAL (Acre-Feet/Yr)	202,248	90,358	2,707	211,627	Anderson	Trinity	131
					Angelina	Neches	617
					Hardin	Neches	6
					Henderson	Trinity	273
					Houston	Neches	202
					Houston	Trinity	155
					Jasper	Neches	2,059
					Jasper	Sabine	322
					Jefferson	Neches-Trinity	299
					Nacogdoches	Neches	72
					Newton	Sabine	791
					Orange	Sabine	4,702
					Polk	Neches	543
					Rusk	Sabine	122
					Sabine	Neches	100
					Sabine	Sabine	94
					San Augustine	Neches	126
					Smith	Neches	182
					Trinity	Neches	197
					Tyler	Neches	1,489
					TOTAL		12,482

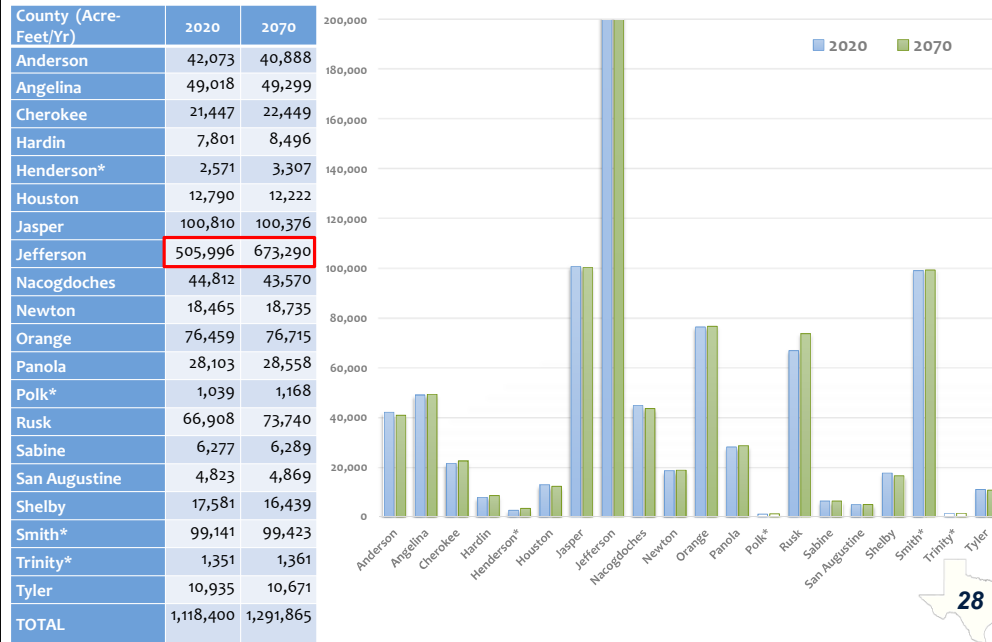
Chapter 3 – Reuse Supply Availability

County	Basin	Use	Supply (Acre-Feet/Year)
Direct Reuse Supplies			
Sabine	Neches	Manufacturing	20
Orange	Sabine	Irrigation	15
Shelby	Sabine	Irrigation	82
Shelby	Sabine	Manufacturing	151
Indirect Reuse Supplies			
Jefferson	Neches-Trinity	Irrigation	13,687
Total Reuse Supplies			13,955



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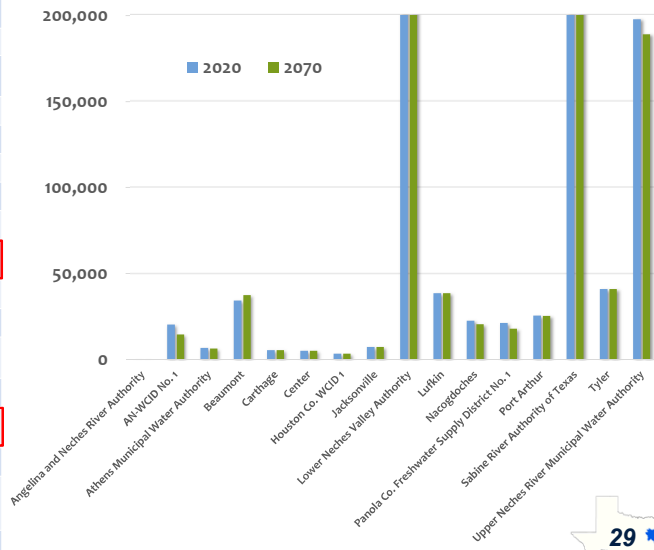
Chapter 3 – Supply Availability by County



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Chapter 3 – Availability by Wholesale Water Provider

County (Acre-Feet/Yr)	2020	2070
Angelina and Neches River Authority	65	70
AN-WCID No. 1	20,340	14,690
Athens Municipal Water Authority	6,916	6,486
Beaumont	34,469	37,525
Carthage	5,564	5,565
Center	5,260	5,260
Houston Co. WCID 1	3,500	3,501
Jacksonville	7,391	7,391
Lower Neches Valley Authority	1,201,876	1,173,876
Lufkin	38,727	38,727
Nacogdoches	22,692	20,692
Panola Co. Freshwater Supply District No. 1	21,367	17,963
Port Arthur	25,682	25,367
Sabine River Authority of Texas	882,943	882,943
Tyler	41,056	41,056
Upper Neches River Municipal Water Authority	197,710	189,010
TOTAL	2,515,559	2,470,122



Chapter 3 – Additional Sections

- WAM Modifications
 - Trinity WAM – updated
 - Neches WAM – updated
 - Sabine WAM - updated



Chapter 3 – Changes to Chapter Requirements Since Previous Plan

- Section added:
 - Hydrologic variance requests for water availability determination
 - Request to modify the default hydrologic assumptions
 - Accurately reflect region's water supplies



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Chapter 4: Identification of Water Needs



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Chapter 4 – Comparison of Water Demands with Water Supplies to Determine Needs

- Water supply and demand
 - Region
 - County
 - WUGs
 - WWP
- Sub-WUG and County-Other considerations
- Second-tier needs



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Chapter 4 – Changes to Chapter Requirements

- Sections Added
 - Simplified Planning
 - County-Other, Sub-WUG Planning
 - Second-Tier Needs Analysis



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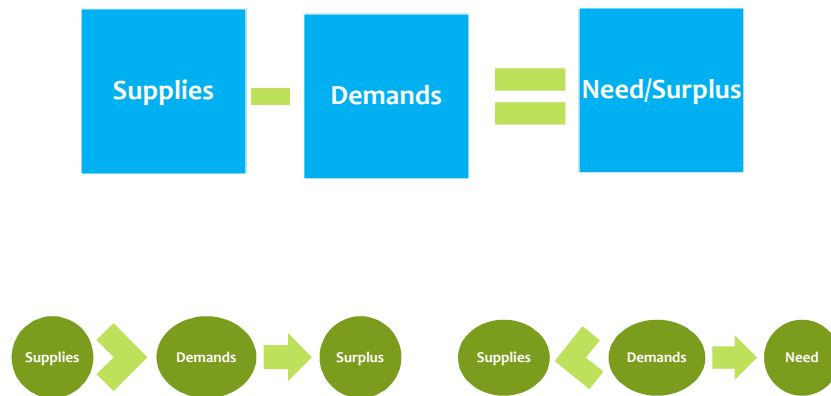
Chapter 4 – Needs Analysis

- Determination of Needs
 - Compares Current Supplies and Projected Demands
 - Determines Water Needs
 - Summarizes Needs by Counties, WUGs, and WWPs



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Chapter 4 – Needs Analysis



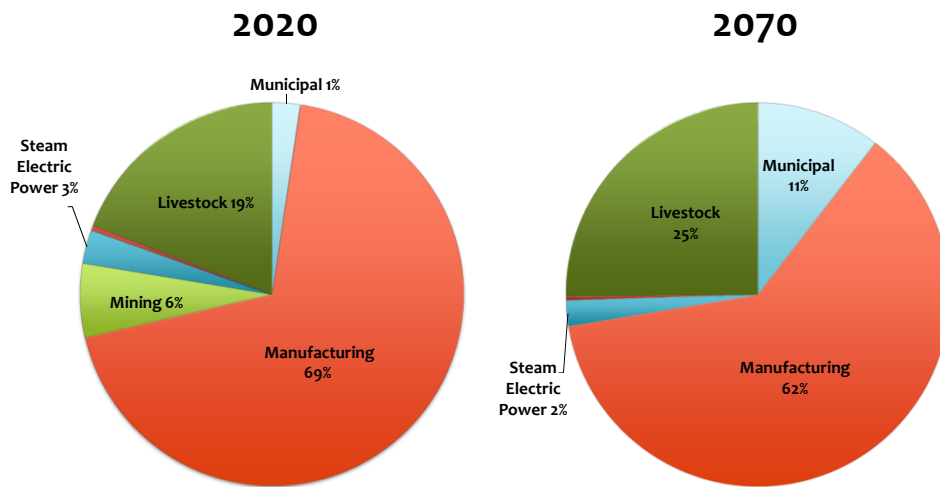
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Chapter 4 – Region's Needs and Surpluses



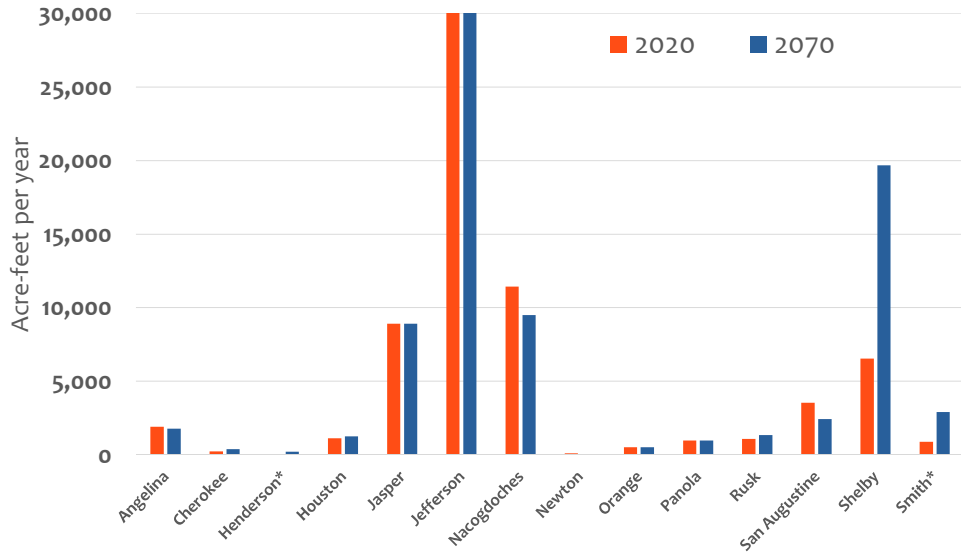
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Chapter 4 – Needs by Use Type



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Chapter 4 – Counties with Shortages



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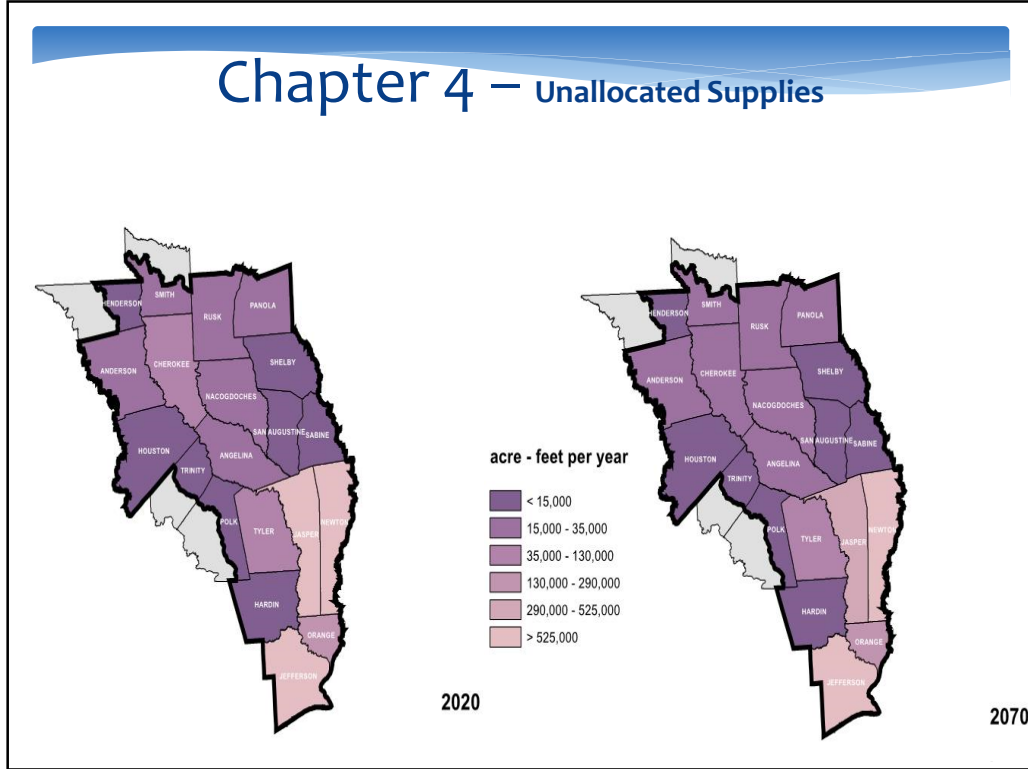
Chapter 4 – Counties with Shortages

County(Acre feet per year)	2020	2070
Anderson	0	0
Angelina	1,922	1,792
Cherokee	238	393
Hardin	0	0
Henderson*	10	229
Houston	1,137	1,271
Jasper	8,932	8,932
Jefferson	86,363	111,708
Nacogdoches	11,445	9,517
Newton	115	0
Orange	526	526
Panola	982	982
Polk*	0	0
Rusk	1,103	1,350
Sabine	0	0
San Augustine	3,555	2,438
Shelby	6,556	19,692
Smith*	900	2,912
Trinity*	0	0
Tyler	0	0
TOTAL	-231,973	-286,659



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Chapter 4 – Unallocated Supplies



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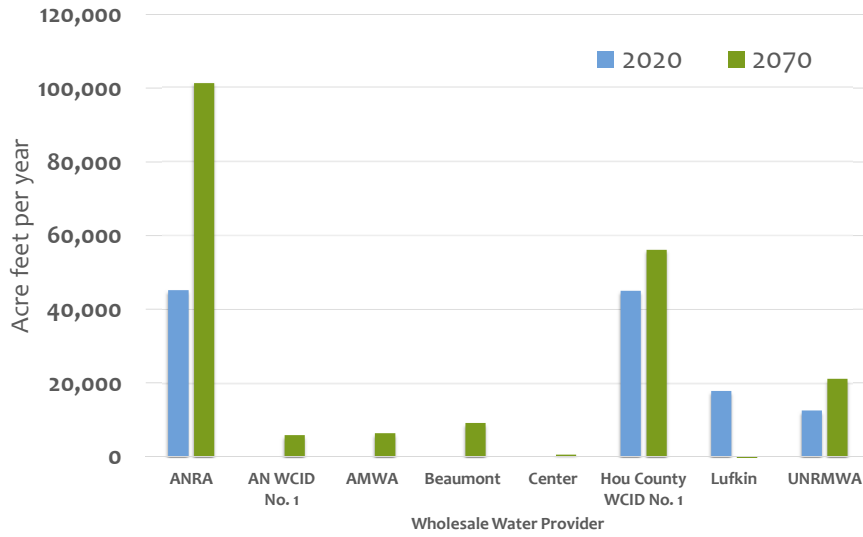
Chapter 4 – WWP's with Shortages

- Eight WWPs Identified with Shortages
 - Angelina and Neches River Authority
 - Angelina-Nacogdoches Water Control & Improvement District (WCID) No. 1
 - Athens Municipal Water Authority
 - Beaumont
 - Center
 - Houston County WCID No. 1
 - Lufkin
 - Upper Neches River Municipal Water Authority



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Chapter 4 – WWP's with Shortages



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Chapter 4 – Projected Needs

Water Provider (Acre feet per year)	2020	2070
Angelina and Neches River Authority	-45,254	-101,299
Angelina-Nacogdoches Water Control & Improvement District (WCID) No. 1	8,060	-5,879
Athens Municipal Water Authority	349	-6,437
Beaumont	0	-9,218
Center	360	-562
Houston County WCID No. 1	-45,027	-56,190
Lufkin	-17,828	8,713
Upper Neches River Municipal Water Authority	-12,537	-21,159
Total	-111,877	-192,032



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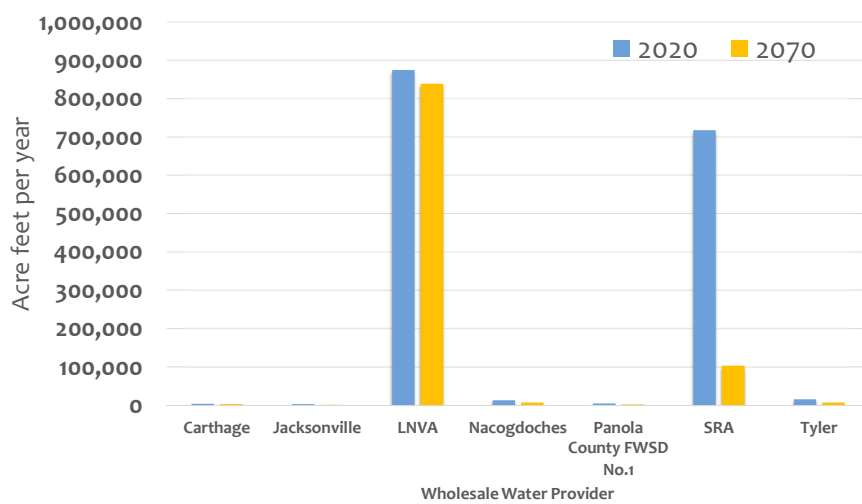
Chapter 4 – Projected Surplus

- Seven WWP's Identified with Surplus
 - Carthage
 - Jacksonville
 - Lower Neches Valley Authority
 - Nacogdoches
 - Panola County Fresh Water Supply District No. 1
 - Sabine River Authority
 - Tyler



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Chapter 4 – Counties with Surplus Supplies



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Chapter 4 – Counties with Surplus Supplies

Water Provider (Acre feet per year)	2020	2070
Carthage	3,333	3,293
Jacksonville	2,814	814
Lower Neches Valley Authority	874,273	837,998
Nacogdoches	12,861	6,966
Panola Co. Fresh Water Supply District No. 1	4,365	2,148
Sabine River Authority	717,562	102,751
Tyler	15,727	7,278
Total	1,630,936	961,248



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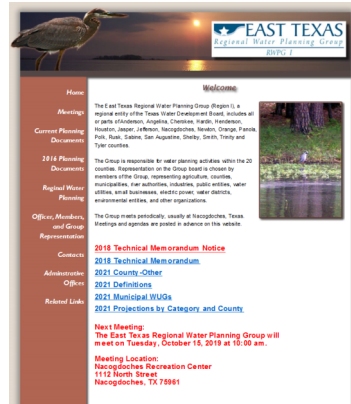
Chapter 10: Public Participation and Plan Adoption



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Chapter 10 – Public Participation And Adoption Plan

- Public involvement and participation
- Methods for public engagement
 - Water user group involvement
 - ETRWPA website
 - Public meetings
 - Public hearings
 - Press releases



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Chapter 10 – Changes to Chapter Requirements

- No significant changes



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Region I

East Texas Regional
Water Planning Group 

**REGIONAL WATER PLANNING
GROUP MEETING
October 15, 2019**