



# Region I

East Texas Regional  
Water Planning Group



**REGIONAL WATER PLANNING  
GROUP MEETING  
January 15, 2020**



# Region I

East Texas Regional  
Water Planning Group



## **Item 9 Consultant Team Report**



**PLUMMER**



*January 15, 2020*

# Consultant Team Report Agenda

- **Planning Schedule**
- **Water Management Strategy Technical Memorandums**



# Consultant Team Report

Item 9a

Project Schedule

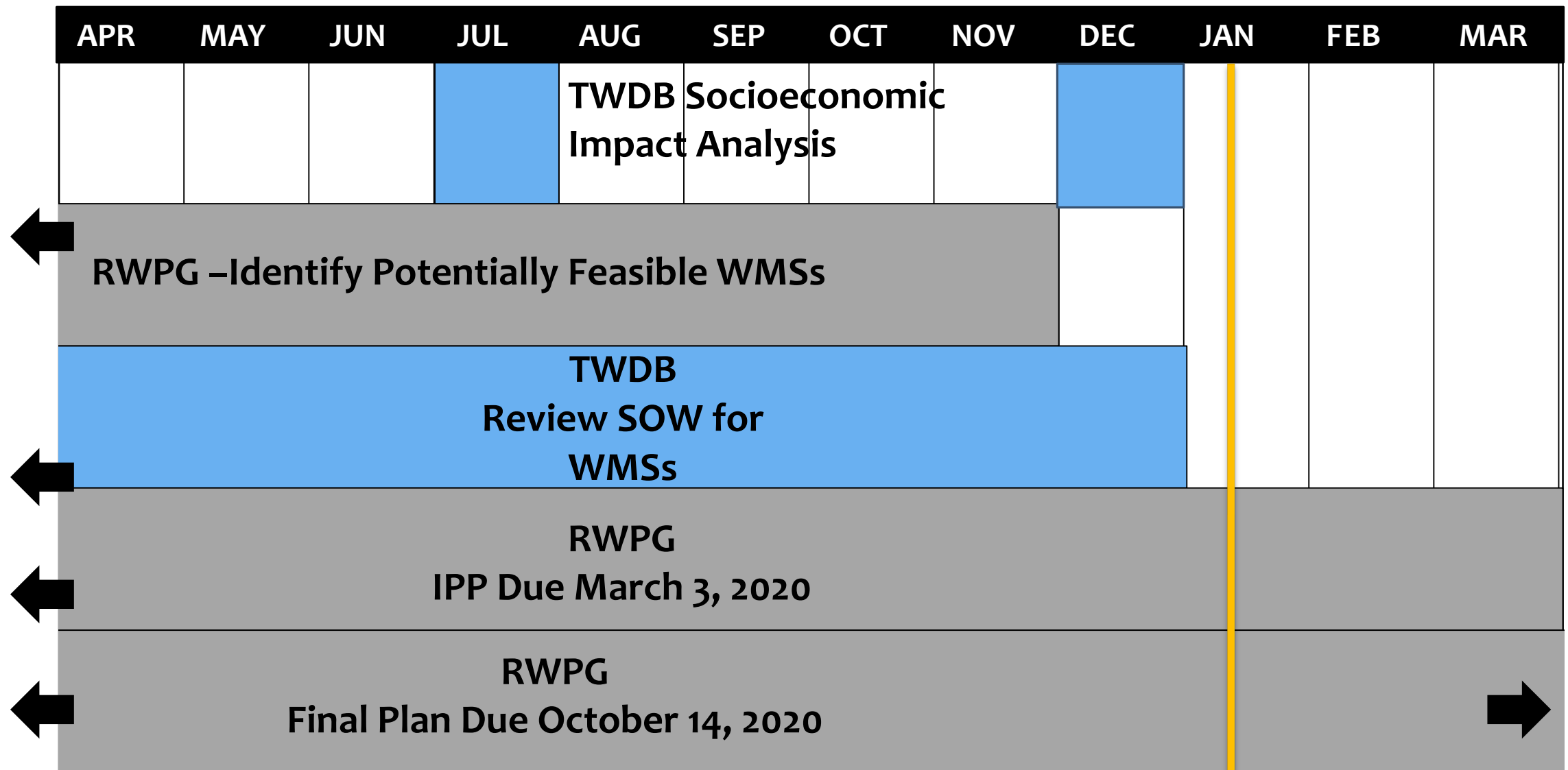


# TWDB Preliminary Working Schedule

**Working Schedule: Fifth Cycle of Regional Water Planning (October 2018) <sup>A</sup>**

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# 2019-2020 Project Schedule



# 2019-2020 RWPG Meeting Schedule

Year	Quarter	Agenda Items		RWPG Mtg. Date
		Chapter	County-Other	
2019	Q2	1, 2 (Needs must be finalized May 2020)	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	5A, 5B, 5C	5 Counties	November 20, 2019
2020	Q1 a	ES, 5B, 7, 9, 11		January 15, 2020
	Q1 b	Initially Prepared Plan Approval (IPP due 03/03/20)		February 19, 2020
	Q2	Public Notices/Hearings		May/June
	Q3 a	Review Public Comments, TWDB Comments Prioritization		July 15, 2020
	Q3 b	Review Public Comments, TWDB Comments, Final Plan Approval (Final Plan due 10/14/20)		September 16, 2020

# Consultant Team Report

Item 9b

Water Management  
Strategy Technical  
Memorandums  
(Chapter 5B)





# Chapter 5B

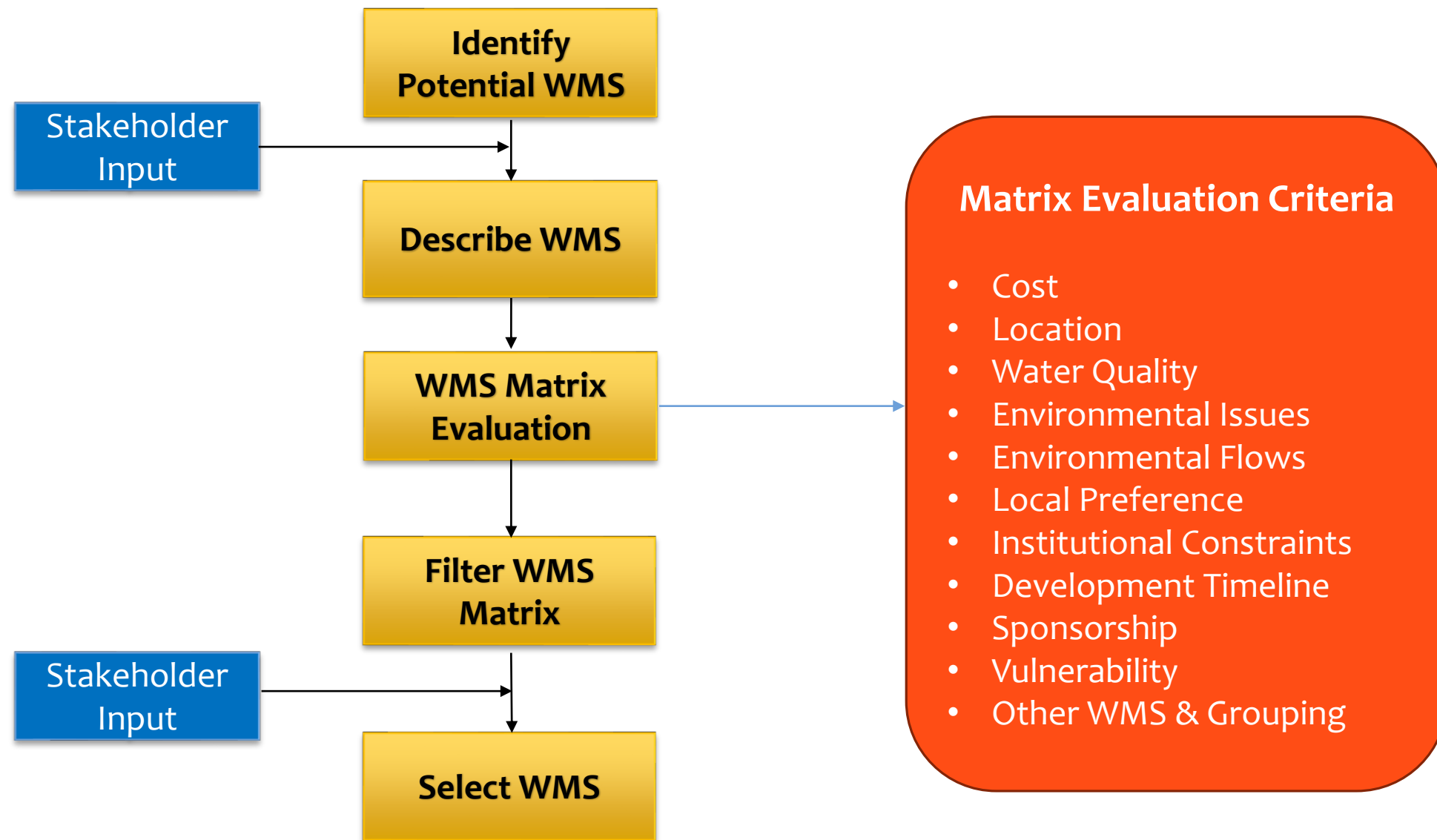
- Water Management Strategies for WUGs and WWP
- WMS Evaluation Matrix
- Tables 5B1, 5B2
- Appendix 5B – Strategy Technical Memoranda

# Chapter 5B

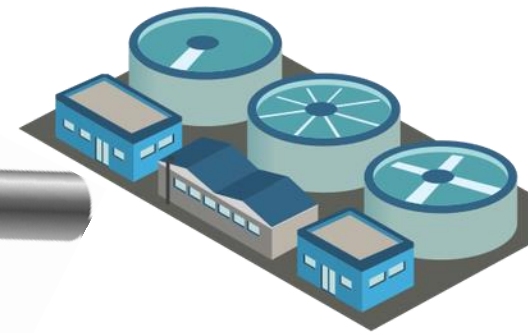
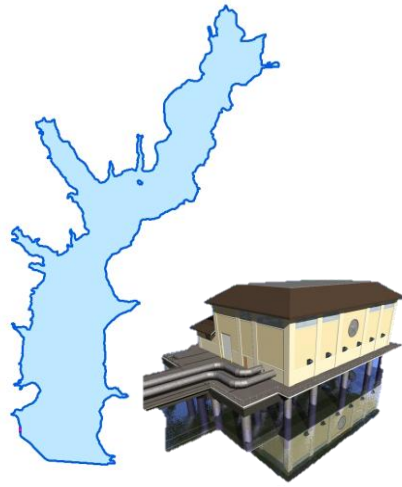
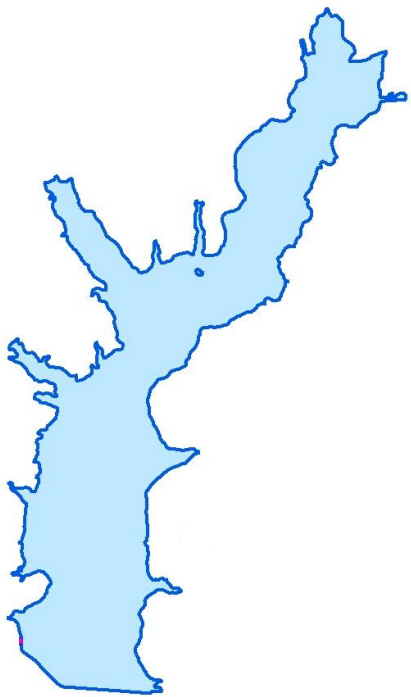
- Summary for Counties and WWP's
  - Recommended and Alternate WMSs
  - Cost Estimates
  - Shortage/Surplus Discussion
  
- Technical Memoranda
  - Project Description
  - Customers
  - Supply Development
  - Environmental and Permitting Considerations
  - Cost Estimation
  - Project Evaluation

# Chapter 5B – WMS

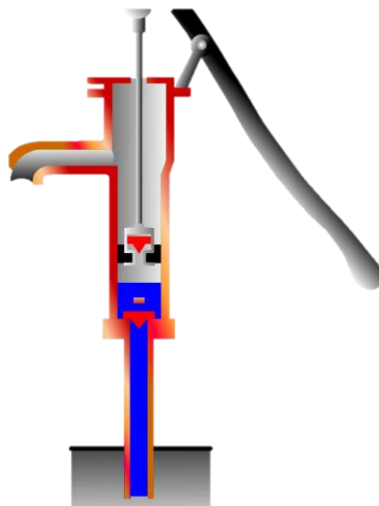
## Evaluation



# Chapter 5B – Strategy Development



Surface Water  
Development



Treatment  
Process

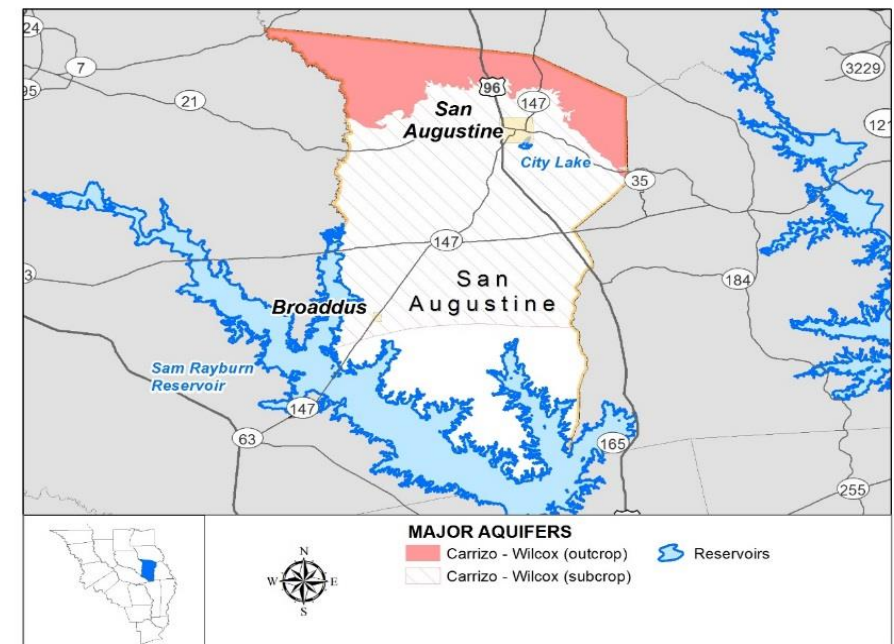


# Chapter 5B:

## Strategy Changes

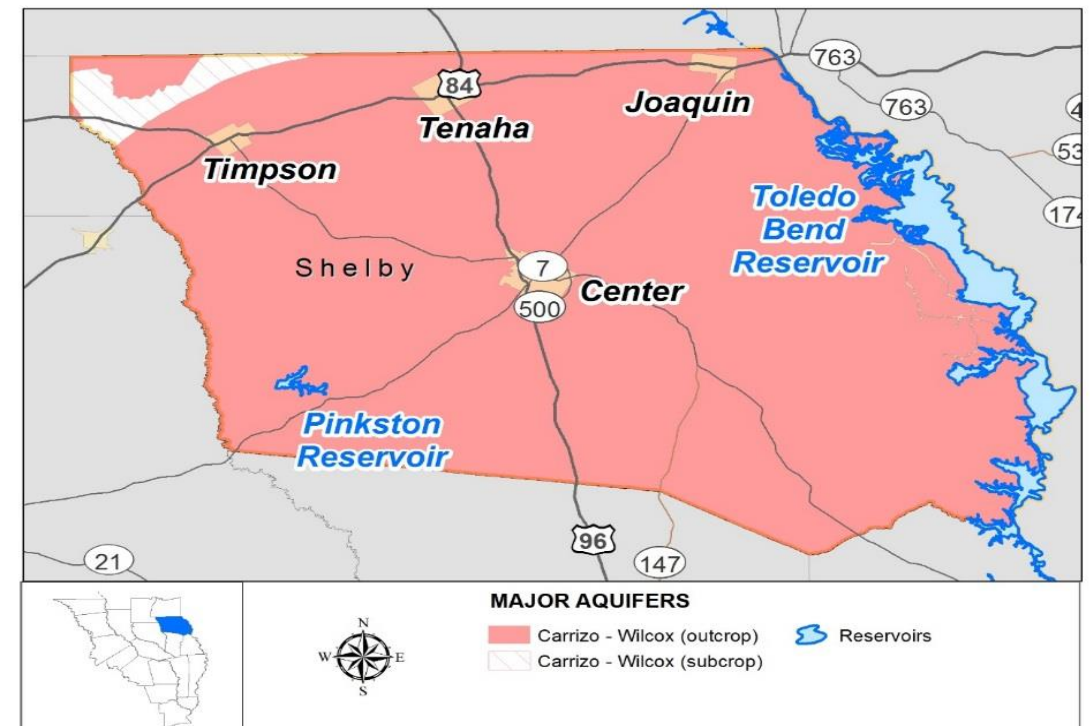
# Chapter 5B – County Water Management Strategies

- San Augustine - ~~Three~~ **Two** WUGs with identified needs
- **San Augustine (Needs Addressed)**
- Livestock
  - Purchase from SRA
- Mining
  - Purchase from ANRA (Run-of-River)



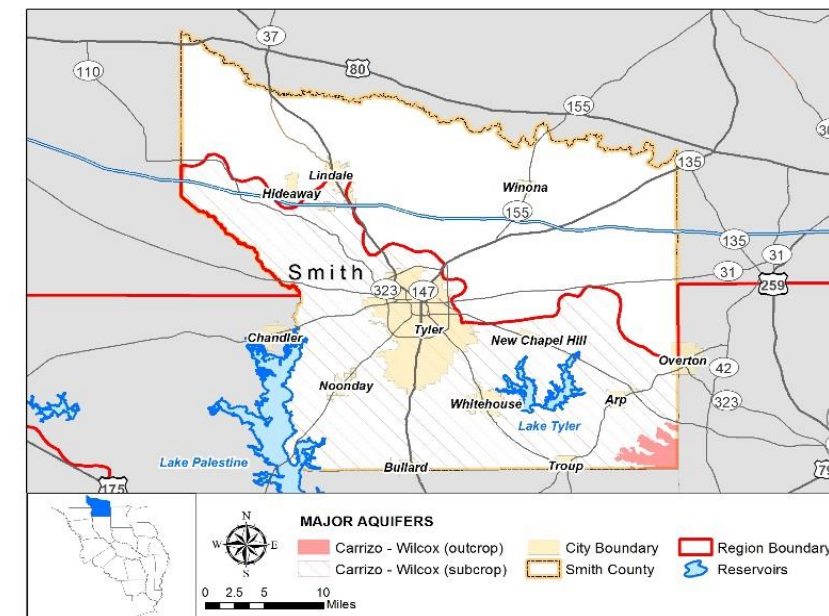
# Chapter 5B – County Water Management Strategies

- Shelby- ~~Four~~ **Two** WUGs with identified needs
- Center (**Needs Addressed**)
- Joaquin (**Needs Addressed**)
- Sand Hills WSC
  - Municipal conservation
  - **New Wells in Carrizo Wilcox**
- Livestock
  - Purchase from SRA



# Chapter 5B – County Water Management Strategies

- Smith- Eight WUGs with identified needs
- Bullard
  - Municipal conservation
  - Purchase from Tyler
- Crystal Systems Inc (Coordination with Region D)
  - Municipal conservation
  - Purchase from Tyler
- Overton (Coordination with Region D)
  - Municipal conservation
- R-P-M WSC (Coordination with Region D)
  - Purchase from Tyler





# Chapter 5B – County Water Management Strategies

- Smith- Eight WUGs with identified needs
- Southern Utilities
  - Municipal conservation
  - Purchase from Tyler
- Whitehouse (Coordination with Region D)
  - Municipal conservation
  - Purchase from Tyler
- Manufacturing (Coordination with Region D)
  - Purchase from Tyler
- Mining (Coordination with Region D)
  - Purchase from Tyler

# Chapter 5B – WWP Water Management Strategies

- Beaumont
  - Conservation
  - Amendment with LNVA

# Chapter 5B:

## Cost Estimates

# Chapter 5B – WWP Water Management Strategies

- Surface Water and Purchase Strategies – ETRWPA Template
- Groundwater Strategies – Unified Costing Model Template
- Conservation Strategies – ETRWPA Template
- Cost Estimates Updated to September 2018 Indices
- Interest During Construction – 5 Years
- Debt Service – 3.5% for 20 years
- Operations and Maintenance
  - Pipelines – 1% of Construction
  - Pump Stations – 2.5% of Construction
  - Storage Tanks – 1% of Construction
- Engineering and Contingencies
  - Pipelines – 30%
  - Pump Stations – 35%

# Chapter 5B – WWP Water Management Strategies

- Opinion of Probable Cost Estimates
- Project specific detailed Cost Estimates used (If available)
- Purchase Water Costs

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			
Mining (Oil/Gas)	\$3.00	NA	
Mining (Other)	NA	NA	
Steam Electric	\$1.00	NA	
Livestock	\$1.00	NA	

# **Item 10**

## **Executive Summary**

# Executive Summary

- Key Findings and Recommendations
- County Summaries
- TWDB DB22 Data Reports



**Item 10:**

**Consideration and Approval of the  
substantial completion of the draft  
Executive Summary.**



# **Item 11**

## **Chapter 5B:**

### **Evaluation of Potentially Feasible, Recommended, and Alternative Water Management Strategies**

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
ANDERSON		No need identified							
ANGELINA	MANUFACTURING	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
		Purchase from Lufkin (Sam Rayburn)	0	6,167	7,471	8,628	9,863	11,195	WWP
	MINING	Identified Need	-473	-572	-397	-299	-224	-167	
		Purchase from ANRA (Run of River, Angelina)	473	572	397	299	224	167	WWP
CHEROKEE	ALTO RURAL WSC	Identified Need	0	0	0	-65	-137	-215	
		Municipal Conservation	0	0	0	11	20	24	CT
		New Wells (Carrizo-Wilcox)	0	0	0	54	117	191	CT
	RUSK	Identified Need	0	0	0	0	0	-122	
		New Wells (Carrizo-Wilcox)	0	0	0	0	0	100	CT
		Municipal Conservation	0	0	0	0	0	22	CT
	MINING	Identified Need	-238	-247	-210	-147	-84	-40	
		Purchase from ANRA (Run of River, Angelina)	238	247	210	147	84	40	WUG & WWP
HARDIN		No need identified							
HENDERSON	CHANDLER	Identified Need	0	0	0	0	0	-118	
		Municipal Conservation	0	0	0	0	0	17	CT
		New Wells (Carrizo-Wilcox)	0	0	0	0	0	101	CT
	MOORE STATION WSC	Identified Need	0	0	0	0	-38	-111	
		New Wells (Carrizo-Wilcox)	0	0	0	0	38	111	CT
	MINING	Identified Need	-10	-19	-10	0	0	0	
		New Wells (Carrizo-Wilcox)	10	19	10	0	0	0	CT
HOUSTON	TDCJ EASTHAM UNIT	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
JASPER	LIVESTOCK	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	

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
ANRA	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
	BALANCE	14,424	48,751	39,428	39,773	39,954	9,903
AN WCID#1	Identified Needs						
	Hydraulic Dredging (Includes Volumetric Survey and Normal Pool Elevation Adjustment)	0	0	5,600	5,600	5,600	5,600
	BALANCE						
ATHENS MWA	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
	BALANCE	3,880	3,541	5,149	4,840	2,306	1,722
BEAUMONT	Identified Needs	0	0	-1,248	-3,843	-6,357	-9,218
	Municipal Conservation	-	3,238	5,341	7,047	8,579	9,966
	BALANCE	-	3,238	4,093	3,204	2,222	748
CARTHAGE	No strategies were identified						
CENTER	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
HOUSTON CO WCID #1	BALANCE						
	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
JACKSONVILLE	BALANCE	3,500	3,500	3,500	3,500	3,500	3,500
	Identified Needs						
JACKSONVILLE	Supply from Lake Columbia	0	0	1,700	1,700	1,700	1,700



**Item 11:**

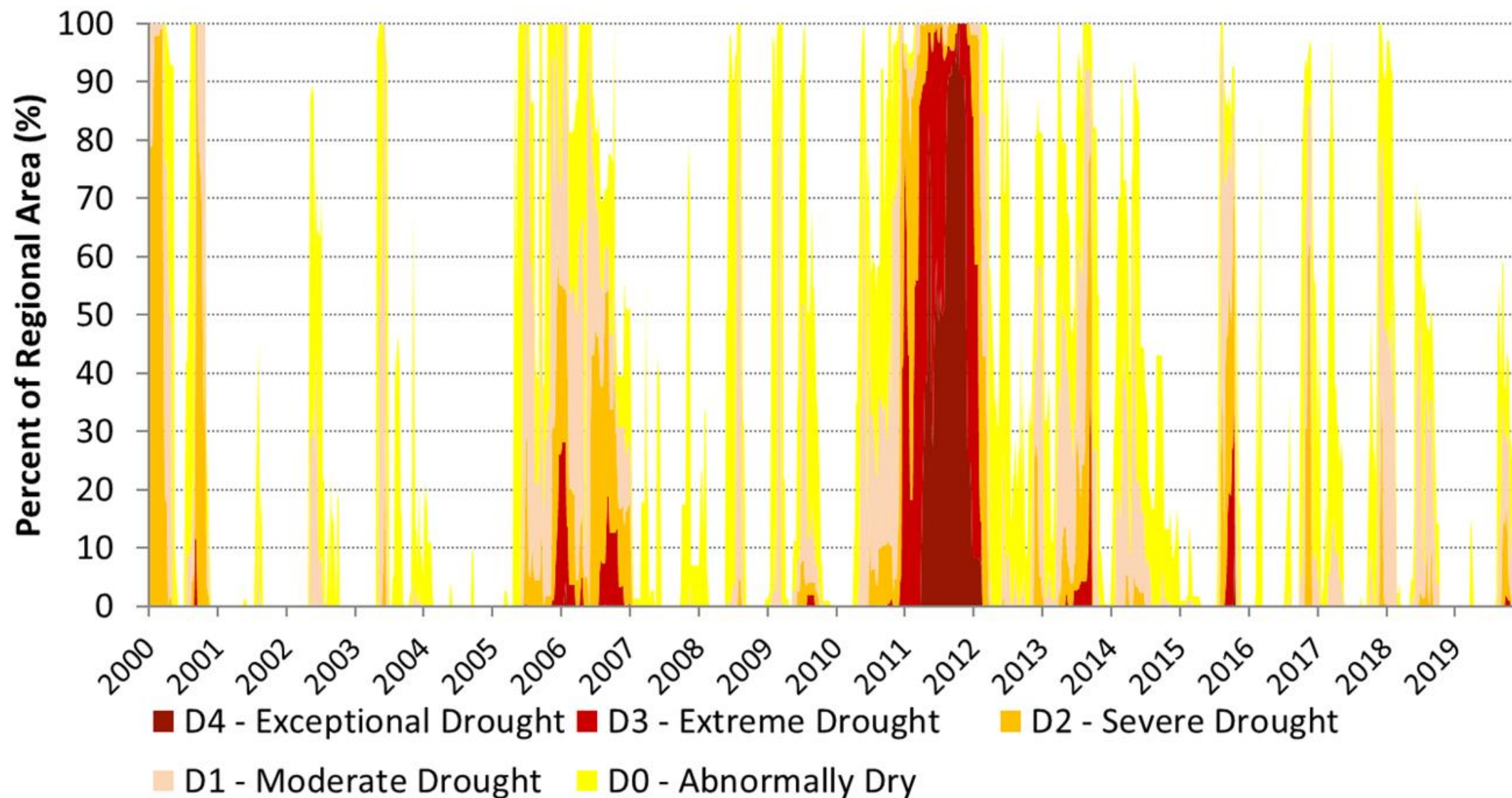
**Consideration and Approval of the  
substantial completion of draft  
Chapter 5B.**

# **Item 12**

## **Chapter 7:**

### **Drought Response Information, Activities, and Recommendations**

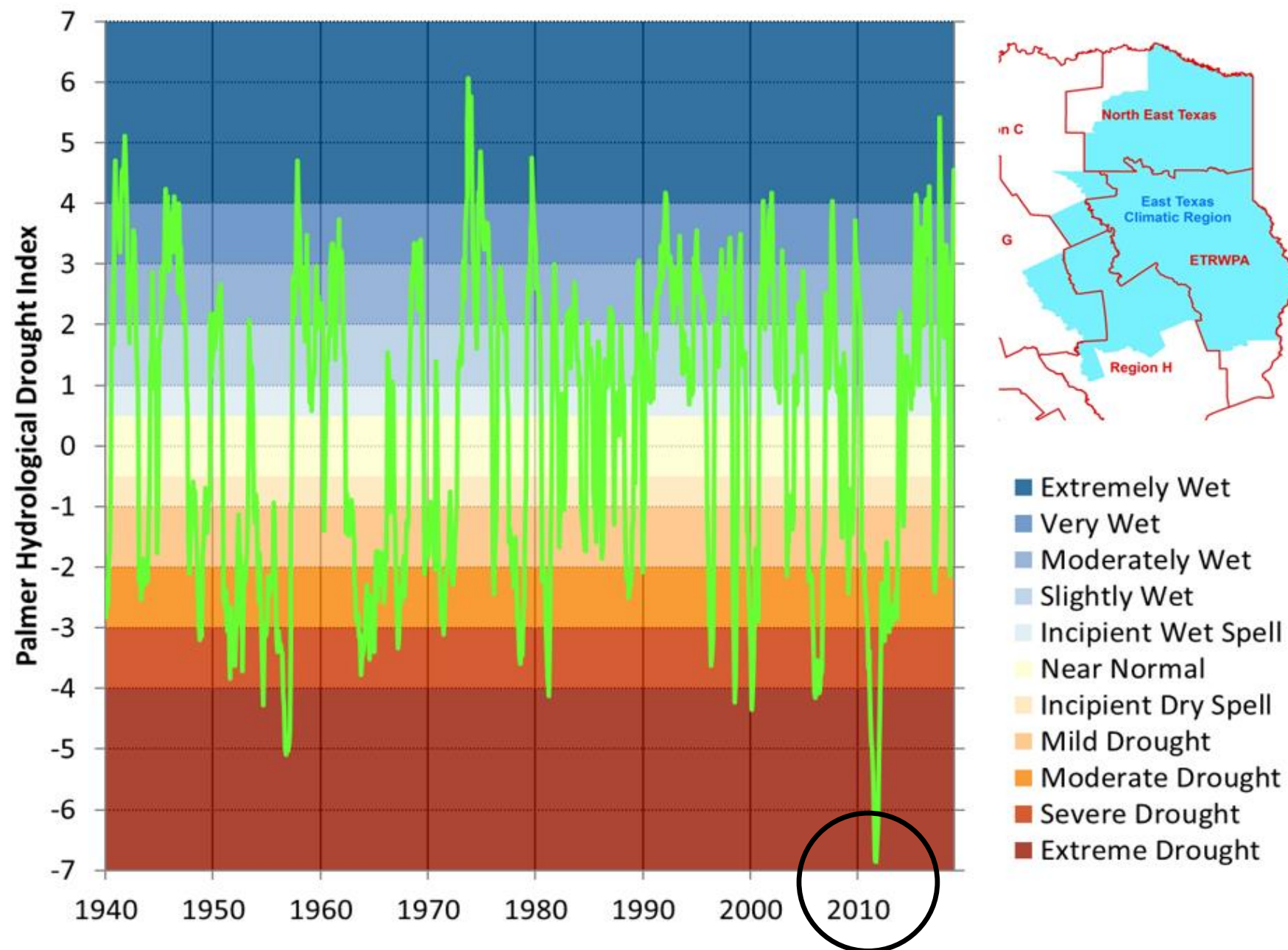
# Chapter 7 – Composite Drought Monitor Index for East Texas



Source: Data provided by the National Drought Mitigation Center, November 2019.

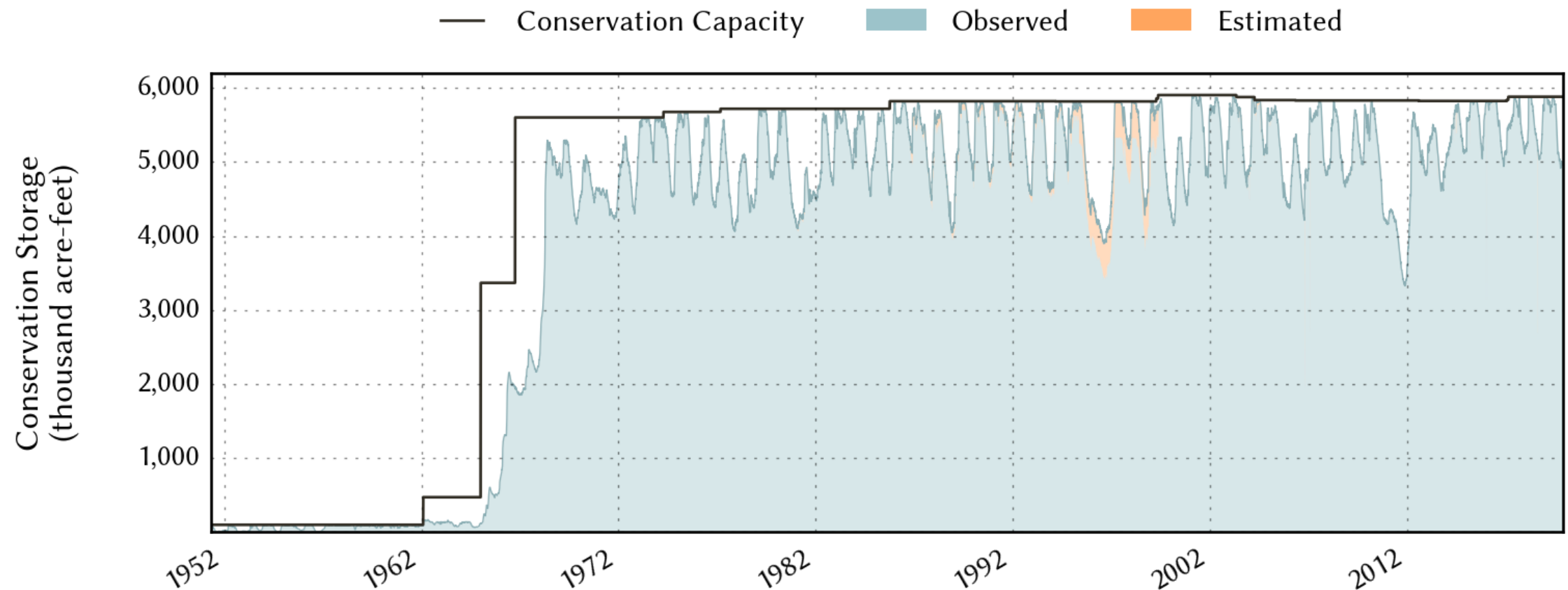


# Chapter 7 – Palmer Hydrological Drought Index for East Texas



Source: National Climatic Data Center: PHDI Divisional Data, URL: <https://www.ncdc.noaa.gov/temp-and-precip/drought/historical-palmers/phd/190011-201910>

# Chapter 7 – Reservoir Storage in East Texas



Source: Texas Water Development Board: East Texas Planning Region Reservoirs, URL: <http://waterdatafortexas.org/reservoirs/region/east-texas>, accessed November 2019.



# Chapter 7 – Drought Response Information, Activities, and Recommendations

- **Current Drought Preparations**
  - Education & Awareness programs
  - Reduce unaccounted for water
  - Water rate structures
- **Region-Specific Drought Response Recommendations**
  - Municipal
  - Other WUGs

# Chapter 7

## Changes to Chapter

- **Sections added:**
  - **Re-organization of required sections**
- **Modified Sections:**
  - **More detail on how emergency interconnect information should be collected and presented**
  - **Additional requirements and guidance given for the model DCPs**



**Item 12:**

**Consideration and Approval of the  
substantial completion of draft  
Chapter 7.**



**Item 13**

**Chapter 9:**

**Infrastructure Financing  
Report**

# Chapter 9 – Infrastructure

## Financing Report

- **Assessment of how WMSs and WMSPs will be financed**
  - TWDB survey
- **Role of state in financing projects within the plan**

# Chapter 9 – Infrastructure

## Financing Report

- **Objectives of the Financing Report**
  - **Identify number of political subdivisions in need of financial assistance**
  - **Determine what portion of RWP cannot be paid by local utility revenue**
  - **Evaluate financing options available to meet needs**
  - **Determine role of state financing**

# Chapter 9

## Changes to Chapter

- **RWPGs are to propose the role the state financing in each project**
  - **There is additional state participation in funding for regional water infrastructure projects**



**Item 13:**

**Consideration and Approval of the  
substantial completion of draft  
Chapter 9.**



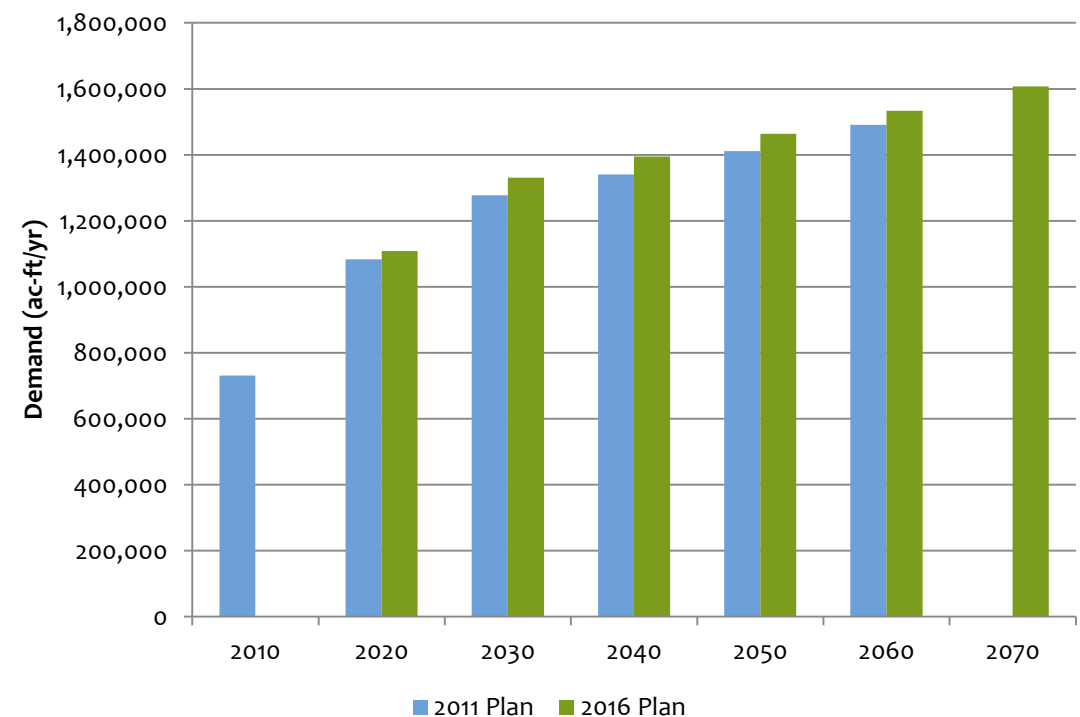
# **Item 14**

## **Chapter 11:**

### **Implementation and Comparison to the Previous Regional Water Plan**

# Chapter 11 – Implementation and Comparison to the Previous Regional Water Plan

- TWDB Implementation survey
  - Recommended project sponsors
  - Changes in supplies since 2011 plan
  - TWDB funding records
  - Conservation implementation reports
- Comparison of 2021 Plan to 2016 Plan
  - Water Demand Projections
  - Drought of Record
  - Water Availability
  - Existing Water Supplies of Water User Groups
  - Identified Needs of WUGs and WWPs
  - Recommended and Alternative WMSs



# Chapter 11

## Changes to Chapter

- **Two additional comparisons added to Section 11.2**
  - **Simplified planning**



**Item 14:**

**Consideration and Approval of the  
substantial completion of draft  
Chapter 11.**

# Questions?

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# Region I

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Water Planning Group



**REGIONAL WATER PLANNING  
GROUP MEETING  
January 15, 2020**

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