



# Region I

East Texas Regional  
Water Planning Group



## Item 5 Consultant Team Report



PLUMMER



FREESE  
AND  
NICHOLS



*February 19, 2020*

## Consultant Team Report Agenda

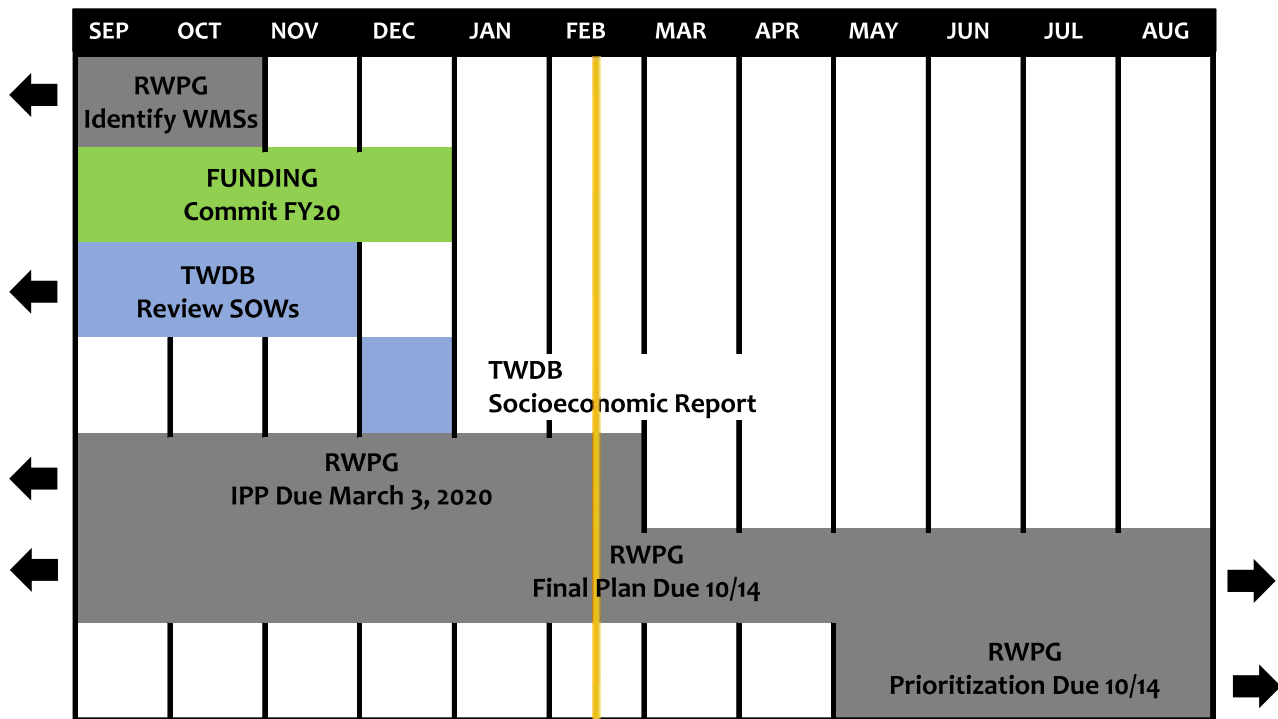
- **Planning Schedule**
- **Website Updates**
- **Review of Chapter and Appendices**







# 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, 2020
	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 5b

### Website Updates



## Website Updates

- **“Mockup” from graphic designer is complete**
- **Website development will begin in the next few days**
- **Timeline**
  - Website development: 6-8 weeks
    - During this time, the RWPG will be able to log in and review website “offline”
  - Launch of final website: 1 week
    - Estimated launch: April 6th, 2020





# Consultant Team Report

## Item 5c

### Review of Chapters and Appendices



## Review of Chapters

Chapter	Title	Substantial Completion Date	Number of Appendices
-	Executive Summary	January 15, 2020	1
1	Description of the Region	October 15, 2020	2
2	Current and Projected Population and Water Demand	October 15, 2020	5
3	Water Supply Analyses	October 15, 2020	4
4	Identification of Water Needs	October 15, 2020	6
5A	Identification of Potentially Feasible Water Management Strategies	November 20, 2019	2
5B	Evaluation of Potentially Feasible, Recommended, and Alternative Water Management Strategies	January 15, 2020	5
5C	Water Conservation Recommendations	November 20, 2019	1
6	Impacts of the Regional Water Plan and Consistency with Protection of Resources	October 15, 2020	1
7	Drought Response Information, Activities, and Recommendations	January 15, 2020	0
8	Unique Stream Segments, Unique Reservoir Sites, and Legislative and Regulatory Recommendations	October 15, 2020	2
9	Infrastructure Financing Report	January 15, 2020	2
10	Public Participation and Adoption of Plan	October 15, 2020	4
11	Implementation and Comparison to the Previous Regional Water Plan	January 15, 2020	1







# Executive Summary



## Executive Summary

### Chapter Summary:

- Introduction to Regional Water Planning
- Key Findings and Recommendations
- Regional Description
- County Summary Sheets
- TWDB DB22 Data Reports





# Executive Summary

## Appendices Summary:

### ■ 25 reports generated by the DB22

- Report 01 Water User Group Population Projections
- Report 02 Water User Group Water Demands
- Report 03 Water User Group Category – Summary
- Report 04 Source Water Availability
- Report 05 Water User Group Existing Water Supplies
- Report 06 Water User Group Identified Water Needs/Surpluses
- Report 07 Water User Group Second-Tier Identified Water Need
- Report 08 Water User Group Second-Tier Identified Water Need – Summary
- Report 09 Source Water Balance
- Report 10a Water User Group Data Comparison to 2016 Regional Water Plan
- Report 10b Source Data Comparison to 2016 Regional Water Plan
- Report 11 Water User Group Unmet Needs
- Report 12 Water User Group Unmet Needs Summary
- Report 13 Water User Group Recommended Water Management Strategies
- Report 14 Recommended Projects Associated with Water Management Strategies
- Report 15 Water User Group Alternative Water Management Strategies
- Report 16 Alternative Projects Associated with Water Management Strategies
- Report 17 Water User Group Management Supply Factor
- Report 18 Recommended Water Management Strategies Requiring New or Amended Interbasin Transfer Permit
- Report 19 Water User Group Recommended Conservation Water Management Strategy Associated with Recommended Interbasin Transfer Water Management Strategy
- Report 20 Recommended Water Management Strategy Supplies Unallocated to Water User Groups
- Report 21 Summary of Water Management Strategy Users by Water Management Strategy Type
- Report 22 Summary of Water Management Strategy Users by Source
- Report 23 Major Water Provider Existing Sales and Transfers
- Report 24 Major Water Provider Recommended Water Management Strategy and Projects



# Executive Summary

## Changes since Substantial Completion:

- Updated 20 County Summary Sheets
- Added 25 DB22 Reports





# Chapter 1:

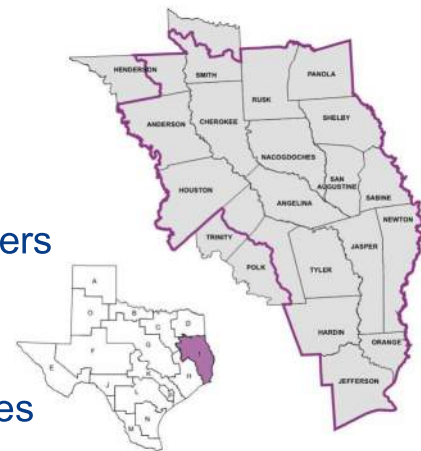
## Description of the Region



## Chapter 1 – Description of the Region

### Chapter Summary:

- Current Water Demands
- Source of Water
- Water User Groups and Major Water Providers
- Agricultural and Natural Resources
- Threats to Water Quality
- Threats to Agricultural and Natural Resources
- Local and Regional Water Planning Efforts
- Drought of Record
- Current Drought Preparations
- Water Loss and Water Audits
- Threats Addressed or Affected by Water Management Strategies





# Chapter 1 – Description of the Region

## Appendices Summary:

Appendix	Title	Description
1-A	Species of Special Concern in the ETRWA	List of rare, threatened, or endangered species developed by the TPWD
1-B	Water Loss Audits	Public utilities with active financial obligations to the TWDB are required to submit water loss audits



# Chapter 1 – Description of the Region

## Changes since Substantial Completion:

- **Incorporated comments received from:**
  - Freese and Nichols, Inc.
  - WSP Global
  - Rusk County Groundwater Conservation District
  - Texas Department of Agriculture
  - Sabine River Authority



## Chapter 2:

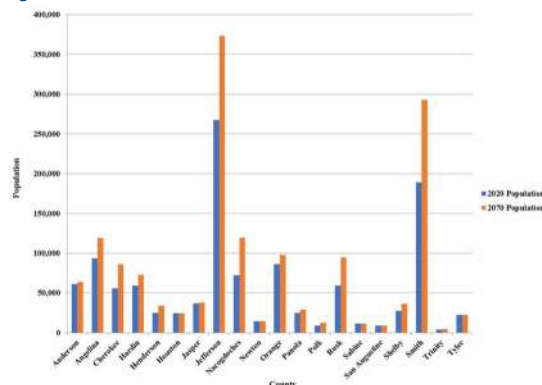
# Current and Projected Population and Water Demand



## Chapter 2 – Current and Projected Population and Water Demand

Chapter Summary:

- Methodology for Updating Demands
- Population Growth Projections
- Water Demands by Water Use Category
- Demands on Major Water Providers





## Chapter 2 – Current and Projected Population and Water Demand

### Appendices Summary:

Appendix	Title	Description
2-A	Correspondence of the ETRWPG Chair to the TWDB	Copies of letters from Kelley Holcomb regarding 2021 Plan Projected Demands
2-B	Population Projections DB22 Report	Summary of population data by WUG, county, and river basin; generated by DB22
2-C	Historical Estimates for Utility Water User Group (WUG) in Region I	Historical population and water use estimates for 2010-2015 provided by TWDB
2-D	Water User Group Demand Projections DB22 Report	Water demand projections by WUG, county, and river basin; generated by the DB22
2-E	Wholesale Water Provider Demands DB22 Report	Water demand projections by WWP, county, and river basin



## Chapter 2 – Current and Projected Population and Water Demand

### Changes since Substantial Completion:

- **Incorporated comments received from:**
  - **Public**
  - **Rusk County Groundwater Conservation District**





# Chapter 3:

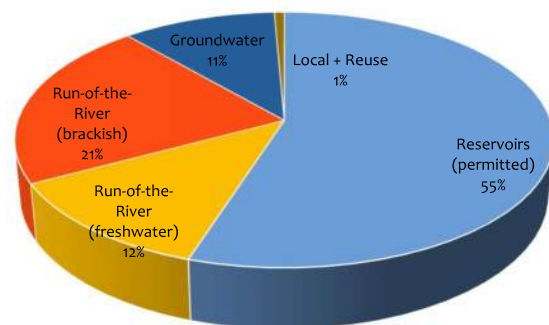
## Water Supply Analyses



### Chapter 3 – Evaluation of Current Water Supplies in the Region

Chapter Summary:

- 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





## Chapter 3 – Evaluation of Current Water Supplies in the Region

### Appendices Summary:

Appendix	Title	Description
3-A	Water Availaibiltiy DB22 Report	Water availability data divided by source, county, basin, and salinity; generated by the DB22
3-B	Water User Group Existing Supplies DB22 Report	Existing water supplies data divided by WUG, source, county, and basin; generated by the DB22
3-C	Desired Future Conditions and Modeled Available Groundwater Report(s)	GAM Run Reports for each Groundwater Management Area (GMA)
3-D	Water Availaibiltiy Technical Memorandum	Utilization of WAM models to calculate surface water availability



## Chapter 3 – Evaluation of Current Water Supplies in the Region

### Changes since Substantial Completion:

- **Incorporated comments received from:**
  - **Public**
  - **Sabine River Authority**





# Chapter 4:

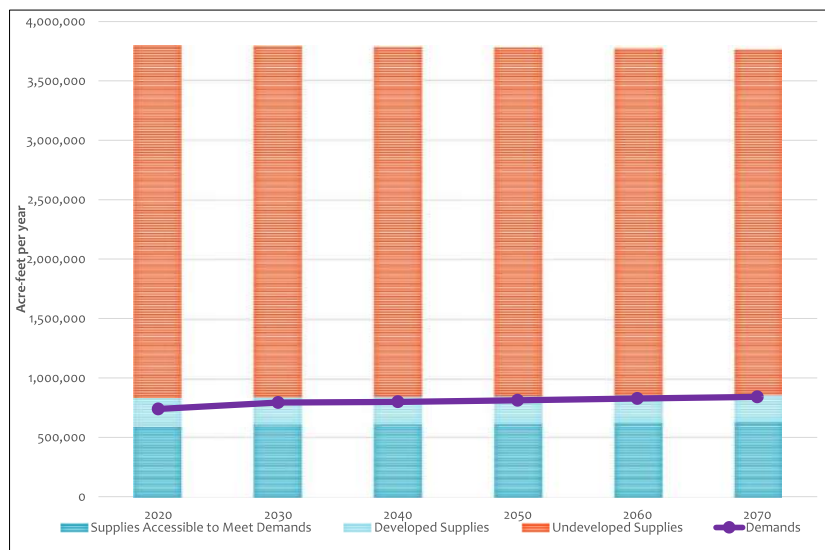
## Identification of Water Needs



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

### Chapter Summary:

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





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

### Appendices Summary:

Appendix	Title	Description
4-A	Identified Water Needs/Surplus DB22 Report	Needs and Surplus data divided by WUG, county, and basin; generated by the DB22
4-B	Second-Tier Identified Water Need DB22 Report	Identified needs divided by WUG, county, and basin; After IPP, TWDB will make summary reports for needs divided by major water provider, county, and river basin after implementation of conservation and direct reuse WMS; generated by DB22
4-C	Source Water Balance DB22 Report	Source water balance data divided by source, county, basin, and salinity; generated by DB22
4-D	Supply Versus Demand DB22 Report	Supply, demand, and population for each of the seven summary WUG categories; generated by DB22
4-E	Water Demands, Supplies, and Needs for Major Water Providers	Data presented by water use category for each MWP
4-F	Major Water Provider Existing Sales and Transfers	Transfers presented by water source type with wholesale/retail delineation for each Major Water Provider; generated by DB22
4-G	Socioeconomic Impact Analysis	Impact of not meeting water needs conducted by TWDB




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

### Changes since Substantial Completion:

- **Incorporated comments received from:**
  - **Public**





# Chapter 5A:

## Identification of Potentially Feasible Water Management Strategies



### Chapter 5A – Identification of Potentially Feasible Water Management Strategies

#### Chapter Summary:

- Potentially feasible strategies
  - Recommended strategies
  - Alternative strategies
- Cost, environmental permitting and implementation issues
- Water conservation and drought management
- Direct and indirect wastewater reuse
- Expanded use of existing supplies
  - Voluntary transfers (sales/contracts)
  - Expanded groundwater and/or local use
- New supplies
- Inter-basin transfers





## Chapter 5A – Identification of Potentially Feasible Water Management Strategies

### Appendices Summary:

Appendix	Title	Description
5A-A	Screening Criteria for Potentially Feasible Water Management Strategies	The ETRWPG identified general guidelines when considering the potential feasibility of WMSs
5A-B	Potentially Feasible Water Management Strategies	Summary of potentially feasible WMS considered and identified for all WUGs with need



## Chapter 5A – Identification of Potentially Feasible Water Management Strategies

### Changes since Substantial Completion:

- **Incorporated comments received from:**
  - **Public**





# Chapter 5B:

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



## Chapter 5B – Water Management Strategies

### Chapter Summary:

- Recommended Strategies by Water User Group

<b>NEEDS</b>		<b>RECOMMENDED STRATEGY</b>		<b>ALTERNATIVE STRATEGY</b>						<b>BALANCE (Does not include Alternative totals)</b>			
County	WUG	2021 Needs and Strategies	2020	2030	2040	2050	2060	2070	Strategy Source	Capital Costs (\$)	Annual Costs (\$)	Unit Costs before Amortization (\$ per acre-foot)	Unit Costs before Amortization (\$ per 1000 gal)
ANDERSON	ELKHART	Unmet Need	0	0	0	0	0	0					
		Municipal Conservation	4	6	6	7	7	8	CT	\$0.00	\$2,000	\$316	\$0.97
	FRANKSTON	Unmet Need	0	0	0	0	0	0					
		Municipal Conservation	4	6	7	7	7	8	CT	\$0.00	\$2,000	\$308	\$0.94
	NORWOOD WSC	Unmet Need	0	0	0	0	0	0					
		Municipal Conservation	2	0	0	0	0	0	CT	\$0.00	\$1,000	\$500	\$1.53
	PALESTINE	Unmet Need	0	0	0	0	0	0					
		Municipal Conservation	81	129	140	150	161	172	CT	\$0.00	\$30,000	\$212	\$0.65
	PLEASANT SPRINGS WSC	Unmet Need	0	0	0	0	0	0					
		Municipal Conservation	2	4	5	5	5	6	CT	\$0.00	\$2,000	\$407	\$1.25
ANGELINA	TDCJ BETO GURNEY & POWLEDGE	Unmet Need	0	0	0	0	0	0					
		Municipal Conservation	16	27	29	30	32	34	CT	\$0.00	\$6,000	\$208	\$0.64
	TDCJ COFFIELD MICHAEL	Unmet Need	0	0	0	0	0	0					
		Municipal Conservation	44	75	80	85	91	96	CT	\$0.00	\$8,000	\$102	\$0.31
	LUFKIN	Unmet Need	0	0	0	0	0	0					
		Municipal Conservation	151	239	273	0	0	0	CT	\$0.00	\$60,000	\$271	\$0.83
ANGELINA	MANUFACTURING	Unmet Need	-1,449	-1,625	-1,625	-1,625	-1,625	-1,625					
		Purchase from Lufkin (Sam Bayburn)	1,625	1,625	1,625	1,625	1,625	1,625	WWP	\$0.00	\$530,000	\$326	\$1.00
	MINING	Unmet Need	-473	-572	-397	-398	-224	-167					
		Purchase from ANRA (Run of River, Angelina)	572	572	572	572	572	572	WWP	\$7,927,000	\$1,245,000	\$2,177	\$6.68





# Chapter 5B – Water Management Strategies

## Chapter Summary:

### Recommended Strategies by Wholesale Water Provider

NEEDS RECOMMENDED STRATEGY 2020/2021/22 STRATEGY BALANCE (Does not include Alternative totals)											
WWP	2021 Needs and Strategies	2020	2030	2040	2050	2060	2070	Capital Costs (\$)	Annual Costs (\$)	Unit Costs before Amortization (\$ per acre-foot)	Unit Costs before Amortization (\$ per 1000 gal)
ANRA	Unmet Needs	-23,888	-42,569	-71,812	-71,857	-71,207	-101,207				
	Lake Columbia	0	75,720	75,640	75,560	75,480	75,400	\$402,862,000	\$23,509,000	\$311	\$0.95
	ANRA Treatment and Distribution System	0	0	0	0	0	0	\$228,001,000	\$49,839,000	\$2,242	\$6.88
	Run of River, Neches (New Application)	20,000	20,000	20,000	20,000	20,000	20,000	\$0	\$0	\$0	\$0.00
	Run of River, Neches (Submitted Application)	10,000	10,000	10,000	10,000	10,000	10,000	\$0	\$0	\$0	\$0.00
	New Wells (Carizo-Wilcox Aquifer)	5,600	5,600	5,600	5,600	5,600	5,600	\$29,775,000	\$3,185,000	\$569	\$1.75
	RECOMMENDED WHS TOTAL	35,600	111,320	111,240	111,160	111,080	111,000				
AN WCID#1	Unmet Needs	0	0	0	0	0	0				
	Hydraulic Bridging (Includes Volumetric Survey and Normal Pool Elevation Adjustment)	0	0	5,600	5,600	5,600	5,600	\$23,716,000	-	\$476	\$1.46
	RECOMMENDED WHS TOTAL	-	-	5,600	5,600	5,600	5,600				
ATHENS MWA	Unmet Needs	0	0	0	0	-2,367	-5,567				
	Municipal Conservation (Region I)	7	13	16	20	23	27	\$786,000	\$25,000	\$1,156	\$3.55
	Municipal Conservation (Region C)	29	192	228	265	483	753	\$444,264	\$161,094	\$215	\$0.66
	Amendment of Fish Hatcheries Permit for Reuse	2,872	2,872	2,872	2,872	2,872	2,872	\$0	\$0	\$0	\$0.00
	Additional Carizo-Wilcox Groundwater	400	400	2,000	2,000	2,000	2,000	\$15,151,000	\$1,885,000	\$940	\$2.89
	Groundwater Supply Expansion	200	200	200	200	200	200	\$2,573,000	\$218,000	\$1,090	\$3.35
	Additional Carizo-Wilcox Groundwater	0	0	0	0	0	1,267	\$9,207,000	\$1,171,000	\$413	\$1.27
	WTP Booster PS Improvement	450	450	450	450	450	450	\$65,000	\$57,000	\$127	\$0.39
	RECOMMENDED WHS TOTAL	3,508	3,677	5,316	5,357	5,578	5,853				



# Chapter 5B – Water Management Strategies

## Appendices Summary:

Appendix	Title	Description
5B-A	Technical Memorandums of Water Management Analysis	Technical Memorandums of Water Management Analysis divided by WUGs
5B-B	Quantification of Environmental Impacts of Water Management Strategies and Strategy Evaluation Matrix	Summary of the approach used for identifying and selecting WMS for development of plan
5B-C	Recommended Water Management Strategies by WUG DB22 Report	Summary of recommended WMSs divided by WUG; generated by the DB22
5B-D	Alternate Water Management Strategies by WUG DB22 Report	Summary of alternate WMS data divided by WUG; generated by the DB22





## Chapter 5B – Water Management Strategies

Changes since Substantial Completion:

- Updated San Augustine Water Management Strategy to include SRA Supplies rather than new Groundwater Wells
- Added Conservation Water Management Strategies for all entities with a 2011 water use over 140 GPCD



## Chapter 5C: Water Conservation Recommendations





# Chapter 5C – Water Conservation Recommendations

## Chapter Summary:

- Texas Water Code §11.002(8) defines Water Conservation: water use practices, techniques, and technologies that:
  - Reduce consumption
  - Reduce loss or waste
  - Improve efficient use
  - Increase recycling and reuse
- Advanced conservation measures were evaluated for municipal WUGs that have projected needs (n=22) and that have a projected gpcd greater than 140 (n=14).
- Conservation measures evaluated include:
  - Enhanced Education
  - Conservation Rate Pricing
  - Enhanced Water Loss Reduction



# Chapter 5C – Water Conservation Recommendations

## Appendices Summary:

Appendix	Title	Description
5C-A	Plumbing Code Savings	The water volume savings due to the future enhancement of plumbing fixtures





## Chapter 5C – Water Conservation Recommendations

Changes since Substantial Completion:

- **No major changes made to chapter since substantial completion**



## Chapter 6:

**Impacts of the Regional  
Water Plan and Consistency  
with Protection of  
Resources**

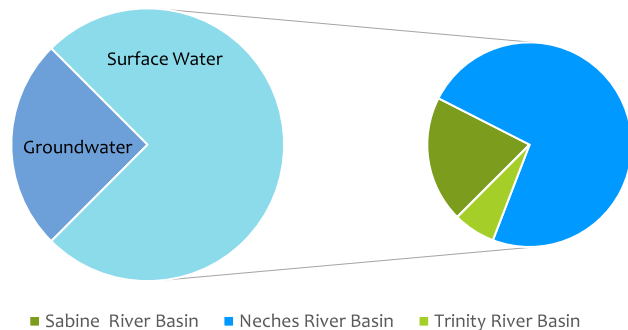




## Chapter 6 – Impacts of the Regional Water Plan and Consistency with Protection of Resources

### Chapter Summary:

- Water Resources
  - Surface water
  - Groundwater
- Agricultural Resources
  - Irrigation
- Natural Resources
  - Timber
  - Energy resources
  - Parks and public lands
  - Threatened and endangered species



## Chapter 6 – Impacts of the Regional Water Plan and Consistency with Protection of Resources

### Appendices Summary:

Appendix	Title	Description
6-A	Title 31 Texas Administrative Code Chapters 357 and 358 Regulations Pertaining to the 2021 Plan	Matrix demonstrating compliance with Chapters 357 and 358 in the TAC, Title 31 by showing regulation and where regulation is met in 2021 Plan





## Chapter 6 – Impacts of the Regional Water Plan and Consistency with Protection of Resources

Changes since Substantial Completion:

- **No major changes made to chapter since substantial completion**



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

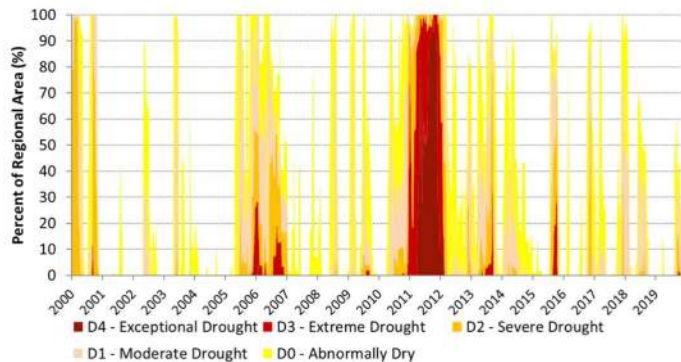




## Chapter 7 – Drought Response Information, Activities, and Recommendations

### Chapter Summary:

- Updated historical drought monitors
- Reviewed and summarized 46 drought contingency plans
- Listed potential emergency water supply sources by WUG



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

### Appendices Summary:

No Chapter 7 Appendices

- Model Drought Contingency Plans posted on Region I website per TWDB requirements





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

Changes since Substantial Completion:

- **No major changes made to chapter since substantial completion**



## Chapter 8:

Unique Stream Segments,  
Unique Reservoir Sites, and  
Legislative and Regulatory  
Recommendations

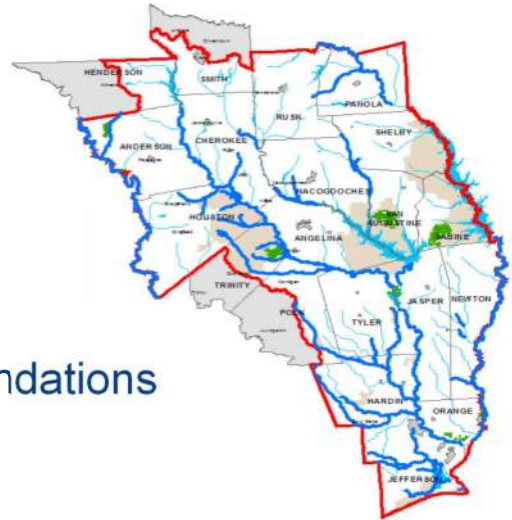




## Chapter 8 – Unique Stream Segments, Unique Reservoir Sites, and Legislative and Regulatory Recommendations

### Chapter Summary:

- Unique stream segments
  - Texas Parks & Wildlife Department identified 41 unique segments in 2005
- Unique reservoir sites
  - Two unique reservoir sites
- Legislative and regulatory recommendations



## Chapter 8 – Unique Stream Segments, Unique Reservoir Sites, and Legislative and Regulatory Recommendations

### Appendices Summary:

Appendix	Title	Description
8-A	Proposed Reservoir Site Locations	Maps showing the locations of proposed reservoirs discussed in Chapter 8
8-B	2011 Prioritization Comments & Concerns Memorandum	Technical memorandum prepared by the Consulting Team that describes some of the primary concerns and observation of the Technical Committee for the ETRWA regarding the 2011 Prioritization Process. An updated process will be available after the IPP after 2021 Prioritization is complete.



## Chapter 8 – Unique Stream Segments, Unique Reservoir Sites, and Legislative and Regulatory Recommendations

Changes since Substantial Completion:

- **No major changes made to chapter since substantial completion**



## Chapter 9: Infrastructure Financing Report





## Chapter 9 – Infrastructure Financing Report

### Chapter Summary:

- Assessment of how WMSs and WMSPs will be financed
- TWDB developed survey
- Identify role of state in financing projects within the plan
- 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



## Chapter 9 – Infrastructure Financing Report

### Appendices Summary:

Appendix	Title	Description
9-A	Infrastructure Financing Report - Contact Information	Survey of WUGs and WWPS with identified needs will be conducted after the IPP and this appendix will summarize the updated contact information of contacted WWPS and WUGs
9-B	Infrastructure Financing Report - Survey Results	Survey of WUGs and WWPS with identified needs will be conducted after the IPP and this appendix will summarize confirmed infrastructure projects, costs, and potential funding sources





## Chapter 9 – Infrastructure Financing Report

Changes since Substantial Completion:

- **Development of Appendices 9-A and 9B**



## Chapter 10: Public Participation and Adoption of Plan





# Chapter 10 – Public Participation and Adoption of Plan

## Chapter Summary:

- Public involvement and participation
  - Representatives of major WUGs
- Methods for public engagement
  - Water user group involvement
  - Press releases
  - Newsletters
  - ETRWPA website
  - Public meetings
  - Public hearings



# Chapter 10 – Public Participation and Adoption of Plan

## Appendices Summary:

Appendix	Title	Description
10-A	Media and Public Outreach	Documentation of the public notices and press releases related to the the Regional Water Planning Process
10-B	Transcripts, Presentations, and Minutes from Public Hearings	This appendix will include documentation of public input provided at a public hearing scheduled after the IPP
10-C	Initially Prepared Plan Public Comments	This appendix will include all comments received during the 2021 IPP comment period.
10-D	Inititally Prepared Plan Submittal Letter	This appendix will include a letter from Kelley Holcomb informing the TWDB of the approval and adoption of the 2021 IPP

Note: Appendices 10-B through 10-D will be available after the 2021 IPP is submitted





## Chapter 10 – Public Participation and Adoption of Plan Changes since Substantial Completion:

- **No major changes made to chapter since substantial completion**



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

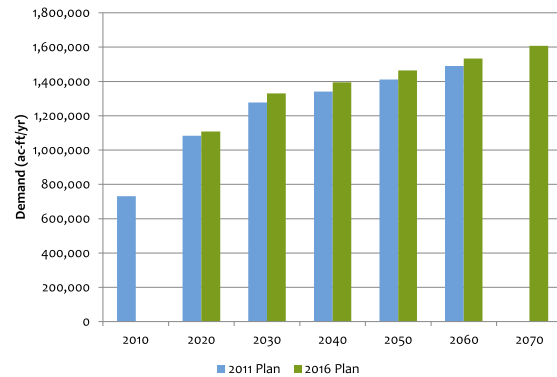




# Chapter 11 – Implementation and Comparison to the Previous Regional Water Plan

## Chapter Summary:

- 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 – Implementation and Comparison to the Previous Regional Water Plan

## Appendices Summary:

Appendix	Title	Description
11-A	TWDB Implementation Survey	Implementation survey that determines the status of projects proposed in the previous round of planning





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

Changes since Substantial Completion:

- **Development of Appendix 11-A**



## Questions?

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