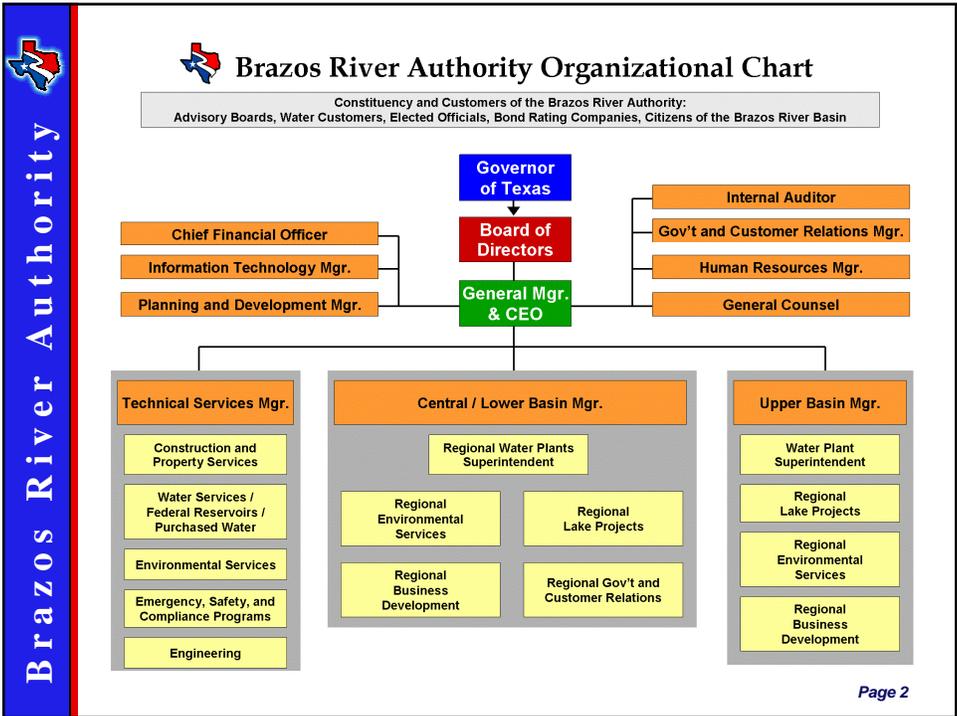




Brazos River Authority

Basin and Bay Area Stakeholders Committee (BBASC) for Environmental Flows

February 25, 2011





Brazos River Authority Overview

MISSION

To Develop, Manage, and Protect the Water Resources of the Brazos River Basin.

- Created by the Texas Legislature in 1929
- Territory:
 - Extends from the New Mexico Border to the Gulf of Mexico
 - 42,000 Square-miles
 - All or part of 70 Counties



Brazos River Authority Overview

RESERVOIRS

- Annually Provide 81 Billion Gallons of Water to Customers
- Built, Own, and Operate Three Reservoirs
- Contract with the Corps of Engineers for Water Supply Storage at Eight Reservoirs
- Reservoirs and River provide Recreation throughout the Basin





BRA Water Rights

Issued and Enforced by Texas Commission on Environmental Quality (TCEQ)

Current Rights from 11 Reservoirs	661,901 af/yr
Colorado Water (LCRA)	25,000 af/yr
Other Agreements	18,000 af/yr
TOTAL	704,901 af/yr
Allens Creek (BRA Portion)	29,900 af/yr



Water Contracts

Long Term Agreements

- 150 Contracts
- Contracts and Commitments equal 698,949 af/yr
- Lakeside and Downstream of Reservoirs

Type of Use (Long Term Agreements)

- Municipal 50%
- Industrial (mostly steam electric) 46%
- Irrigation 3%
- Mining 1%



Top 10 Customers

	Contract Amount (af/yr)
Luminant	122,447
NRG	109,944
Bell County WCID 1	62,509
Round Rock	45,782
GCWA	39,355
Georgetown	32,168
Temple	30,453
Dow	16,000
Cleburne	15,000
Johnson County SUD	13,210
TOTAL:	486,868 (appx. 70% of total)



Brazos River Authority Overview

TREATMENT OPERATIONS

- Operates Wastewater Treatment Plants and Regional Wastewater Treatment Systems
- Own and/or Operate Four Water Treatment Systems





Brazos River Authority Overview

WATER CONVEYANCE

- West Central Brazos Water Distribution System
 - 70 miles of Pipeline
 - From Possum Kingdom Lake west toward Abilene
 - Supplies Oil and Gas Producers, Ranching Operations, and Stephens Regional SUD
- Williamson County Regional Raw Water Line
 - 28 miles of Pipeline
 - From Lake Stillhouse Hollow to Lake Georgetown
 - Supplies Round Rock, Georgetown, Brushy Creek MUD, Chisholm Trail SUD, and Jonah Water SUD



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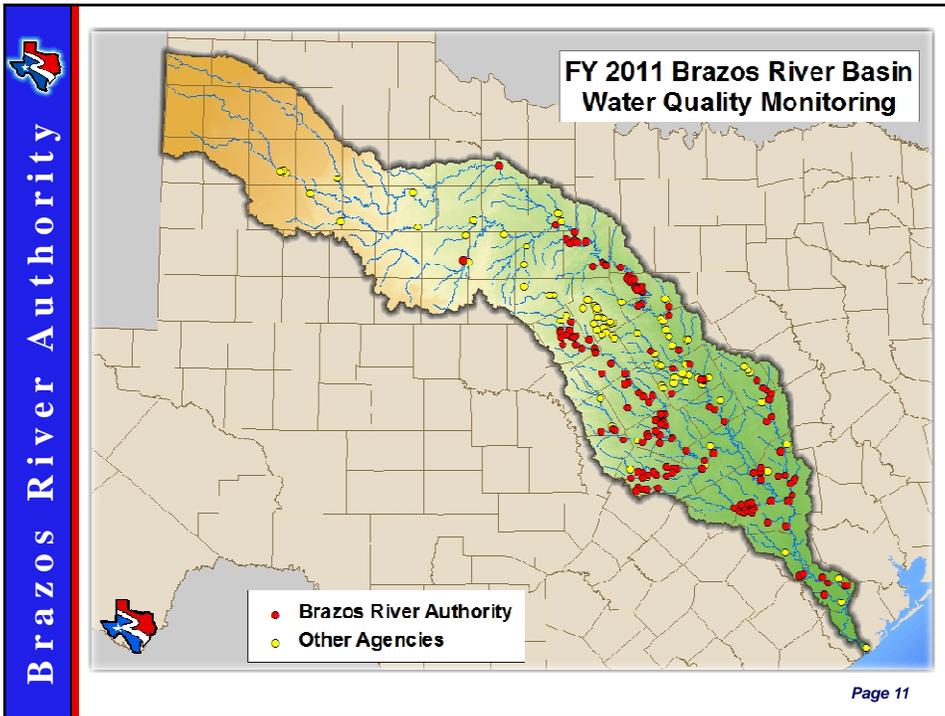
Brazos River Authority Overview

ENVIRONMENTAL STEWARDSHIP

- Brazos River Basin Clean Rivers Program
- Chemical and Physical Water Quality Analysis
- Biological Assessment
- Habitat Assessment
- Quality Assurance /Quality Control
- Data Analysis
- Watershed Management
- Regulatory Compliance



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Brazos River Authority

Water Quality Management Issues Facing Basin

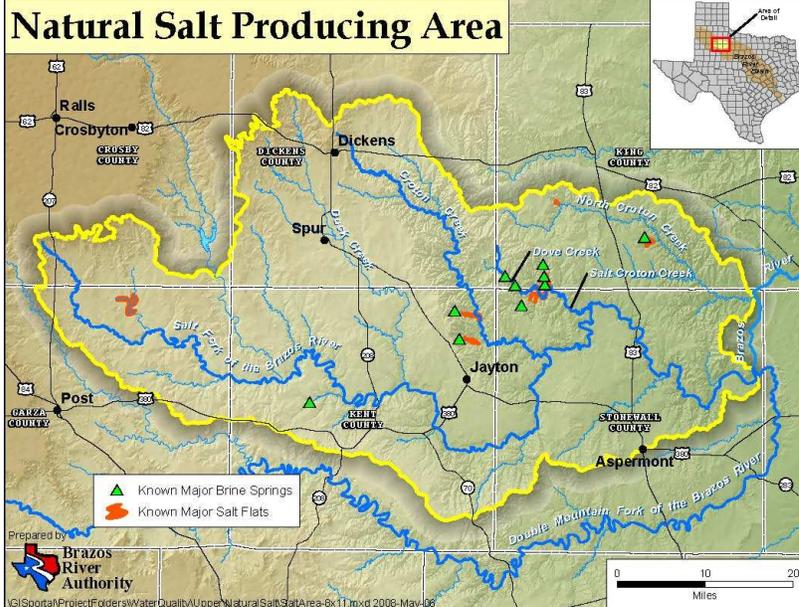
- Nonpoint Source Pollution and Stormwater Runoff
- Increasing Need for Water Quality Data
- Wastewater
- Funding
- Lack of Enforcement

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Water Quality Concerns in the Basin

- Overall, Water Quality is Good
- Natural Chloride Pollution
- Bacteria
- Nutrients
- Isolated Issues
 - Dissolved Oxygen
 - Suspended Solids

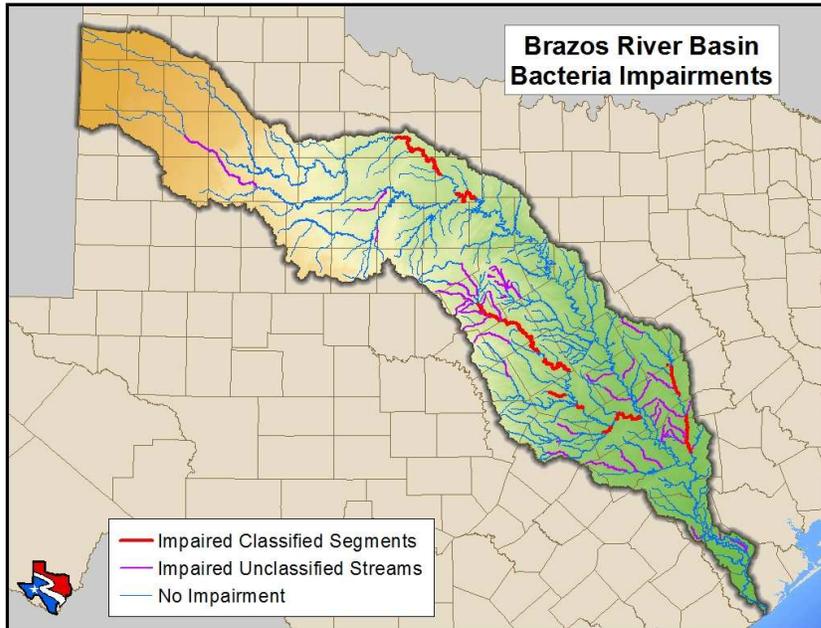


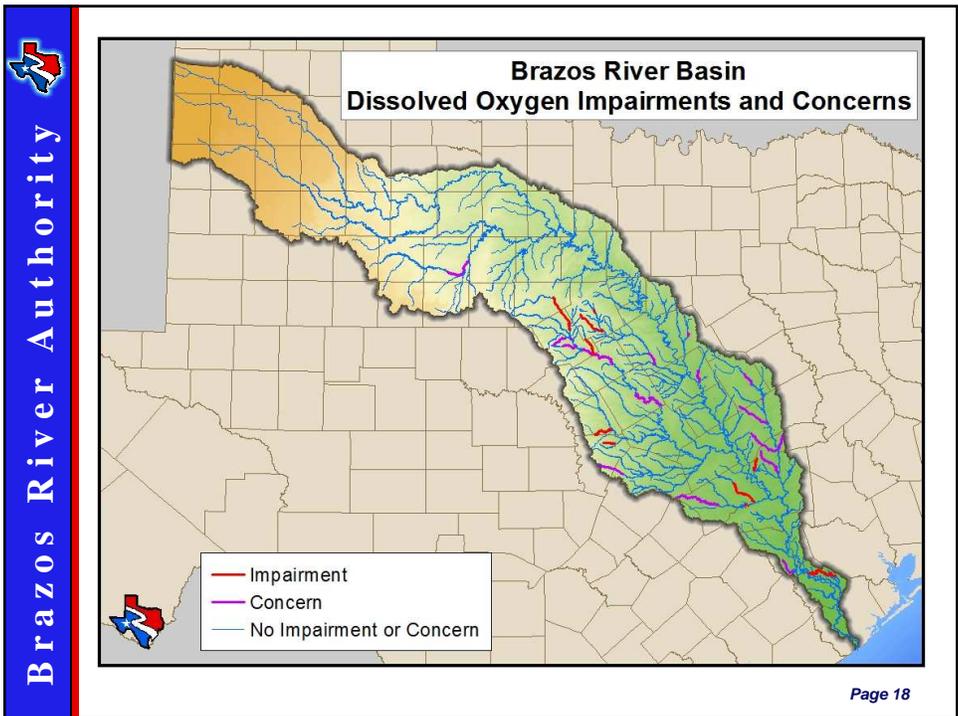
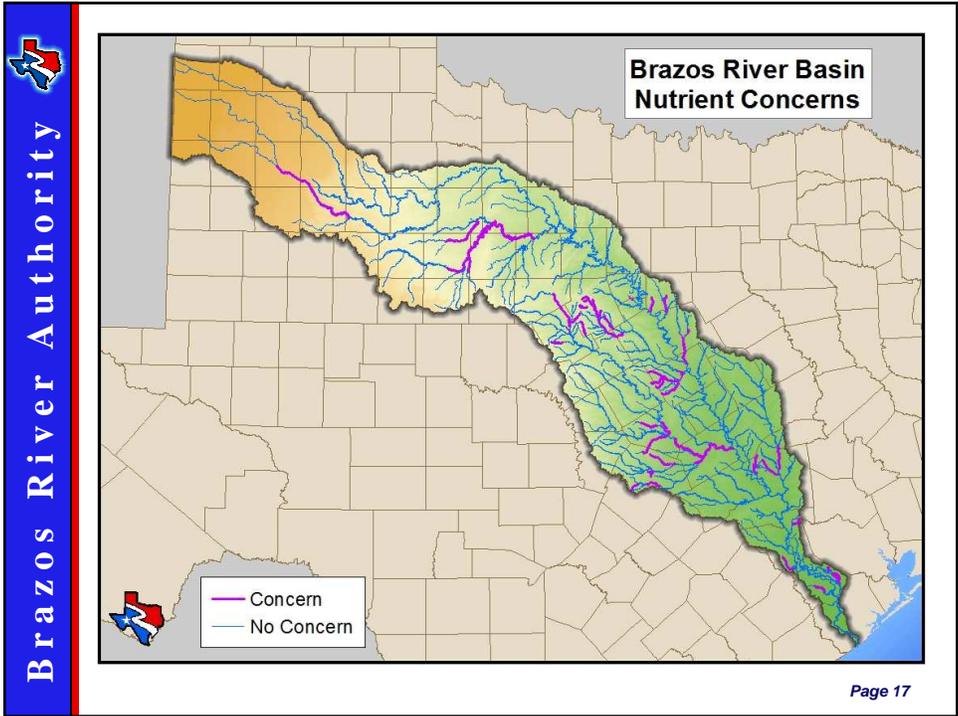


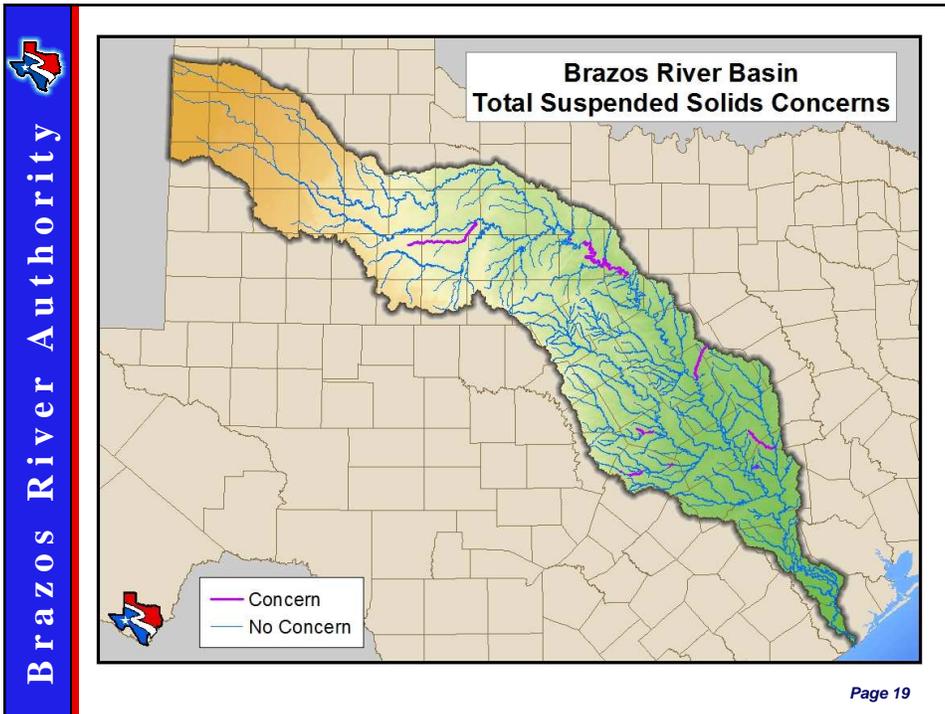
Natural Salt in the Upper Basin



Brazos River Basin Bacteria Impairments







Lake Granbury Watershed Protection Plan

- **Funded by CWA§319
NPS Grant from TCEQ
and EPA**
- **Addressing Elevated
Bacteria Levels in Man-
Made Coves**
- **Submitted for Approval
in August 2010**
- **Applied for
Implementation Grant in
September 2010**
- **Submitted Response to
EPA Comments in
January 2011**

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Leon River Watershed Protection Plan

- **Funded by CWA§319
NPS Grant from
TSSWCB and EPA**
- **Addressing Nutrient and
Bacteria Loading in
Leon River Watershed**
- **Final WPP Currently
Available for Public
Comment**



San Gabriel River/Granger Lake Watershed Protection Plan

- **Funded by CWA§319
NPS Grant from
TSSWCB and EPA**
- **Addressing Elevated
Sediment Levels in the
River and Lake
Granger**
- **Estimated Completion
March 2011**





Use Attainability Analyses (UAA)

- UAA evaluates designated or presumed uses if there is reason to believe the standards for a water body are inappropriate due to local conditions
- **Recreational**
 - Tehuacana Creek
 - Deer Creek
 - Gibbons Creek
 - Cedar Creek
- **Aquatic Life**
 - Resley's Creek
 - Thompson's Creek



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Lake Somerville Impairment Study

- Started in FY 2009
- Funded by Grant from TCEQ
- Investigating Potential Causes of Impairments:
 - Rapid and extreme pH fluctuations,
 - Dissolved oxygen fluctuations
 - Elevated chlorophyll concentrations
- Estimated Completion in FY 2012



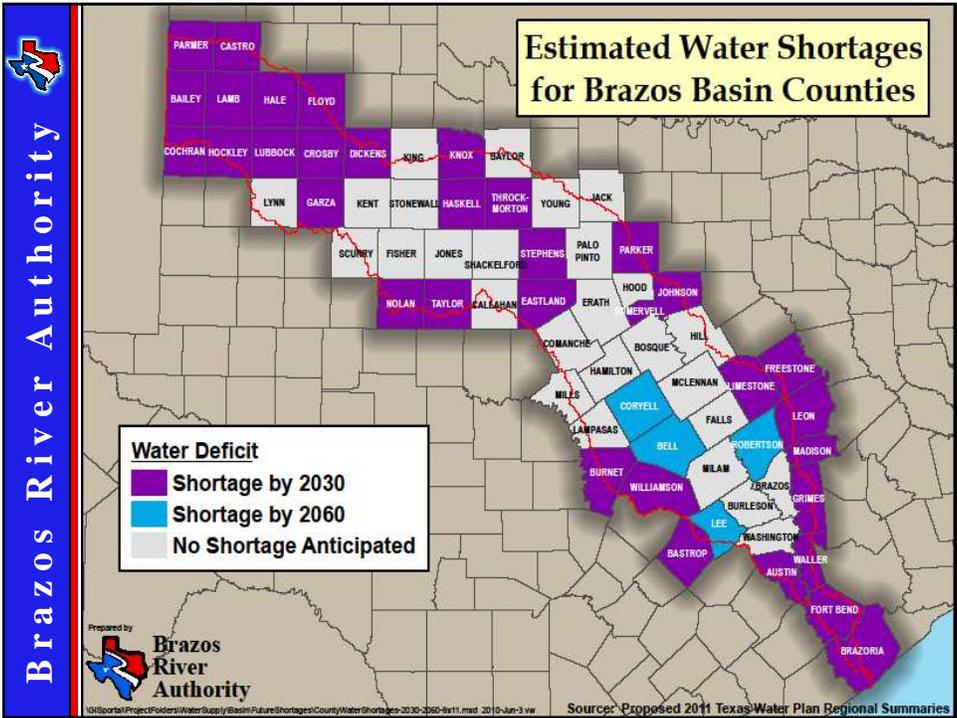
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Brazos River Authority



Future Water Needs

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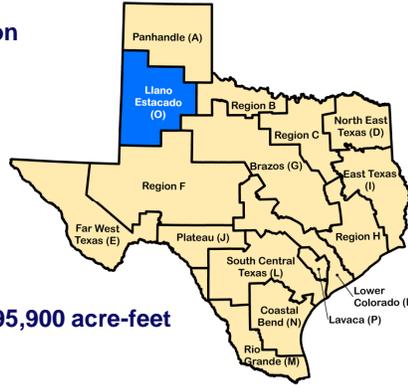




2011 Region O Plan

Select Water Management Strategies

- Irrigation Water Conservation
- Local Groundwater Development



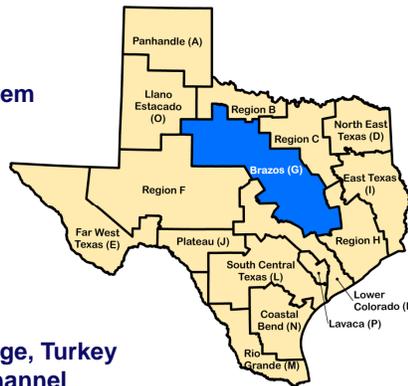
Total New Water Supplies = 395,900 acre-feet by 2060



2011 Brazos G Plan

Select Water Management Strategies

- Conservation
- Brazos River Authority System Operation
- Reuse
- Pool Rise
- Groundwater Development
- New Reservoirs: Cedar Ridge, Turkey Peak, Coryell County Off-channel



Total New Water Supplies = 397,655 acre-feet by 2060



2011 Region H Plan

Select Water Management Strategies

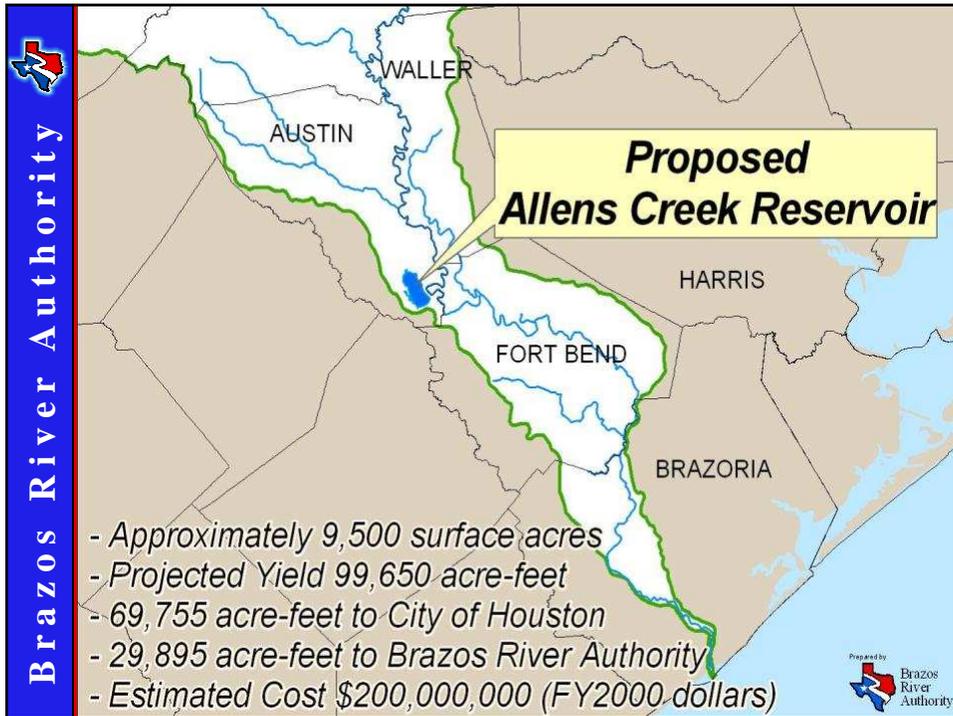
- Conservation
- Reuse
- Groundwater
- Saltwater Barrier
- New Reservoirs: Allens Creek, Brazoria Off-Channel, Fort Bend Off-Channel, Dow Off-Channel, GCWA Off-Channel



Total New Water Supplies = 2,064,647 acre-feet by 2060



Water Supplies for Future Needs

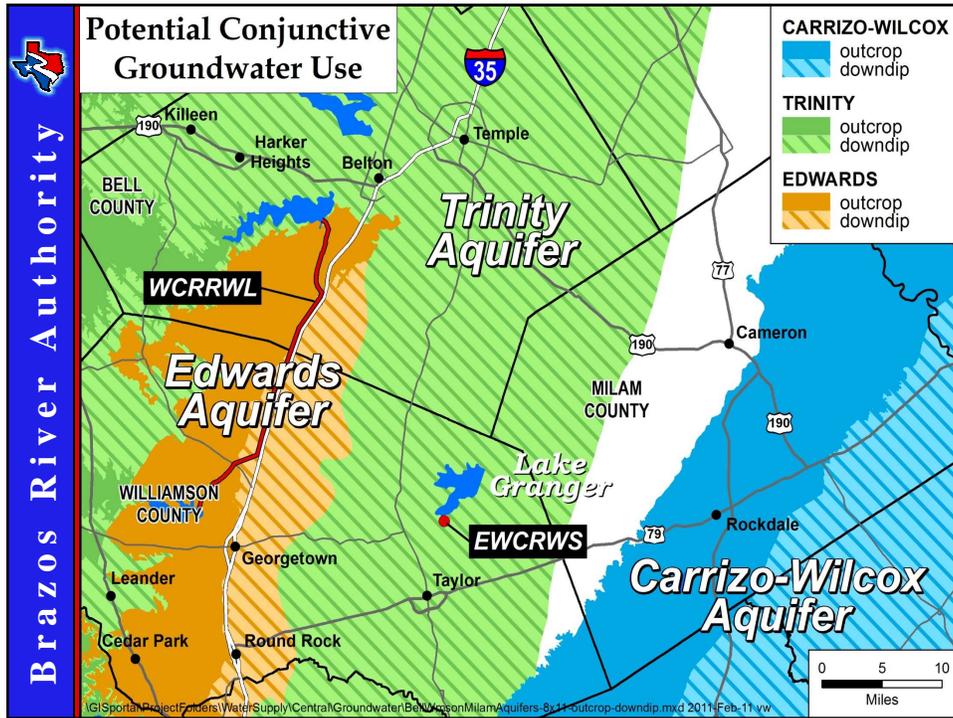


Allens Creek Reservoir

Project Timeline:

- **404 Permit Requirements - At a *minimum*, permitting process takes 2 to 4 years, including, but not limited to, the following:**
 - Archaeological Investigations
 - Wetlands Delineation and Mitigation
 - Threatened and Endangered Species Surveys and Mitigation
 - Habitat Review
- **Facility Design – 2 years**
- **Facility Construction – 2 years**
- **Reservoir Filling – 2 years or longer**

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Brazos River Authority

System Operation Permit

- Requested 421,000 acre-feet
- Uses TCEQ Water Availability Models (WAM)
- Accesses Return Flows
- Water Supply Strategy in Brazos G and Region H water plans
- Commits Water to Texas Water Trust
- Consistent with Senate Bill 3 Environmental Flows Criteria (HEFR prototype)
- 23 Specific Entity Protests
 - 19 Settled or Withdrawn (2 prior to permit filing)
- Remaining Parties
 - Dow
 - Friends of the Brazos
 - Fort Bend Special Districts (2)
 - Comanche County Growers/Bradley Ware

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System Operation Permit Status

- **Significant Events**
 - Filed – June 15, 2004
 - Priority Date – October 15, 2004
 - Draft Permit – February 11, 2010
 - Initial TCEQ Hearing – April 28, 2010
 - SOAH Jurisdictional Hearing – June 7, 2010
 - SOAH Evidentiary Hearing – May 8, 2011
 - TCEQ Permit Approval – March 2012 (?)



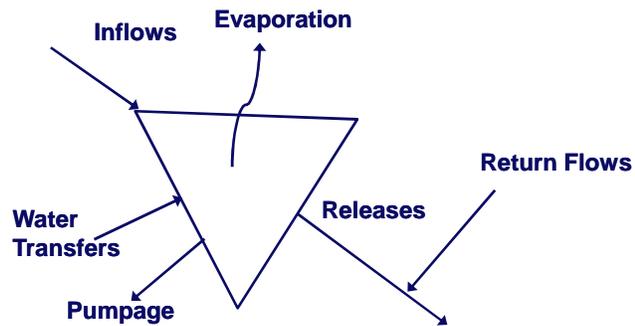
System Operation Permit Water Management Plan

- **Defines BRA Commitments and Demands**
- **Defines how BRA will Operate the System to Meet Demands**
- **Modeling and Accounting**
- **Provides Planning to Meet Commitments**
- **Defines Other Constraints**



System Operation Permit Water Accounting Plan

- Tracks Water by Source and Priority Date
- Accounts for Inputs (inflows, return flows, water transfers, etc.) and Outputs (reservoir releases, evaporation, pumpage, etc.).



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System Operation Permit Environmental Flows

- Instream Flow Statistics Jointly Developed by TPWD, TCEQ and BRA
- Consistent with Senate Bill 3 Environmental Flows Criteria (HEFR prototype)
 - Subsistence Flows
 - Base Flows
 - High Flow Pulse
 - Overbank Flows
- Agreements on Most Points
 - Adaptive Management
 - Environmental Flows Matrix for Initial Permit Requirements
 - Diversion Trigger Rates during HFP Events

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Brazos River Authority

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