REGION H WATER PLANNING GROUP

Reception and Briefing

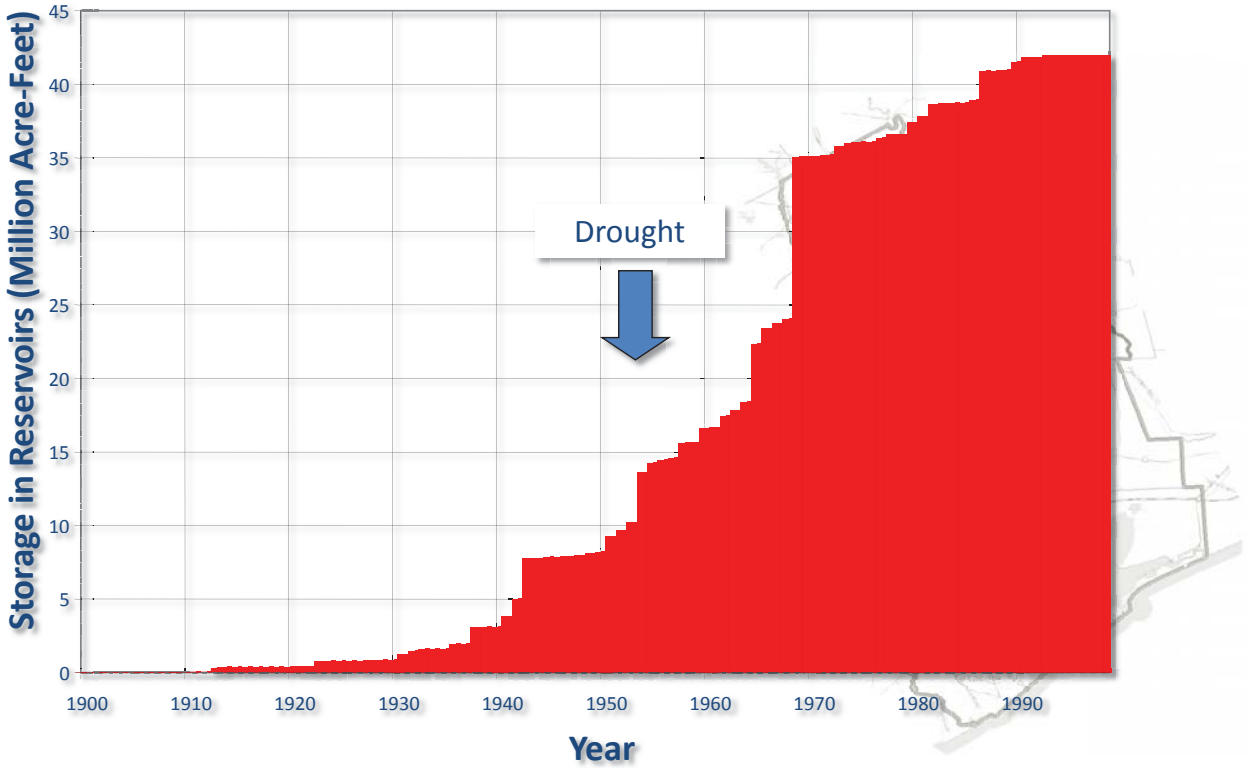
August 21, 2012

Water Planning in Texas

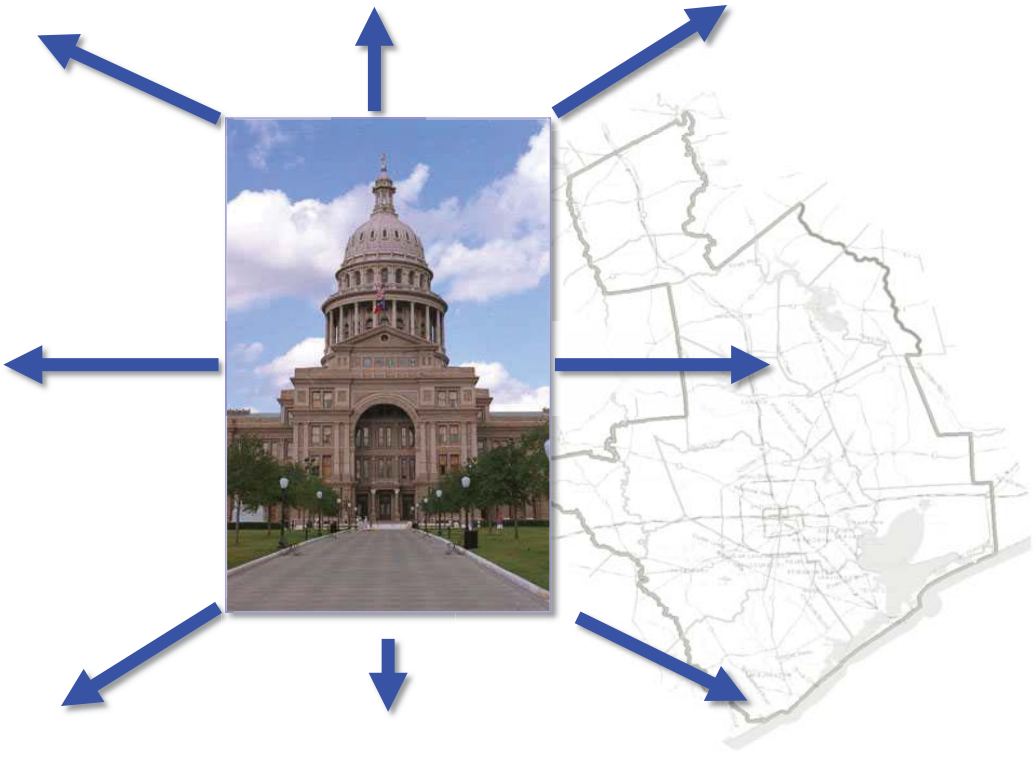
Impact of Drought…

- Planners plan whether it is wet or dry
- But drought in Texas has historically driven major initiatives in funding and construction

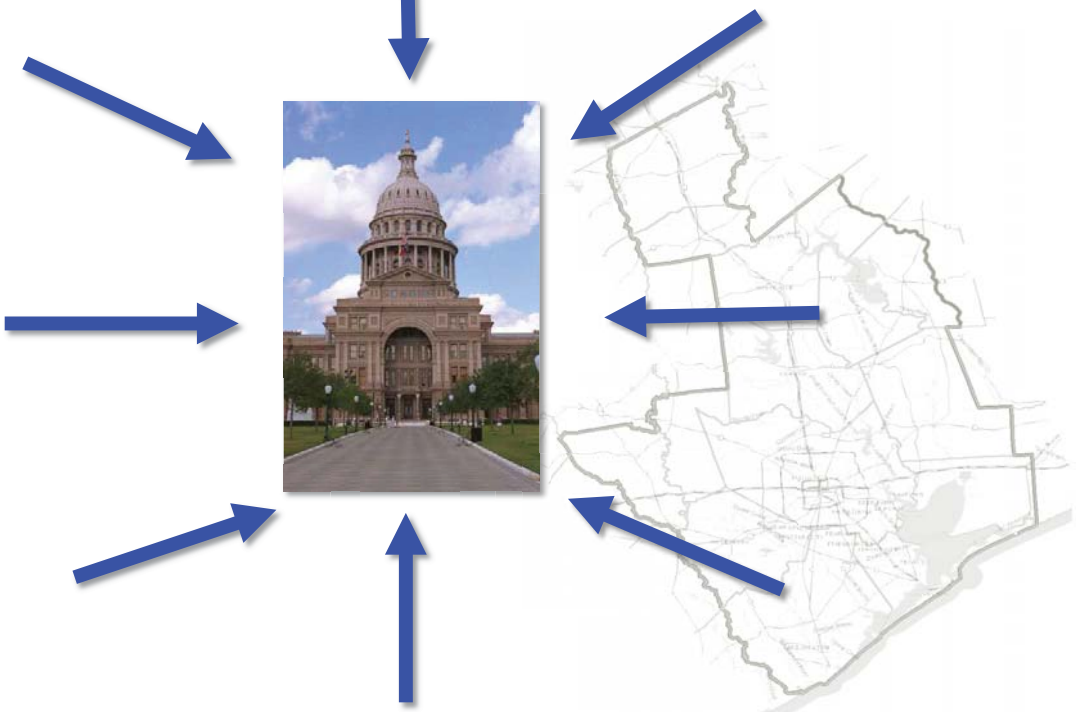
Water Planning in Texas



Water Planning in Texas



Water Planning in Texas



Water Planning in Texas

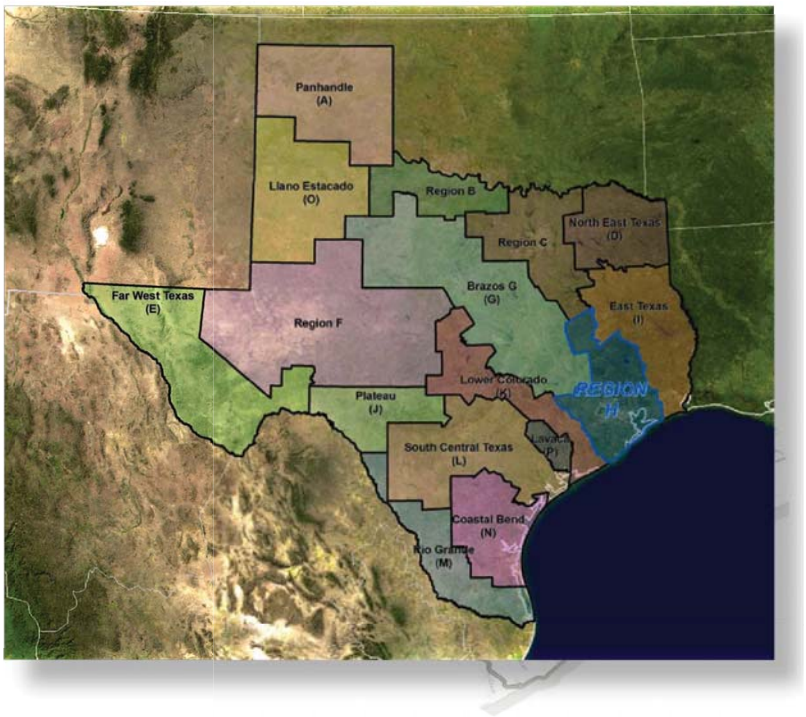
A Regional Approach…

- First initiated under Senate Bill 1 of 75th Legislature in 1997
- "Bottom Up" approach to water planning
- Administered by Texas Water Development Board
- First Regional Water Plan submitted in 2001
- Updated plans in 2006 and 2011
- Currently working on 2016 plan

Water Planning in Texas

About the Regions…

- 16 Regions identified in the state, designated A through P
- Defined based on existing boundaries
  - River basins
  - Aquifers
  - Political boundaries
  - Etc.



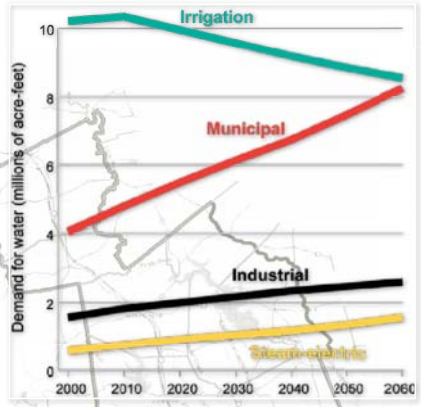
Regional Water Planning in Texas

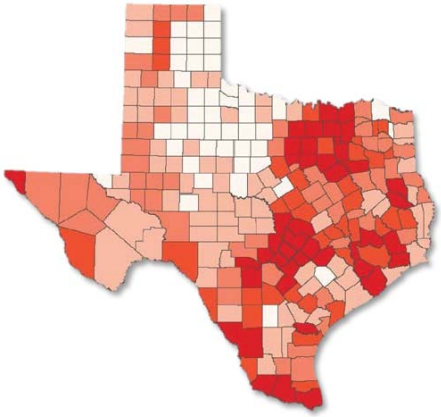
About the Planning Groups…

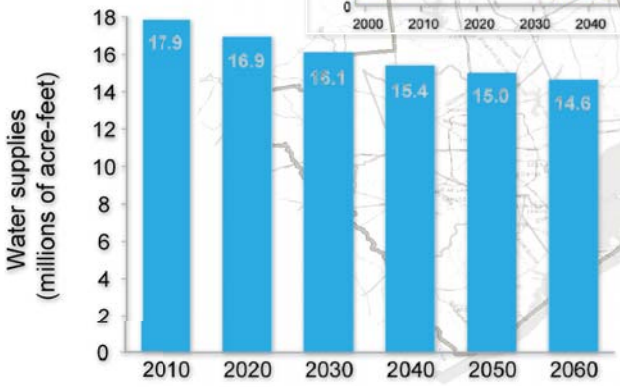
- Volunteers with various levels of experience in the water industry
- Diverse backgrounds:
  - Public
  - Counties
  - Municipalities
  - Industries
  - Agriculture
  - Environment
  - Small Business
  - Power Generation
  - River Authorities
  - Water Districts
  - Water Utilities
  - Groundwater Management Areas
- Assisted by teams of consultants

Planning Process

- How much water do we need?
- How much water do we have?
- If we don't have enough, how will we meet future needs?







Steps of the Regional Planning Process

How much water is needed?
- Non-Pop. And Municipal water demand projections
- TWDB and SDC Data
- Stakeholder Input

How much water is available?
- Water availability in drought of record
- WAM Modeling
- Groundwater availability

Identify Shortages

What strategies can meet shortages?
- ID potential water management strategies
- Evaluate strategies and impacts

Select and Recommend WMS

What do we recommend?
- Develop DRAFT plan
- Public involvement
- Develop FINAL plan

Steps of the Regional Planning Process

How much water is needed?
- Non-Pop. And Municipal water demand proje
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- Stakeholde

What strategies can meet shortages?
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Plan adoption
- Solicit public and stakeholder input
- Resolve Plan conflicts
  - Within Region H
  - With other regions
- Promote cooperation among regions and WMS development

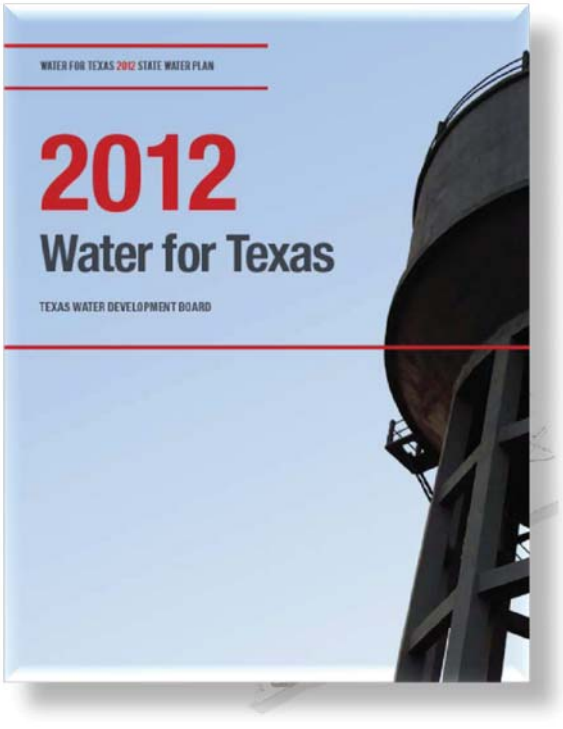
How much w
- Water availab record
- WAM Modeling
- Groundwater availability

What do we recommend?
- Develop DRAFT plan
- Public involvement
- Develop FINAL plan

Regional Water Planning in Texas

State Water Plan

- Developed as a compilation of Regional Water Plans
- Published in year following conclusion of regional planning
- 2012 Plan available: *http://www.twdb.texas.gov/*



Regional Planning…

- …does not replace the need for planning at the local level
- …does not replace the need for local sponsors to build/finance projects
- …does not mandate the implementation of certain strategies
- …does not replace the need for state-level financing mechanisms and support

ABOUT REGION H

About Region H

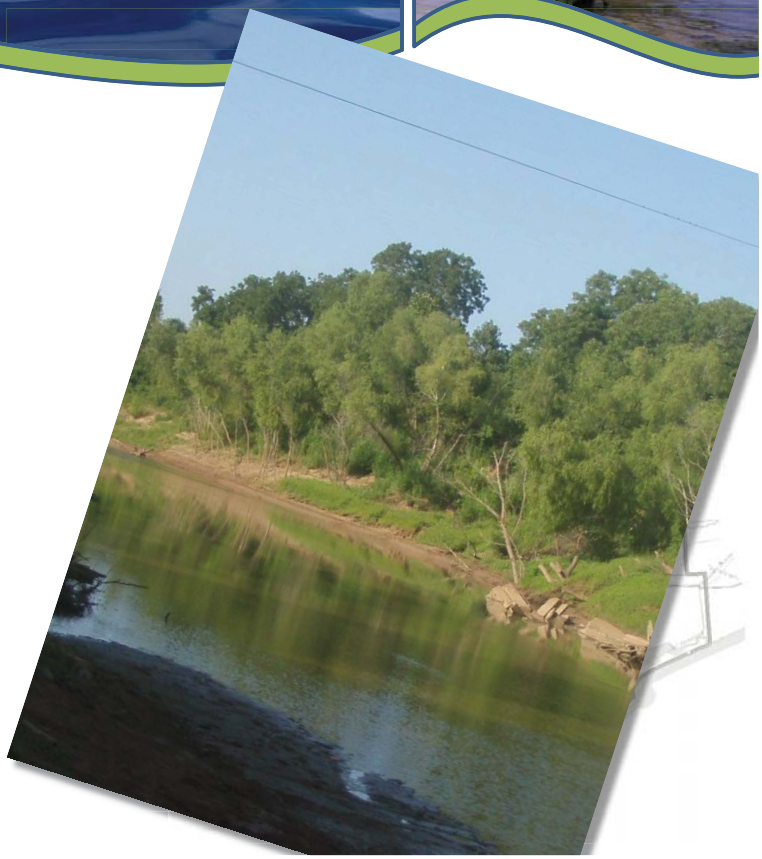
Area

- Entirety or Portion of 15 Counties
  - Austin
  - Brazoria
  - Chambers
  - Fort Bend
  - Galveston
  - Harris
  - Leon
  - Liberty
  - Madison
  - Montgomery
  - Polk
  - San Jacinto
  - Trinity
  - Walker
  - Waller

About Region H

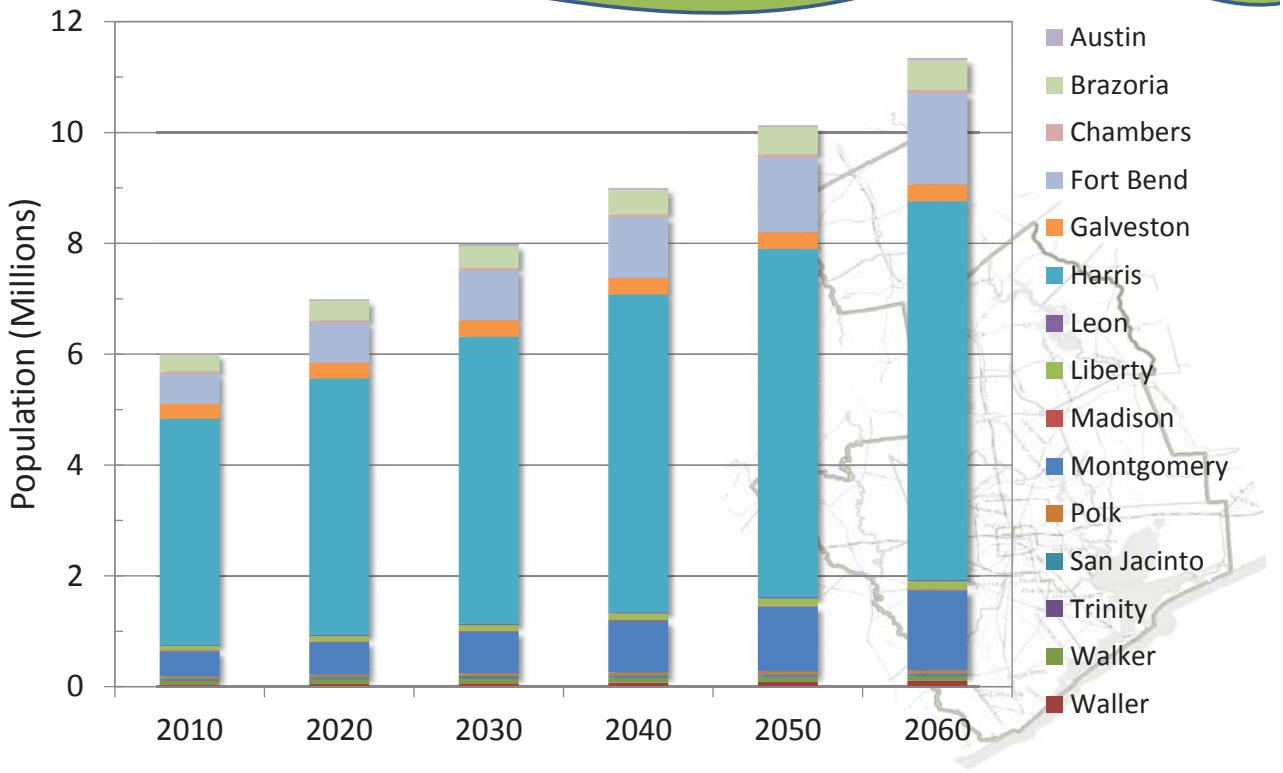
Water Resources

- Groundwater
  - 2 Major Aquifers
  - 4 Minor Aquifers
- Surface Water
  - 3 River Basins
  - 3 Major Reservoirs



2011 REGION H WATER PLAN

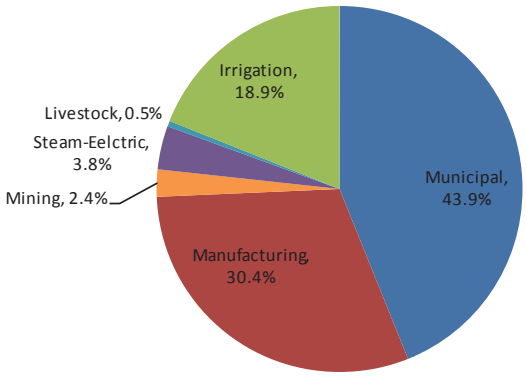
Population Growth



Demand Comparison – 2010 and 2060

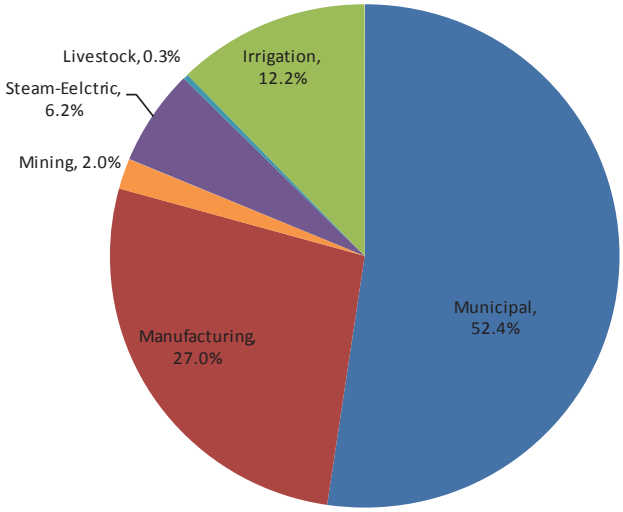
Year 2010 Demand

Total Demand of 2.38 Mil. Ac-Ft/Yr

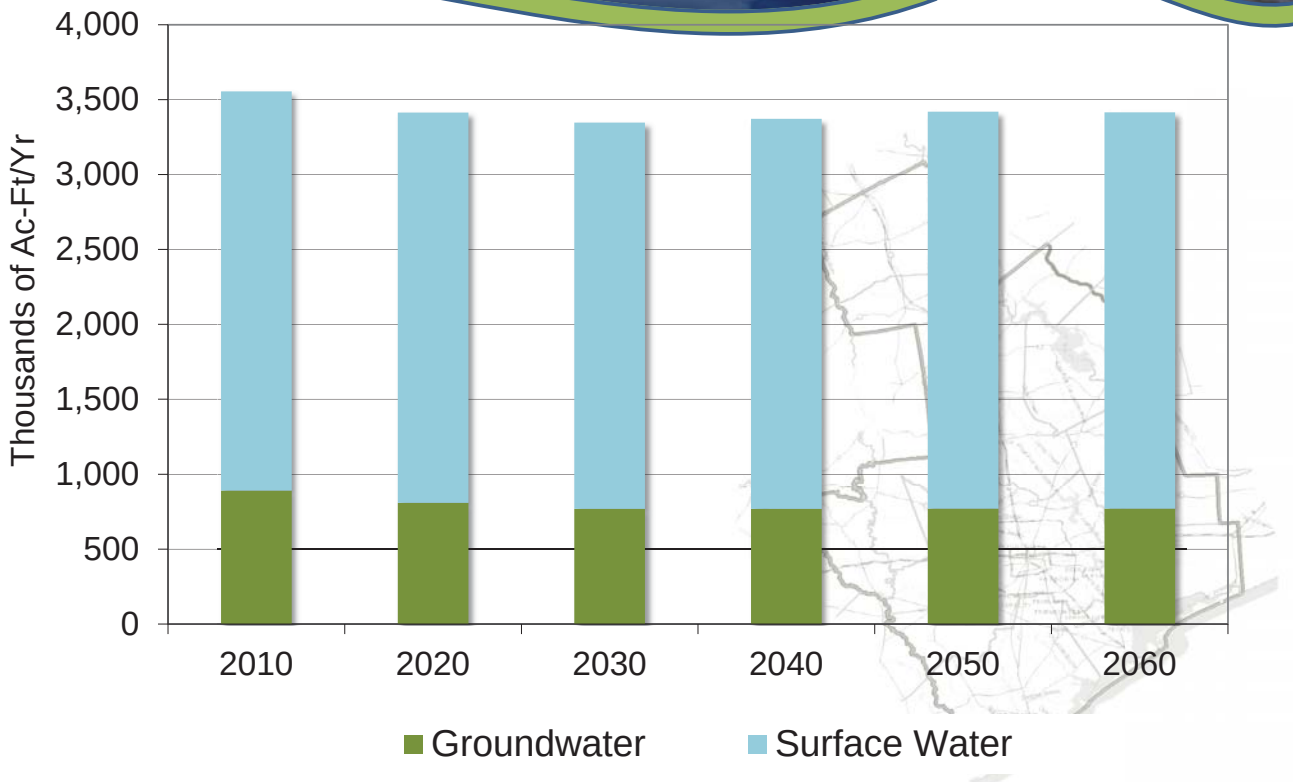


Year 2060 Demand

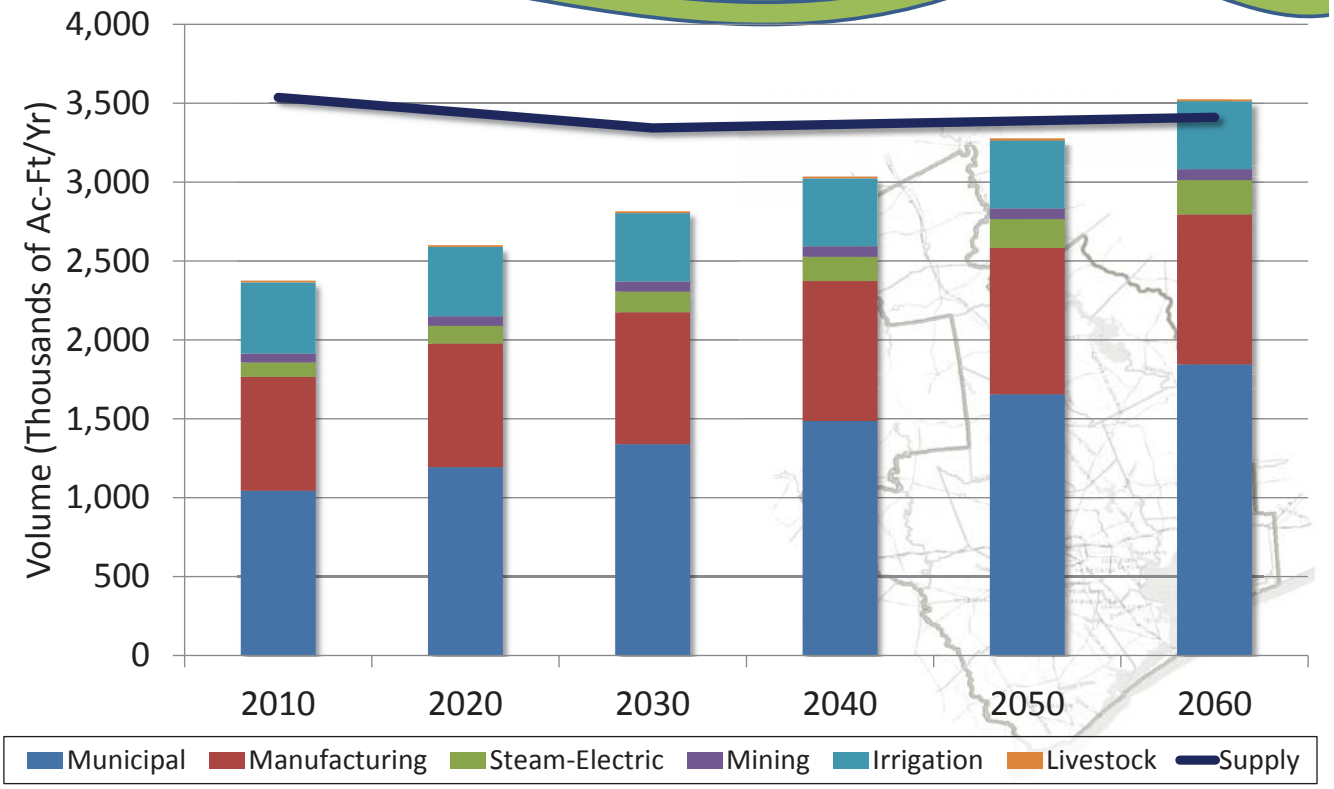
Total Demand of 3.53 Mil. Ac-Ft/Yr



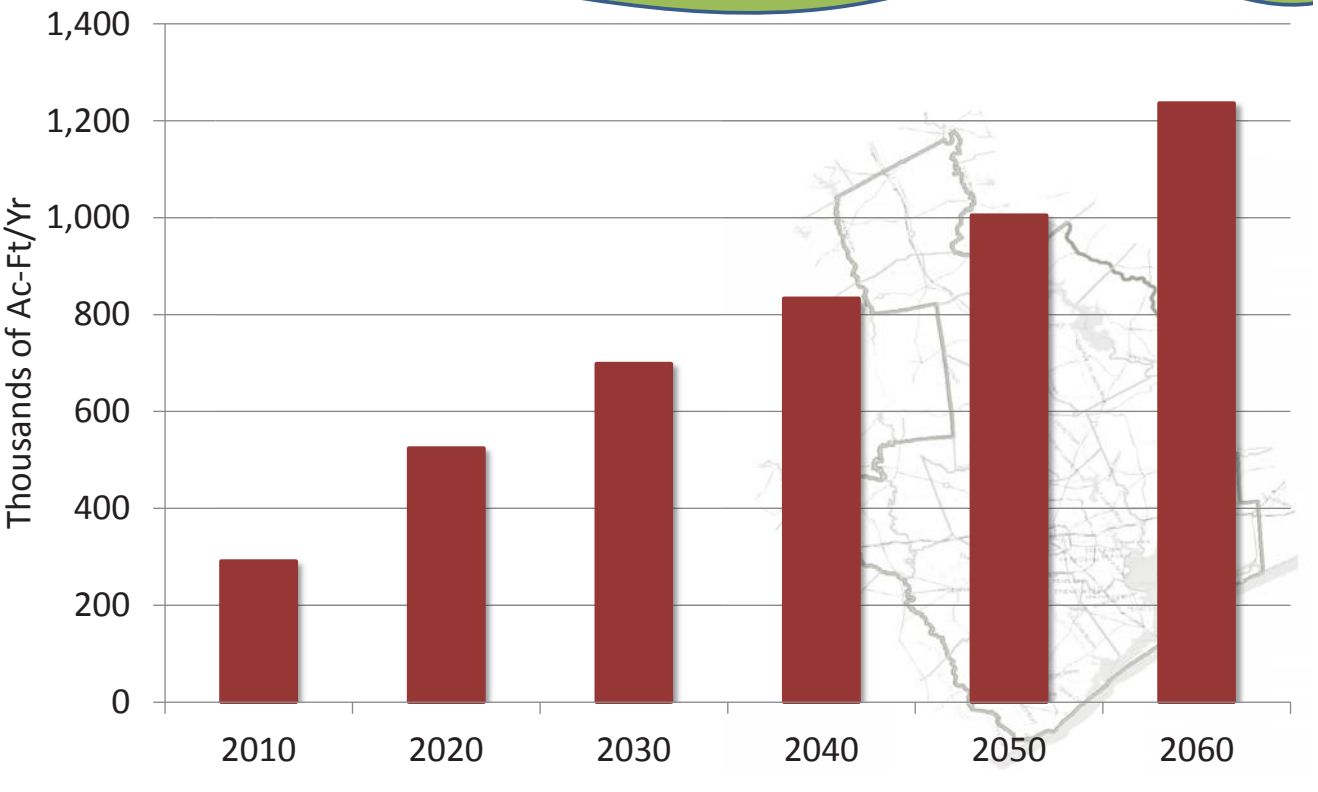
Existing and Projected Water Supplies



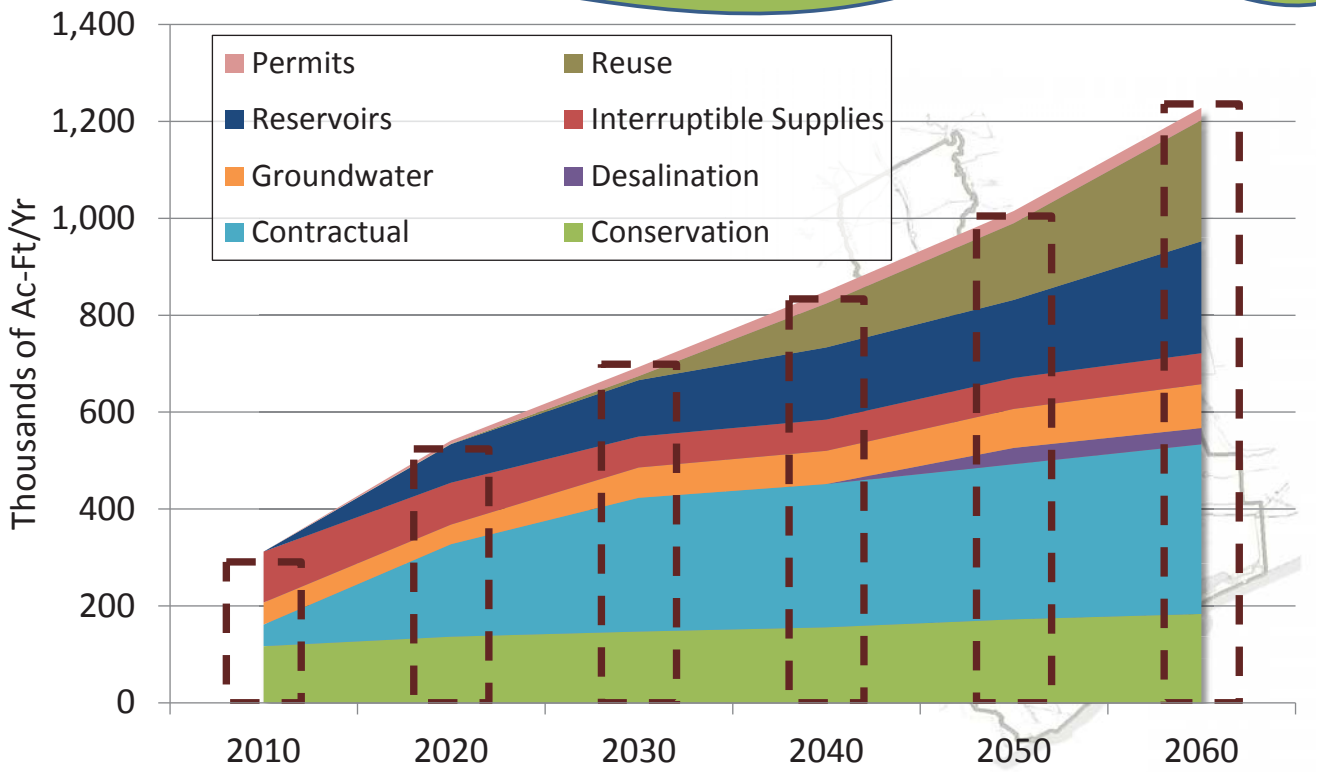
Supplies vs Demands



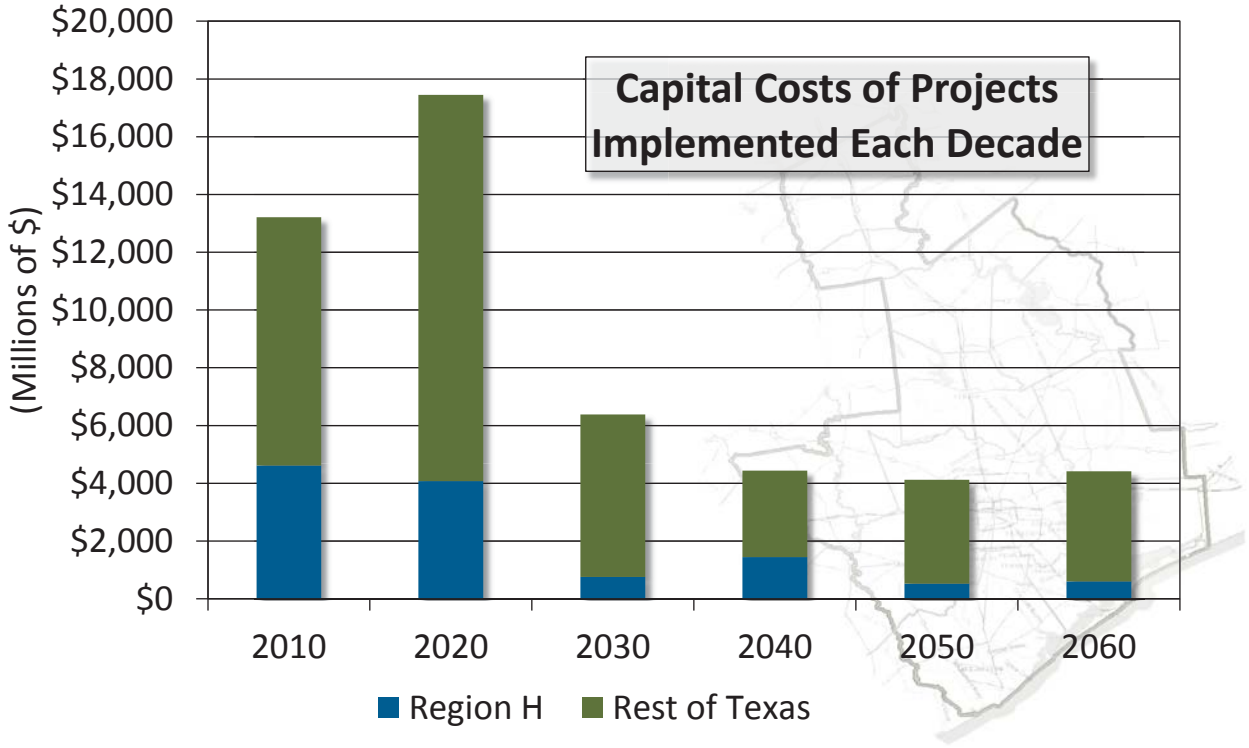
Projected Shortages



Proposed Management Strategies



Costs for Strategies



RECOMMENDATIONS

Legislative Recommendations

Interbasin Transfers

- Remove barriers to interbasin transfers

Bay and Estuary Programs

- Increase funding for programs, additional monitoring, and research.

Groundwater

- Support rule of capture for areas outside of regulatory jurisdiction
- Support development of GCDs and their continued study of groundwater resources
- Continue funding of Groundwater Availability Modeling program

Legislative Recommendations

Funding

- Establish funding mechanisms for projects identified in RWPs
- Fund research of agricultural research for efficient irrigation practices

Conservation

- Implement programs recommended by the Water Conservation Implementation Task Force
- Fund research in advanced conservation technologies

Legislative Recommendations

Reclaimed Water

- Resolve permitting issues for indirect reuse and promote water reclamation statewide

Flood Damage

- Establish flood damage liability limits for reservoirs

Legislative Recommendations

Planning

- Encourage the State Demographer to explore potential population shifts due to emerging technologies
- Continue funding the Regional Water Planning process

Infrastructure Financing Recommendations

- State Participation Program
- State Revolving Fund
- State Loan Program
- Accessibility to Federal Programs for Irrigation Conservation
- Texas Community Development Program

Infrastructure Financing Recommendations

- Small Town Environment Program
- Regional Water Supply and Wastewater Facilities Planning Program
- Support funding of USDA Water and Waste Disposal Loans and Grants
- Rural Water Assistance Fund

Infrastructure Financing Recommendations

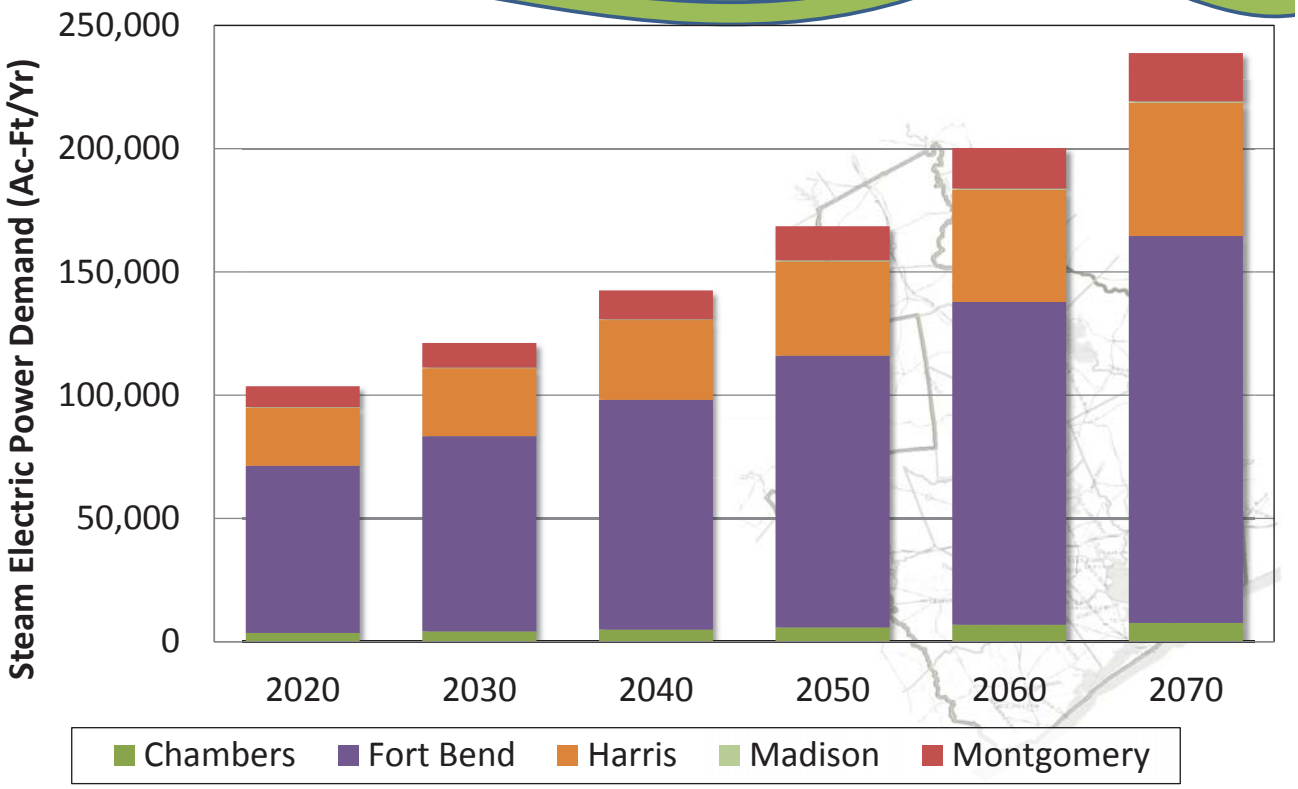
- State and federal programs for desalination
- Increased grants for drought resistant crops and efficient irrigation practices
- Funding for increased USACE participation
- Regional facilities and support through State Participation

Regulatory and Administrative Recommendations

- State and federal programs for desalination
- Increased grants for drought resistant crops and efficient irrigation practices
- Increased USACE participation
- Regional facilities and support through State Participation

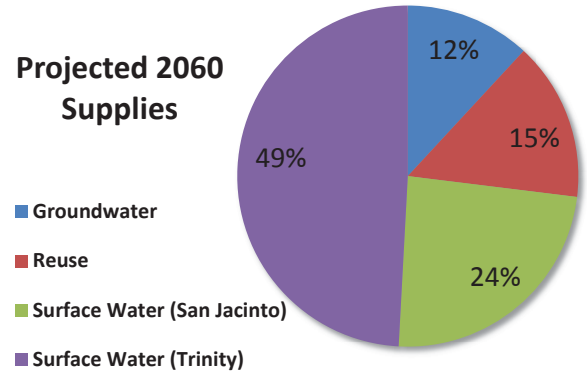
TRENDS IN THE ENERGY, INDUSTRIAL, AND OIL AND GAS SECTORS

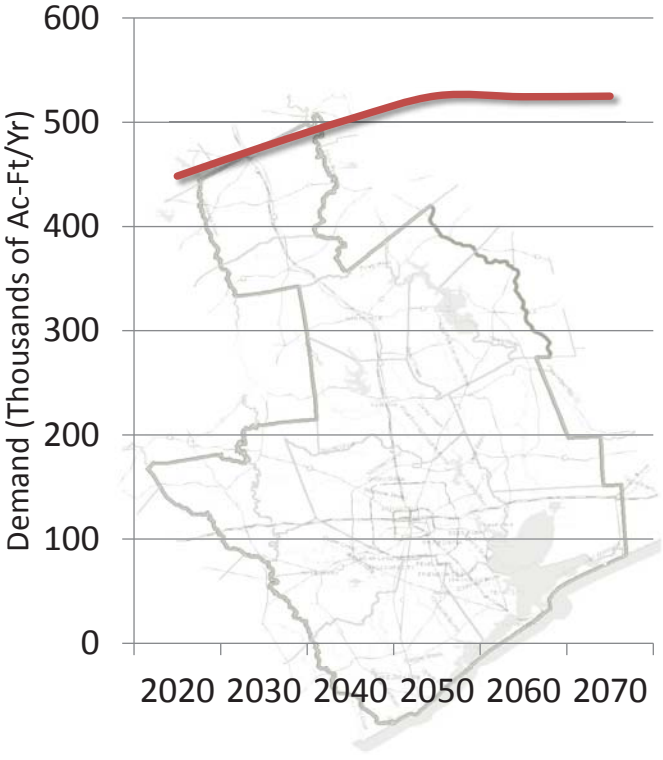
Steam Electric Demands in Region H



Harris County Industrial Demands

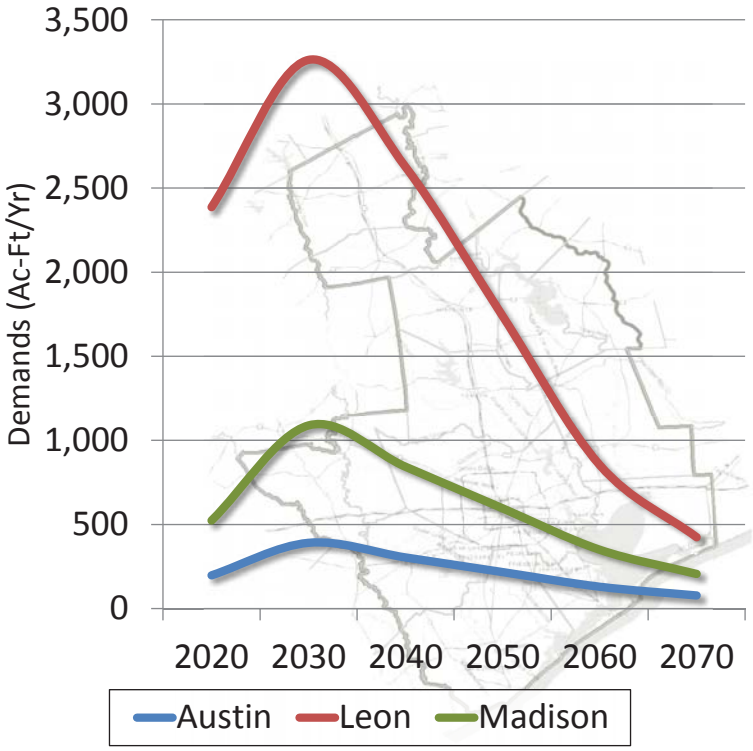
- Continued growth
- Anticipate increasing conservation over time





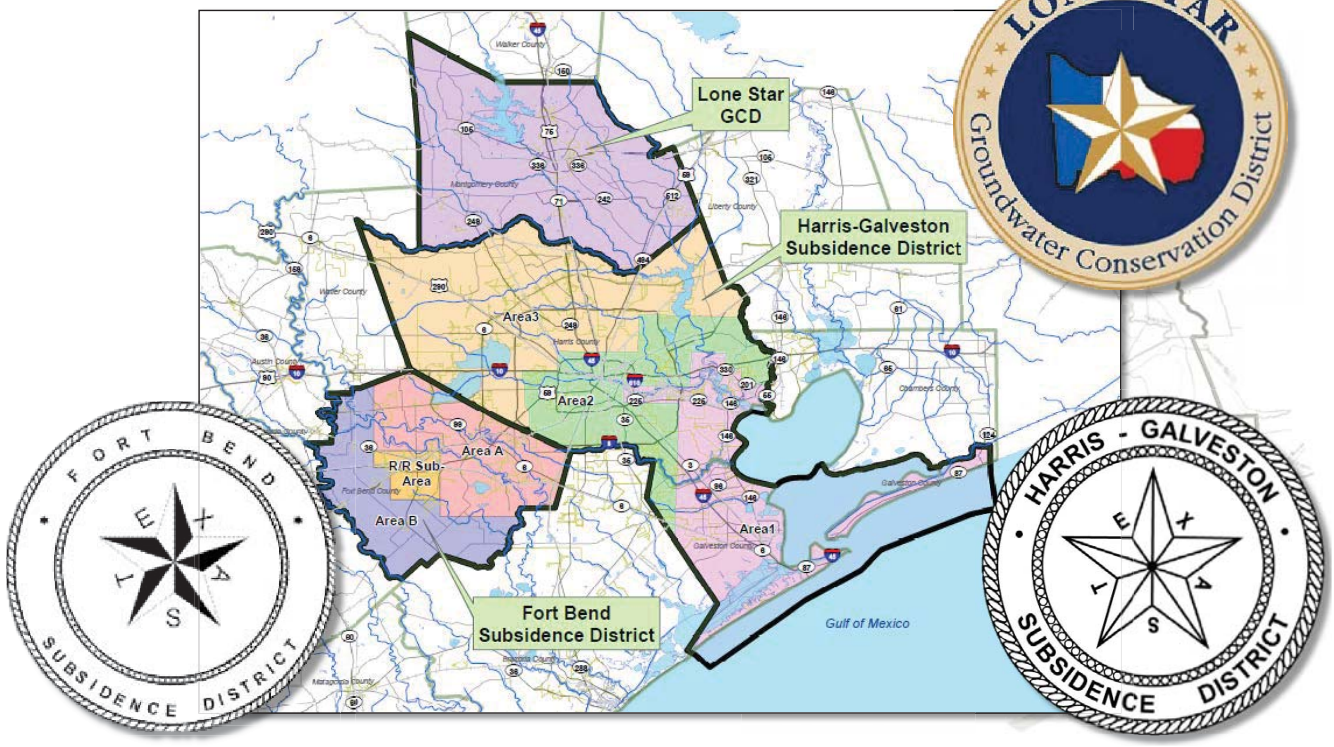
Oil and Gas Exploration

- Mining demands contain oil and gas exploration
- Three counties in region impacted by Eagle Ford Shale
- Pronounced impacts in near term
- ≈0.2% of regional demand

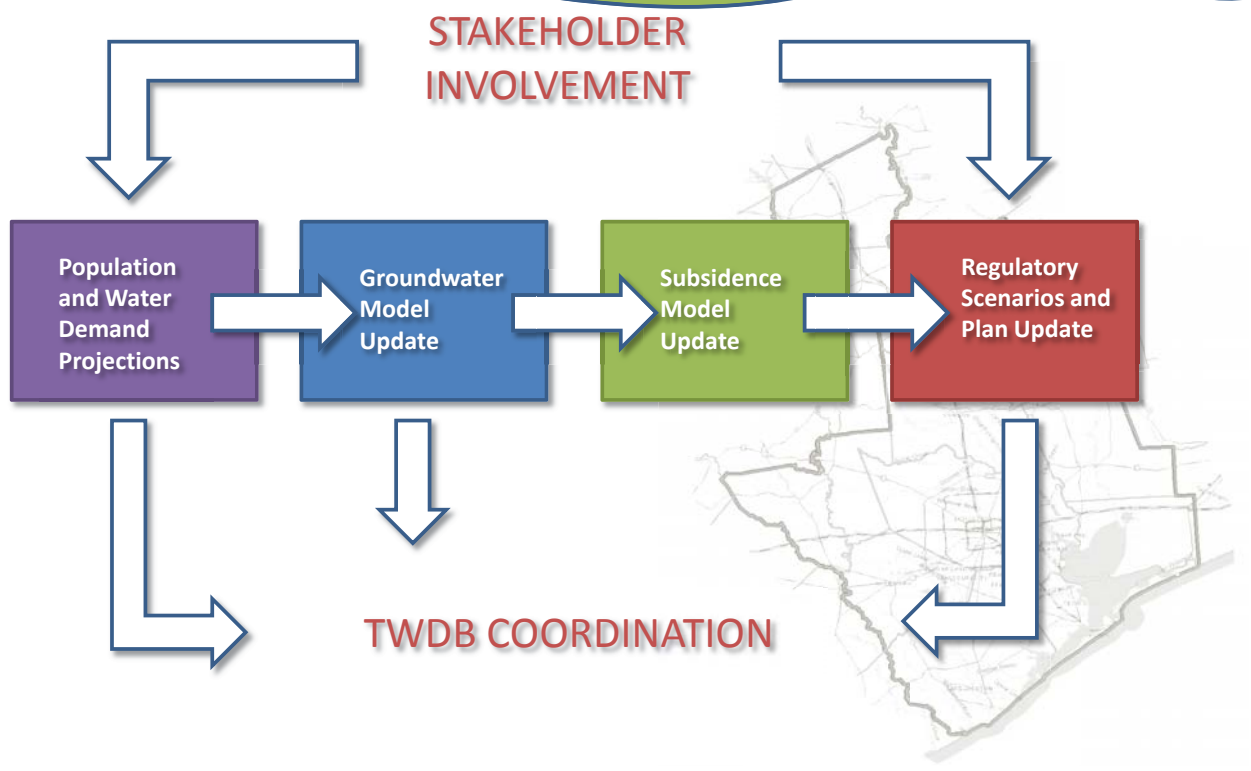


LOOKING FORWARD:
THE 2016 PLAN

Regional Groundwater Update

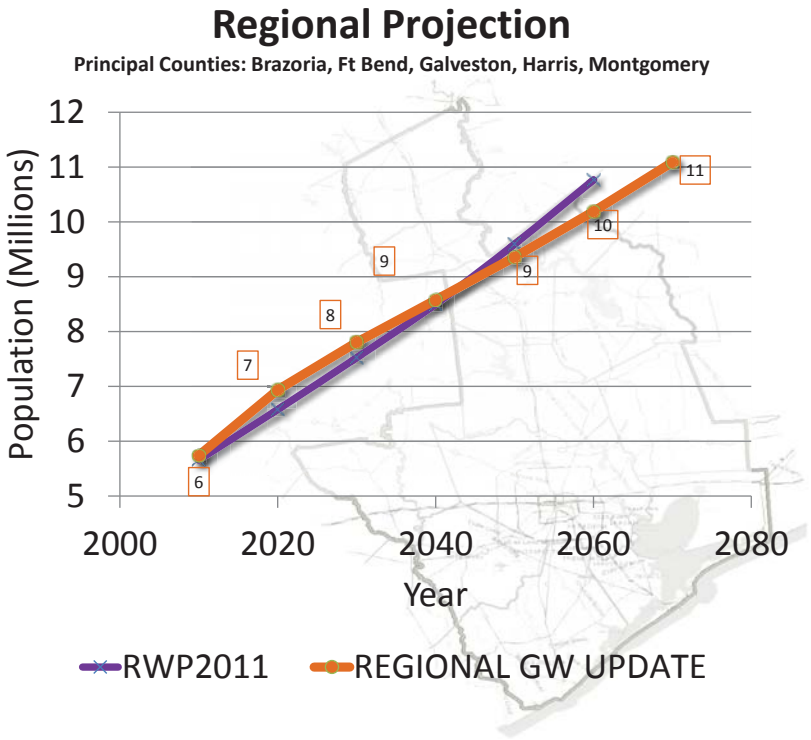


Regional Groundwater Update Project Components



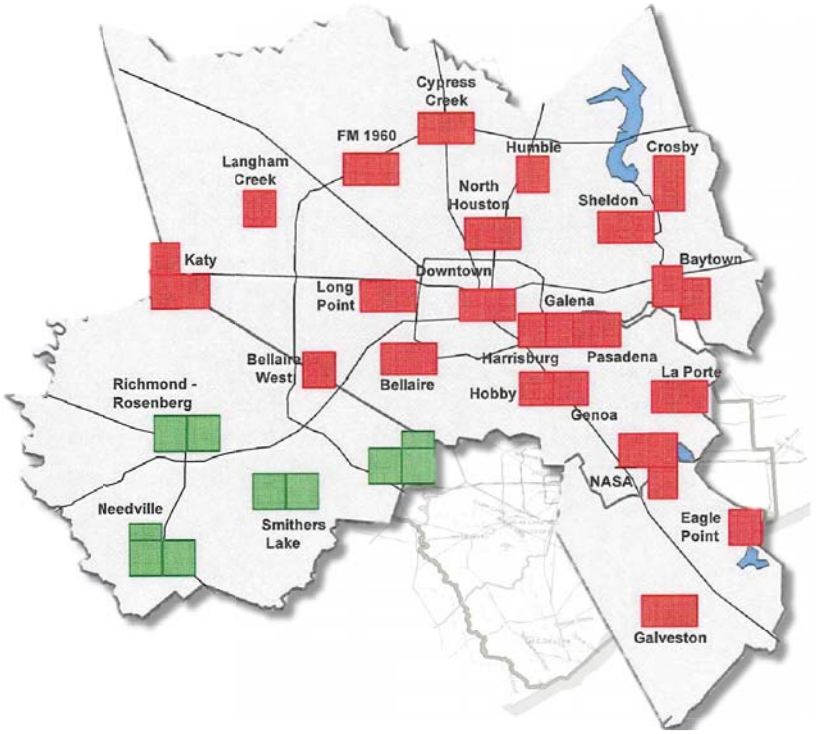
Completed Activities

- Population Projections
- Water Demand Projections



Completed Activities

- Groundwater Model Development
- Subsidence Model Development



Task 4D Schedule Acceleration: Priority WMS

- Allens Creek Reservoir
- Regional Return Flows
- Houston Indirect Reuse
- Brackish Groundwater Desalination
- Montgomery County Reservoir

Allens Creek Reservoir

Description (2011 RWP)

Type:	Reservoir
Yield:	99,650 ac-ft
Basin:	Brazos
Cap. Cost:	$223 mil.
Unit Cost:	$168/ac-ft

Scope and Budget

- Update yield and costs
- Document required permitting
- Identify needs for project
- Coordinate with sponsors & potential stakeholders
- Revise expected start date if needed

Regional Return Flows

Description

Type:	Reuse
Yield:	TBD
Basin:	San Jacinto
Cap. Cost:	TBD
Unit Cost:	TBD

Scope and Budget

- Identify facilities and obtain discharge data
- Estimate current and future flow
- Consider impacts of other reuse projects
- Coordinate with sponsors & potential stakeholders
- Assess needs, uses, costs and recommend volume

Houston Indirect Reuse

Description (2011 RWP)

Type:	Reuse
Yield:	160,000 ac-ft
Basin:	San Jacinto
Cap. Cost:	Var. by WUG
Unit Cost:	$402+/ac-ft

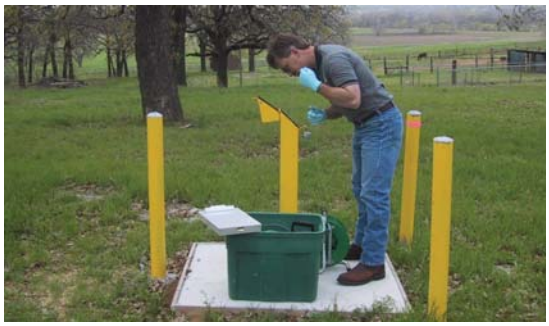
Scope and Budget

- Identify, map, and quantify discharges & COH coord.
- Characterize potential diversion locations
- Determine available DOR supplies
- Determine suitability for target WUGS
- Identify infrastructure needs and estimate cost

Brackish Groundwater Desalination

Description

Type:	Groundwater
Yield:	TBD
Basin:	TBD
Cap. Cost:	TBD
Unit Cost:	TBD



Scope and Budget

- Identify formations and collect data
- Develop estimates of potential favorable areas
- Compare potential areas with locations of needs
- Develop cost estimates

Montgomery County Reservoir

Description

Type:	Reservoir
Yield:	TBD
Basin:	San Jacinto
Cap. Cost:	TBD
Unit Cost:	TBD

Scope and Budget

- Identify potential location and delineate catchment
- Develop reservoir shape parameters
- Evaluate DOR supply availability and estimated storage trends
- Develop cost estimates

Water Planning in Texas

Impact of Drought…

- Planners plan whether it is wet or dry
- But drought in Texas has historically driven major initiatives in funding and construction

Thank you!

http://www.regionhwater.org