


The Role of Water Reuse in Texas

3rd Lone Star Water Summit
December 12, 2014
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Texas Water 
Development Board



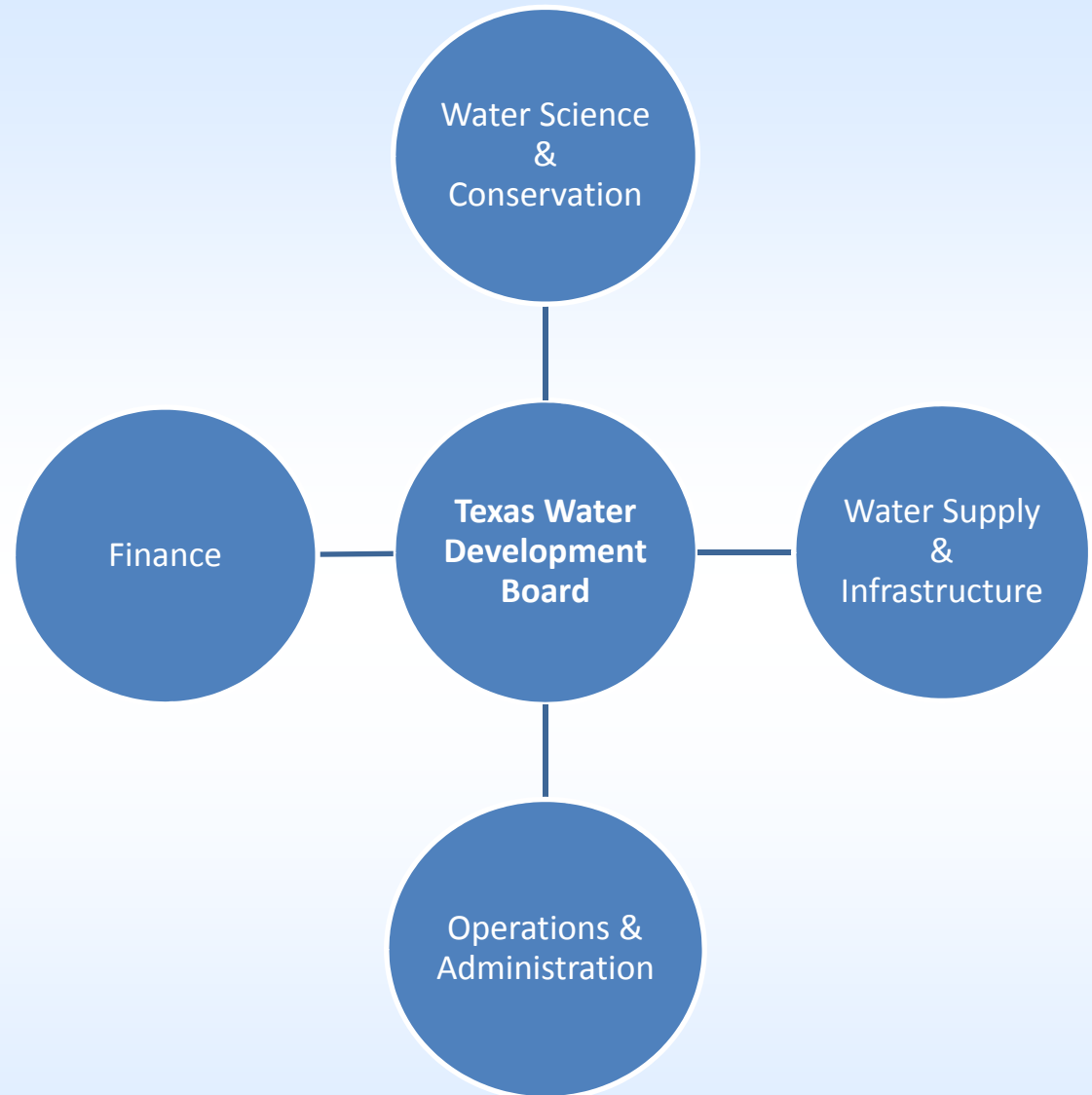
The following presentation is based upon professional research and analysis within the scope of the Texas Water Development Board's statutory responsibilities and priorities but, unless specifically noted, does not necessarily reflect official Board positions or decisions.

Mission

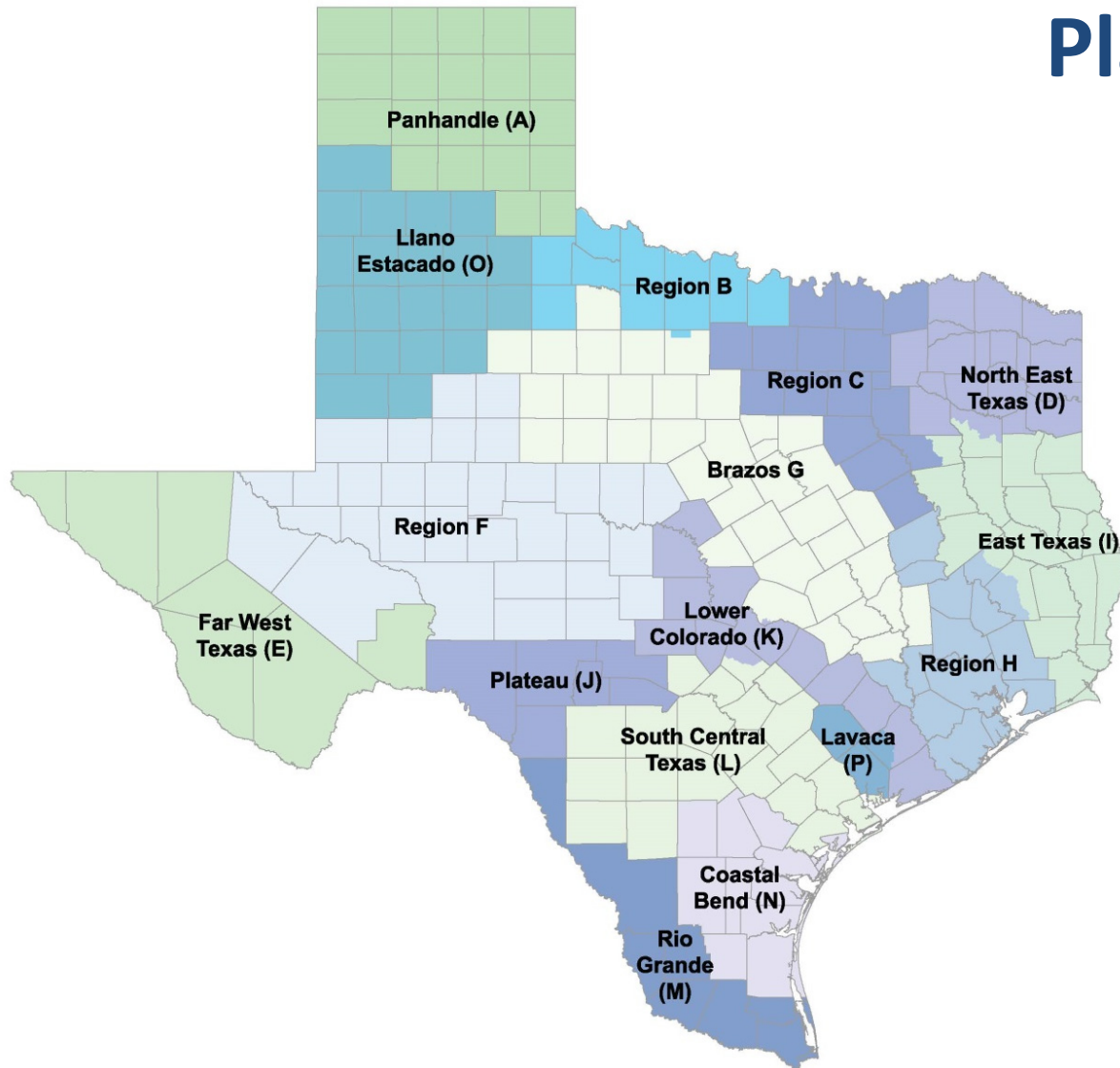
To provide

- Leadership,
- Information,
- Education, and
- Support for planning, financial assistance, and outreach

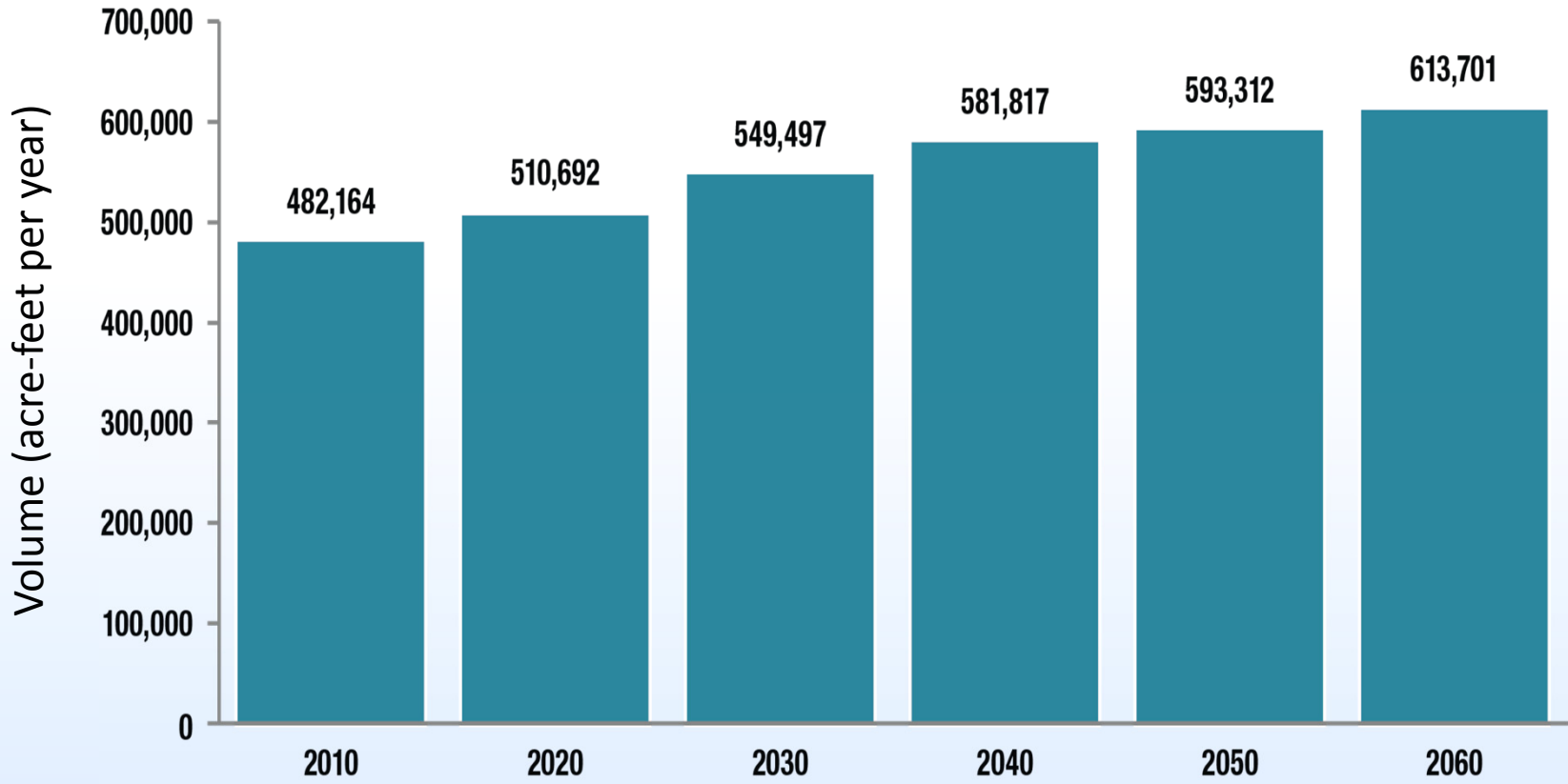
for the conservation and responsible development of water for Texas.



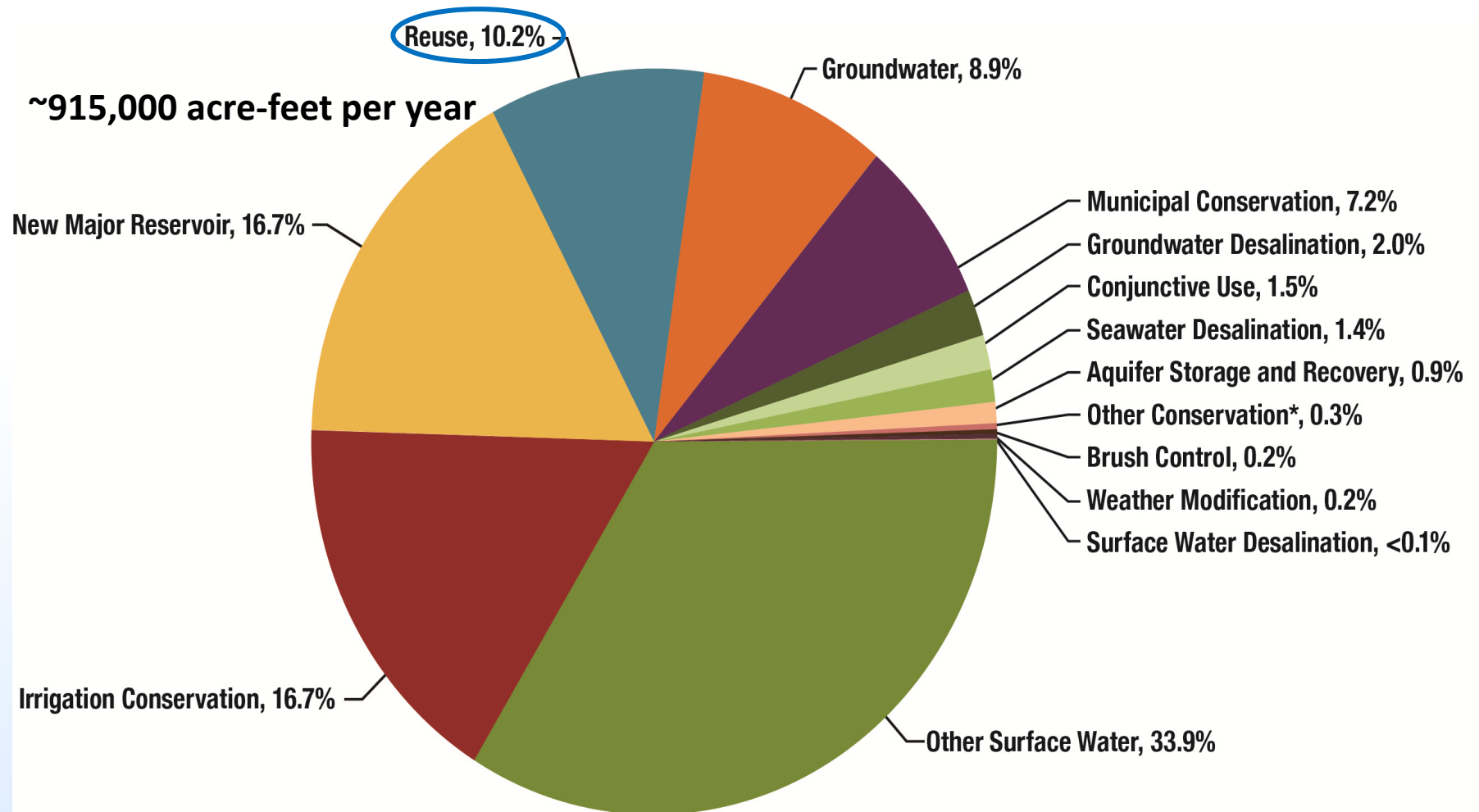
Regional Water Planning Areas



Projected Existing Water Supplies by 2060



Recommended Water Management Strategies by 2060

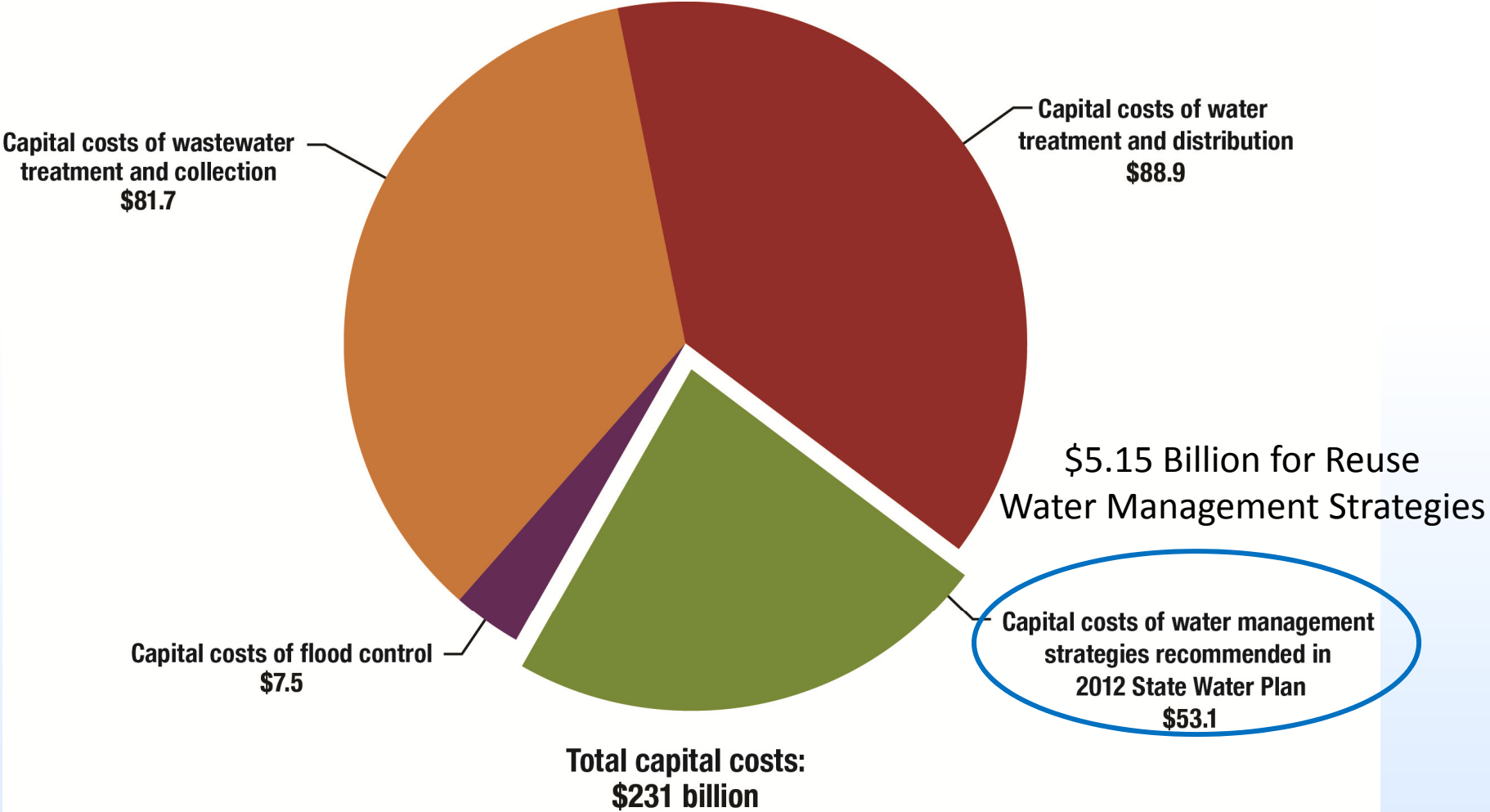




Reuse - Recommended Water Management Strategy

- 12 regional water planning groups (except A,D, J, and P) have reuse as recommended water management strategy
- 4 regional water planning groups have reuse as an alternative water management strategy
- Region H, largest volume (282,274 acre-feet per year) of reuse planned by 2060

Capital Costs

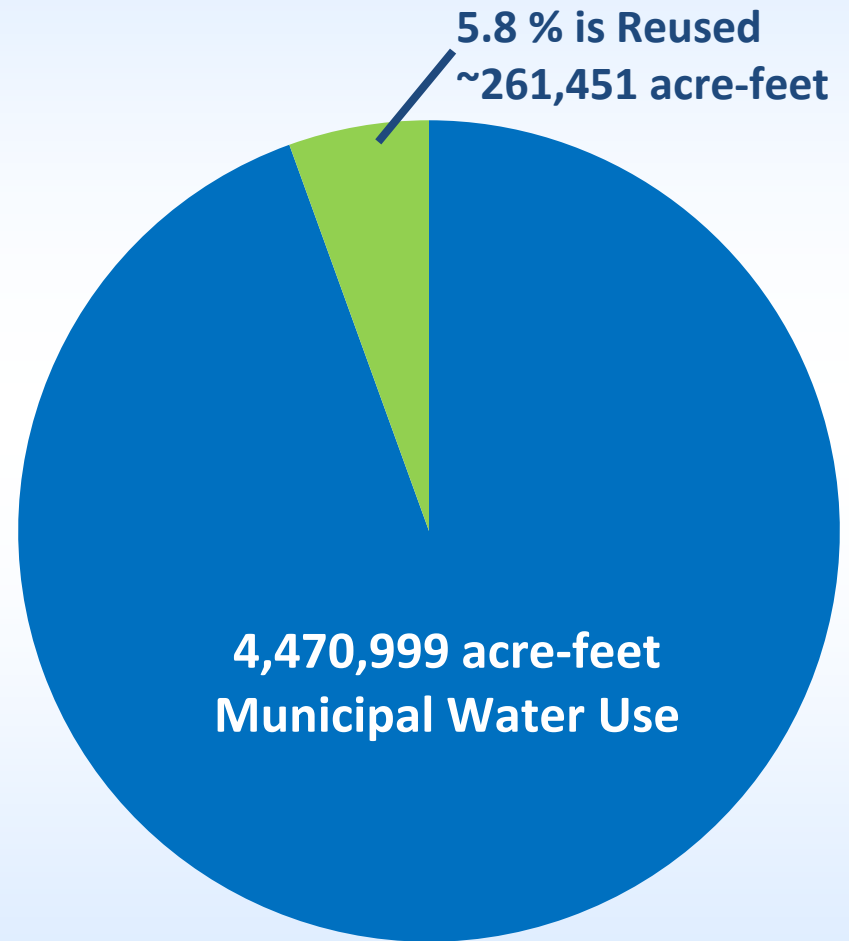
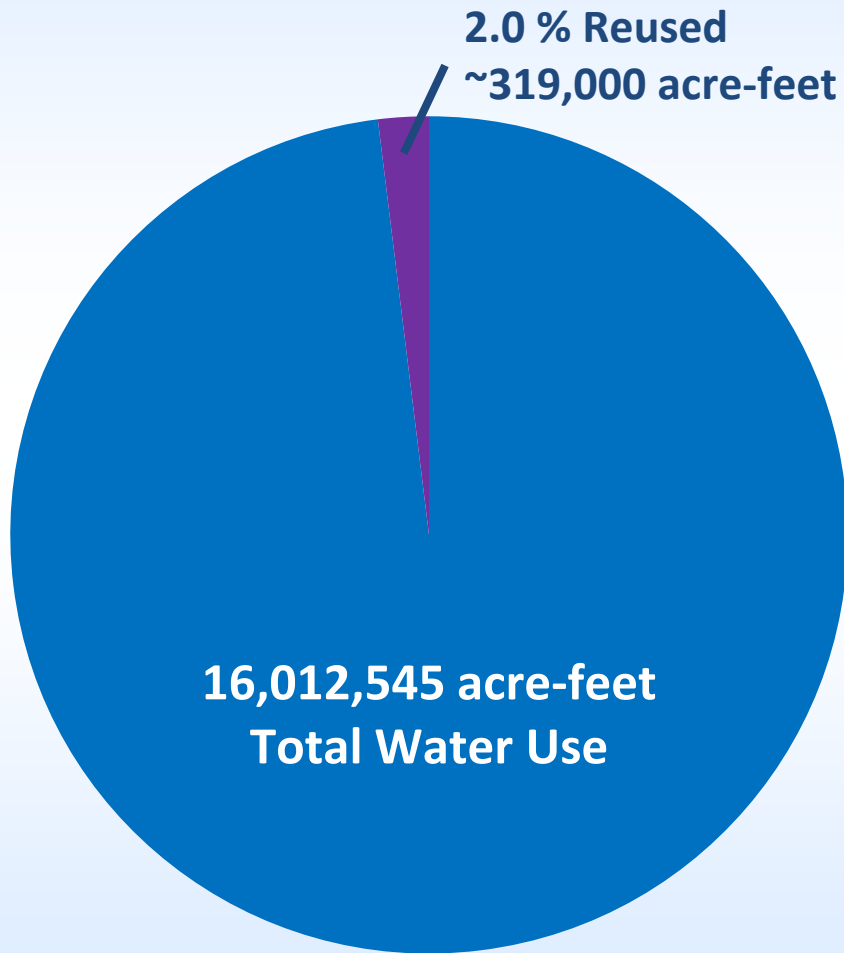




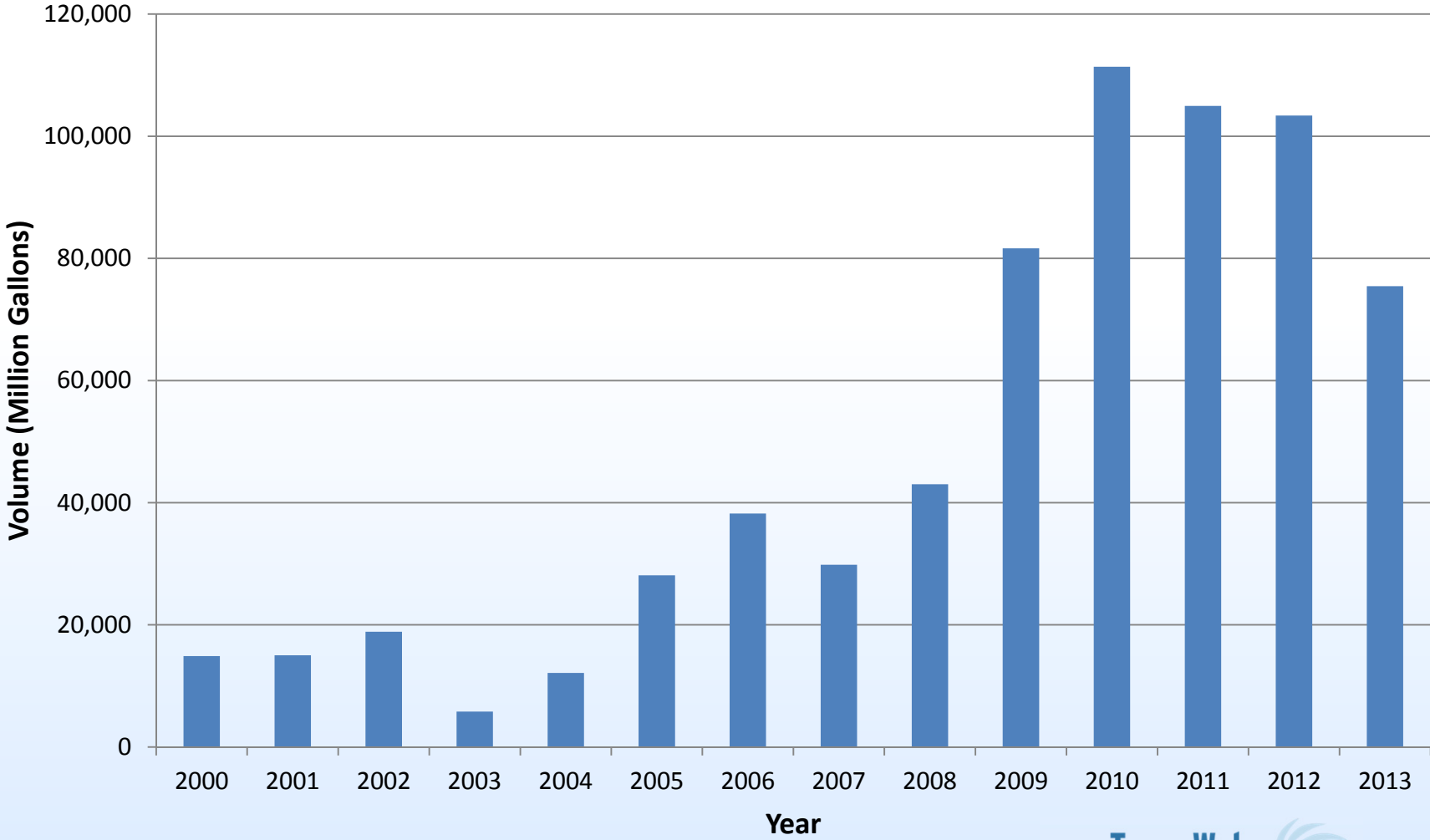
Water Use Survey

- Conducted annually by water use survey team
- Two surveys types: Municipal and Industrial
- Survey ~4,500 municipal and 2,500 industrial
- <http://www.twdb.state.tx.us/waterplanning/waterusesurvey/index.asp>

2012 Water Usage in Texas

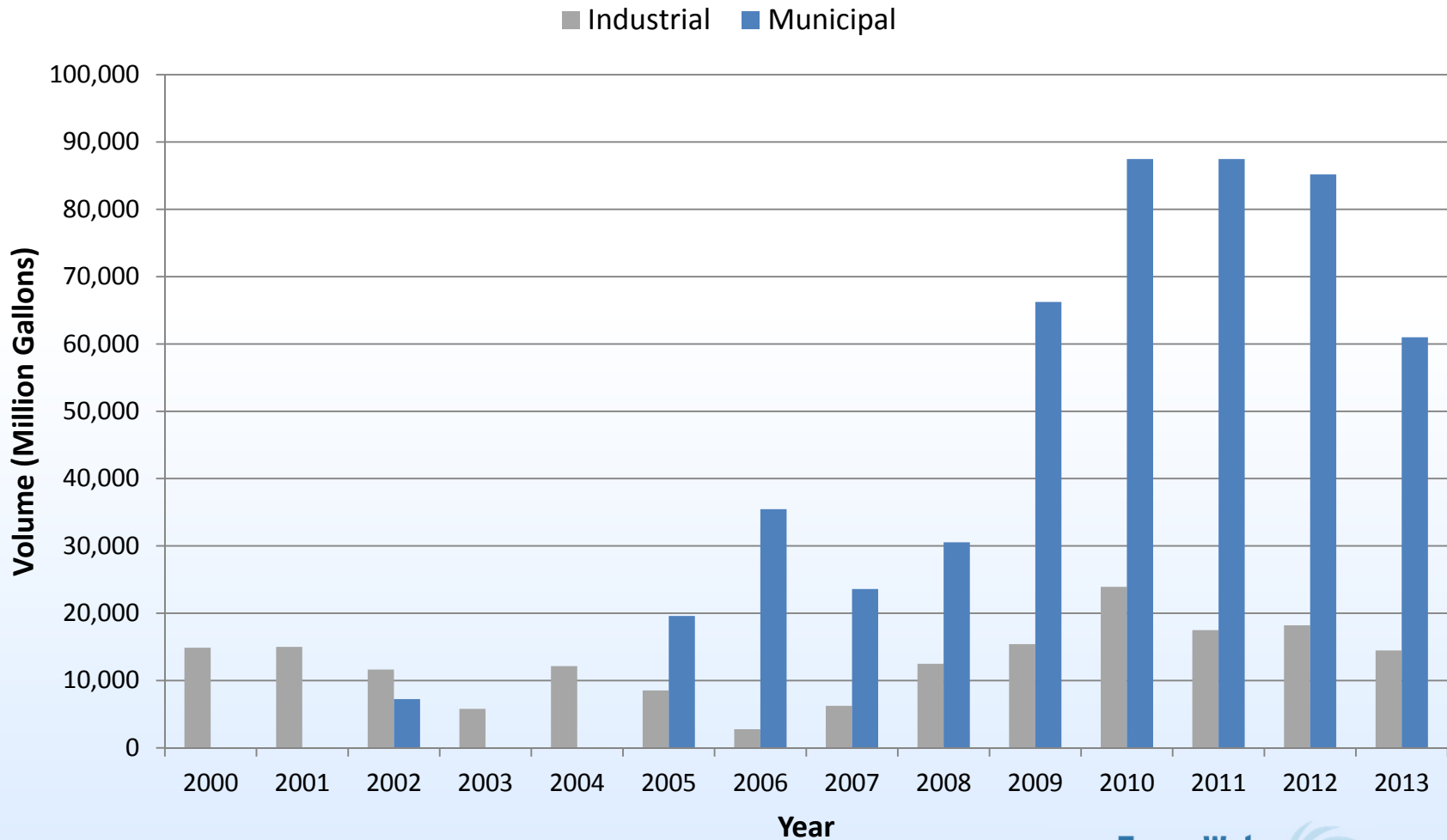


Reuse in Texas

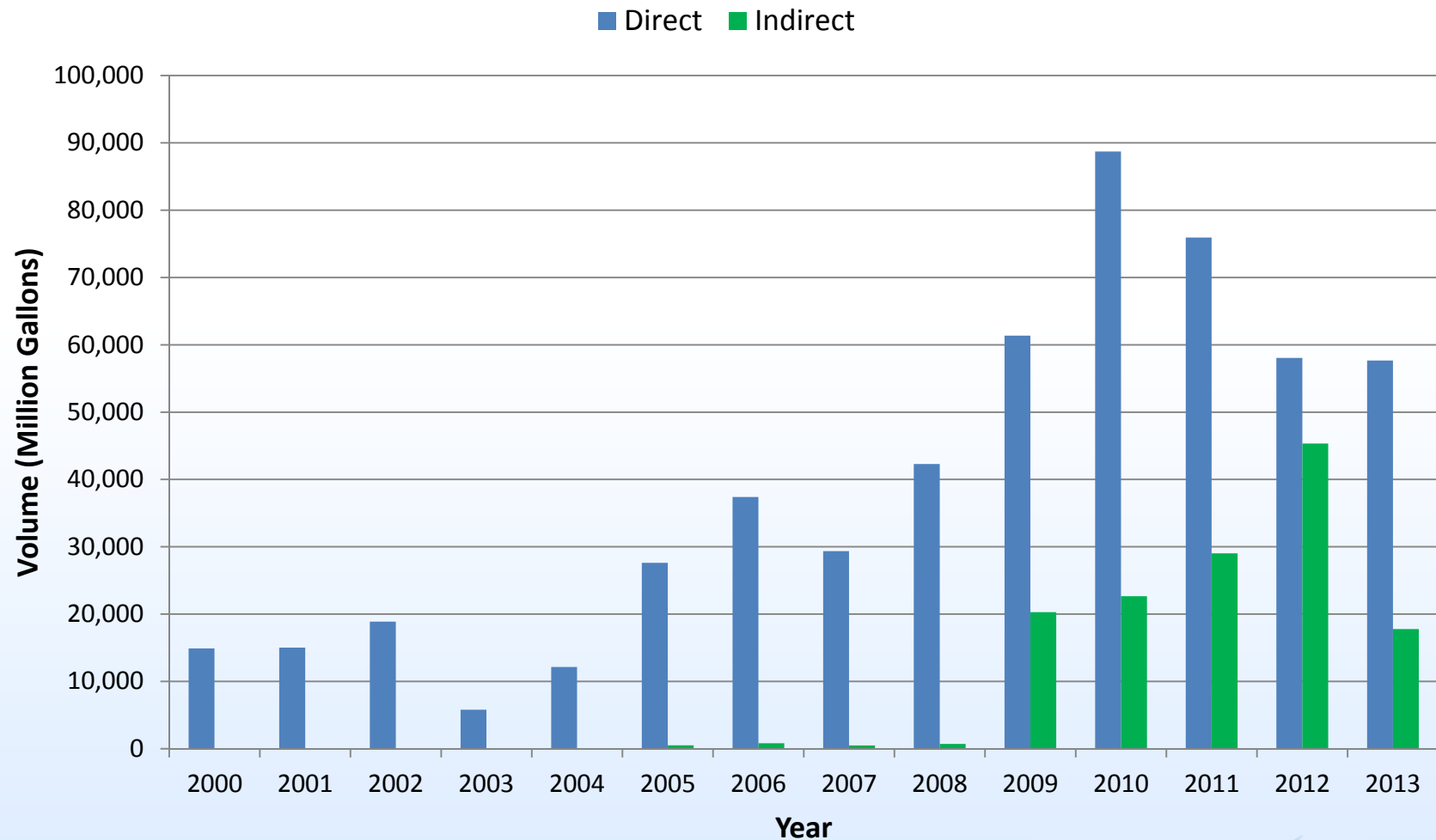


2013 Water Use Survey

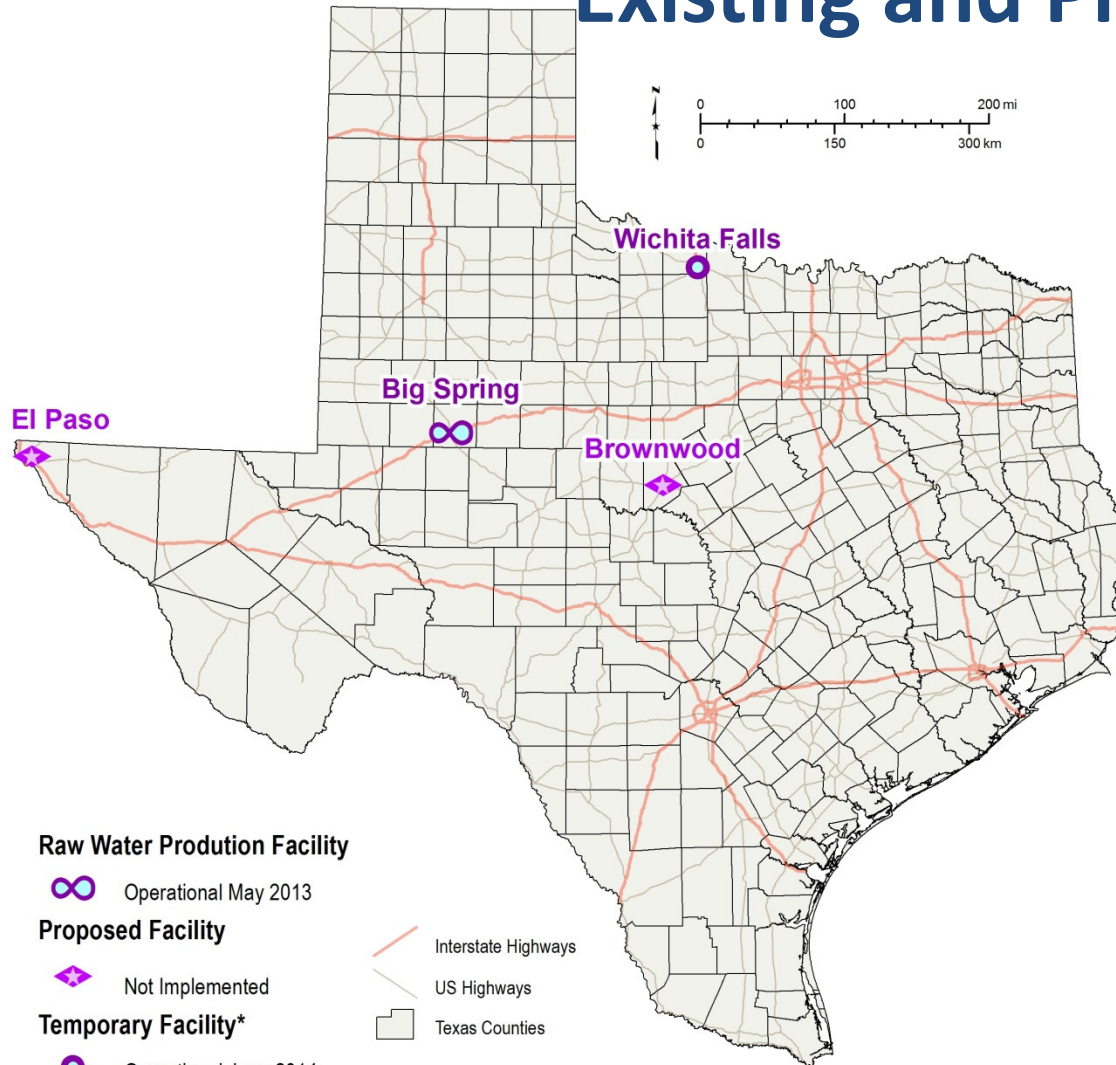
Type of System: Industrial and Municipal



Type of Reuse: Direct and Indirect



Direct Potable Water Reuse Existing and Proposed Facilities



Raw Water Production Facility

∞ Operational May 2013

Proposed Facility

◆ Not Implemented

Temporary Facility*

○ Operational June 2014

— Interstate Highways
— US Highways
□ Texas Counties

*Direct Potable Reuse Water Treatment Plant permitted for a period of 6 months



Project Updates Direct Potable Reuse

- Raw Water Production Facility in Big Spring
 - Operating since May 2013
- Direct Potable Reuse Project in Wichita Falls
 - Operating since July 2014 (emergency project)
- Advanced Purified Water Treatment in El Paso
 - Preparing a piloting protocol
- Direct potable reuse project in Brownwood
 - Awaiting city council approval

Project Updates

Potable reuse

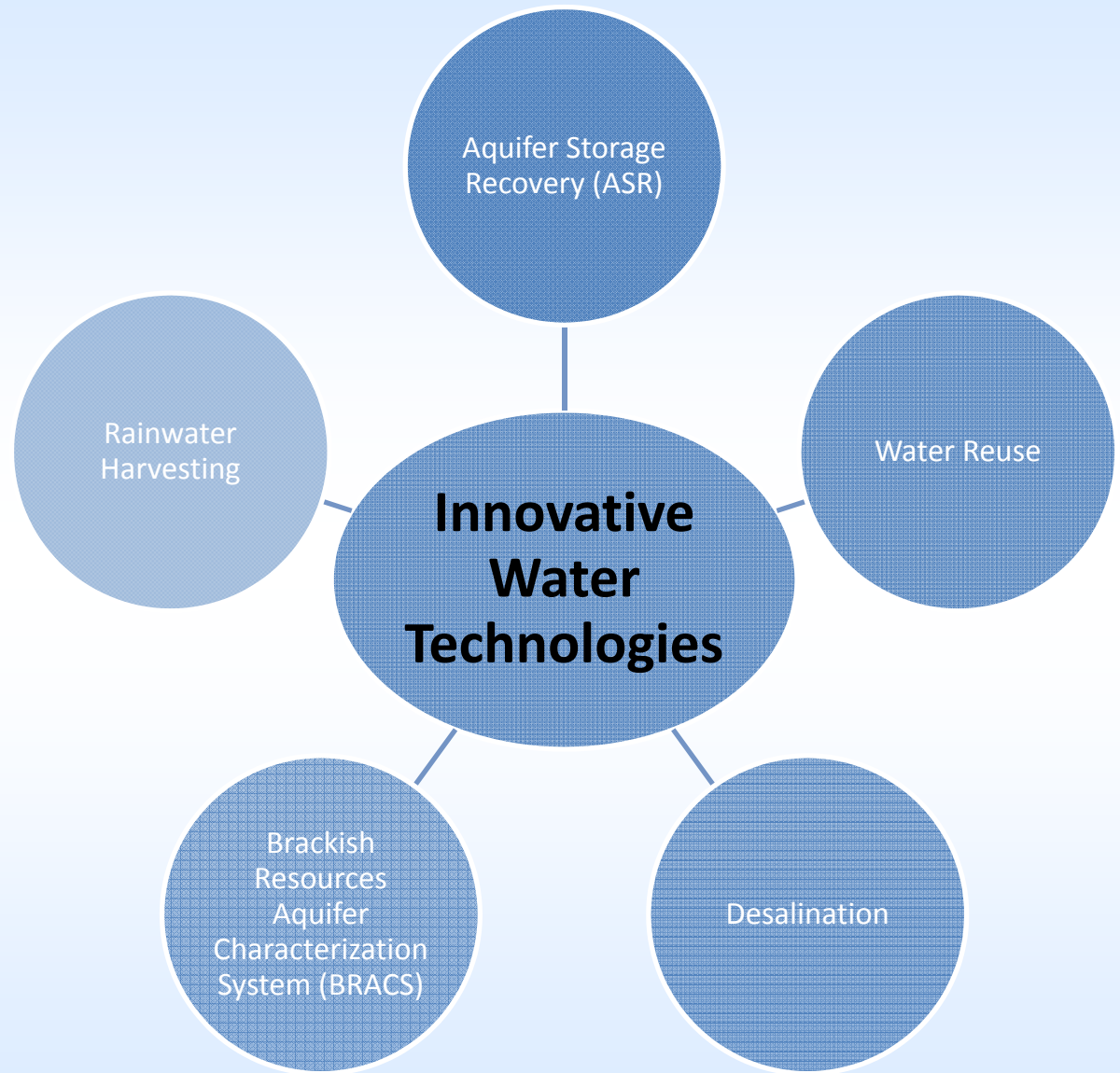
- Laguna Madre Water District
 - Completed feasibility study for direct potable reuse
- San Angelo
 - Conducting a feasibility study for direct potable reuse
- Wichita Falls
 - Obtained permits for Lake Arrowhead indirect project

Mission

To provide

- *research,*
- *develop, and*
- *disseminate information*

to advance the development of innovative water management strategies in Texas



<http://www.twdb.state.tx.us/iwt/>

Water Reuse Research

Evaluating the Potential for Direct Potable Reuse

- Contaminants of Concern
- Water quality performance targets
- Water quality characterization
- Source control
- Treatment technologies
- Environmental buffers
- Quantitative relative risk assessment
- Pilot protocols
- Regulatory summary
- Public awareness and outreach



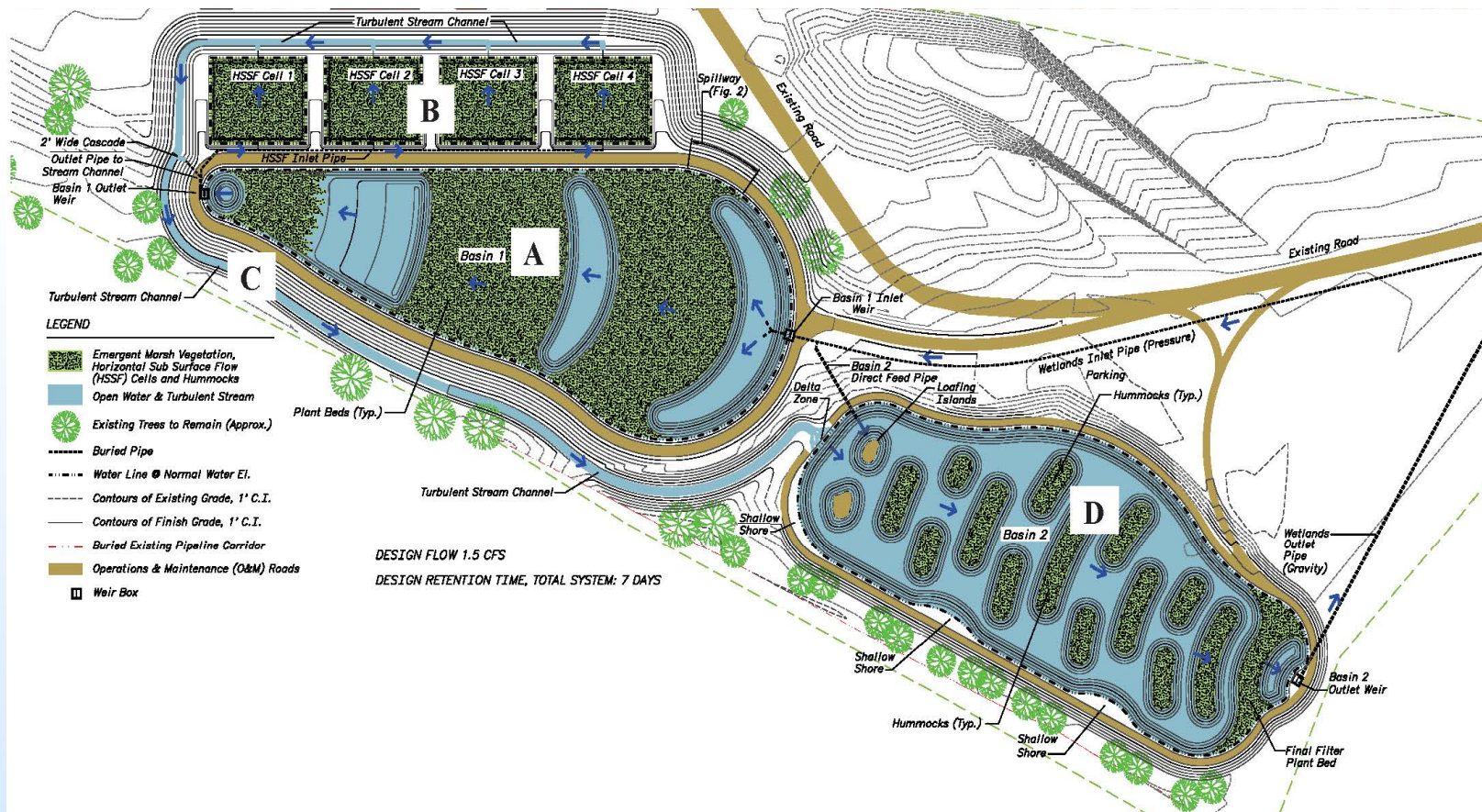
Testing Water Quality in a Municipal Wastewater Effluent Treated to Drinking Water Standards

- Quarterly sampling
 - Chemicals of Emerging Concern
 - Microbial pathogens
- Develop correlations for surrogates compounds
- Guidance document for monitoring at direct potable reuse facilities



Brazos River Demonstration Wetland

- Engineered wetland constructed in Waco, Texas to evaluate how endocrine disrupting compounds can be reduced from treated wastewater effluent.



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Innovative Water Technologies

<http://www.twdb.texas.gov/innovativewater/reuse/index.asp>

Texas Water Development Board

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