

# “Water is for Fighting Over”

## *Building Resiliency in Water Resource Management for Galveston*

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Living on the Edge: Managing Change through Innovation

October 22, 2015

# Building Resiliency in Water Resource Management For Galveston

## *Availability of a clean water supply*

- *Clean, productive aquifers*
- *Adequate river flow*
- *Working, efficient infrastructure*

## *Health of watersheds*

- *Balance of fresh and recycled water*
- *Prevention of saltwater intrusions, mineral and bacterial imbalances*

## *Health of coastal ecosystems*

- *Stable wetlands*
- *Appropriate salinity in the bays*
- *Minimal impact on wildlife*

# Issues

## Complex Regulations and Policies

- Myriad of Water Management Entities
- Differing Water Rights Policies and Laws
- International Water Disputes

## Infrastructure

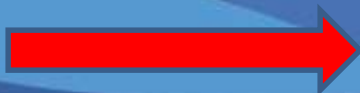
- Aging/Antiquated
- Inadequate for population growth in targeted areas

## Supply and Demand

- Shrinking Aquifers
- Excess Groundwater Withdrawal
- Surface Water Totally Allocated
- Instream vs Environmental Flows

# Technologies, Strategies and Solutions

- Regulations and Policies
  - Texas State Water Plan
  - SWIFT and \$2B Initial Funding
  - Legislative Solutions to Create Market Mechanisms (Commoditization)
  - Instream and Environmental Flows
  - Watermaster Program to Police Water Use
- Infrastructure
  - Interbasin Transfers of Water
  - Infrastructure Upgrades
  - Reservoir Evaporation Prevention using Polymer Film
  - Construction of Small, Targeted-Use Reservoirs
- Management of Supply and Demand
  - Brackish and Seawater Desalination
  - Aquifer Storage/Recovery and Recharge
  - Individual, Industrial and Commercial Conservation
  - Water Reuse and Recycling
  - Irrigation/Agriculture Technologies



**ONE SIZE DOES NOT FIT ALL!**

# Texas State Water Planning



# Texas Legislative Actions on Water

## 83<sup>rd</sup> Legislative Session (2013) – “The Water Session”

- State Water Implementation Fund for Texas (SWIFT) created and seeded with \$2 Billion (approved by voters in November 2013)
- A low-interest, revolving loan fund, should provide up to \$26B in funding for projects in current water plan
- \$3.9 Billion allocated to approved projects from Texas State Water Plan in July 2015
  - \$1B to be distributed by the end of 2015
  - \$2.9B over next decade
  - Allocations include almost \$2B for Harris County interbasin transfer project



# Texas Legislative Actions on Water

## 84Th Legislative Session (2015) – “Study Sessions”

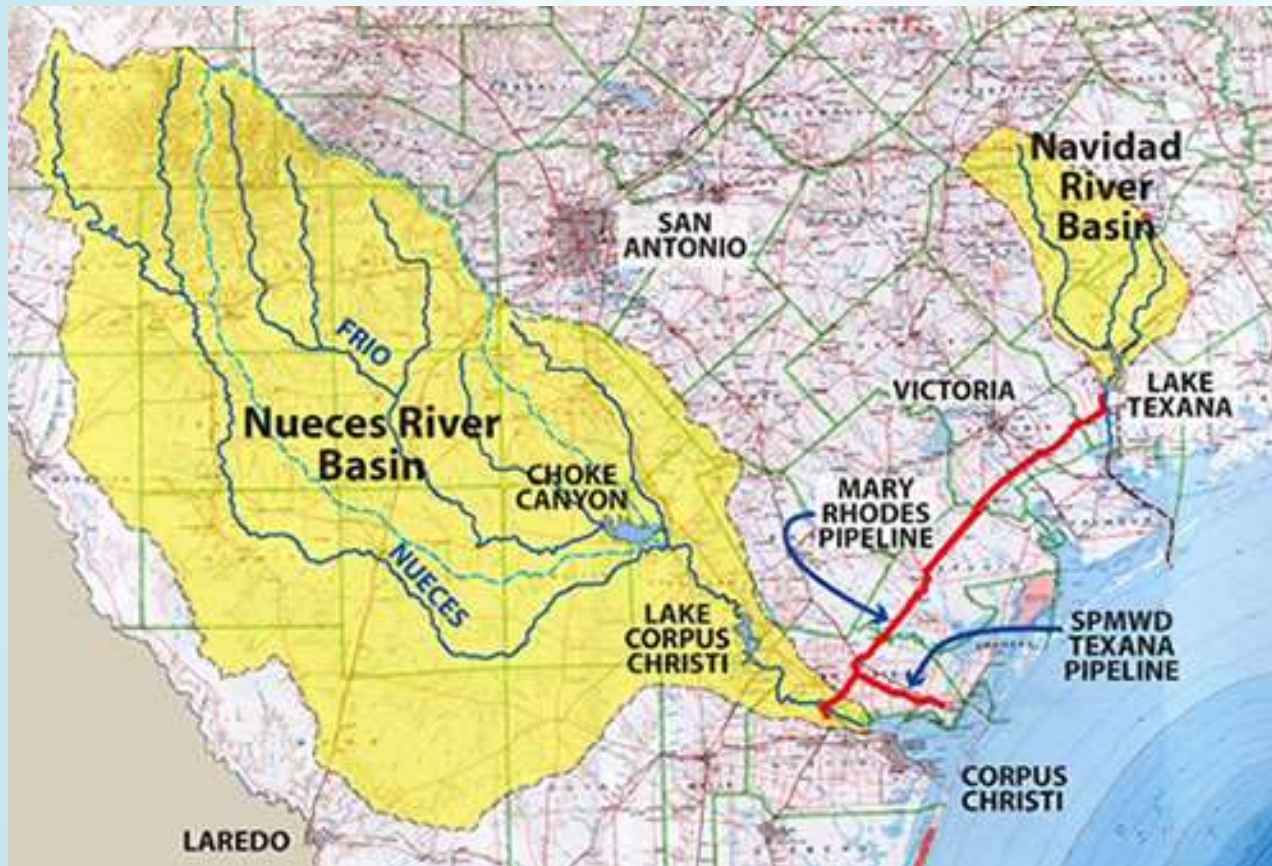
### Study Desalination

- Both brackish water and seawater
- Energy sources, disposal sources
- Regulatory needs

### Study Commoditization (HB 3298)

- Development of a market and conveyance network for water in this state
- Reallocation of water entitlements from one water user to another
- Conveyance of water from one geographic location to another
- Creation of an integrated network of both natural and constructed infrastructure

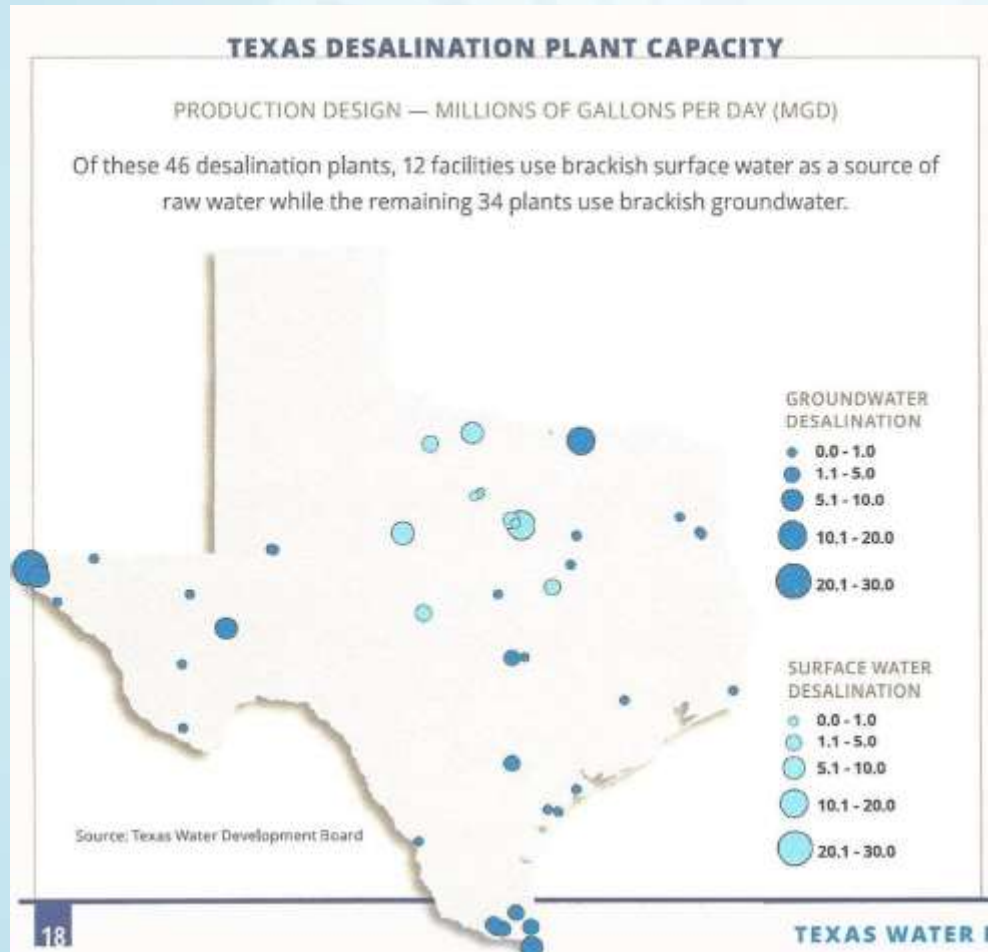
# Interbasin Transfers of Water



The Mary Rhodes Pipeline 101 miles (Phase I)  
Colorado River 41-mile Mary Rhodes (Phase 2)  
**TOTAL 142 mile pipeline**



# Desalination Plants in Texas



- There are 46 desalination plants currently operating in Texas
- None supplies 100% of the need

# Our Water Future Requires Social Change

- Water Paradigms: Lost
  - Reservoir Construction
  - Groundwater Withdrawal
  - River Flow
- Water Paradigms: Found
  - **Desalination**
  - **Commoditization**
  - **Innovation**
  - **Conservation**



We need to determine how to put a “TRUE” value on water.



We need to create legislation, policies, management entities that align to the future.



We need to address water issues on global, country and local levels.

# Questions?

