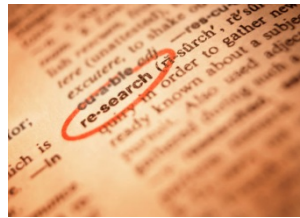
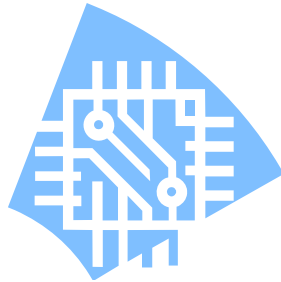


With Drought Comes Opportunity...



Robert E. Mace, Ph.D., P.G.

Texas Water Development Board

presented to

Water Forum III: Drought and Other Extreme Weather Events

hosted by

Center for Integrated Earth System Science

October 14, 2013

METRO & STATE, B1
COOLER HEADS PREVAIL
Temperatures dip as the stages heat up at ACL Music Fest

TRAVEL
8 things you'll love about Mexico City

A of n
raime

Austin American Statesman

Breaking news at statesman.com

TEXAS IN DROUGHT WATER SUPPLY

Sunday, October 6, 2013

STATESMAN
IN-DEPTH
CHECKPOINTS

Vehicle checks draw scrutiny

Critics question intent, legality of roadblocks by DPS in border areas.

By **Jeremy Schwartz**
jschwartz@statesman.com

When it announced last month it would begin stopping motorists at randomly placed roadblocks throughout the Rio Grande Valley, the Department of Public Safety, the roadways safety as it conducting its first checkpoints in two



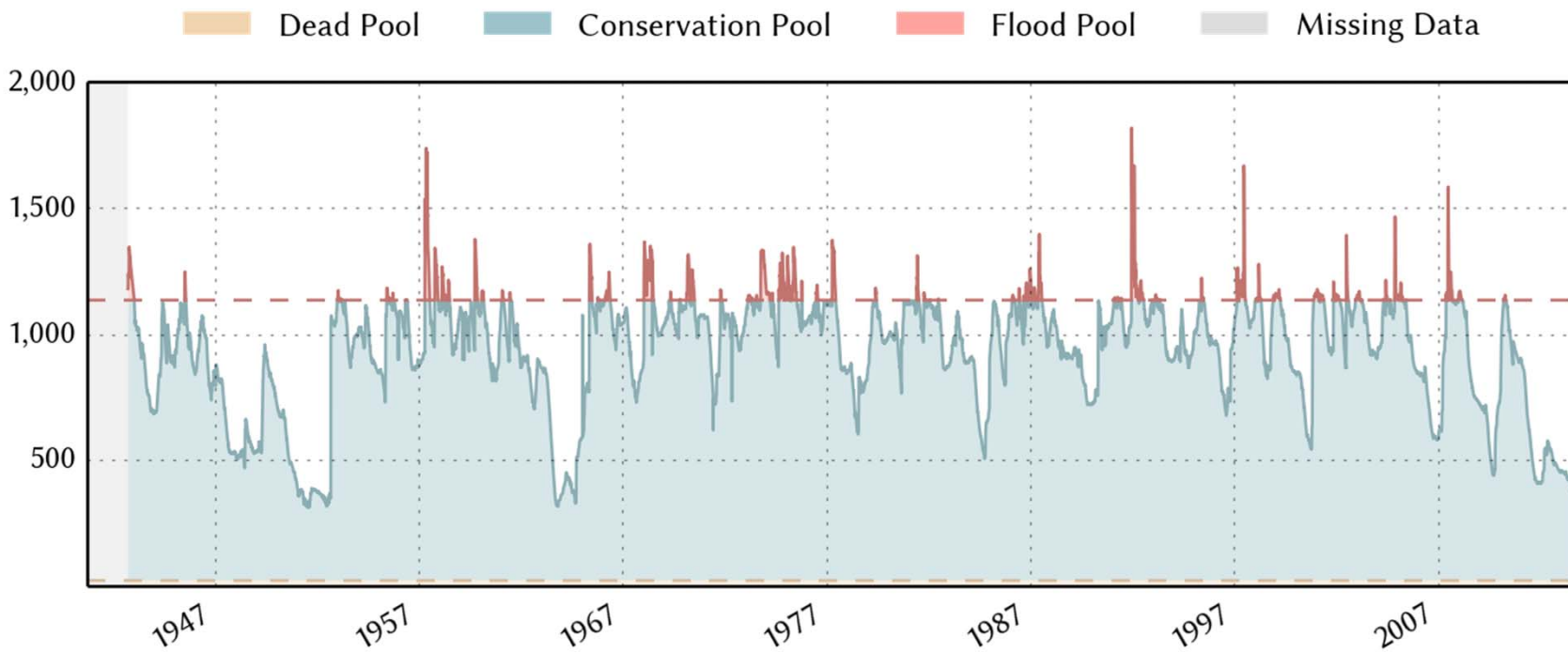
WHEN THE WATER RUNS DRY

In lieu of another 'rain bomb,' water planners say Central Texas should prepare for the worst.

STATESMAN.COM

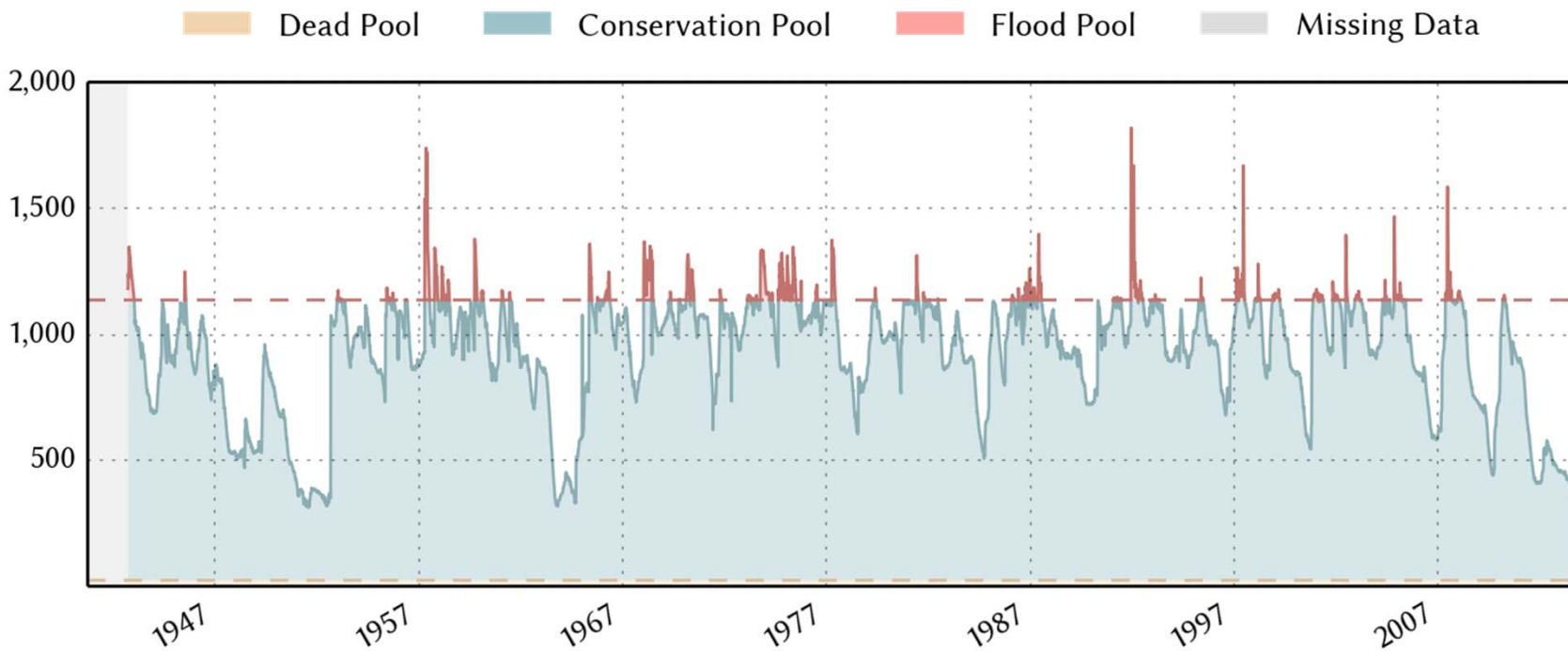
The Mansfield Dam holds back the diminishing waters on Lake it. Sometimes island was a in extending far into the day. STATESMAN

Lake Travis



October 3, 2013

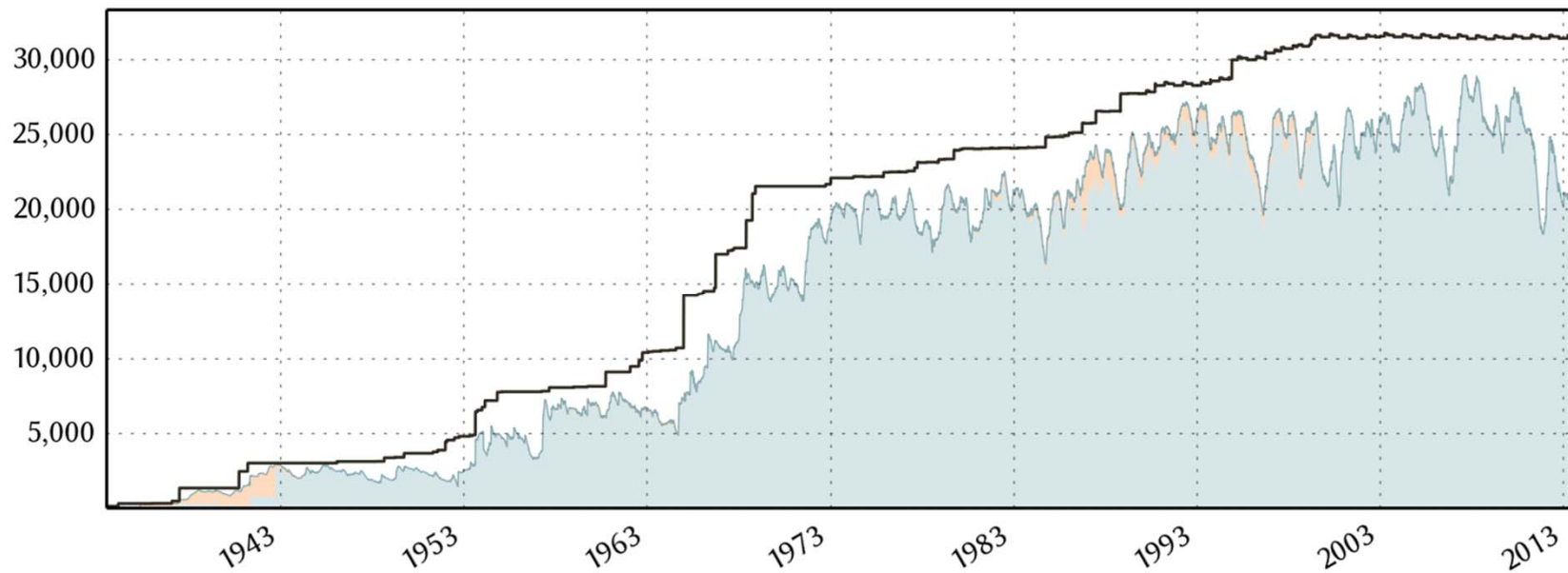
Lake Travis



currently 31.5% full
October 14, 2013

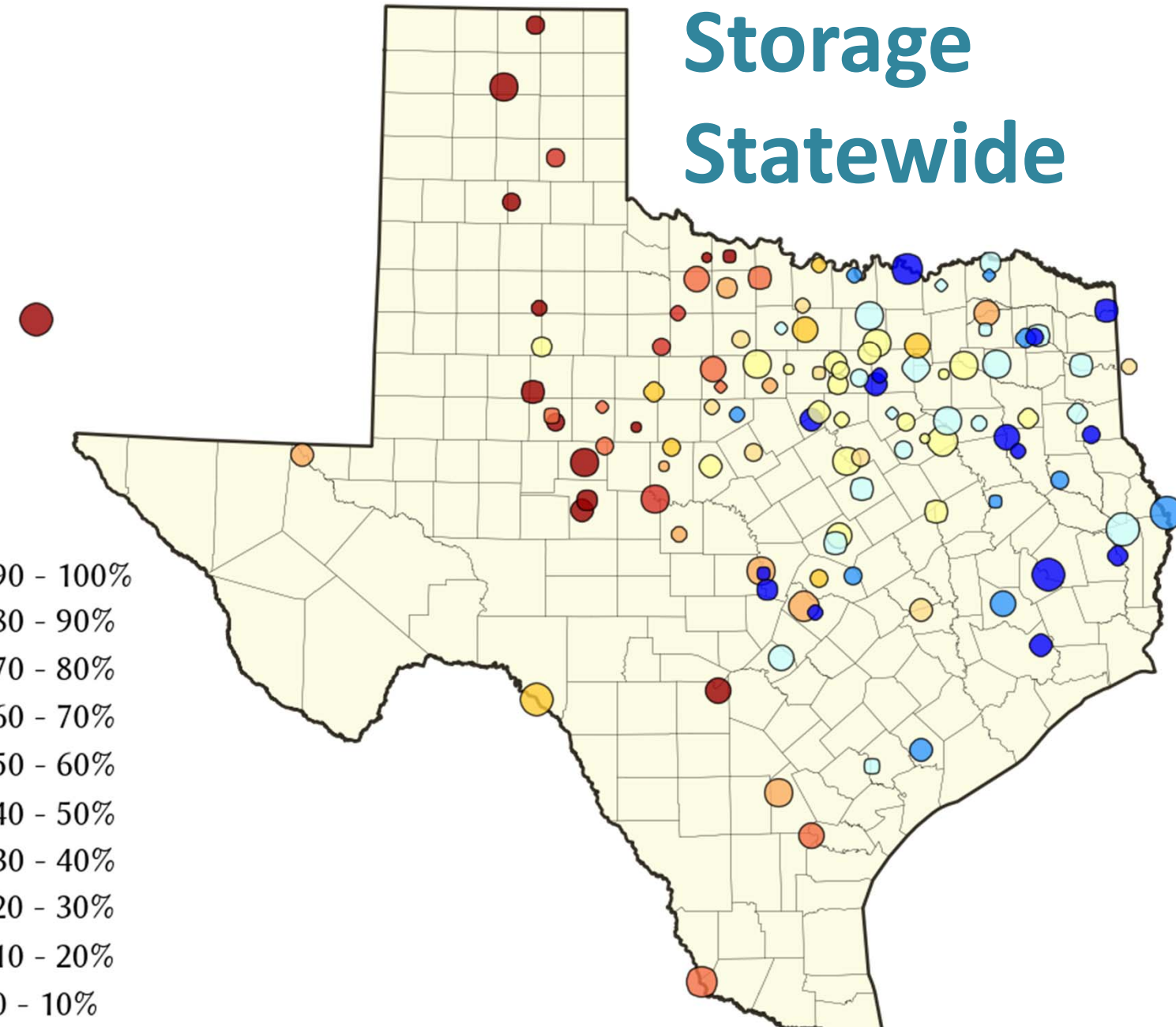
Statewide Storage

— Conservation Capacity ■ Observed ■ Estimated



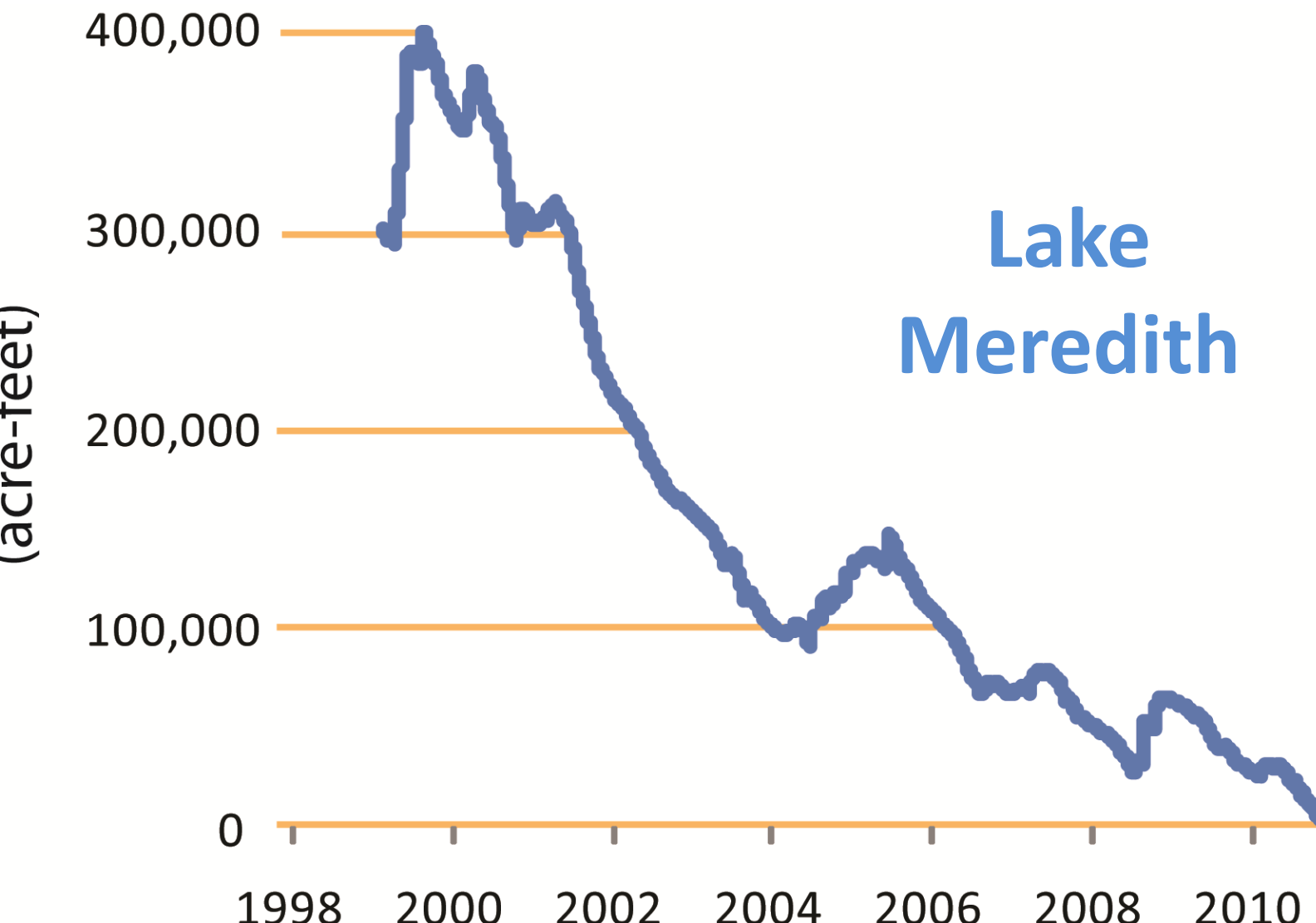
currently 59% full
October 11, 2013

Storage Statewide



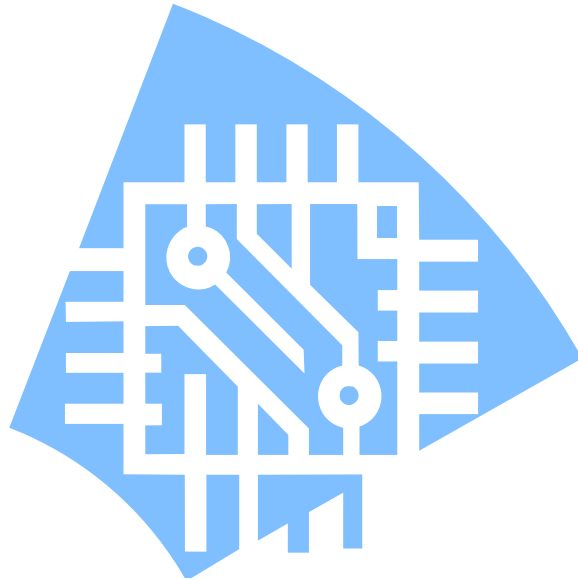
Lake Meredith...





Lake Meredith

Opportunity for new technology....





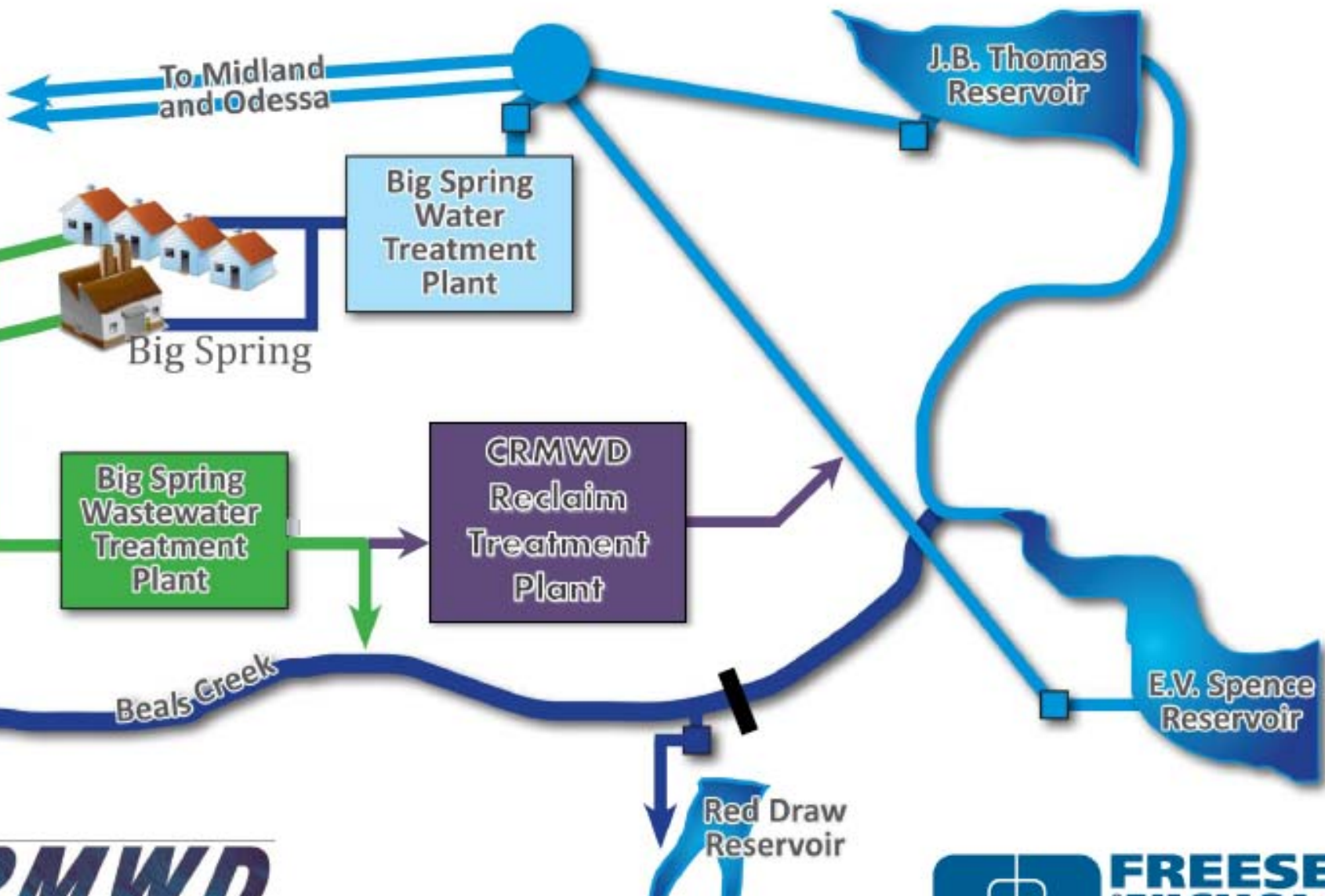
Dilbert.com DilbertCartoonist@gmail.com



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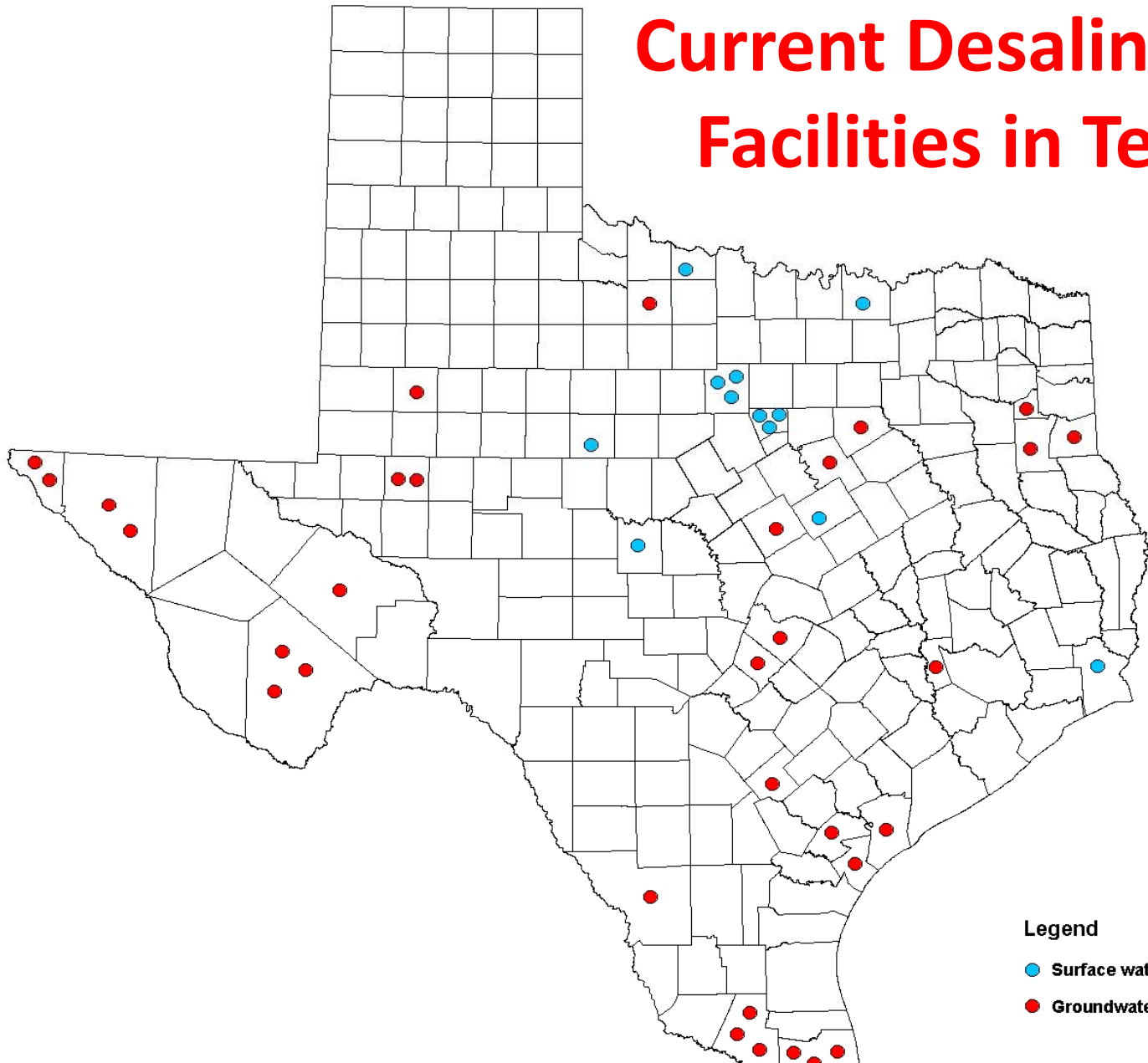


Big Spring Reclamation Project





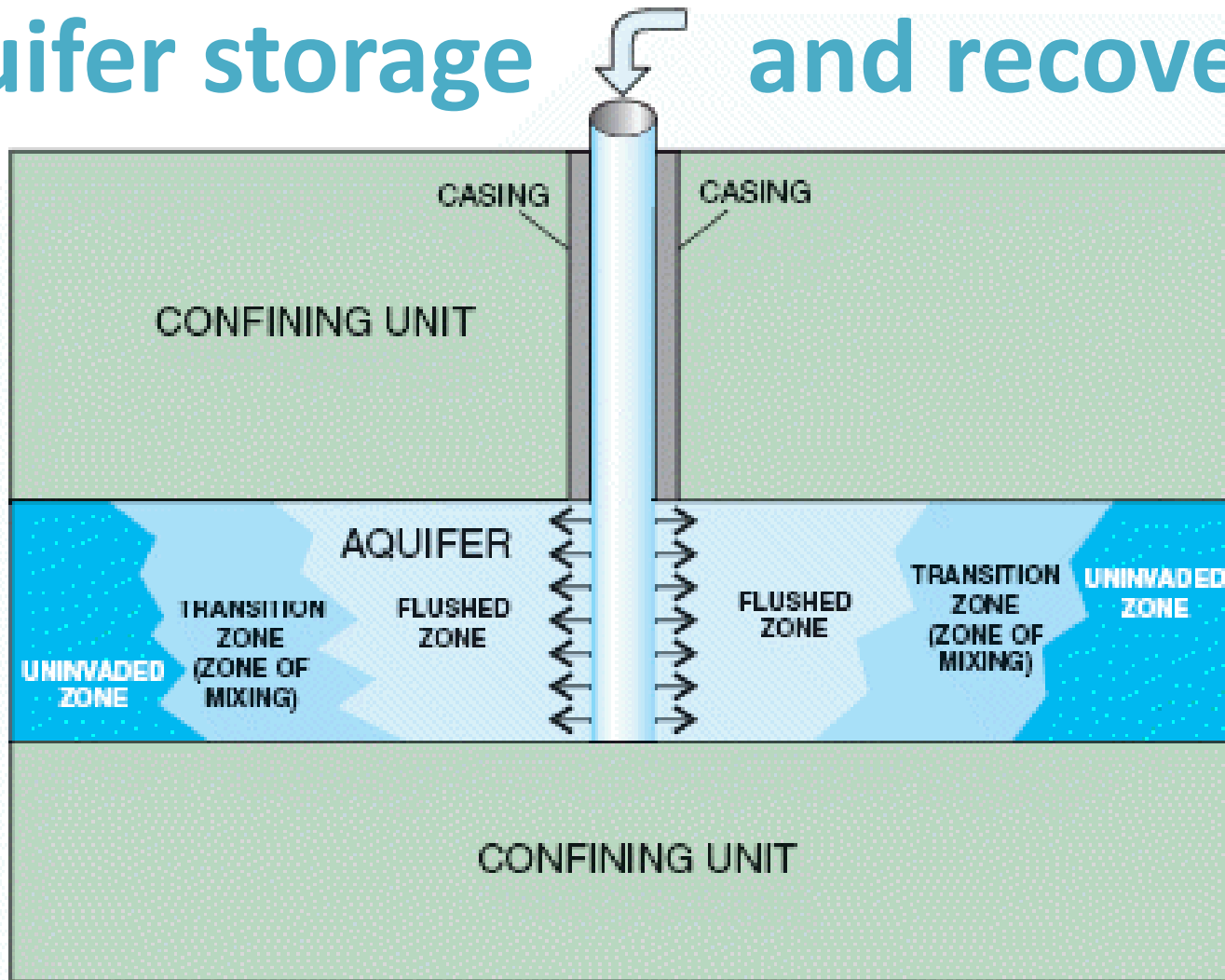
Current Desalination Facilities in Texas



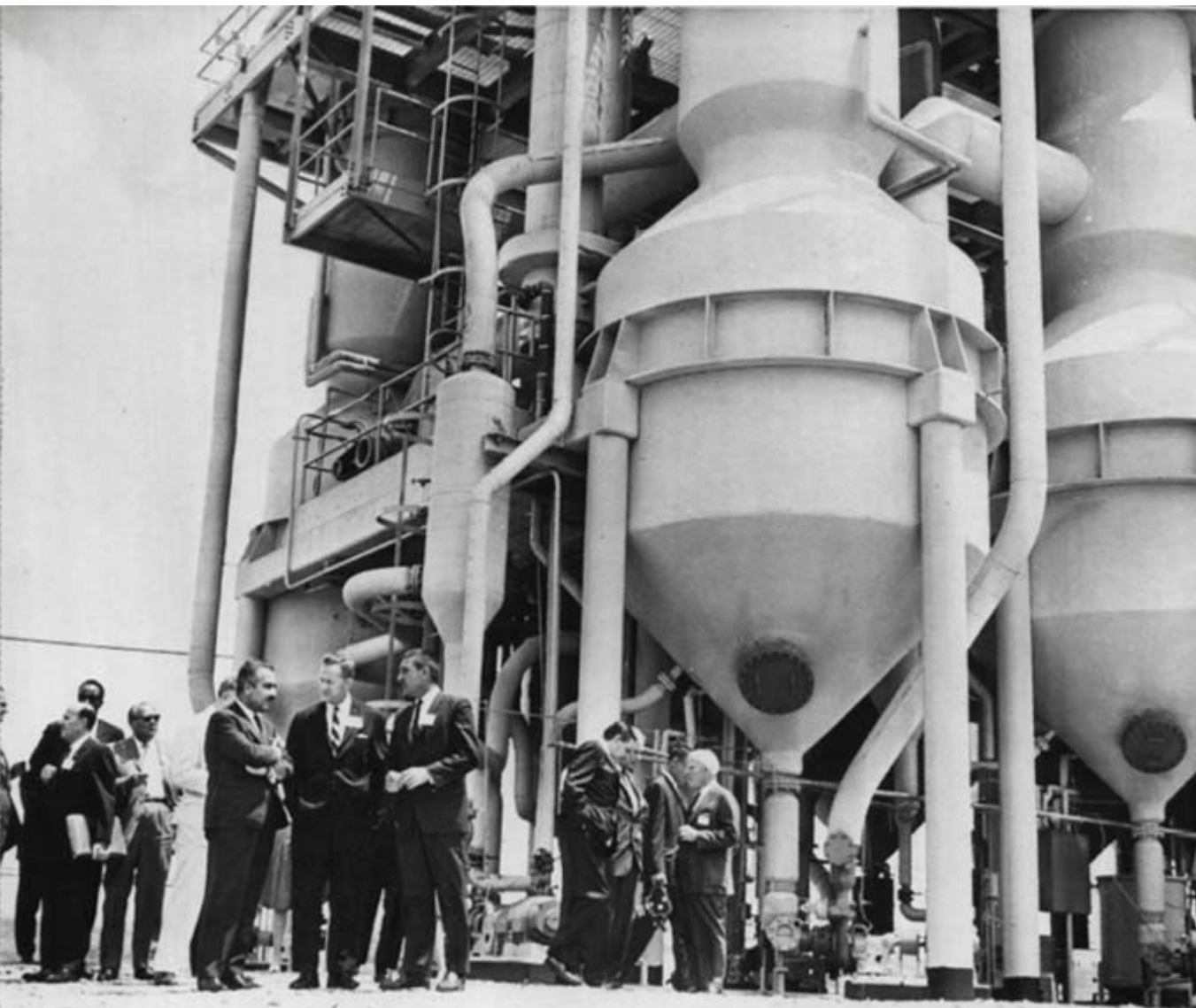
Legend

- Surface water
- Groundwater

Aquifer storage and recovery

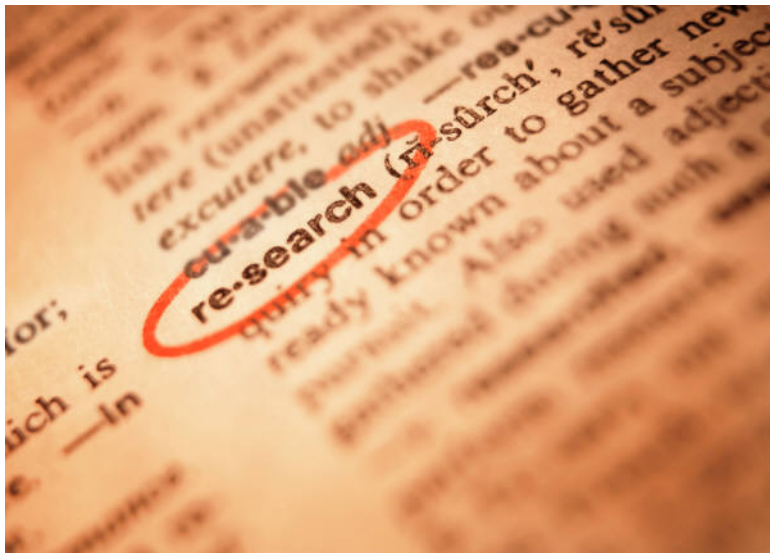


(FOR USE WITH AP SPECIAL REPORT BY RONALD THOMPSON FOR PMS, FRIDAY, AUG. 27)
(NYT-AUG. 23) WHERE SALT WATER GETS THE FRESH LOOK—AND FASTER—Looking something like an oil refinery with its complex of pipes and stills is the U.S. Government's first salt water conversion plant at Freeport, Tex. Ambassadors from 30 foreign countries stand outside the main works of the plant during a recent tour. Man in left-center foreground, with hands

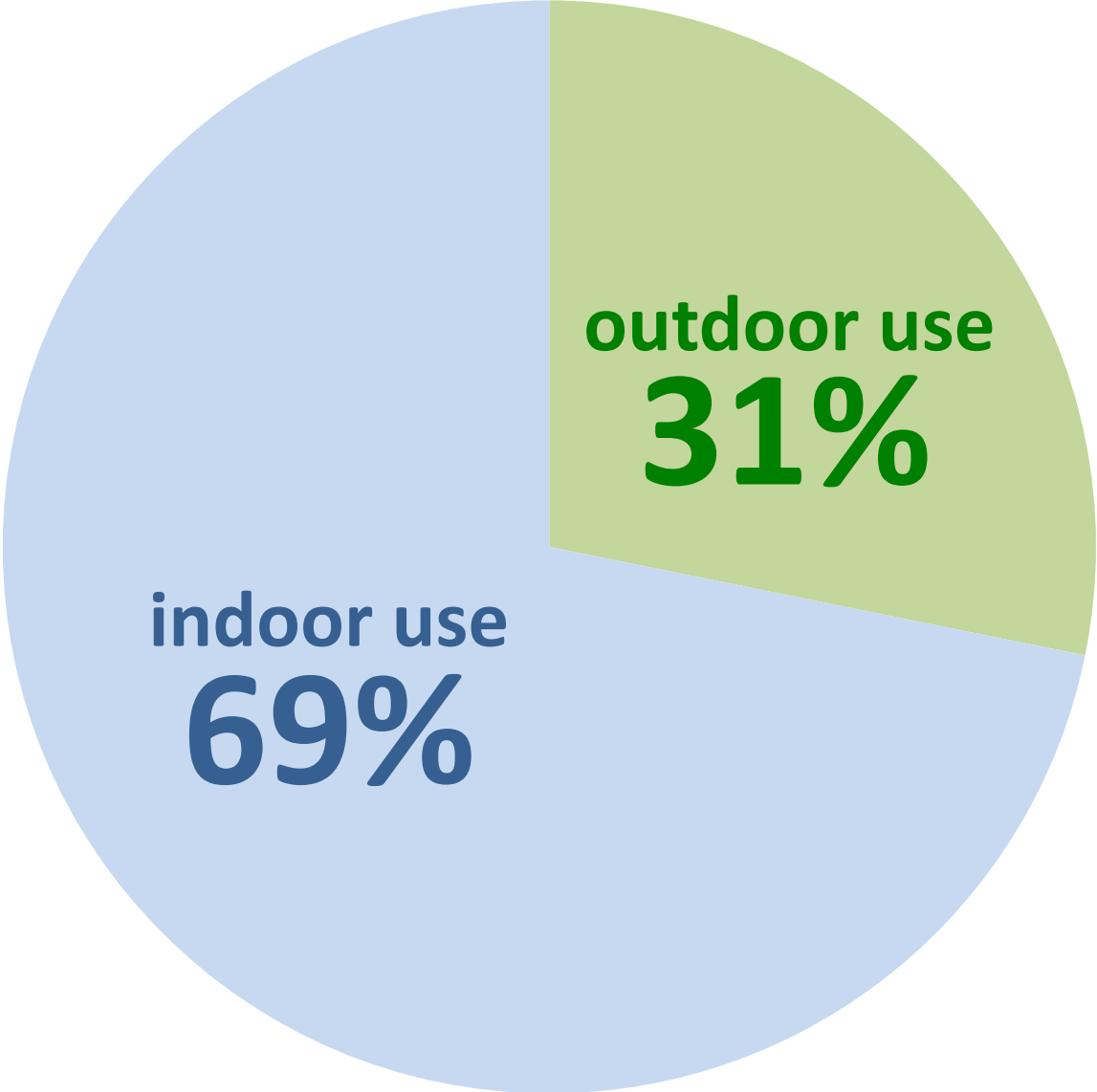


August 27, 1965

Opportunity for research...



Texas residential water use



Advanced conservation



33 million gallons a year



Water loss

audits for 2010

- 16.8 percent loss
 - 3.1 apparent
 - 13.7 real



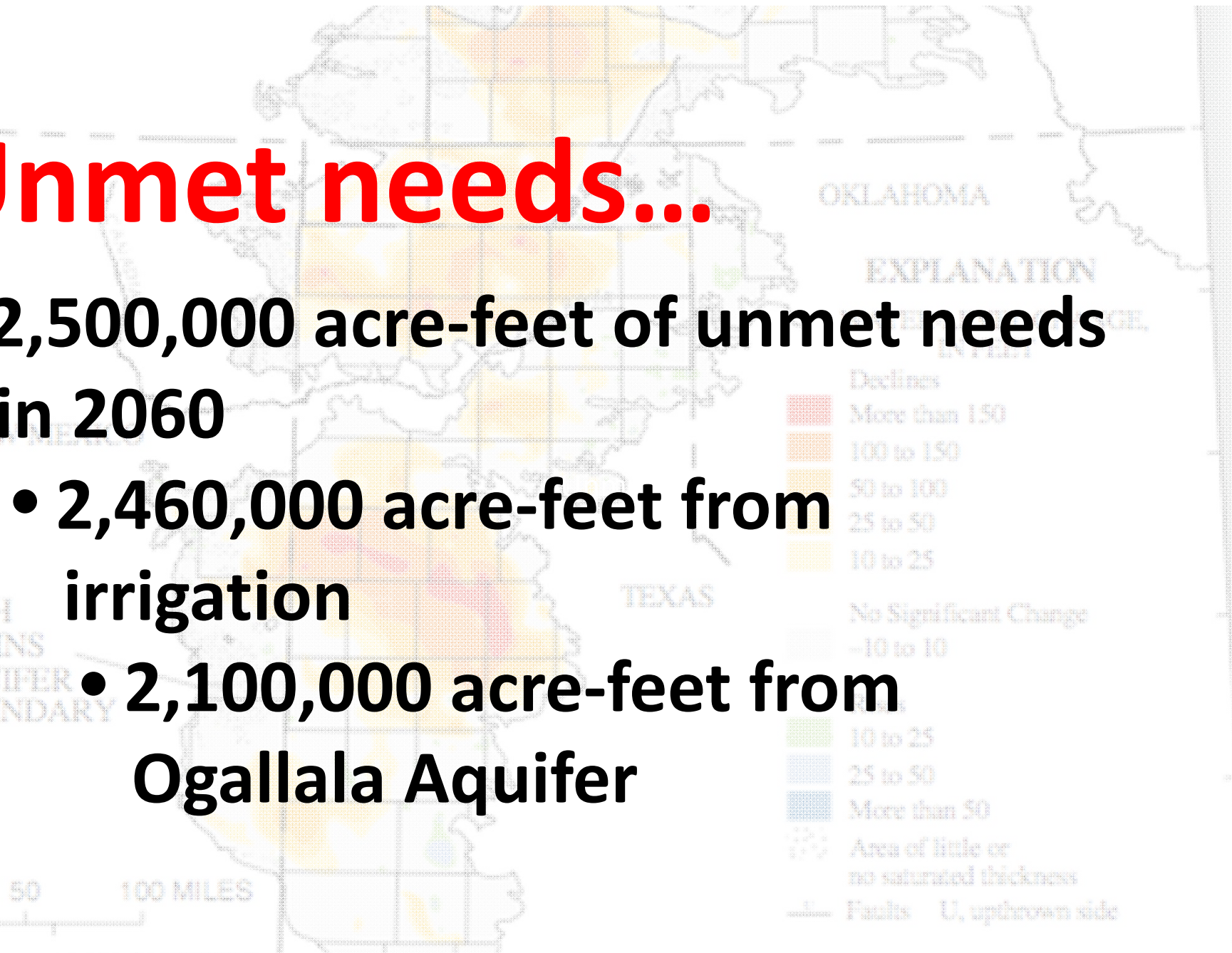


Unmet needs...

2,500,000 acre-feet of unmet needs
in 2060

- 2,460,000 acre-feet from
irrigation

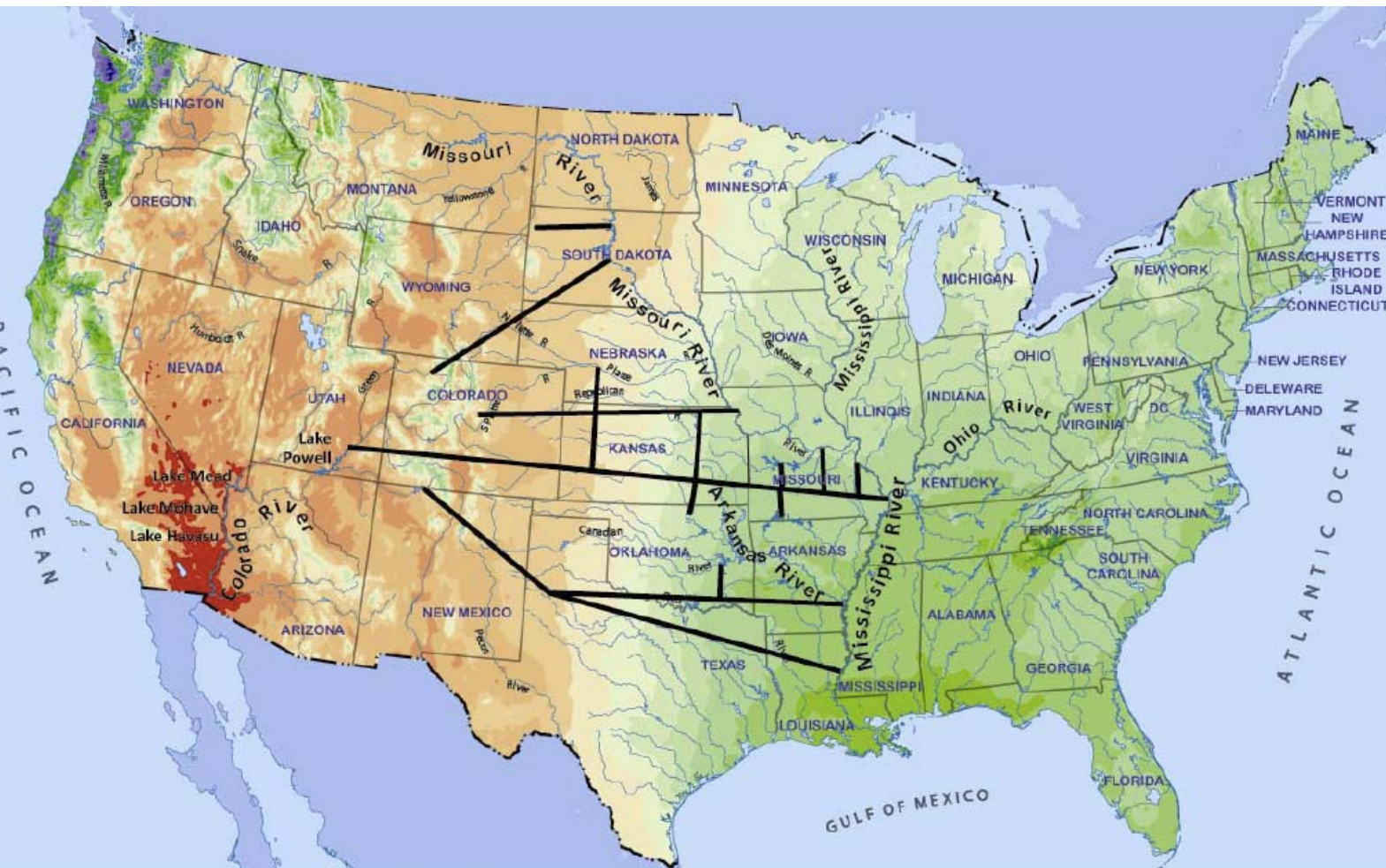
- 2,100,000 acre-feet from
Ogallala Aquifer



ping pong balls



Lawrence Livermore National Laboratories 2009



ater...



UWERL?

Urban Water Efficiency Research Laboratory?

Testing facility similar to Pike Powers

Laboratory & Center for Commercialization?

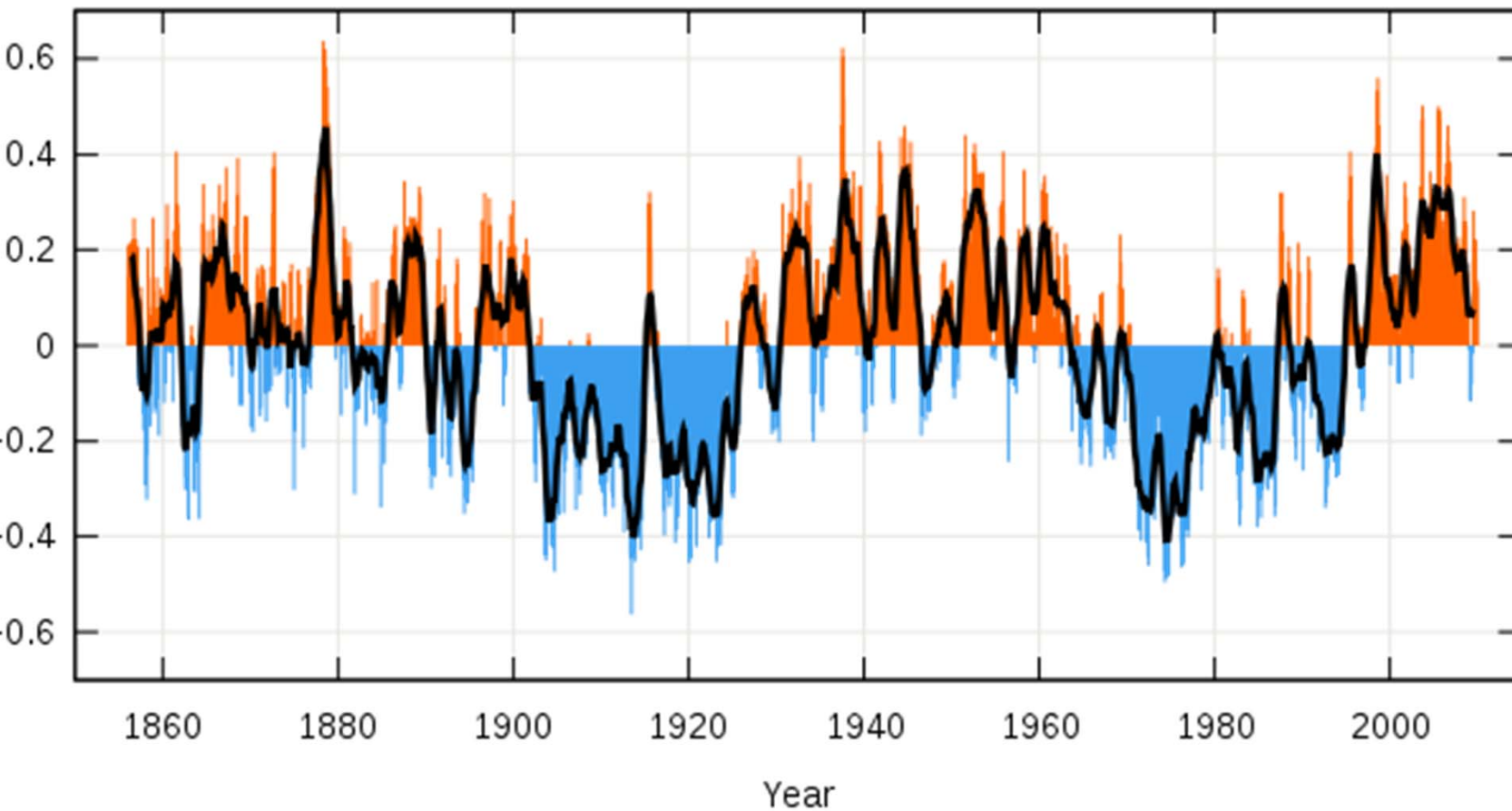
Testing facility for new water technologies?

Water tech incubators?

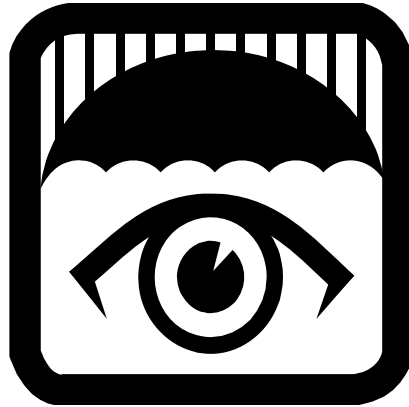
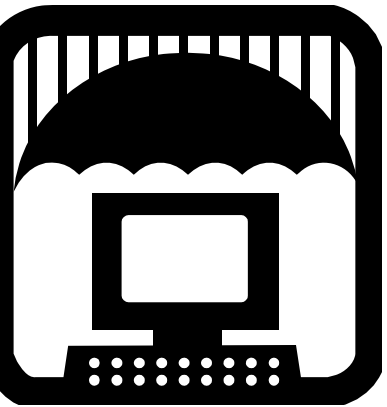


Atlantic Multidecadal Oscillation

Monthly values for the AMO index, 1856 -2009



Policy



**Opportunity
to implement
the water plan....**



State
Water
Implementation
Fund for
Texas



Prop 6
Nov 5th

Three Parts



Senate Joint Resolution 1 (Proposition 6)

- Creates SWIFT, SWIRFT
- Authorizes use of bond enhancement agreements to provide security for bonds

House Bill 1025

- Appropriates \$2 billion from “Rainy Day Fund”

House Bill 4

- General law changes governing SWIFT, SWIRFT

Legislative Intent



specified in Secs. 2.01, 2.02 HB 4

Exclusively for State Water Plan projects

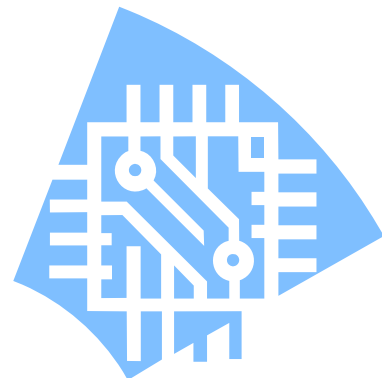
Provides a source of revenue or security for specified TWDB bond programs

Provides support for low-interest loans, longer loan terms, incremental repurchase terms, or loan deferrals

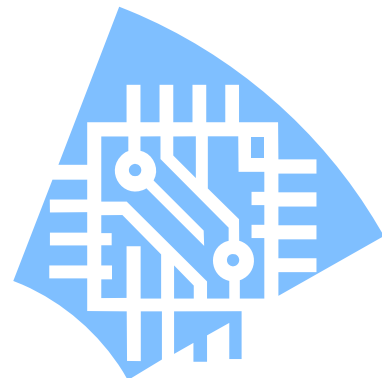
Grants expressly prohibited



With Drought Comes Opportunity...



With Drought Comes Opportunity...



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