

Texas Desal 2015

INNOVATION & RELIABILITY

Private Investment Potential for Desalination in Texas



About EPCOR

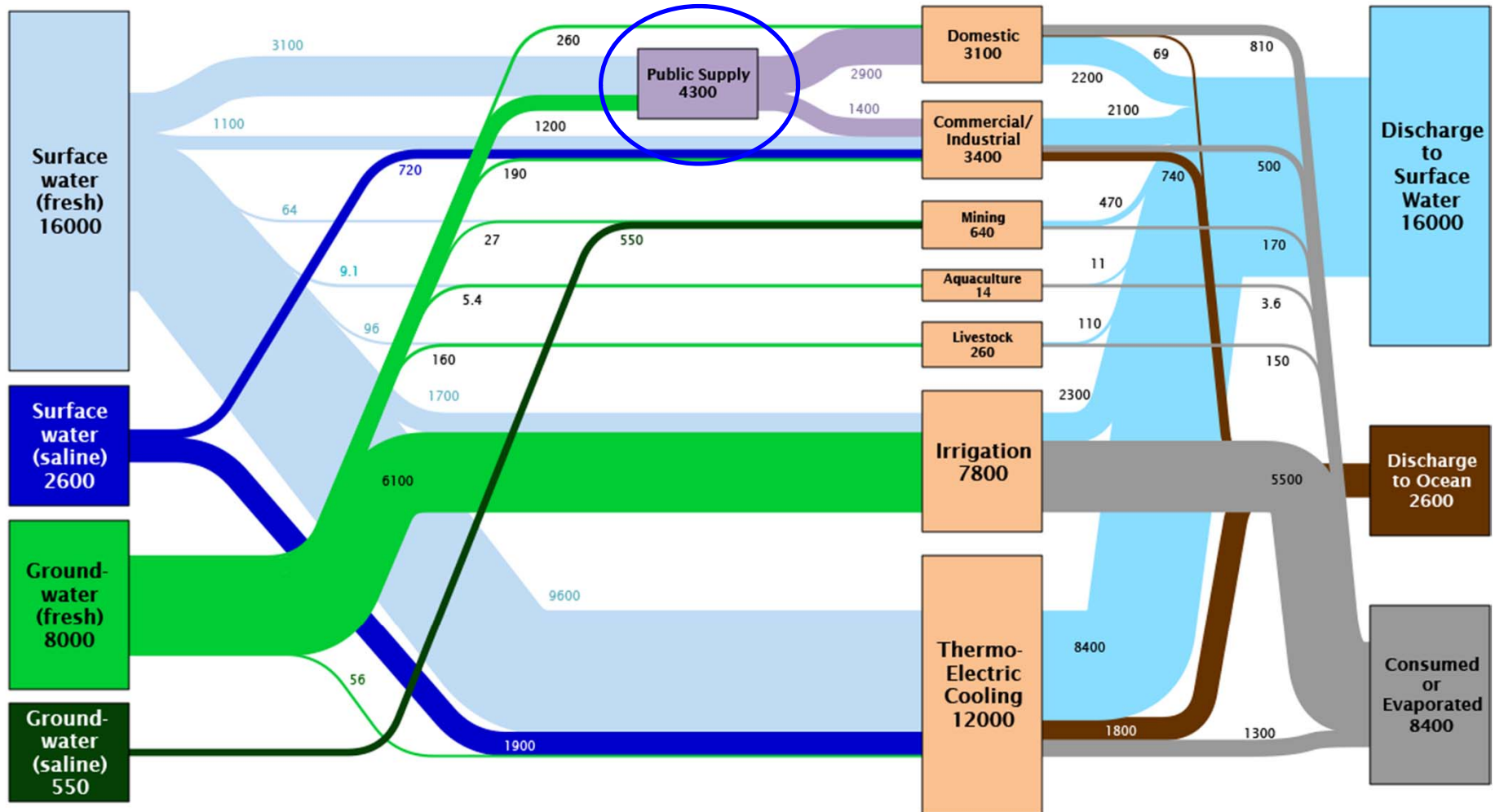
- **Builds, owns and operates water and wastewater infrastructure in the United States and Canada**
- **Private corporation with \$5.7 billion in assets**
 - Serves over 1.9 million people in over 100 communities
 - Largest private water provider in Arizona and New Mexico
- **Emerging leader in P3 project development**
 - 2014: Awarded City of Regina WWTP Design-Build-Finance-Operate (\$181 M)

Working Premise

“If it ain’t broke, don’t fix it.”

ESTIMATED TEXAS WATER FLOW IN 2005 (MGD)

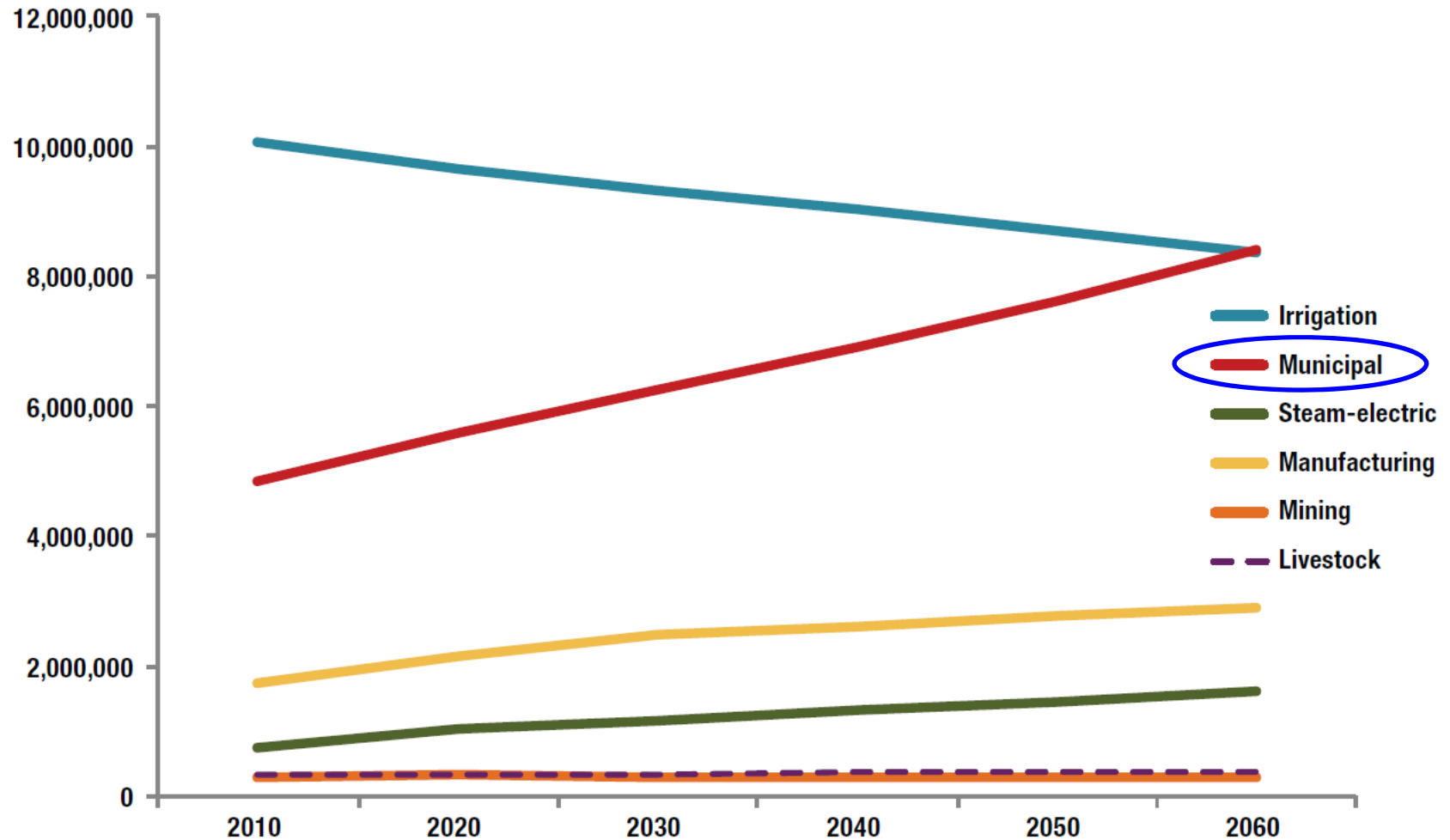
73% of Public Supply from Surface Water



Source: Lawrence Livermore National Laboratory 2011



TEXAS WATER DEMAND PROJECTIONS BY USE CATEGORY (ACRE-FEET PER YEAR)

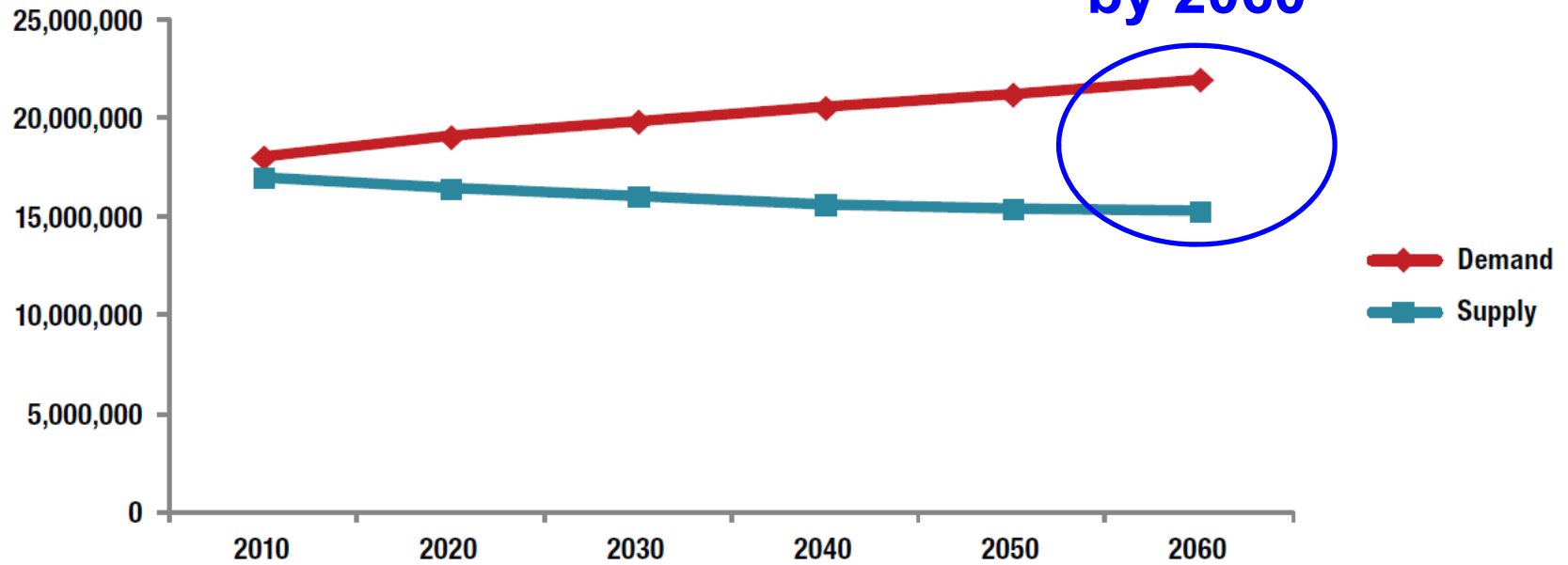


Source: TWDB 2012

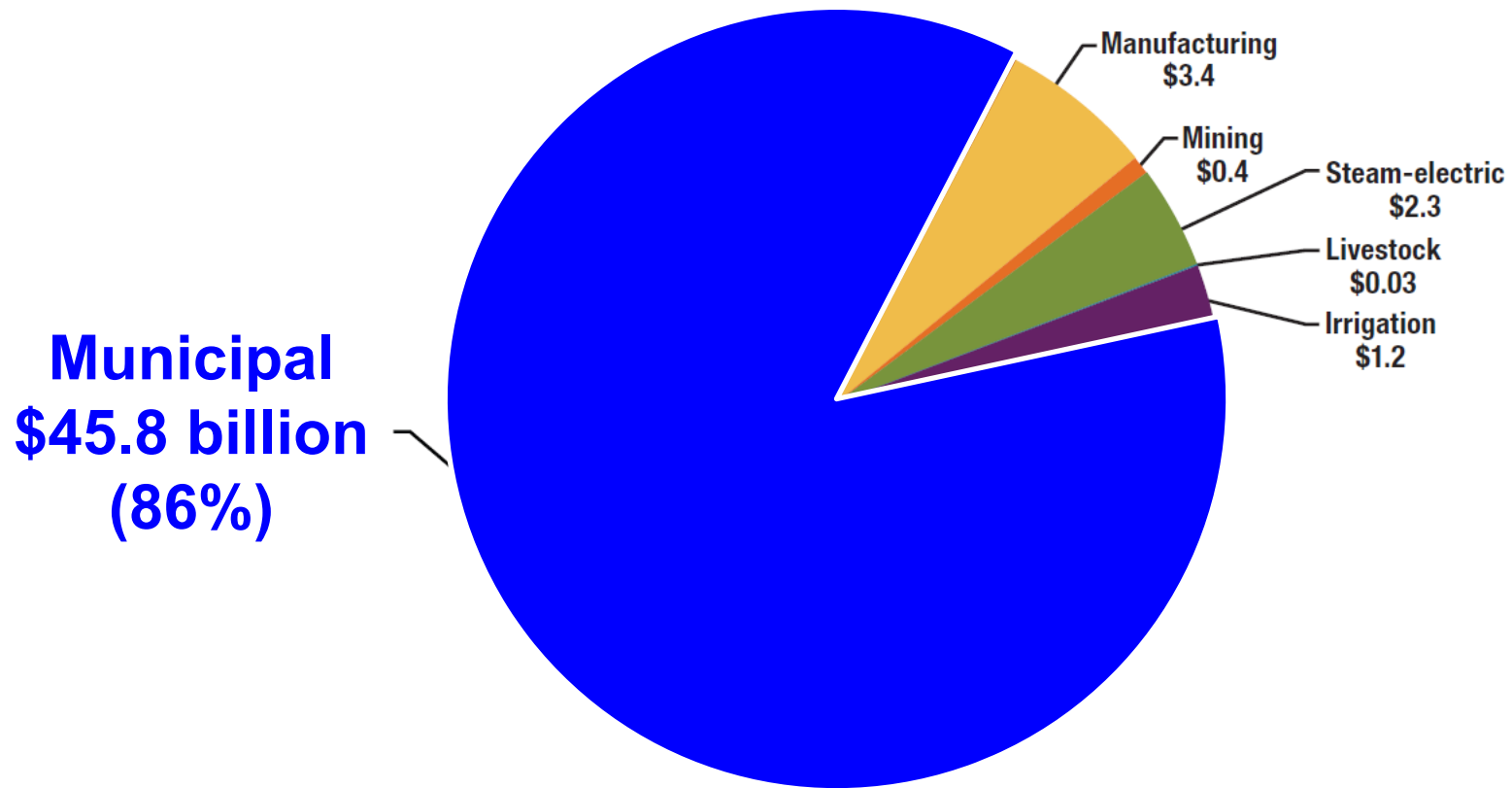


TEXAS PROJECTED WATER DEMAND AND EXISTING SUPPLIES (ACRE-FEET PER YEAR)

**Shortfall of about
8.3 M acre-feet per year
by 2060**

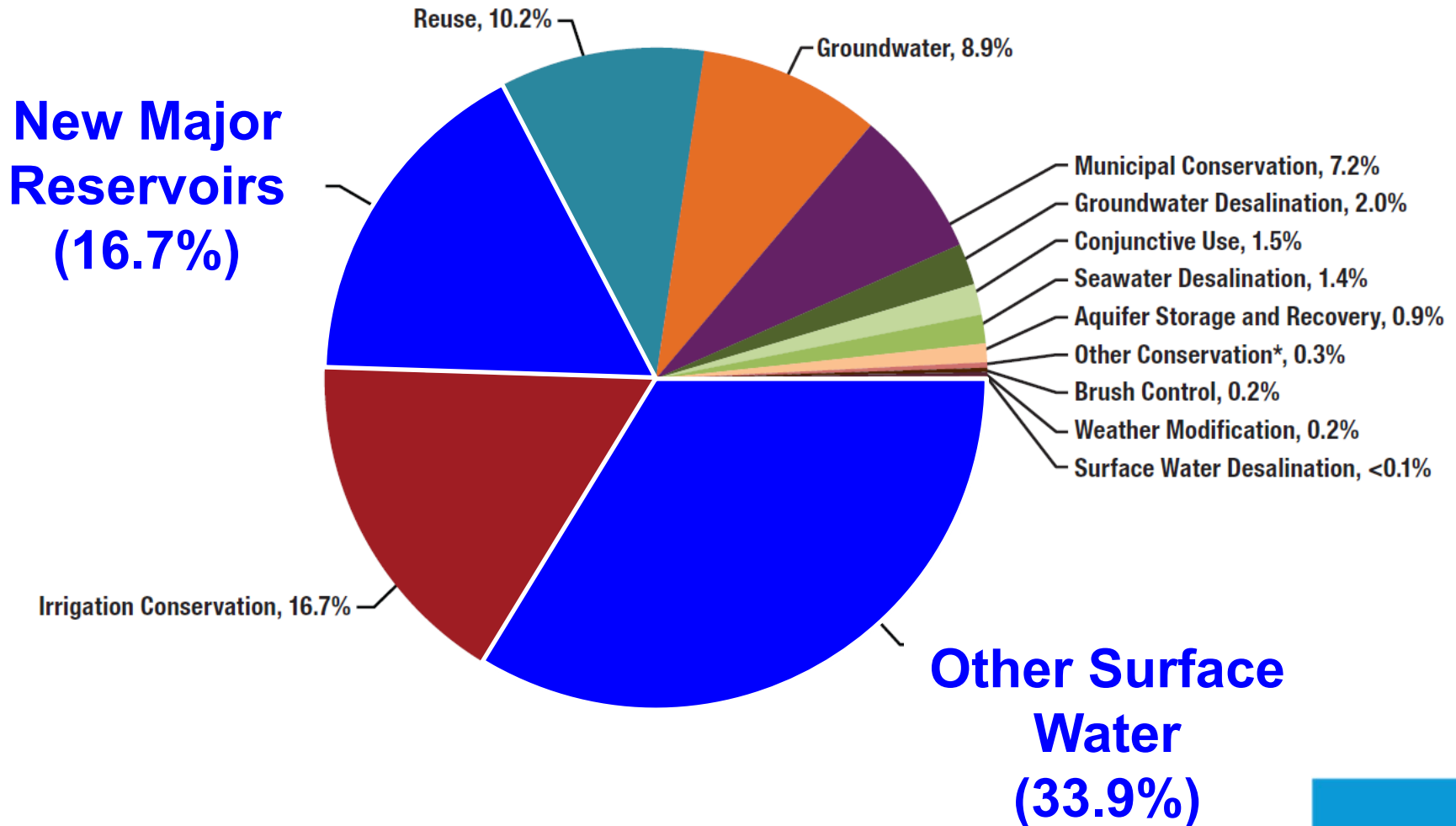


TOTAL CAPITAL COSTS OF RECOMMENDED WATER MANAGEMENT STRATEGIES BY WATER USE CATEGORY (BILLIONS OF DOLLARS)



Source: TWDB 2012

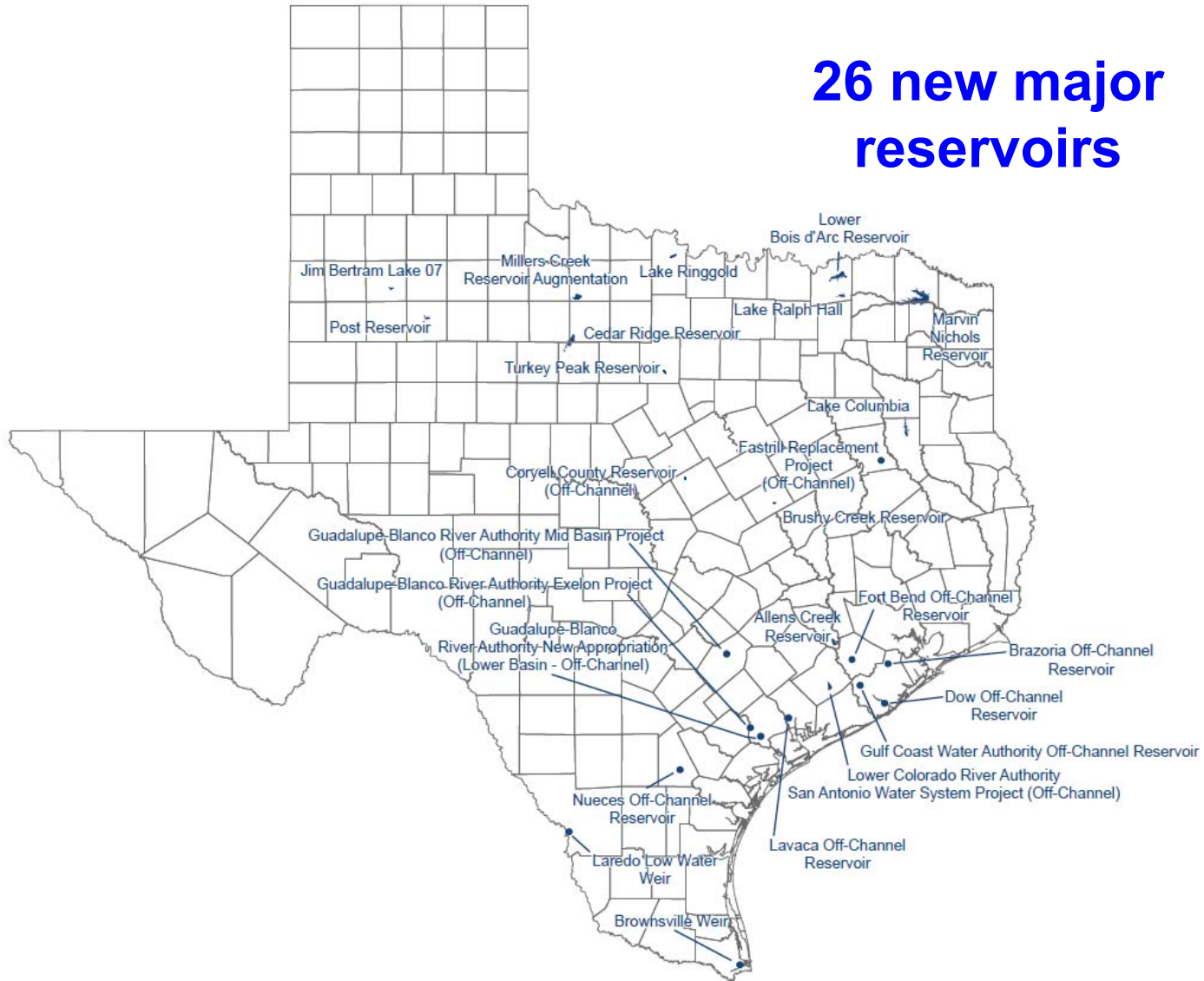
RELATIVE VOLUMES OF RECOMMENDED WATER MANAGEMENT STRATEGIES IN 2060



Source: TWDB 2012



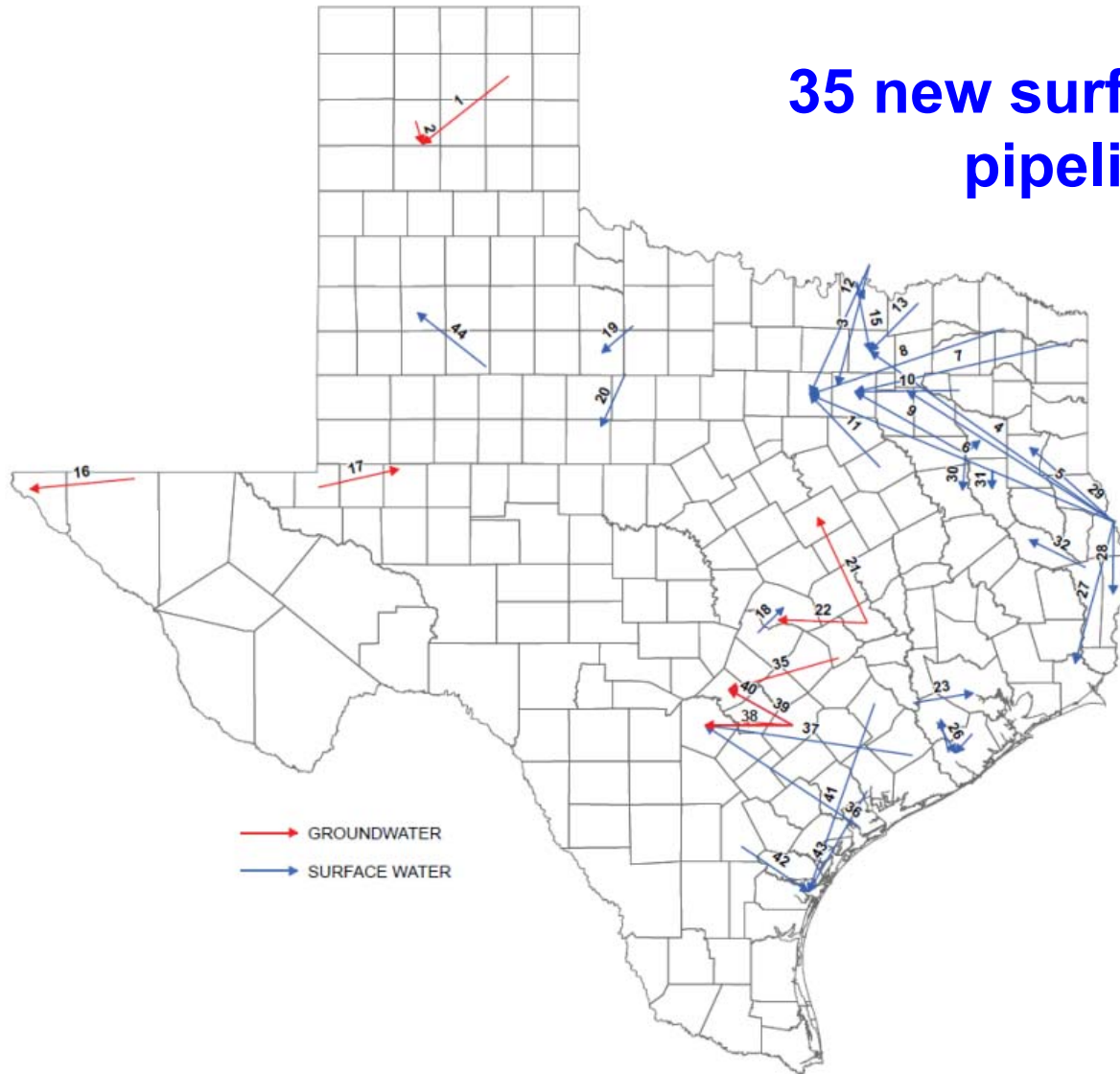
26 new major reservoirs



Source: TWDB 2012

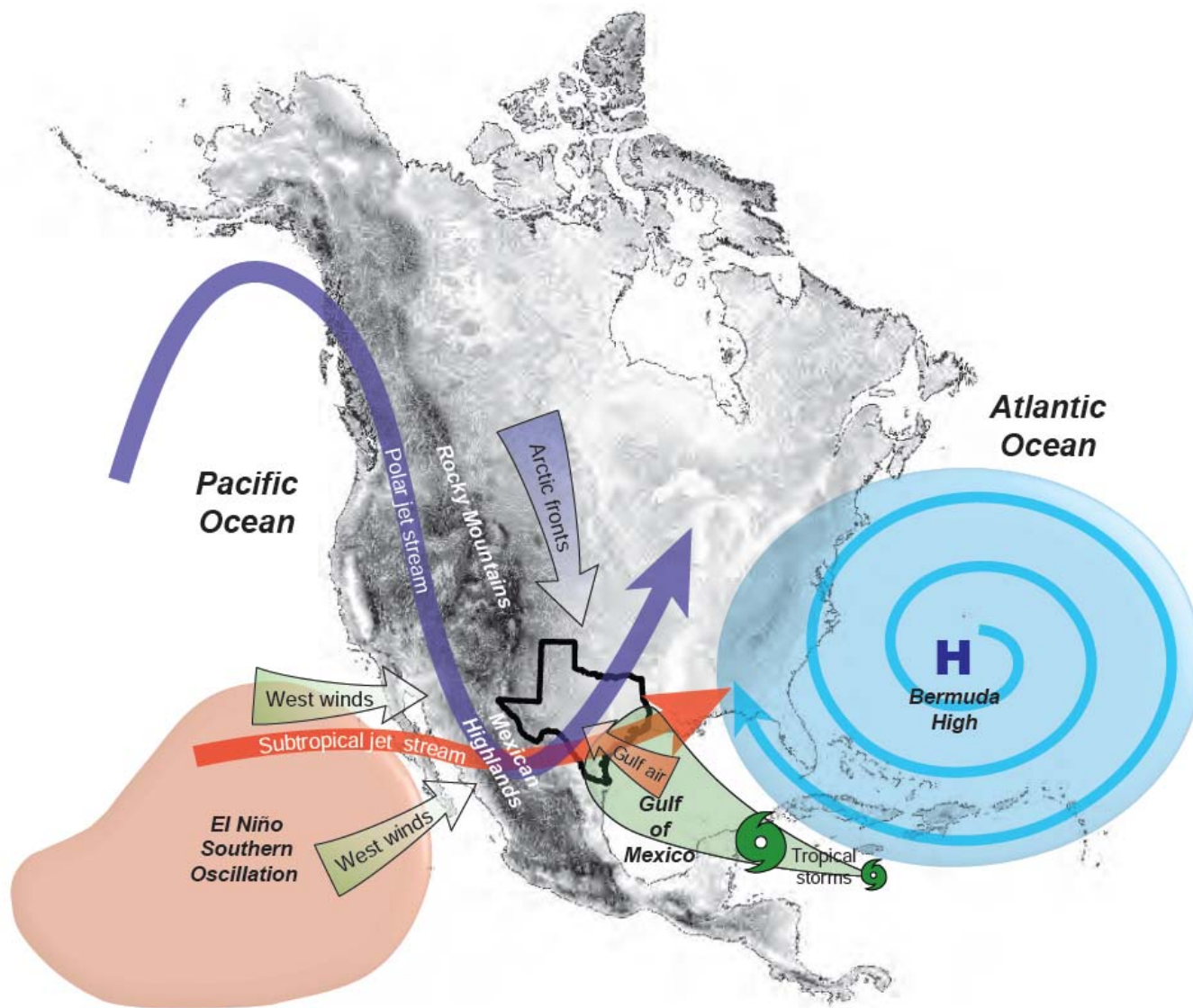


35 new surface water pipelines



Source: TWDB 2012

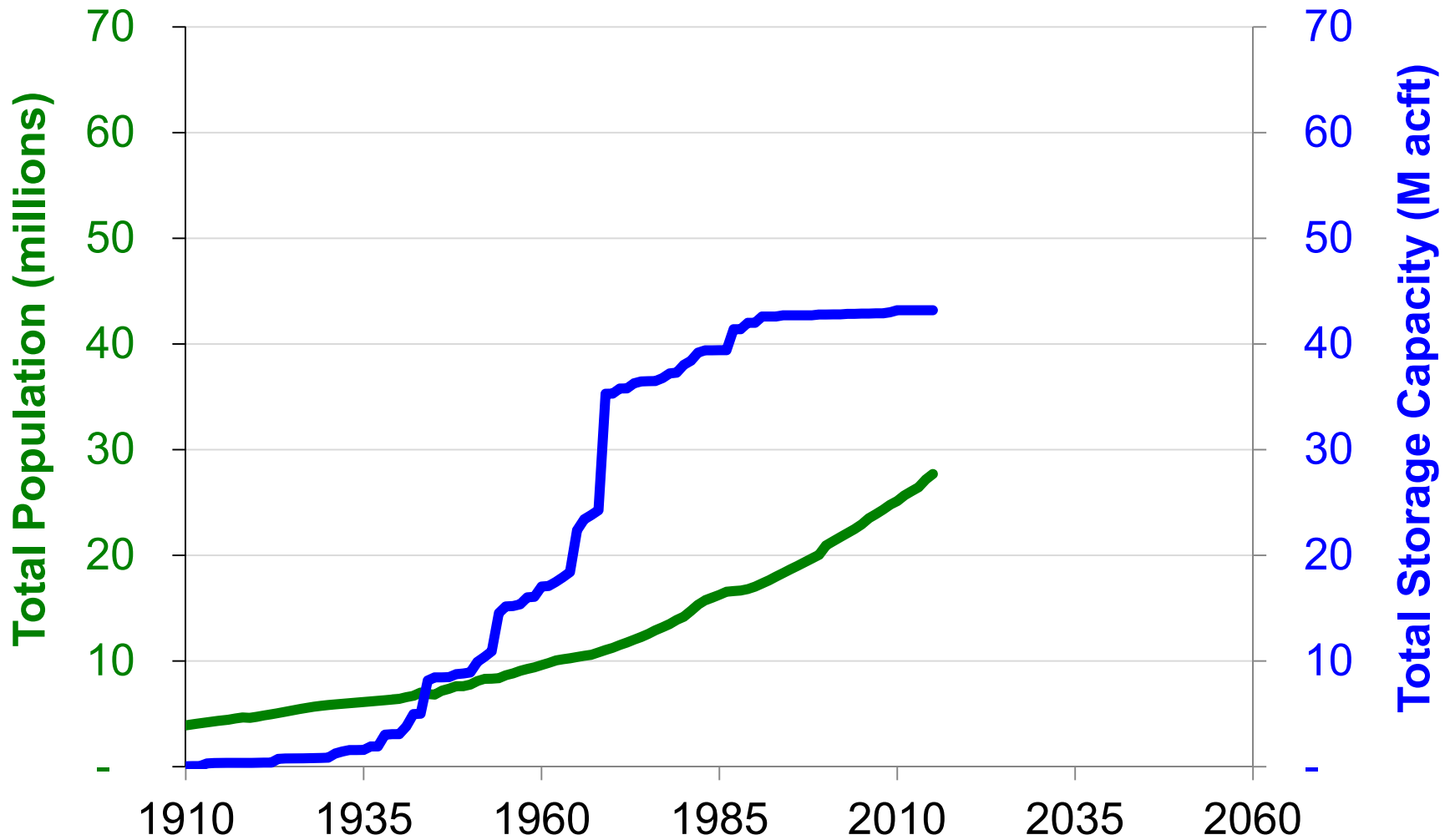
SEASONAL AIR MASSES THAT AFFECT TEXAS CLIMATE



Source: TWDB 2012



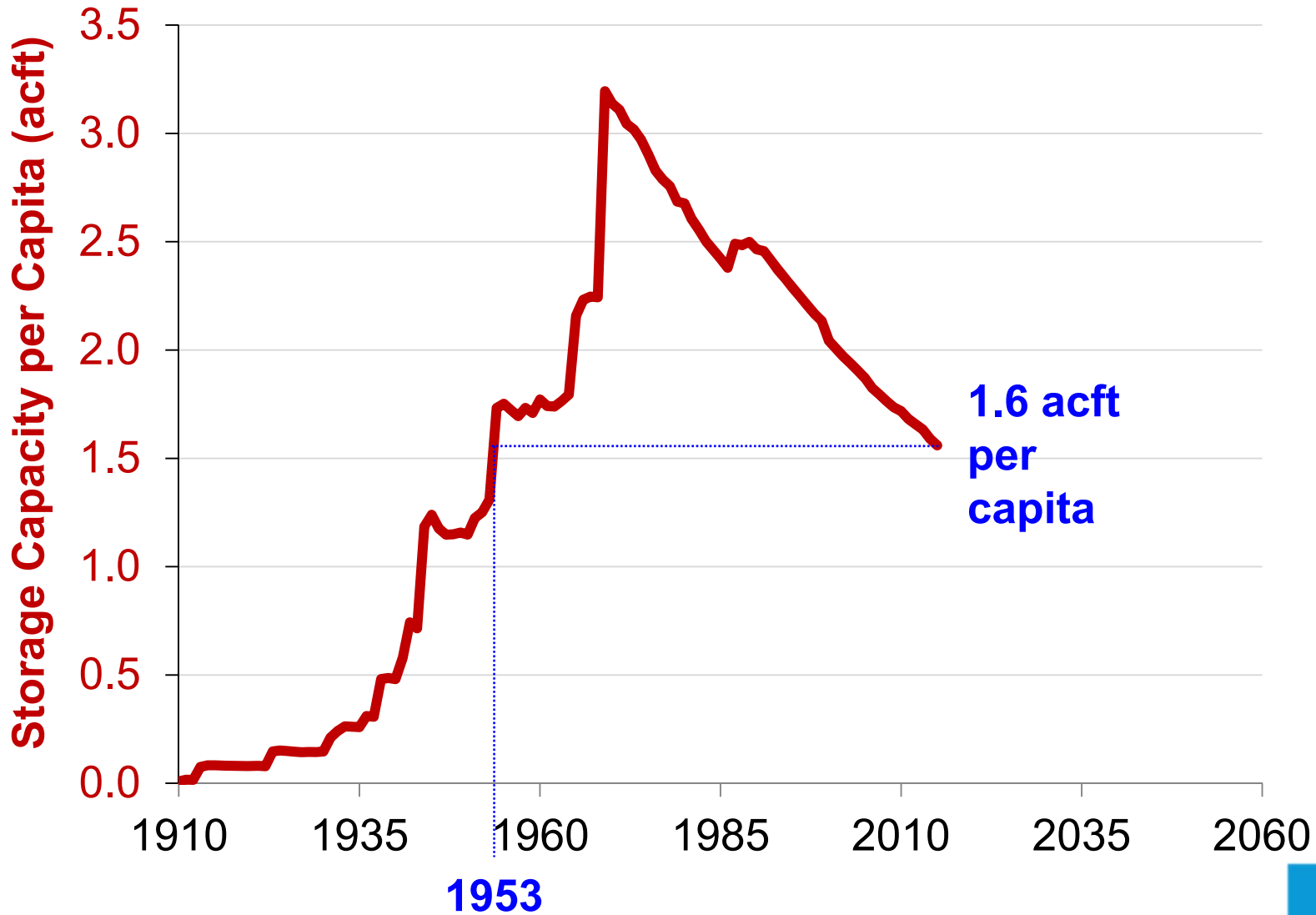
TEXAS POPULATION AND RESERVOIR STORAGE CAPACITY



Source: TWDB 2012 and US Census Bureau 2010



TEXAS RESERVOIR STORAGE CAPACITY PER CAPITA

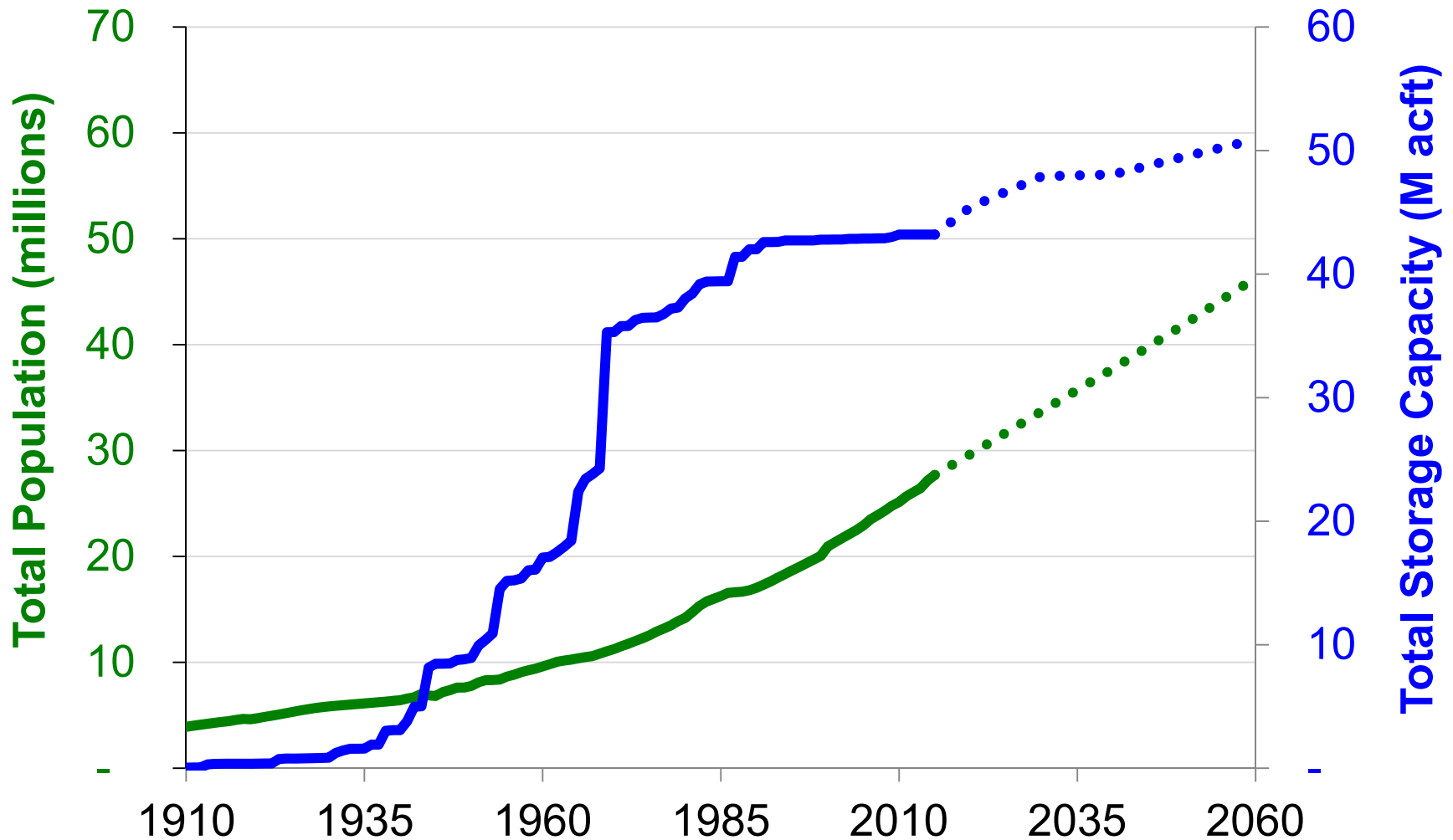


Source: TWDB 2012 and US Census Bureau 2010



TEXAS POPULATION AND RESERVOIR STORAGE CAPACITY

(assumes all new major reservoirs in State Water Plan are constructed)

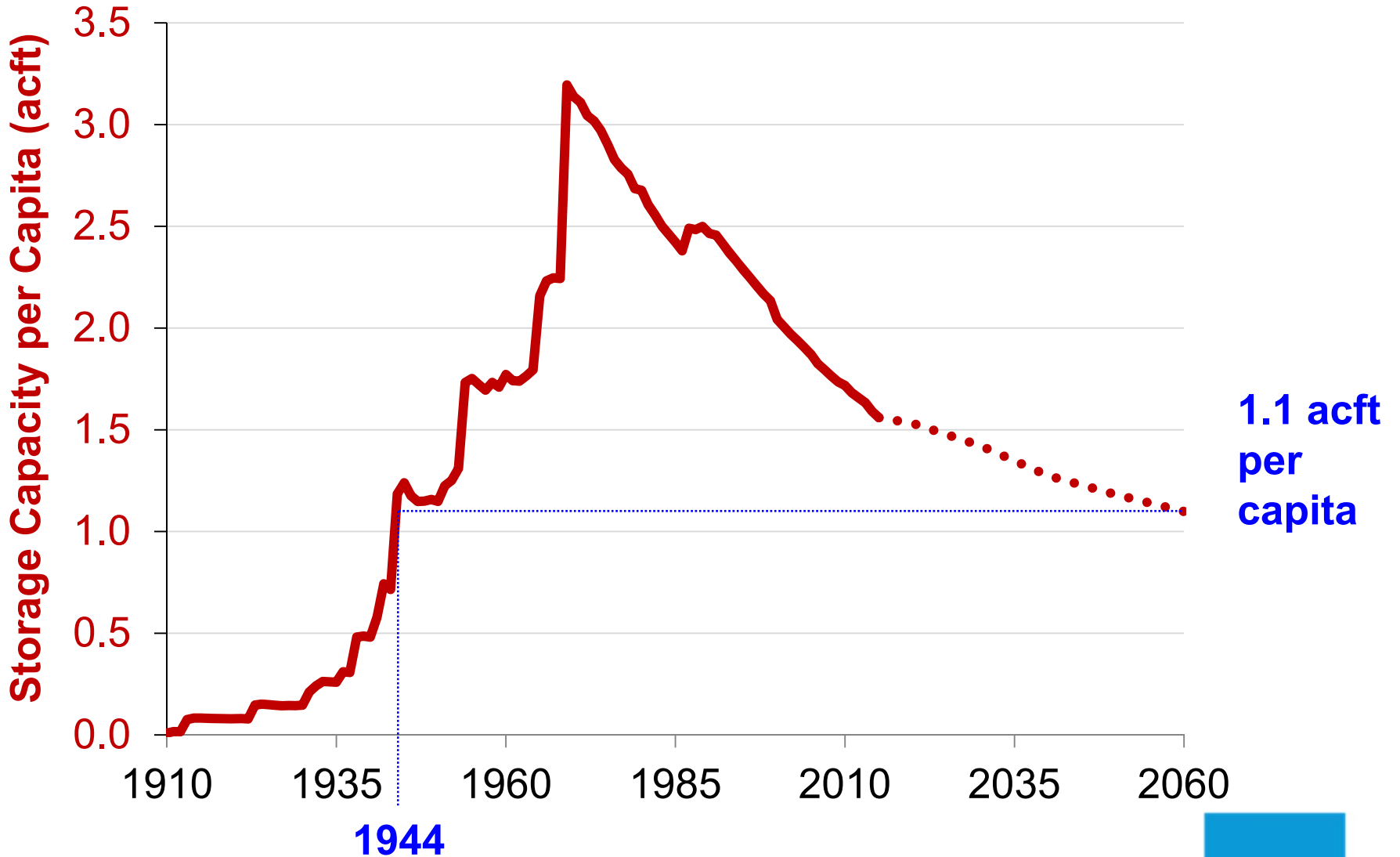


Source: TWDB 2012 and US Census Bureau 2010



TEXAS RESERVOIR STORAGE CAPACITY PER CAPITA

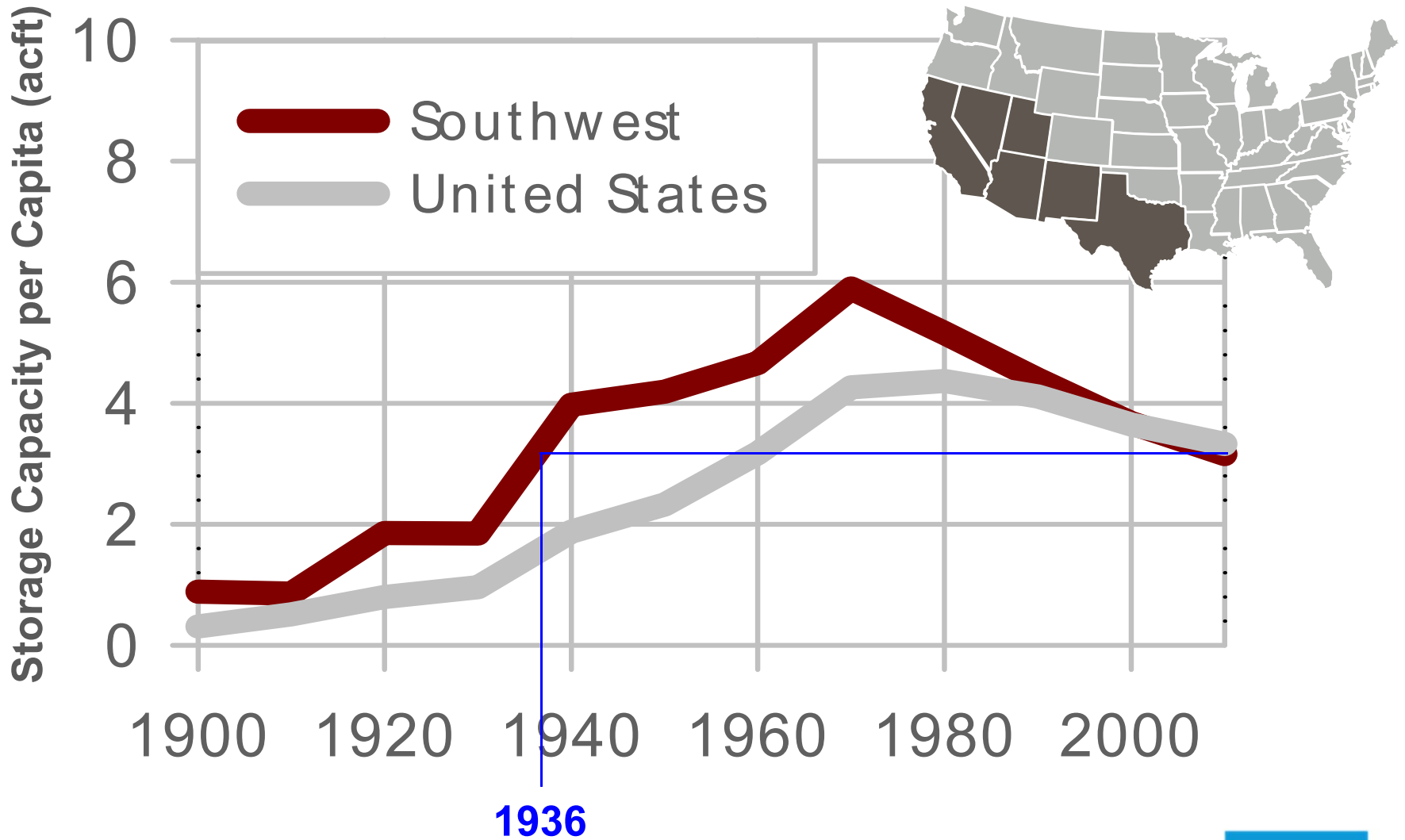
(assumes all new major reservoirs in State Water Plan are constructed)



Source: TWDB 2012 and US Census Bureau 2010



SOUTHWEST U.S. RESERVOIR STORAGE CAPACITY PER CAPITA

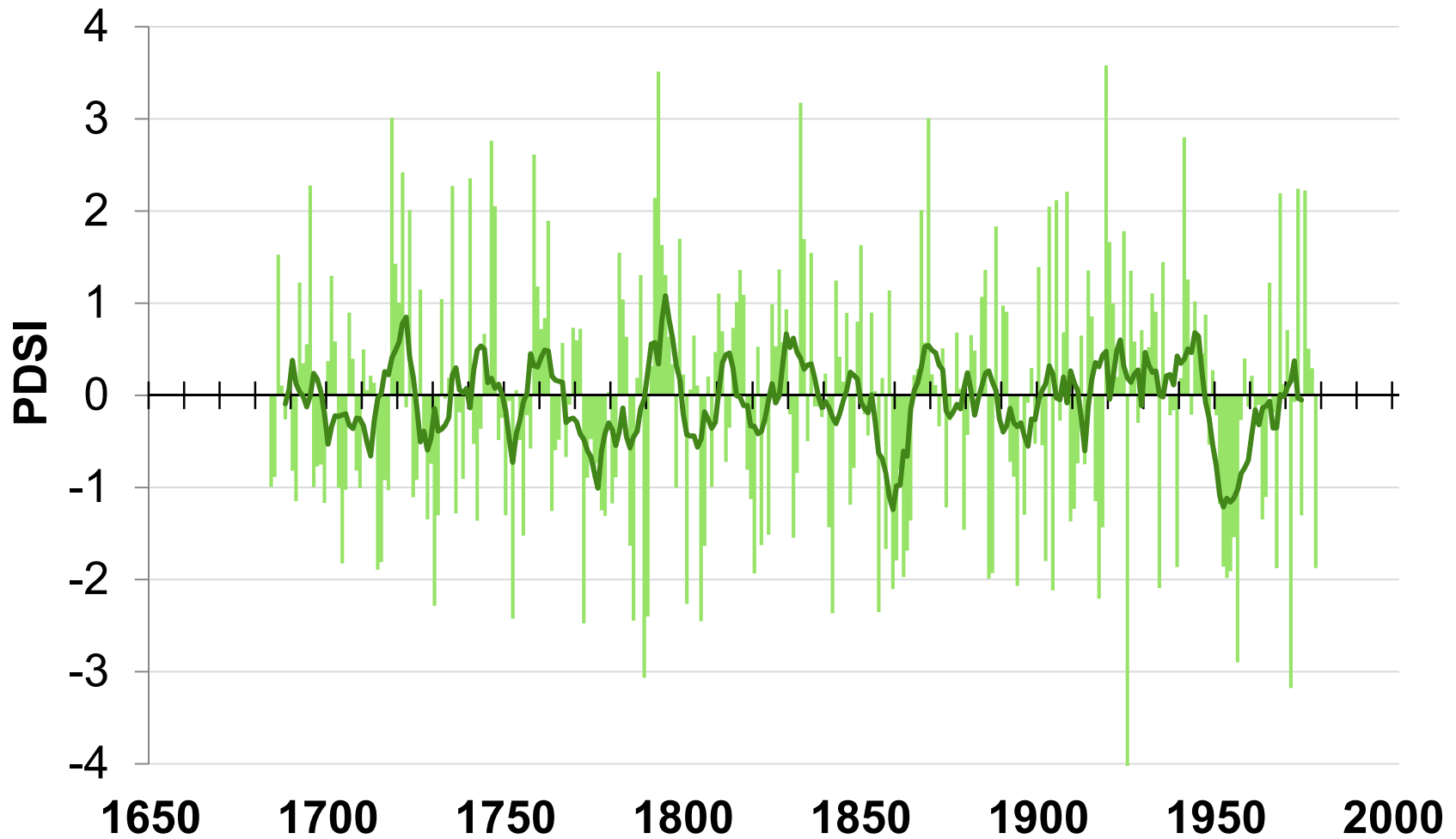


Source: Graf 1999



PALMER DROUGHT SEVERITY INDEX (PDSI) IN TEXAS (1684-1978)

(Reconstructed from Tree Ring Data; dark line indicates 10-year average)

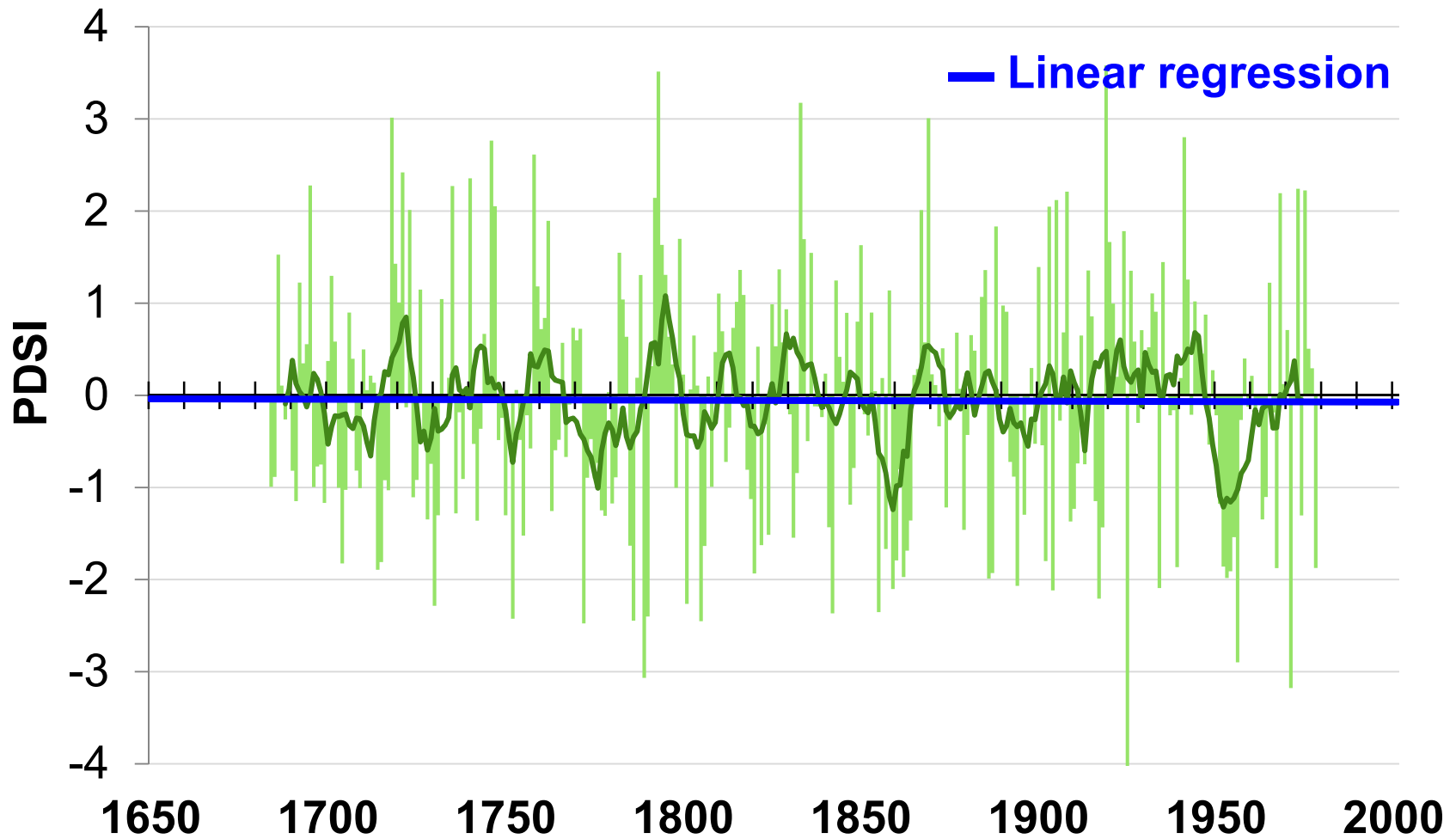


Source: Cook, et. al. 2004



PALMER DROUGHT SEVERITY INDEX (PDSI) IN TEXAS (1684-1978)

(Reconstructed from Tree Ring Data; dark line indicates 10-year average)

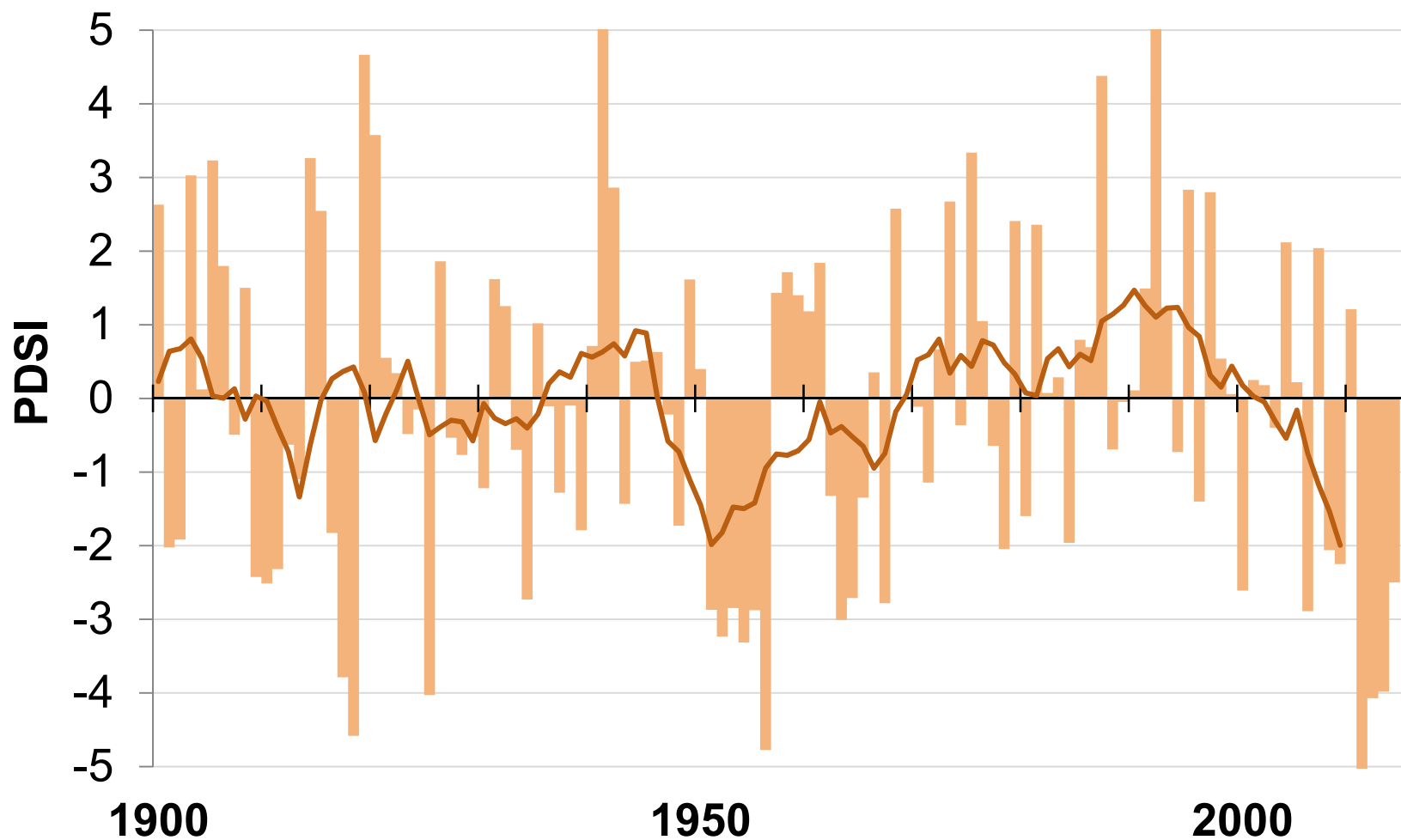


Source: Cook, et. al. 2004



PALMER DROUGHT SEVERITY INDEX (PDSI) IN TEXAS (1900-2014)

(Actual Instrument Recordings; dark line indicates 10-year average)



Source: NOAA 2015

Conclusions

“It ain’t broke, but it won’t work.”

Conclusions

- **During a ‘drought’ in Texas, paper water ≠ wet water** (not now; and not in 2060)
- **‘Droughts’ in Texas are *long-term cycles*, not *short-term events***
- **Water rates will increase**, even if desalination is not part of the solution
- The real question is this: **Will customers get *water supply reliability* for their increased rates or not?**



Thank you

WATER PARTNERSHIP SOLUTIONS THAT DELIVER



LEARN MORE ABOUT HOW EPCOR
DESIGNS, BUILDS, FINANCES AND
OPERATES INNOVATIVE WATER
SOLUTIONS:

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