

Aquifer Storage & Recovery (ASR)

Moderator:

Judge David Blackburn

Panelists:

Dr. Steve Young, INTERA

Dr. Neil Deeds, INTERA

Mr. Ricky Garrett, WCID No. 1

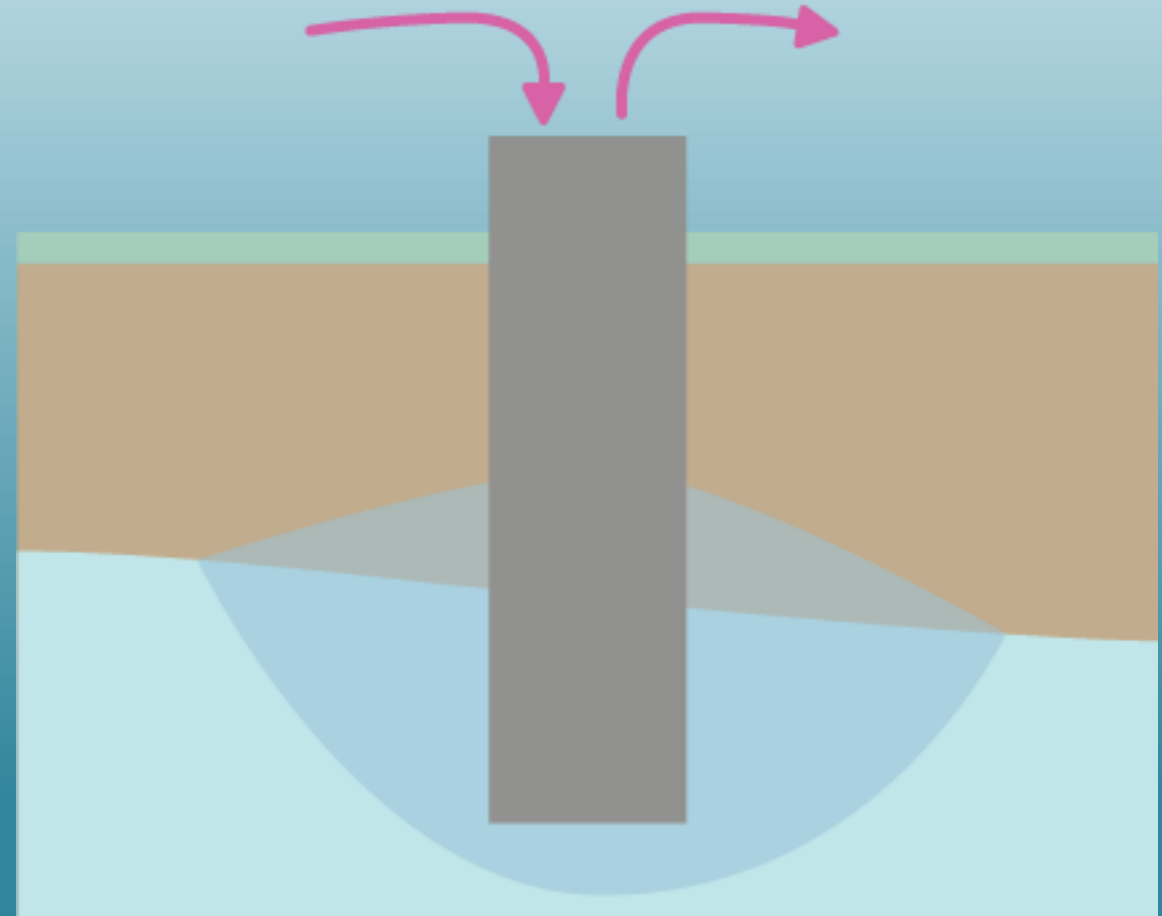
Mr. Rick Kasberg, KPA Engineers

Mr. David Olson, City of Temple

Mr. Brian Dosa, DPW Ft. Cavazos

Andrea Croskrey, Texas Water Development Board

Mr. David Smith, CDM Smith



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22nd Annual Bell County Water Symposium

Belton, Texas

What is ASR?

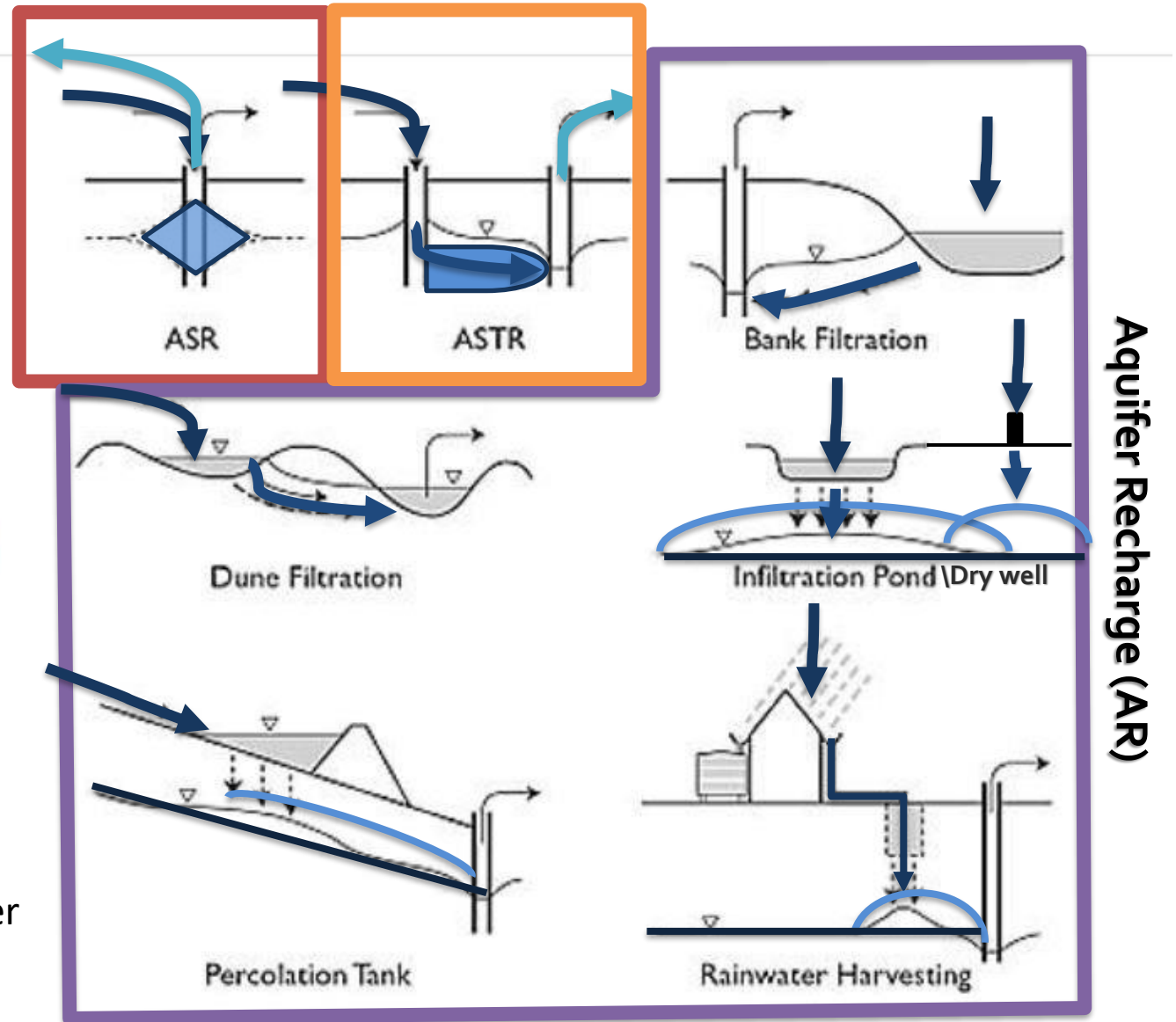
Texas Water Code:

Aquifer storage and recovery (ASR), a project involving the injection of water into a geologic formation for the purpose of subsequent recovery and beneficial use by the project operator (TWC §27.151)

Aquifer recharge (AR), a project involving the intentional recharge of an aquifer by means of an injection well authorized under this chapter or other means of infiltration (TWC §27.201)

Informally:

- ASR, a water saving account
- Aquifer Storage, Transfer & Recovery (ASTR), a water savings account but you transfer your deposit
- AR, a water investment



Most common MAR techniques (Gale and Dillon 2005) ASR: Aquifer Storage and Recovery; ASTR: Aquifer Storage Transfer and Recovery

ASR: a brief TX legislative history

- 1993, SB 1477: Edwards Aquifer Act, EAA may increase/enhance recharge of the aquifer
- 1995, HB 1989: statutes for ASR, \$500K for pilot projects, reports to 75th & 76th Legislature
- 2001, SB 2: no injection wells through the Edwards Aquifer in Kinney, Uvalde, Medina, Bexar, Kendall, Comal, Hays, Travis, and Williamson counties [30 TAC 331.19(b)]
- 2015, HB 655: amended TWC for ASR projects; TCEQ can authorize by permit or rule, public notice required, injected water must meet Federal Safe Drinking Water Act standards, role of TCEQ & GCDs defined, recovery determination required; new rules effective May 19, 2016
- 2015, HB 1 Rider 25: \$1M for alternative water supply demonstration projects
- 2019, SB 483: allows injection through the Edwards Aquifer for ASR in BSEACD
- 2019, SB 520: allows NBU to have an ASR injection well in Edwards Aquifer >5k mg/L TDS
- 2019, HB 720: adds statutes for AR; surface water, including stormwater and floodwater, may be appropriated for ASR & AR; may apply to amend surface reservoir water right to ASR with evaporation or sedimentation losses credit
- 2019, HB 721: TWDB mandate for ASR studies

What is TWDB's role in ASR?

- **Science**

- Reports, contracts, and in-kind services
- <https://www.twdb.texas.gov/innovativewater/asr/docs.asp>

- **Planning**

- Regional and statewide
- <https://www.twdb.texas.gov/waterplanning/index.asp>

- **Funding**

- Grants and loans for feasibility studies, design, construction
- <https://www.twdb.texas.gov/financial/index.asp>

TWDB Innovative Water Technologies

Mandate

- Texas Water Code §11.155
- Conduct ASR or AR studies
- Work with and report the results to water planners, engineers, government officials, and other appropriate interested persons that may be investigating the development of ASR and AR projects within Texas.

Goals

- Inform through public education
- Provide all available study materials & data
- Facilitate the application of best practices among entities

Who regulates ASR?

ASR or AR well

- TCEQ: Underground Injection Control Class V injection well authorization
- TCEQ: public water supply permit if for drinking water

ASTR or AR infiltration basin

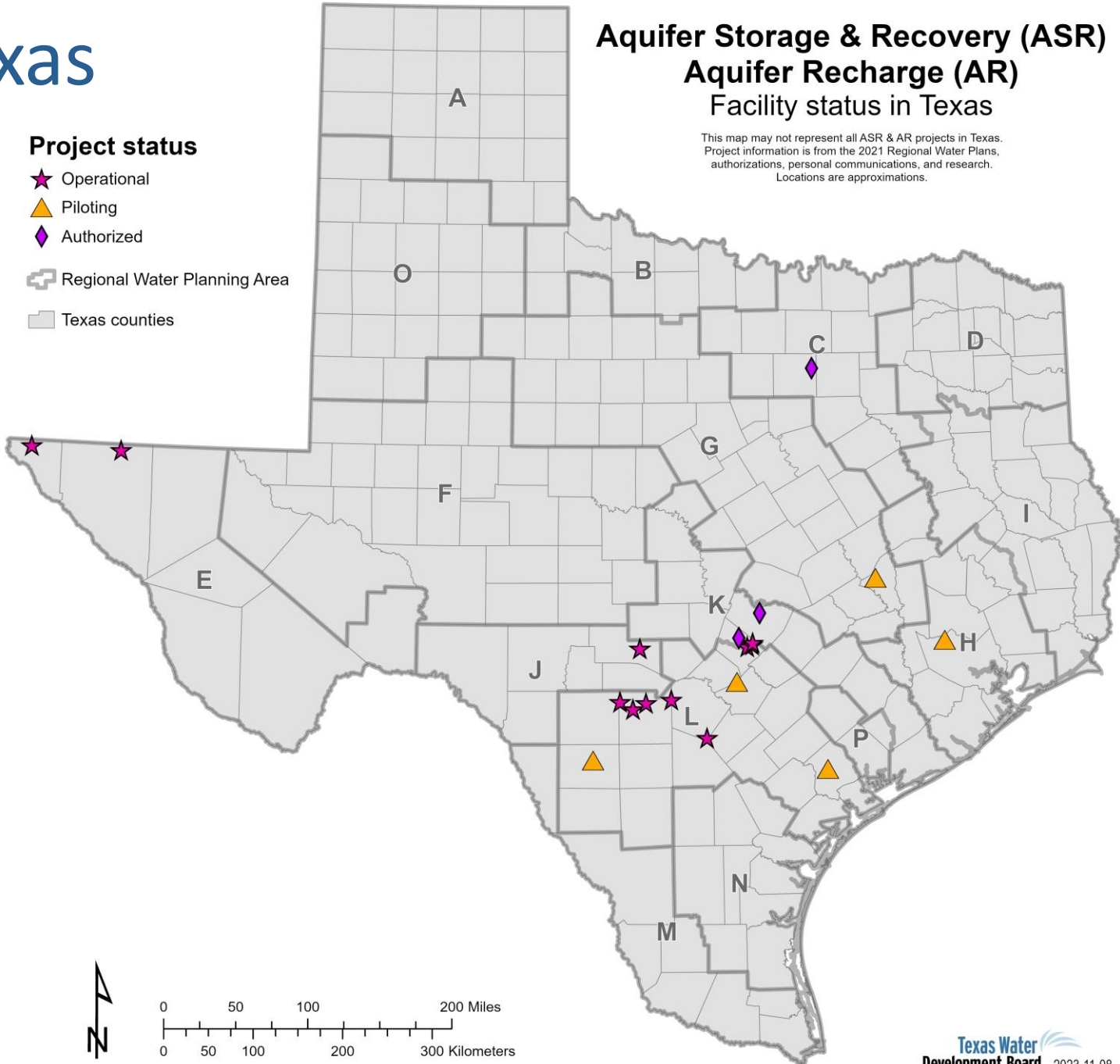
- Regulation on the source water supply

Source water supply for injection or infiltration

- Surface water: TCEQ, surface water rights determination or amendment
- Groundwater permit: possibly a GCD permit
- Reclaimed water: some regulatory ambiguity

Existing ASR and AR in Texas

- 11 operational (4 ASR, 7 AR)
- 5 are pilot testing, 3 have authorizations
- Scales vary greatly
 - Kerrville, ~3,000 acre-feet stored (March 2022)
 - San Antonio, ~186,000 acre-feet stored (October 2022)



Future ASR and AR in Texas

88th Texas Legislature (2023)

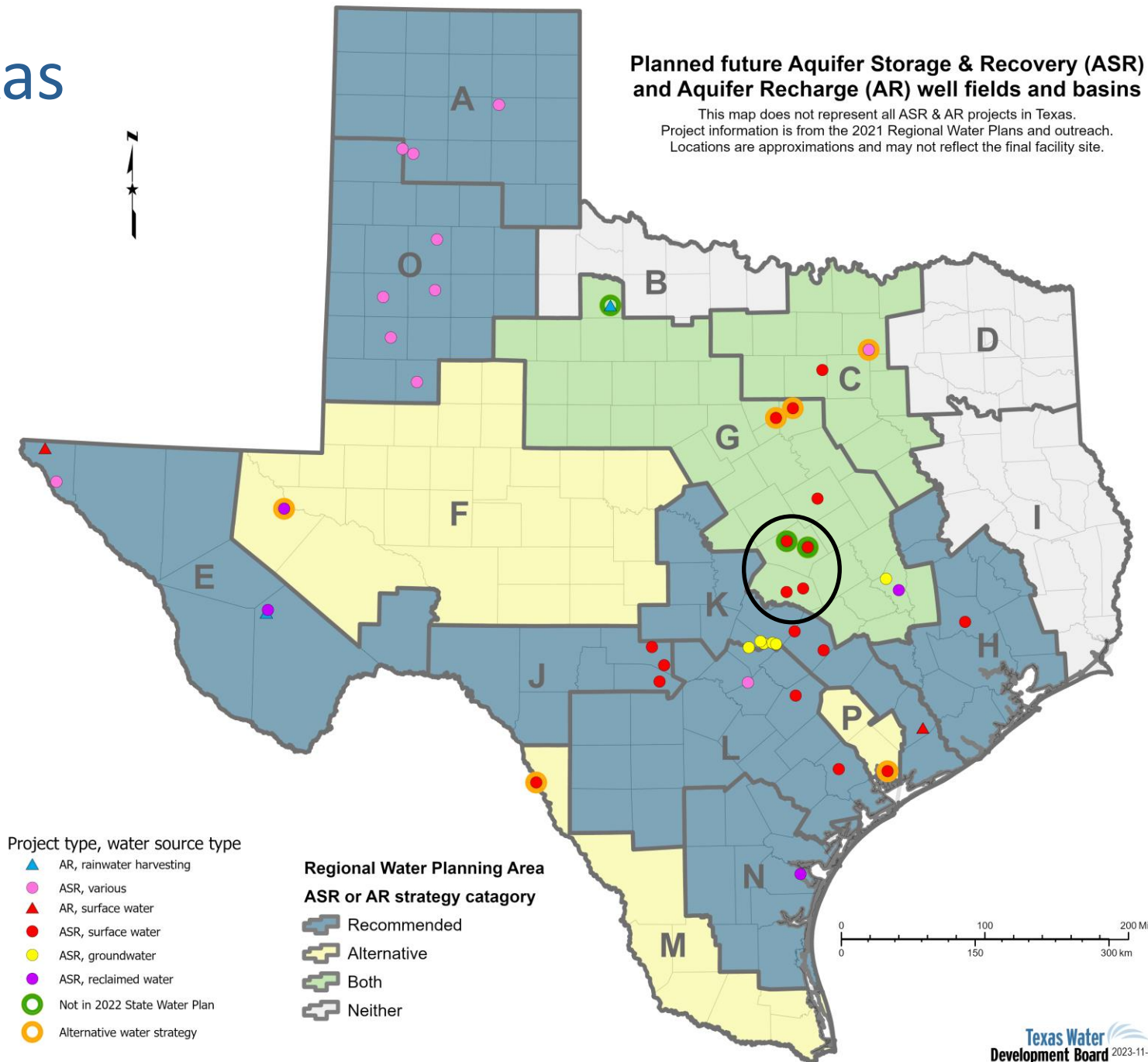
- SB 28 - New water supply for Texas fund
[Proposition 6 **PASSED!!!!**]
- SB 2379 - ASR in eastern Williamson County
[vetoed]

State Water Plan (2022) strategies

- 10 of 16 regional water planning groups
- 37 ASR well fields, 3 AR surface infiltration
- 193,000 acre-feet per year in 2070, 3% of the total
- \$2.7B total capital costs, \$18.5M median capital cost per project, \$39-\$1,330/acre-foot

Additional planned projects

- 2 ASR well field, 1 AR surface infiltration



TWDB ASR & AR Program

Andrea Croskrey, P.G.

Geoscientist, ASR discipline lead

Innovative Water Technologies Department

andrea.croskrey@twdb.texas.gov

512-463-2865

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

Stay connected:

