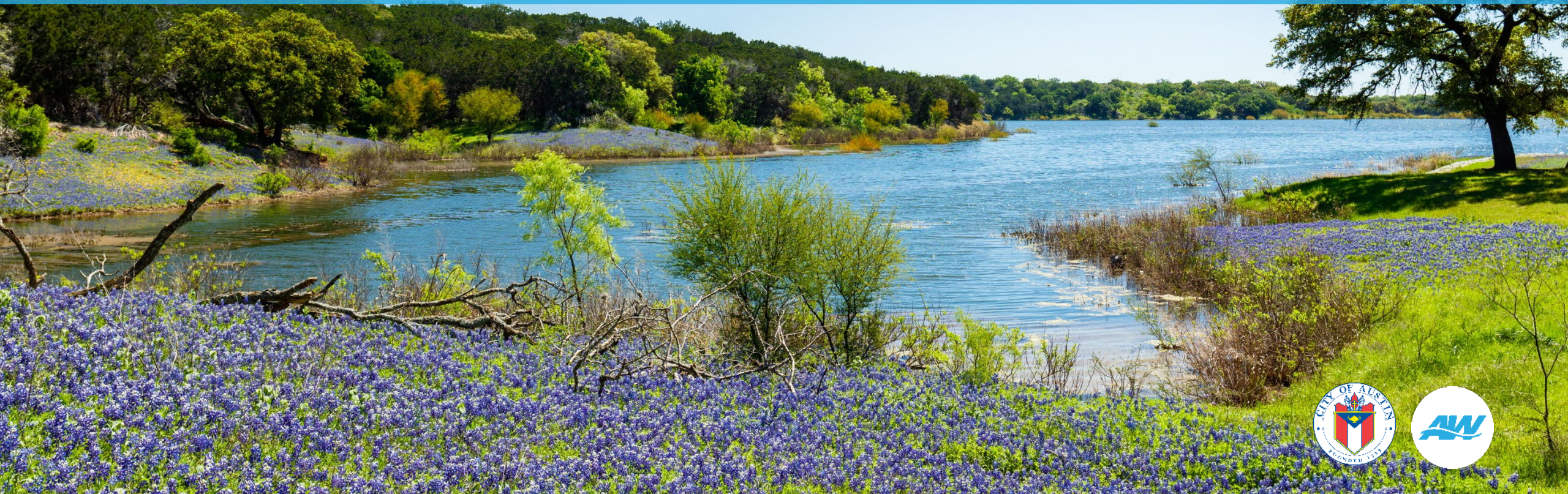
AQUIFER STORAGE & RECOVERY

Water & Wastewater Commission | June 8, 2022



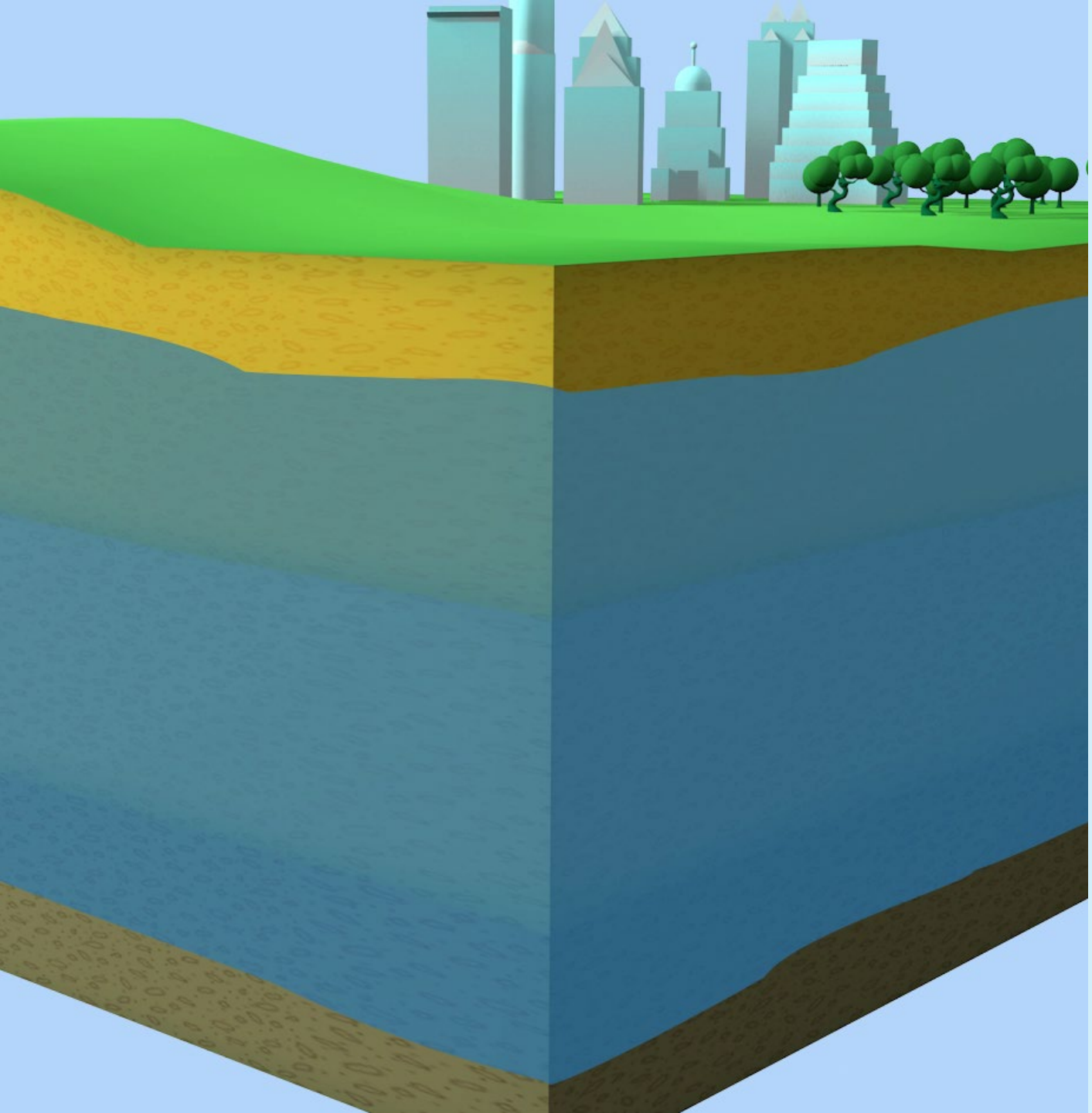
AGENDA

1. Welcome
2. About Aquifer Storage & Recovery (ASR)
3. ASR Project Timeline
4. Update on Work To Date
5. Next Steps

ABOUT ASR: PROJECT BACKGROUND

Aquifer Storage and Recovery (ASR) is a water supply strategy to store available water for recovery and use when we need it most.

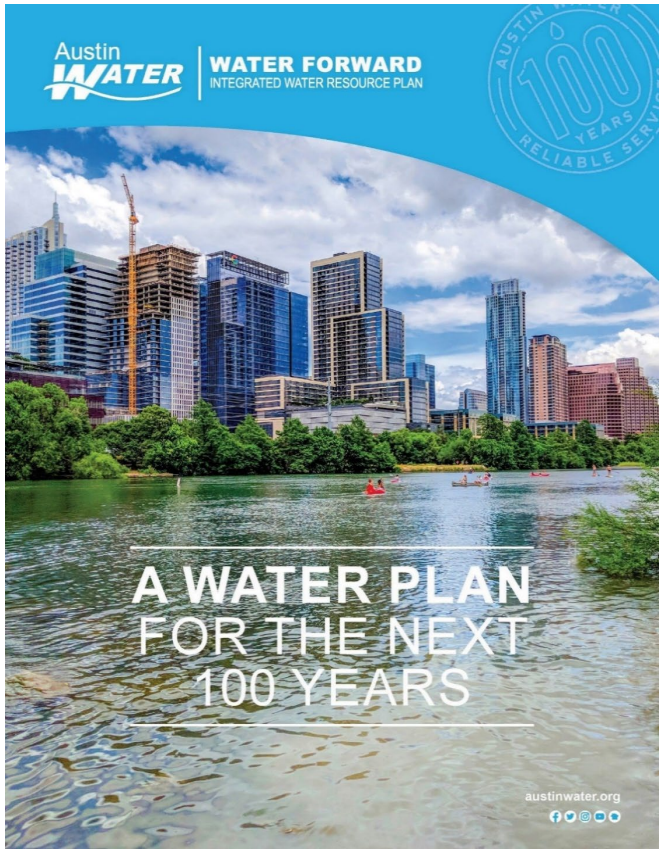
Other cities around the US and here in Texas are already using ASR systems, including San Antonio, El Paso, and Kerrville.



ABOUT AQUIFERS

- **Aquifers** are layers of rock or sediment below the ground that can hold large amounts of water
- **Groundwater** is water held underground in the sediment or in rock pores.
- The ASR project will not remove more water than was stored.

ABOUT ASR: PROJECT BACKGROUND



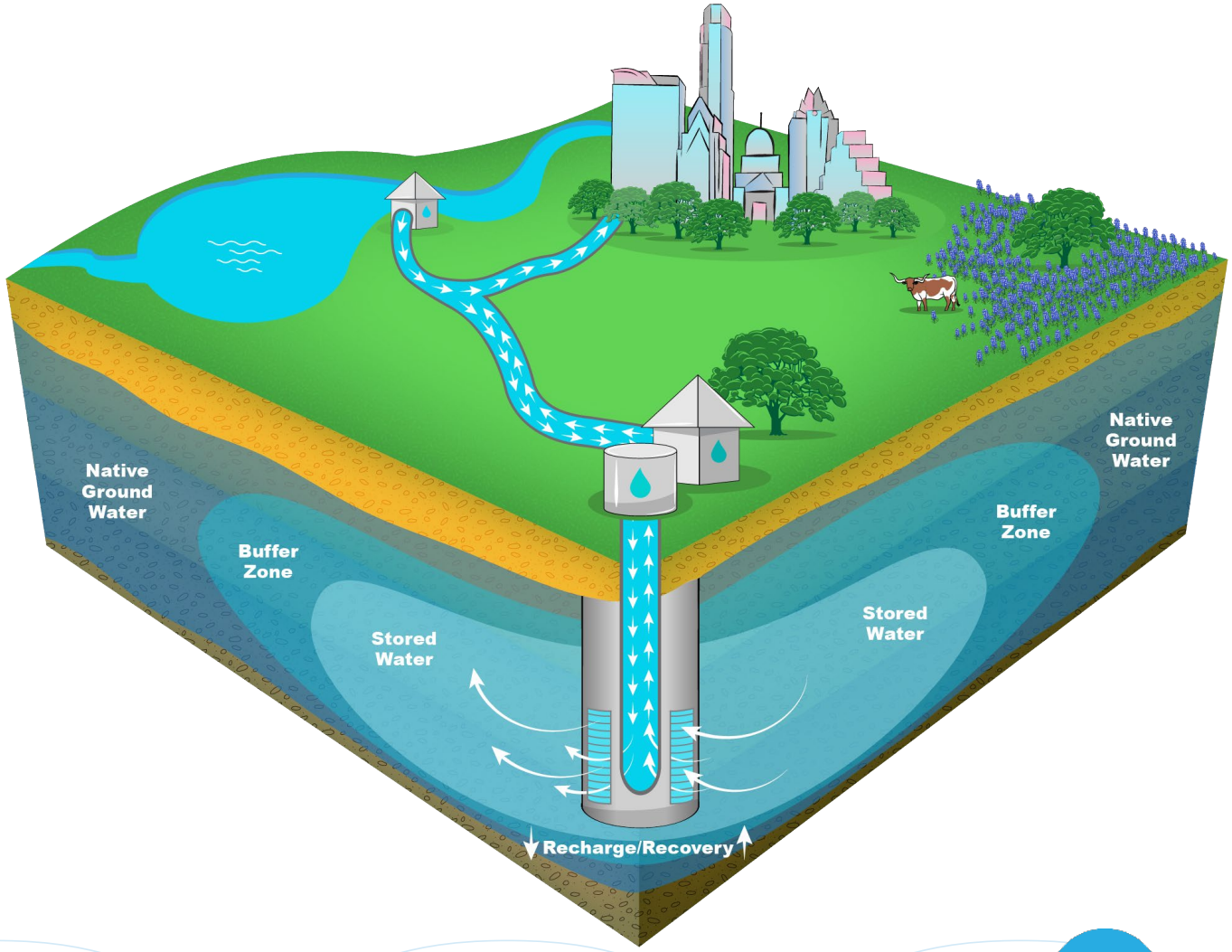
ASR is part of the Austin City Council-approved Water Forward plan, which provides a roadmap for Austin's water future for the next 100 years.

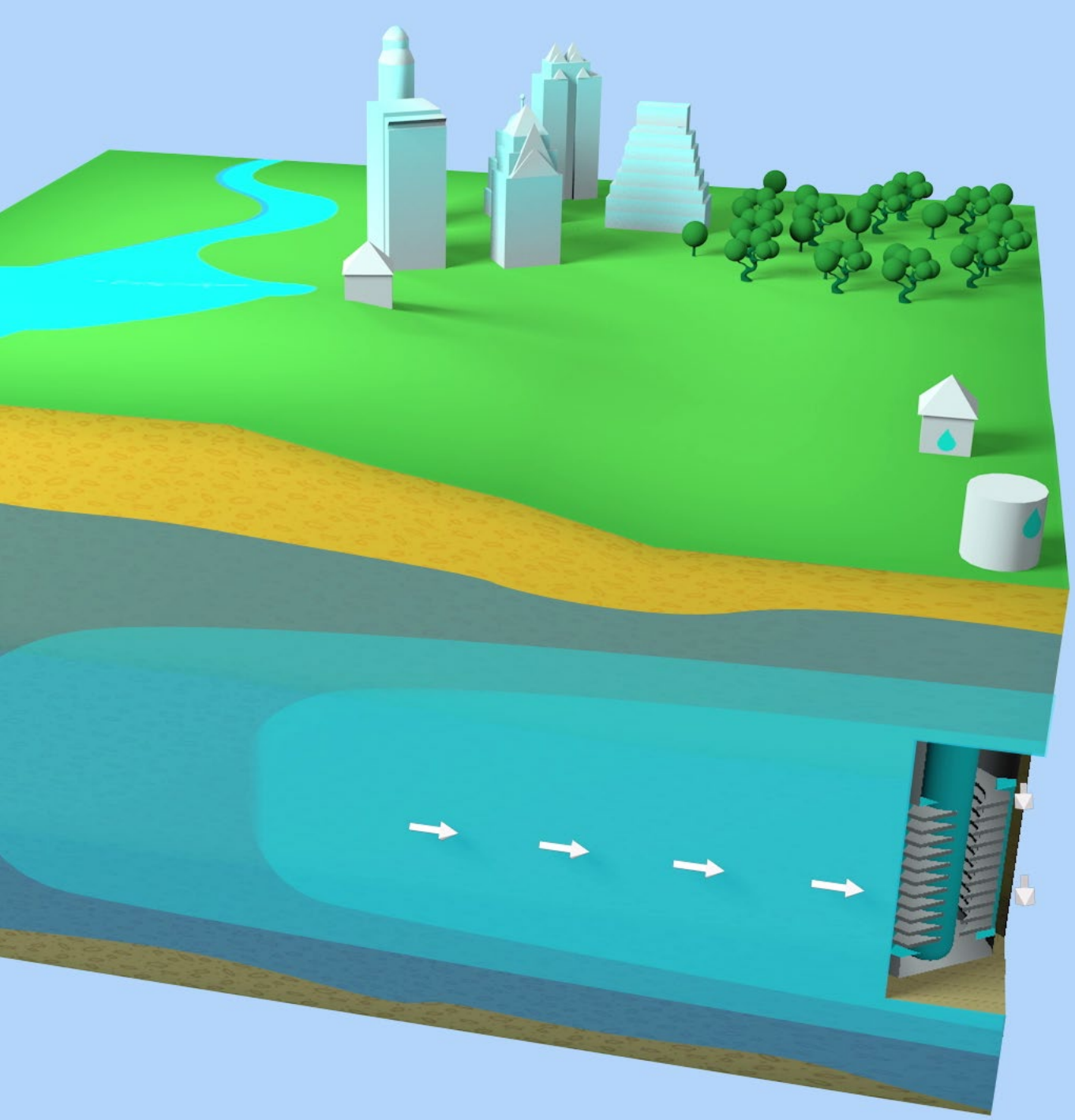
In 2021, Austin Water (AW) began a study to determine if aquifers in our region are suitable for AW's ASR project.

ABOUT ASR:

HOW IT WORKS

- When water supplies are plentiful, available water from Austin's drinking water system is pumped into an aquifer underground.
- Treated, potable water is stored in the aquifer until it is needed.





ABOUT ASR: HOW IT WORKS

- When Austin's regular water supply becomes low, stored water can be pumped out of the aquifer
- Stored water is tested and treated before delivered to customers.

ABOUT ASR: PROJECT BENEFITS

Aquifer Storage and Recovery will make Austin's water supply more resilient through climate change and droughts.

An ASR system can store large amounts of water with minimal disturbance to the land above the aquifer.

Water stored in an ASR system would be available under Austin's existing water rights, allowing Austin to maximize local water resources.

Storing water underground in a natural aquifer prevents the high evaporative losses that reservoirs experience in a warm climate.

Storing water in a natural aquifer is more cost effective than other similarly sized water storage options.

An ASR system could provide a second source of water supply during emergencies.

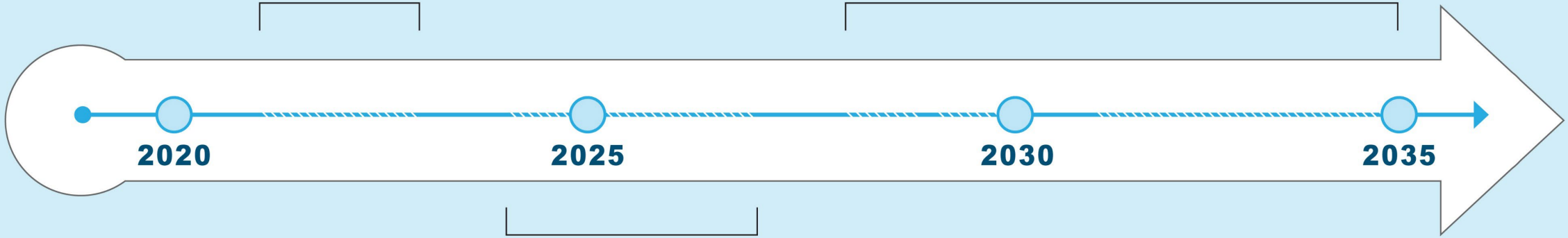
ABOUT ASR: PROJECT TIMELINE

2021-2023

Identify locations for testing and possible projects

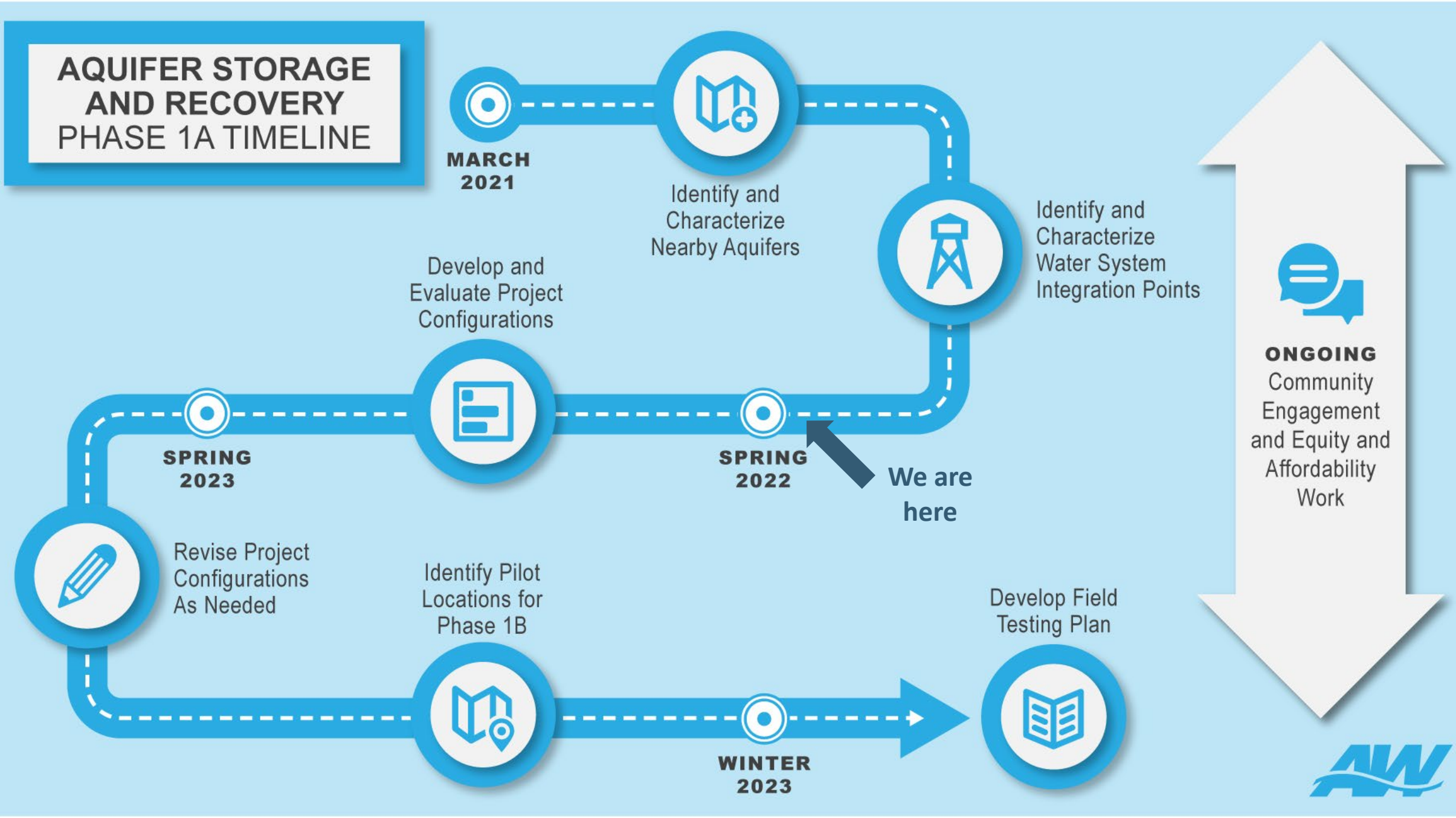
2028-2035

Design and construction of full-scale ASR project



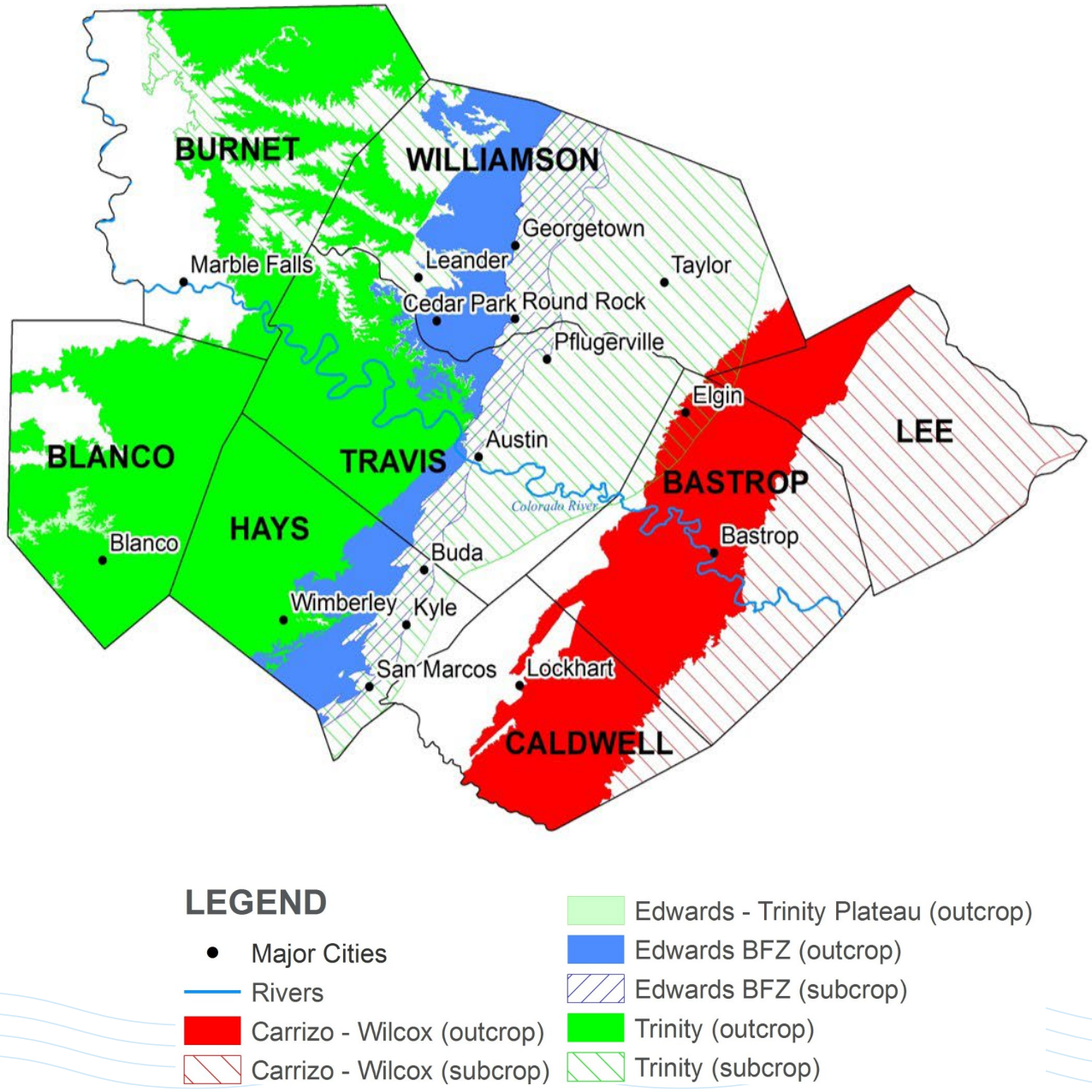
2024-2027

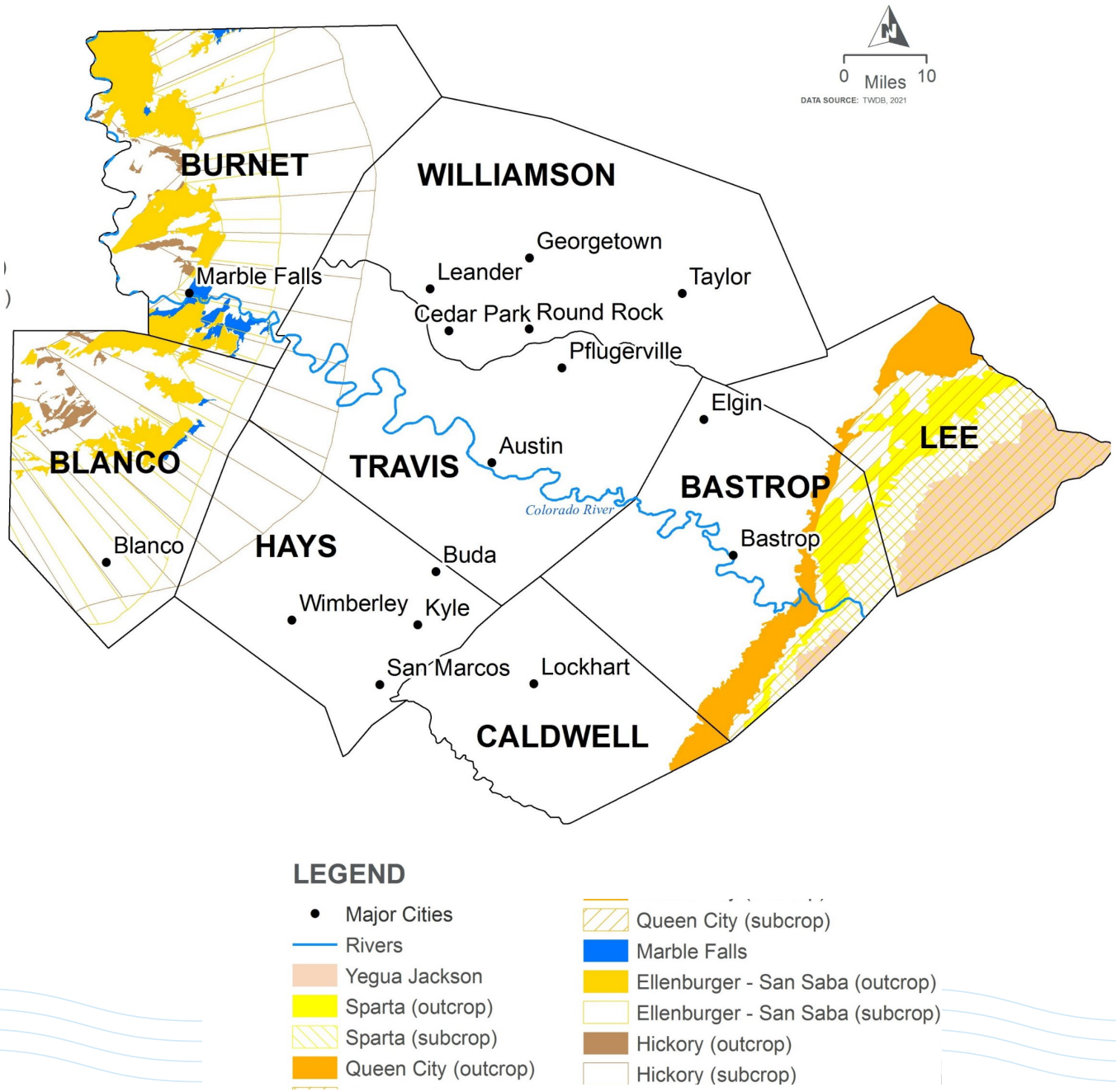
Conduct field testing and small-scale project testing to develop recommendations for a full-scale ASR project


AQUIFER STORAGE AND RECOVERY
PHASE 1A TIMELINE
MARCH 2021
Identify and Characterize Nearby Aquifers
Identify and Characterize Water System Integration Points
Develop and Evaluate Project Configurations
SPRING 2023
SPRING 2022
We are here
Revise Project Configurations As Needed
Identify Pilot Locations for Phase 1B
WINTER 2023
Develop Field Testing Plan
ONGOING
Community Engagement and Equity and Affordability Work

INITIAL SCREENING

Major aquifers





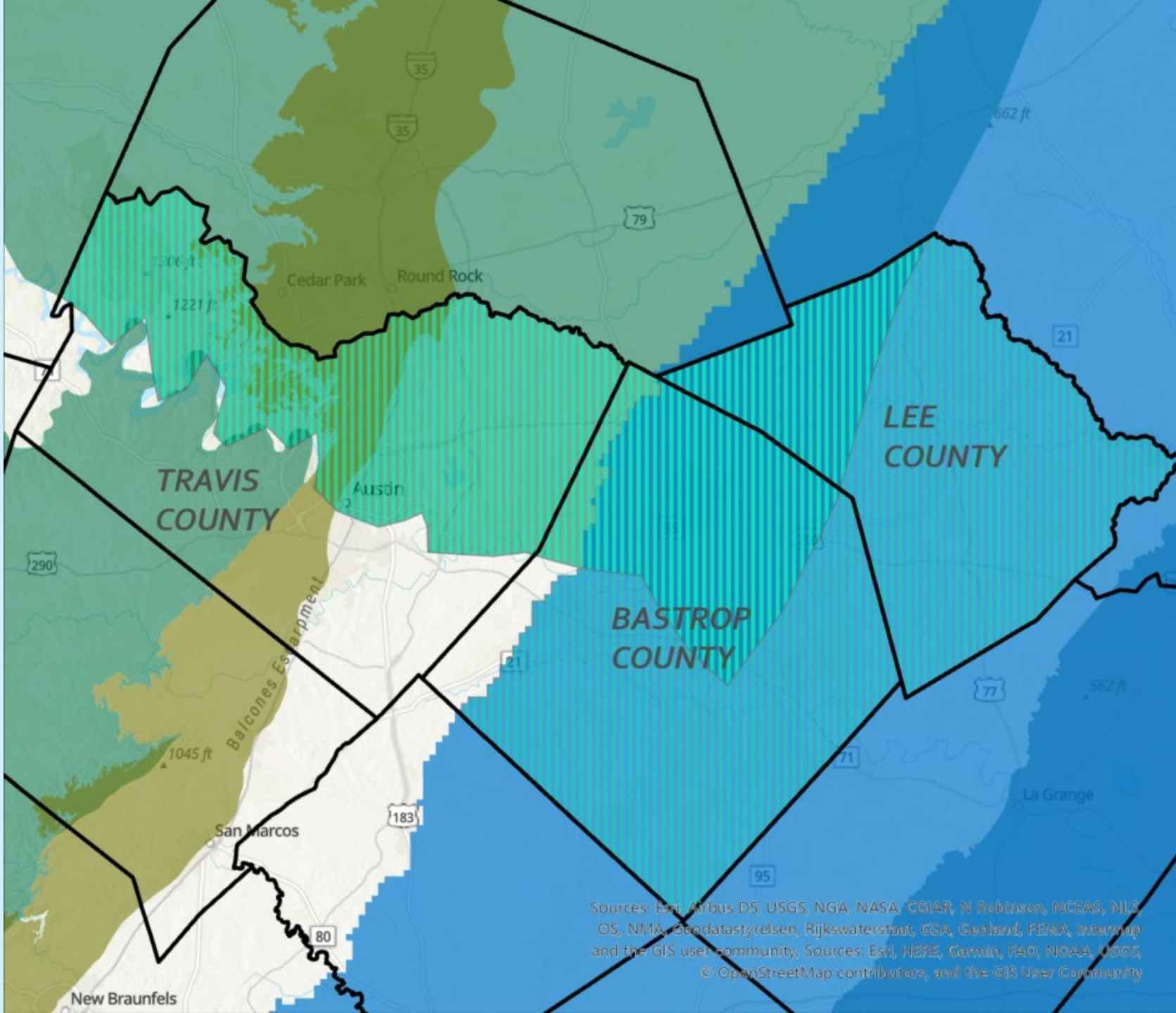
INITIAL SCREENING

Minor aquifers

INITIAL STORAGE ZONE SCREENING RESULTS

County	Aquifer-Aquifer Subunit	# of wells for 2040 yield	Permitting Score	Hydro Score	Screening Result
Bastrop	CW-Carrizo	100	84%	77%	Moving forward to Task 4.5 for further analysis. Specific subunits for Task 4.5 include the Carrizo-Wilcox Carrizo, CW-Simsboro, and NT-Hosston units in Bastrop County.
	CW-Simsboro	105	82%	76%	
	NT-Hosston	61	78%	71%	
Lee	NT-Hosston	55	77%	71%	Moving forward to Task 4.5 for further analysis. Subunits for Task 4.5 include the Northern Trinity Hosston unit, CW-Simsboro, and CW-Carrizo units in Lee County.
	CW-Carrizo	93	76%	77%	
	CW-Simsboro	50	76%	79%	
Travis	**NT-Hosston**	116	60%	74%	Moving forward to Task 4.5 for further analysis. Subunits for Task 4.5 include the Northern Trinity Hosston unit in Travis County.
Williamson	NT-Hosston	130	50%	74%	Lower permitting score and higher number of wells needed.
Hays	Edwards BFZ	2	25%	68%	Lower hydro/permitting score than other options.
Blanco	Ellenburger - San Saba	75	79%	67%	Lower hydro score than other options.
Travis	Edwards BFZ	11	51%	65%	Lower hydro/permitting score than other options.
Hays	Hickory	134	84%	65%	Lower hydro score and higher number of wells needed.
Burnet	Ellenburger - San Saba	119	82%	64%	Lower hydro score and higher number of wells needed.
Hays	Edwards BFZ	0	31%	61%	Lower hydro/permitting score than other options.
Travis	Edwards BFZ	1	52%	59%	Lower hydro/permitting score than other options.
Hays	TrinHC - Middle Trinity	123	58%	58%	Lower hydro/permitting score than other options.
Blanco	Ellenburger - San Saba	138	77%	54%	Lower hydro score and higher number of wells needed.

INITIAL STORAGE ZONE SCREENING RESULTS



Legend:

- County_boundaries
- ScreeningResults_Trinity_extent

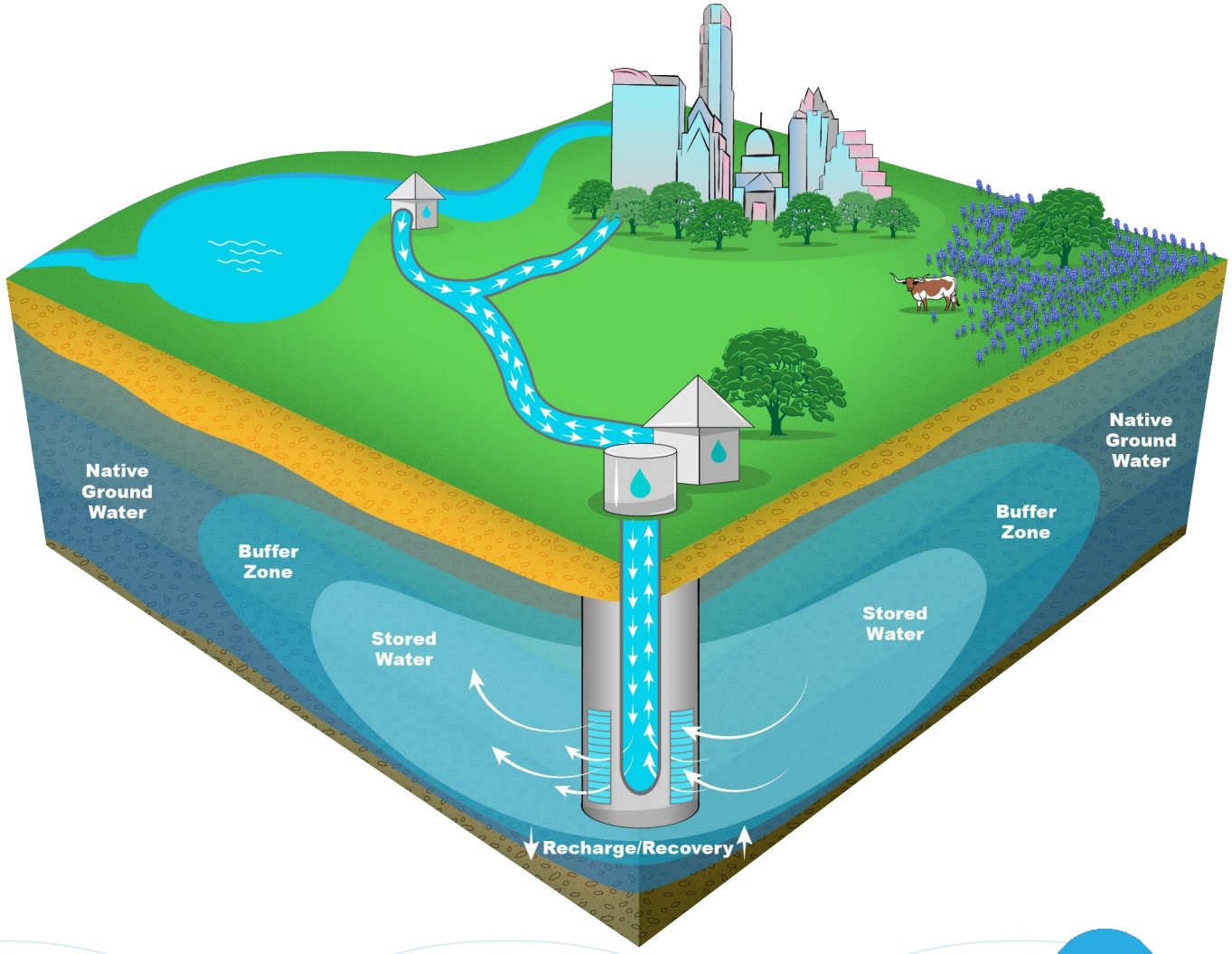
Major Aquifers:

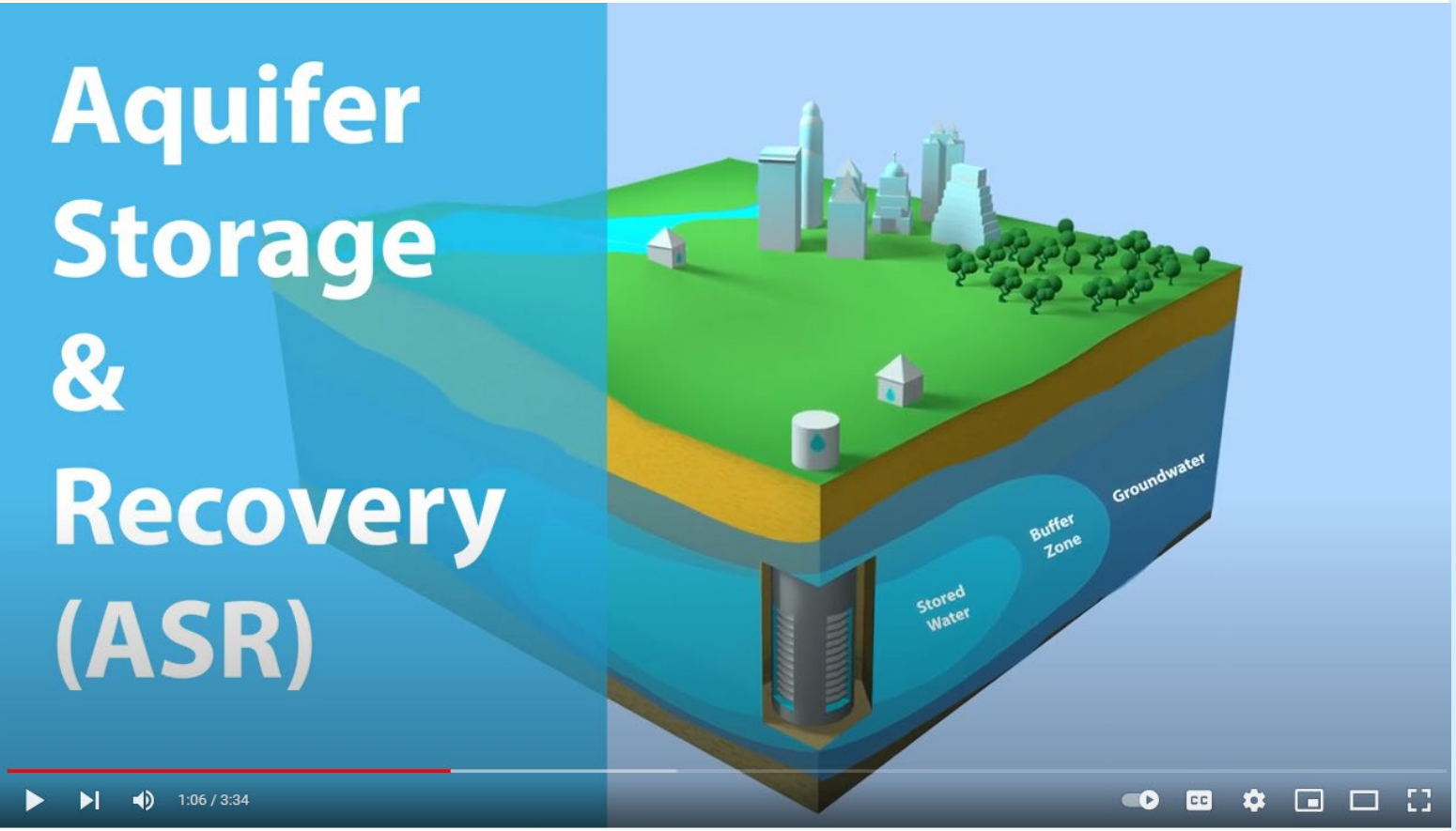
- Carrizo
- TrinityHC
- Trinity
- GulfCoast
- Edwards

ASR PHASE 1A

NEXT STEPS

- Detailed spatial analysis to identify potential piloting locations for evaluation
- Evaluate potential locations using criteria and weightings informed by community input
- Recommend a location for further field testing and piloting
- Continue community engagement and equity efforts throughout the process





ASR video: https://www.youtube.com/watch?v=LM203bvnUv8

QUESTIONS?

- AustinTexas.gov/ASR
- SpeakUpAustin.org/ASR