



GRP Review Committee Meeting

April 22, 2024

Item 1

Call to Order

Item 2

Public Comments

Item 3

Approval of Minutes

Item 4

GRP Division Updates

Item 5
**Discussion Regarding Spring Creek Utilities,
MUD 88 and MUD 89**

Item 6
Lone Star Groundwater Conservation
District Update

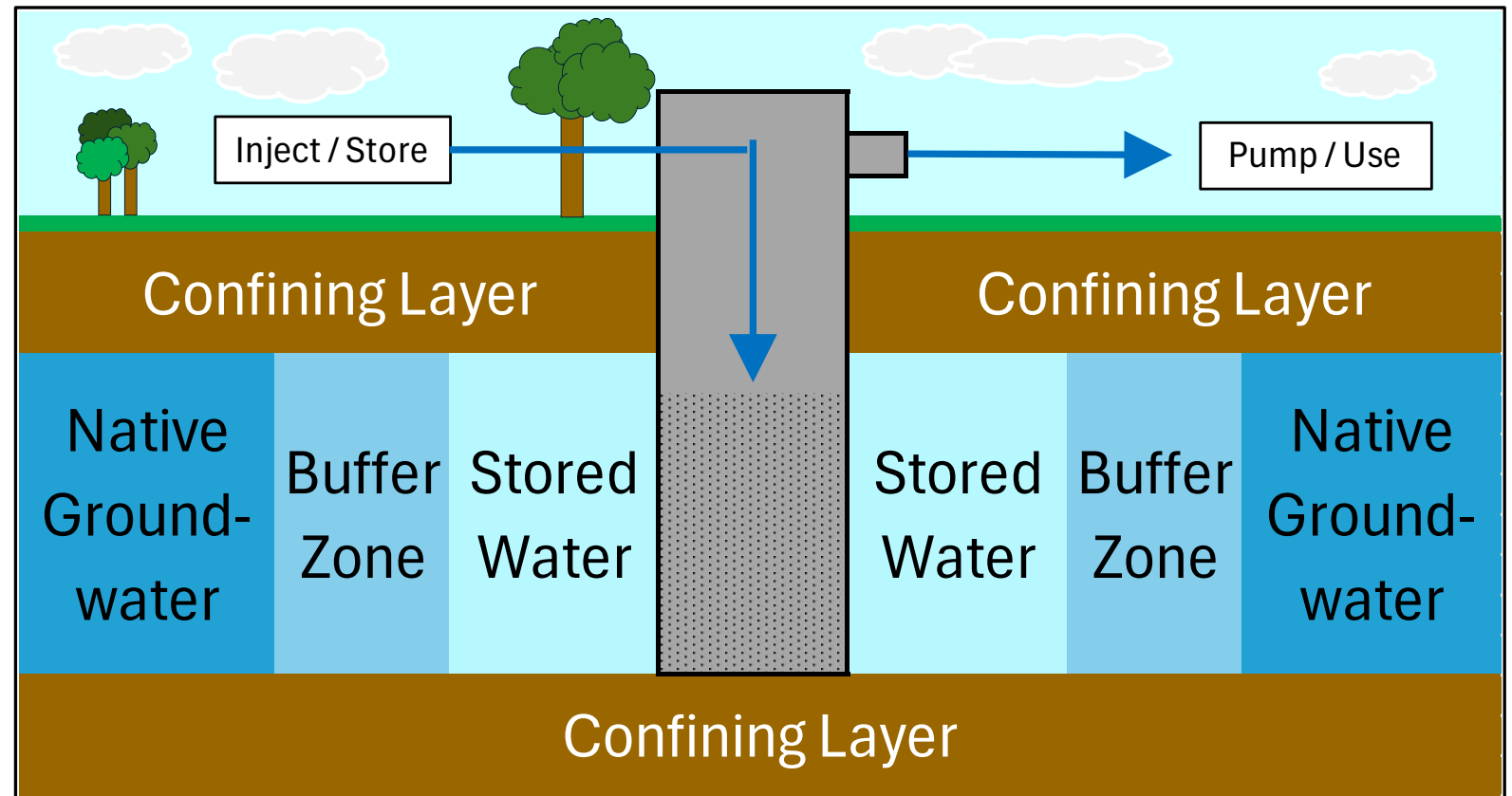
Item 7
**Presentation and Update on Aquifer Storage
Recovery**

What is ASR?

- **Texas Administration Code (TAC) Title 30 §331.2 (9) defines ASR as:**
“...the injection of water into a geologic formation, group of formations, or part of a formation that is capable of underground storage of water for later retrieval and beneficial use.”
- **TWDB defines ASR as:**
“The practice of storing water in a suitable aquifer through a well when water is available and recovering the water from the same aquifer when it is needed.”
- **FEMA defines ASR as:**
“Capturing water when it is abundant such as a rainy season or during spring snow melts, storing the water in the subsurface in brackish aquifers, and recovering the water when needed.”

Aquifer Storage & Recovery (ASR)

- **Freshwater Aquifer**
 - *High recovery possible, potentially 100%.*
- **Brackish Aquifer**
 - *100% recovery likely not possible*
 - *Some water used to establish buffer zone*
- **Storage time effects recovery**
 - *Potential migration and chemical interactions*



Concerns about ASR

Ability to recover stored water and quality of recovered water if stored for too long.

Aquifer Contamination

Before water is injected into an aquifer, it must be treated to drinking water standards. However, differences in water chemistry between the injected water and receiving aquifer could cause metals such as arsenic, hydrogen sulfide or uranium in the surrounding geologic formation to dissolve in the injected water

Concerns about ASR

Energy consumption and cost effectiveness

ASR source water generally has to be treated both before it is injected as well as after it is withdrawn. This treatment, along with pumping the water to and from the ASR facility, makes ASR more energy intensive and potentially not as cost effective as other water supply options.

Concerns about ASR

Potential migration and potential for others to recover the stored water

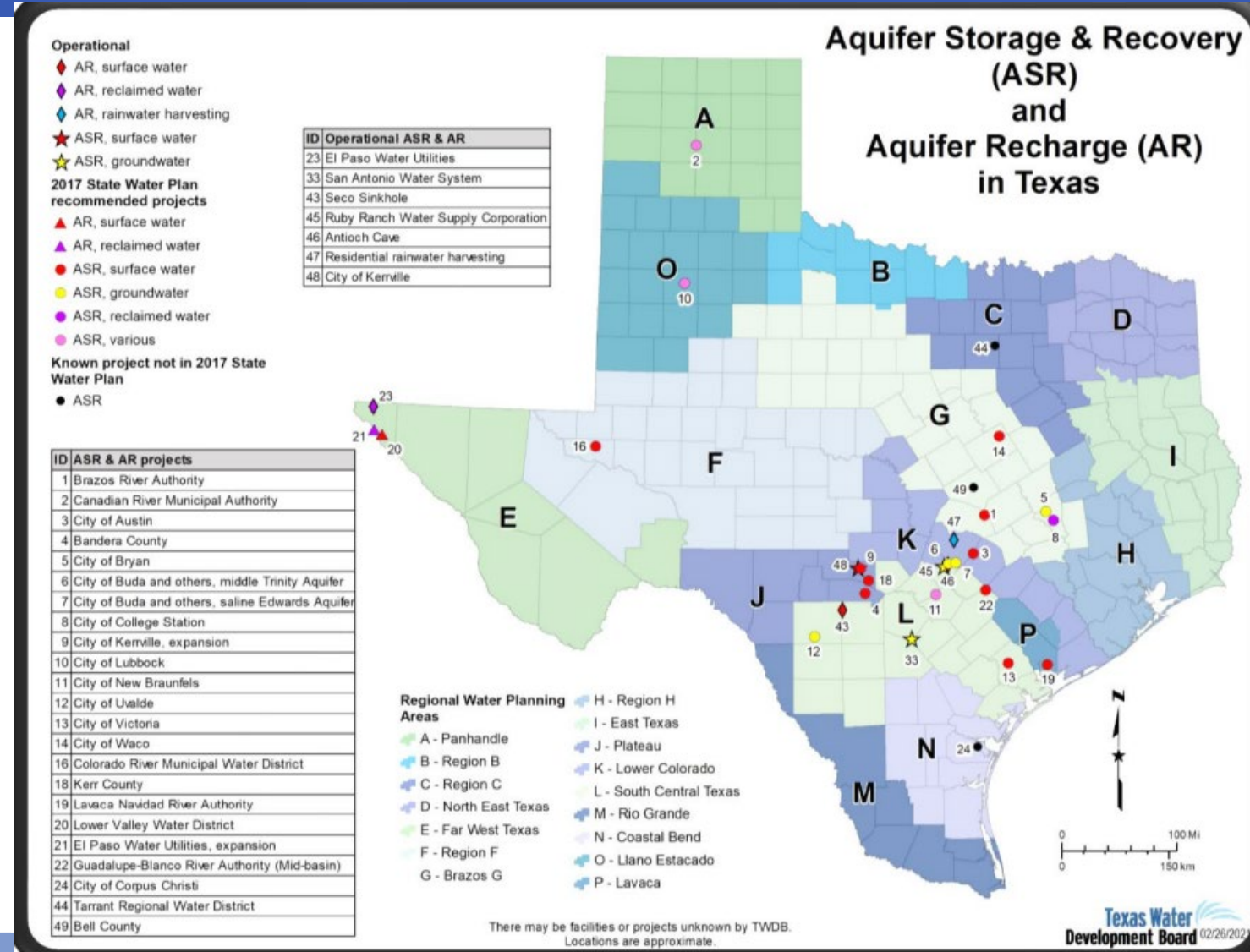
If long storage times are expected, flow in the aquifer may pose a risk of the stored water migrating away from the storage site and potentially lead to others recovering the stored water.

Benefits of ASR

- Long term storage
- Seasonal storage/peak demand management
- Emergency Storage and Supply
- Reclaimed water storage for reuse
- Defer expansion of water facilities
- Ecosystem maintenance
- Potential for restoration of groundwater Levels
- Evaporation management

ASR Planning

- 86th Texas Legislature (2019) passed ASR related mandates:
 - Statewide Suitability Survey (completed in 2020)
 - TWDB to conduct statewide survey to identify the relative suitability of the major and minor aquifers in Texas for ASR or Aquifer Recharge (AR).
 - Individual Studies
 - TWDB evaluated 21 studies and selected 2 to pursue.



Current TWDB ASR Projects

- **Aquifer Storage and Recovery Report: ASR Suitability Survey for the Lower Valley Water District, El Paso County, Texas**
 - *The goal of this study is to provide the Lower Valley Water District (LVWD) in Clint, Texas with a refined suitability map for a potential aquifer storage and recovery project. This suitability map will include the hydrogeological characteristics of the Hueco Formation, potential sources of excess water to inject into the Hueco-Bolson aquifer, and a water needs analysis.*
 - **Study Start Date:** April 2022
 - **Study Completion Date:** Winter 2023/2024
 - **Study Status:** *Ongoing*
 - **Benefits:** *This study will aid the LVWD with the development of their proposed ASR project and will also be publicly available to researchers or other stakeholders interested in developing ASR projects.*

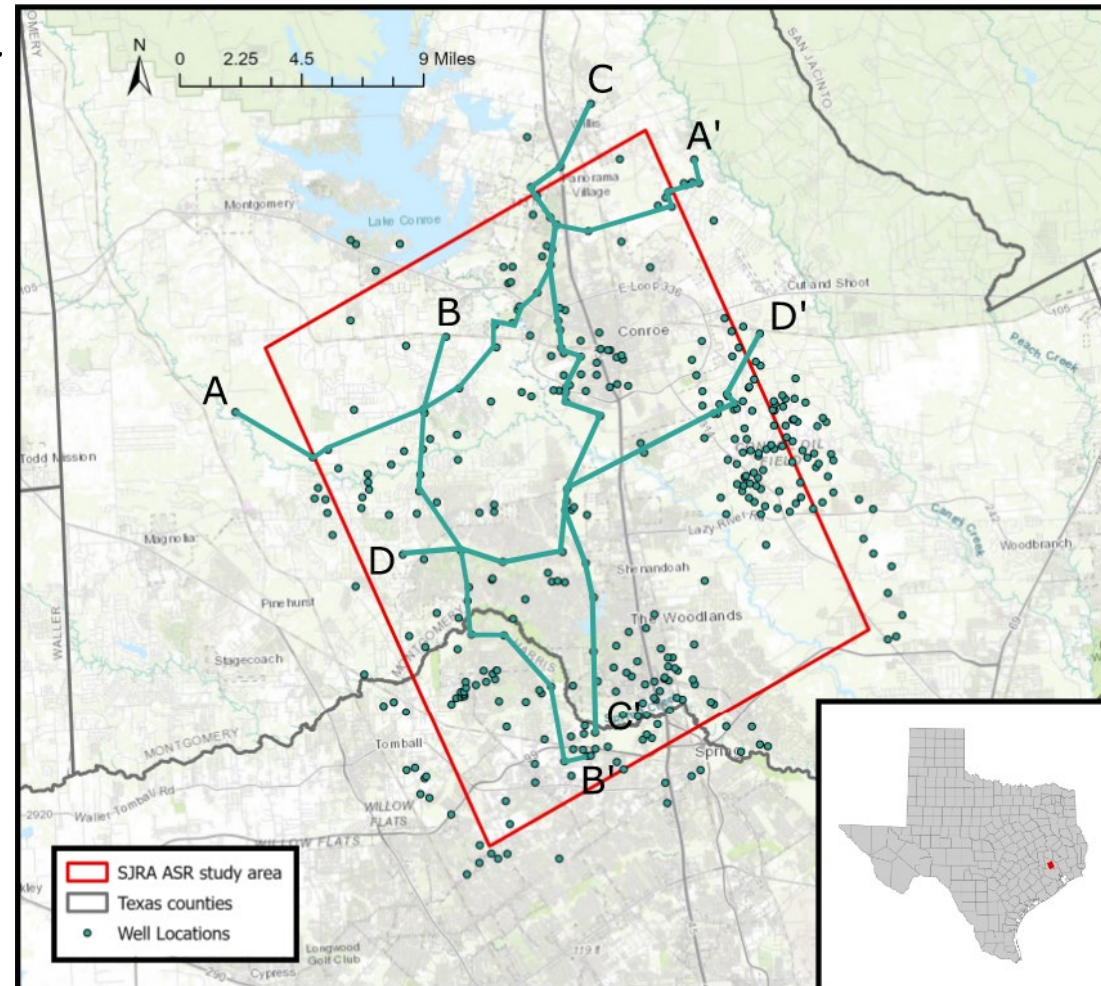
Current ASR Projects

- **Aquifer Storage and Recovery Report: Gulf Coast Aquifer Characterization for Southern Montgomery County, Texas:**
 - *The goal of this study is to map and characterize the Gulf Coast Aquifer within the study area using existing water well reports, well cuttings from new nearby water supply wells, geophysical well logs, and available aquifer data. This study will support the aquifer storage and recovery (ASR) strategy of the San Jacinto River Authority (SJRA) and is a recommended water management strategy in the 2022 State Water Plan.*
 - **Study Start Date:** April 2022
 - **Study Completion Date:** Mid 2025
 - **Study Status:** *Ongoing*
 - **Benefits:** *This study will develop data and a report that will aid SJRA with the development of their proposed ASR project and will also be publicly available to researchers or other stakeholders interested in developing ASR projects.*

TWDB performing on SJRA's behalf

TWDB-SJRA Project Tasks and Goals

- **Scope**
 - *Detailed aquifer characterization of the Gulf Coast Aquifer in and around SJRA's Montgomery County service area*
 - *Analysis from the Statewide ASR Suitability Survey*
 - *Site selection considerations and suggestions based on hydrogeology*
- **Tasks Performed to Date**
 - *Identification and location verification of 365 wells for use in analysis*
 - *Correlation of stratigraphic surfaces*
 - *Partial water quality analysis*
- **SJRA Goals**
 - *Determine the feasibility of ASR as a strategy in SJRA's Montgomery County service area*
 - *Identify potential future ASR projects, if feasible*



Questions

Item 8
GRP Items for Consideration by the SJRA
Board of Directors

Water Conservation Plan

Current & Proposed

5 Years

- 2.5% reduction in average per-capita municipal demand

10 Years

- 5.0% reduction in average per-capita municipal demand

Drought Contingency Plan

Current & Proposed

Stage	Trigger	Target Reductions	
		Municipal, Irrigation (Apr – Sept)	Municipal, Irrigation (Oct - Mar)
1	Lake Conroe @ 198' or equipment, pipeline, or sample failure	5%	5%
2	Lake Conroe @ 196' or equipment, pipeline, or sample failure	10%	5%
3	Lake Conroe @ 193' or equipment, pipeline, or sample failure	20%	10%
4	Lake Conroe @190' or equipment, pipeline, or sample failure	30%	15%

Item 9

Attorney's Update

Item 10
Future GRP Review Committee Meeting
Agenda Items

Item 11
Future Meeting Schedule

Monday, May 20, 2024

Item 12 Adjourn