TWDB HB 721 related ASR studies

Andrea Croskrey
ASR Discipline Lead
Conservation and Innovative Water Technologies
Presented to *ASR for Texas! 2021*
May 5, 2021

HB 721

- Passed in 2019 by the 86th Texas Legislature
- Three ASR-AR related mandates for Texas Water Development Board:
  1. Statewide Suitability Survey
  2. Individual studies
  3. Share the results

http://www.twdb.texas.gov/innovativewater/asr/projects/Statewide/index.asp

Texas Water Development Board

Search site Search

Connect with us:

Home Board Financial Assistance Water Planning Groundwater Surface Water Flood Conservation Innovative Water GIS Data

Statewide Survey of Aquifer Suitability for Aquifer Storage and Recovery Projects or Aquifer Recharge Projects

Project Summary:

The objective is to conduct a statewide survey to identify the relative suitability of Texas' major and minor aquifers for aquifer storage and recovery projects or aquifer recharge projects, produce public data in support of the survey, and prepare a report documenting and providing an overview of the survey. This work will fulfill a requirement of House Bill 721, passed by the 86th Texas Legislature in 2019.

TWDB Contract Manager: Andrea Croskrey

Funding Recipient: HDR Engineering, Inc.

Project Administrator: Kristi Shaw, P.E., HDR Inc.

Participants: Bureau of Economic Geology, Collier Consulting, Cooper Consulting, Floodace, GeoSystems Analysis, Inc., and INTERA, Inc.

Project Start Date: December 19, 2019

Project Completion Date: October 31, 2020

Aquifer Storage and Recovery

- ASR FAQs
- ASR Projects
- ASR TWDB Documents
- ASR Useful Links

Brackish Resources Aquifer Characterization System

Desalination

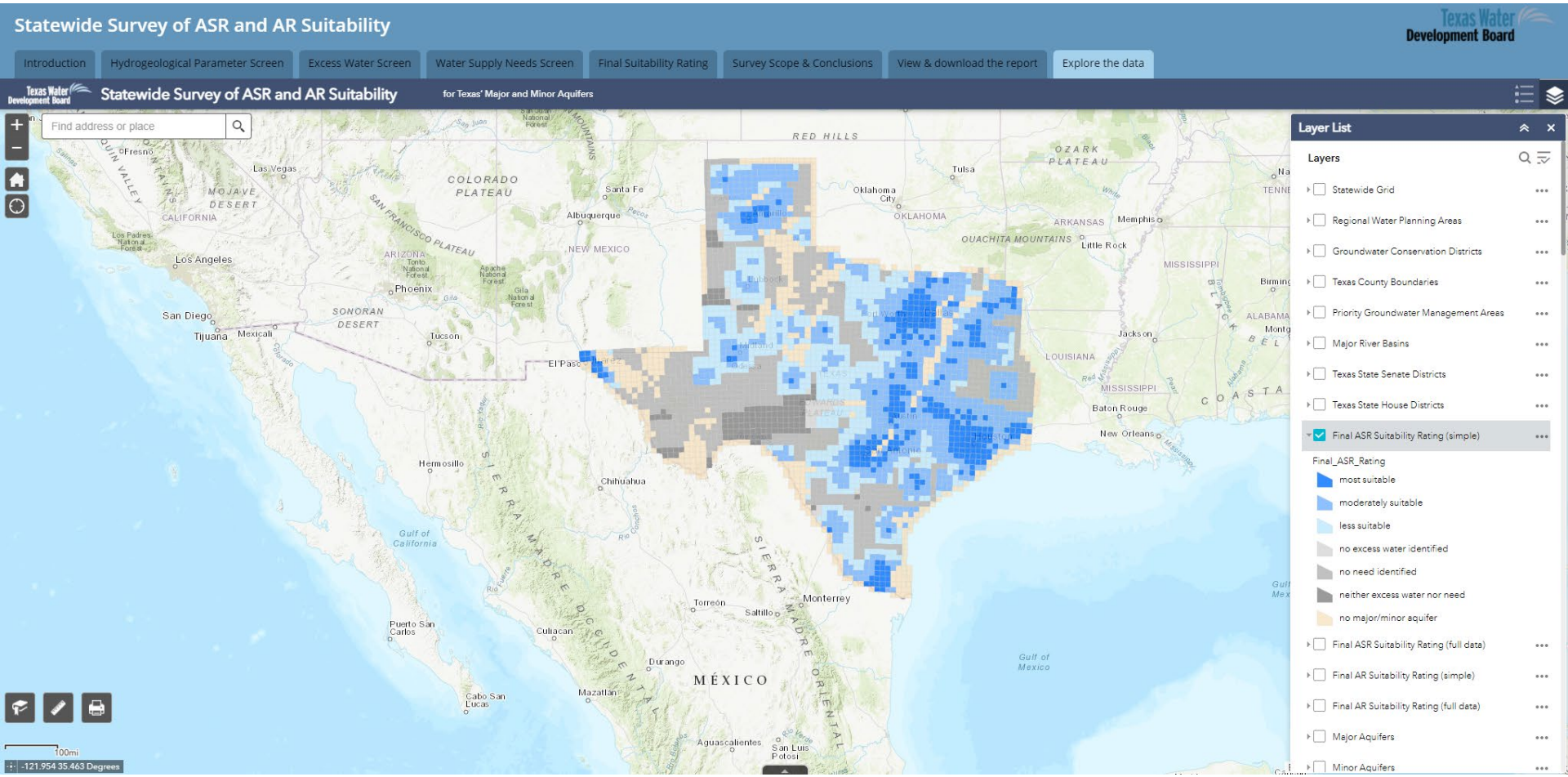
Rainwater Harvesting

Water Reuse

Innovative Water Technologies Staff

StoryMap for the Statewide Suitability Survey

https://twdb-wsc.maps.arcgis.com/apps/MapSeries/index.html?appid=75313de26daf4994bcb590fdb8846b80



HB721 Individual studies

(mandate)

1. conduct studies of ASR and AR projects identified in the state water plan or by interested persons; and
2. report the results of each study … to regional water planning groups and interested persons

HB721 Individual studies

(implementation)

- Formed new ASR team
- Evaluated all 20 ASR and one AR recommended water management strategy projects in the 2017 State Water Plan
- Gathered information:
  - regional water plans,
  - calling project sponsors (project status and interest)
- Organized information
  - classified different components of the projects
  - Matched the project components, project timeline, and TWDB staff skillsets
- Select two projects to conducts studies

HB721 Individual studies

http://www.twdb.texas.gov/innovativewater/asr/projects.asp

Carrizo-Wilcox Aquifer Characterization for Aquifer Storage and Recovery, Eastern Gonzales and Southern Caldwell Counties, Texas

Study Summary:

The goal of this study is to map and characterize the Carrizo-Wilcox Aquifer to a depth of 2,000 feet below ground surface 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) part of the Guadalupe-Blanco River Authority's (GBRA) Mid-basin Water Supply Project (MBWSP) and is a recommended water management strategy in the 2017 State Water Plan. This ASR project will be used to meet water supply needs in Caldwell, Comal, Guadalupe, and Hays counties. Injected water will be sourced from the Guadalupe River and stored within the Carrizo Aquifer for later recovery to meet demand.

The objectives of the study are to:

- collect, analyze, and interpret water well and geophysical well logs;
- incorporate data from new GBRA water supply wells;
- interpret the stratigraphic framework, lithology, structure and hydrogeology of the study area;
- map the net sand distribution in the Carrizo-Wilcox Aquifer;
- analyze the native groundwater quality of the Carrizo-Wilcox Aquifer including mapping the distribution of total dissolved solids;
- incorporate newly created information into the publicly available BRACS Database and study GIS datasets;
- prepare and publish study findings in a peer-reviewed TWDB report.
- fulfill the Texas Water Code §11.155 mandate to "conduct studies of aquifer storage and recovery projects and aquifer recharge projects identified in the state water plan or by interested persons".

Longevity Assessment for City of Bandera Water Wells

Study Summary:

The goals of the study are to (1) evaluate water level decline in the lower Trinity Aquifer in Bandera county, and (2) predict future water levels in the aquifer in this area. The results of this study will be used to evaluate the need for an Aquifer Storage and Recovery (ASR) project(s) to augment the water supply of the lower Trinity Aquifer to meet the growing demand of the city of Bandera and new subdivisions in Bandera County.

The objectives of the study are to:

- Create a groundwater model of the lower Trinity Aquifer for the study area
  - The new groundwater model will be based on the Hill Country Trinity Groundwater Availability Model (GAM) but modified as follows:
    - change the grid cell size in Bandera county area, from 1-mile to 0.25-mile and
    - update the lower Trinity aquifer pumpage information from 1997 to 2020
- Process the new "Bandera county lower Trinity Aquifer" model to simulate existing water level data
- Process the model to predict future water levels based on 2021 Region J Water Plan demands until 2070
- Prepare and publish study findings in a TWDB report

Study Team Members: Azzah AlKurdi, Shirley Wade, and Andrea Croskrey

Study Start Date: Fall 2020

Study Completion Date: Summer 2021

Benefits: The study will develop data and a report that will be available to researchers and decision-makers to assist in evaluation of future ASR projects, including different scenarios of injection rates and locations.

Share the results!

- We have presented and plan to present at:
  - Public webinars
  - Professional conferences
  - Regional Water Planning Group meetings
  - As requested and resources allow…

Questions?

Andrea Croskrey
ASR Discipline Lead, Innovative Water Technologies
Texas Water Development Board
Andrea.Croskrey@twdb.texas.gov