

Item 5 – Discussion Concerning Possible GMA 12 Common Database

GMA 12 members once again wish to explore the possibility of GMA 12 districts hosting a common database that allows the public and each of the other districts the ability to readily access water level and production data. This same discussion was had many months ago but ended with no solution regarding funding.

Attached is the latest proposal from Halff Associates responding to GMA 12 requesting an update addressing cost and functionality. All member districts agreed to breach this matter with board members during the January 23, 2026, DFC planning meeting.

Halff Database Update

- Meeting with Halff on January 8, 2026
- Discussion around making a common database to where each GCD could pull data from but not edit each others' data
- Request for quotes for 2 ways, water level only or water level and production
- Back-end work to include:
 - Data synchronization
 - Updating of data every day
- Quote received on 1/22/2026
- Halff will be at meeting on 2/19/2026 to discuss quote





GMA 12 Groundwater Data Sharing System Scope and Fee Proposal

Background

Halff Associates, Inc. (Halff) has extensive experience developing groundwater management systems and currently hosts systems for 29 districts in Texas, including all districts in GMA 12.

Summary

Halff proposes a web-based Groundwater Data Sharing System (GDSS) for GMA 12. The GDSS will maintain a centralized, read-only database populated by automated nightly data pulls from participating Halff Groundwater Management System (GMS) district databases.

To support upcoming GMA 12 discussions, this proposal is organized into two ballpark scope/fee options:

- (A) Monitoring Wells Only and
- (B) Monitoring Wells plus Production. Final scope and pricing will be confirmed after validating district schemas, data quality, and (for production) reporting frequency/volume.

The GDSS will be available to all participating GMA 12 groundwater conservation districts using Halff GMS version 6 or later. Districts joining after the initial deployment will have a one-time integration charge of \$3,000 per district (requires a single technical contact for integration questions and scheduling).

Scope of Services

Halff will create a shared information database separate from each participating district's database. This shared database will be populated by automated nightly data pulls from participating Halff GMS district databases. Wells marked as confidential in a district's GMS will not be included in the shared database, and water levels marked as not publishable will not be included. The GDSS will provide a centralized, read-only interface for viewing and querying the shared data.

Access to the GDSS will be secured by default, allowing access only to participating districts. A public-facing view (limited to approved fields/wells and/or aggregated production) can be added if requested.



GMA 12 Groundwater Data Sharing System Scope and Fee Proposal

Common Capabilities (Included in Options A and B)

- Central shared SQL Server database hosted and managed by Halff.
- Nightly automated data integration (ETL) from participating district GMS databases.
- Schema alignment and validation checks during integration to standardize formats across districts.
- Read-only web application and web map experience for viewing, mapping, and querying shared data.
- Query tool for custom reporting with filtering and export to CSV/Excel.

Scope Options

Option A - Monitoring Wells Only:

- Monitoring well attributes (including construction/screen interval fields where available in source data).
- Water level readings and water-level charting/tabular views.
- Map layer and tools focused on wells with water level readings.
- Dashboard summaries for monitoring activity (e.g., wells and water levels reported).

Option B - Monitoring Wells plus Production:

- All Option A functionality, plus production data ingestion, storage, and reporting.
- Production normalization to address differences in district reporting formats and frequencies.
- Production aggregation methods (e.g., weekly/monthly averages) for efficient display of high-volume sources.
- Map layers and dashboard views for production summaries and exploration.

Optional Add-ons

- Water quality module (water quality results, mapping, and history views).
- Public-facing view (limited to approved wells/fields and/or aggregated production).



GMA 12 Groundwater Data Sharing System Scope and Fee Proposal

A GDSS dashboard will show GMA-wide attributes such as the number of wells, monitored wells, and water levels reported. If Option B is selected, the dashboard will also include production summaries and explorer views.

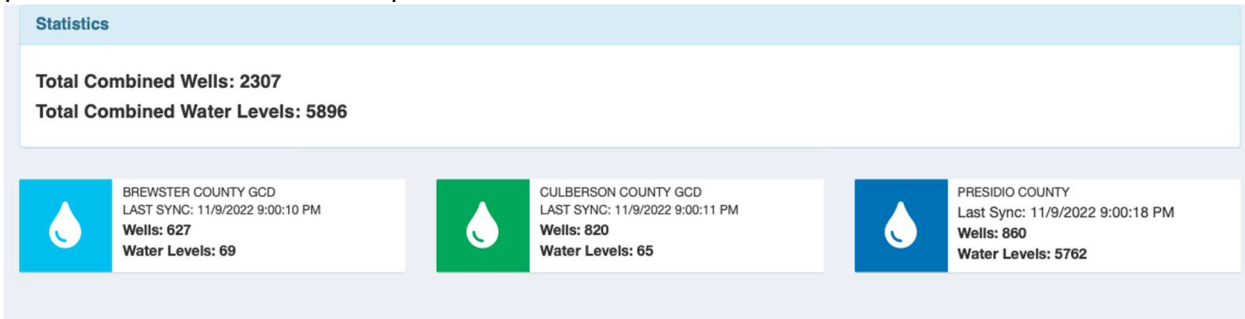


Figure 1: Example Dashboard

A web map will display information for wells of each district participating in the GDSS.

The web map will include a layer showing only wells with water level readings, allowing you to focus on wells with water level data. If Option B is selected, an additional tool will show only wells that have production reported. If the Water Quality add-on is selected, a similar tool will show only wells that have water quality reports. A GMA-wide virtual bore tool will be available on the web map, allowing a user to click on any cell within the GMA and see the aquifer layer and depth information at that point.

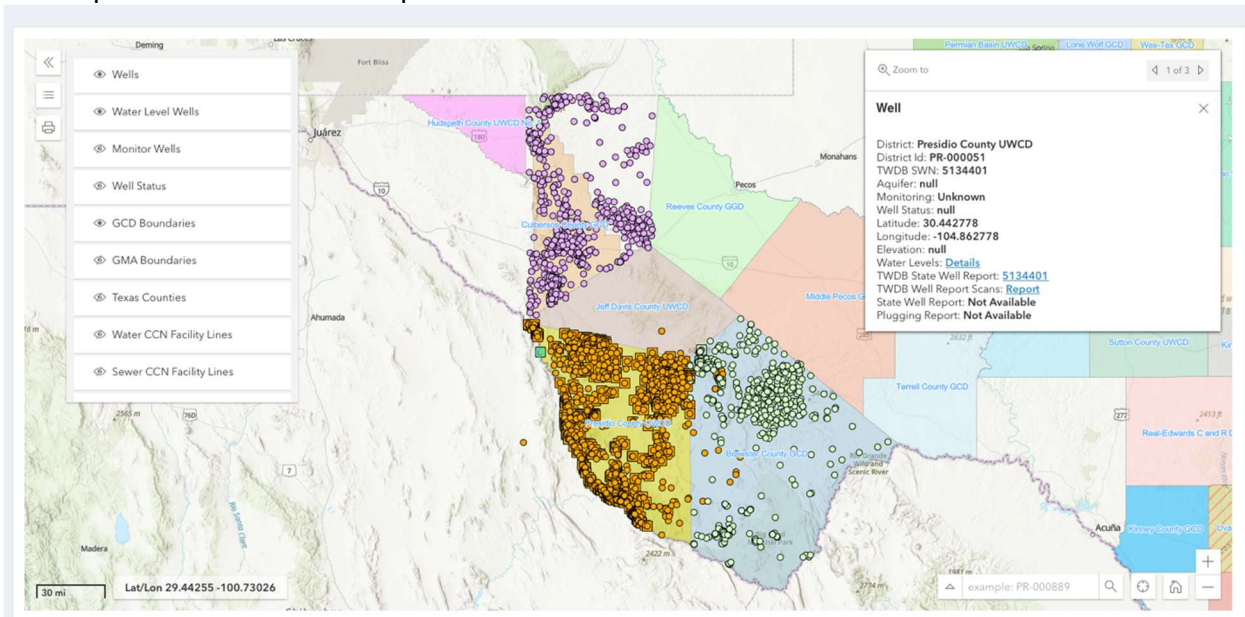


Figure 2: Example Web Map

The web map will include the following features (assuming they have been populated in the originating district's GMS):

- Wells. Clicking a well will show:
 - The district it belongs to
 - The designated aquifer
 - The Lat/Lon Coordinates
 - Well depth
 - District id for the well
 - Whether it is a monitored well
 - Well status
 - TWDB state well number
 - State well report
 - The plugging report.
 - A link to more well information (see above)
 - Water levels. A link on the well information menu will open a water level reading page for the well. A graph of water levels will be shown, along with a tabular view of the actual readings.
 - Link to production history (Option B), if available.
 - Link to water quality history (Water Quality add-on), if available.

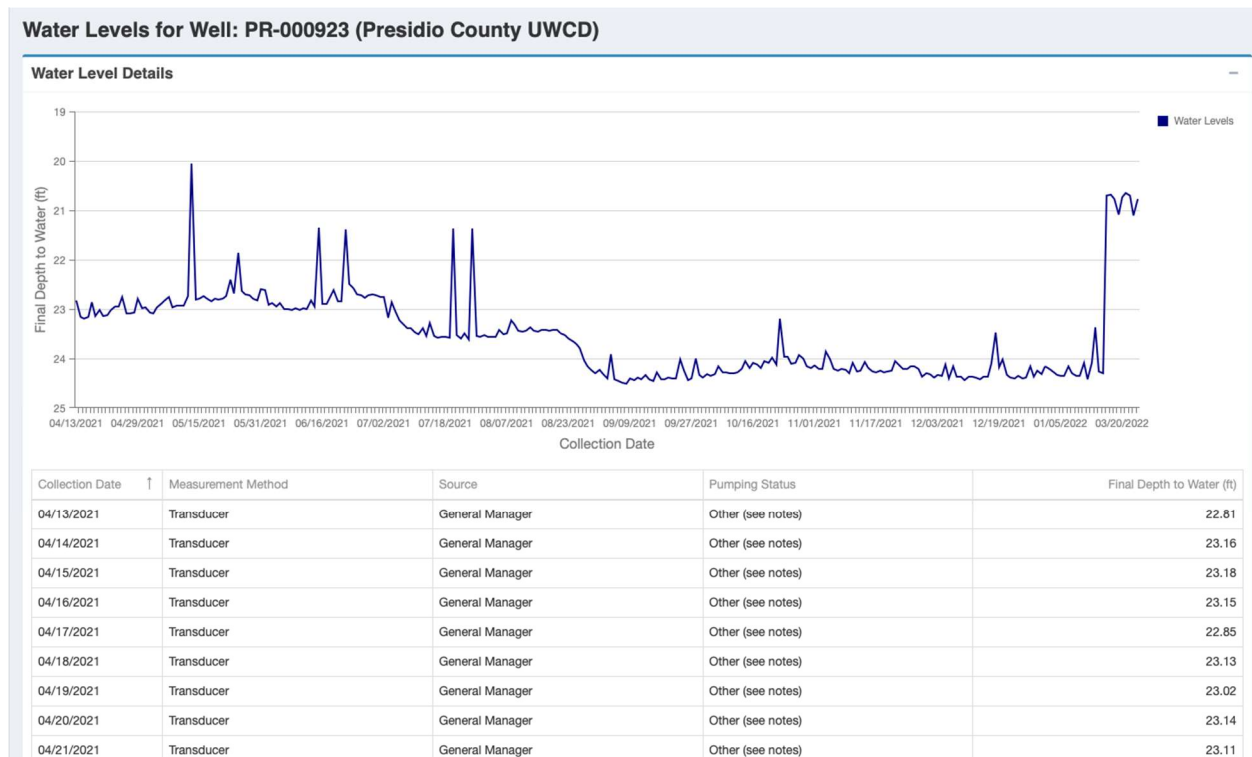


Figure 3: Example Graph

- Web map functionality
 - Toggle layers on and off



GMA 12 Groundwater Data Sharing System Scope and Fee Proposal

- Printing
- Measurement tool
- Search

GIS Reference Layers – Halff will include data available from publicly available sources like TWDB, TNRI, USGS, TCEQ, and others. Additional datasets can also be obtained or created to meet the needs of the GDSS. Reference layers available include:

- TWDB/USGS monitoring wells
- TWDB Major/Minor aquifers
- Political jurisdictions
- TWDB groundwater index grid
- Groundwater Conservation District (GCD) boundaries
- FEMA floodplains
- CCN boundaries
- Geologic Atlas of Texas
- Surface water features, i.e., streams and water bodies
- NWS rainfall measurements/accumulations

Basemap Layers – standard basemap layers available from Esri:

- Aerial/Satellite imagery
- Streets
- Hybrid of imagery and streets
- Topographic
- National Geographic
- Light gray canvas

All web map GIS layers will be stored in Esri's enterprise geodatabase format. The geodatabase format supports importing and exporting the GIS data from various formats.

A query tool is included, allowing custom reports to be created from all data in the GDSS. The query tool will allow individual fields to be selected and unlimited filtering with advanced AND/OR conditions. For example, show all wells that are monitored AND are in Aquifer ABC AND with a water level reading between March 1 and September 30 in 2002 OR a water level reading anytime in 2004. The results of the queries can be downloaded as either CSV or an Excel file. If desired, predefined queries can be created to be selected as is or as a starting point for custom queries.



GMA 12 Groundwater Data Sharing System Scope and Fee Proposal

Assumptions and Out of Scope

- Ballpark pricing: these estimates are intended for planning discussions and will be finalized after confirming district schemas, data quality, and production reporting volume/frequency.
- District participation and cost allocation are governed by GMA 12 and participating districts; the GDSS can be deployed with any subset of districts and expanded later.
- One contracting entity/point of contact (TBD) will be identified for project management, invoicing, and acceptance.
- Manual data cleanup/backfilling and changes to district source systems are out of scope unless separately authorized.

Estimated One-Time Fees

The following estimates are provided as ballpark one-time implementation fees by option.

Work Package	Option A (Monitoring)	Option B (Production Adds)	Optional Add-ons / Notes
GDSS Core Platform setup (shared database, web app, web map, query tool)	\$14,000		
District integration & schema alignment (initial districts)	\$6,000		Additional districts after initial deployment: \$3,000 per district
Secure application access	\$3,000		
Dashboard (monitoring summaries)	\$3,500		Includes production summaries if Option B is selected
GMA-wide aquifer bore tool	\$7,800		
QA/QC	\$3,600		
Production integration, normalization, and reporting		\$4,000	Includes production map layers and reporting views
Production aggregation		TBD	Level of effort depends on reporting frequency/volume
Water quality module			\$6,500 (optional)



GMA 12 Groundwater Data Sharing System Scope and Fee Proposal

Subtotal (Option A)	\$37,900		
Subtotal (Option B, excluding TBD)		\$41,900	
Subtotal (Option B + Water Quality, excluding TBD)		\$48,400	

Note: 'TBD' items will be refined after confirming production reporting volume/frequency and district workflows.

Recurring Fees

1. Web Hosting and Support

\$6,000

Any additional support, data cleanup, or enhancement requests beyond the scope options above will be scoped and quoted separately.