

## **Item 4 – Consideration of a GMA 12 Shared Database**

GMA 12 members have been discussing some form of a shared database for the past five years. The ideas began as a simple website on which monitoring well data could be uploaded for districts and the public to use. At that time, Lost Pines GCD was the only GMA 12 member not using Halff Associates as their database provider. They have recently moved their data over to Halff.

This change makes it more feasible to move forward with the shared database concept. Halff Associates made a presentation to GMA 12 this summer outlining what is possible and what one other GMA has already done. The primary data which districts would like shared are monitoring well measurements and locations, permitted wells, permitted amounts, actual water production data, etc. David Coyer, Halff representative, ballparked the cost at approximately \$50,000 (one-time build out and deployment) and \$5,000/year for maintenance.

Districts are being asked to share in the costs, but some indicate the inability to share equally in the cost. There is a belief that the three districts with the most pumping (Lost Pines, Post Oak Savannah, Brazos Valley) would basically finance the project leaving Fayette County and Mid-East Texas to contribute as their budgets allow.

The following question was asked during discussion on this topic at the October 20, 2022 board meeting:

**"Why can't all districts share a common database and use this for each district's implementation of the GMS platform? If we did that, we wouldn't need a separate app to share data amongst the districts."**

As Halff Associates began developing the GMS platform, they considered that very idea. Halff ultimately chose against it for a few reasons, namely:

1. Halff is very concerned with security and ensuring the data for each district is only accessible to those verified by the district. While technically feasible, using a single database with logical partitions by district left a potential for data leaking. If we had a bug in our software that incorrectly partitioned the data in the database, districts could unintentionally access other districts' data. We deliberately decided to use separate databases with individual web application instances to safeguard against accidental data leaks. Since each district has its own application that communicates with its database, the potential for data leaks or contamination is minimized.

2. Throughout Halff's time designing and building database applications for groundwater districts, we have discovered that 80% of the workflows amongst districts are highly similar. However, the remaining 20% varies widely from district to district. If we developed GMS as a single database for all districts, the option for customizing each district's particular processes and workflows would be complicated and expensive to maintain. We, therefore, decided to create the GMS framework to fit that 80% similarity while still providing the customizations desired for each district by delivering each district's GMS implementation as a stand-alone database application.

Halff Associates is scheduled to make a final presentation and estimate of cost at the November 18, 2022 GMA 12 meeting. Districts are asked to report their district board buy-in on the shared database at that meeting.

**It is the recommendation of the General Manager that Brazos Valley Groundwater Conservation District cost-share in a shared GMA 12 database up to 40% or \$20,000 of the total cost of the project.**