

Lone Star GCD Subsidence Study Phase 2 Overview

For Phase II of the Lone Star GCD's Subsidence Study, District consultants are focusing on the continued investigation of specific issues identified during Phase I of the study. Phase II centers on a Detailed Technical Evaluation of Data and Modeling and is divided into three tasks to allow for additional assessment of past subsidence data and further future monitoring efforts.

Task 1 - Technical Evaluations of Existing Data and Recent Study: A previously identified study: Subsidence Risk Assessment and Regulatory Considerations for the Brackish Jasper Aquifer (Kelley and others, 2018) is being reviewed and analyzed to assess whether the particular methodology and final conclusions should be applicable to assessing subsidence within Montgomery County from the underlying Jasper Aquifer. The methodology used in this study will purportedly be applied for the development of the Gulf Coast Land Subsidence and Groundwater Flow Model (GULF 2023). Anticipated work associated with this task includes review of data used in Kelley and others (2018) report, evaluation and consideration of variables that may influence parameter estimates, assessment of methodology application to the Jasper Aquifer, and preparation of a technical evaluation of this work.

Proposed completion date March 2022

Task 2 - Geologic Structure: As stated in the Phase I Final Report, irregularities in the existing datasets were identified that portrayed the geologic surface and formation within Montgomery County. Work during Task 2 will focus on calculating the distribution and thickness of the clay layers underlying the county. The goal is to improve the mapping of the elevation of the sub-surface formations while studying the thickness of the sand and clay intervals within the formations. Anticipated work associated with Task 2 includes review of previous geophysical log evaluations, review of selected State Well Reports, interpolating surfaces of geologic formations and lithologic units, and preparation of a technical summary of this work.

Proposed completion date May 2022

Task 3 - Reporting, Recommendations, and Presentations: Succeeding the completion of Task 1 and Task 2, a written comprehensive Phase II Final Report will be presented to the Board of Directors and public. The final report will include recommendations, conceptual plans, and budgetary estimates for subsequent project phases.

Proposed completion date August 2022

The potential for land subsidence due to compaction of the subsurface formations is an important consideration for the Lone Star Groundwater Conservation District Board of Directors with regard to managing the groundwater resources within Montgomery County. When working to manage Montgomery County's groundwater resources, Directors must consider subsidence and several other important regional and local factors as the District works to find a balance between providing fair and equitable access to groundwater production and conservation of groundwater resources as described in Chapter 36 of the Texas Water Code.