

Executive Summary

The Guadalupe-Blanco River Authority (GBRA) retained PBS&J to investigate the opportunities for regionalization of wastewater treatment facilities in the eastern portion of Hays County, Texas. This investigation is in relation to a sharp increase in growth in Eastern Hays County, particularly near the cities of Buda, Mountain City, Kyle, Neiderwald, and Uhland. The increase in growth will cause greater environmental stress on the watersheds of the area due, in part, to an expected increase in septic systems (OSSF) and small, individual wastewater treatment plants with their discharges into the associated watersheds.

This investigation of the planning area also analyzed where regional facilities might be located in order to minimize adverse effects to water quality, make the most economic sense, and to maximize reuse of the treated wastewater, both to reduce discharge to the receiving streams and to reduce demand on the water supply.

Six tasks were developed to accomplish these goals:

- 1) Development of Baseline Information
- 2) Public Participation
- 3) Population Analysis and WWTP Planning
- 4) Analyze Effects of Conceptual Development Options
- 5) Regional Water Quality Protection Plan
- 6) Recommendation for Watershed Management Practice

Projections from two agencies were used for population growth: the Capital Area Metropolitan Planning Organization (CAMPO), and the Hays Consolidated Independent School District (Hays CISD). Projections were divided into two periods: 2005–2017 and 2017–2030, and analyzed by Traffic Serial Zones (TSZ). From this analysis it was determined that the highest overall potential growth occurred more or less along the IH 35 corridor on both the east and west sides. The greatest population change is shown to be in the Kyle and Mountain City, city limit boundaries and, to some extent, just east of the city of Buda city limits.

Once key areas of growth had been determined multiple wastewater collection, treatment and disposal methods were evaluated for their suitability and cost-effectiveness to manage the anticipated increase in population in the planning area.

Three separate alternatives were considered: No Action, Sub-regional Plants, and Smaller Multiple Plants. Each of these three models was evaluated to determine collection volume, possible reuse, environmental effects, and overall cost to serve the projected population growth throughout each of the planning area's TSZs.

No Action was a model in which there is no governmental effort supporting regionalization and wastewater treatment is left up to each individual development. This alternative would have the most use of OSSFs and little wastewater reuse.

The **Regional Plants** alternative considered two plants, one located in Kyle and the other at Winfield, to serve the entire study area with wastewater collection and reuse.

Multiple Plants is a five-plant model, with each plant serving a smaller portion of the planning area with wastewater collection and reuse.

Analysis determined that the Multiple Plant scenario should have greater reuse potential due to each plant's proximity to the reuse demands; reuse is shown to reduce water demands on an annual average basis by nearly a million gallons per day (See Table 4-4). This is significant to water conservation and will affect water treatment costs and water rights impacts. City representatives and GBRA could have significant impact on the management of water and will more likely encourage private development to provide organized wastewater treatment and the reuse infrastructure. The multiple plant model proved to have the lowest anticipated cost per LUE.

To implement the recommended plan, an agreement or "Wastewater Compact" could be created. The Compact would be the basis for guiding development of wastewater facilities in the study area, while still relying on the private sector to assume the profit potential and risk for new development. The Compact would allow for members to take different roles, depending on the location of new development and specific conditions. The Compact could also be the vehicle for coordination on rate studies, and to solicit participation/stakeholder meetings with citizens, governments and developers in order to begin initiating treatment facilities.