

2 December 2022

Mr. David Douglas  
Liberty County Texas  
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Liberty, TX 77575  
(delivered via email: [david.douglas@co.liberty.tx.us](mailto:david.douglas@co.liberty.tx.us))

**RE: Liberty County – Countywide Drainage Study Justification**

Mr. Douglas,

As a historically rural county, various jurisdictions across Liberty County have exercised very limited regulation on expansion and land development and have had few resources to support a thorough understanding of the drainage systems across the county or impacts of new developments. Furthermore, without an overall understanding of the complex drainage systems of the county or the resources necessary for proper enforcement, flood control regulations in a consistent and beneficial manner has not been possible. While limited regulation of development in a rural area may not significantly impact drainage issues, Liberty County is now challenged with explosive population growth and a particularly high percentage of socially vulnerable residents, all while responding to climate change.

While the State of Texas has seen its population grow by approximately 16% in the past decade (census years 2010 to 2020) with an additional estimate of 1.3% statewide growth from 2020 to 2021, Liberty County has experienced a greater than 20% population growth from 2010 to 2020 with a recent population explosion of an estimated 6.5% from 2020 to 2021.

To avoid subjecting the most vulnerable populations of older, long-established neighborhoods and the expanding Hispanic and Latino population (currently approximately 34% of Liberty County residents, who are often in homes where English is not the preferred language within the household) to development-induced flooding, Liberty County needs a current and comprehensive flood study and master drainage plan.

Public engagement and input are critical to understanding the current concerns of residents and the future vision of developers. The proposed study will include multiple in-person public data gathering and information sessions throughout Liberty County and provide information in various formats and languages to ensure inclusive engagement of the population to the greatest extent possible.

The following Figures 1 through 3 depict the intense residential growth Liberty County has experienced in recent years.

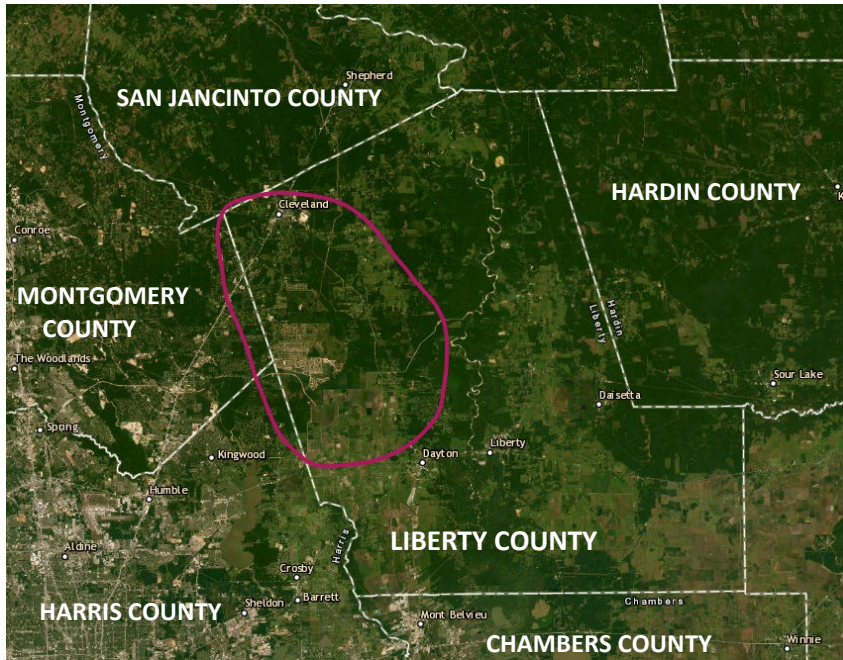


Figure 1 - Liberty County with the region of most recent rapid growth circled.

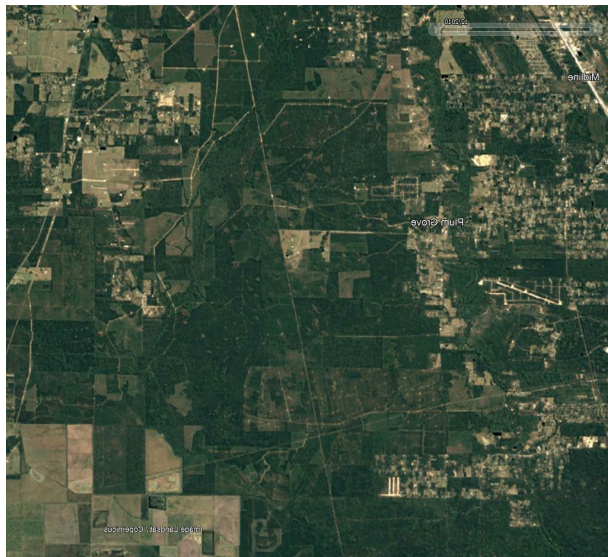


Figure 2 – Northwest Liberty County circa 2010

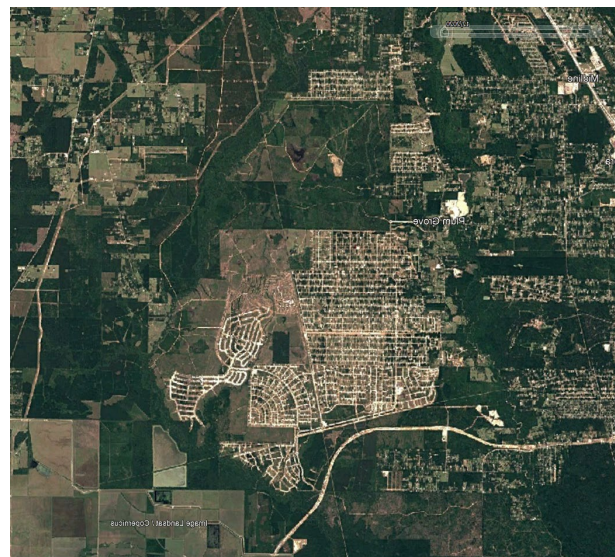


Figure 3 – Northwest Liberty County circa 2020

Presently, there are multiple entities (small drainage districts, water control and improvement districts, special utility districts, etc.) with varying degrees of responsibility for managing drainage and regulating development across the county. These entities do not presently coordinate their efforts or regulatory intent and the County is often in a position of not knowing who has jurisdiction for particular drainage features and outfall ditches. As part of the proposed Master Plan, all entities and their respective jurisdictional boundaries would be identified along with

mapping of all drainage features and outfall ditches for which each entity holds documented easements or rights-of-way. This mapping will provide Liberty County with the understanding of who is responsible for various locations and assist in directing developers to the appropriate jurisdiction for permitting, etc.

While FEMA has released various updated risk maps across Liberty County over the past 15 years, the updates provide limited base flood elevation (BFE) info. Additionally, all elevations on updated maps reference to NAVD 88, but no elevation reference marks are provided on the updated maps. Old maps with reference marks all use NAVD 23 vertical datum and are therefore inconsistent with the current map set. To properly manage development, the flood study and master drainage plan would be supported by and supplemented with detailed maps which provide comprehensive BFE data and survey reference monumentation established throughout the county on a common datum along with a comprehensive drainage criteria manual which can be utilized by all jurisdictions for consistency throughout the County.

Liberty County is experiencing a welcome explosion in population, but the growth, along with climate change as experienced through multiple record flood events in the past decade, brings significant flood control challenges which the County has not previously faced and is not currently equipped to adequately manage. Attached to this letter is a high-resolution image of western Liberty County which shows how urban sprawl from nearby Harris and Montgomery Counties has reached once-rural Liberty County and continues to expand at unprecedented rates necessitating the need for an immediate and comprehensive drainage management master plan.

The first step in providing long-term sustainable flood mitigation is understanding the current and likely future conditions through a detailed study and the development of a comprehensive management plan based on consistent data with as guide for consistent implementation. The proposed drainage study, drainage master plan, and drainage criteria manual, all supported by detailed updated surveys, maps, and survey monumentation across the County will provide Liberty County with the tools needed to understand, manage, and plan for ongoing development well into the future and support comprehensive flood control efforts to protect their residents and support sustainable growth across the county.

If you have any further questions on this matter, please contact me at your convenience.

Respectfully,

  
Dawn Pilcher, PE, RPLS



# Attachment A

## Growth and Development in Western Liberty County

