Texas Water Development Board

2028 REGIONAL FLOOD PLAN
DRAFT CHAPTER 1
REGION 6
SAN JACINTO

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PREPARED FOR THE **SAN JACINTO REGIONAL FLOOD PLANNING GROUP**

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DRAFT CHAPTER 1

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INTRODUCTION

In the wake of historic flooding in Texas, the 86th Texas Legislature passed Senate Bill 8 in 2019 that authorized and established regional and state flood mitigation planning processes and assigned the responsibility for flood mitigation planning to the Texas Water Development Board (TWDB). The TWDB has appointed a Regional Flood Planning Group (RFPG) for each of the 15 major river basins in Texas to develop river basin-specific Regional Flood Plans (RFPs). The San Jacinto region, Region 6, shown in **Figure 0-1**, is one of the RFPGs formed by the TWDB. The RFPGs' responsibilities include directing the work of their technical consultants, soliciting and considering public input, identifying specific flood risks, and identifying and recommending flood management evaluations, strategies, and projects to reduce risk in their regions.



FIGURE 0-1: SAN JACINTO REGION OVERVIEW

The Region 6 San Jacinto RFPG was established by the TWDB on October 1, 2020, to manage the flood mitigation planning efforts for the San Jacinto River drainage basin. The San Jacinto region covers all of Harris and Montgomery Counties and parts of Walker, Grimes, Waller, Fort Bend, Brazoria, Galveston,

Chambers, Liberty and San Jacinto Counties. On August 15th, 2024, the TWDB adopted the first-ever Texas State Flood Plan which was delivered to the Legislature by September 1st, 2024.

Following the conclusion of the first regional and state flood planning cycle, the second cycle began. This report presents the Region 6 RFP, which documents the efforts of the RFPG during the second five-year flood planning cycle. The date of completion of the RFP is set as January 10, 2028, with the accompanying State Flood Plan completion date set as September 1, 2029. The RFP includes chapters that follow the necessary steps for comprehensive flood mitigation analyses and planning for the San Jacinto region.

CHAPTER 1. PLANNING AREA DESCRIPTION

The headwaters of the San Jacinto River begin as two separate, major tributaries – the East Fork and the West Fork. The East Fork begins east of the City of Huntsville in Walker County and meanders south through the Sam Houston National Forest until joining with the West Fork just upstream of Lake Houston. The West Fork begins west of the City of Huntsville and flows southeast until ultimately joining the East Fork in Lake Houston in Harris County. The West Fork is dammed to form Lake Conroe in Montgomery County and southern Walker County. Downstream of Lake Houston, the main stem of the San Jacinto River continues south through the Houston Ship Channel, receiving flow from an intricate system of approximately 20 major watersheds that each drain into 20 major waterways. This system is mostly within Harris County, where there are 2,500 miles of waterways. Of those waterways, only around 800 miles naturally existed when Houston was founded in 1836. The rest have been added over the years to improve drainage and allow for development. The Houston Ship Channel system then flows onward to Galveston Bay and ultimately into the Gulf of Mexico. The San Jacinto region also includes major watersheds that drain directly to Galveston Bay, including both the Clear Creek and Dickinson Bayou watersheds.

The San Jacinto region drainage area consists of a wide variety of landscapes and communities served by a vast network of natural and constructed drainage infrastructure, including approximately 3,700 stream miles (estimated by TWDB) of various tributaries, bayous, and urban drainage systems as well as thousands of acres of ponds, reservoirs, and wetlands. Land surface elevations across the San Jacinto region range from several feet below sea level in the tidal and coastal regions to approximately 400 feet above sea level in northern Walker County.

The San Jacinto region encompasses 5,092 square miles, making it the second smallest flood planning region in the state by area. However, the region is the second most populous, with an estimated population in the 2020 Census of 6,360,000. With a population density of 1,200 people per square mile, the San Jacinto region is also the most densely populated region in the state, with double the population density of any other region. Flood risk, from extensive development and proximity to the coast, makes flood mitigation planning a particular issue of interest and need. The San Jacinto region has the highest accumulated value of National Flood Insurance Program (NFIP) claims of any region in the state (1975-2019). According to the TWDB, these NFIP claims total approximately $11.7 billion, nearly $10 billion greater than any other flood planning region in Texas. This number has since grown due to Hurricane Beryl in 2024, a major storm in Region 6.

The San Jacinto region's climate is characterized by relatively high rainfall and high humidity. Average precipitation reported for the San Jacinto region from the National Oceanic and Atmospheric Administration (NOAA) is approximately 46 inches per year, based on historical rainfall over the past 100 years. Annual precipitation totals vary by a few inches between the northern and southern extents of the region.

Chapter 1.A. Social and Economic Character of the San Jacinto Region

1.A.1. Population and Future Growth

The San Jacinto region is the state's second most populated flood planning region, with an estimated population of 6.4 million as of the 2020 Census. Approximately 21% of all Texas residents live in the area. It is a geographically diverse region where the needs of rural stakeholders must be balanced with those of rapidly developing urban population centers. Flood risks faced by communities and landowners vary significantly across this region. To better understand the nature of that flood risk, this section discusses the general descriptions of social and economic character of the region such as information on development, population, and economic activity.

1.A.1.a. Current Conditions

Most of the population is centered around the Greater Houston Area (Houston, The Woodlands, Sugar Land, Baytown, Conroe), as well as communities near the coast. Incorporated major cities, those with populations greater than 50,000, in the San Jacinto region are listed in **Table 1-1.** The 2020 Census population in the Greater Houston Metro Area is approximately 7.1 million residents, which does extend outside of the Region 6 boundary.

TABLE 1-1: MAJOR CITIES IN THE SAN JACINTO REGION

City	Population	City	Population
Houston	2,304,600	Conroe	90,000
Pasadena	152,000	Atascocita	88,200
Pearland	125,800	Baytown	83,700
The Woodlands	114,400	Missouri City	74,300
League City	114,400	Galveston	53,700
Sugar Land	111,000	Texas City	51,900

Source: 2020 Census Redistricting (census.gov)

1.A.1.b. Economic Activity

The San Jacinto region is a robust major economic center of importance both to the state and nation, with a diversified economic base including service, manufacturing, transportation, energy, and agriculture. The San Jacinto region is home to the nation's fourth-largest city, Houston, located within the Greater Houston Metro Area, where close to 3.47 million workers are employed, according to 2026 Texas Workforce Commission reports. While the Greater Houston Area serves as a hub for much activity, areas outside of the urban core are also major economic contributors.

Major Industries

Petrochemical as well as oil and gas production are dominant industries within the San Jacinto region. Houston is often referenced as the "Energy Capital of the World" and is home to 44 of the 113 publicly traded oil and gas companies in the U.S., accounting for over 40%[1] of the nation's base petrochemical capacity. The region serves as a hub for the processing, manufacturing, and distribution of petrochemical products. The energy industry within the San Jacinto region is greatly supported by the extensive transportation and logistics industry mentioned below.

The transportation and logistics industry also has significant impact within the region. In particular, the Port of Houston is one of the highest ranked U.S. ports in both foreign and domestic waterborne tonnage; the flow of goods through the port is greatly supported by the Gulf Intercoastal Waterway, the Houston Ship Channel, and the expansive and interconnected interstate and highway systems that serve as the logistical backbone of the region.

The service sector holds a prominent role within the San Jacinto region, including but not limited to, industries of accounting, law, banking, computer software, engineering, healthcare, telecommunications, technical services, retail, and accommodation and food services. The service industry sector is the largest industry within the region based on the total number of employees, which is at 1.36 million across Brazoria, Chambers, Fort Bend, Galveston, Grimes, Harris, Liberty, Montgomery, San Jacinto, Walker, and Waller Counties, according to the 2021. The San Jacinto region is also home to some of the largest medical facilities in the country, such as the Texas Medical Center in Houston and the University of Texas Medical Branch in Galveston.

The region's coastal areas also serve a vital economic function. Aside from the inherent benefits of promoting accessibility for the shipping and energy sectors, there is a draw to the region for its natural resources. Approximately eight million people travel to Galveston Island annually for recreational sports, fishing, tourism, and vacation. The coastal region also plays a significant role in the food supply industry via commercial fishing, crabbing, and shrimping. In addition to tourism, the coastal and marine environments are host to multiple top-tier oceanic research facilities and universities.

This wide and vitally important suite of industries is frequently threatened by severe flooding. Major components of the greater region-wide economy that are at critical risk of flooding include major industries along the Houston Ship Channel. Further analysis of the critical infrastructure within the region was performed and documented within Chapter 2.

Household Income

Along with the large industrial economic characteristics of the region, household income is another factor that is used to evaluate the overall socioeconomic status of the region. Median household incomes can be affected by many factors, including education levels, the opportunity for employment, and location. Median household incomes can also provide a good comparison of income levels across

[1] Greater Houston Partnership, 2021: 16H W001 Chemical Industry Overview .pdf

the San Jacinto region. Within the region, the median[2] income by Census tract is $84,224, which is slightly above both the Texas ($79,721) and the U.S. median incomes ($81,604) (as calculated in 2024).

1.A.1.c. Projected Growth Within the Region

Most of the region is projected to experience high levels of population growth over the next 30 years, primarily in Montgomery and Harris Counties and in the currently urbanized parts of Galveston County. From 2020 to 2050, the population in the San Jacinto region is expected to grow by 33% to 8,454,389 residents, based on Water User Group and Hydrologic Unit Code (HUC) 8 population projection data provided by the TWDB. One of the largest challenges associated with this growth is determining how to manage development responsibly and continue to preserve the region's natural resources.

Urban Population Growth Trends

From 1985 to 2023, approximately 890 square miles of land within the San Jacinto region have been developed into urban use, based on data from the National Land Cover Dataset (NLCD) Land Cover Change Index. More than half of that urbanization occurred in Harris County. Given the expected population growth, it can be assumed that a continued increase in urban development will accompany the projected population growth.

Social Vulnerability Analysis

Disasters impact different people or groups in different ways, ranging from their ability to evacuate an area in harm's way, the likelihood of damage to their homes and properties, and their capacity to marshal the financial resources needed to recover and rebuild after a storm. These factors are evaluated by the U.S. Centers for Disease Control and Prevention (CDC) to determine an area's social vulnerability, which measures a person's or group's capacity to weather, resist, or recover from the impacts of a hazard in the short and long terms. When anticipating the likely extent of damages to a community from catastrophic floods, the social vulnerability analysis first considers "exposure" based on the geographic location of people and property.

Another critical dimension to consider is each community's relative "vulnerability" to floods when they do occur. The overall vulnerability is calculated based on four aspects: socioeconomic status; household composition and disability; minority status and language; and housing type and transportation. The higher the Social Vulnerability Index (SVI), the more vulnerable a community is to a natural disaster; the lower the SVI, the higher the resilience a community has to a natural disaster. SVI values range from 0 to 1. The SVI by census tract within the region ranges from 0.0015 - 0.9900. This wide range of SVI values shows the diversity of the population affected by flood risk within the region. These different communities respond differently to flood disasters, and when flood mitigation policies or standards are being created, each of these communities should be given an equitable consideration.

Additionally, TWDB developed and released the Texas Flood Social Vulnerability Index (TX F-SVI) in February 2025, indicative of flood-specific SVI within the state of Texas. The TX F-SVI seeks to tailor the SVI values in a way to better represent the flood risk vulnerability unique to the social and

2 2024 Median household income by U.S. Census Tract

environmental characteristics of Texas. These factors include a household's ability to prepare for, respond to, and recover from a flood event. SVI and TX F-SVI of communities were considered in the vulnerability analysis conducted as part of, and described in, Chapter 2.

1.A.2. Flood Prone Areas and Flood Risks to Life and Property

As the San Jacinto Regional Flood Planning Group (RFPG) seeks to better manage flood risk to mitigate the loss of life and property from flooding, it is important to establish a baseline of the area's exposure to flood hazards, as well as the vulnerability of communities. A multitude of plans, regulations, and infrastructure are currently in place to address flood hazards in Texas. This planning largely takes place at the local level, with variable standards used by communities and a lack of consistent, available floodplain mapping across the region. This creates significant challenges in quantifying risk. Flood risks and exposure of life and property to those risks are analyzed and documented further in Chapter 2

1.A.2.a. Types of Major Flood Risks

Despite being the second smallest flood planning region in the state by area, the San Jacinto region experiences some of the most complex flood challenges, brought on in part by the variety of flooding sources. Other factors contributing to the complexity of flooding include a range of topography, varying levels of development, intense rainfall, susceptibility to tropical weather events, and varying types of soil and land cover. The most prevalent flood risk types within the region are riverine, coastal, urban drainage, and compound flooding.

Riverine

Riverine flood risk, or fluvial flood risk, is defined by the *Technical Guidelines for Regional Flood Planning (Exhibit C)* as "flooding caused by bank overtopping when the flow capacity of rivers is exceeded locally. The rising water levels generally originate from high-intensity rainfall creating soil saturation and large volumes of runoff, either locally and/or in upstream watershed areas". Riverine flooding is a prevalent source of risk within the region, and in general is a common type of flood risk in both urban and rural areas throughout the San Jacinto region.

Coastal

According to the *Technical Guidelines for Regional Flood Planning (Exhibit C)*, "coastal flooding occurs when normally dry, low-lying land is flooded by seawater." This flooding occurs as a result of storm surge, wave action, and various other tidal influences. Wave action can be limited by either water depth or fetch, the distance the wind can affect the water surface. Depth-limited waves can only grow to a size that the depth of water will allow regardless of the fetch. Fetch-limited waves can grow to the size that the wind forces them. Most of Galveston Bay is depth-limited and therefore relieves some risk of wave action flooding. Gulf-abutting portions of the region, such as Galveston Island, are subject to a higher risk from wave action flooding due to the proximity to the Gulf of Mexico. Storm surge is a temporary rise in mean water level due to the pressure and velocity of a storm approaching the coast. This quick rise in water level can inundate structures or allow flood protection features, such as a seawall, to be overtopped by waves that would otherwise be absorbed or deflected. Most of the coastal areas within

the region, both the Gulf- and Bay-abutting portions, are at risk of storm surge due to the large expanse of open bay and a deep ship channel.

Urban/Pluvial

Urban flood risk, or pluvial flood risk, is described by the *Technical Guidelines* as flooding caused, "when the inflow of stormwater in urban areas exceeds the capacity of drainage systems to infiltrate stormwater into the soil or to carry it away. The inflow of stormwater results from (a) heavy rainfall, which can collect on the landscape (pluvial flooding) or cause rivers and streams to overflow their banks and inundate surrounding areas; or (b) storm surge or high tides, which push water onto coastal cities." Urban flood risk is prevalent in the Greater Houston Area due to a variety of risk factors including large amounts of impervious area, flat topography, and older, capacity-limited storm sewer infrastructure. As development continues throughout the region, urban flooding will continue to play a prominent role in the overall flood risk to the region.

Compound

Compound flooding is the combined influence of coastal, riverine, and urban drainage flooding. This type of risk is prevalent in the San Jacinto region as there are many areas in the southern/coastal areas with high development that experience significant coastal flooding. Compound flooding occurs where areas experience direct interaction between tidal and riverine risk. One such area is the Houston Ship Channel, which experiences increases in water surface elevations from both tidal/coastal flooding as well as riverine impacts from upstream tributaries.

Ecological Benefits of Flooding

Flooding is known to have negative impacts on the environment and communities, however there are some ecological benefits that come with natural flooding. These benefits can include replenishing nutrients in the soil; relocating fish and different organisms that live in water bodies; recharging groundwater systems; and filling water supply reservoirs. The nutrients that are provided from flooding improve the soil for agricultural production and efficiency while also improving the health of the fish in the water bodies. This does not necessarily mean that flooding is beneficial for the environment at all times but it is important to note there are also benefits provided by natural flooding.

1.A.2.b. Identification of Flood Prone Areas

For the RFP flood risk analyses, flood prone areas are locations that experience flooding outside the extent of the existing Special Flood Hazard Area (SFHA). To adequately grasp the extent of flood prone areas in the region, members of the public and regional stakeholders were provided the opportunity to identify flood prone areas using the online San Jacinto Survey and interactive webmap, which allowed users to provide input as points and polygons. Responses to the following questions were required for any comment submission on the webmap survey:

1. What is impacted by the flooding?
2. How often does the location flood?
3. What level of storm intensity causes the area to flood?
4. What appears to be the main cause of the flooding at each location?

Additionally, users could provide written comments and attach photos with each submission. The San Jacinto Survey was made available for public comment on April 17, 2025. This data is important because floodplain mapping only exists where hydrologic and hydraulics (H&H) models have been developed and, therefore, this type of data can help to reveal areas where floodplain mapping is missing.

Based on topography and survey response content, several point locations were digitized into polygons in the floodplain mapping to represent areas of likely inundation. These flood prone areas provide an indication of locations of known flood risk but are not comprehensive. A flood frequency was not estimated for survey responses, so the extent of survey-delineated flood prone areas will remain unchanged between the existing and future flood hazard analyses. This identification process demonstrates the need for improved understanding and public perception of flood risk.

Additional details of flood prone areas identified as a part of this cycle of the RFP can be found in **Chapter 2A Section: 2.A.1.d Existing Flood Map Gaps and Flood Prone Areas** along with accompanying figures.

1.A.2.c. Flood-Related Fatalities

One of the potential consequences of flood damage is the loss of human life. This is an issue within the larger context of flood-related risk and is a commonly reported statistic after most hurricanes or flooding-related natural disasters. The organization of flood related fatality data is generally lacking as there is not a unified database of this information; further, the information may be treated as confidential depending on the community. While accurate quantification of flood-related fatalities is challenging, the overall goal of the RFP effort, to reduce the risk to life and property, aligns well with reducing deaths associated with flooding. According to the National Oceanic and Atmospheric Administration (NOAA) Storm Events Database, 118 recorded losses of life were reported between 2000 and 2020 as direct results of flooding. This value is provided as a general county record, so the value also reflects data from the portion of counties that are only partially within the San Jacinto region.

1.A.2.d. Critical Assets Subject to Flood Risk

Within the San Jacinto Region, there are several pieces of critical infrastructure at risk of significant impacts from floodwaters. For example, the Houston Ship Channel, a major hub for shipping, transportation, and chemical manufacturing industries, is subject to severe damages from coastal and compound flood risks. Portions of the interstate highway system running through the San Jacinto region are subject to inundation, not only impeding the flow of traffic and major shipping routes but impacting emergency response and evacuation routes during a natural disaster. Also, along the coastal portion of the region, there are large chemical manufacturing facilities that are at great risk of damages by both coastal and riverine flood risk. Flooding damage to those facilities could cause both economic and environmental damage. These are just a few of the several aspects of critical infrastructure within the San Jacinto region that are at risk of damages and severe consequences from flooding. A more detailed analysis of critical infrastructure that is exposed to flood risk was performed as a part of the exposure analysis detailed in Chapter 2.

1.A.3. Key Historical Flood Events

The San Jacinto region has a lengthy history of flooding. These numerous flood events have caused billions of dollars in damages and thousands of fatalities. The following section summarizes the most significant storms in the San Jacinto region's history, as well as programs and management changes implemented in response to flood events. Although this report does not describe in detail the full list of all major flood events within the region, the events presented in this section are intended to provide a concise overview of the character of regional flooding and how these events have shaped the San Jacinto region into a flood-focused community.

1.A.3.a. Great Galveston Storm of 1900

One of the most significant events in the region and nation came at the beginning of the twentieth century. Although the Great Galveston Storm of 1900 took place quite some time before the current level of modern technical data collection (the U.S. Weather Bureau was at that time only approximately a decade old), several sources estimate the Great Galveston Storm of 1900 as the deadliest natural disaster in American history. This Atlantic hurricane, estimated to have been a Category 4 storm with winds of up to 135 miles per hour, destroyed almost 4,000 homes and most of the infrastructure in the City of Galveston. As hurricane information and tracking was not a developed science at the time, the storm was not predicted ahead of time which led to the loss of between 6,000 and 12,000 lives. The lack of communication and organization of emergency protocols was a major contributor to the loss of life. This storm led to greater awareness of the need to organize communication strategies; the importance of tracking and predicting storms; and constructing critical flood mitigation infrastructure. The Galveston Seawall, a product of the response to the Great Galveston Storm of 1900, is still standing and functioning.

1.A.3.b. 1920 - 1930s Storms

The early 1900s contained several significant non-tropical originating storms, such as the 1929 and 1935 events that swept through the San Jacinto region. A significant aspect of these storms was the role that saturated soils played in causing extensive flooding. For example, the May 1929 storm caused significant flooding due to the fact the soils were already saturated, and the bayous were already full from a Gulf storm earlier that April. By the late 1930s, as infrastructure projects around the county began to proliferate, the need for local sponsorship of flood management activities was increasingly recognized. The Texas Legislature responded to these severe flood events by creating local entities with flood management responsibilities. For example, in 1937, the Harris County Flood Control District (HCFCD) was created by the Texas Legislature in response to severe damage from previous events with the intent of taking a systematic and unified approach to mitigating flood risk within Harris County.

1.A.3.c. Tropical Storm Claudette

In July of 1979, Tropical Storm Claudette, an Atlantic originating storm, brought unprecedented rainfall to the San Jacinto region and specifically to the vicinity of the City of Alvin, Texas, which received 42 inches of rain in approximately 24 hours. At the time, this was the record 24-hour precipitation amount for any location within the U.S. The cities of Alvin, Freeport, and others in the surrounding area all

received record-breaking amounts of rainfall, resulting in $700 million in total estimated damages across Texas regions.

1.A.3.d. Tropical Storm Allison

Tropical Storm Allison, an Atlantic originating tropical storm, was the next significant event in the region. This storm made landfall twice, first on June 5, 2001, near Galveston, Texas. As the storm moved northward, the Greater Houston Area received from 4 to 10 inches of rainfall across varying parts of the area. Over the following day, the storm dropped 8 to 12 inches of rainfall near the Sugar Land-Stafford area of Fort Bend and Harris Counties. The storm retreated into the Gulf of Mexico, gathering more moisture before proceeding back inland on June 10, 2001. This second landfall, moving at a relatively slow speed across the area, caused significant inundation. Flooding was exacerbated by low rainfall infiltration because soils were already saturated from the first landfall occurrence. During the second landfall, the storm spent a long period of time over the Houston area, causing five of the major bayou systems to experience flooding and all the major interstate systems to close, as well as flooding the entirety of the Texas Medical Center. During the storm's second landfall, two-thirds of Harris County received more than 10 inches of rain, with some areas receiving more than 20 inches in a span of 10 hours. The storm caused nearly $5 billion in damages and 22 deaths in Harris County alone.

As a result of Tropical Storm Allison, entities within the San Jacinto region moved toward a more holistic approach to flooding. For example, a multi-year initiative called the Tropical Storm Allison Recovery Project (TSARP) was created through the partnership of Federal Emergency Management Agency (FEMA) and the HCFCD. TSARP established a new advanced technical approach to remapping floodplains of local counties and created new and more accurate flood models based on updated land use and topographic data. The lasting and widespread impact of Tropical Storm Allison persuaded officials to adjust their recovery strategies in fundamental ways, creating new programs in the region such as the Voluntary Home Buyout Program, which addressed homes that were found to have no other feasible / cost-effective mitigation strategy available to reduce flood risk. Another significant result of Tropical Storm Allison was an increased focus on resiliency built into critical infrastructure within the region. For example, after the Texas Medical Center was severely damaged by Tropical Storm Allison, resiliency became a priority as the area was rebuilt, with changes made successfully reducing the impact that severe flooding can have on Texas Medical Center's critical infrastructure.

1.A.3.e. Hurricane Ike

Hurricane Ike was the third costliest hurricane in U.S. at the time, with an estimated $27 billion in damages throughout the country, resulting from two component rainfall events in September 2008, the first bringing 6-10 inches of rain, and the second bringing 3-8 inches the following day. The most significant damage resulted from extreme storm surge, with Galveston Island experiencing the highest storm surge recorded since 1915 and 12-17-foot storm surges taking place in parts of both Harris County and Bolivar Peninsula, Galveston County.

1.A.3.f. Memorial Day 2015 Flood

On May 25, 2015, several thunderstorm systems merged and released an average of 5.3 inches of rainfall across Harris County, roughly equating to 162 billion gallons, over a 12-hour period, with some areas in the San Jacinto region recording more than 10 inches. Brays Bayou within the City of Houston received close to 11 inches in three hours. More than 6,000 structures were flooded in Harris County alone, and Brays Bayou recorded record high rainfall amounts. The Memorial Day event caused significant damages due to the soils being saturated and infrastructure flowing full from consistent rainfall from previous weeks.

1.A.3.g. Tax Day 2016 Flood

On April 16 and 17, 2016, severe storms caused approximately 240 billion gallons of water to fall upon Harris County, with an intense amount of rainfall in the northern and western areas of the county. The Upper Cypress Creek, Addicks Reservoir, and Barker Reservoir catchments received approximately 13-17 inches of rain over 12 hours. Both reservoirs recorded receiving record water surface elevation levels. As the bulk of the water volume made its way downstream from the reservoirs and bayous into the downstream bayous (particularly Buffalo Bayou), secondary flooding resulted from the channels experiencing water surfaces up to 6 feet higher than normal reservoir release levels. In Harris County alone, more than 1,800 high-water rescues were executed, and close to 10,000 structures were flooded. A state of emergency was declared in nine counties in the area. Six weeks later, the region received another 8-13 inches of rainfall which caused significant repeated flooding, as soils were still saturated and many bayous within Harris County were still holding water from the 2016 Tax Day event.

Both the Memorial Day 2015 and Tax Day 2016 events provided useful data such as high-water marks, stream gauge data, and inundation extents indicated by FEMA NFIP claims. These events are used frequently in the development of H&H models as calibration events within the San Jacinto region.

1.A.3.h. Hurricane Harvey

On August 25, 2017, Hurricane Harvey made landfall near Port Aransas, Texas as a category 4 hurricane that produced substantial rainfall at high rates. As the storm slowed and stalled over Harris County and surrounding areas, it brought continued intense bands of rain, causing flash flooding throughout the entire San Jacinto region. In a four-day period, more than 1 trillion gallons of water fell across Harris County alone. One of the rainfall gauges in Harris County (Clear Creek at I-45) reported more than 47 inches of rainfall in four days. Widespread rainfall caused 46% of all the river flow forecasting points in Southeast Texas to reach new record levels during the storm. Hurricane Harvey is estimated to have caused more than $125 billion in damages throughout the country and caused 68 deaths within Texas, 36 of which were in Harris County. Hurricane Harvey is the second-costliest hurricane in U.S. behind Hurricane Katrina in 2005. The storm highlighted the need for further improvements to floodplain management, disaster recovery, and funding for repairs. In the following September of 2017, the U.S. federal government allocated relief funds through House Resolution 601, which provided “$15.25 billion in FY2017 supplemental appropriations to FEMA, the Small Business Administration (SBA), and the Department of Housing and Urban Development (HUD) for disaster relief requirements, such as response and recovery efforts from Hurricanes Harvey and Irma.” This large influx of money into the affected areas has had a significant positive impact on flood infrastructure and flood mitigation projects.

1.A.3.i. Tropical Storm Imelda

On September 17, 2019, Tropical Storm Imelda made landfall near Freeport, Texas as a tropical storm. The storm system moved north and weakened to a tropical depression on September 18, 2019, just north of Houston, Texas. Tropical Storm Imelda also produced an EF-1 tornado in Harris County on September 18, 2019. Throughout the lifespan of Tropical Storm Imelda, there was widespread rainfall that amounted to greater than 30 inches. Texas Coastal Ocean Observation Network (TCOON) gauges on the east side of Houston, Texas recorded water levels in Buffalo Bayou 4.3 feet above typical levels, making it the seventh wettest tropical cyclone to hit the United States and the fourth wettest in Texas since 1940. Within Harris, Liberty, and Montgomery counties, approximately 3,100 homes were flooded. There were five direct flood-related fatalities, all within southeastern Texas and the storm total damages are estimated to be nearly $5 billion.

1.A.3.j. Hurricane Beryl

Hurricane Beryl made landfall in Matagorda Bay, Texas on July 8, 2024, as a category 1 hurricane. The storm produced a storm surge and tide of 5-7 feet above ground level and 8-12 inches of rain. It left 2.7 million people without power and destroyed over 200 buildings in southeastern Texas, totaling over $7 billion in damages across the United States. Hurricane Beryl directly caused 11 deaths across Texas due to flooding, high winds, and other storm-related causes.

1.A.3.k. Damages, Flood Claims, and Fatalities

The San Jacinto region is regularly impacted by thunderstorms, tropical storms, and hurricanes, which can lead to severe flood events across the entirety of the region. Major storm events and associated FEMA NFIP flood claims, damages, and fatalities are reported in **Table 1-2**. The values displayed in **Table 1-2** only include the San Jacinto region, not for the entire storm area.

TABLE 1-2: REPORTED FLOOD DAMAGES, CLAIMS, AND FATALITIES

Name	Year	Total Flood Damages[3]	NFIP Claims	No. Fatalities
Great Galveston Storm	1900	Unknown	Unknown	6,000-12,000
May 1929 Storm	1929	$27,100,000	Unknown	Unknown
December 1935 Storm	1935	$73,500,000	Unknown	Unknown
Tropical Storm Claudette	1979	$612,500,000	8,842	Unknown
Hurricane Alicia	1983	$438,400,000	13,497	21
October 1994 Storm	1994	$398,900,000	5,400	17
Tropical Storm Allison	2001	$1,771,800,000	25,906	22
Hurricane Ike	2008	$2,148,100,000	34,471	13
Memorial Day	2015	$513,000,000	5,776	7
Tax Day	2016	$632,800,000	8,155	7
Hurricane Harvey	2017	$9,460,000,000	66,244	49
Tropical Storm Imelda	2019	$488,200,000	7,010	2

[3] Values in March 2026 dollars

Name	Year	Total Flood Damages[3]	NFIP Claims	No. Fatalities
Hurricane Beryl	2024	$7,200,000,000	Unknown	11

Hurricane Harvey was the most destructive recent storm event in the San Jacinto region, as reported by both the number of NFIP claims and the total value of NFIP claims. It should be noted that for all these flood events, the loss of property is greater than the number reported, as properties without flood insurance at the time of the event are not accounted for in the number of NFIP claims or the total damage value.

In addition to the direct property damage and fatalities associated with hurricanes and flood events, there are also emotional and psychological costs rarely mentioned or quantified regarding these events. All people within the region can be greatly impacted by the results of flooding, including concerns associated with displacement, resource scarcity (such as gas, food, and water), loss of work, lack of mobility, and irreparable damage or destruction to property. Although there is not a clear numerical value associated with these types of hardship, the burden and impact upon the community's physical and mental wellbeing will continue to be extremely significant.

1.A.3.l. Disaster Declarations

Formal federal governmental disaster declarations may be issued for any natural event determined to have caused severe damage that goes beyond the capabilities of both state and local governments to respond. Major disaster declarations include key events such as hurricanes, tornadoes, storms, earthquakes, landslides, fires, floods, or explosions. Out of the 68 federally declared disasters within the counties of the San Jacinto region since 1953, 46 are associated with hurricanes, severe storms, coastal storms, or flooding.

1.A.4. Agricultural and Natural Resources Most Impacted by Flooding

Flood events can have a detrimental impact on the extensive agricultural and natural resources of the San Jacinto River Basin, which includes more than 2,983 square miles of farming, forestry, and ranch land (**Table 1-3**). Potential impacts to various agricultural sectors and natural resources are discussed in greater detail in the following subsections. **Table 1-3** has also been provided to show the breakdown of the land use within the San Jacinto region and how the general trend of areas at risk of flooding follows the same trend as the total land use area. Urban development has the highest percentage of square miles at risk based on the existing flood hazard mapping detailed in Chapter 2.

TABLE 1-3: REGIONAL LAND USE SUMMARY

Land Use	Total Area in Region (Sq. Mi.)	Total Area in Region at Risk of Flooding (Sq. Mi.)	Percentage
Farming	186	66	35%
Forestry	1,425	363	25%
Open Water	132	132	100%
Ranching	1,372	743	54%
Urban Development	1,976	1,159	59%

1.A.4.a. Farming

Flooding or excess precipitation can impact cropland in various ways, including rapid direct damage to crops or long-term impacts through soil erosion and soil nutrient losses. The severity of the impact flooding has on farming depends on a broad range of factors, including crop type, the timing of storm events relative to planting or crop growth stage, and the wind speed of a storm. Different crops have different resiliencies to excess precipitation and prolonged standing water. Permanent crops, such as fruit trees, tend to be more resilient to excess precipitation or standing water compared to row crops, such as corn and soybeans. Heavy rain prior to planting could delay planting or prevent planting entirely. Additionally, the stage of growth of a crop influences its susceptibility to damage or loss due to excess water. It should be noted that some degree of flooding may be tolerated or even beneficial for some crops such as rice. However, flooding in excess and sustained conditions do have associated negative long- and short-term impacts. The San Jacinto region has incurred tens of millions of dollars in crop losses due to flooding, hurricanes, and tropical storms since 1989 according to the Texas Farm Bureau.

1.A.4.b. Forestry

Forestry impacts due to flooding are also multifaceted. Flash flooding can bring swiftly moving debris that could physically wound trees, creating conditions for contaminated flood water to introduce diseases. Sustained flood conditions can also deplete the soil's oxygen supply and cause root damage. Floods that occur during the growing season can kill trees much faster than similar conditions during the dormant season. However, flooding can also positively impact forests by clearing weaker trees, spreading seeds, and stimulating the growth of surviving trees. Forested areas can be used as potential natural infrastructure with benefits such as increased storage of runoff during flood events.

1.A.4.c. Ranching

Ranching activities in the region are also impacted by flooding. Livestock can be swept away, drowned, or injured by flash floods. Livestock exposed to contaminated flood waters can experience health issues such as pneumonia or foot rot. Livestock may also be exposed to disease-carrying mosquitoes during flood events. Prolonged flood events and impacts can cause further challenges to the ranching sector by causing delays in building back livestock herds or limiting the availability of accessible and usable forage land. Ranching areas can also be used as potential natural infrastructure with benefits such as increased storage of runoff during flood events.

1.A.5. Political Subdivisions with Flood-Related Authority

State guidelines define political subdivisions with flood-related authority as cities, counties, districts, or authorities created under Article III, Section 52, or Article XVI, Section 59, of the Texas Constitution, any other political subdivision of the state, any interstate compact commission to which the state is a party, and any nonprofit water supply corporation created and operating under Chapter 67. State law also provides for limited purpose Water Supply and Utility Districts, known variously as Municipal Utility Districts (MUDs), Municipal Water Districts (MWDs), Fresh Water Supply Districts (FWSDs), and Special Utility Districts (SUDs). These districts may be located within or adjacent to cities or counties involved in the reclamation and drainage of their jurisdictional property.

Although a multitude of these entities have the capability to exercise some degree of flood-related authority, many defer to a larger entity such as a county or municipality for regulatory floodplain management purposes. These larger entities often have unified enforceable development codes and floodplain management standards in place. For example, although MUDs and SUDs are considered to be political subdivisions given the above definition, they rarely directly regulate drainage or flooding infrastructure within their jurisdictions. Also, many of these entities have the authority to implement flood-related planning or projects but do not necessarily have the authority to implement or enforce floodplain management practices or standards. Of the political subdivisions, the majority of entities active in flood planning are municipal or county governments, both of which utilize broad authority to set policies mitigating flood risk. The data collection effort for this plan identified 83 municipalities and 11 counties within the region with flood-related authority (**Table 1-4**). "Other" refers to entities such as a Council of Government (COG), Utility District, Economic Development District, Navigation District, Waste Disposal, Non-Profit, Management District, or Regional Flood Planning Group. Of the 1,101 entities in the region, 1,037 are political subdivisions with flood-related authority, and only 104 are actively involved in flood planning, including all 11 counties and 82 municipalities within the region.

TABLE 1-4: POLITICAL SUBDIVISIONS WITH FLOOD-RELATED AUTHORITY

Type of Political Subdivision	Number of Jurisdictions
Municipality	83
County	11
River Authority	2
Flood District	1
Other	940
Total	**1,037**

1.A.6. Extent of Local Regulations and Development Codes

Based on research performed by the San Jacinto RFPG, in conjunction with the San Jacinto Survey responses, there are many entities within the San Jacinto region that have regulations and codes in place regarding stormwater management. Detailed results of the effort is described in Chapter 3. These measures are often included within local subdivision regulations or drainage criteria manuals. Development regulations and drainage manuals cover standards pertaining to planning and drainage report submissions, right of way and easements, and the completion of H&H studies. Drainage design criteria serve to set the minimum standards for planners, architects, and engineers to follow when preparing plans for construction within the corresponding jurisdictions. These could be for regional entities, municipalities, or counties within the San Jacinto region.

All 11 counties which are wholly or partially within the San Jacinto region include entities with some form of floodplain regulations. Local regulation and development codes of the 1,101 entities within the region are summarized in **Table 1-5**.

TABLE 1-5: REGIONAL REGULATIONS SUMMARY

Regulation/Code	Municipalities with Regulation/Code
Floodplain Management Practices	81
Floodplain Management Regulations	103
NFIP Participation	96
Higher Standards Than NFIP Requires	83

There are also several drainage districts throughout the San Jacinto region. These drainage districts have the authority to construct, improve, and maintain infrastructure related to drainage, as well as the ability to levy taxes, issue bonds, acquire land, and implement regulatory measures. Drainage districts in Brazoria, Fort Bend, Galveston, and Harris Counties all have development regulations and design criteria for their respective jurisdictions.

1.A.7. Existing Flood Planning Documents

The Existing Flood Planning Documents section provides insight into the regulatory and policy environment governing floodplain management in the various jurisdictions of the San Jacinto region, including the most common types of regulation, structural controls, and planning activities. Additional details are provided in the following subsections.

1.A.7.a. Floodplain Ordinances

Floodplain Ordinances dictate how development is to occur within (or to avoid) a floodplain. FEMA provides communities with flood hazard information upon which floodplain management regulations are based. Floodplain Ordinances and Court Orders are subject to the NFIP and promote communities taking flood hazards into account when making land use and land management decisions. Ordinances may include references to maps with Base Flood Elevations, freeboard requirements, and flood storage requirements, as well as criteria for land management and use. In addition, communities can regulate development within floodplains with higher or more restrictive standards than those set by the NFIP.

Many of the municipalities in the San Jacinto region participate in the NFIP. FEMA requires flood control measures and flood prevention standards to be included in local regulations and development codes for program participation. Generally speaking, these regulations:

- restrict and prohibit land uses that are dangerous;
- control alteration of floodplains, channels, and natural protective barriers;
- describe permitting and variance procedures for land use regulation in relation to flood prevention;
- define the duties of the floodplain administrator;

- specify subdivision and construction standards;
- prescribe penalties for non-compliance to standards; and,
- define overall rules and regulations for flood control and flood hazard reduction.

Some communities have included drainage design manuals and detailed construction standards within their ordinances for flood hazard reduction.

1.A.7.b. Current Local Regulation and Development Codes

Subdivision regulations provide more focused regulation of the design and form of the development elements of a city, such as regulating the platting processes, standards for the design and layout of streets and other types of infrastructure, the design and configuration of parcel boundaries, and standards for protecting natural resources and open space. While both cities and counties have subdivision ordinances, counties in Texas do not have zoning authority.

Many entities within the region specify drainage requirements within their subdivision regulations or associated drainage criteria manuals. These regulations specify detention requirements for new development, require finished floor elevations for buildings, and standard design requirements for drainage infrastructure.

1.A.7.c. Local and Regional Flood Plans

There have been numerous flood studies in the San Jacinto region since 2003. These studies range from Hazard Mitigation Plans (HMPs) and Master Drainage Plans (MDPs) for counties and municipalities to larger regional watershed studies. The plans describe the existing flood hazard conditions within the watershed and outline mitigation measures to better respond to flooding events. These include 15 HMPs, 11 Flood Insurance Studies (FISs), 10 Master Drainage Plans (MDPs), and two Base Level Engineering (BLE) studies. There are 27 additional studies that were identified, including drainage analyses and flood planning and risk reduction studies. In addition, the first cycle of the RFP was completed in 2023, the base for which this second cycle has been built upon.

Chapter 1.B. Assessment of Flood Infrastructure

The following sections describe the natural and built infrastructure that gives the basin its hydraulic and hydrologic characteristics, which are the primary functions and indicators of how floodwaters move and behave through an area. Flood infrastructure in the San Jacinto region includes both natural areas and built features that are owned and managed by stakeholders ranging from Flood Control Districts to individual farmers and ranchers. The RFP considers both natural and manmade features that contribute to risk reduction, which includes:

- bridges and culverts
- dams that provide flood protection
- detention and retention ponds
- levees
- low water crossings (LWCs)
- rivers and tributaries
- storm drain systems
- parks, preserves, and green spaces
- reservoirs
- wetlands
- gauges, high-water marks, flood early warning systems (FEWS)
- vegetated dunes
- sea barriers, walls, and revetments
- tidal barriers and gates
- stormwater canals

The TWDB-provided several data sources to assist with the identification of flood management infrastructure at the Flood Data Hub website, such as Dams, Levees, Reservoirs, Stream Gauges, and Low Water Crossings. There were also several questions posed in the San Jacinto Survey that were used to supplement the information provided by existing data sources to create a more complete picture of how communities in the region protect themselves from flood risk.

A comprehensive inventory of existing flood infrastructure is provided in the TWDB-required format as **Table 2** in **Appendix 1-4**. Due to the scale of this assessment, the San Jacinto RFP includes major flood infrastructure such as regional detention facilities but not minor elements such as small private detention ponds serving individual properties. **Map 1**, found in **Appendix 1-1**, depicts the existing flood infrastructure within the San Jacinto region.

1.B.1. Natural Features

1.B.1.a. Rivers and Tributaries

The San Jacinto region is comprised mainly of the San Jacinto River and its major rivers and minor tributaries, making up a complex network of functioning floodplains. A functioning floodplain is a broad term used to describe a natural area susceptible to flooding that provides a broad range of ecological and hydrological functions, including flood storage, water quality maintenance, and groundwater recharge. Rivers and tributaries were collected from the National Hydrography Dataset (NHD) and sorted based on if they were a named river or otherwise categorized as a tributary.

1.B.1.b. Wetlands

A wetland is an ecosystem that is flooded by water, either permanently, seasonally, or after discrete rainfall events. Wetlands provide an important ecosystem for aquatic plants and animals, as well as significant flood storage. The natural functions of wetlands within the San Jacinto region are numerous including natural stormwater treatment, biodiversification, oxygen saturation improvements, areas to promote infiltration, and distribution of intensity of floodwaters. To eliminate duplicate features, wetland areas that were greater than 1 acre and classified as either "Freshwater Emergent", "Freshwater Forested/shrub", or "Estuarine and Marine" were kept as a part of the infrastructure assessment. After the assessment and removal of any duplicate features that overlapped with the known ponds and reservoirs, the San Jacinto region contained over 141,320 total acres of wetlands.

1.B.1.c. Parks, Preserves, and Green Spaces

Parks and preserves are included in the flood infrastructure assessment because they provide essential opportunities for infiltration and retention of stormwater during and after rainfall. These types of natural flood infrastructure are generally located within or adjacent to floodplains throughout the basin to provide flood benefits and flood storage. Higher concentrations of these areas are located along or close to the major rivers. There is a relatively large amount of preserved natural areas within the region, notably the Sam Houston National Forest, the Coastal Prairie Conservancy, Lake Houston Wilderness Park, Armand Bayou Nature Center, and various dedicated urban green spaces.

1.B.1.d. Coastal Areas

The San Jacinto region contains and is greatly impacted by coastal areas. There are also somewhat inland areas, areas not directly touching the coast, that see an impact from coastal flooding, such as the Houston Ship Channel and other areas inland within Brazoria, Chambers, Galveston, and Harris Counties. The natural functions of coastal areas, such as dune and bay ecosystems, serve a large ecological and economic benefit. Galveston Island, a barrier island, provides protection to Galveston Bay and land behind it from much of the Gulf of Mexico's wave, current, and tidal action. On Galveston Island, measures are in place to protect the Island and keep the barrier island stable. Measures include dune systems, a seawall along the historically populated portion of the eastern portion of the Island, and beach nourishment of severely eroding Gulf-facing beaches. Galveston Bay is a relatively shallow bay with minimal wave action due to the barrier island, which can reduce the erosive forces on the bay shorelines.

1.B.2. Constructed Flood Infrastructure and Structural Protections

A vast number of stormwater features have been constructed across Texas, ranging from major flood control infrastructure such as reservoirs, dams, and levees to municipal drainage systems made up of constructed channels and ditches, closed storm drain systems, and detention and retention ponds. Each of these elements play an important role in protecting communities within the San Jacinto region from flooding.

1.B.2.a. Dams, Reservoirs, and Levees

Reservoirs and their associated dams in Texas may serve one or more purposes, including recreation, flood risk mitigation, irrigation, water supply, and fire protection. Information on major reservoirs for the San Jacinto RFP analysis was compiled from the TWDB dataset. Of the 211 total reservoirs identified in the TWDB-provided infrastructure dataset, 8 major reservoirs (**Table 1-6**) were identified in the San Jacinto region. Additionally, there were 8 ponds within the region with a capacity greater than 1,300 ac-ft that were updated to be classified as reservoirs based on TWDB guidance. It's important to note that the Addicks and Barker Reservoirs' primary functions are to reduce flood risk, whereas the other reservoirs in **Table 1-6** were constructed to provide other functions, such as water supply.

TABLE 1-6: LIST OF MAJOR RESERVOIRS

Reservoir Name	Impoundment Feature	Location
Addicks Reservoir	Dam	Houston, TX
Barker Reservoir	Dam	Houston, TX
Lake Conroe	Dam	Conroe, TX
Lake Houston	Dam	Houston, TX
Lewis Creek Reservoir	Dam	Willis, TX
Sheldon Reservoir	Dam	Sheldon, TX
Mustang Lake East/West	Dam	Alvin, TX
Gulf Coast Water Authority Reservoir	Dam	Texas City, TX

Levees are human-made embankments that contain flood flows to a restricted floodplain. Throughout the region, there are roughly 156 miles of levee systems. The prominent levees within the San Jacinto region include a seawall along eastern Galveston Island; levees along Cedar Bayou in Chambers County; the coastal protection levee system around Texas City; two levee systems along Spring Creek and Cypress Creek in northern Harris County near Spring, Texas; and the Lynchburg Pump Station levee along the Harris County Ship Channel.

1.B.2.b. Bridges, Culverts, and LWCs

Bridges and culverts are essential pieces of infrastructure for transportation of the public across rivers and tributaries. These structures allow for the conveyance of flow across a roadway embankment for, designed for varying levels of storm events based on the owning and operating entity. Bridges and culverts were downloaded from the TxDOT bridge dataset, which specifies specific details of the structures such as culvert, barrels, span, or bridge to identify culverts from bridges. These structures were then also categorized as LWCs if they met the criteria defined by TWDB, which is a crossing inundated by the 50% ACE event.

1.B.2.c. Stormwater Management, Storm Drain and Canal Systems

Storm drainage infrastructure data was primarily pulled from various cities' public websites. Stakeholder survey responses were solicited through the San Jacinto Survey, however limited responses were provided. These stormwater management systems contain several elements such as culverts, inlets, detention, and natural functioning drainage systems. Though more storm drainage system data was

publicly available during this second cycle of the RFP, there are still some limitations to the number of entities represented by the infrastructure dataset. Typically, smaller municipalities may not have the resources to digitize and provide storm drainage infrastructure for their areas.

1.B.2.d. Detention and Retention Ponds

Detention and retention systems are either dry or wet bottom basins, constructed to store and release downstream controlled stormwater runoff. Detention areas located within the San Jacinto region are a common and frequently utilized measure for mitigating and reducing impacts from flooding due to land development, road improvements, and other projects that have the potential to increase stormwater runoff. Detention is often accompanied by channel redesign to ensure the volume, capacity, and timing of releases from the channel have no adverse downstream impacts. Detention basins can vary in size from privately owned impoundments that provide benefit to one property to large regional basins owned and maintained by public entities. However, at municipal and privately owned levels, there are many more instances of detention than listed or provided in the accompanying spatial dataset. For the scope of this Regional Flood Plan, it was determined that ponds under 1 acre in area were not deemed large enough to be considered major infrastructure.

There is an increasing trend of constructing wet-bottom detention facilities, meaning a certain volume of water is designed to always stay in the basin. Constructing larger regional-scale detention can lead to reduced design and maintenance costs.

1.B.2.e. Coastal Infrastructure

Within the San Jacinto region, the counties of Brazoria, Chambers, Galveston, and Harris either border or are proximate to the Texas coastline. Different portions of the coastline are protected from waves or nominal tidal water levels to varying degrees by seawalls, beach and dune systems, harbors, or other protective elements. The importance of maintaining the uninterrupted function of port, petrochemical operations, and prevalent industries within the coastal areas of the region has historically resulted in investments in protection measures which make those sites and the coastline less susceptible to minor, regular flooding events.

1.B.2.f. Stream Gauges and FEWS

Stream gauges are essential to a FEWS, allowing for real-time flow and water level data to provide clear measurements during an emergency response. These gauges also serve as historical records of streams and tributaries to support communities in decision making and developing infrastructure. Stream gauges are utilized in hydrologic and hydraulic studies to calibrate modeling to historic events. The main source of stream gauges within the San Jacinto region is HCFCD's Flood Warning System (FWS).

1.B.3. Assessment of Condition and Functionality of Existing Infrastructure

The data collection mentioned above for the San Jacinto RFP was then reviewed for the condition and functionality of each feature. The TWDB funded and guided the development of the Infrastructure Assessment Toolkit to assist with the assessment of the condition and functionality of major constructed flood infrastructure in Texas. These assessment resulted in the creation of **Map 2** (**Appendix 1-2**). The Toolkit assessed infrastructure based on the following three categories:

- **Functionality/Capacity**: How the infrastructure performs. Functionality/capacity shall be reported as:
    - Functional: The infrastructure is serving its intended design level of service.
    - Non-functional: The infrastructure does not function as intended or at its design level of service.
- **Condition**: The physical condition of the infrastructure. Condition shall be reported as:
    - Deficient: The infrastructure or natural feature is in poor structural or non-structural condition and needs replacement, restoration, or rehabilitation.
    - Non-deficient: The infrastructure or natural feature is in good structural or non-structural condition.
- **Confidence**: The level of confidence the RFPG has in determining both the condition and functionality/capacity of existing natural features and major flood infrastructure. Confidence shall be reported as:
    - High: Data used for classification came from the entity through findings of a study or analysis.
    - Low: Data used for classification is based on asset attributes and assumptions.
    - None: No data available to determine classification.

The functionality assessment was performed based on a variety of factors specific to the infrastructure type. Generally, if report documentation on the feature was available to classify its functionality, that was utilized and classified as “High” confidence. For dams, reservoirs, and weirs, functionality was determined based on the owner or how the feature was utilized. Features owned by a federal entity or used for power or water supply were classified as “Functional” with a “Low” confidence rating without report documentation. Levees were classified as functional if they were FEMA accredited. If FEMA accreditation occurred after 2018, the functionality confidence was considered “High,” while if accreditation happened before 2018, confidence was “Low.” Roadway stream crossings, culverts, and bridges were classified as “Functional” if the feature was not overtopped during the 100-year event. For storm drain systems, inlets, channels, ponds, and coastal constructed infrastructure, features were classified as “Functional” with “Low” confidence if the construction date was after the applicable drainage criteria manual or Atlas 14 rainfall adoption date.

The condition for constructed infrastructure was based on numerous factors collected based on the feature. Institutional knowledge and documented reports of the structure's condition as utilized, as well as a feature's age. If the infrastructure was greater than 50 years in age and no additional data was available, was classified as "Deficient." For example, the National Inventory of Dams dataset was utilized to determine the condition of the dams within the San Jacinto region.

If a construction date was not available for the condition and functionality assessment, the date was assumed using the National Structure Inventory (NSI). The construction dates were assigned by using the NSI date from the nearest structure to the flood infrastructure location. This assumes that the infrastructure was built at or near the time of the surrounding structures. For ponds, a construction date was assigned based on the corresponding dam and its construction date. If deck elevation was missing for bridges, culverts, and low water crossings, the elevation was assumed using LiDAR and Google Earth elevation data. LiDAR data was also used to develop channel elevations at the points of flood infrastructure. From there, 5- and 100-year region wide depth rasters were used to calculate the water surface elevation at the point of the infrastructure. The water surface elevation was then compared to the deck elevation to discern if the structure was overtopped in the 5- or 100-year events. If other information was not available for the condition and functionality assessment, the flood infrastructure condition and functionality were left as "Unknown" with a confidence of "None", and no other assumptions were made.

Natural flood infrastructure features, like rivers and wetlands, were determined deficient based on reports or institutional knowledge. Rivers and tributaries were determined to be "Non-Deficient" if features were part of a rural reach and wetlands that were determined to be "Deficient" based on modifications performed like excavation or impoundment. The natural flood infrastructure types were all classified as "Unknown" for functionality because those infrastructure features do not have a designed level of service.

Figure summarizes the condition ratings for both the constructed and natural infrastructure features. Of the 412,386 features assessed, 13% were classified as "Deficient", 25% were classified as "Non-Deficient", and 62% were classified as "Unknown."

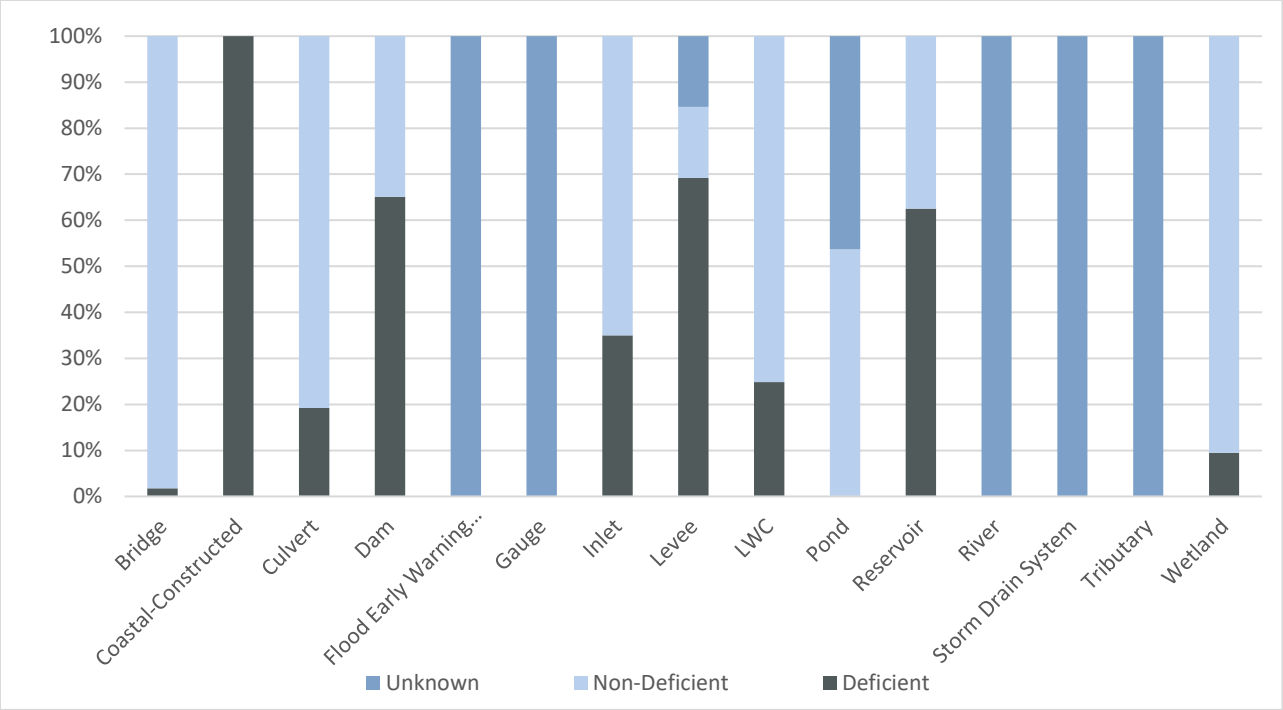

FIGURE 1-1: CONDITION OF NATURAL AND CONSTRUCTED FEATURES

Figure Summarizes the functionality assessed for the 411,525 constructed features. Of the features assessed, 3% were classified as “Functional”, 96% were classified as “Non-Functional”, and 1% were classified as “Unknown.”

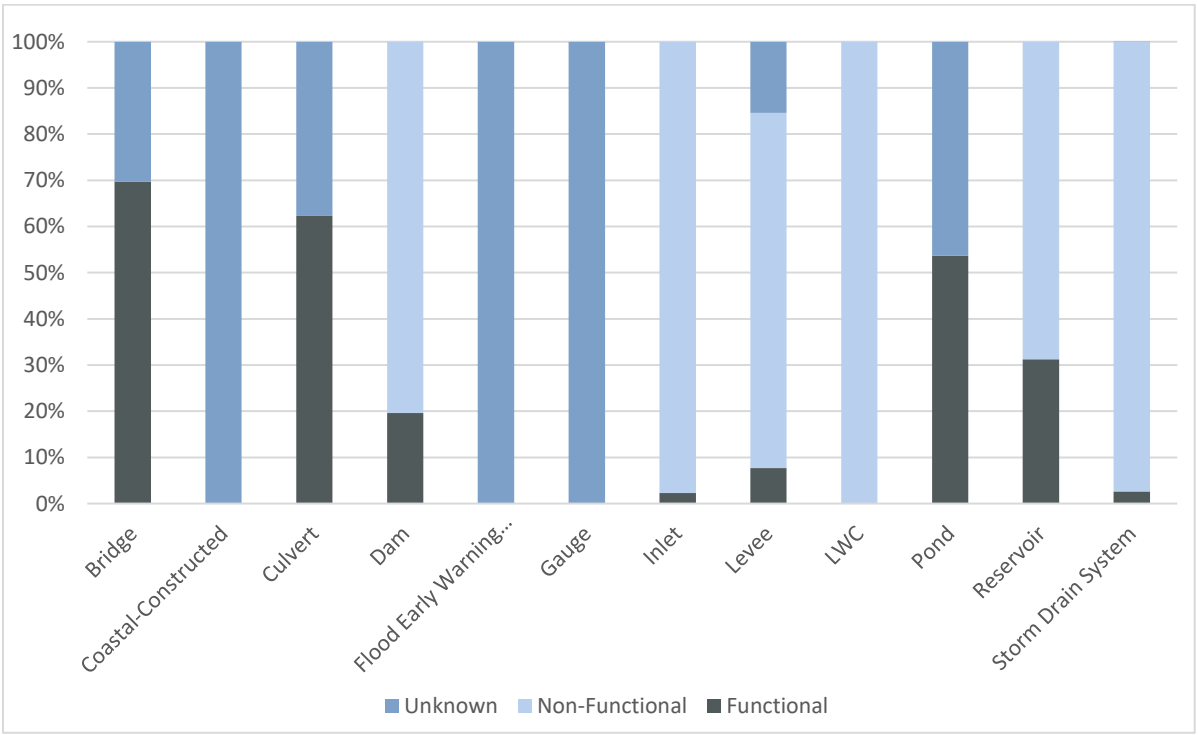

FIGURE 1-2: FUNCTIONALITY OF CONSTRUCTED FEATURES

1.B.3.a. Dam and Levee Safety

There are currently 189 identified dams within the San Jacinto region. While the dams are located across a wide geographic area, roughly 50% are within Montgomery County. Of the 189 identified dams, approximately 80% are state regulated, and the majority in the region are privately owned. Out of the 189 dams, 63% do not have a condition assessment rating, 19.6% were rated fair, 7.4% were rated poor, 7.4% were rated satisfactory, and 2.6% were rated unsatisfactory. In 2019, the Association of State Dam Safety Officials (ASDSO) estimated the cost to rehabilitate all non-federal dams in Texas at $13.6 billion. These metrics show that dams within the region are not in the best of condition and are susceptible to further decline, increasing the risk of failure.

The Texas City Hurricane Flood Protection and Lynchburg pump station systems were the only levees to receive a performance and potential lost benefit rating according to the U.S. Army Corps of Engineers (USACE) National Levee Database (NLD). The Lynchburg pump station levee system protects a critical pump system that supplies drinking water to the City of Houston. The Lynchburg system has a relatively low associated risk, as the likelihood of failure of the system prior to surge water elevations reaching the top of the levee is low, according to the USACE NLD. The Texas City Hurricane Flood Protection (HFP) system received a high-risk classification due to the system having experienced 100% water loading during Hurricane Ike, and the USACE notes that the wall is likely to fail prior to the system being overtopped. In the event that a failure occurs, there are billions of dollars and thousands of people at high risk.

There are both provisionally accredited levee (PAL) systems and accredited levee systems identified in the region. An accredited levee system designation is given when FEMA has determined that the system meets the design, data, and documentation requirements described in Title 44, Chapter 1, Section 65.10 of the Code of Federal Regulations (44 CFR 65.10) and can be shown on a flood insurance rate map (FIRM) as reducing the base flood hazard. A PAL system is accredited when the system provides a base flood hazard reduction on an effective FIRM and FEMA is awaiting data and/or documentation to show the system is compliant with 44 CFR 65.10. The Texas City systems are recognized as PAL systems, while the Spring Creek and Cypress Creek systems are FEMA accredited levee systems.

1.B.4. Planned Flood Infrastructure Improvements

Planned flood infrastructure projects and studies within the region portray an assessment of current mitigation needs. Stakeholder survey responses were very limited for planned projects. Subsequent outreach and research was conducted by the RFPG. Entities within the San Jacinto region have an extensive list of 611 proposed or ongoing projects ranging from land acquisition and buyouts to regional detention and conveyance improvements. These projects include potential local, state, and federal sponsors. **Figure 1-3** shows the breakdown of flood mitigation project types within the region researched and provided via the stakeholder portion of the San Jacinto Survey. **Map 3**, found in **Appendix 1-3**, depicts the proposed and/or ongoing flood mitigation projects within the San Jacinto region by HUC 8. For a list of identified existing flood projects within the San Jacinto region, refer to **Table 3** in **Appendix 1-5**. Task 4 further discusses the recommended projects for the San Jacinto RFP.

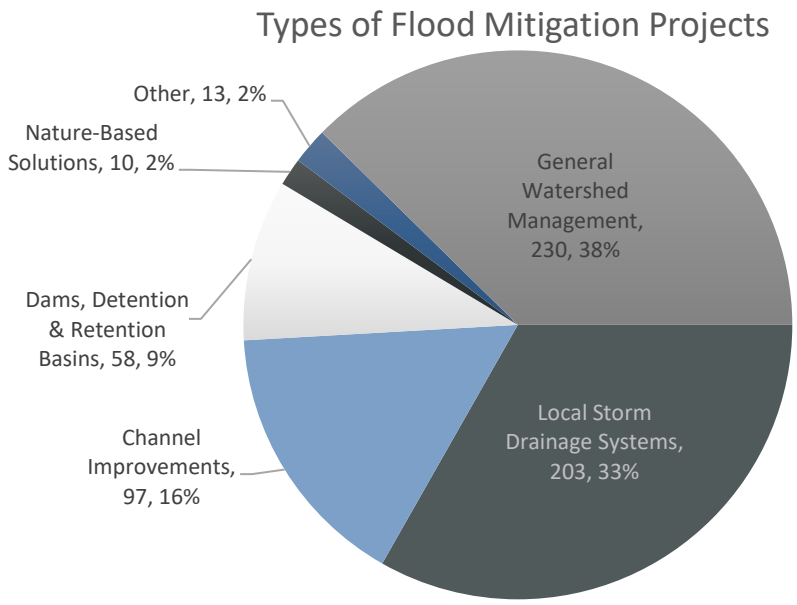

FIGURE 1-3: TYPES OF FLOOD MITIGATION PROJECTS[4]

The most common types of projects in the region are general watershed management projects, followed closely by local storm drainage system projects. General watershed management projects include the 2018 HCFCD Bond program projects, as well as examining General Drainage Improvements within various watersheds. The next most common project type includes local storm drainage projects, primarily led by the HCFCD and their local partners. These include subdivision drainage improvement projects.

The third most common type of project is channel improvement projects, which are inclusive of channel repair and channel conveyance improvement projects. The channel repair projects are primarily ones proposed by HCFCD as part of the Harris County 2018 Bond program. The channel conveyance improvements vary in size from several miles of channel widening to shorter sections of channel repair to stabilize banks and restore capacity.

Detention and retention basins make up a small portion of projects in the region, but they may also be included under the general watershed management projects that make up the bulk of identified projects. Nature-based solutions, including mitigation banks and floodplain preservation, were a minority of the projects. The 'other' category includes acquisition, home elevation, and flood warning systems throughout the region.

4 The categories with the fewest number of projects have been represented together as an "Other" category, including land acquisition, levees and flood walls, roadway crossing improvements, and coastal projects.

1.B.4.a. Structural Projects Under Construction

The ongoing Harris County 2018 Bond program has projects in different stages of implementation, including 43 active construction projects within the county. Outside of Harris County, information was insufficient to provide a complete understanding of the status of proposed infrastructure projects.

1.B.4.b. Non-structural Flood Mitigation Projects Being Implemented

Projects involving non-structural measures were limited within the region compared to structural projects. Non-structural solutions may include flood warning gauges to enhance flood response, voluntary home buyout programs, and land acquisition for floodplain preservation.

1.B.4.c. Structural and Non-Structural Flood Mitigation Projects with Dedicated Funding and Expected Year of Completion[5]

Multiple sources of funding were identified for ongoing projects with dedicated funding for construction. The majority (95%) of the identified funding sources were funded through Harris County Flood Control District. Other sources of funding identified included Community Development Block Grant (CDBG) funds, Texas General Land Office (GLO) funds, and local municipality funds.

1.B.4.d. Anticipated Benefits of Planned Infrastructure Improvements

The San Jacinto Survey results and initial research of the identified planned projects provided limited information on expected benefits for each project gathered during Task 1. Project benefits were generally found in the project description and only found in 14% of identified projects. The identified project benefits vary greatly depending on the type and scale of the drainage improvements. Without greater detail as to the scale, functionality, and complexity of each project, it is difficult to quantify the anticipated benefits of the remaining projects.

1.B.5. Summary of Ongoing Study Efforts

Flood studies are important tools to help communities identify flood risk. The input data for these studies is constantly being updated and refined, including information such as rainfall depths, land use, and implemented projects. Ongoing studies can be leveraged in future flood planning efforts to enhance the understanding of existing and future flood hazard within the region.

Base Level Engineering (BLE) studies involve the development of high-level models to estimate flood risk and are led by the TWDB in partnership with FEMA. BLE studies provide additional flood risk information for areas of limited or outdated mapping. Current BLE studies within the region include the West Fork San Jacinto, East Fork San Jacinto, Spring Creek, North Galveston Bay, Austin-Oyster, and West Galveston Bay watersheds.

The Texas GLO's Combined River Basin Study, which covers counties that received a Presidential Disaster Declaration due to the impact of Hurricane Harvey, has resulted in a detailed assessment of existing flood risk as well as the development of mitigation strategies for each of the regions included in the

5 "Year Complete" refers to the expected year of completion for a project.

study. The study's Central region covers the San Jacinto and Brazos River watersheds, including much of the San Jacinto region. Information from this study was used to support Task 2 flood risk mapping effort.

The TWDB Flood Infrastructure Fund (FIF) provides funding for projects and studies throughout the San Jacinto region. Of the applications received by TWDB for FIF funds for flood planning studies, ten studies were funded to understand existing flood risk and provide mitigation solutions. These include studies sponsored by the San Jacinto River Authority, the City of Houston, Chambers County, Waller County, and Montgomery County.

Potential funding sources identified for ongoing study efforts in the San Jacinto region identified as part of the San Jacinto RFPG data collection effort include federal, state, and local sources. Federal sources include FEMA through the Flood Mitigation Assistance (FMA) program and Hazard Mitigation Grant Program (HMGP), HUD funding through the Community Development Block Grant Mitigation (CDBG-MIT) and Community Development Block Grant Disaster Recovery (CDBG-DR) programs, the Natural Resources Conservation Service (NRCS), and the USACE. State funding includes the Texas GLO, TWDB FIF program, and Texas Division of Emergency Management (TDEM). Local funding sources include general funds, local bonds, taxes, and stormwater utility fees.

Texas Water Development Board

2028 REGIONAL FLOOD PLAN
DRAFT CHAPTER 2
REGION 6
SAN JACINTO

May 2026



PREPARED FOR THE **SAN JACINTO REGIONAL FLOOD PLANNING GROUP**

2028 REGIONAL FLOOD PLAN
DRAFT CHAPTER 2

PREPARED FOR:

TWDB on behalf of Region 6 San Jacinto Regional Flood Planning Group

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CHAPTER 2. FLOOD RISK ANALYSES

A critical component in the development of the RFP was to define a baseline of understanding for flood risk in the San Jacinto region. This chapter documents the effort to define flood risk throughout the San Jacinto region for both existing and future conditions. The flood risk analysis comprised three main components:

1. Flood Hazard Analyses - determine the source, location, magnitude, and frequency of flooding;
2. Flood Exposure Analyses - to identify who and what might be harmed within the San Jacinto region; and
3. Vulnerability Analyses - to identify vulnerabilities of communities and critical facilities.

Figure 2-1 demonstrates the main components that drive the flood risk analysis performed for the San Jacinto region.



FIGURE 2-1: FLOOD RISK ANALYSIS COMPONENTS

Chapter 2.A. Existing Condition Flood Risk Analysis

2.A.1. Existing Condition Flood Hazard Analysis

Task 2A is intended to identify and compile a comprehensive outlook of existing-condition flood hazards in the region, including riverine (fluvial) flooding, urban (pluvial) flooding, coastal flooding, playa flooding, and possible flood-prone areas of risk. This task is primarily a data-gathering and assessment effort focused on available flood hazard information and determining how to leverage that information for use in this second flood planning cycle. This effort and the resultant mapping are not regulatory in nature but are, instead, intended to gather and present a single, coherent, continuous set of information on flood risk throughout the San Jacinto region.

2.A.1.a. Characterization of Existing Condition Floodplains

First Cycle Limitations

In the first planning cycle, RFPGs were tasked with developing an existing flood hazard for only the 1% Annual Chance Exceedance (ACE) event and 0.2% ACE event. The existing flood hazard was derived from available floodplain mapping information within the Flood Hazard Quilt provided by the TWDB in the Flood Planning Data Hub website at that time. This initial existing flood hazard mosaiced National Flood Hazard Layer (NFHL) Effective Detailed data, NFHL Effective Approximate data, and Base Level Engineering (BLE) data using a max-on-max approach.

This resulted in an existing flood hazard, primarily driven by riverine and coastal flood risk, leaving opportunities in future cycles to include other sources such as urban (pluvial) flood risk.

The flood hazard mapping included in the first planning cycle was based upon TP40 rainfall frequency, depth, and distribution information. TP40 was originally released in the 1960s and updated versions only account for historical storms of record through the early 2010s. Atlas 14, produced by National Oceanic and Atmospheric Administration (NOAA), is the most recent estimate of rainfall frequency for Texas, as it considers historical rainfall records up to and including Hurricane Harvey in 2017. There are significant differences between TP40 and Atlas 14 rainfall amounts as shown in the table below, **Table 2-1.**

TABLE 2-1: APPROXIMATE RAINFALL DIFFERENCE BETWEEN ATLAS 14 AND TP40

Location	TP40 Rainfall (in)	NOAA Atlas 14 Rainfall (in)
San Jacinto Region	11.5-13.5	13.5-20.5

Given the magnitude of these differences, the second planning cycle focused on updating the existing flood hazard mapping to reflect Atlas 14 rainfall, the best available data at the time of the cycle, as discussed below.

Second Planning Cycle

A goal of the RFPG was to expand the understanding of flood risk, measured by the percentage of flood hazard mapped with Atlas 14 rainfall data. Throughout the San Jacinto region, many flood risk studies and models have been developed using Atlas 14 rainfall, providing region-wide coverage of flood risk with varying levels of detail. This level of data availability is not the norm for many of the other flood planning regions. The second planning cycle flood risk analyses utilized both local and statewide Atlas 14 studies and datasets, prioritized based on the level of detail, to refine the hazard within the region.

In the second planning cycle, the existing flood hazard data was refined and limitations from the first cycle were addressed. The goal of creating the existing flood hazard in this second planning cycle was to leverage recent studies that incorporate Atlas 14 rainfall, reflect recent development, and include additional flood risk sources beyond riverine and coastal flooding, such as urban flooding. Results from models that were developed using the latest modeling software and have been calibrated to recent flood events were prioritized.

A major enhancement to this second cycle flood hazard dataset is the inclusion of the 10% ACE event in addition to the 1% and 0.2% ACE events. This addition improves the characterization of flood risk by capturing both extreme events and frequent events that can disrupt day-to-day activities.

For this flood planning cycle, flood hazard mapping incorporated community models, 2D BLE, FEMA Detailed NFHL, 1D BLE, and Fathom datasets, as approved by the RFPG. The methodology for reconciling overlapping sources of floodplain data is discussed further in the **Section 2.A.1.c Best Available Existing Flood Hazard Data**. The risk distribution of 10%, 1%, and 0.2% ACE events within the region can be seen in **Figure 2-2**. Harris, Montgomery, and Walker Counties have the largest overall areas and floodplain areas within the San Jacinto region.

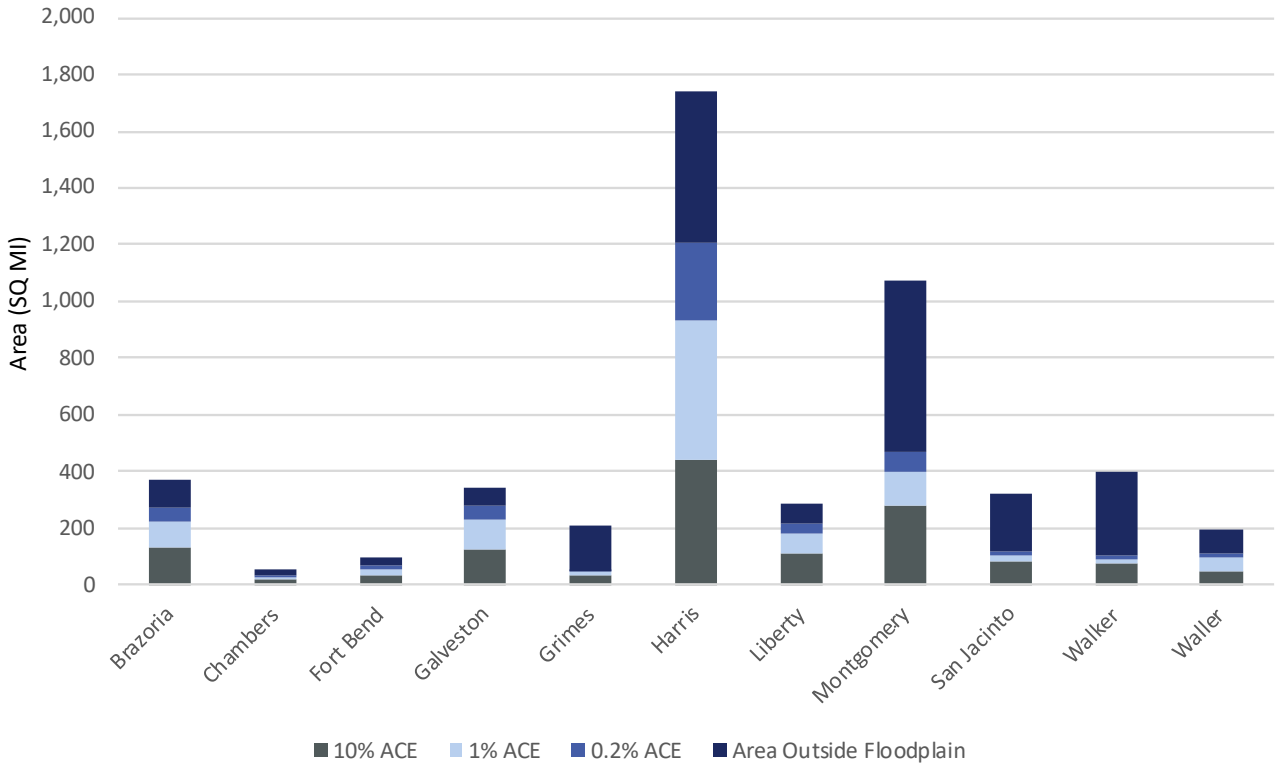

FIGURE 2-2: EXISTING FLOODPLAIN AREA1 BY COUNTY WITHIN SAN JACINTO REGION

2.A.1.b. Existing Hydrology and Hydraulic Model Availability

Hydrologic and hydraulic (H&H) modeling is a necessary component in determining how water flows over land and is a crucial element in developing effective and reasonable flood mitigation planning strategies. Hydrology is the scientific study of earth's natural water movement with a focus on how rainfall, infiltration, and evaporation affect the amount of runoff, and hydraulics represents the analysis of the depth and flow of water.

Applied since the 1970s, H&H modeling uses computer software applications that simulate the flow of rainfall runoff over the land to predict the rise in water level in creeks, rivers, and lakes as well as potential flooding extents. H&H modeling simulates flow, frequency, depth, and extent of flooding over land and frequently satisfies regulatory requirements to ensure that natural, agricultural, and social resources are not damaged by flooding induced by development or modifications to natural features.

[1] For the purposes of the graphic, the 0.2% ACE area is not inclusive of the 1% ACE area.

As previously discussed, the San Jacinto region is a data-rich area with numerous FEMA, BLE, and other detailed H&H modeling efforts. The abundance of available detailed H&H modeling is apparent in **Appendix 2A-5** and in the model coverage **Map 14** shown in **Appendix 2A-8**. The list of existing H&H models in **Appendix 2A-5** was developed based on known modeling efforts. However, the model coverage shown in **Map 14** of **Appendix 2A-8** is representative of models that have been collected and are publicly available or were submitted by sponsors to the San Jacinto RFPG for the purpose of including FMXs in the plan.

2.A.1.c. Best Available Existing Flood Hazard Data

As defined in the *Technical Guidelines for Regional Flood Planning (Exhibit C)* the RFPGs shall perform existing condition flood hazard analysis to determine the location and magnitude of the 10%, 1%, and 0.2% ACE events.

Existing flood hazard was determined based on community models, BLE, FEMA, and Fathom modeling efforts. The technical consultants presented a general overview of the data hierarchy, that was then discussed by, and approved by the Technical Committee on July 2, 2025 and the San Jacinto RFPG on August 14, 2025, as detailed below:

1. Community Models & Maps utilizing Atlas 14 rainfall
2. 2D BLE
3. FEMA Detailed NFHL
4. 1D BLE
5. Fathom

To make use of all available existing flood hazard data within the San Jacinto region and ensure the most comprehensive coverage, the region was divided into 6 areas. A more refined data hierarchy was then developed based on the data available within each area, following the approach presented to and approved by the RFPG on August 14, 2025. **Figure 2-3** shows all 6 areas with varying data hierarchies.

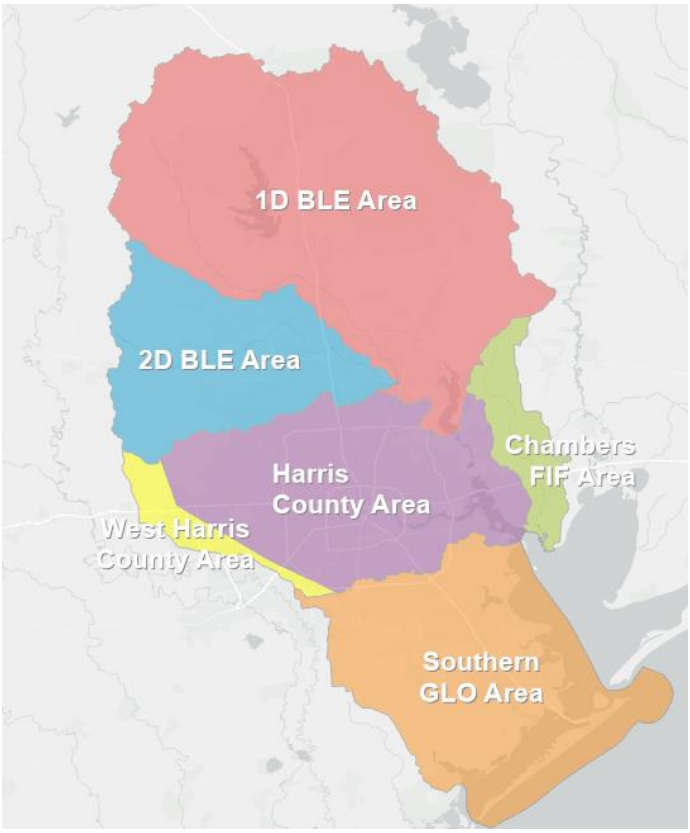

FIGURE 2-3: SUBDIVIDED DATA HIERARCHY AREAS WITHIN THE SAN JACINTO REGION

The refined data hierarchy per area is detailed below:

1D BLE Area

1. Draft Harris County Modeling, Assessment and Awareness Project (MAAPnext)
2. San Jacinto Master Drainage Plan (SJMDP)
3. FEMA Detailed NFHL
4. 1D BLE
5. Pluvial Fathom

2D BLE Area

1. Draft MAAPnext
2. SJMDP
3. 2D BLE

Chambers County Flood Infrastructure Fund (FIF) Area

1. Chambers County FIF Study
2. Pluvial Fathom
3. NFHL Coastal Zone VE

Harris County Area

1. Draft MAAPnext
2. Pluvial Fathom
3. NFHL Coastal Zone VE

West Harris County

1. Draft MAAPnext
2. 2D BLE
3. NFHL Coastal Zone VE

Southern General Land Office (GLO) Area

1. Draft MAAPnext
2. GLO Central Region Combined River Basin Flood Studies (RBFS)
3. 2D BLE
4. NFHL Coastal Zone VE

In areas with overlapping data, available modeling with higher quality and level of detail were prioritized first with subsequent available data supplemented in to capture risk, when applicable. For instance, in the northern part of the San Jacinto region, in the 2D BLE area, SJMDP was utilized as it provided the most accurate depiction of flood risk along major rivers. However, smaller tributary flood risk was not captured in the study and there was a need to supplement with 2D BLE data. This example is highlighted below, in **Figure 2-3.**

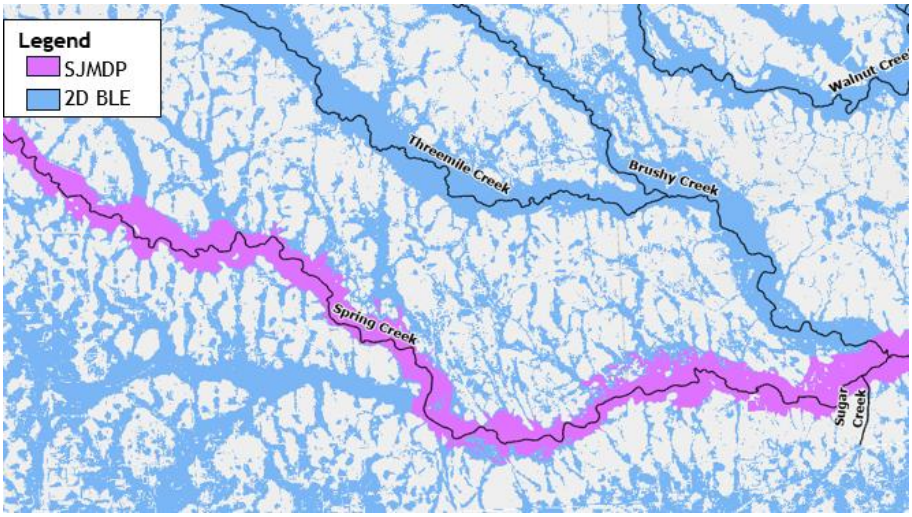

FIGURE 2-3: SJMDP AND 2D BLE COMPARISON

Explanation of Approach

This data hierarchy method was used for the San Jacinto region to prioritize recent, detailed local modeling and supplement it with additional data to capture similar levels of detail across the entirety of the region. Recently developed local models that utilize Atlas 14 rainfall serve as the primary data sources to develop the Existing Flood Hazard layer. These models include updated terrain to capture development and were calibrated to historic events. For example, available FEMA NFHL data can be up

to 18 years old and lacks recent modeling updates, such as Atlas 14 rainfall, recent development, terrain, calibration, or 2D modeling. Due to the outdated nature of this available data, FEMA NFHL data was only utilized selectively in the 1D BLE area and along the coast of the San Jacinto region (GLO area) for mapping existing flood hazard, as agreed upon by the San Jacinto RFPG on August 14, 2025. The San Jacinto RFPG chose this approach in alignment with Goal ID: 06-20-0000000010 – expand the understanding of flood risk in the San Jacinto region, measured by the percentage of the floodplain quilt that is based on Atlas 14 rainfall – previously adopted in 2023. This approach supports the goal by leveraging investments from local stakeholders and the state to better understand flood risk.

The draft MAAPnext modeling within Harris County was ranked above other models due to the incorporation of Atlas 14 rainfall, updated terrain data, inclusion of completed flood damage reduction projects, calibrated and validated with historical events, and inclusion of previously unmapped flooding. The remaining areas outside of Harris County prioritize the community models available in those areas. For instance, in the northern part of the San Jacinto region, the SJMDP is prioritized as the most recent comprehensive modeling. It utilized Atlas 14 rainfall data, is calibrated and validated with historical events, and includes recent terrain data. Chambers County FIF modeling was also prioritized for similar reasons. The recent GLO Combined RBFS models were also used primarily in the southern portion (GLO region) of the region, since they incorporate Atlas 14 riverine, coastal, and compound flooding, and have also been calibrated and validated with historical events.

Although community models were the primary data source, supplemental data was also needed to map additional flood risk within the San Jacinto region. 2D BLE data was supplemented to capture the urban and tributary flood risk. **Figure 2-3** shows the difference in flood risk captured from community models, such as the SJMDP and 2D BLE data, to highlight the need to supplement community models with additional data to create a comprehensive view of flood risk across the San Jacinto region. FEMA Detailed NFHL and 1D BLE had similar flood risk footprint along major rivers, but FEMA Detailed NFHL was prioritized over 1D BLE due to its incorporation of structures into the model. Pluvial Fathom was prioritized last in areas of the San Jacinto region where 2D rain-on-mesh modeling was not available and captured local flooding.

FEMA NFHL Pending Data, FEMA NFHL Preliminary Flood Hazard data, FAFDS, and FEMA Approximate NFHL were considered, but were not used because flood risk coverage was achieved throughout the San Jacinto region with higher quality data sources.

Floodplain Processing Parameters

To develop a unified flood hazard layer, it was necessary to perform data processing to integrate multiple floodplain sources. The table below, **Table 2-2**, details the processing parameters applied to each dataset to ensure consistency and compatibility across the merged flood hazard layers. This approach was approved by the San Jacinto Technical Committee on July 2, 2025.

TABLE 2-2: FLOODPLAIN PROCESSING PARAMETERS

Depth Filter	Island Eliminations	Filling holes	Simplifying	Smoothing
0.5 ft	< 2 Acres	< 0.5 Acre	2.5 ft	20 ft

These processing parameters were selected to reduce model noise and improve the reliability of the floodplain delineation. Specifically, small ponding areas under 2 acres and shallow inundation zones with depths less than 0.5 feet were excluded, as these areas were more indicative of modeling uncertainty. Gaps within the floodplain smaller than 0.5 acres were filled to maintain continuity. Additionally, the floodplain extents were simplified and smoothed using a tolerance of 2.5 feet and 20 feet, respectively, to remove extraneous vertices while preserving the essential extents of the floodplain and enhancing cartographic clarity.

Existing Flood Hazard

A region-wide set of maps was developed that depicts the existing flood hazard areas following the described processes and hierarchy of data priority as shown in **Map 4** found in **Appendix 2A-1**. These maps also identify the type of flooding specific to each flood hazard area, either riverine (fluvial) flooding, urban (pluvial) flooding, coastal flooding, and possible flood-prone areas of risks. These maps reflect the best-known flood risk data as seen appropriate by the San Jacinto RFPG, prioritizing recently developed community models that utilize Atlas 14 rainfall, recent terrain and development, and have been calibrated to recent storm events. Ongoing and upcoming studies may offer new insight into flood risk that can be incorporated into the existing flood hazard area in future planning cycles.

2.A.1.d. Existing Flood Map Gaps and Flood Prone Areas

Flood Map Gaps

The intent of the gap analysis is to identify areas of outdated flood modeling and mapping. Watersheds with inadequate floodplain mapping information have been classified as map gaps. These watersheds were identified at a Hydrologic Unit Code (HUC) level, which indicates the size of the watershed reflected in a series of digits. The HUC12 level was used for this analysis.

Since the San Jacinto region is data rich with extensive community and regulatory flood models and mapping available, the definition of flood map gaps will likely differ from that used in other regions, while remaining consistent with the Exhibit D Data Submittal guidelines.

Community models provided broad coverage across the region and were prioritized in the development of the Existing Flood Hazard. This flood risk data was then used as a reference to help inform the gap designations, which was concentrated to the northern portion of the region. The following definitions of Map Gaps are applicable only within this area and reference data within that area. For the purposes of the map gap analysis, inadequate mapping in the San Jacinto region has been defined as:

- Incomplete Coverage
    - Mapping produced from community models—such as the San Jacinto Master Drainage Plan—that mapped only primary streams within HUC-12 watershed and did not include contributing streams has been classified as Incomplete Data. These gaps are supplemented with 1D BLE, which is approximate due to modeling assumptions that floodwaters are moving in a single direction.

- Approximate Data
    - Mapping where 1D BLE data was the best available data was classified as Approximate Data. Since the San Jacinto Master Drainage Plan only mapped primary streams, some HUC-12 watersheds were delineated to smaller contributing streams for which only approximate floodplain data were available. These gaps were supplemented with 1D BLE and Fathom flood risk data.

The gap analysis provides an understanding of the areas of the region that have modeling and mapping needs. Information on the location of flood map gaps is included in **Map 5** found in **Appendix 2A-2**.

Flood Prone Areas

Flood prone areas have been considered as known locations that experience flooding outside the extent of the existing flood hazard area. Members of the public and regional stakeholders were provided the opportunity to identify flood prone areas using an online interactive map where users were allowed to provide input as points and polygons.

To solicit public input, an online survey with an interactive map was made available. The online web survey was made available for public comment on the San Jacinto Regional Flood Planning website on April 17, 2025. It did not include the Existing Flood Hazard layer at the time of creation, as it was under development. Despite this limitation, the RFPG proceeded with public outreach to allow members of the public to provide feedback on areas of known flood risk. An additional online web map was made available to meeting participants during the public meeting series, held between February and March 2026, which consisted of five meetings held across the region. This version of the survey allowed members of the public to identify known areas of flood risk as well as review the Existing Flood Hazard layer, either to confirm that areas of known flood risk are captured or identify additional areas of flood risk. Both versions of the survey included the same questions below.

1. What is impacted by the flooding?
2. How often does the location flood?
3. What level of storm intensity causes the area to flood?
4. What appears to be the main cause of the flooding at each location?

In addition to the polygons and points recorded, the responses to the survey questions were recorded (a response received shown below) and used for planning purposes to help provide more detail into the extent and the perceived cause of the flooding. Additionally, users could provide written comments and attach photos with each submission. As future planning cycles progress, the intent is to continue to engage the public and regional stakeholders to help identify areas that experience flood risk that are not currently being reflected in regulatory risk information.

Example of Received Responses

1. How often does the location flood? *Infrequently (only from heavy rains)*
2. What level of storm intensity causes the area to flood? *Only during heavy or prolonged rain events*
3. What appears to be the main cause of the flooding at each location? *Undersized or lack of drainage system*
4. What is impacted by the flooding? *Streets/Roadway*
5. Comments: *The intersection of Scott Street and South Loop floods during intense rains. I believe it's due to undersized storm sewer (South Loop construction began in 1950's?) and lack of overland sheet flow path. The intersection can get 3+ feet deep and impassable. However, at the same time, the streets in adjacent South Union (roadside ditch sections) remain passable during same storm events. Roadside ditch drainage in the neighborhoods provides storage while keeping roadways passable. The curb and gutter sections remain flooded and impassable.*

Across both versions of the online web surveys, a total of 110 recorded responses were received. Based on survey responses and topographic review, several point locations were digitized into polygons to represent areas of likely inundation. Since the initial web survey was released prior to the completion of the Existing Flood Hazard layer, some survey response-identified flood risk locations spatially overlapped with Existing Flood Hazard areas. In these cases, the Existing Flood Hazard layer was used in place of polygons digitized solely from survey responses.

In **Figure 2-4**, an example of a reported flood prone area is shown by the polygon with the cyan border, which overlaps the Existing Flood Hazard. Users were allowed to input data in any location, including areas within the existing floodplain, but only data recorded outside of the known flood hazard area was used in the flood prone area analysis. This data helps inform the San Jacinto RFPG of flood risks that are not reflected in current flood risk mapping.

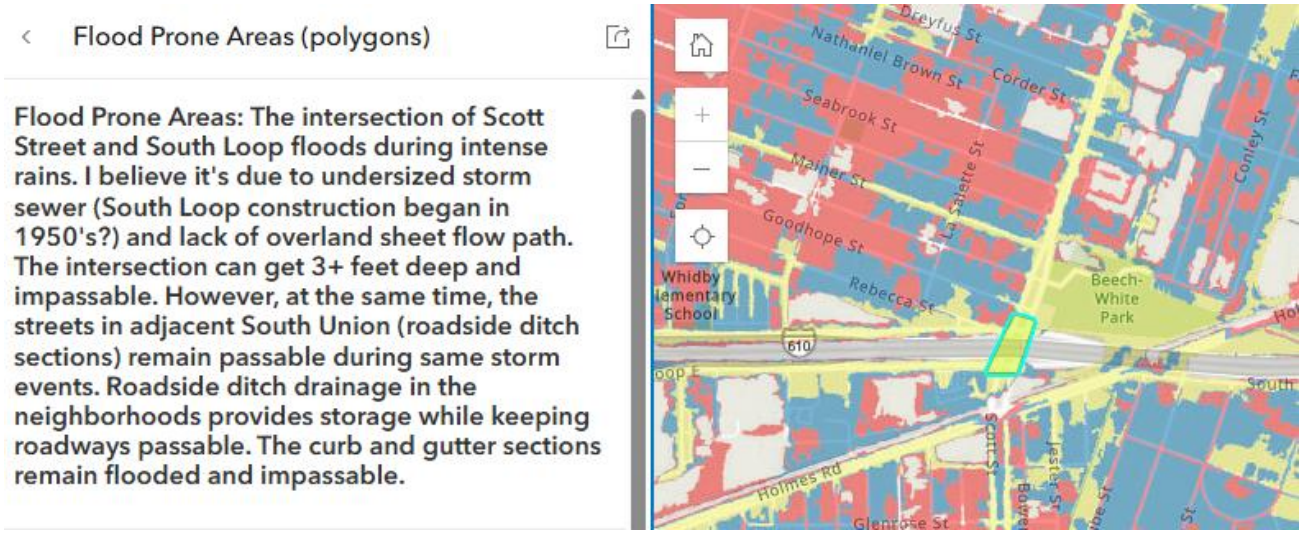

FIGURE 2-4: EXAMPLE FLOOD PRONE AREA - SURVEY RESPONSE

Additionally, some survey-identified flood prone polygons were not incorporated into the Existing Flood Hazard layer when their boundaries were overly expansive and unlikely to accurately represent floodplain extents. For example, **Figure 2-5** shows a polygon submitted through the web survey that was not included as a flood prone area in the Existing Flood Hazard, as it was not considered a reliable representation of flood risk in the area and much of the polygon overlapped with flood risk already identified through the development of the Existing Flood Hazard layer.

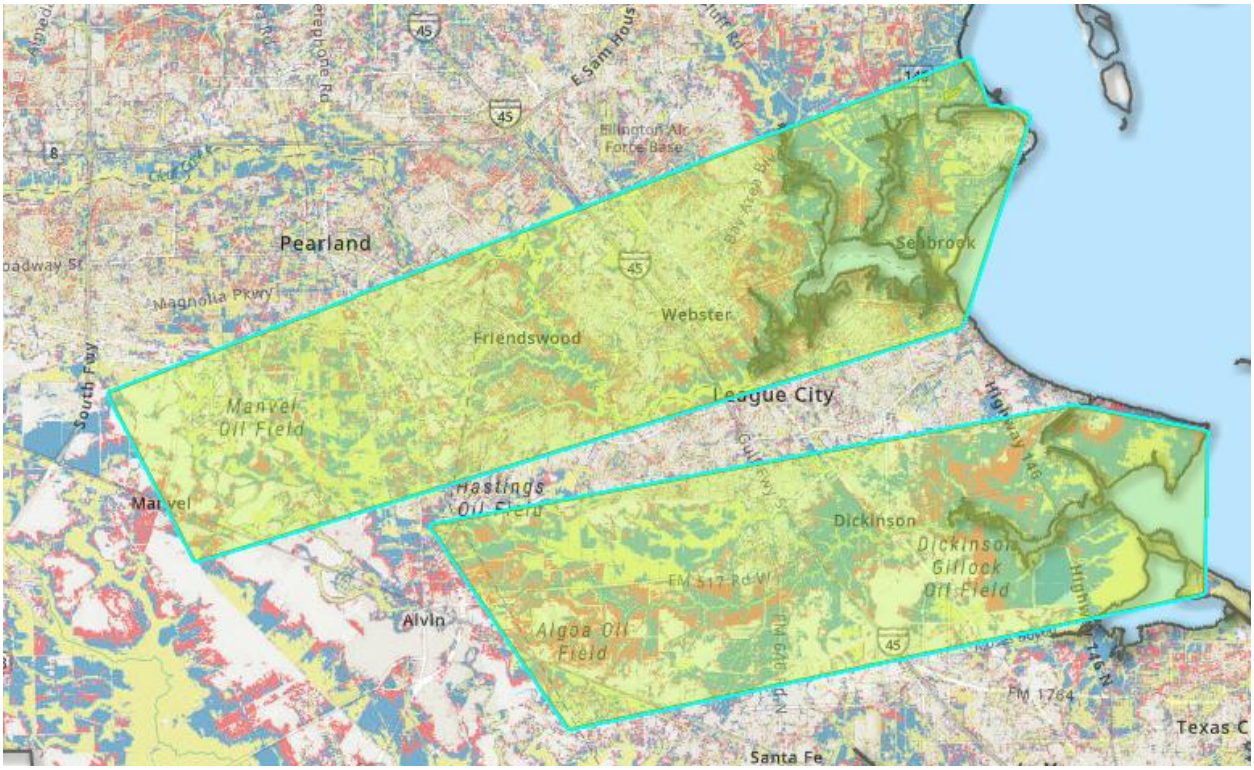

FIGURE 2-5: EXAMPLE FLOOD PRONE AREA - SURVEY RESPONSE

The flood prone areas were included in the Existing and Future Flood Hazard spatial features with a Flood Frequency designated as “Unknown”, per *Technical Guidelines for Regional Flood Planning (Exhibit C)*. The flood prone areas shown within **Map 4** and **Map 5** of **Appendix 2A-1** and **Appendix 2A-2** were not assigned a flood frequency value due to the wide variety of survey responses received. For example, some responses identified areas of frequent street ponding while others identified areas that were inundated during Hurricane Harvey. Since flood frequency was not estimated for survey responses, the extent of the delineated flood prone areas remained unchanged between the existing and future flood hazard analyses. When a flood prone area was not located within the Existing Flood Hazard extent but within the Future Flood Hazard extent, the flood prone area was not included in the Future Flood Hazard layer to avoid duplicating identified flood risk.

2.A.2. Existing Condition Flood Exposure Analysis

2.A.2.a. First Planning Cycle & Second Planning Cycle Existing Flood Hazard Comparison

The existing flood hazard developed in this second cycle showed a significant increase in floodplain area extents compared to the first planning cycle. The extent of this change is representative of the more accurate data used to develop the floodplain, such as updated rainfall data, and the capture of pluvial flooding through rain-on-mesh modeling. **Figure 2-6**, shown below, highlights the differences between first and second cycle floodplain area. First planning cycle hazard referenced data sources that utilized pre-Atlas 14 rainfall data. This second cycle prioritized community models that utilized Atlas 14 rainfall. The results show the first cycle area in the 0.2% ACE floodplain are relatively similar to the second cycle area in 1% ACE floodplain.

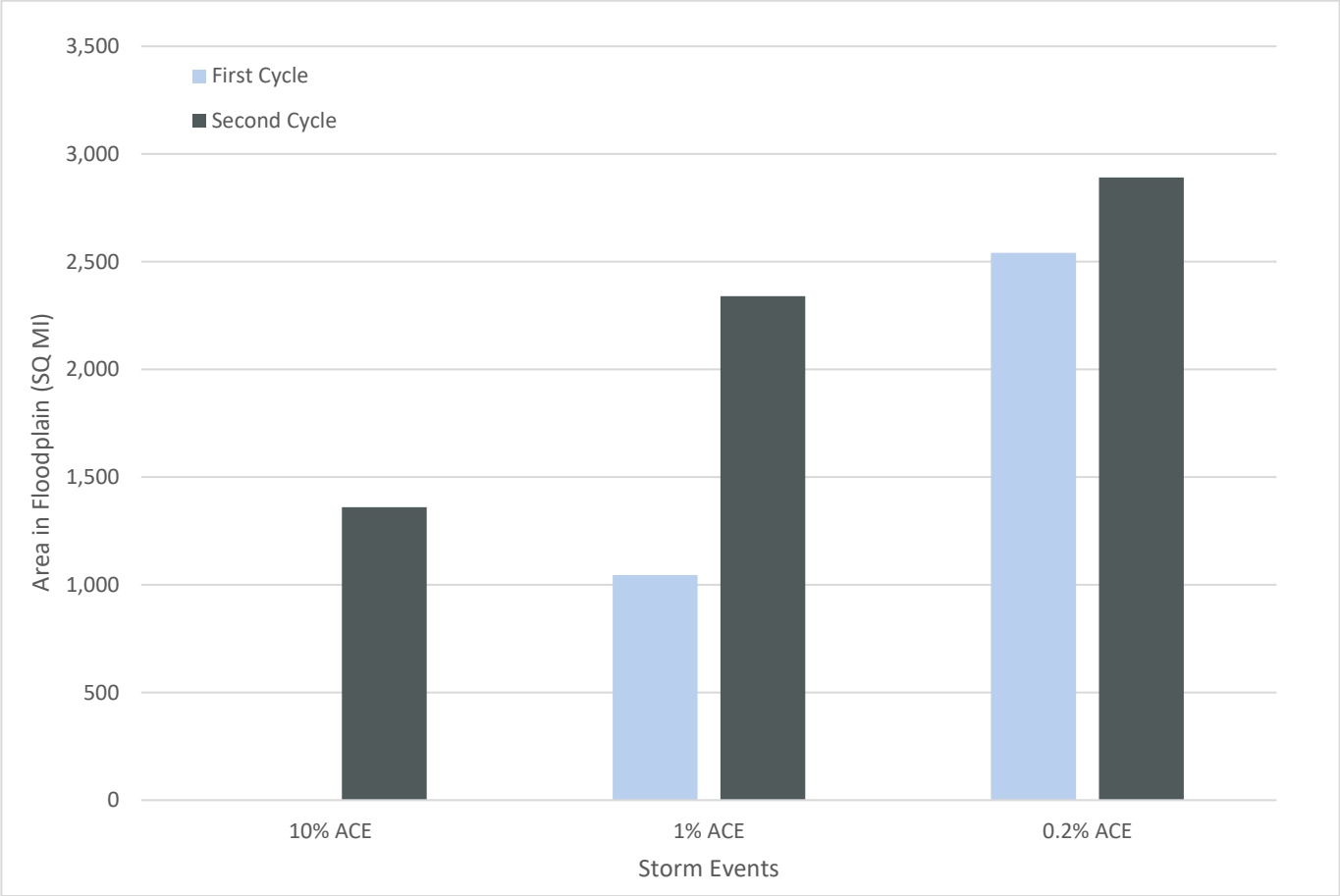

FIGURE 2-6: COMPARISON OF FIRST AND SECOND CYCLE FLOODPLAIN FOOTPRINT AREA

2.A.2.b. Existing Development within the Floodplain

As defined in the *Technical Guidelines for Regional Flood Planning (Exhibit C)*, the goal of the exposure analysis is to identify who and what might be harmed within the region by flooding. The exposure analysis, a ArcGIS exercise, was completed by intersecting roadways, agricultural areas, critical facilities,

and buildings, with the flood hazard features to determine a region-wide evaluation of the infrastructure prone to risk associated with inundation from the existing and future 0.2%, 1%, and 10% ACE events

TWDB provided the following datasets that were used in the critical infrastructure dataset: police and fire stations, hospitals, shelters, schools, natural gas pipelines, and electric power transmission. The natural gas pipelines and electric power transmission lines were not included as a part of the critical infrastructure dataset used in the exposure analysis within the San Jacinto region since most of these features within the region were determined to be floodproofed, located well above or below ground, or are not in imminent risk of damage if located spatially within the floodplain.

In addition to the TWDB-provided dataset, the San Jacinto RFPG supplemented the critical infrastructure dataset with water and wastewater treatment plants, correctional facilities, aviation facilities, waste disposal facilities, power generation, and chemical manufacturing and processing facilities. As a result of the exposure analysis, a population estimate was generated to summarize the number of people impacted in the various floodplains. The exposure analysis information was summarized in **Table 4 - Existing Conditions Flood Risk Summary, by County** provided as **Appendix 2A-7**.

This exposure information will be used to identify areas within the region that have the greatest flood mitigation needs and serve as a basis of comparison when assessing benefit of potential mitigation projects or strategies. The density of critical features resulting from the exposure analysis is displayed region wide in **Map 6** in **Appendix 2A-3**.

2.A.2.c. Potential Flood Mitigation Projects

Approximately 68% of HUC-12 watersheds within the San Jacinto region have at least one ongoing project within its extents. There are approximately 445 ongoing/planned projects within the San Jacinto region aimed at reducing flood risk. Many of these projects are located within Harris County and parts of Fort Bend, Montgomery, and Walker Counties. As a general requirement, these projects often have associated model results or post-project inundation mapping; however, as these projects have yet to be completed or implemented, mapping for these ongoing and planned projects was not incorporated in the Existing Flood Hazard layer. These benefits and floodplain modifications have future opportunities to be reflected in future planning cycles as changes to effective FEMA mapping or as these projects are implemented.

2.A.2.d. Flood Exposure Due to Existing Levees or Dams

Levees in the San Jacinto Region

Levees are a significant piece of flood reduction infrastructure, totaling more than 156 miles throughout the San Jacinto region. Some of the most notable levees include systems along eastern Galveston Island, along Cedar Bayou in Chambers County, the coastal levee system within Texas City, the two systems in northern Harris County near Spring, Texas along Spring and Cypress Creeks, and the Lynchburg Pump Station along the Harris County Ship Channel. Throughout the region, levees are frequently used for agricultural purposes, but these agriculture levees rarely serve any significant flood protection to property or infrastructure and therefore are not considered as flood infrastructure for this RFP cycle.

Among the levees within the region, both the Texas City systems are recognized as provisionally accredited (PAL), and the Spring Creek and Cypress Creek Systems are FEMA accredited. The details of the accreditation and risk analysis process are defined in section 1.B.3.a. The Lynchburg Pump Station levee system protects a critical pump system that supplies drinking water to the City of Houston. The Lynchburg system has a relatively low associated risk, as the likelihood of failure of the system prior to surge water elevations overtopping the levee is low according to the USACE National Levee Database. Although there are water supply and infrastructure consequences of the Lynchburg Pump System levee failing, the Lynchburg levee protects one person and $1 million in property value. On the other hand, the Texas City Hurricane Flood Protection (HFP) system received a high-risk classification due to the system experiencing significant water loading during Hurricane Ike; the USACE notes that the system is likely to fail prior to the system being overtopped. As shown in **Table 2-3**, the two levees in Texas City protect a substantial amount of property and number of people, yielding significant flood exposure in the event of a system failure.

Levee Exposure Assessment

The most significant levees and the resources they protect within the region according to the USACE National Levee Database are found in **Table 2-3**. There are other levees within the region that protect millions of dollars' worth of property and many people, but the ones included below are seen as the most significant with property value protected at greater than $25 million. The exposure assessment and modeling utilized for mapping purposes considered FEMA levee accreditation.

TABLE 2-3: LEVEE EXPOSURE DATA

Levee Name	Location	Length (miles)	Population Protected	Buildings Protected	Property Value Protected	FIRM/FEMA Status
Galveston Co Ind. Water Reservoir Levee System	Texas City	5.9	11,108	3,112	$1B	Provisionally Accredited (PAL)
Texas City Hurricane Flood Protection	Texas City	22.0	15,370	4,965	$1B	Provisionally Accredited (PAL)
Spring Creek Levee System	Spring	1.2	1,460	475	$370M	Accredited
Cypress Creek System	Spring	0.9	545	179	$64M	Accredited

Dams in the San Jacinto Region

In Texas, the Texas Commission on Environmental Quality (TCEQ) is the regulatory agency responsible for the administration of state dam safety laws. Dams located in Texas have both a size and hazard classification. The size classification is based on the maximum storage in the reservoir as well as the height of water behind the dam and the hazard potential is based on the estimated loss to human life and property damages downstream from the dam would a breach occur. A dam's hazard classification

can be low, significant, or high, based on the downstream risks in the event of a failure. Although the classification data is not released publicly, TCEQ maintains and defines these classifications. Within the San Jacinto region, every type of classification for both size and hazard of dams are represented. If the hazard classification is deemed to be significant or high, an emergency action plan (EAP) must be developed by the dam owner. Of the 189 dams identified in the region, 69 dams have an EAP prepared and 18 possess the associated hazard that warrants an EAP but do not currently have a plan in place.

Dams within the region have various purposes, namely flood protection, water supply, recreation, and irrigation. The only two dams in the region that are intended for flood control purposes are the two federally regulated USACE-owned and operated dams at the Addicks and Barker Reservoirs. Addicks and Barker Reservoirs are the only ones in the region that have flood control pools, which are operated by following specific protocols designed to protect downtown Houston from flooding.

Other major reservoirs in the region such as Lake Houston and Lake Conroe have a primary purpose of providing water supply to the region; as such, these reservoirs do not have a dedicated flood pool nor the infrastructure to retain flood flows. Instead, water supply reservoirs such as these are designed to maintain a conservation pool used for water supply, and to serve as a pass-through of flood flows by following protocols that ensure peak reservoir releases do not exceed peak inflows into the reservoir.

Any state-regulated dam classified by the TCEQ or federal dam operated by USACE classified as high hazard must have associated modeling and risk analysis corresponding to various dam breach scenarios. Although this modeling and risk analysis is not readily available to the public and is not currently reflected in FEMA mapping, these types of large-scale risks are being evaluated and considered in the scope of public flood risk.

A critical aspect of dams and reservoirs is a flowage easement which is privately owned land that the dam operator has the right to inundate at any point in time under normal operations. Depending on the community and dam operator, the allowances regarding what can be done with such land, such as building or developing, can be limited. The lack of development in these areas is an appropriate response of land use since the area is likely to experience inundation.

2.A.2.e. Existing Flood Exposure

Harris, Montgomery, and Galveston Counties, are spatially prominent with large relative land areas in the San Jacinto region. These three counties show the highest values for almost every category in the exposure analysis. An important consideration regarding the exposure analysis is that there is no elevation data associated with the flood hazard evaluation. Infrastructure such as elevated roadways and buildings appear at risk in the exposure analysis even if they are properly elevated and are well above the regulatory water surface elevations. This potentially exaggerates the results of the exposure analysis.

Population

Floodwaters can endanger the general population in numerous settings, including at home, in the workplace, during daily commuting, and while traveling to seek shelter. Within the region there are several areas that show significant populations at risk. For example, Harris County tops the list with an estimated 1.03 million, 2.69 million, and 3.64 million people at risk in the 10%, 1%, and 0.2% ACE risk

classifications, respectively, representing the full extent of the corresponding ACE floodplains. Population risk in Harris County accounts for over 80% of the region's total population exposed to the cumulative 0.2% ACE flood risk. These population numbers are based on the TWDB-provided buildings layer population estimates and are not indicative of people who are commuting in and out of these counties. Galveston County has the second highest estimated population exposed to flood risk and Montgomery County with the third highest. The largest numbers of population exposed to flood risk overlap with the most densely populated counties.

Structures

While people often shelter in their homes in times of danger and emergency, there is an inherent risk associated with staying at home during a flood event. Most of the structures identified at risk within the flood exposure analyses are residential. For example, in the entire San Jacinto region, out of the roughly 785,000 structures at risk in the 1% ACE event, approximately 664,000 are classified as residential. Critical facilities and public infrastructure perform essential functions that require enhanced consideration in flood planning. The breakdown of existing structure types within the flood prone areas, 10 %, 1%, and 0.2% ACE flood hazard areas can be seen in **Figure 2-7**.

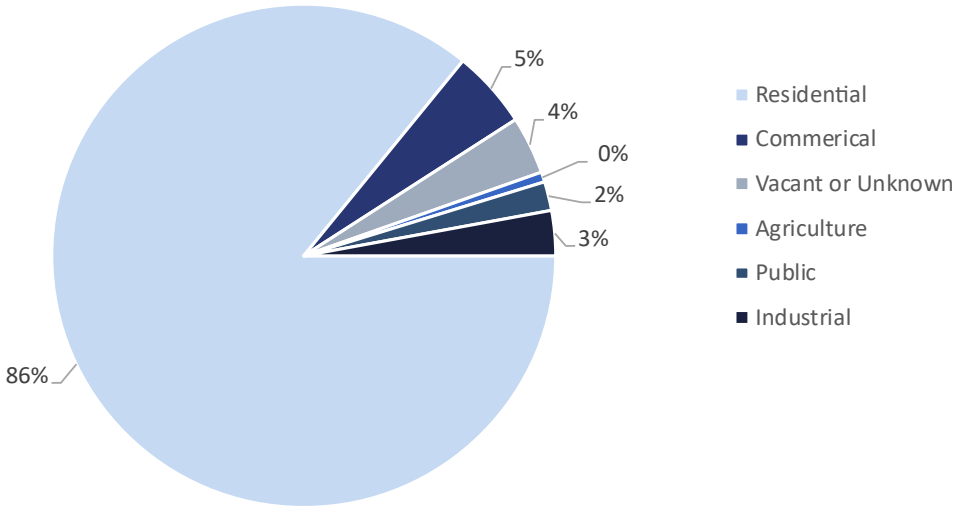

FIGURE 2-7: DISTRIBUTION OF EXISTING STRUCTURES AT RISK BY TYPE

Galveston County has the second highest number of structures exposed to all three flood events, with the third highest being Montgomery County. Out of the estimated 2.1 million structures located within the San Jacinto region (as provided by the TWDB buildings dataset), approximately 59% of the structures are located within the cumulative floodplains, as shown in **Figure 2-8**.

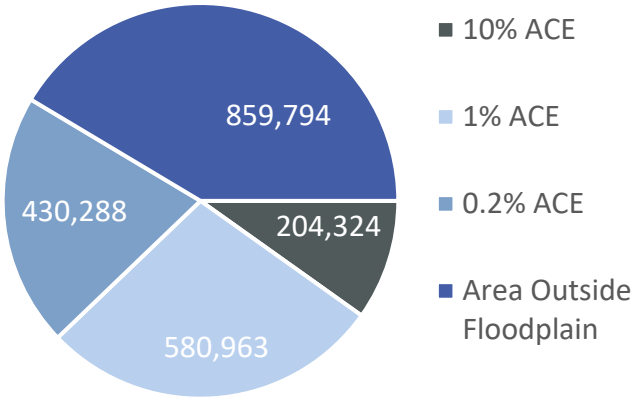

FIGURE 2-8: EXISTING FLOOD HAZARD EXPOSURE OF STRUCTURES

In terms of damages to structures resulting from flooding, the San Jacinto region has the highest value of National Flood Insurance Program (NFIP) flood claims in the state out of any RFP as of 2019. Significant damages from storms such as Hurricane Harvey, Tropical Storm Allison, and Hurricane Ike contribute heavily to the NFIP claims, as described in Chapter 1.

Critical Facilities / Public Infrastructure

Critical facilities have especially high consequences associated with flood risk due to the nature and function of the facilities as they serve vital function to the well-being of the population. As expected, Harris County tops the list of critical facilities exposed to flood hazards, accounting for more than half of the critical facilities in the mapped cumulative 0.2% ACE event. Galveston County has the second highest critical facility exposure values; Brazoria County has the third highest number of critical facilities exposed to flood hazards.

A main component of public infrastructure is roadway data. TxDOT roadway data was provided by TWDB, which included interstates and highways. Two factors were analyzed for roadways: length of roadway inundated in a flood event and number of road stream crossings. Bridge deck elevation data was not included in the analysis, so all points of intersection between streams and roads were considered in the exposure analysis. At a conceptual level, flood risk associated with flooded roadways is associated with low water crossings; cars floating in more than six inches of water; or people unable to escape as their car is swept away.

Also, as roadways are shut down due to flooding, the transportation of goods and emergency services are affected along major thoroughfares. For example, a large amount of shipping and logistics occurs along US Interstate 10 within the region; if any part of it were to become impassable, this would cause significant financial impact and travel delays throughout the region. There are approximately 10,300, 16,800, and 19,700 miles of roadway with associated risk in the 10%, 1%, and 0.2% ACE, respectively. Harris County tops the list for roadways inundated by all mapped storm events; Galveston County has the second highest miles of roadways exposed to flooding; and Montgomery County has the second highest number of roadway stream crossings.

Agricultural Areas

Agricultural area in the region was identified using the 2024 National Cropland Data Layer produced by USDA National Agricultural Statistics Service. A total of 320, 590, and 721 square miles of agricultural land were exposed region-wide to 10%, 1%, and 0.2% ACE, respectively. Land use categories associated with farming and ranching were included in the exposure analysis as agricultural areas, while fallow or idle cropland and forestry were excluded. Harris County leads the region with approximately 29% of the agricultural acreage that is exposed to flooding within the entire San Jacinto region. Second was Brazoria County with 18% followed by Liberty County at 11% with the third most exposed acreage. These ranges serve as an indicator of the variety of land use dynamics within the region. Although agricultural lands are a predominately natural aspect of the landscape and rarely contain large amounts of impervious surface, prolonged and unexpected flooding can cause significant damages to crop quality and yield amounts.

2.A.2.f. Expected Loss of Function

Severe flood events can result in a loss of function for a community's infrastructure which impacts the systems supported by the infrastructure. The impacts can include disruptions to life, business, and public services that can be essential to a community during and after a flood event. Infrastructure that becomes inundated during flooding events is often non-functional during the event and through the recovery process.

A spatial analysis was conducted in GIS using the best available data and the existing conditions floodplain layer to generate count estimates of expected loss of function to infrastructure for the San Jacinto region and inform discussion of interconnected impacts. The expected loss of function analysis does not consider any hardening, raising, or other methods to protect functionality.

Inundated Structures

Residential structure data used in the San Jacinto region included single-family homes, town homes, mobile homes, as well as multi-family residences like apartments and condominiums. Based on the GIS analysis, an estimated 664,000 residential buildings are in the 1% ACE floodplain extents and have the potential to lose function during and after storm events. Loss of function of residential structures can result in content loss and displacement of residents. Harris County and Galveston County show the highest number of residential structures in the 1% ACE floodplain extents.

Non-residential inventory data includes agricultural, commercial, industrial, and public buildings. An estimated 121,000 non-residential buildings are within the 1% ACE floodplain, full floodplain extent. These buildings are subject to a potential loss of function during storm events and during the recovery process. Loss of function of non-residential structures can result in content and inventory loss, potential relocation, loss of work, and loss of short-term shelters.

Transportation

Transportation line data (roadways and railroads) from TxDOT was used to estimate road and railways crossings at risk of flooding. Based on the GIS analysis, approximately 16,750 miles of roadways could experience a loss of function during a 1% ACE storm event in the San Jacinto region, cumulatively.

There are approximately 239 low water crossings identified by TWDB in the San Jacinto region. The San Jacinto region consultant team additionally identified low water crossings by bridge class culverts from the TxDOT Bridge dataset as well as by intersecting TxDOT roadways and railroads with river and tributaries within the region. A total of 862 low water crossings has been identified in the San Jacinto region. These low water crossings will likely become impassable and result in a loss of function during significant storm events. The impassable roadways can delay emergency responders and strand motorists. During significant storm events, debris buildup can cause loss of stream conveyance at bridges and exacerbate the risk of stream road crossings with higher flood waters and debris overtopping the roadways.

Health and Human Services

Health and human services include hospitals, nursing homes, and other services to enhance the health and well-being of the public. These services are housed in buildings that are often designated as Critical Facilities due to their importance before and after a flood event. Based on spatial analysis, over 7,000 schools and almost 1,000 medical facilities are located within the existing floodplain. During flood events, potential loss of function can occur for these services due to their location within the floodplain.

Medical and health care services may be disrupted by power outages and staff displacement or may close for weeks for repairs related to flooding. The loss of these essential services may lead to lack of care for chronic conditions, delayed diagnoses, postponed surgeries, and unavailability of care during an emergency worsening health outcome as a whole. Nursing homes depend on continuous availability of staff, electricity, and medicines to care for elderly populations. Harris County has the highest number structures tied to health and human services within the existing 1% ACE floodplain in the San Jacinto region.

Water Supply

Flooding events can contaminate water supply sources such as wells, springs, and lakes/ponds through polluted runoff laden with sediment, bacteria, animal waste, pesticides, untreated wastewater, industrial waste and chemicals. Drinking water wells have the potential to become contaminated during major flooding events, requiring disinfection and cleanup. In the region, there are over 200 water treatment facilities cumulatively within the 10%, 1% and 0.2% ACE floodplains, with almost half of these facilities located within the full extent of the 1% ACE floodplain.

These facilities include water wells, pump stations and potable water treatment plants. During a flood event, these critical facilities can become inaccessible by the staff needed for operation or may experience damage to essential operational equipment due to inundation, debris or power failure. Failure or breaching of any of these water supply system components may result in public health impacts such as the issuing of water boil notices to protect the public from water-borne disease. In more severe storms, water service interruptions may result. Given the essential status of potable water in everyday life loss of water supply has far-reaching repercussions to human health and safety, hospitals, and businesses.

Water and Wastewater Treatment

Flooding has the potential to significantly impact wastewater treatment facilities by exceeding their flow design capacity and reducing treatment effectiveness. Flooding events can lead to overtopping of storage tanks leading to discharge of untreated waters. Additionally, failure of wastewater treatment systems due to flooding may consist of direct losses such as equipment damage and indirect impacts such as contamination of clean water supply, floodwater, and streams. There are over 770 wastewater treatment plants in the entire San Jacinto region, with over 550 wastewater treatment facilities cumulatively within the 0.2% ACE floodplain, representing about 70% of wastewater treatment facilities at risk. Approximately 50% of the wastewater treatment facilities are exposed to flood risk within the 1% ACE floodplain.

Failure of wastewater treatment facilities during a flood also poses a risk to human health and safety when floodwater becomes polluted with high levels of disease-causing bacteria. People, animals and pets can become exposed to these pollutants, increasing the risk of disease. Discharge of untreated wastewater also degrades water quality in streams affecting aquatic life, public health, and ecosystems.

Energy Generation

Potential failure of energy generation sites, including power substations and petrochemical facilities can result in wide-reaching effects on people, business, and the larger economy given the significant role of petrochemical fuels and electricity in everyday life. From a systematic perspective, energy generation and distribution infrastructure is a critical node, as disruptions propagate to other nodes such as healthcare, transportation, supply chain, and water supply. Flooding events can affect these critical facilities directly or indirectly; direct effects include equipment damage due to inundation, or debris. Indirect effects are more far-reaching. In the case of power plant damage resulting in widespread outages, healthcare facilities, schools, and residences are affected. The energy grid is also put under strain as production or distribution hubs are offline due to damage. There are over 1,550 power generation facilities with the cumulative 0.2% ACE floodplain in the San Jacinto region.

Emergency Services

Emergency services are tied to fixed facilities including Emergency Medical Services (EMS), fire and police stations, and designated emergency shelters. There are over 440 fire stations, nearly 140 police stations, 165 emergency shelters and almost 60 EMS locations within the floodplain resulting in increased hazard during flooding events. The location of this type of critical infrastructure within the floodplain creates compound effects, as they hinder the community's ability to respond or recover from disaster.

Flooding can disrupt these critical services by direct damage to facilities; however, the services they provide are closely linked to other critical nodes such as transportation and power supply. Beyond physical damage, these services often experience functional loss when roads are impassable and police, EMS, or firefighters are unable to reach distress calls on time. People may be unable to reach emergency services via phone if power supply is limited or cut off, resulting in negative impacts on health and public safety when most needed. Flood events could hinder access to areas such as shelters.

2.A.3. Existing Condition Vulnerability Analysis

Vulnerability is an assessment of the potential negative impact of the flood hazard to communities and a description of the impacts. This task used the data from the existing flood exposure analysis to determine the vulnerability of exposed structures and population to flooding. The existing condition vulnerability analysis used the same base data as the future condition vulnerability analysis.

The analysis also utilizes the 2022 Social Vulnerability Index (SVI) data developed by the U.S. Centers for Disease Control and Prevention (CDC). The CDC calculates the SVI at the census tract level within a specified county using 16 variables grouped into four themes that cover four major areas of social vulnerability: Socioeconomic Status, Household Composition, Race/Ethnicity/Language, and Housing/Transportation. The San Jacinto RFP analysis is using SVI as a metric for vulnerability, which is being linked to resilience given a natural disaster within communities. For the purposes of the flood planning cycle, the TWDB recommended that vulnerability, SVI, should be used as the proxy for resilience. FEMA defines vulnerability as susceptibility to physical injury, harm, damage, or economic loss. It depends on an asset's construction, contents, and economic value of its functions[2]. Vulnerability depends upon many factors such as land use, extent and type of construction, contents and use, the nature of populations (mobility, age, health), and warning of an impending hazardous event and willingness and ability to take responsive actions (Wright, 2007[3]). **Figure 2-9** shows the CDC themes used for SVI calculation.

[2] https://emilms.fema.gov/is_0393b/groups/85.html

[3] 4952BWright, J.M. 2007. Chapter 4 Flood Risk Assessment. In: Floodplain Management: Principles and Current Practice. Knoxville, TN: University of Tennessee. 25pp.

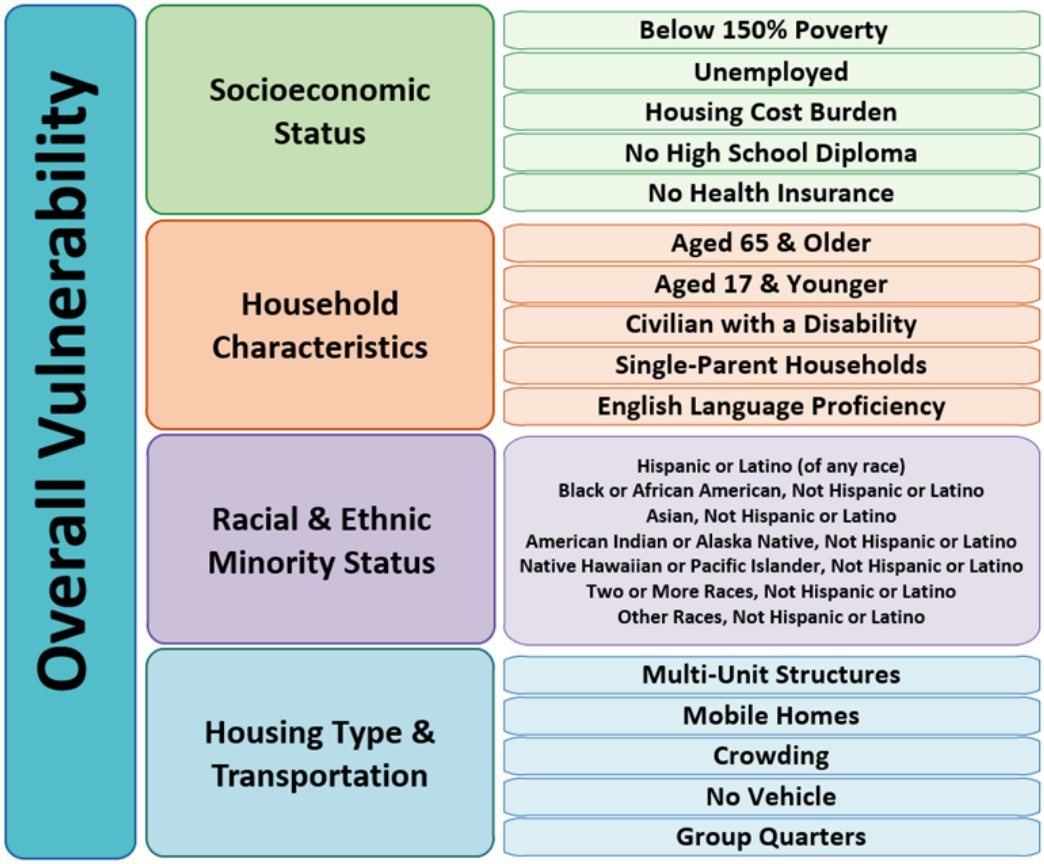

FIGURE 2-9: CDC THEMES FOR SVI CALCULATION

Additionally, for the second planning cycle, the TWDB funded a project to develop a flood-specific social vulnerability index for Texas (TX F-SVI). TX F-SVI uses 18 census variables to best identify the Texas communities most vulnerable to flood events. TWDB provided the RFPGs with building data that included both CDC SVI and TX F-SCI data identified for each building.

CDC SVI and TX F-SVI values are measured from 0 to 1, where zero is the lowest vulnerability to a natural disaster and one is the highest vulnerability. Throughout the San Jacinto region the SVI and TX F-SVI by TWDB provided building data ranged from 0.0001-0.9994 and 0.0007-0.9996, respectively; this wide range shows the broad diversity of communities and how they can likely respond to flood hazards occurring within the region. This data provides more detail into the communities that are at risk and how they are likely to respond to a disaster given their current resources.

All vulnerability spatial features and required tables were completed in accordance with the *Technical Guidelines for Regional Flood Planning (Exhibit C)* and the *Data Submittal Guidelines for Regional Flood Planning (Exhibit D)* for both the existing and future flood risk. The data generated from the vulnerability analysis are shown in **Map 7** in **Appendix 2A-4**. The average SVI of infrastructure exposed to flood risk as well as exposed critical facilities are presented by county in **Table 4 in Appendix 2A-7**.

2.A.3.a. Resiliency of Communities

Increasing the overall resiliency of a community goes beyond merely reducing flood risk; there must be a focus on the broader, systemic aspects of the community and their ability to respond, given their current

resources and systems. For example, the National Preparedness and Response Science Board describes multiple actions that may be taken, such as promoting access to public health, healthcare, and social services; promoting health and wellness alongside disaster preparedness; and, expanding communication and collaboration among networks of social services, business, academia, etc. The list states that communities can increase resiliency by encouraging at-risk individuals, and the programs that serve them, to take an active and responsible role in facilitating disaster efforts and building social connectedness to build trust amid emergency preparedness efforts. All these efforts, in addition to reducing flood risk, can provide a holistic approach to reducing the impact that flood-related natural disasters have on communities throughout the San Jacinto region.

2.A.3.b. Vulnerability of Critical Facilities

Critical facilities were considered for this analysis to be hospitals, police and fire stations, shelters, schools, water and wastewater treatment plants, correctional facilities, aviation facilities, waste disposal facilities, power generation, and chemical manufacturing and processing facilities. Water and wastewater treatment plants are considered critical due to their function as well as their proximity to floodplains or bodies of water. Hospitals and shelters are considered, as a part of the exposure analysis, critical features due to the vital role these facilities play in providing essential services to the region. The rest of the facilities were considered critical in the exposure analysis due to the primary function or necessary service they provide to the San Jacinto region. Out of the almost 19,000 critical features identified within the region, the average SVI value per critical structure is 0.52 with a standard deviation of 0.29, the average TXF-SVI value per critical structure is 0.51 with a standard deviation of 0.30. These values generally show that the resiliency and vulnerability of critical facilities are greatly varied across the region.

Critical facilities have especially important risks when exposed to floodwaters. For example, during Tropical Storm Allison, the entire Houston Medical Center was devastated by flood waters, causing major losses of data and research and a lengthy loss of care to patients. Aside from the inherent importance of the previously listed features, there are certain features such as the Houston Ship Channel and the corresponding petrochemical production and the interstate highway system, which include infrastructure that can experience damages from compound flooding, riverine flooding, and storm surge. These are critical infrastructure that are subject to more frequent and complex risk associated with compound flooding scenarios as well as severe consequences in the event of damage or inundation.

Beyond the sheer property damage associated with flooding events, there are also the longer-term damages associated with flooding losses that, although not deemed critical from an infrastructure point of view in the exposure analysis, are no less important in the discussion of flood risk. These associated damages include but are not limited to: loss of work, mental health stress and illness, or lack of resources for needed repairs. Based on the SVI metric some of these threats disproportionately affect more vulnerable groups, as communities respond in myriad ways given a hardship such as a flood-related natural disaster.

2.A.4. Summary of Exposure and Vulnerability Analyses

The previous sections presented results of the methodology employed to develop qualitative and quantitative descriptions of the flood threat, exposure, and vulnerability within the San Jacinto region. Based on the exposure analysis within the cumulative existing 10%, 1%, and 0.2 % ACE floodplains, there are approximately 1.2 million structures, 4.3 million people, and 3,000 square miles of land area exposed to flood risk. These values have significantly increased from the first cycle and will only continue to increase with associated increases in population and development within the region. The differences in these values from the first cycle to this second cycle are shown below, in **Table 2-4**.

TABLE 2-4: CUMULATIVE 0.2% ACE FLOOD RISK DIFFERENCES FROM 1ST AND 2ND CYCLE

Storm Event	Cycle	Structures at Risk	Population at Risk	Land Area at Risk (Sq Mi)
Cumulative 0.2% ACE	1st	500,000	1,700,000	2,000
Cumulative 0.2% ACE	2nd	1,200,000	4,300,000	3,000

The existing flood risk, exposure, and vulnerability assessment for the San Jacinto region are summarized by county in the TWDB-required **Table 4** located in **Appendix 2A-7**, providing the results by county of the existing flood exposure and vulnerability analysis as outlined in the *Technical Guidelines for Regional Flood Planning (Exhibit C)*.

A geodatabase with applicable layers as well as associated TWDB-required **Maps 4** through **Map 7** are provided in **Appendix 2A** as PDFs. **Table 2-5** outlines the geodatabase deliverables included in the RFP as well as spatial files and tables. These deliverables align with the *TWDB's Data Submittal Guidelines*.

TABLE 2-5: TASK 2A GEODATABASE LAYERS AND TABLES

Item Name	Description	Feature Class Name	Data Format (Polygon/Line/ Point/GDB Table)
Existing Flood Hazard	Perform existing condition flood hazard analyses to determine the location and magnitude of 10%, 1%, and 0.2% ACE.	ExFldHazard	Polygon
Existing Exposure	Develop high-level, region-wide, and largely GIS-based existing condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both 1% annual chance and 0.2% annual chance flood events.	ExFldExpPol	Polygon
	Develop high-level, region-wide, and largely GIS-based existing condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both 1% annual chance and 0.2% ACE.	ExFldExpLn	Polyline
	Develop high-level, region-wide, and largely GIS-based existing condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both 1% annual chance and 0.2% annual chance flood events.	ExFldExpPt	Point
	Combine the Exposure Poly, Line, and Point data into a single master layer, also includes vulnerability data.	ExFldExpAll	All

Chapter 2.B. Future Condition Flood Risk Analysis

2.B.1. Future Condition Flood Hazard Analysis

The purpose of **Chapter 2.B.** is to present key considerations in the development of future condition flood hazard areas and summarize the methodology utilized to determine the future 10%, 1%, and 0.2% ACE flood hazard areas. For the 2024-2028 planning cycle, the RFPGs were tasked with performing future condition flood analyses to determine the potential extent of the 10%, 1%, and 0.2% ACE flood hazard based on a 30-year future forecast period. The estimated flood hazard changes would be used solely for the purpose of estimating the general magnitude of potential future increases in flood risk under the equivalent of a "do-nothing" or "no-action" alternative. Within the San Jacinto regional flood planning context, these projections would not be used for developing new regulatory flood hazard maps. Some political entities within the San Jacinto river basin, such as Harris County, have adopted "no-rise/no adverse impact" policies that require new development to offset increases in development impervious area and resulting runoff rates with the addition of detention.

The first step of the task was to identify areas within each FPR where future condition hydrology and hydraulic model results and maps are available and to summarize the relevant information for use in determining future flood hazards. In areas where future condition flood hazard data were not available, the *Technical Guidelines for Regional Flood Planning (Exhibit C)* call for the use of future condition flood hazard information provided by the TWDB. This Future Conditions dataset was developed by the TWDB for year 2060 and accounts for future rainfall, sea level change, land subsidence, and land use changes. The San Jacinto region chose to utilize more detailed methods to determine future condition flood hazard information in addition to TWDB's dataset. The approach was presented to and approved by the San Jacinto RFPG at the planning meeting on August 14, 2025 and was accepted by the TWDB on October 22, 2025.

Additional discussion and supporting information related to Task 2B can be found in the *Technical Memorandum* and **Appendix 2B-6**.

2.B.1.a. Characterization of Future Condition Floodplains

Flood hazard within the San Jacinto region can be defined as pluvial, urban, riverine, and coastal. Changes in flood risk for riverine and coastal flood hazards are dependent on a variety of potential factors. Riverine floodplain boundaries may be influenced by future development, population growth, subsidence, and future rainfall patterns.

In addition to those factors, coastal floodplain boundaries may be affected by a combination of storm intensity, sea level change (SLC), and coastal erosion. Each of these changes can influence the extent of hurricane or tropical storm surge that reaches inland, inundating communities.

Development and population growth may result in a change of land use and alter existing drainage patterns, which may result in increases in downstream discharge rates and runoff volumes and in shortened hydrograph timing. Depending on the magnitude of changes, water surface elevations and floodplain widths may increase. Many municipalities and counties in the region have development

retention/detention criteria to reduce and mitigate increases in peak stormwater runoff as a result of development.

Subsidence is the gradual lowering of the ground elevation that, in the greater Houston-Galveston region, primarily results from aquifer compaction due to long-term, sustained groundwater extraction. Changes in ground elevations from non-uniform subsidence may result in wider floodplains for the region. Changing regulations are intended to reduce subsidence.

Models that include increased riverine discharges due to future rainfall patterns result in changes in water surface elevation and limited changes in inundation extents in areas with steep terrain. Alternatively, in areas with flat terrain, increased flows result in smaller changes in water surface elevations and larger changes in inundation extents. Since varying terrain is common throughout the region, varying results are seen in floodplain comparisons.

Throughout the San Jacinto region, flood risk data is prevalent, and there is substantial coverage of available regulatory flood hazard mapping, with the exceptions listed in **Section 2.A.1.d. A region-wide set of maps was developed that** depicts the existing flood hazard areas following the described processes and hierarchy of data priority as shown in **Map 4** found in **Appendix 2A-1.** These maps also identify the type of flooding specific to each flood hazard area, either riverine (fluvial) flooding, urban (pluvial) flooding, coastal flooding, and possible flood-prone areas of risks. These maps reflect the best-known flood risk data as seen appropriate by the San Jacinto RFPG, prioritizing recently developed community models that utilize Atlas 14 rainfall, recent terrain and development, and have been calibrated to recent storm events. Ongoing and upcoming studies may offer new insight into flood risk that can be incorporated into the existing flood hazard area in future planning cycles.

Existing Flood Map Gaps and Flood Prone Areas. The types of risk reported in the flood hazard layer are riverine, pluvial, and coastal.

Current Land Use and Development Trends Associated with Population Increase

The TWDB's Water User Group projects that within the next 30 years, the population in the Water Planning Region H (which is a similar boundary to Region 6) would increase by 3.5 million residents, equating to an approximate population increase of 37% between 2020 and 2050. Within the San Jacinto region, the population is estimated to increase by 2.0 million, with the majority of growth being in Harris, Montgomery, and Fort Bend Counties.

Land use changes associated with population increases in the San Jacinto region were considered for some of the region based on model availability. Future development land use changes in the northern portion of the watershed (approximately Lake Houston Watershed) were analyzed in the San Jacinto Regional Watershed Master Drainage Plan (SJRMDP). The future conditions models from the SJRMDP included changes in land use based on a 50-year population outlook that accounted for increased impervious cover in anticipated development areas. The future conditions model reflects anticipated changes in population between 2020 and 2070, which are expected to lead to increases in impervious cover and changes in the timing of basin runoff.

An analysis of future development for the southern areas of the San Jacinto region is not included due to the high density of development in Harris and Galveston Counties. While future development may have an impact on runoff, many areas within these zones have already been essentially fully developed. Other

factors, such as increase in rainfall, subsidence, and sea level change will result in comparatively more substantial changes to the floodplain extents. These areas also have high standards for development within the floodplain and detention criteria which minimize the impacts from future development.

Future Rainfall Conditions

Future rainfall conditions are described in the report "Year 2060 Floodplain Maps for Texas"[4], produced by Fathom, AECOM, and Aqua Strategies (Fathom report), on behalf of the TWDB. The climate in 2060 is modeled assuming a 2°C global mean temperature rise relative to the pre-industrial period, which was selected in consultation with the Office of the Texas State Climatologist. The 17th, 50th, and 83rd percentile outputs of that temperature scenario represent the minor, moderate, and significant climate forcing scenarios, respectively, in the Fathom report. The TWDB recommended the use of the significant climate forcing scenario (Scenario 3) when utilizing the Fathom data, with which the San Jacinto RFPG agrees.

The pluvial change factor grids produced by Fathom were obtained and utilized for the San Jacinto region. Future rainfall is calculated by multiplying existing rainfall by the average pluvial change factor per watershed or model. The exact change factors used for each model are reported in **Section 2.B.1.c**. The San Jacinto region on average expects to see a rainfall increase of approximately 14%.

Sea Level Rise

Sea level rise (SLR) was taken into consideration when estimating future flood hazard for coastal areas by modifying existing models with the coastal change factors developed by Fathom under Scenario 3.

For modification of existing models an absolute change to coastal boundary condition was applied. This coastal boundary condition was developed by applying the coastal change factors provided by Fathom, which assumes the San Jacinto region is projected to experience a Mean Sea Level increase between 1.8-ft to 2.1-ft by the year 2060. More methodology details are discussed in subsequent sections, as well as in the report "Year 2060 Floodplain Maps for Texas", produced by Fathom, AECOM, and Aqua Strategies.

Subsidence

Approximately 250 GPS stations are currently monitoring subsidence within the San Jacinto region, operated by the Harris-Galveston Subsidence District (HGSD), Fort Bend Subsidence District (FBSD), University of Houston, Lone Star Groundwater Conservation District (LSGCD), Brazoria County Groundwater Conservation District (BCGCD), Texas Department of Transportation (TxDOT), and other local entities. Much of the subsidence is observed in the northern and southern zones of the region and shown in **Figure 2-10**.

[4] Fathom, AECOM, Aqua Strategies (ASI), "Year 2060 Floodplain Maps for Texas", April 2025, https://s3.amazonaws.com/twdb-gis-data/Staged/office-of-planning/flood-planning/flood-data/flood-risk/cursory-floodplain-data-2025/Final_Report_YR2060_Flood_Maps_07292025.pdf

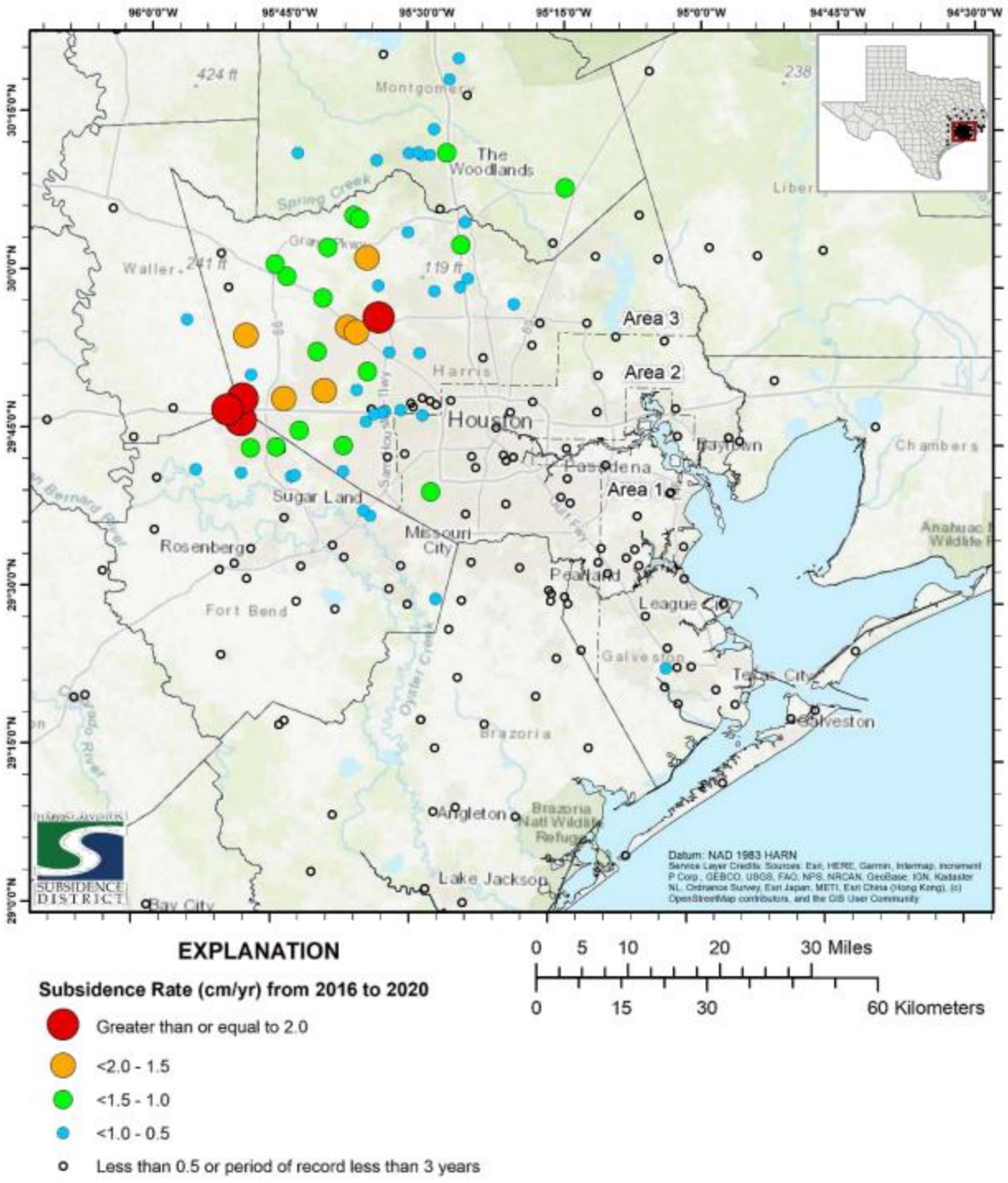

FIGURE 2-10: SUBSIDENCE RATES IN THE SAN JACINTO REGION

Anticipated Changes to Floodplain Functionality, Sedimentation in Flood Control Structures, and Major Geomorphic Changes

Flood control structures prevent floodwaters, either stormwater or coastal water, from inundating vast amounts of land and property. Hydraulic works (levees, flood walls, dams, river diversions, etc.) represent human modification to the flood hazard. In the San Jacinto region, the most prominent flood control structures at a regional scale are levees, dams, and reservoirs.

Sedimentation occurs throughout all flood control structures and is often accounted for during the design of the facility. Sedimentation in water supply reservoirs primarily impacts the conservation pool or water supply available. The TWDB has completed sedimentation studies on both Lake Conroe and Lake Houston to determine the water supply capacity impact of sedimentary accumulation in each lake. These studies show that sedimentation occurs at the bottom of the reservoir which has minimal impact on the water storage volume; however, sedimentation does have an impact on available firm water yield (water supply) from the reservoir. In May 2025, the Texas legislature approved the creation of the Lake Houston Dredging and Maintenance District as a special district to oversee ongoing dredging operations as a long-term solution for sedimentation. Selective dredging of channels within the Addicks watershed is ongoing and aims to remove sediment deposition and restore channel capacity as part of several projects sponsored by the Harris County Flood Control District.

Sediment deposition in a channel can reduce its cross-section area over time or block storm sewer outfalls from local drainage systems. During high-frequency, low-intensity events, reduced channel conveyance may result in increased water surface elevations. But during low-frequency, high intensity storms, such as the 1% ACE, flood flows are typically conveyed by the greater floodplain and reduced channel conveyance may have a limited impact on water surface elevations.

Sediment deposition throughout the San Jacinto region is also dynamic. During flood events, rushing water can scour deposited sediment and transport it downstream. As the flood recedes and floodwaters slow down, sediments from upstream may begin to deposit and can reform the obstruction. This shifting sediment complicates the calculation of water surface elevations during the peak of the flood.

Since additional analysis is needed to understand the impacts of geomorphic changes to the functionality of the floodplain, this aspect was not included within the future conditions flood hazard layer.

Completion of Proposed or Ongoing Flood Mitigation Projects

There are multiple Flood Mitigation Projects (FMPs) throughout the San Jacinto region that are either under construction or have dedicated construction funding. Additional details regarding the types of ongoing mitigation projects in the region can be found in Chapter 1. In summary, there are 611 identified or ongoing projects in the region. These include land acquisition, channel conveyance improvements, levees and flood walls, local storm drainage systems, nature-based solutions, dams/retention/detention basins, roadway crossing improvements, and coastal projects.

Although flood mitigation projects impact the floodplains in their localized area, they were not included in the future floodplain analysis. Individual project models would have needed to be compiled, reviewed, and incorporated into the analysis to incorporate into the future condition analysis. In addition, models would have required calibration to ensure that inputs and assumptions were the same

throughout the region. Major flood mitigation projects that are intended to have widespread regional impact can be incorporated in future cycles of the RFP if the RFPG deems it necessary.

2.B.1.b. Available Hydrology and Hydraulic Models

Available H&H models were assessed for inclusion of future flood risk data. Only one community study within the region was found to have future condition models suitable for the RFP, namely the San Jacinto Regional Watershed Master Drainage Plan (SJRMDP).

The SJRMDP was completed in 2020 by the HCFCD, City of Houston, Montgomery County, and San Jacinto River Authority. It was a comprehensive plan for all major streams in the upper San Jacinto River basin. The SJRMDP included updated existing conditions H&H models for the main streams within the watershed as well as a high-level analysis of future floodplains as the region continues to grow. The SJRMDP future conditions included changes in land use based on a 50-year population outlook that was accounted for through increased impervious cover in anticipated development areas. The SJRMDP future conditions models reflect anticipated changes in population between 2020 and 2070, which are expected to lead to increases in impervious cover and changes in the timing of basin runoff. While these models were developed for the purpose of high-level planning, they serve as a valuable guide for understanding the potential future flood risk for the basin. Notably, the SJRMDP did not consider future rainfall; thus, the SJRMDP models were modified with future rainfall. The modeling extents of the SJRMDP are shown below in **Figure 2-11**.

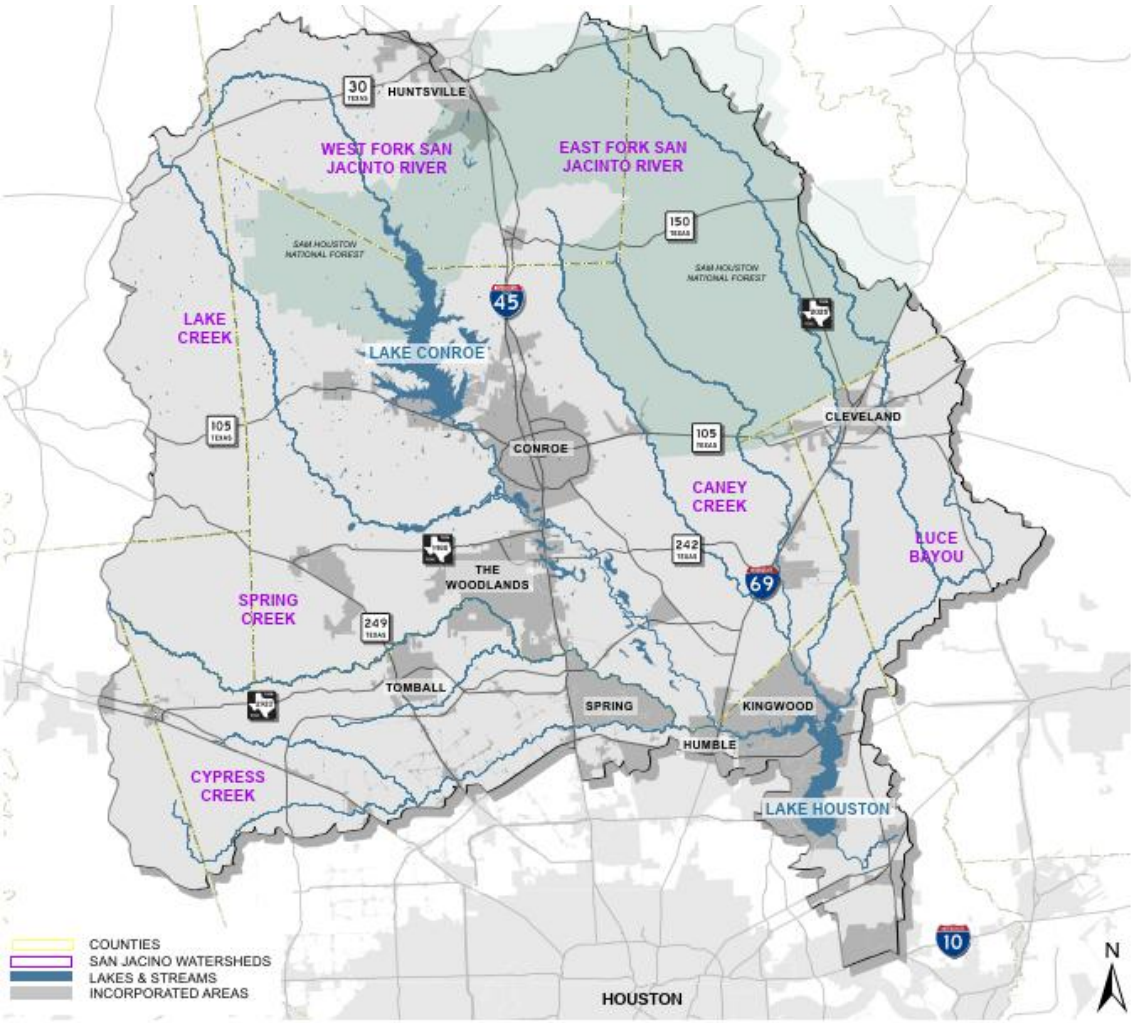

FIGURE 2-11: MODELING EXTENTS OF SJRMDP

2.B.1.c. Determination of Future 10%, 1% and 0.2% Annual Chance Event Floodplains

The assessment of future flood risk requires an estimation of the extent of the future flood hazard area. The determination of potential increases in the San Jacinto region's future 10%, 1%, and 0.2% ACE flood hazard areas is based on a "do-nothing" or "no-action" scenario for approximately 30 years of continued growth with existing flood regulations and policies.

As mentioned above, the TWDB's Technical Guidelines call for the use of Fathom's future condition significant climate forcing scenario ("Scenario 3"). Upon review of this data for the San Jacinto region, it was commonly found that the future floodplains were smaller than existing condition flood extents from detailed modeling for all storm events analyzed (10%, 1%, and 0.2% ACE). For example, **Figure 2-12** shows the comparison of 1% ACE floodplains between the existing Spring Creek 2D BLE study and Fathom Scenario 3. Since the existing 2D BLE flood extents are larger than Fathom Scenario 3, this is an area where Fathom Scenario 3 could not be utilized per the TWDB's guidance and the RFPG's expectations regarding future flood risk.

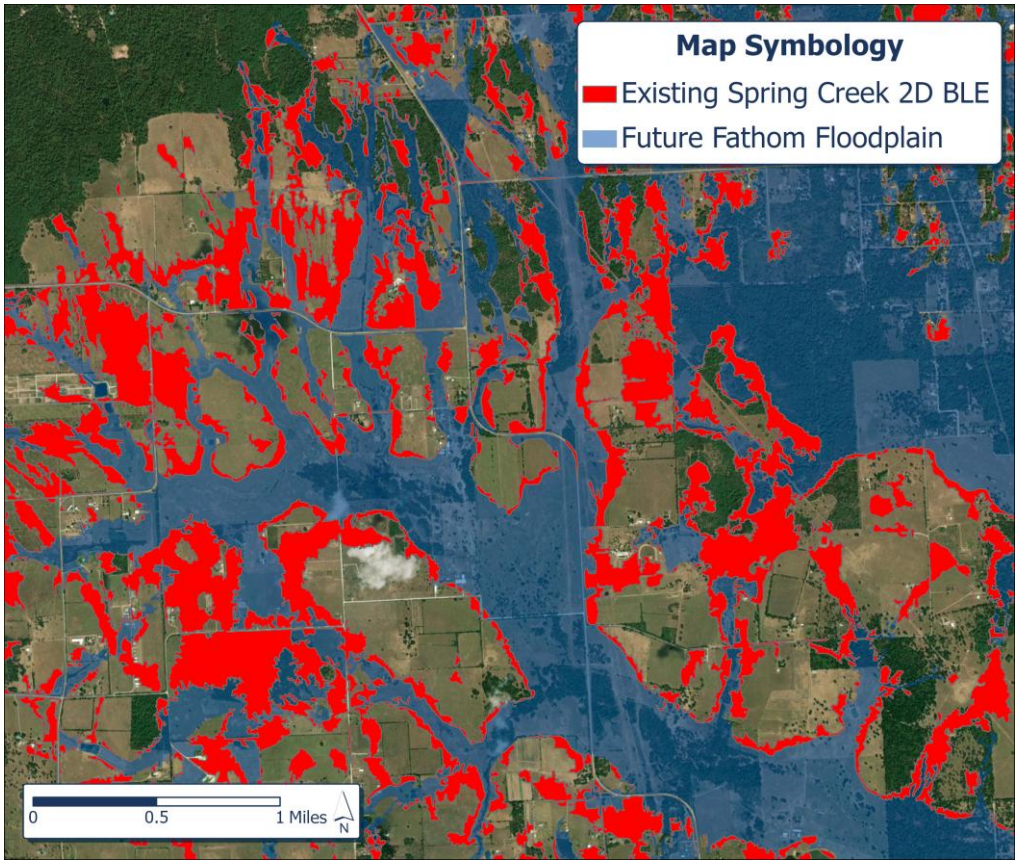

FIGURE 2-12: 1% ACE FLOODPLAIN COMPARISON BETWEEN SPRING CREEK 2D BLE AND FATHOM SCENARIO 3 (COMBINED PERIL)

Therefore, the RFPG chose to modify detailed existing hydrologic and hydraulic models to characterize future flood risk in the San Jacinto region. Pluvial Fathom Scenario 3 was utilized where pluvial flood risk was not already defined (e.g., in 1D BLE areas).

To determine the most impactful driving factors on future conditions flood risk, the methodologies of the Fathom future conditions analysis were reviewed. The following are important conclusions drawn from the Fathom report:

- For fluvial and pluvial scenarios: When future land use and subsidence are introduced without changes in climate, the median change in water surface elevation is zero.
- For coastal scenarios: When future land use and subsidence are introduced without changes in climate, the median increase in water surface elevation is two inches.
- For all scenarios: Future climate forcing is the biggest driver in water surface elevation increases.

Based on the above, modification of existing models to characterize future conditions flood hazard only considers changes in rainfall and sea level for this planning cycle because these factors have the most direct and meaningful impact on water surface elevation increases. Those changes are described in detail below.

For characterization of future flood hazard maps, the region was divided into three zones, designated as Northern (north of draft MAAPnext study areas), Central (draft MAAPnext study areas, excluding Cedar Bayou), and Coastal (south and east of draft MAAPnext study areas) to facilitate model prioritization, as shown in **Figure 2-13**.

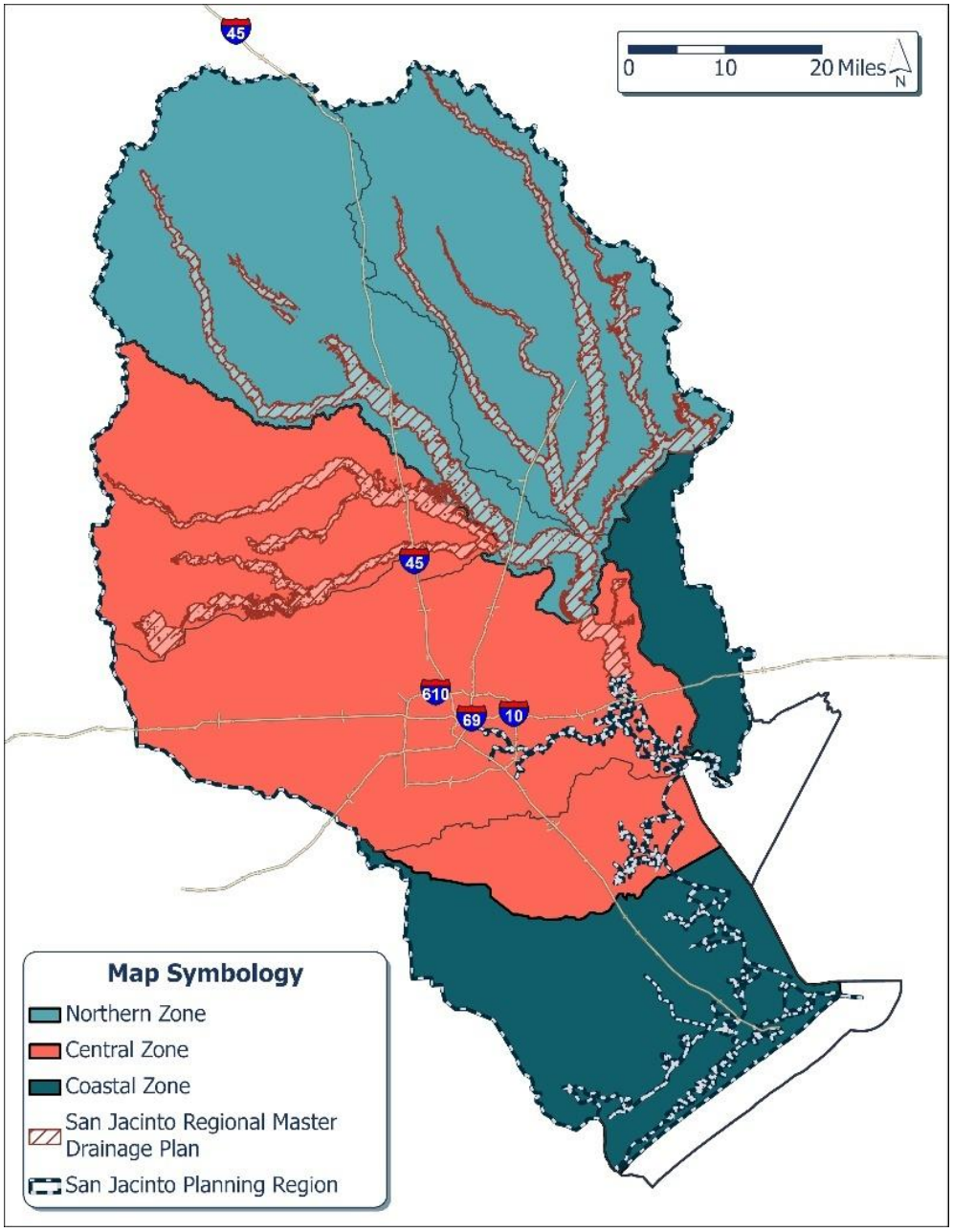

FIGURE 2-13: SAN JACINTO ZONE DESIGNATIONS

Model prioritization for each zone in the region is outlined below:

Northern Zone:

1. San Jacinto River Master Drainage Plan future model, simulated with future rainfall
2. 1D BLE models, vertically buffered
3. Pluvial Fathom Scenario 3

Central Zone:

1. Draft MAAPnext models, simulated with future rainfall
2. 2D BLE model, simulated with future rainfall
3. 2D GLO model, simulated with future rainfall and sea level change
4. Pluvial Fathom Scenario 3

Coastal Zone:

1. Chambers FIF study, simulated with future rainfall and sea level change
2. 2D GLO models, simulated with future rainfall and sea level change
3. 2D BLE models, simulated with future rainfall and sea level change
4. Pluvial Fathom Scenario 3

Northern Zone

The Northern Zone consists of all areas north of the draft MAAPnext study areas. The modifications to existing models in this zone are described in the sections below, in decreasing order of model priority.

San Jacinto River Master Drainage Plan

The SJRMDP future conditions 1D models were modified to include future rainfall using the Fathom pluvial change factor. The average rainfall percentage increase for the SJRMDP watershed was 14.1%. The hydrologic models were rerun with this change factor applied. The hydraulic models were then resimulated with the revised hydrologic inputs. Where needed, hydraulic property tables were updated to accommodate the increased water surface elevations. Inundation boundaries were exported for the 10%, 1%, and 0.2% ACEs.

1D BLE Models (West Fork San Jacinto River, East Fork San Jacinto River)

Mapping products from the 1D Base Level Engineering (BLE) models for the West Fork San Jacinto River and the East Fork San Jacinto River watersheds were vertically buffered using scripted GIS tools to produce future flood risk products. To determine a vertical buffer value, an average water surface elevation increase was computed from the Fathom analysis. The existing and future (Scenario 3) water surface elevation rasters were clipped to the Northern Zone, and the average difference across the clipped rasters was computed for each storm event. The average rise in water surface elevation for the 10%, 1%, and 0.2% ACEs was 0.33 feet, 0.45 feet, and 0.59 feet, respectively. These vertical buffers were applied to the original map products to produce future condition flood polygons.

Pluvial Fathom Scenario 3

Pluvial Fathom Scenario 3 inundation polygons were utilized in their original form wherever pluvial flood risk was not already defined.

Central Zone

The Central Zone consists of all draft MAAPnext study areas, except for the Cedar Bayou watershed. The modifications to existing models in this zone are described in the sections below, in decreasing order of model priority.

Draft MAAPnext Models

The draft MAAPnext 1D/2D models developed for Harris County were modified to include future rainfall using the Fathom pluvial change factor. The average rainfall percentage increase across Harris County was 14.3%. The hydrologic models were rerun with this change factor applied. The hydraulic models were then resimulated with the revised hydrologic inputs. Where needed, hydraulic property tables were updated to accommodate the increased water surface elevations. Inundation boundaries were exported for the 10%, 1%, and 0.2% ACE events.

2D BLE Model (Spring Creek)

The 2D BLE model for Spring Creek was modified to include future rainfall using the Fathom pluvial change factor. The average rainfall percentage increase for the Spring Creek watershed was 14.2%. The hydrologic model was rerun with this change factor applied. The hydraulic model was then resimulated with the revised hydrologic inputs. Inundation boundaries were exported for the 10%, 1%, and 0.2% ACE event.

2D GLO Model (Clear Creek)

The 2D model of Clear Creek developed by the Texas General Land Office (GLO) was modified to include future rainfall using the Fathom pluvial change factor. The average rainfall percentage increase for the Clear Creek watershed was 14.3%. This change factor was applied to the models, both the rainfall-only scenario and the surge-dominant scenario. In addition, the average coastal change factor for the Clear Creek region was 1.77 feet. This value was added to the Gulf-side boundary condition to account for sea level change. The hydraulic models were resimulated, and the resulting depth rasters from each scenario were mosaicked to represent a worst-case condition. Inundation boundaries were exported for the 10%, 1%, and 0.2% ACE event.

Pluvial Fathom Scenario 3

Pluvial Fathom Scenario 3 inundation polygons were utilized in their original form wherever pluvial flood risk was not already defined.

Coastal Zone

Chambers FIF Model

The models produced for the Chambers County drainage study were modified to include future rainfall using the Fathom pluvial change factor. The average rainfall percentage increase across Harris County was 14.0%. This change factor was applied to the models. In addition, the average Fathom (Scenario 3) coastal change factor for the watershed was 1.77 feet. This value was added to the Gulf-side boundary condition to account for sea level change. The hydraulic models were resimulated, and the resulting depth rasters from each scenario were mosaicked to represent a worst-case scenario. Inundation boundaries were exported for the 10%, 1%, and 0.2% ACE events.

2D GLO Models (Mustang Bayou, Moses Bayou, Highland Bayou, Dickinson Bayou)

The 2D models developed by the GLO for Mustang, Moses, Highland, and Dickinson Bayous were modified to include future rainfall using the Fathom pluvial change factor. The average rainfall percentage increase for the Mustang, Moses-Highland, and Dickinson Bayou watersheds was 14.1%, 13.7%, and 14.1%, respectively. These change factors were applied to the models, both the rainfall-only scenario and the surge-dominant scenario. In addition, the average Fathom (Scenario 3) coastal change factor for those watersheds was 2.10 feet, 2.10 feet, and 1.97 feet, respectively. These values were added to the Gulf-side boundary condition to account for sea level change. The hydraulic models were resimulated, and the resulting depth rasters from each scenario were mosaicked to represent a worst-case condition. Inundation boundaries were exported for the 10%, 1%, and 0.2% ACE event.

2D BLE Model (West Galveston Bay)

The 2D BLE model for West Galveston Bay was modified to include future rainfall using the Fathom pluvial change factor. The average rainfall percentage increase for the West Galveston Bay watershed was 13.7%. The hydrologic model was rerun with this change factor applied. In addition, the average Fathom (Scenario 3) coastal change factor for the watershed was 2.10 feet. This value was added to the Gulf-side boundary condition to account for sea level change. The hydraulic model was then resimulated. Inundation boundaries were exported for the 10%, 1%, and 0.2% ACEs.

Pluvial Fathom Scenario 3

Pluvial Fathom Scenario 3 inundation polygons were utilized in their original form wherever pluvial flood risk was not already defined.

Sea Level Rise Considerations

Sea Level Rise (SLR) is a consideration only for areas within the previously identified Coastal Zone of the Region. For this cycle, sea level rise projections have been made available by the TWDB via the future coastal flooding conditions prepared by Fathom for the year 2060. Fathom characterized future sea level rise by generating a set of costal change factors based on the 2021 IPCC's Regional AR6 sea level projections and sea level models. The AR6 projections are a statistical spatial distribution of projected net sea level rise relative to a baseline time period. Projections cover long periods due to the slow,

gradual but large-scale processes driving mean sea level rise. These projections assume the main drivers of sea level rise are ice and glacier melt and water expansion from rising atmospheric temperature.

Fathom pulled sea level rise values (as a net increase in meters over a year 2011 baseline mean sea level) from the AR6 projections and applied them as coastal change factors to the boundary condition points within their model along the Texas coast. Per the Fathom report, the costal change factors along the Coastal Area of the San Jacinto region range from a 1.9-feet to 2.3 feet (0.6-0.7 meters) vertical net increase in the starting water surface elevation at the coastal boundary condition.

For comparison, the Sea Level Analysis Tool (SLAT) developed by USACE was also consulted to pull SLR projections in the vicinity of the Coastal Zone within the region. The SLAT tool utilizes tidal gauge-level historical data records for over 30 years, and High, Intermediate and Low sea level change scenarios developed by the USACE in 2019 to generate SLR projections. The Low scenario assumes a linear extrapolation of the historical rate of sea level change. While the High and Intermediate scenarios make use of the National Research Council (NRC) sea level change acceleration curves (Curve I and Curve III respectively) to account for increases in the rate of SLR. Only the High scenario (Curve III) makes use of 2007 IPCC climate projections. The tool was consulted for the Morgans Point and Eagle Point tidal gauges in Galveston Bay; both are the closest gauges to the San Jacinto region Coastal Zone.

The tables below show the net sea level rise for the 30-year period between 2030 and 2060 for both locations.

TABLE 2-6: 2019 USACE SLR PROJECTIONS AT MORGANS POINT TIDAL GAUGE

2019 USACE Scenario	2030 MSL Above NAVD 88(ft)*	2060MSL Above NAVD 88(ft)*	Net Mean Sea Level Rise 2030-2060 (ft)
High	**1.75**	**3.3**	**1.55**
Intermediate	1.34	1.48	0.14
Low	1.21	1.38	0.17

**Mean sea level above NAVD88 datum at Morgans Point, Galveston Bay, TX*

TABLE 2-7: 2019 USACE SLR PROJECTIONS AT EAGLE POINT TIDAL GAUGE

2019 USACE Scenario	2030 MSL Above NAVD 88(ft)*	2060 MSL Above NAVD 88(ft)*	Net Mean Sea Level Rise Above NAVD 88 2030-2060 (ft)
High	**2.05**	**4.43**	**2.38**
Intermediate	1.65	3.13	1.48
Low	1.52	2.72	1.2

**Mean sea level above NAVD88 datum at Eagle Point, Galveston Bay, TX*

The project SLR for the year 2060 under the 2019 USACE High scenario at the two gauges consulted above closely approximate the coastal change factors recommended by Fathom.

Subsidence Considerations for Future Planning Cycles

As previously mentioned, future conditions flood hazard for the San Jacinto region only considers changes in rainfall and sea level for this planning cycle as these factors were shown by the Fathom report to be the drivers of future surface elevation increases. However, subsidence has shown to be a localized but potentially significant consideration and can be incorporated into future planning cycles. Considerations are discussed below.

Fathom Scenario 3 incorporated subsidence projections for coastal areas of Texas for the year. The coastal area defined by Fathom covers the entire San Jacinto region. Fathom utilized NOAA subsidence rate data points, as well as data from the Harris-Galveston Subsidence District (HGSD) to develop a future year 2060 Digital Elevation Model (DEM) assuming linear subsidence rates.

This future DEM was compared to an existing DEM incorporating the latest high resolution LiDAR data for the state as of 2022 to estimate the total land subsidence. Subsidence projections developed by Fathom for the year 2060 are summarized in **Figure 2-14** below (figure sourced from the Fathom report).

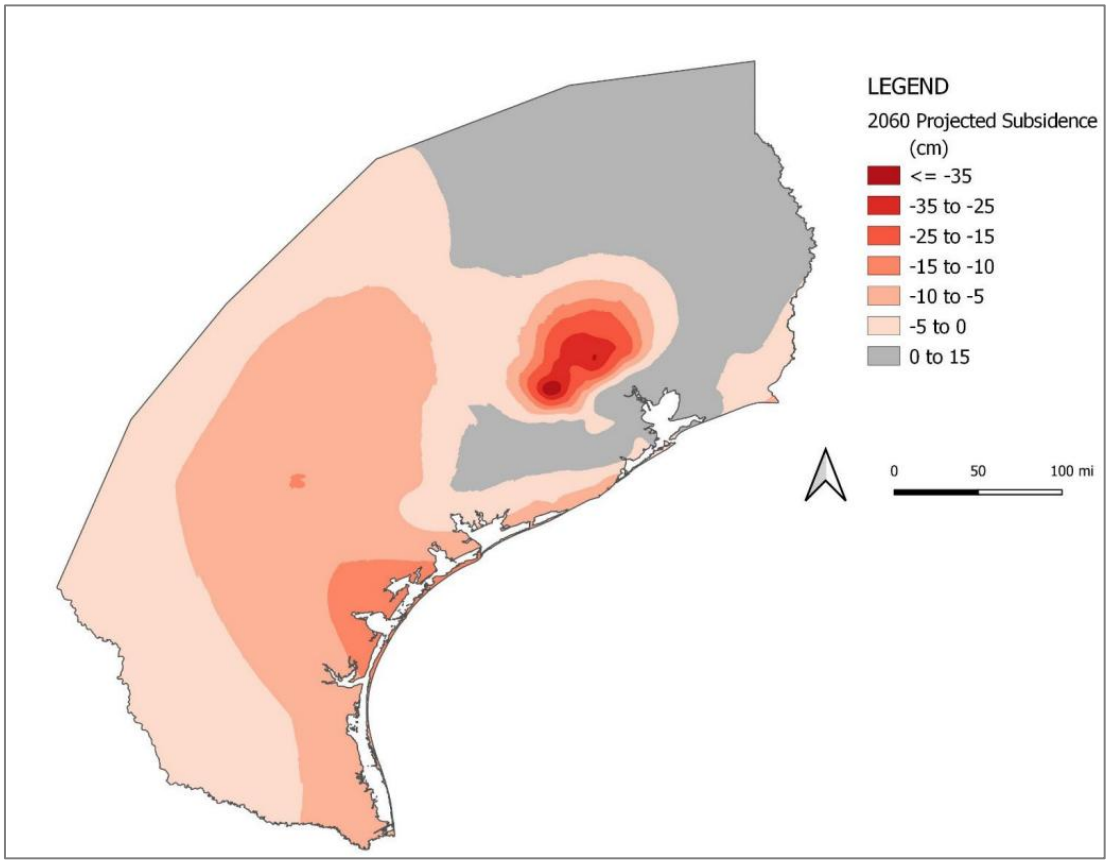

FIGURE 2-14: FATHOM 2060 PROJECTED SUBSIDENCE

Figure 2-15 was developed with subsidence rates published by the HGSD in May 2022 is shown below, for reference and comparison to the figure above.

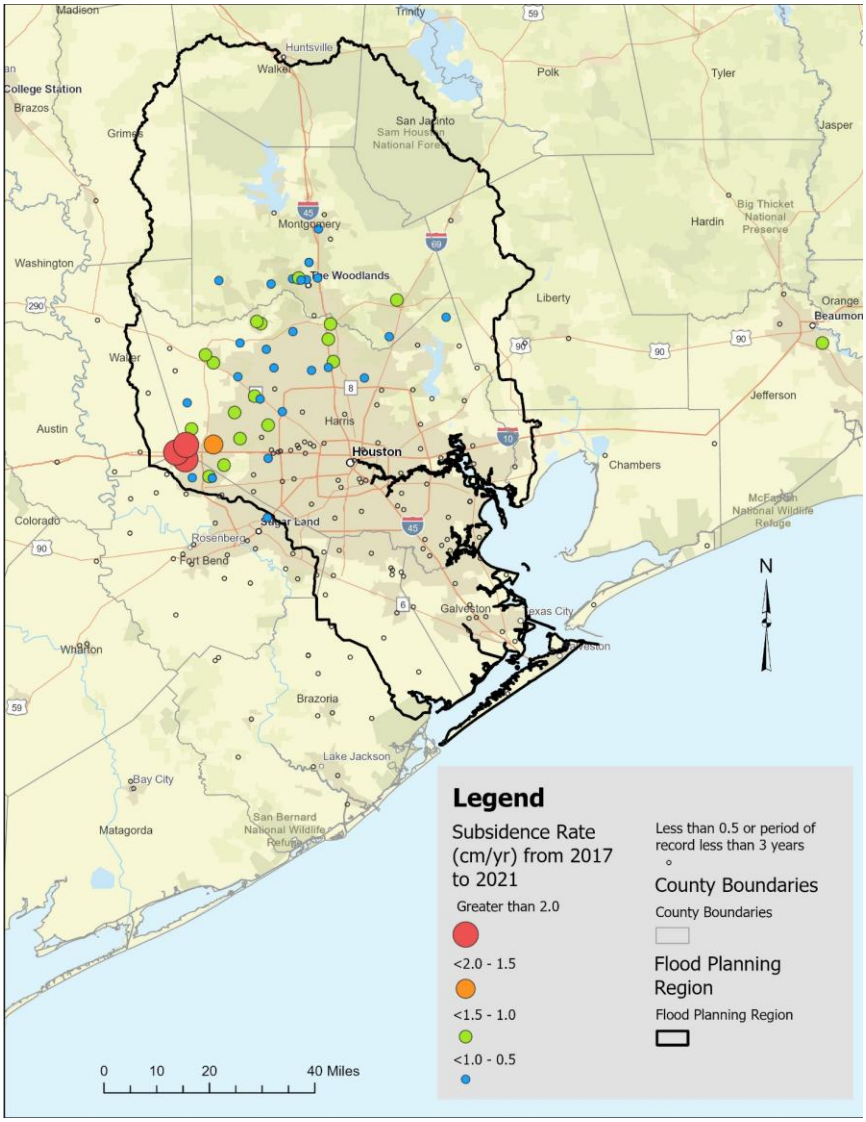

FIGURE 2-15: SUBSIDENCE RATE FROM 2017 TO 2021

Note that while land subsidence varies spatially, some of the largest expected subsidence overlaps with the western edge of the San Jacinto region and the junction between Harris, Waller and Fort Bend counties, as shown in **Figure 2-15**. According to Fathom, land subsidence may increase by over 1-foot in this area of the region by 2060, compared to year 2022 land surface levels. Other areas projected to be impacted are northwestern Harris County and Montgomery County.

For planning purposes and estimations of future flood damage exacerbation due to subsidence, it is recommended that future planning cycles within the region incorporate DEMs that account for land surface levels dropping. The San Jacinto region may leverage the DEM already developed by Fathom or can build on its process.

Another source of a future condition DEM is the 2025 subsidence study localized to the Spring Creek watershed in northwest Harris County. This study has also analyzed the impacts of subsidence on flooding impacts and developed a DEM for the year 2070 that accounts for land surface and hydraulic structure subsidence. One key takeaway from this report is the projected flooding of major crossings at

I-45 and Grand Parkway at Spring Creek in the 1% AEP event. These are major roads that also serve as hurricane evacuation routes, highlighting the importance of subsidence for specific areas of the region.

Future Flood Hazard Exceptions

The determination of future flood hazard layers described above was applied across the San Jacinto region with a few exceptions where regional, man-made structures influence the flood hazard area. For all areas mentioned below, additional analysis should be conducted to understand the implications of future growth and rainfall changes in the region.

Within the San Jacinto region, there are two water supply reservoirs, Lake Houston and Lake Conroe. Lake Houston water surface elevations during flood events are influenced mostly by the large uncontrolled spillway. Elevations in Lake Conroe are controlled by operational gates. Due to controlled releases from Lake Conroe, within the area influenced by the Lake Conroe Dam, the existing condition flood hazard areas were used as the future condition flood hazard areas for the 10%, 1%, and 0.2% ACE. Additional analysis should be conducted in future planning cycles to better understand potential changes to future floodplains within the influence area of these reservoirs.

Within the region there are also two regional flood control facilities (Addicks and Barker Reservoirs) where water surface elevations are strictly controlled by operational gates. The gated structures allow storm runoff to pass downstream and gate operations are based on reservoir elevations. Therefore, for areas influenced by the Addicks and Barker Reservoirs, the existing conditions flood hazard areas are used as the future conditions flood hazard areas for the 10%, 1%, and 0.2% ACE. Additional analysis should be conducted in future planning cycles to understand potential changes to future floodplains based on reservoir operations and future inflows.

Summary Future Flood Hazard Delineation

The future 10%, 1%, and 0.2% ACE flood hazard areas were developed following the TWDB's *Technical Guidelines for Regional Flood Planning (Exhibit C)*. The methodology and approach described above were presented to and approved by the RFPG on August 14, 2025 and was accepted by the TWDB on October 22, 2025.

Appendix 2B-1 of **Map 8** shows the future condition flood hazard areas for the San Jacinto region. The future conditions risk distribution of 10%, 1%, and 0.2% ACE within the region can be seen in **Figure 2-16**. Within the region, in Brazoria, Galveston, Harris, and Liberty counties, more than 75% of the land area is within the 10%, 1%, and 0.2% ACE future condition floodplains.

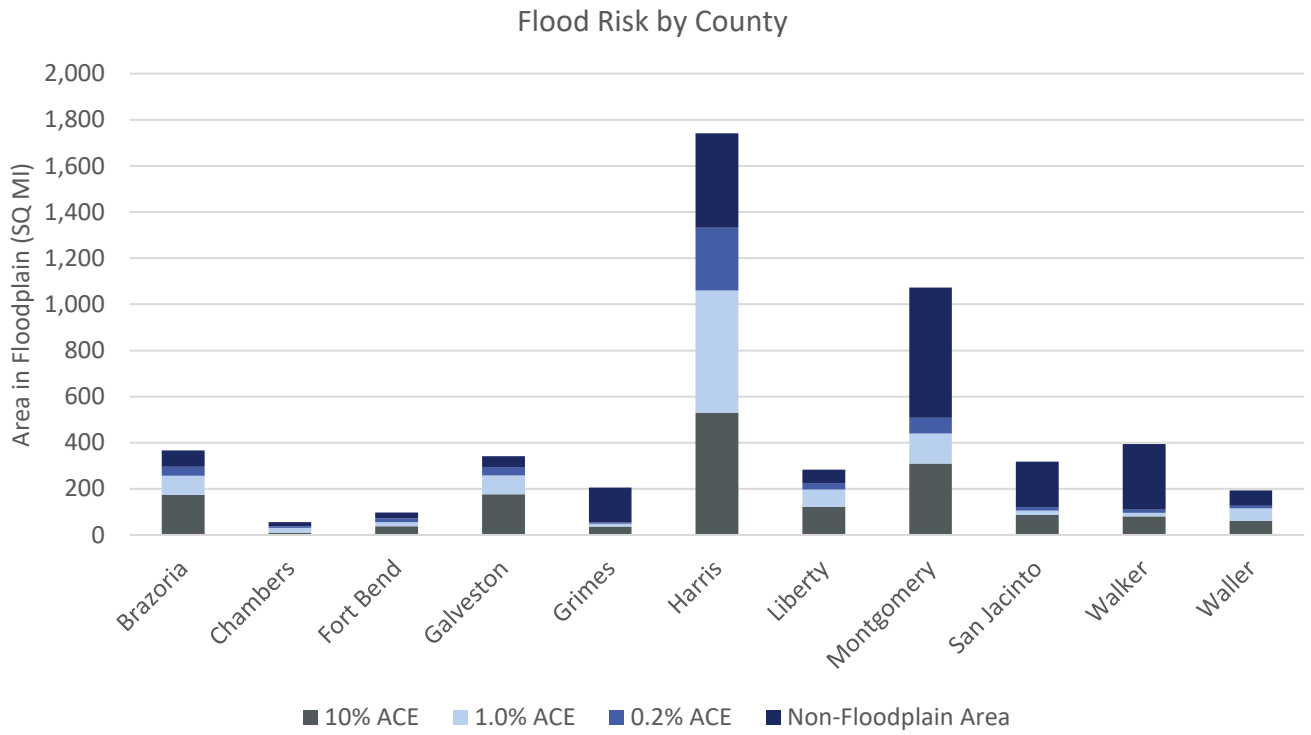

FIGURE 2-16: FUTURE FLOODPLAIN AREA BY COUNTY

2.B.1.d. Flood Map Gaps and Future Flood Prone Areas

The unavailability of detailed future flood models and associated mapping data across the region resulted in the future flood hazard mapping assumptions and approaches discussed above. The San Jacinto River Master Drainage Plan was the only community model in the region with detailed future flood analysis, although even the SJRMDP did not consider future changes in rainfall. The data gaps are shown in **Map 10** in **Appendix 2B-3**. The drainage areas modeled in the SJRMDP are classified as "Incomplete Coverage", and all other areas in the region are classified as "Approximate Data".

2.B.1.e. Comparison to Existing Conditions Floodplains

Map 9 in **Appendix 2B-2** depicts the changes in flood hazard areas from existing to future conditions. **Table 2-8** compares the existing and future conditions extents for the entire region.

TABLE 2-8: EXISTING AND FUTURE CONDITIONS FLOOD HAZARD AREA COMPARISON

Annual Chance Storm Event	Existing Conditions (Sq Mi)	Future Conditions (Sq Mi)	Difference (Sq Mi)	Difference (%)
10% ACE	1,367	1,625	258	+19%
1% ACE	2,364	2,664	300	+13%
0.2% ACE	2,914	3,159	245	+8%

2.B.2. Future Condition Flood Exposure Analysis

An exposure analysis was performed to identify the population and structures in the region that may be affected during the future 10%, 1%, and 0.2% ACE floods. ArcGIS was utilized to intersect the future flood hazard layer and the features identified by TWDB to determine the affected existing development, critical infrastructure, roadways, and low water crossings at risk of flooding.

2.B.2.a. Existing and Future Development within the Floodplain

The analysis performed for future flood hazard exposure was based on the flood exposure dataset developed as part of **Chapter 2.A Existing Condition Flood Risk Analysis**. Future development was not accounted for as part of this analysis due to the complexity and variability in predicting future structure locations, as well as current floodplain ordinances within the region that regulate development within existing flood hazard areas. Existing buildings, associated population, roadway crossings, agricultural areas, and other metrics were used in the future flood exposure analysis by intersecting this existing data with the future 10%, 1%, and 0.2% ACE flood hazard areas. Because the future flood hazard layer generally results in larger mapping extents when compared to the existing conditions floodplain quilt, the number of people and structures at risk in the future conditions flood exposure analysis is greater than under the existing conditions analysis.

The types of critical infrastructure considered for the analysis of future flood risk include medical facilities, government buildings, emergency operations and shelters, law enforcement facilities, fire stations, schools, nursing homes, airports, railyards, ports, power generating plants, transmission facilities and water/wastewater treatment plants. To facilitate alignment with concurrent GLO and USACE coastal studies, additional structure types added to the critical infrastructure list include chemical plants, refineries, chemical storage facilities, oil and gas infrastructure and correctional facilities.

2.B.2.b. Proposed and Ongoing Flood Mitigation Projects

The existing conditions flood hazard areas do not include post-project inundation mapping due to the vast number of projects within the region as well as lack of information on the future condition floodplains. Many of these projects do not have significant impact on the less frequent storm event floodplains such as the 10%, 1%, and 0.2% ACE identified in this analysis. Future projects, such as those recommended in the RFP, should consider the increase in flood risk associated with future condition variables over the life of the respective structures.

2.B.2.c. Future Flood Exposure

The summary of future flood exposure by county can be found in **Table 5**, **Appendix 2B-7**. A map of future flood exposure can be found in **Map 11** in **Appendix 2B-4**. The increase in future flood hazard exposure compared with existing conditions exposure is summarized in

Table 2-9, **Table 2-10**, and **Table 2-11**. As a clarification point, nighttime and daytime populations are included in the tables in the appendix, as well as a third “population” column. That column, also included as a row in

Table 2-9, **Table 2-10**, and **Table 2-11**, is the maximum between the nighttime and daytime values.

TABLE 2-9: SUMMARY OF INCREASED EXPOSURE IN FLOOD HAZARD AREA FOR 10% ACE FLOOD RISK IN THE SAN JACINTO REGION

	Existing Conditions	Future Conditions	Increase	% Increase
Population	1,210,552	1,515,922	305,370	25%
Total Structures	204,324	293,463	89,139	44%
Residential Structures	165,093	238,825	73,732	45%
Non-Residential Structures	39,231	54,638	15,407	39%
Critical Facilities	2,351	3,251	900	38%
Roadway Crossings	5,751	6,389	638	11%
Roadway Segments (Mi)	10,279	11,785	1,506	15%
Agricultural Area (Sq Mi)	320	409	89	28%

TABLE 2-10: SUMMARY OF INCREASED EXPOSURE IN FLOOD HAZARD AREA FOR 1% ACE FLOOD RISK IN THE SAN JACINTO REGION

	Existing Conditions	Future Conditions	Increase	% Increase
Population	3,137,921	3,598,289	460,368	15%
Total Structures	785,287	951,471	166,184	21%
Residential Structures	664,096	807,742	143,646	22%
Non-Residential Structures	121,191	143,729	22,538	19%
Critical Facilities	7,790	9,328	1,538	20%
Roadway Crossings	7,879	8,392	513	7%
Roadway Segments (Mi)	16,754	18,268	1,514	9%
Agricultural Area (Sq Mi)	590	694	104	18%

TABLE 2-11: SUMMARY OF INCREASED EXPOSURE IN FLOOD HAZARD AREA FOR 0.2% ACE FLOOD RISK IN THE SAN JACINTO REGION

	Existing Conditions	Future Conditions	Increase	% Increase
Population	4,288,201	4,784,394	496,193	12%
Total Structures	1,215,575	1,386,461	170,886	14%
Residential Structures	1,044,045	1,193,248	149,203	14%
Non-Residential Structures	171,530	193,213	21,683	13%
Critical Facilities	11,426	13,098	1,672	15%
Roadway Crossings	8,733	9,103	370	4%
Roadway Segments (Mi)	19,700	21,012	1,312	7%
Agricultural Area (Sq Mi)	650	714	64	10%

Population Totals by County

The population associated with existing structures was not altered for the future exposure analysis. Future development was not accounted for as part of this analysis due to the complexity and variability involved in predicting future structure locations as well as current floodplain ordinances within the region that regulate development within existing flood zones. Existing buildings, and associated population, were used in the future flood exposure analysis by intersecting this existing data with the future 10%, 1%, and 0.2% ACE flood hazard areas.

An estimated 1,515,922 people are anticipated to be located within the future 10% ACE flood hazard area; 3,598,289 people within the future 1% ACE flood hazard area; and 4,784,394 people within the future 0.2% ACE flood hazard area. An estimated 496,193 people are introduced into future flood prone areas.

Structures

Future flood exposure analysis was performed by overlaying the future flood hazard area developed for the San Jacinto region with the buildings, critical facilities, infrastructure, and agricultural areas that were determined to be in the region. **Table 5** in **Appendix 2B-7** shows the total number/area of buildings, critical facilities, and agricultural areas exposed to the future flood hazard areas, summarized by county. A total of 951,471 structures are exposed to the 1% ACE flood risk regionwide under future conditions.

While people often shelter at home in times of danger and emergency, there is an inherent risk associated with doing so during a flood event. Most of the structures identified at risk within the flood exposure analyses were residential. For example, out of the 951,471 structures at risk in the future condition 1% ACE in the region, 807,742 are classified as residential. Critical facilities and public infrastructure perform essential functions that require enhanced consideration in flood planning. An explanation of critical facilities used in the exposure analysis is provided in **Section 2.A.2.a**. The breakdown of types of structures within either the 10%, 1%, or 0.2% ACE future condition flood hazard areas are shown in **Figure 2-17**.

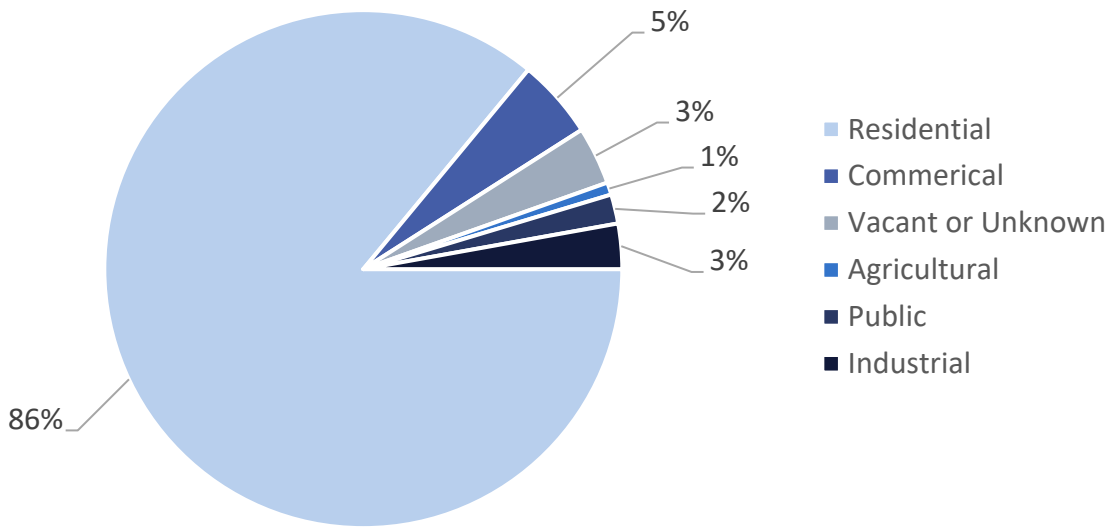

FIGURE 2-17: DISTRIBUTION OF FUTURE STRUCTURES AT RISK BY TYPE

Harris County had the largest number of structures in the future condition floodplains. Similar to the results for the existing condition floodplains, Galveston County had the second highest number of structures within the flood hazard areas. Out of the approximately 2.1 million structures located within the San Jacinto region, as provided by the TWDB buildings dataset, approximately 44% of the structures

within the region are located within the future conditions 10%, 1%, or 0.2% ACE floodplains as shown in **Figure 2-18**.

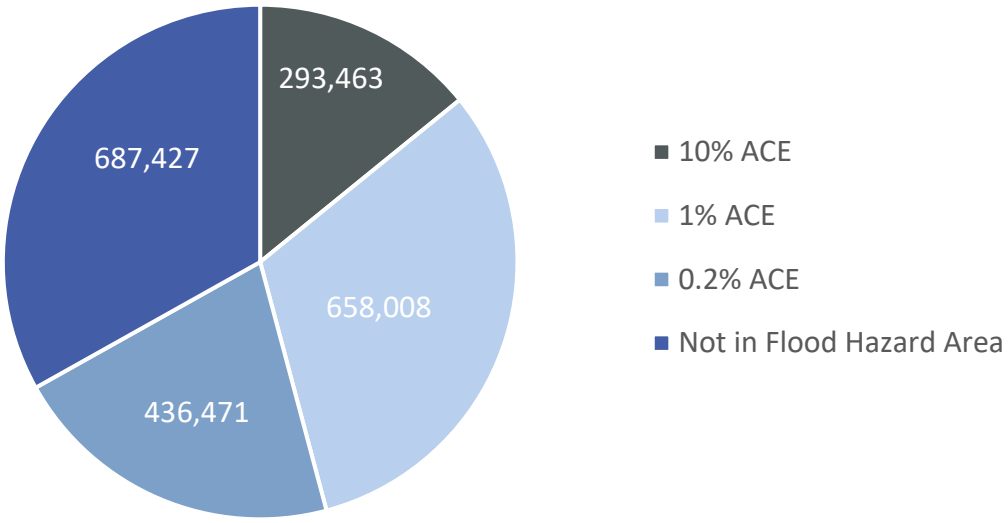

FIGURE 2-18: FUTURE FLOOD HAZARD EXPOSURE OF STRUCTURES

Critical Facilities and Public Infrastructure

Critical facilities and public infrastructure were analyzed with the future flood hazard areas to determine future flood risk exposure of these features. No additional features were added to the dataset compiled in the existing conditions flood exposure analysis previously described. An additional 1,538 critical facilities were identified in the future condition 1% ACE flood risk exposure analysis that were not previously located within the existing conditions floodplain. Harris County tops the list as shown in Appendix 2-B.

Roadway Crossings and Roadway Segments

The future flood risk exposure analysis for roadways used only the existing roadway data available from TxDOT. Without considering additional future roads, the 1% ACE future flood risk exposure resulted in a 7% increase in roadway crossings and 9% increase in miles of inundated roadways. Similar to the existing condition exposure analysis, bridge deck height was not considered in the future condition exposure analysis.

Agricultural Area

Agricultural areas in the San Jacinto planning region were also evaluated to determine future flood exposure. The same area classified as agricultural in the existing exposure analysis was used in the future flood risk exposure analysis. Without altering the agricultural land dataset, the 1% ACE future flood risk exposure resulted in an 18% increase in inundated agricultural land in the future condition.

2.B.2.d. Flood Prone Areas

Flood prone areas were not changed between existing and proposed future conditions. These areas were provided by residents and the public using the online dashboard; therefore, additional future conditions flood prone areas cannot be known at this time.

2.B.3. Future Condition Vulnerability Analysis

Vulnerability is an assessment of the potential negative impact of the flood hazard to communities and a description of the impacts. This task uses data from the flood exposure analysis to determine the vulnerability of structures and population exposed to flooding. The future condition vulnerability analysis uses the same data and process as the existing conditions vulnerability analysis, discussed in **Section 2.A.3 Existing Condition Vulnerability Analysis**.

2.B.3.a. Resiliency of Communities

A community's Social Vulnerability score is proportional to a community's susceptibility to risk. Social vulnerability is a consequence-enhancing risk indicator and community risk factor that represents the susceptibility of social groups to the adverse effects of natural hazards like floods, including disproportionate death, injury, loss, or disruption of livelihoods. An SVI score and rating represent the relative level of a community's social vulnerability compared to all other communities, with a higher SVI score indicating higher overall vulnerability.

2.B.3.b. Vulnerability of Critical Facilities

Based on the analysis of future conditions flood exposure data, there is a large increase in critical facilities vulnerable to flooding during the 10%, 1%, and 0.2% ACE storms. In order to protect critical facilities and other infrastructure from flooding in future storm events, mitigation and protection measures should be taken in advance to reduce risk of loss of function during future storm events. **Map 12** in **Appendix 2B-5** depicts the future conditions vulnerability of critical facilities in the San Jacinto region.

2.B.4. Summary of Exposure and Vulnerability Analyses

The future floodplains include 14% more structures and 12% more people potentially impacted than existing conditions while just adding 8% more land area. As mentioned previously, no additional structures or population were added under future conditions to reflect future development or population growth. Actual future flood risk could be higher when considering new structures that would be constructed and growth in population, which would increase flood risk beyond just the expansion of flood hazard areas under future condition scenarios.

The future flood risk, exposure, and vulnerability assessment for the San Jacinto region are summarized in **Table 5** located in **Appendix 2B-7**, providing the results per county of the future flood exposure and vulnerability analysis as outlined in the *Technical Guidelines for Regional Flood Planning (Exhibit C)*.

A geodatabase with applicable layers as well as **Maps 8** through **Map 12** are provided in **Appendix 2-B**.

Table 2-12 below outlines the geodatabase deliverables included in this RFP as well as spatial files and tables. These deliverables align with the TWDB's *Data Submittal Guidelines*.

TABLE 2-12: TASK 2B GEODATABASE LAYERS AND TABLES

Item Name	Description	Feature Class Name	Data Format (Polygon/Line/ Point/GDB Table)
Future Flood Hazard	Perform future condition flood hazard analyses to determine the location and magnitude of 10% ACE, 1% ACE, and 0.2% ACE floods.	FutFldHazard	Polygon
Future Exposure	Develop high-level, region-wide, and largely GIS-based future condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, the 10% ACE, 1% ACE, and 0.2% ACE floods.	FutFldExpPol	Polygon
	Develop high-level, region-wide, and largely GIS-based future condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, the 10% ACE, 1% ACE, and 0.2% ACE floods.	FutFldExpLn	Polyline
	Develop high-level, region-wide, and largely GIS-based future condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, the 10% ACE, 1% ACE, and 0.2% ACE floods.	FutFldExpPt	Point
	Combines the Exposure Poly, Line, and Point data into a single master layer, also includes Vulnerability data.	FutFldExpAll	All

Appendices

Chapter 1

Appendix 1-1 Map 1: Existing Flood Infrastructure



Legend

Infrastructure Type

- Bridge
- Culvert
- Dam
- Gauge
- Inlet
- LWC
- Levee
- Sea Wall
- Storm Drain System
- River
- Tributary
- Pond
- Reservoir
- Wetland
- Flood Early Warning System
- Watersheds
- Municipality
- County
- Region Boundary

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SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
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Legend

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- Municipality
- County
- Region Boundary
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Harris County Ship Channel Page 13
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Region 6 San Jacinto
2028 Regional Flood Plan
Existing Flood Infrastructure

MAP 1
2 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
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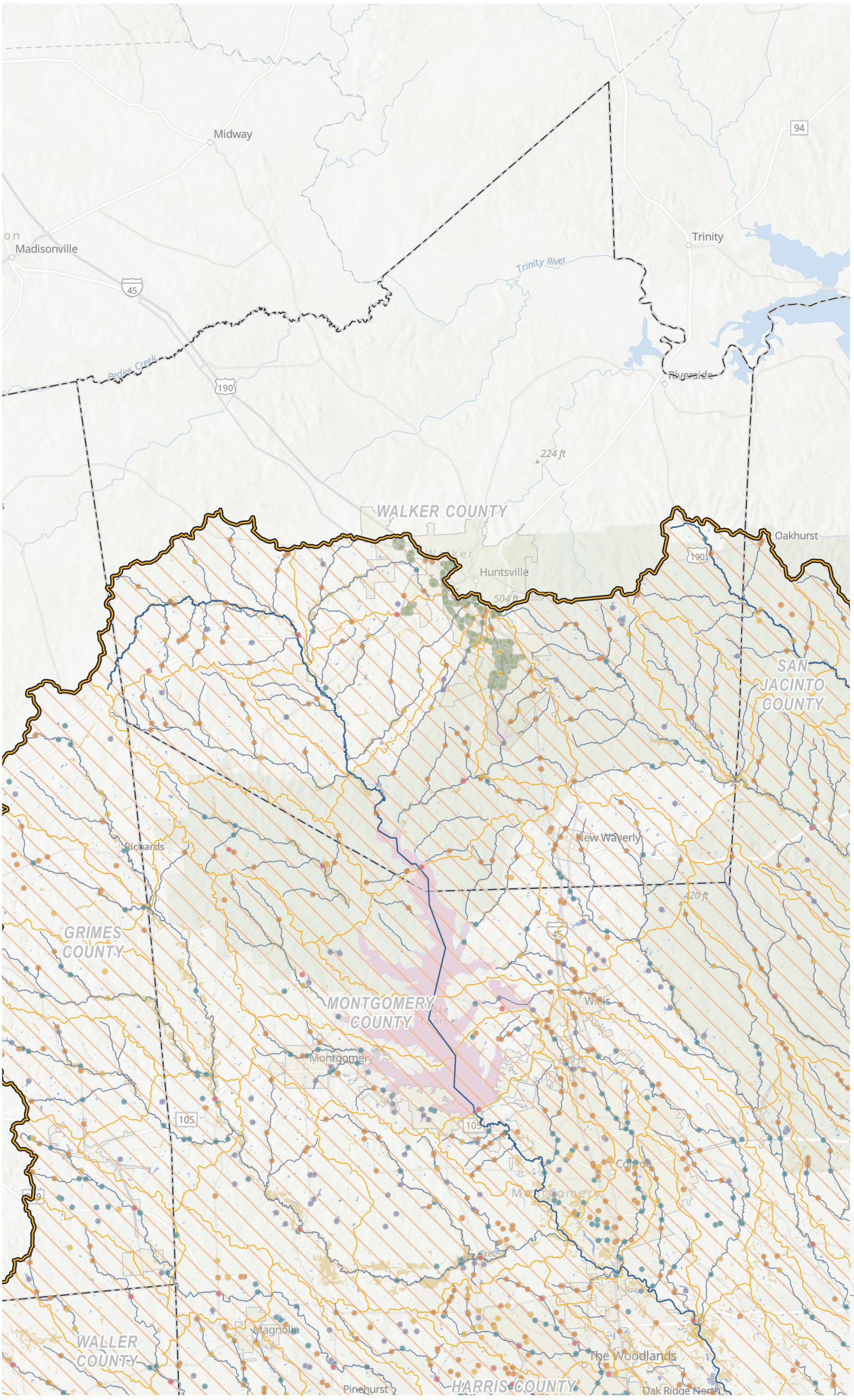

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SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
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Existing Flood Infrastructure

MAP 1
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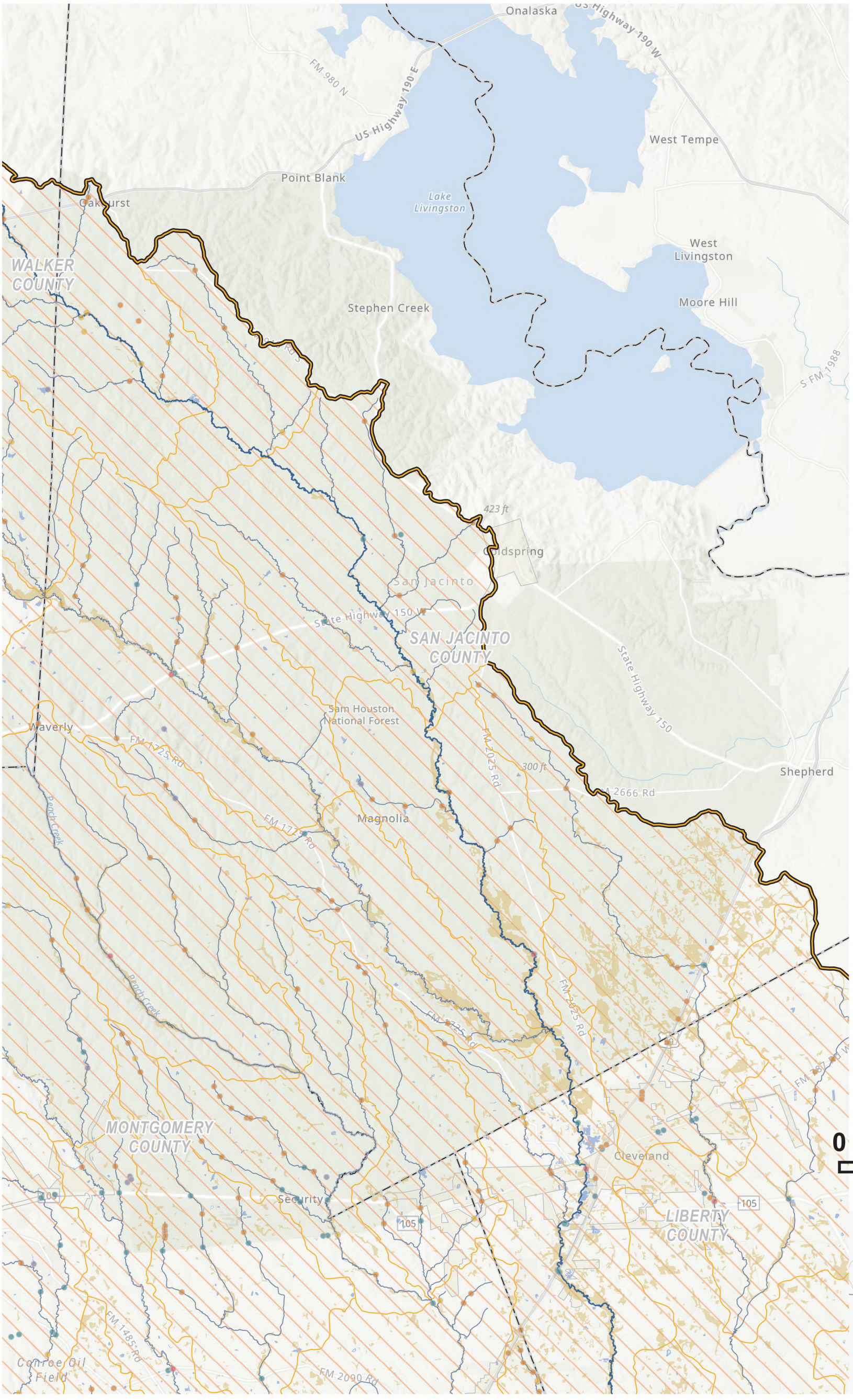

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Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

MAP 1
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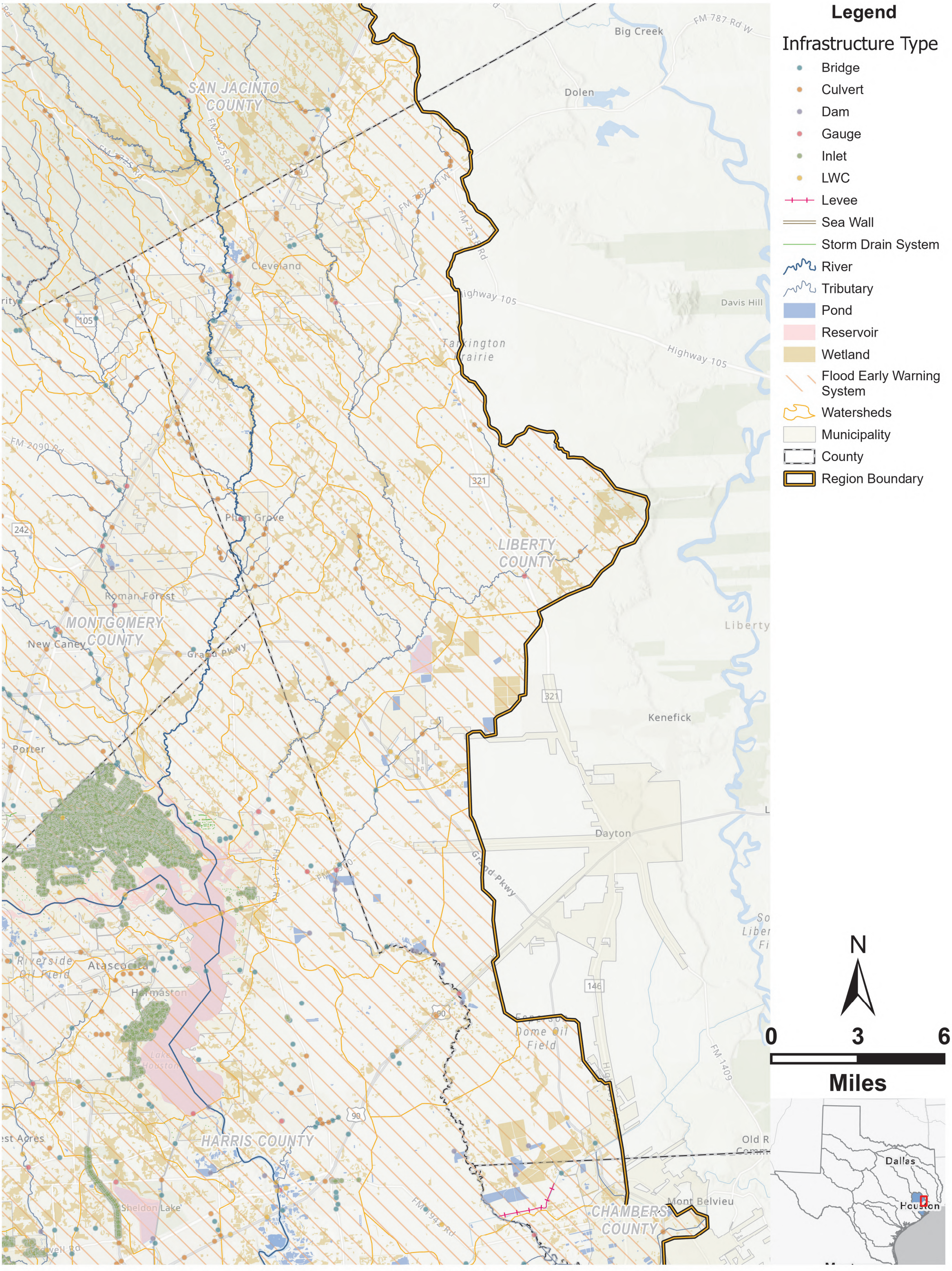

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

MAP 1
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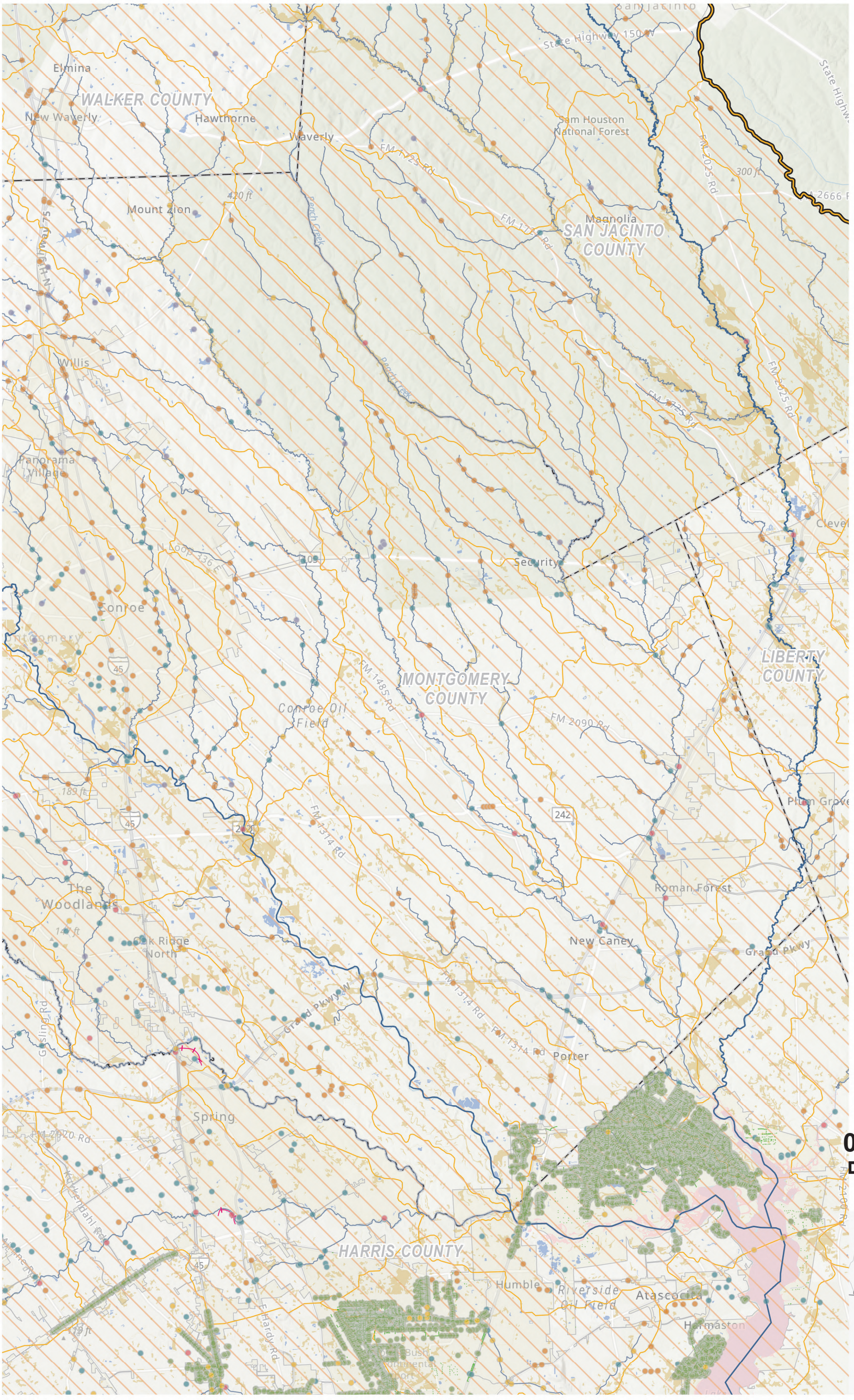

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SAN JACINTO REGIONAL FLOOD PLANNING GROUP
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Region 6 San Jacinto
2028 Regional Flood Plan

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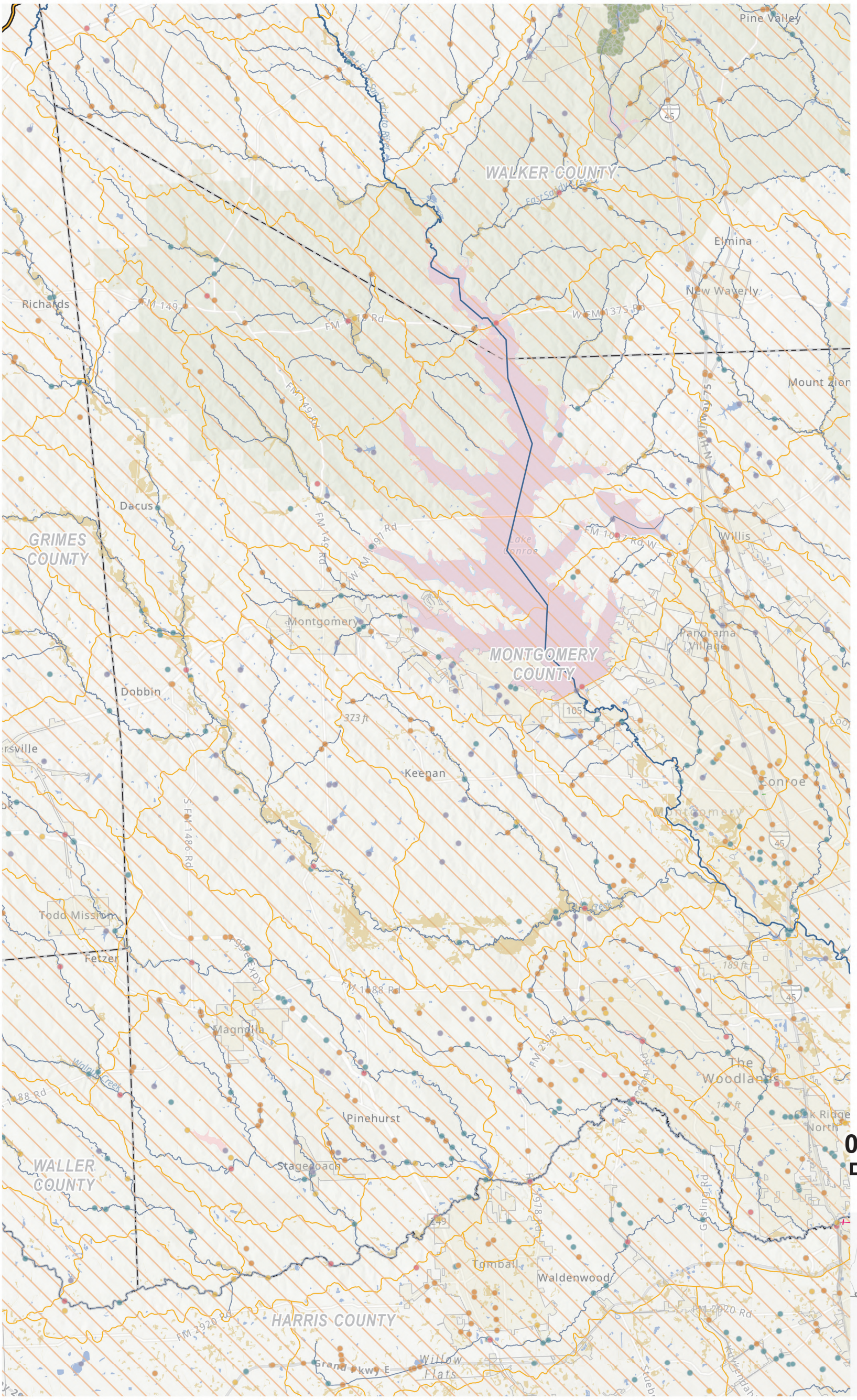

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Region 6 San Jacinto
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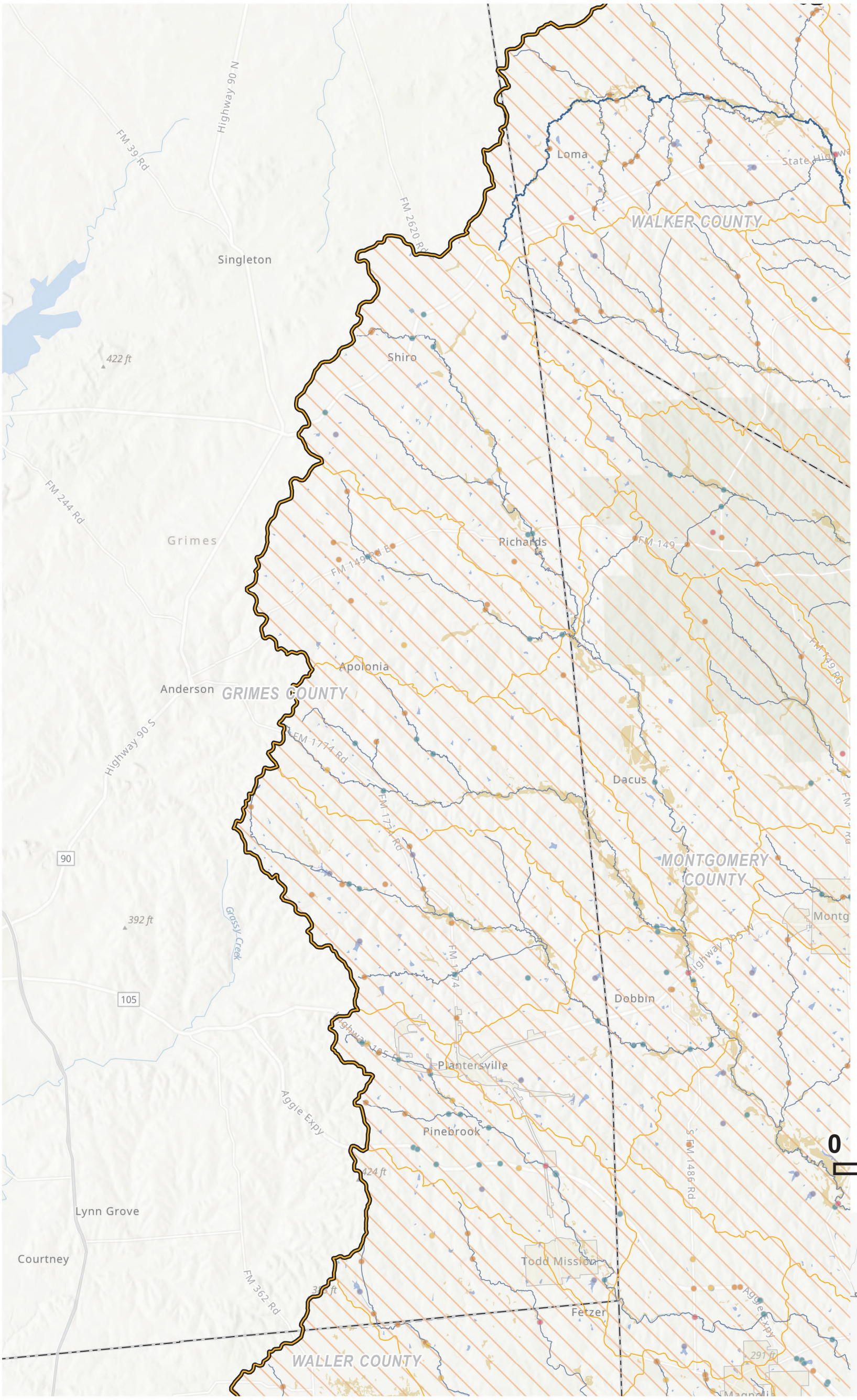

Region 6 San Jacinto
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Existing Flood Infrastructure

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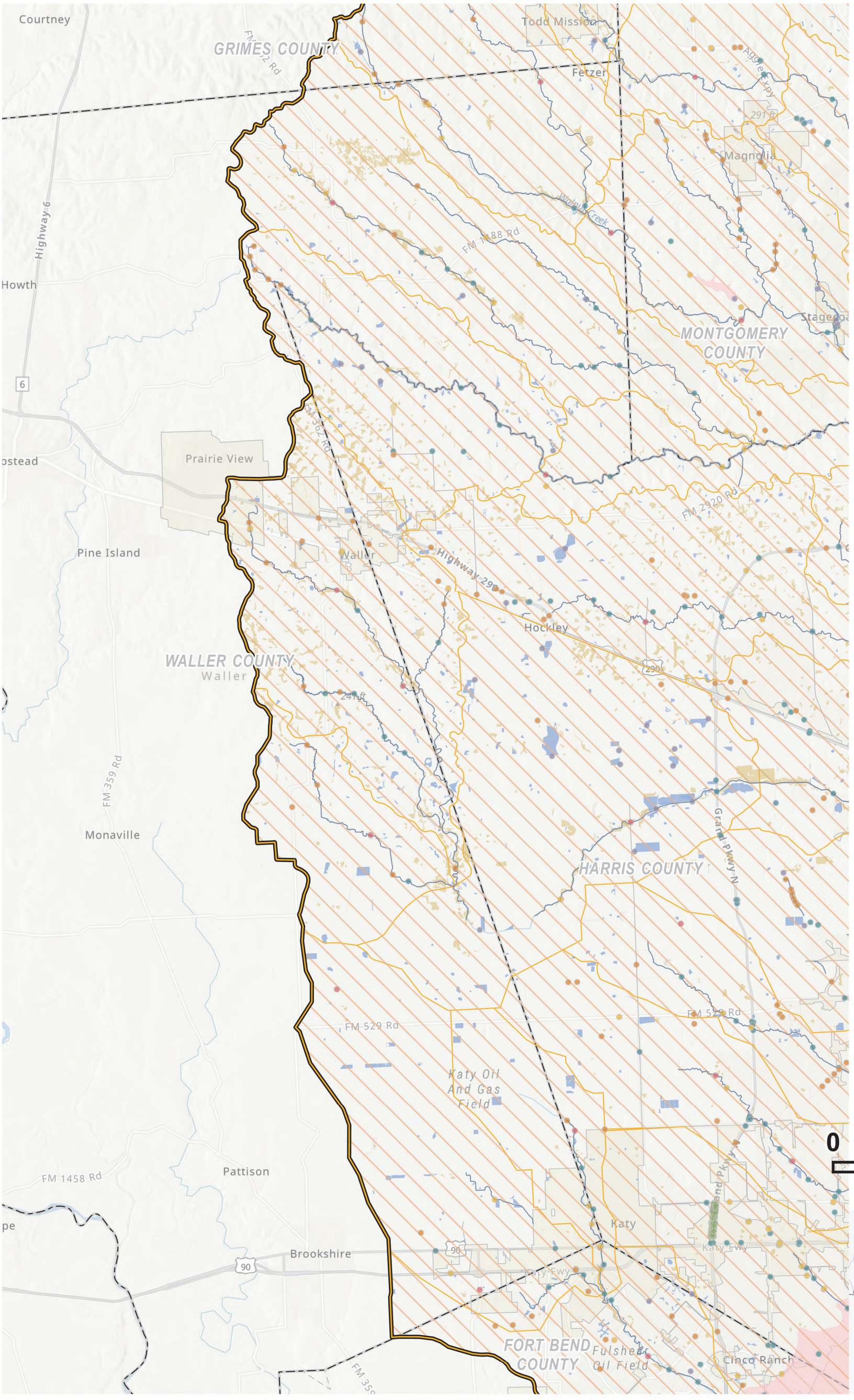

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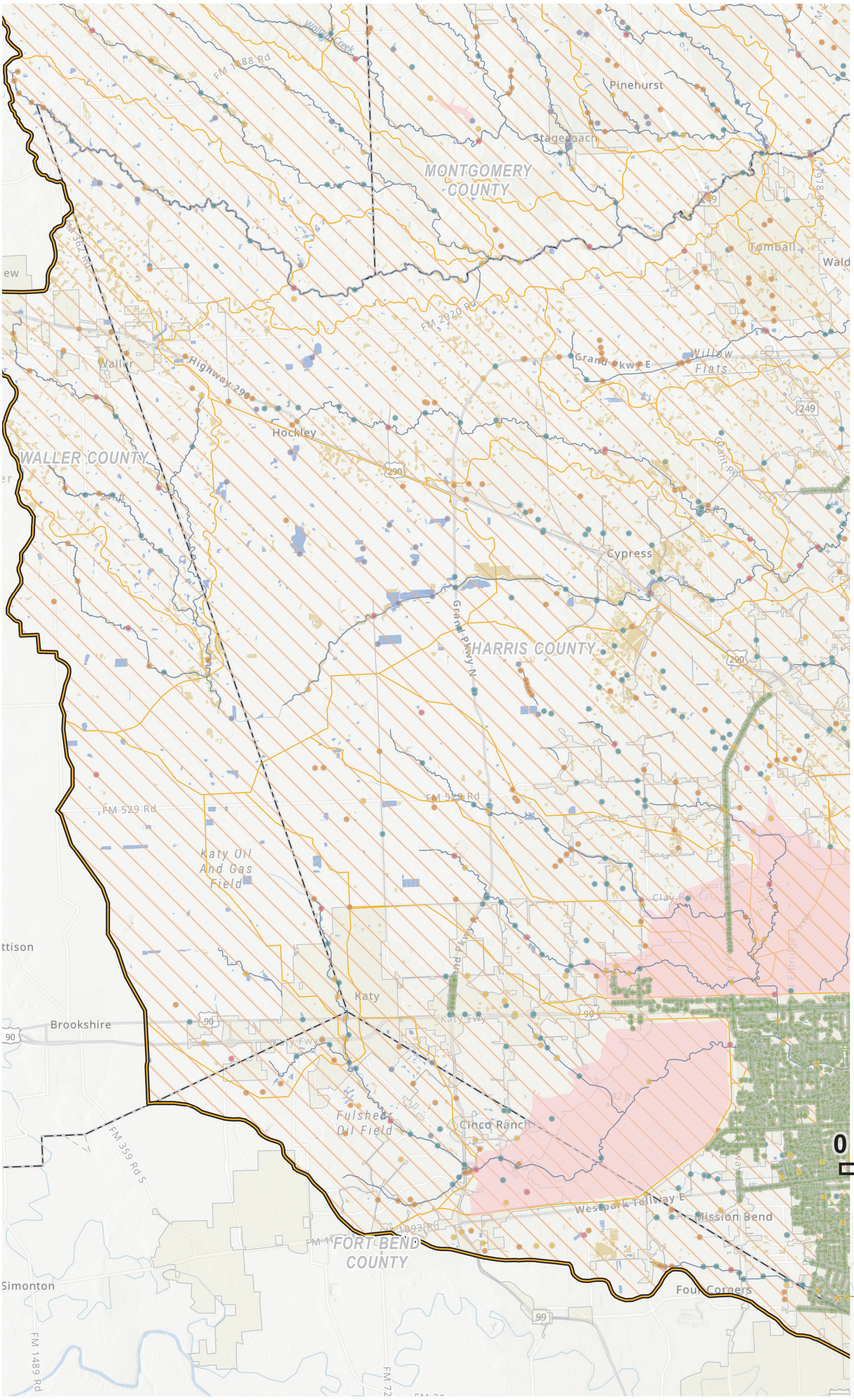

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

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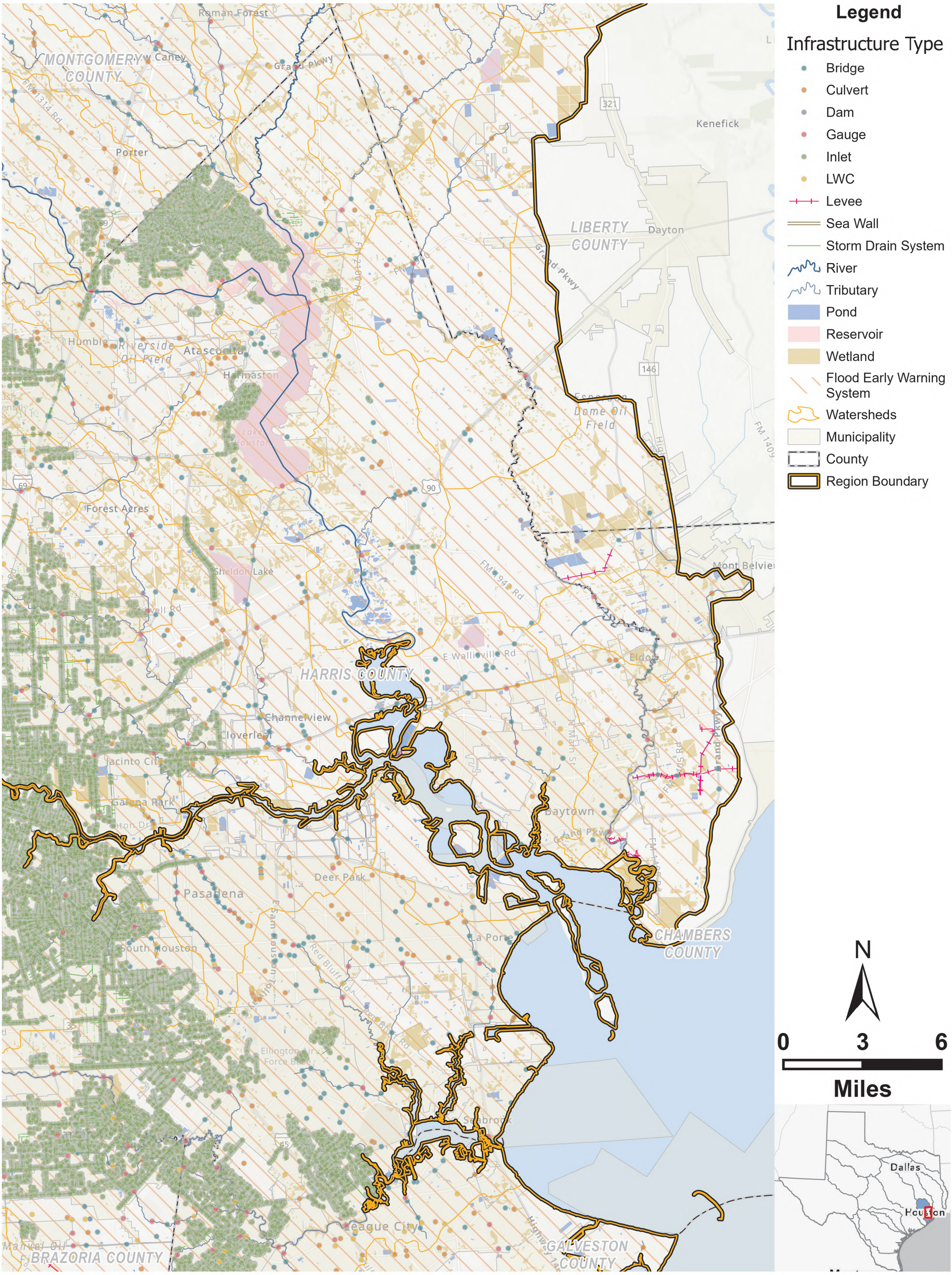

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

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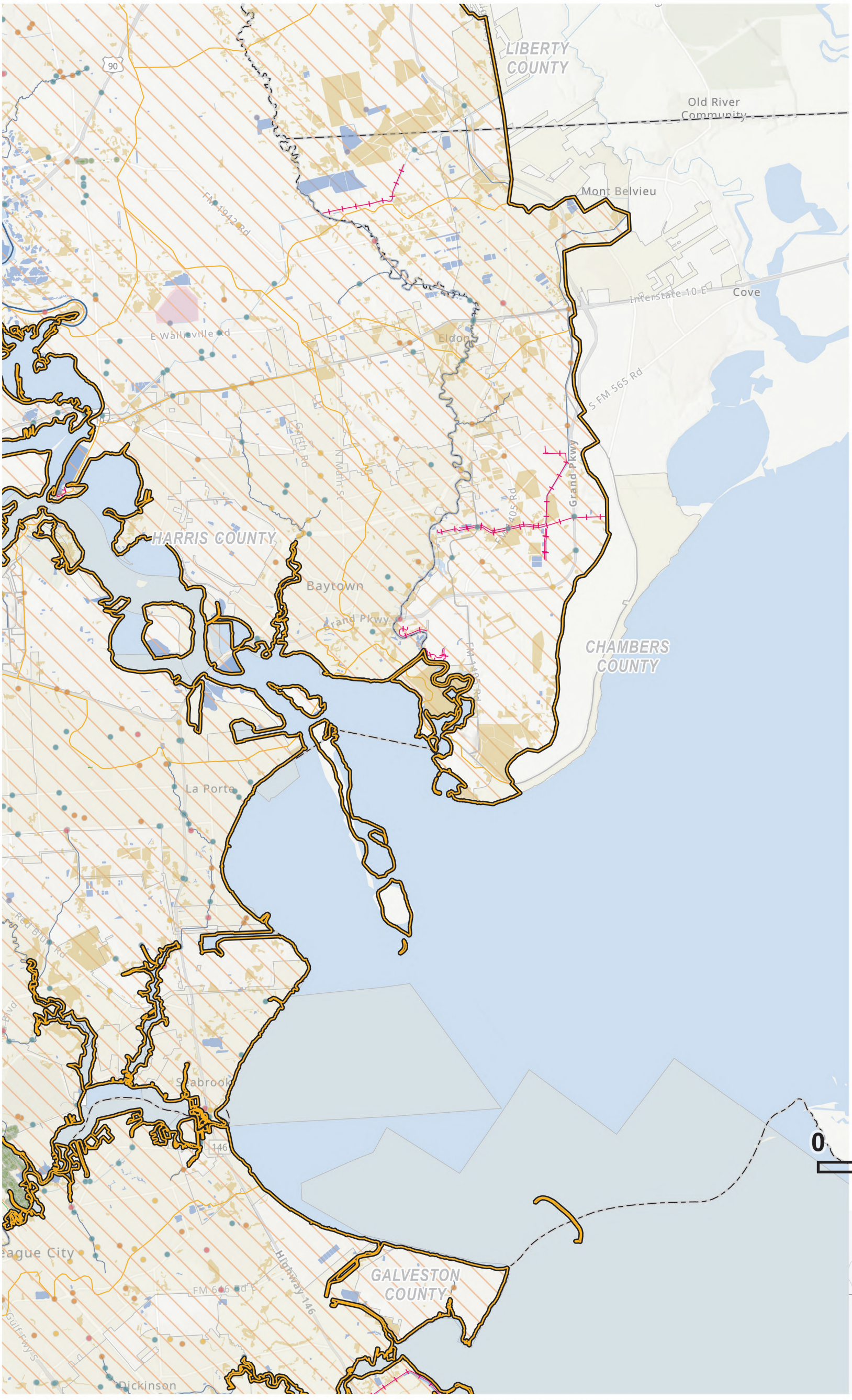
REGION 6



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REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

MAP 1
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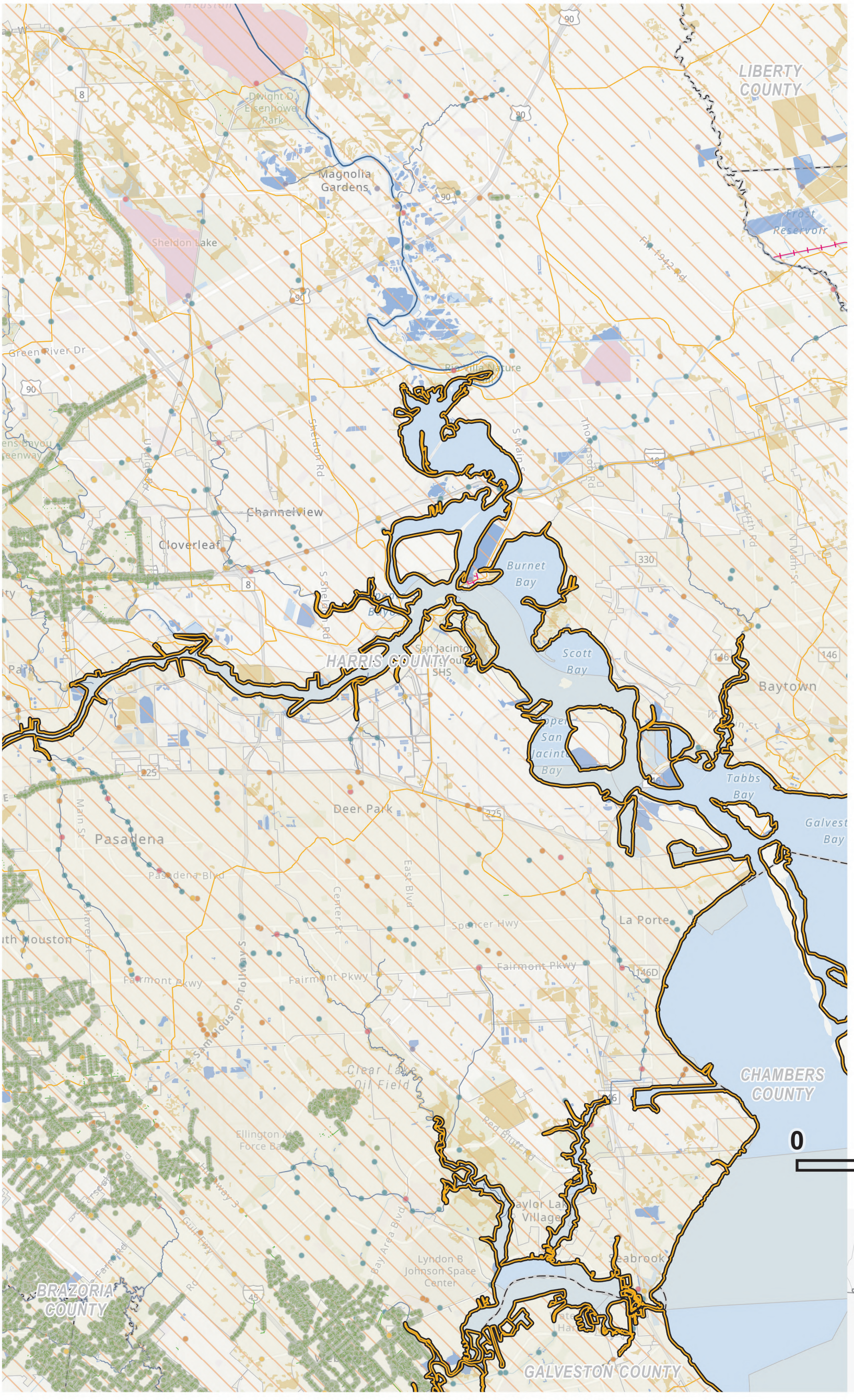

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- Tributary
- Pond
- Reservoir
- Wetland
- Flood Early Warning System
- Watersheds
- Municipality
- County
- Region Boundary

N

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Miles

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

MAP 1
13 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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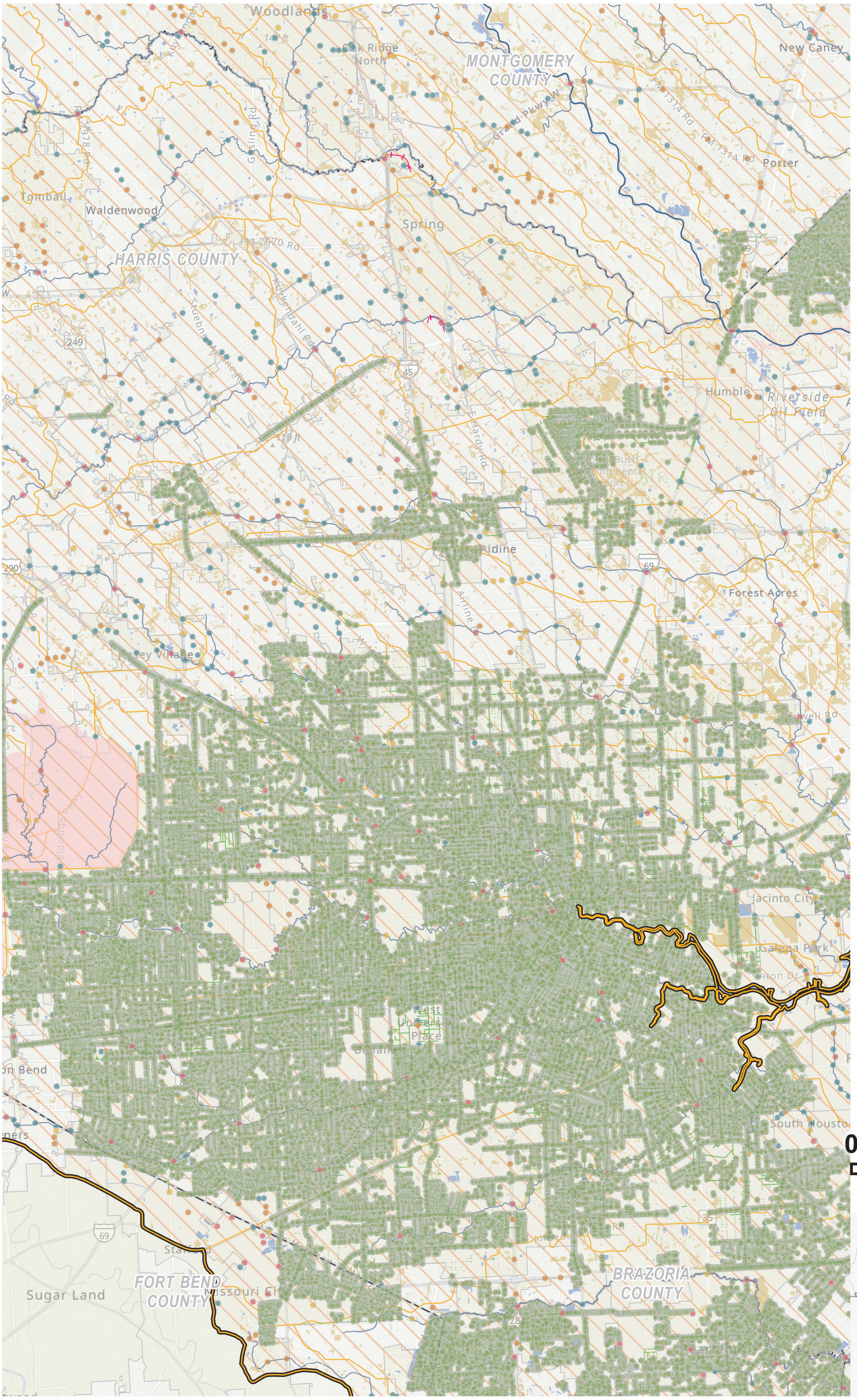

Legend

Infrastructure Type

- Bridge
- Culvert
- Dam
- Gauge
- Inlet
- LWC
- Levee
- Sea Wall
- Storm Drain System
- River
- Tributary
- Pond
- Reservoir
- Wetland
- Flood Early Warning System
- Watersheds
- Municipality
- County
- Region Boundary

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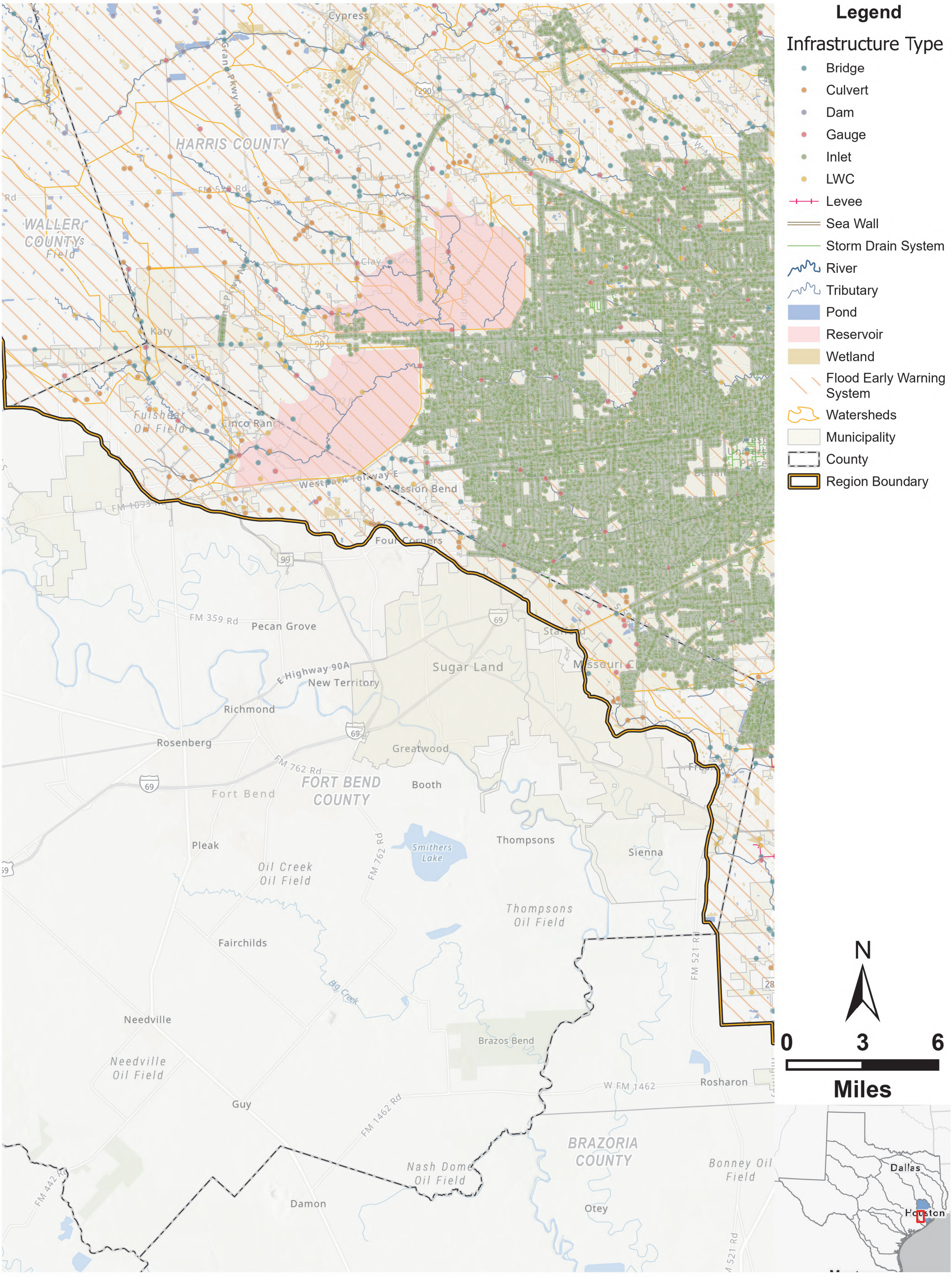
SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

MAP 1
14 of 17 in series



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Infrastructure Type

- Bridge
- Culvert
- Dam
- Gauge
- Inlet
- LWC
- Levee
- Sea Wall
- Storm Drain System
- River
- Tributary
- Pond
- Reservoir
- Wetland
- Flood Early Warning System
- Watersheds
- Municipality
- County
- Region Boundary

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

MAP 1
15 of 17 in series

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Prepared by Freese and Nichols, Inc.

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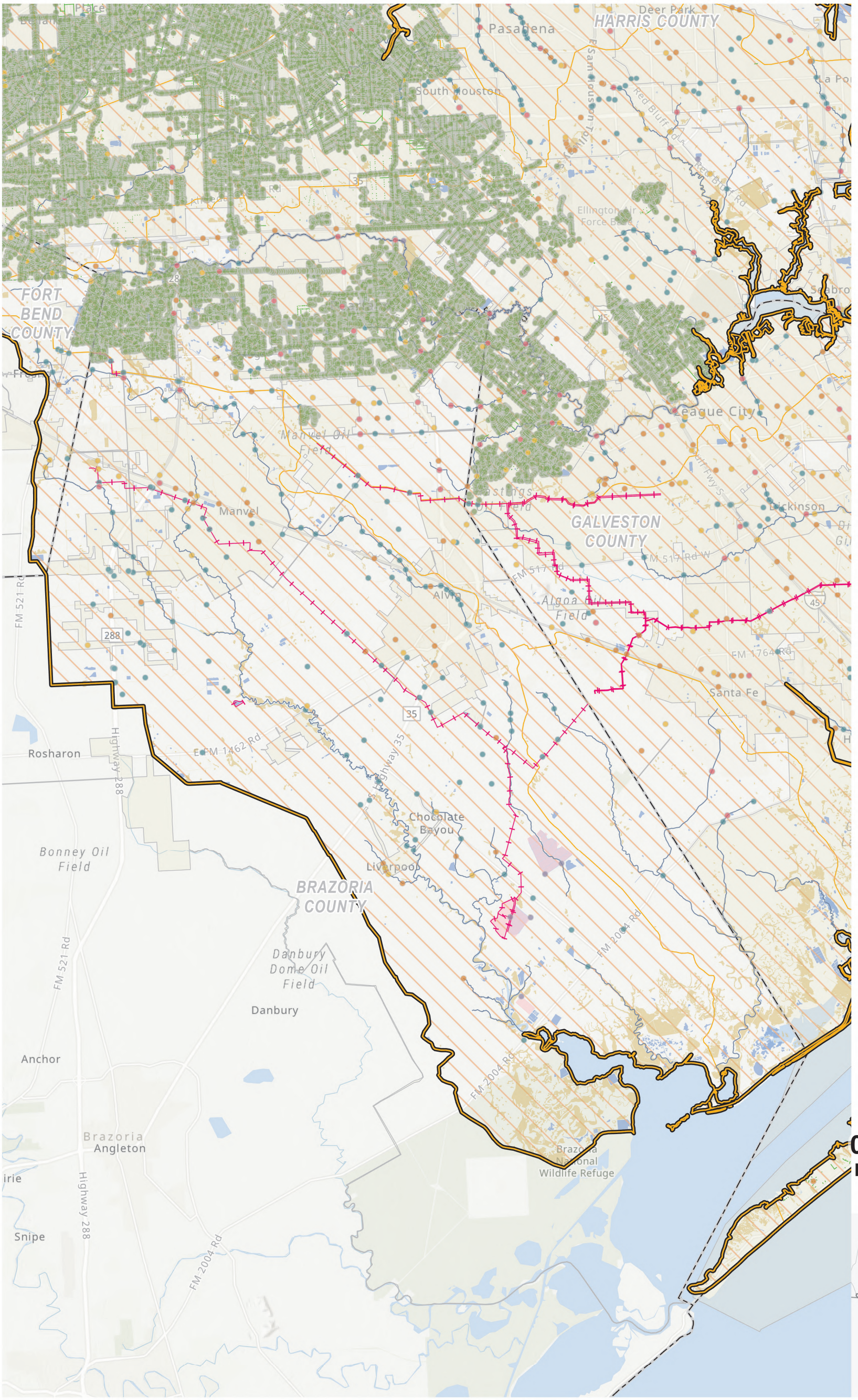

Legend

Infrastructure Type

- Bridge
- Culvert
- Dam
- Gauge
- Inlet
- LWC
- Levee
- Sea Wall
- Storm Drain System
- River
- Tributary
- Pond
- Reservoir
- Wetland
- Flood Early Warning System
- Watersheds
- Municipality
- County
- Region Boundary

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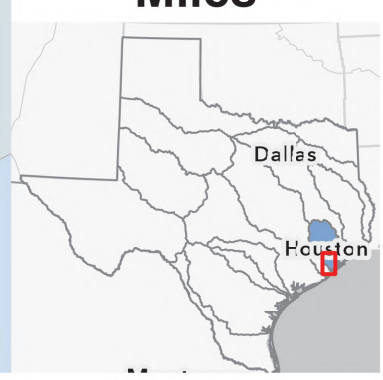

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

MAP 1
16 of 17 in series

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Prepared by Freese and Nichols, Inc.

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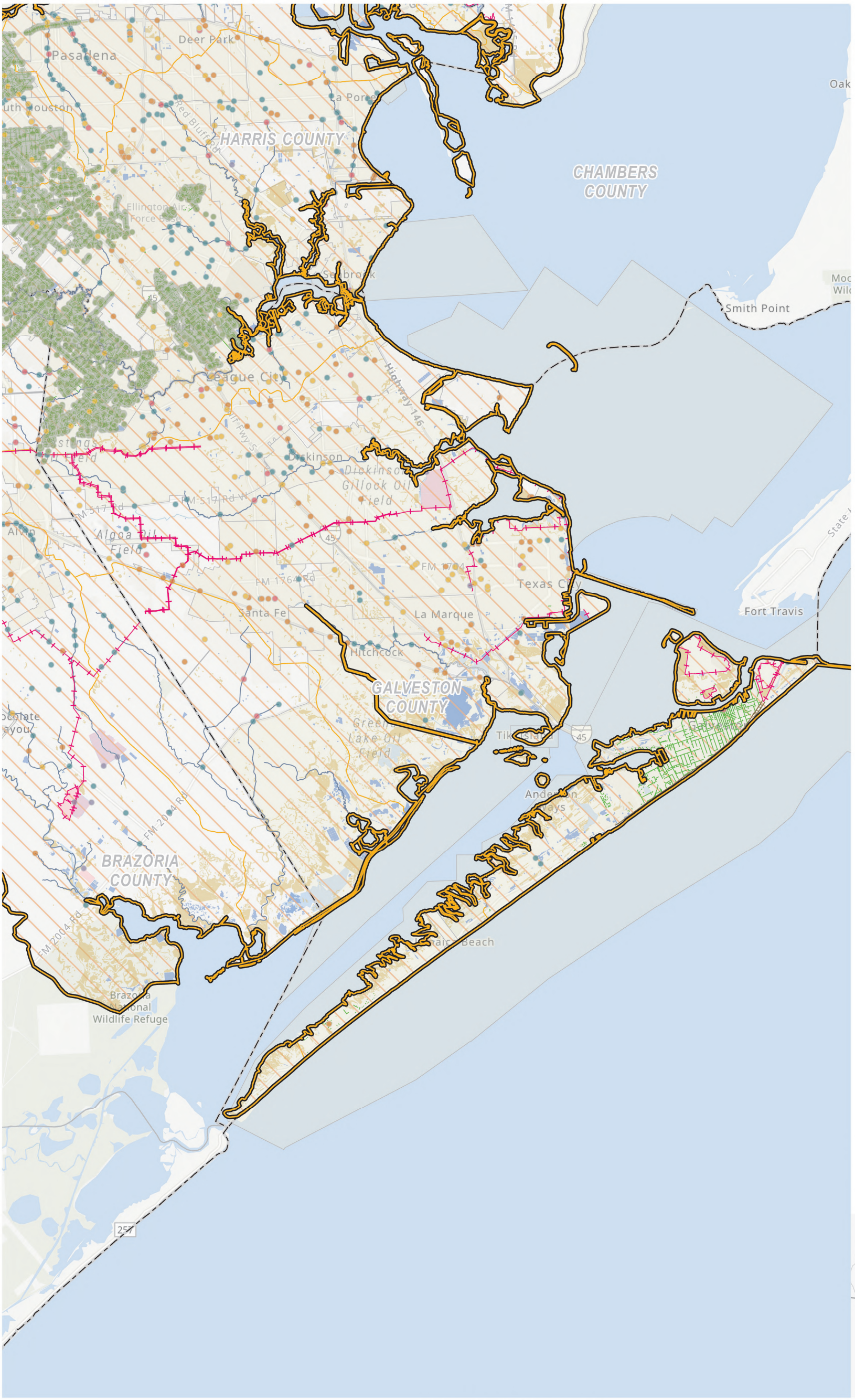

Legend

Infrastructure Type

- Bridge
- Culvert
- Dam
- Gauge
- Inlet
- LWC
- Levee
- Sea Wall
- Storm Drain System
- River
- Tributary
- Pond
- Reservoir
- Wetland
- Flood Early Warning System
- Watersheds
- Municipality
- County
- Region Boundary

N

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Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Flood Infrastructure

MAP 1
17 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

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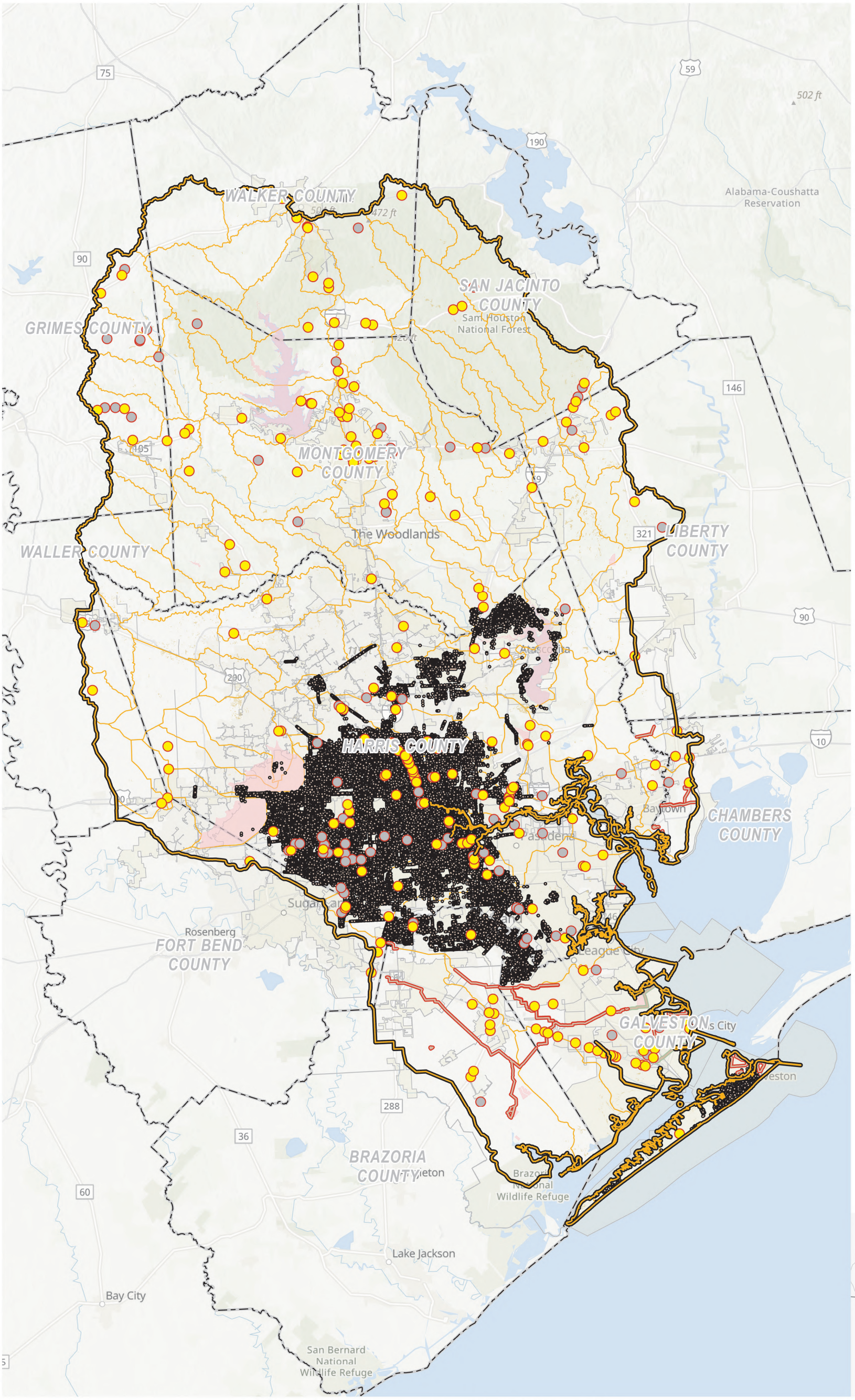
NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Appendix 1-2 Map 2: Non-Functional or Deficient Flood Mitigation Features or Infrastructure



Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
1 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Legend

- Watersheds
- Municipality
- County
- Region Boundary
- Index

Walker County Page 3
Grimes County Page 8
W Montgomery County Page 7
E Montgomery County Page 6
San Jacinto County Page 4
Liberty County Page 5
W Harris County Page 10
E Harris County Page 11
Waller County Page 9
Central Harris County Page 14
Harris County Ship Channel Page 13
Chambers County Page 12
Fort Bend County Page 15
Brazoria County Page 16
Galveston County Page 17

N

0 3 6 12

Miles

Region 6 San Jacinto
2028 Regional Flood Plan
Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
2 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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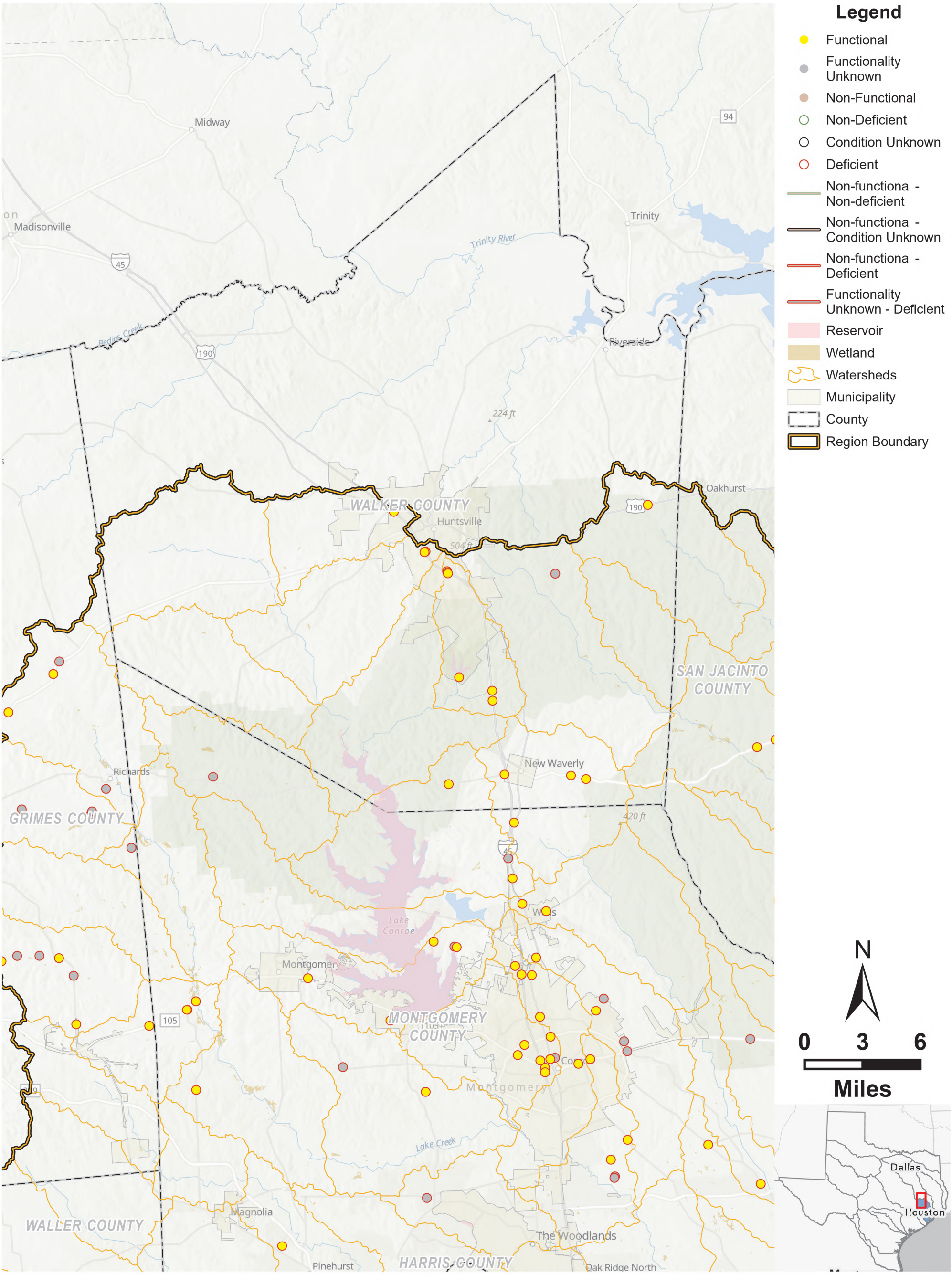

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
3 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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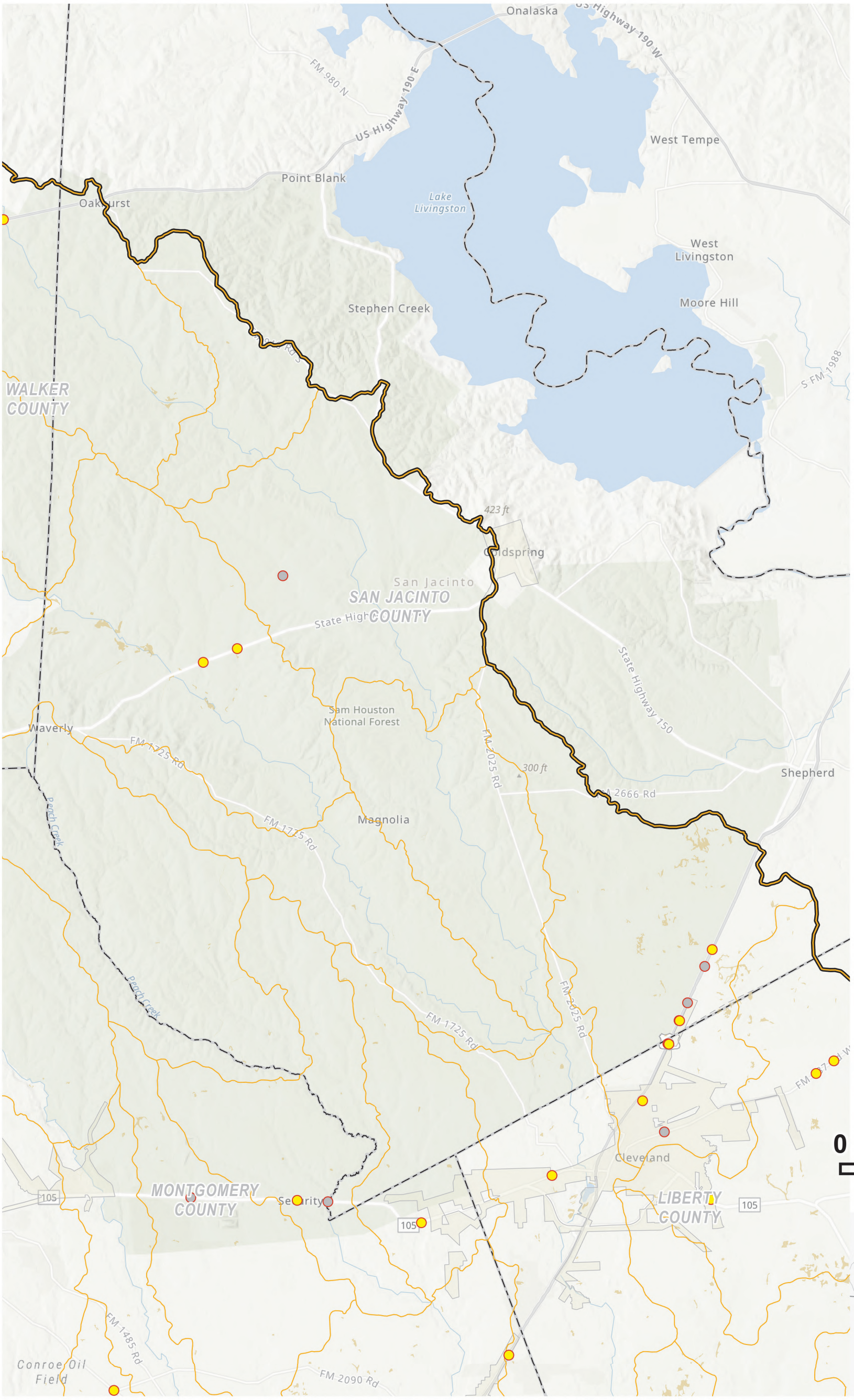

Legend

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- Functionality Unknown
- Non-Functional
- Non-Deficient
- Condition Unknown
- Deficient
- Non-functional - Non-deficient
- Non-functional - Condition Unknown
- Non-functional - Deficient
- Functionality Unknown - Deficient
- Reservoir
- Wetland
- Watersheds
- Municipality
- County
- Region Boundary

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
4 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

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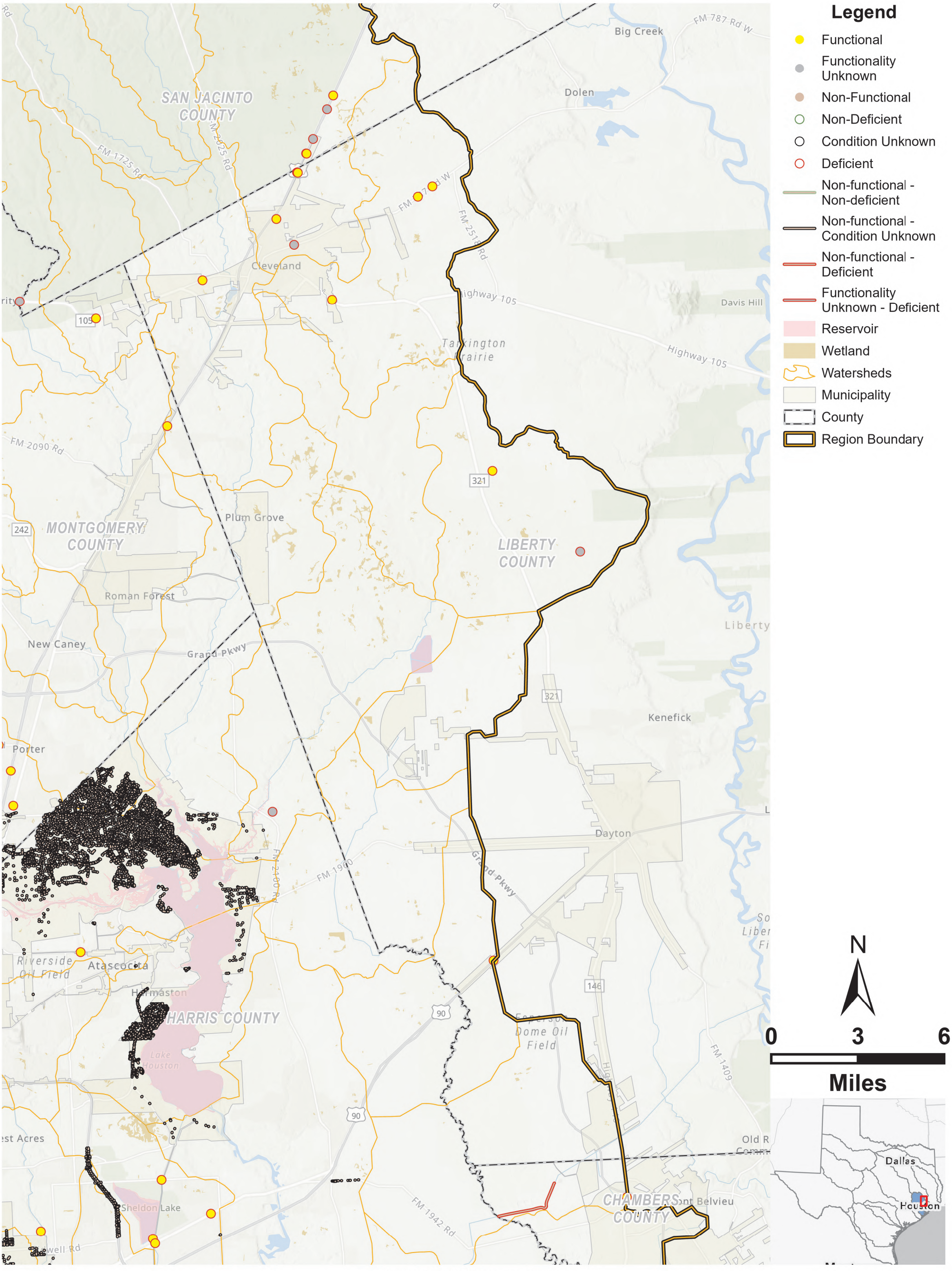

Region 6 San Jacinto
2028 Regional Flood Plan

MAP 2

5 of 17 in series

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

SAN JACINTO REGIONAL FLOOD PLANNING GROUP REGION 6

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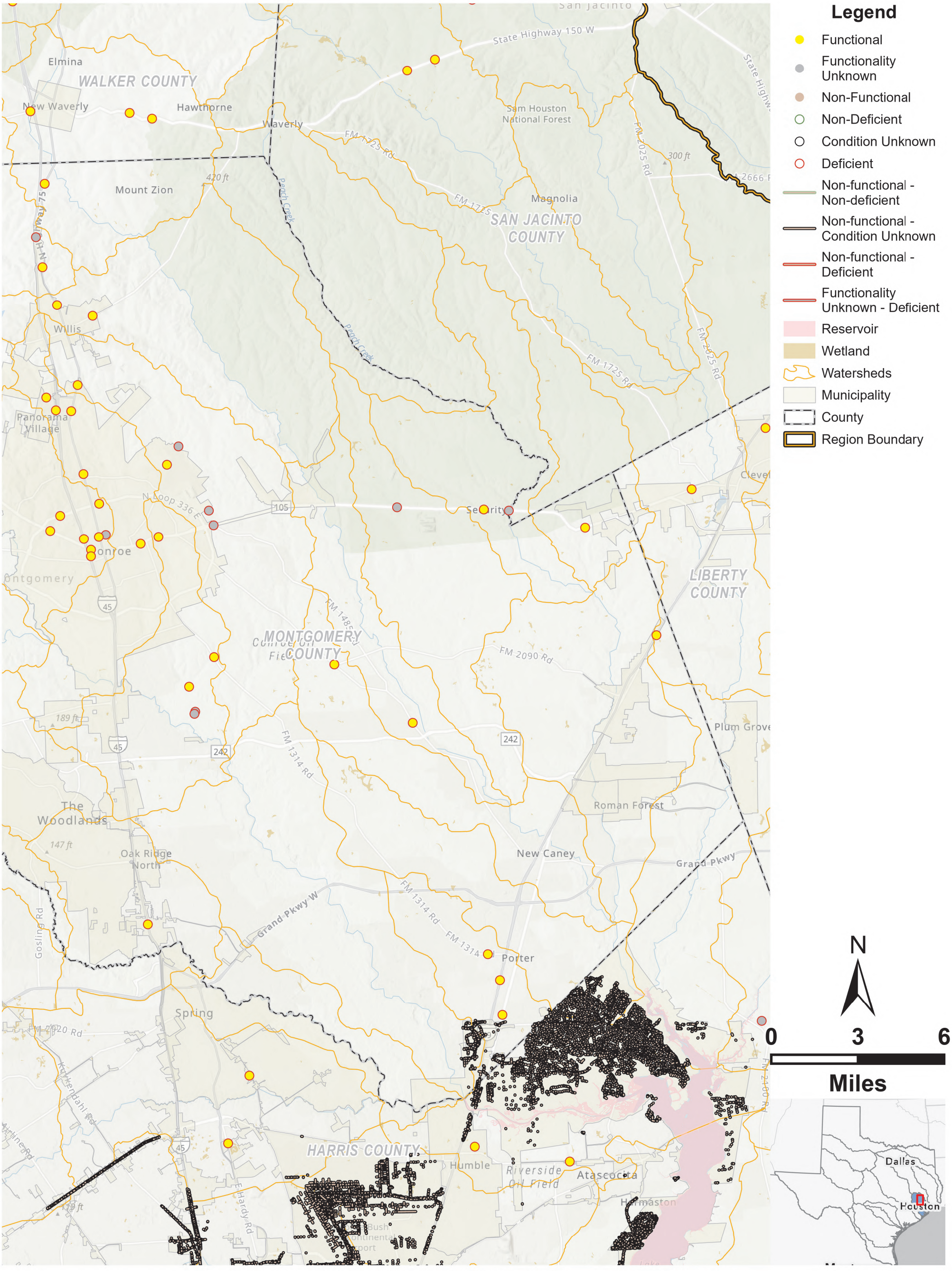

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
6 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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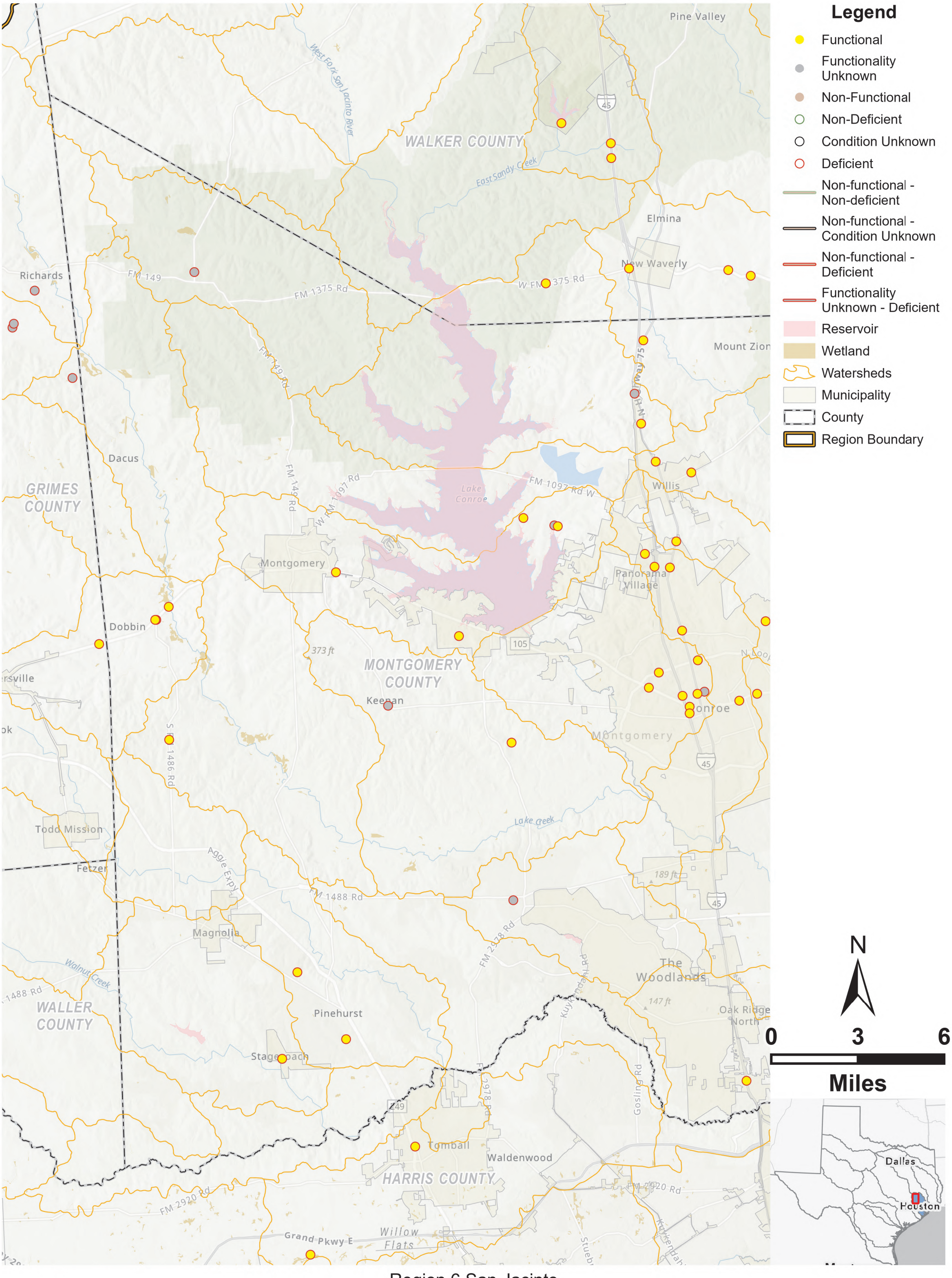

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
7 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

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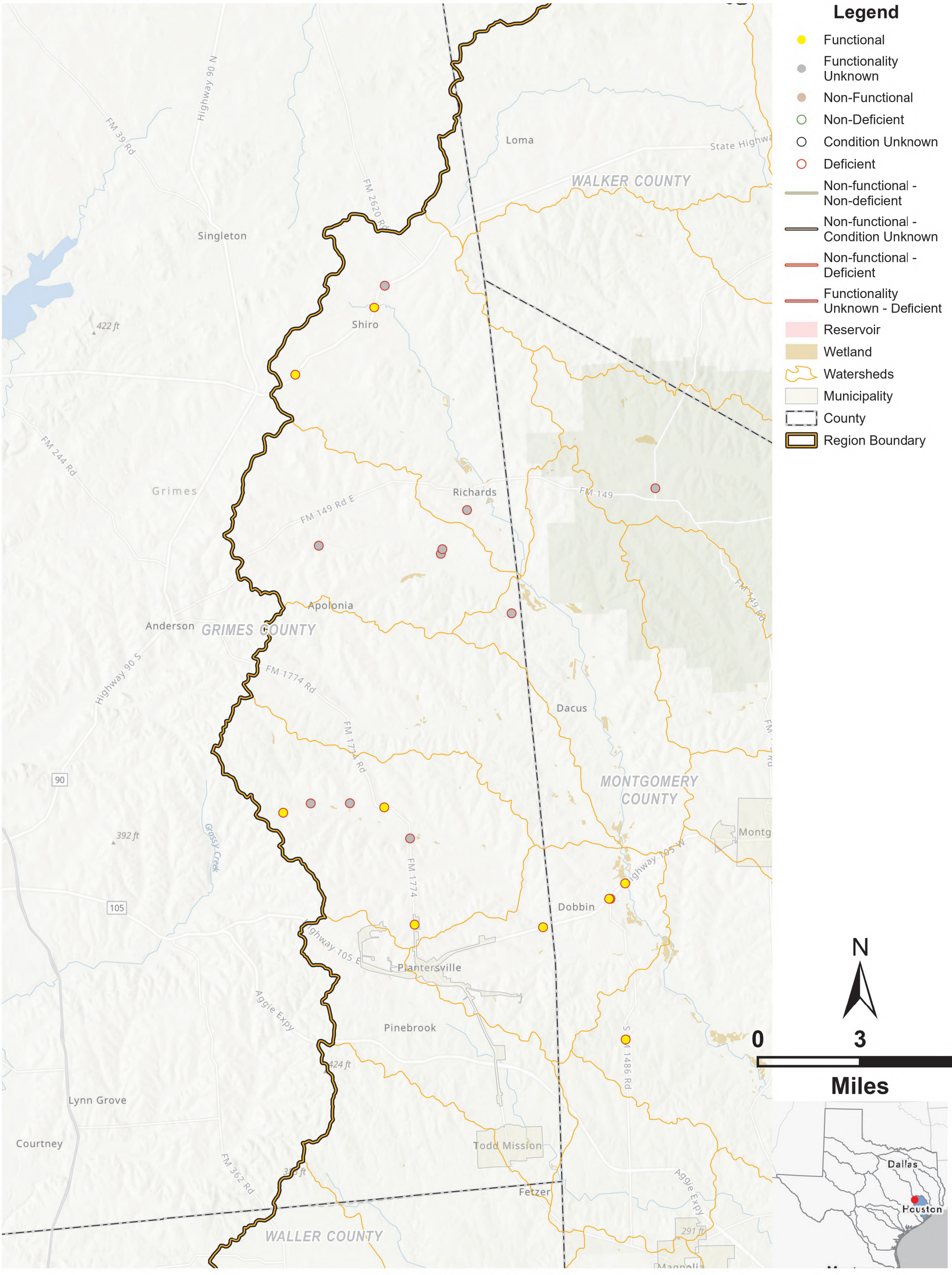

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
8 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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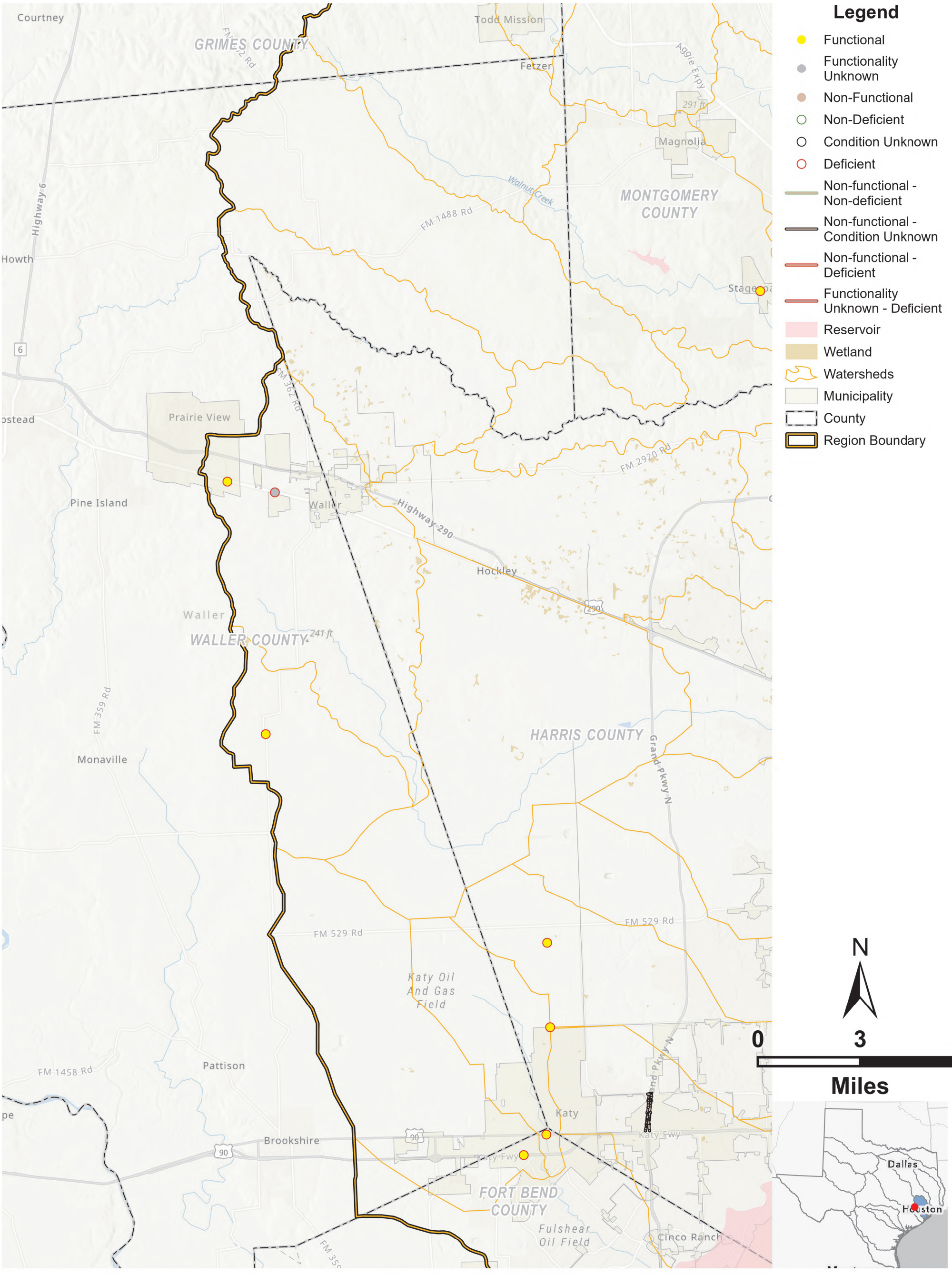

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
9 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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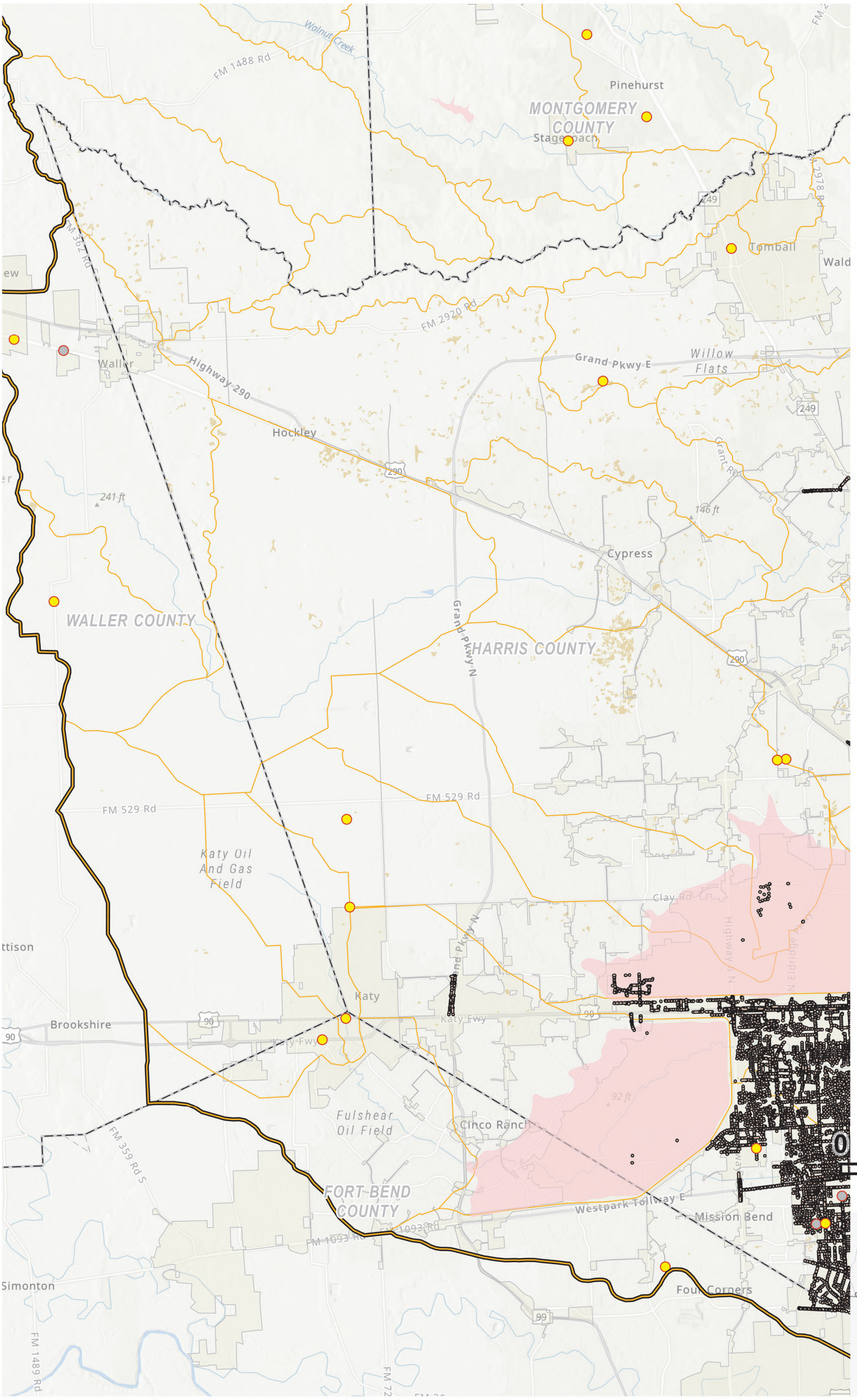

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
10 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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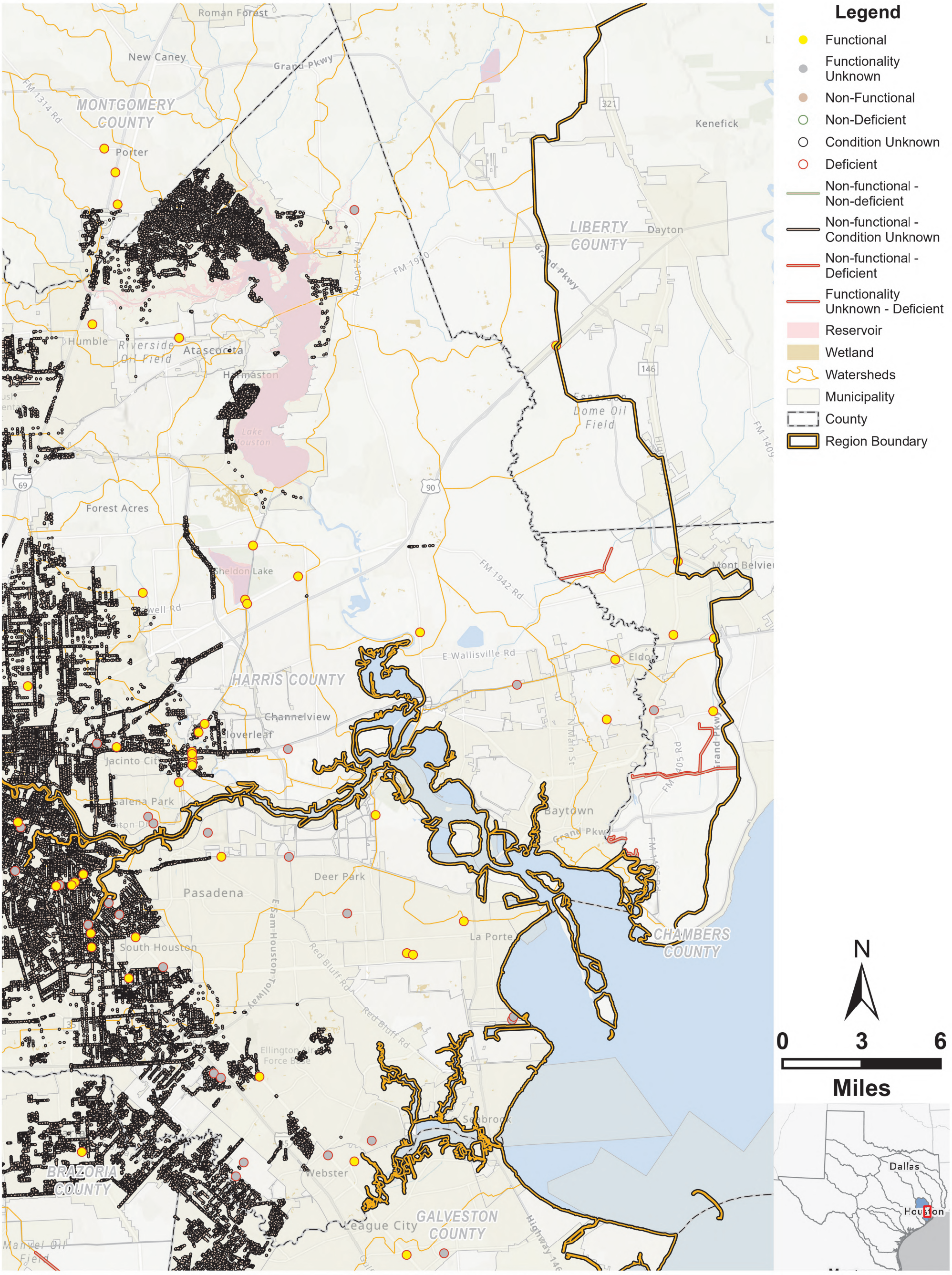

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

MAP 2
11 of 17 in series

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Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
12 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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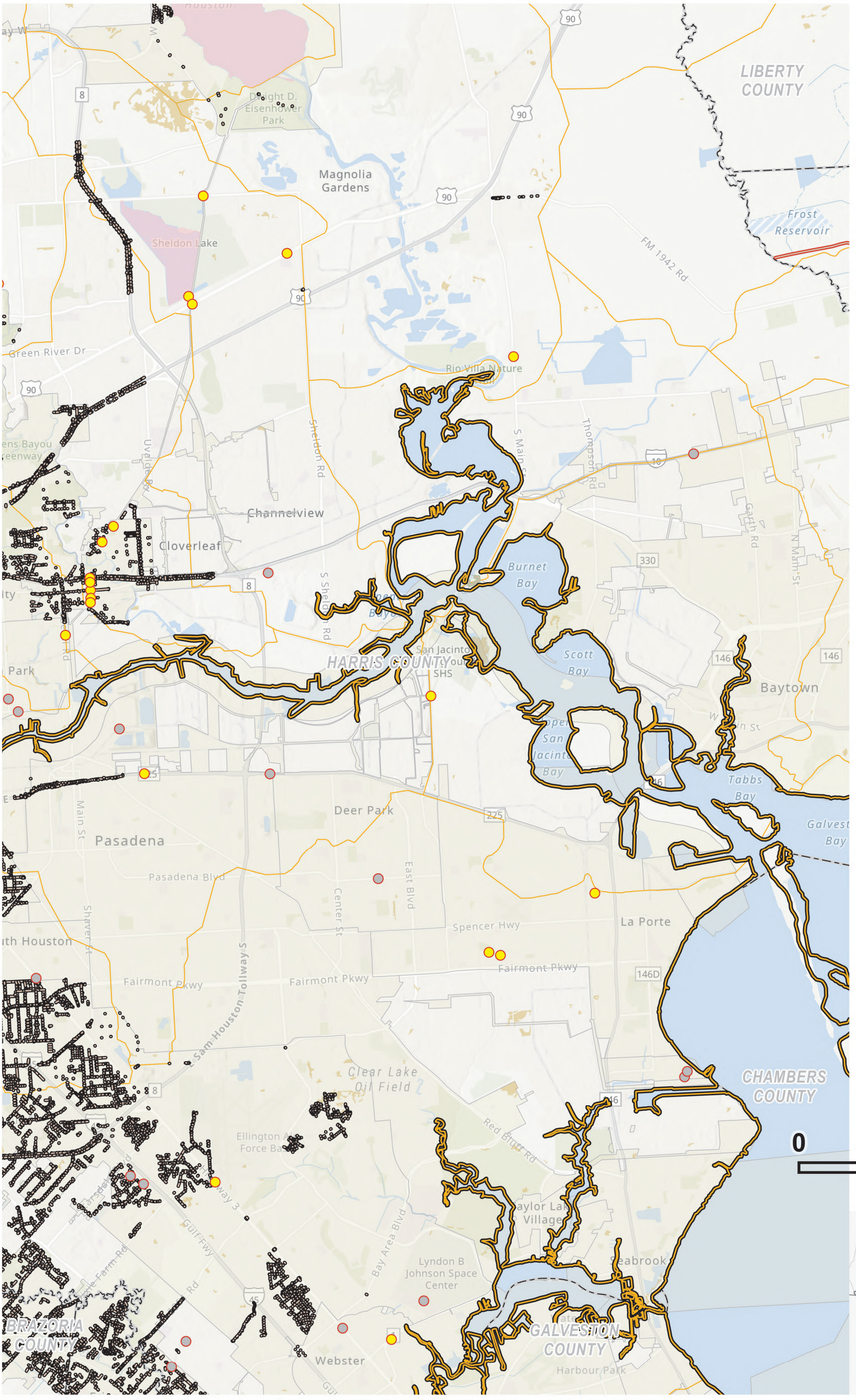

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
13 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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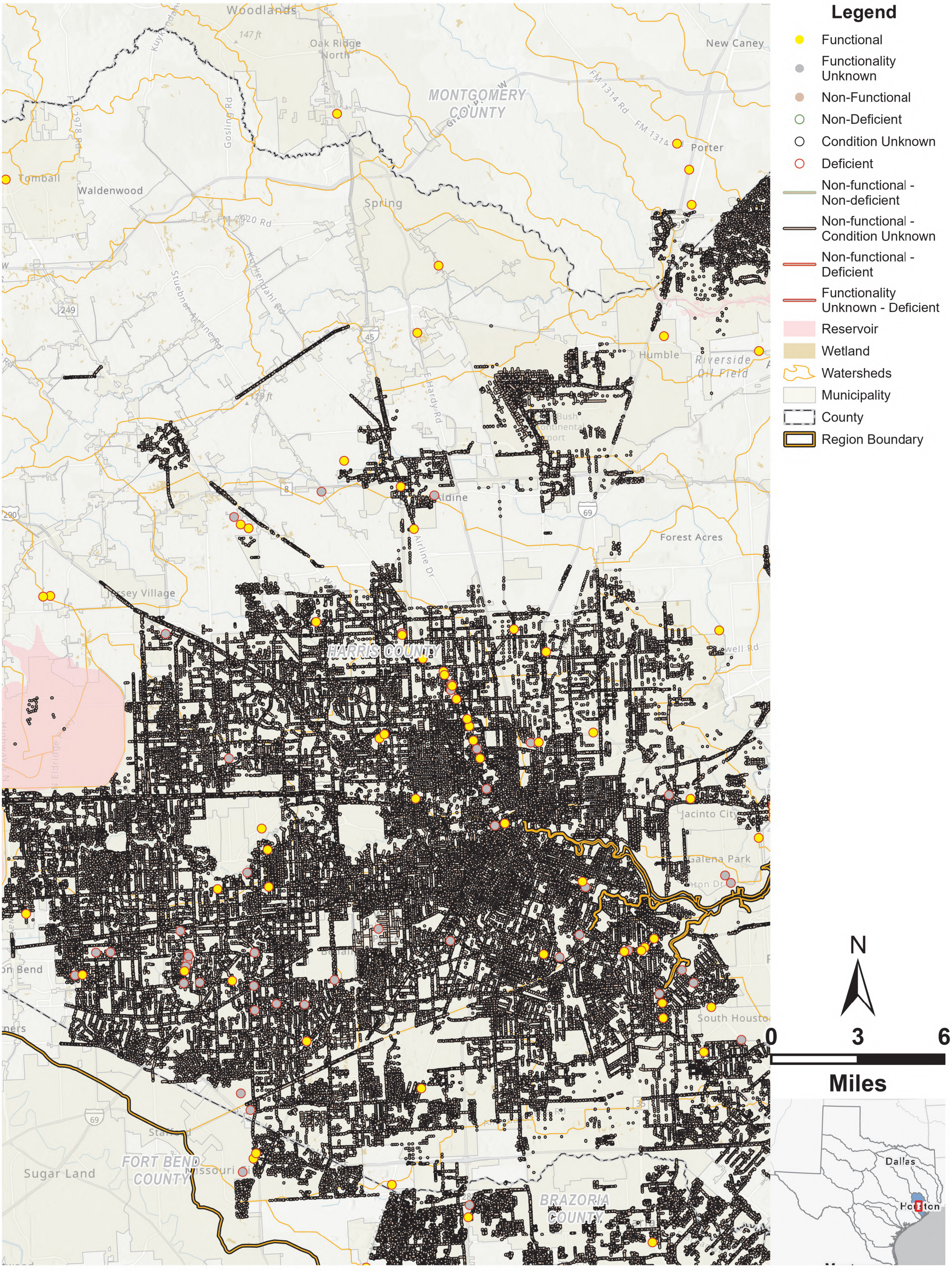

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
14 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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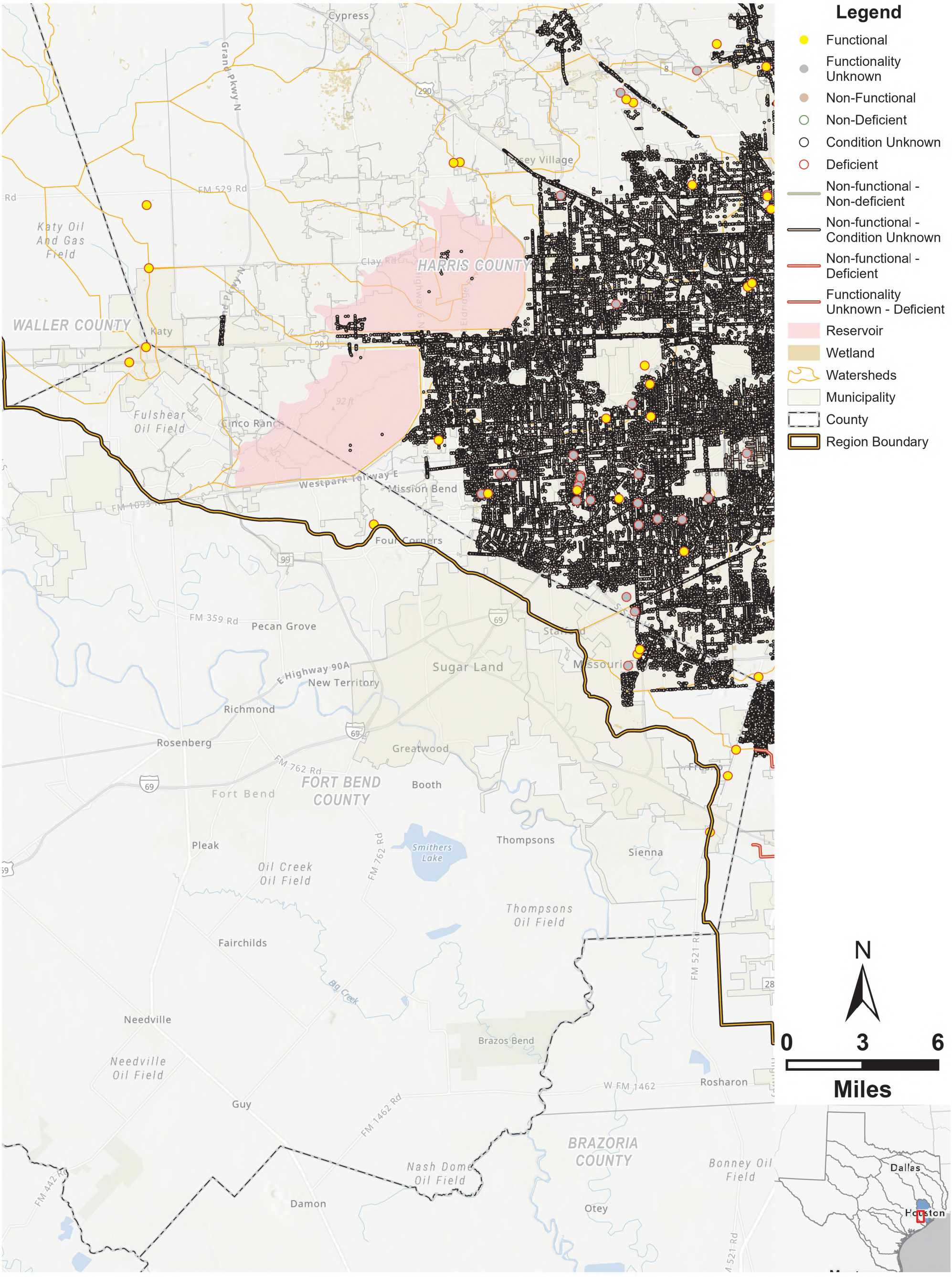

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
15 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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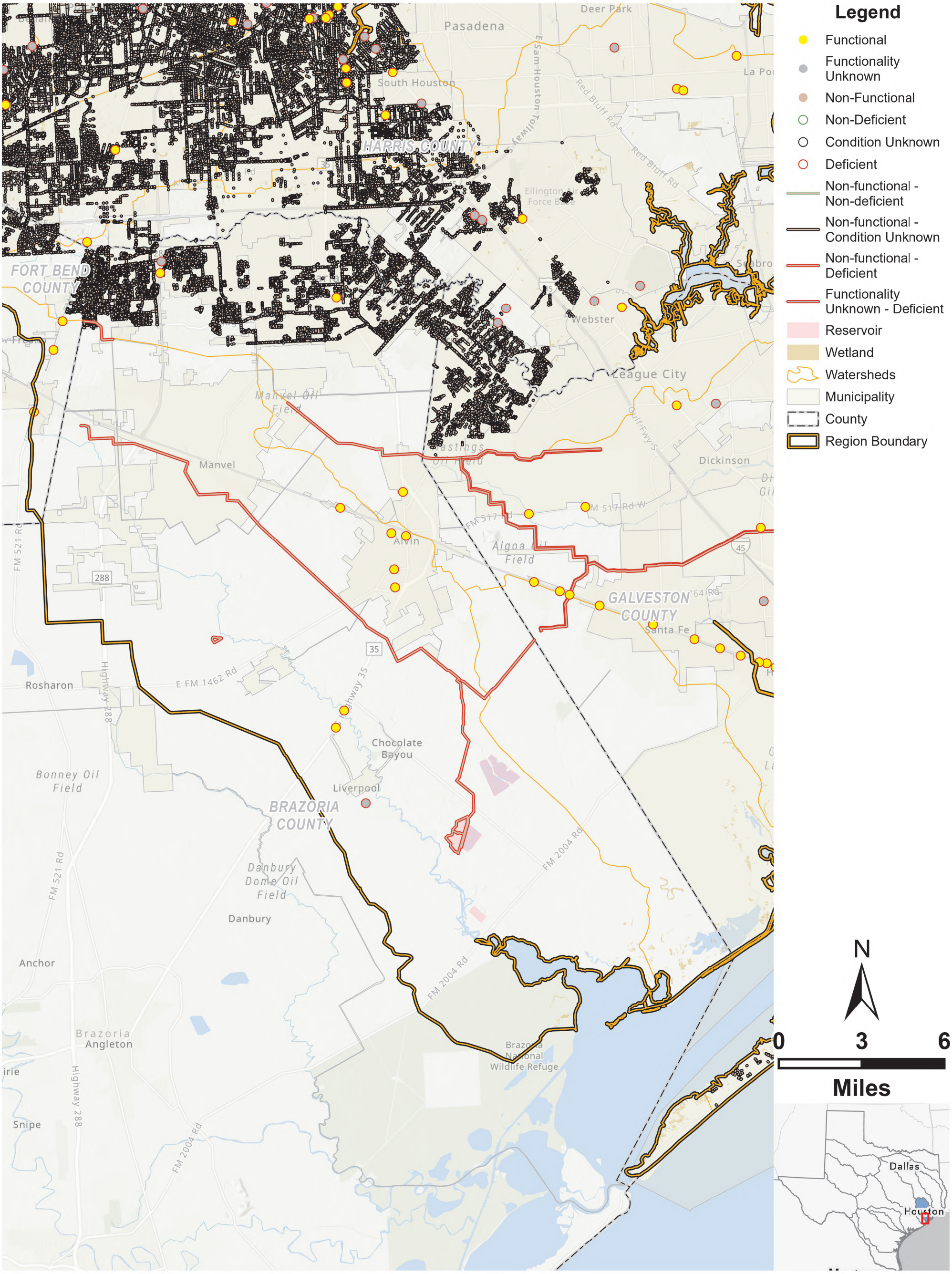

Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
16 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

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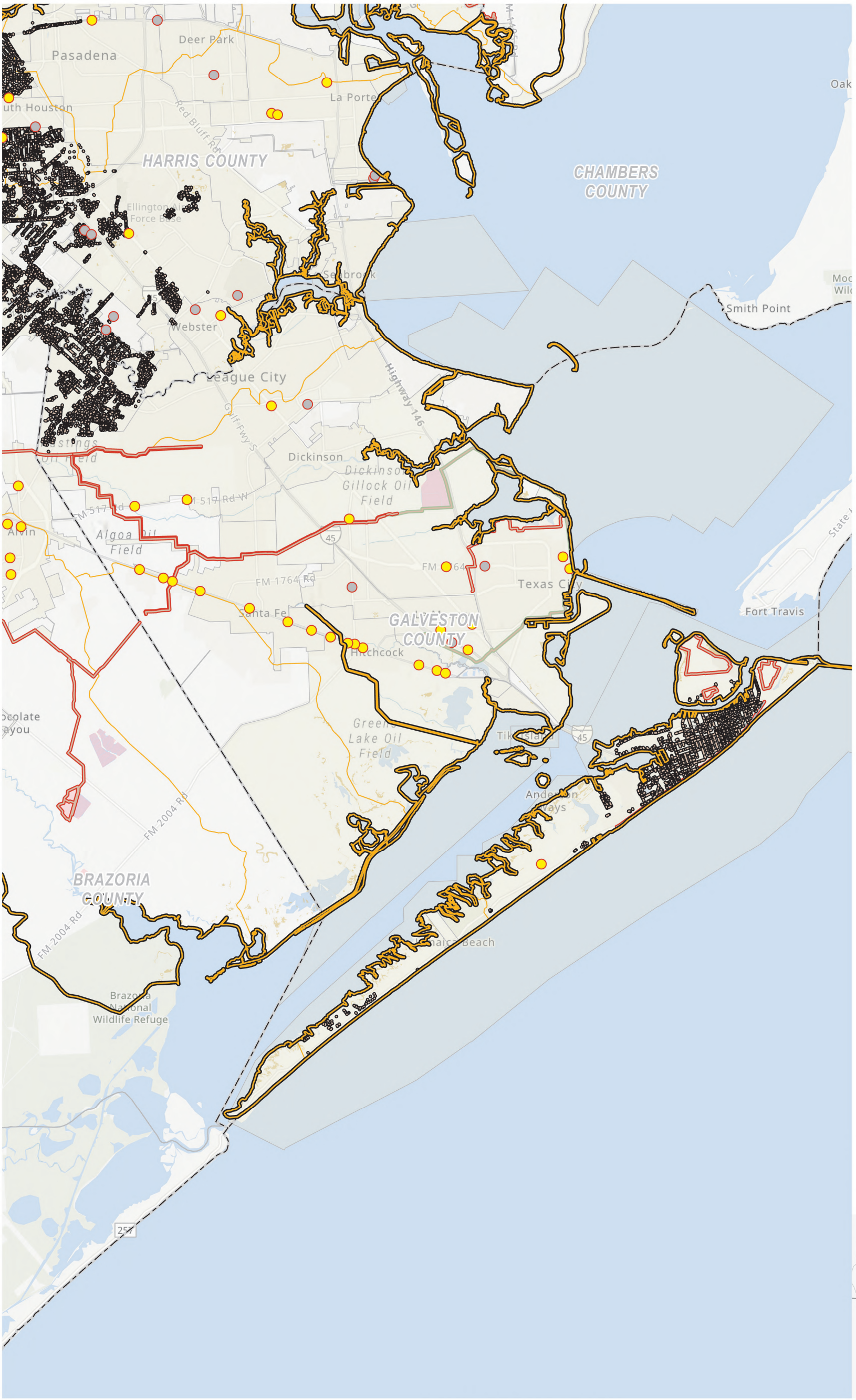

Legend

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- Non-Functional
- Non-Deficient
- Condition Unknown
- Deficient
- Non-functional - Non-deficient
- Non-functional - Condition Unknown
- Non-functional - Deficient
- Functionality Unknown - Deficient
- Reservoir
- Wetland
- Watersheds
- Municipality
- County
- Region Boundary

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Region 6 San Jacinto
2028 Regional Flood Plan

Non-Functional or Deficient Flood Mitigation Features or Infrastructure

MAP 2
17 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

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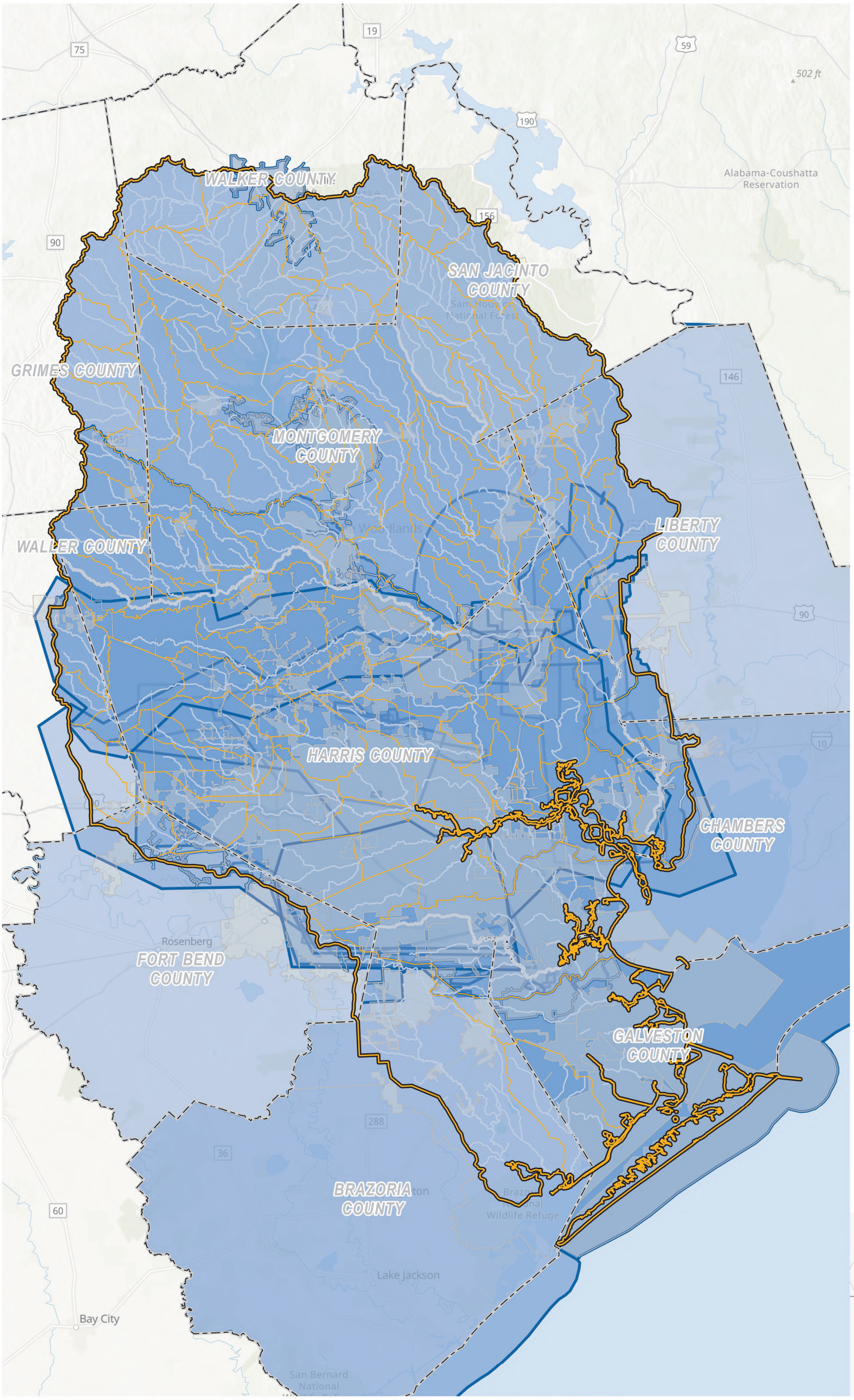
NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Appendix 1-3 Map 3: Proposed or Ongoing Flood Mitigation Projects



Legend

- Existing/Ongoing FMPs
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

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SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Proposed or Ongoing Flood Mitigation Projects

MAP 3

Appendix 1-4 Table 2: Summary of Existing major flood Infrastructure and natural features by county (ExFldInfra)

Table 2. Summary of existing Major Flood Infrastructure and Natural Features by County

County	Watersheds[A]	Feature Name	Infrastructure Type	Feature Count	Description	Natural or Constructed[B]	Level of Service	Functionality	Functionality Confidence	Deficiency	Condition Confidence
Harris	Multiple	Multiple	Dam	2	Multiple Dams	Constructed	Unknown	Functional	High	Deficient	High
Montgomery	Multiple	Multiple	Dam	4	Multiple Dams	Constructed	Unknown	Functional	High	Deficient	High
Walker	East Sandy Creek	Huntsville State Park Dam	Dam	1	Dam NIDID=TX02952	Constructed	Unknown	Functional	High	Deficient	High
Harris	Multiple	Multiple	Dam	6	Multiple Dams	Constructed	Unknown	Functional	High	Non-Deficient	High
Montgomery	Multiple	Multiple	Dam	14	Multiple Dams	Constructed	Unknown	Functional	High	Non-Deficient	High
Walker	Multiple	Multiple	Dam	2	Multiple Dams	Constructed	Unknown	Functional	High	Non-Deficient	High
San Jacinto	Hopkins Branch-Winters Bayou	Yellow Gate Lake Dam	Dam	1	Dam NIDID=TX05268	Constructed	Unknown	Functional	High	Non-Deficient	High
Fort Bend	Little Prong-Buffalo Bayou	Katy Mills Dam	Dam	1	Dam NIDID=TX07554	Constructed	Unknown	Functional	High	Non-Deficient	High
Harris	Kickapoo Creek-Spring Creek	Adams Lake Dam	Dam	1	Dam NIDID=TX03392	Constructed	Unknown	Functional	High	Non-Deficient	Low
Walker	Gourd Creek-Winters Bayou	Mitcham Lake Dam	Dam	1	Dam NIDID=TX05165	Constructed	Unknown	Functional	High	Non-Deficient	Low
San Jacinto	Multiple	Multiple	Dam	2	Multiple Dams	Constructed	Unknown	Functional	High	Non-Deficient	Low
Galveston	Dickinson Bayou	Galveston County Water Industrial Reservoir Dam	Dam	1	Dam NIDID=TX01595	Constructed	Unknown	Functional	Low	Non-Deficient	High
Walker	Gourd Creek-Winters Bayou	Tillie Lake Lower Dam	Dam	1	Dam NIDID=TX02949	Constructed	Unknown	Functional	Low	Non-Deficient	High
Harris	Mallard Lake-Cypress Creek	Warren Lake Dam	Dam	1	Dam NIDID=TX03398	Constructed	Unknown	Non-Functional	Low	Deficient	High
Montgomery	Multiple	Multiple	Dam	12	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Deficient	High
Walker	Multiple	Multiple	Dam	2	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Deficient	High
Harris	Multiple	Multiple	Dam	23	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Montgomery	Multiple	Multiple	Dam	38	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Galveston	Dickinson Bayou	Gcwa Off Channel Term Stop Res Levee	Dam	1	Dam NIDID=TX07073	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Brazoria	Multiple	Multiple	Dam	5	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Walker	Multiple	Multiple	Dam	15	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Grimes	Multiple	Multiple	Dam	9	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Liberty	Multiple	Multiple	Dam	5	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Waller	Multiple	Multiple	Dam	4	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Chambers	Seaberg Reservoir-Cedar Bayou	W Scott Frost Reservoir No 1 Levee	Dam	1	Dam NIDID=TX05778	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Montgomery	Multiple	Multiple	Dam	26	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Non-Deficient	High
Walker	Multiple	Multiple	Dam	2	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Non-Deficient	High
Grimes	Hurricane Creek-Mill Creek	Lake Hollyhill Dam	Dam	1	Dam NIDID=TX03052	Constructed	Unknown	Non-Functional	Low	Non-Deficient	High
Harris	Multiple	Multiple	Dam	6	Multiple Dams	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Fort Bend	Little Prong-Buffalo Bayou	West Cinco Ranch Lake Dam	Dam	1	Dam NIDID=TX01563	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Harris	Multiple	Multiple	Bridge	7	Multiple Bridges	Constructed	Unknown	Functional	Low	Deficient	Low
Montgomery	Multiple	Multiple	Bridge	6	Multiple Bridges	Constructed	Unknown	Functional	Low	Deficient	Low
Galveston	Multiple	Multiple	Bridge	6	Multiple Bridges	Constructed	Unknown	Functional	Low	Deficient	Low
Brazoria	Multiple	Multiple	Bridge	3	Multiple Bridges	Constructed	Unknown	Functional	Low	Deficient	Low
Walker	Mustang Bayou	Region 6 Bridge	Bridge	1	29 Span Bridge (3 Span Continuous Steel Plate Girder Unit and 26 Simple PSC Beam Spans) on Concrete Substructure	Constructed	Unknown	Functional	Low	Deficient	Low
Grimes	Multiple	Multiple	Bridge	3	Multiple Bridges	Constructed	Unknown	Functional	Low	Deficient	Low
Fort Bend	Multiple	Multiple	Bridge	3	Multiple Bridges	Constructed	Unknown	Functional	Low	Deficient	Low
Chambers	Mustang Bayou	Region 6 Bridge	Bridge	1	29 Span Bridge (3 Span Continuous Steel Plate Girder Unit and 26 Simple PSC Beam Spans) on Concrete Substructure	Constructed	Unknown	Functional	Low	Deficient	Low
Harris	Multiple	Multiple	Bridge	1005	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Montgomery	Multiple	Multiple	Bridge	204	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Galveston	Multiple	Multiple	Bridge	83	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Brazoria	Multiple	Multiple	Bridge	142	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Walker	Multiple	Multiple	Bridge	13	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Grimes	Multiple	Multiple	Bridge	21	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
San Jacinto	Multiple	Multiple	Bridge	3	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Liberty	Multiple	Multiple	Bridge	20	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Waller	Multiple	Multiple	Bridge	9	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Fort Bend	Multiple	Multiple	Bridge	70	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Chambers	Multiple	Multiple	Bridge	8	Multiple Bridges	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Harris	Multiple	Multiple	Bridge	419	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Montgomery	Multiple	Multiple	Bridge	116	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Galveston	Multiple	Multiple	Bridge	28	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Brazoria	Multiple	Multiple	Bridge	54	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Walker	Multiple	Multiple	Bridge	11	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Grimes	Multiple	Multiple	Bridge	12	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
San Jacinto	Multiple	Multiple	Bridge	9	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Liberty	Multiple	Multiple	Bridge	8	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Waller	Multiple	Multiple	Bridge	16	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Fort Bend	Multiple	Multiple	Bridge	16	Multiple Bridges	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Chambers	Mustang Bayou	Region 6 Bridge	Bridge	1	29 Span Bridge (3 Span Continuous Steel Plate Girder Unit and 26 Simple PSC Beam Spans) on Concrete Substructure	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Harris	Multiple	Multiple	Bridge	5	Multiple Bridges	Constructed	Unknown	Unknown	Low	Deficient	Low
Montgomery	Mustang Bayou	Region 6 Bridge	Bridge	1	29 Span Bridge (3 Span Continuous Steel Plate Girder Unit and 26 Simple PSC Beam Spans) on Concrete Substructure	Constructed	Unknown	Unknown	Low	Deficient	Low

Table 2. Summary of existing Major Flood Infrastructure and Natural Features by County

County	Watersheds[A]	Feature Name	Infrastructure Type	Feature Count	Description	Natural or Constructed[B]	Level of Service	Functionality	Functionality Confidence	Deficiency	Condition Confidence
Grimes	Mustang Bayou	Region 6 Bridge	Bridge	1	29 Span Bridge (3 Span Continuous Steel Plate Girder Unit and 26 Simple PSC Beam Spans) on Concrete Substructure	Constructed	Unknown	Unknown	Low	Deficient	Low
San Jacinto	Multiple	Multiple	Bridge	2	Multiple Bridges	Constructed	Unknown	Unknown	Low	Deficient	Low
Liberty	Mustang Bayou	Region 6 Bridge	Bridge	1	29 Span Bridge (3 Span Continuous Steel Plate Girder Unit and 26 Simple PSC Beam Spans) on Concrete Substructure	Constructed	Unknown	Unknown	Low	Deficient	Low
Harris	Multiple	Multiple	Culvert	71	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Montgomery	Multiple	Multiple	Culvert	31	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Galveston	Multiple	Multiple	Culvert	19	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Brazoria	Multiple	Multiple	Culvert	7	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Walker	Multiple	Multiple	Culvert	13	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Grimes	Multiple	Multiple	Culvert	3	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
San Jacinto	Multiple	Multiple	Culvert	4	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Liberty	Multiple	Multiple	Culvert	8	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Waller	Multiple	Multiple	Culvert	2	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Fort Bend	Multiple	Multiple	Culvert	5	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Chambers	Multiple	Multiple	Culvert	3	Multiple Culverts	Constructed	Unknown	Functional	Low	Deficient	Low
Harris	Multiple	Multiple	Culvert	246	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Montgomery	Multiple	Multiple	Culvert	206	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Galveston	Multiple	Multiple	Culvert	33	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Brazoria	Multiple	Multiple	Culvert	20	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Walker	Multiple	Multiple	Culvert	60	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Grimes	Multiple	Multiple	Culvert	15	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
San Jacinto	Multiple	Multiple	Culvert	19	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Liberty	Multiple	Multiple	Culvert	19	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Waller	Multiple	Multiple	Culvert	9	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Fort Bend	Multiple	Multiple	Culvert	23	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Chambers	Multiple	Multiple	Culvert	8	Multiple Culverts	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Harris	Multiple	Multiple	Culvert	53	Multiple Culverts	Constructed	Unknown	Unknown	Low	Deficient	Low
Montgomery	Multiple	Multiple	Culvert	12	Multiple Culverts	Constructed	Unknown	Unknown	Low	Deficient	Low
Galveston	Multiple	Multiple	Culvert	4	Multiple Culverts	Constructed	Unknown	Unknown	Low	Deficient	Low
Brazoria	Multiple	Multiple	Culvert	2	Multiple Culverts	Constructed	Unknown	Unknown	Low	Deficient	Low
Walker	Halls Bayou	Region 6 Culvert	Culvert	1	5 Barrel 6’ diameter x 47.7' Precast Concrete Pipe Culvert	Constructed	Unknown	Unknown	Low	Deficient	Low
Grimes	Multiple	Multiple	Culvert	8	Multiple Culverts	Constructed	Unknown	Unknown	Low	Deficient	Low
San Jacinto	Multiple	Multiple	Culvert	3	Multiple Culverts	Constructed	Unknown	Unknown	Low	Deficient	Low
Liberty	Multiple	Multiple	Culvert	2	Multiple Culverts	Constructed	Unknown	Unknown	Low	Deficient	Low
Waller	Halls Bayou	Region 6 Culvert	Culvert	1	5 Barrel 6’ diameter x 47.7' Precast Concrete Pipe Culvert	Constructed	Unknown	Unknown	Low	Deficient	Low
Fort Bend	Halls Bayou	Region 6 Culvert	Culvert	1	5 Barrel 6’ diameter x 47.7' Precast Concrete Pipe Culvert	Constructed	Unknown	Unknown	Low	Deficient	Low
Chambers	Halls Bayou	Region 6 Culvert	Culvert	1	5 Barrel 6’ diameter x 47.7' Precast Concrete Pipe Culvert	Constructed	Unknown	Unknown	Low	Deficient	Low
Harris	Multiple	Multiple	Culvert	130	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Montgomery	Multiple	Multiple	Culvert	115	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Galveston	Multiple	Multiple	Culvert	29	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Brazoria	Multiple	Multiple	Culvert	17	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Walker	Multiple	Multiple	Culvert	38	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Grimes	Multiple	Multiple	Culvert	6	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
San Jacinto	Multiple	Multiple	Culvert	29	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Liberty	Multiple	Multiple	Culvert	20	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Waller	Multiple	Multiple	Culvert	12	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Fort Bend	Multiple	Multiple	Culvert	15	Multiple Culverts	Constructed	Unknown	Unknown	Low	Non-Deficient	Low
Harris	Multiple	Multiple	LWC	181	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Deficient	Low
Montgomery	Multiple	Multiple	LWC	5	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Deficient	Low
Galveston	Multiple	Multiple	LWC	11	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Deficient	Low
Brazoria	Multiple	Multiple	LWC	3	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Deficient	Low
Walker	Mustang Bayou	Region 6 LWC	LWC	1	2 Simple Span Timber Stringer Bridge on Timber Caps & Piles	Constructed	Unknown	Non-Functional	None	Deficient	Low
San Jacinto	Mustang Bayou	Region 6 LWC	LWC	1	2 Simple Span Timber Stringer Bridge on Timber Caps & Piles	Constructed	Unknown	Non-Functional	None	Deficient	Low
Liberty	Mustang Bayou	Region 6 LWC	LWC	1	2 Simple Span Timber Stringer Bridge on Timber Caps & Piles	Constructed	Unknown	Non-Functional	None	Deficient	Low
Waller	Multiple	Multiple	LWC	5	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Deficient	Low
Fort Bend	Multiple	Multiple	LWC	6	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Deficient	Low
Harris	Multiple	Multiple	LWC	350	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
Montgomery	Multiple	Multiple	LWC	78	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
Galveston	Multiple	Multiple	LWC	61	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
Brazoria	Multiple	Multiple	LWC	41	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
Walker	Multiple	Multiple	LWC	29	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
Grimes	Multiple	Multiple	LWC	11	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
San Jacinto	Multiple	Multiple	LWC	18	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low

Table 2. Summary of existing Major Flood Infrastructure and Natural Features by County

County	Watersheds[A]	Feature Name	Infrastructure Type	Feature Count	Description	Natural or Constructed[B]	Level of Service	Functionality	Functionality Confidence	Deficiency	Condition Confidence
Liberty	Multiple	Multiple	LWC	17	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
Waller	Multiple	Multiple	LWC	12	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
Fort Bend	Multiple	Multiple	LWC	29	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
Chambers	Multiple	Multiple	LWC	2	Multiple LWCs	Constructed	Unknown	Non-Functional	None	Non-Deficient	Low
Harris	Multiple	Multiple	Inlet	3107	Multiple Inlets	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Montgomery	Multiple	Multiple	Inlet	12	Multiple Inlets	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Walker	Multiple	Multiple	Inlet	295	Multiple Inlets	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Harris	Multiple	Multiple	Inlet	52030	Multiple Inlets	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Galveston	Multiple	Multiple	Inlet	74	Multiple Inlets	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Fort Bend	Multiple	Multiple	Inlet	74	Multiple Inlets	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Harris	Multiple	Multiple	Inlet	74864	Multiple Inlets	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Montgomery	Multiple	Multiple	Inlet	268	Multiple Inlets	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Galveston	Multiple	Multiple	Inlet	3365	Multiple Inlets	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Brazoria	Multiple	Multiple	Inlet	12081	Multiple Inlets	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Walker	Multiple	Multiple	Inlet	577	Multiple Inlets	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Fort Bend	Multiple	Multiple	Inlet	2457	Multiple Inlets	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Harris	Multiple	Multiple	Gauge	303	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Montgomery	Multiple	Multiple	Gauge	57	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Galveston	Multiple	Multiple	Gauge	43	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Brazoria	Multiple	Multiple	Gauge	43	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Walker	Multiple	Multiple	Gauge	10	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Grimes	Multiple	Multiple	Gauge	2	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
San Jacinto	Multiple	Multiple	Gauge	5	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Liberty	Multiple	Multiple	Gauge	10	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Waller	Multiple	Multiple	Gauge	18	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Fort Bend	Multiple	Multiple	Gauge	28	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Chambers	Multiple	Multiple	Gauge	4	Multiple Gauges	Constructed	Unknown	Unknown	None	Unknown	None
Montgomery	Multiple	Multiple	Pond	65	Multiple Ponds	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Harris	Multiple	Multiple	Pond	32	Multiple Ponds	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Walker	Multiple	Multiple	Pond	21	Multiple Ponds	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Liberty	Multiple	Multiple	Pond	2	Multiple Ponds	Constructed	Unknown	Functional	Low	Non-Deficient	Low
San Jacinto	Multiple	Multiple	Pond	3	Multiple Ponds	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Waller	Multiple	Multiple	Pond	4	Multiple Ponds	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Grimes	Multiple	Multiple	Pond	7	Multiple Ponds	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Harris, Liberty	Multiple	Multiple	Pond	4	Multiple Ponds	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Chambers, Liberty	Cedar Bayou Lake-Cedar Bayou	W Scott Frost Reservoir Number 1	Pond	1	Pond/Lake	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Galveston	Multiple	Multiple	Pond	5	Multiple Ponds	Constructed	Unknown	Unknown	None	Unknown	None
Montgomery	Multiple	Multiple	Pond	56	Multiple Ponds	Constructed	Unknown	Unknown	None	Unknown	None
Brazoria	Multiple	Multiple	Pond	4	Multiple Ponds	Constructed	Unknown	Unknown	None	Unknown	None
Harris	Multiple	Multiple	Pond	30	Multiple Ponds	Constructed	Unknown	Unknown	None	Unknown	None
Walker	Multiple	Multiple	Pond	10	Multiple Ponds	Constructed	Unknown	Unknown	None	Unknown	None
Liberty	Multiple	Multiple	Pond	5	Multiple Ponds	Constructed	Unknown	Unknown	None	Unknown	None
San Jacinto	Multiple	Multiple	Pond	4	Multiple Ponds	Constructed	Unknown	Unknown	None	Unknown	None
Waller	Multiple	Unnamed Pond	Pond	1	Pond/Lake	Constructed	Unknown	Unknown	None	Unknown	None
Grimes	Multiple	Multiple	Pond	2	Multiple Ponds	Constructed	Unknown	Unknown	None	Unknown	None
Harris, Liberty	Seaberg Reservoir-Cedar Bayou	Enderli Reservoir	Pond	1	Pond/Lake	Constructed	Unknown	Unknown	None	Unknown	None
Chambers	Multiple	Unnamed Pond	Pond	1	Pond/Lake	Constructed	Unknown	Unknown	None	Unknown	None
Fort Bend	Multiple	Unnamed Pond	Pond	1	Pond/Lake	Constructed	Unknown	Unknown	None	Unknown	None
Harris	Multiple	Addicks Reservoir	Reservoir	1	Reservoir	Constructed	Unknown	Functional	High	Deficient	High
Harris, Fort Bend	Multiple	Barker Reservoir	Reservoir	1	Reservoir	Constructed	Unknown	Functional	High	Deficient	High
Montgomery	Little Lake Creek-Conroe Lake	Lewis Creek Reservoir	Reservoir	1	Reservoir	Constructed	Unknown	Functional	High	Non-Deficient	Low
Galveston	Dickinson Bayou	Gulf Coast Water Authority Reservoir	Reservoir	1	Reservoir	Constructed	Unknown	Functional	Low	Deficient	High
Harris	Highlands Reservoir-San Jacinto River	Highlands Reservoir	Reservoir	1	Reservoir	Constructed	Unknown	Functional	Low	Non-Deficient	High
Brazoria	Multiple	Multiple	Reservoir	4	Multiple Reservoirs	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Harris	Carpenters Bayou	Sheldon Reservoir	Reservoir	1	Reservoir	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Walker	East Sandy Creek	Lake Raven	Reservoir	1	Reservoir	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Liberty	Multiple	Pin Oak Reservoir	Reservoir	1	Reservoir	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Montgomery, Walker	Multiple	Lake Conroe	Reservoir	1	Reservoir	Constructed	Unknown	Non-Functional	Low	Non-Deficient	High
Montgomery	Multiple	Multiple	Reservoir	2	Multiple Reservoirs	Constructed	Unknown	Non-Functional	Low	Non-Deficient	High
Harris	Multiple	Lake Houston	Reservoir	1	Reservoir	Constructed	Unknown	Non-Functional	Low	Non-Deficient	High
Galveston	Multiple	Multiple	Wetland	12	Multiple Wetlands	Natural	Unknown	Unknown	None	Deficient	Low
Montgomery	Multiple	Multiple	Wetland	4	Multiple Wetlands	Natural	Unknown	Unknown	None	Deficient	Low
Brazoria	Multiple	Multiple	Wetland	6	Multiple Wetlands	Natural	Unknown	Unknown	None	Deficient	Low
Harris	Multiple	Multiple	Wetland	6	Multiple Wetlands	Natural	Unknown	Unknown	None	Deficient	Low
Walker	Multiple	Multiple	Wetland	3	Multiple Wetlands	Natural	Unknown	Unknown	None	Deficient	Low
Liberty	Multiple	Liberty County Wetlands	Wetland	1	Freshwater Emergent Wetland	Natural	Unknown	Unknown	None	Deficient	Low
San Jacinto	Multiple	Multiple	Wetland	3	Multiple Wetlands	Natural	Unknown	Unknown	None	Deficient	Low
Waller	Multiple	Multiple	Wetland	2	Multiple Wetlands	Natural	Unknown	Unknown	None	Deficient	Low
Grimes	Multiple	Multiple	Wetland	3	Multiple Wetlands	Natural	Unknown	Unknown	None	Deficient	Low
Fort Bend	Multiple	Fort Bend County Wetlands	Wetland	1	Freshwater Emergent Wetland	Natural	Unknown	Unknown	None	Deficient	Low
Galveston	Multiple	Multiple	Wetland	53	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
Montgomery	Multiple	Multiple	Wetland	45	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low

Table 2. Summary of existing Major Flood Infrastructure and Natural Features by County

County	Watersheds[A]	Feature Name	Infrastructure Type	Feature Count	Description	Natural or Constructed[B]	Level of Service	Functionality	Functionality Confidence	Deficiency	Condition Confidence
Brazoria	Multiple	Multiple	Wetland	45	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
Harris	Multiple	Multiple	Wetland	82	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
Walker	Multiple	Multiple	Wetland	22	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
Liberty	Multiple	Multiple	Wetland	33	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
San Jacinto	Multiple	Multiple	Wetland	25	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
Waller	Multiple	Multiple	Wetland	21	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
Grimes	Multiple	Multiple	Wetland	17	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
Chambers	Multiple	Multiple	Wetland	32	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
Fort Bend	Multiple	Multiple	Wetland	18	Multiple Wetlands	Natural	Unknown	Unknown	None	Non-Deficient	Low
Galveston	Halls Bayou, Dickinson Bayou, Mustang Bayou, Outer Bar Channel-Gulf of Mexico, Clear Creek-Frontal Galveston Bay	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Montgomery	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Brazoria	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Harris	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Walker	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Liberty	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
San Jacinto	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Waller	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Grimes	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Chambers	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Fort Bend	Multiple	Harris County Flood Early Warning System	Flood Early Warning System	1	Flood Early Warning System	Constructed	Unknown	Unknown	None	Unknown	None
Harris	Multiple	Multiple	Levee	2	Multiple Levees	Constructed	Unknown	Functional	Low	Non-Deficient	Low
Galveston	Multiple	Multiple	Levee	9	Multiple Levees	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Brazoria	Multiple	Multiple	Levee	4	Multiple Levees	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Chambers	Multiple	Multiple	Levee	5	Multiple Levees	Constructed	Unknown	Non-Functional	Low	Deficient	Low
Harris	Multiple	Lynchburg Pump Station	Levee	1	Lynchburg Pump Station. Segment ID: 3104000006	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Galveston	Dickinson Bayou	Texas City Hurricane Flood Protection	Levee	1	Texas City Hurricane Flood Protection. Segment ID: 3104000004	Constructed	Unknown	Non-Functional	Low	Non-Deficient	Low
Galveston	Dickinson Bayou	Old San Jacinto Fort Levee 2	Levee	1	Old San Jacinto Fort Levee 2. Segment ID:560004000017	Constructed	Unknown	Unknown	Low	Unknown	Low
Galveston	Dickinson Bayou	Shoal Point Levee 2	Levee	1	Shoal Point Levee 2	Constructed	Unknown	Unknown	None	Unknown	None
Chambers	Multiple	Multiple	Levee	2	Multiple Levees	Constructed	Unknown	Unknown	None	Unknown	None
Walker	Multiple	Multiple	River	2	Multiple Rivers	Natural	Unknown	Unknown	None	Unknown	None
Montgomery	Multiple	Multiple	River	3	Multiple Rivers	Natural	Unknown	Unknown	None	Unknown	None
Harris	Multiple	Multiple	River	2	Multiple Rivers	Natural	Unknown	Unknown	None	Unknown	None
San Jacinto	Multiple	East Fork San Jacinto River	River	1	East Fork San Jacinto River	Natural	Unknown	Unknown	None	Unknown	None
Grimes	Multiple	West Fork San Jacinto River	River	1	West Fork San Jacinto River	Natural	Unknown	Unknown	None	Unknown	None
Liberty	Multiple	East Fork San Jacinto River	River	1	East Fork San Jacinto River	Natural	Unknown	Unknown	None	Unknown	None
Harris,Montgomery	Multiple	Multiple	Tributary	3	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Walker	Multiple	Multiple	Tributary	65	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Montgomery	Multiple	Multiple	Tributary	110	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Harris	Multiple	Multiple	Tributary	79	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Galveston	Multiple	Multiple	Tributary	20	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
San Jacinto	Multiple	Multiple	Tributary	42	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Harris,Waller,Montgomery	Multiple	Spring Creek	Tributary	1	Spring Creek	Natural	Unknown	Unknown	None	Unknown	None
Grimes	Multiple	Multiple	Tributary	21	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Liberty	Multiple	Multiple	Tributary	19	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Brazoria	Multiple	Multiple	Tributary	22	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
San Jacinto,Walker	Multiple	Boswell Creek	Tributary	1	Boswell Creek	Natural	Unknown	Unknown	None	Unknown	None

Table 2. Summary of existing Major Flood Infrastructure and Natural Features by County

County	Watersheds[A]	Feature Name	Infrastructure Type	Feature Count	Description	Natural or Constructed[B]	Level of Service	Functionality	Functionality Confidence	Deficiency	Condition Confidence
Brazoria,Galveston,Harris	Clear Creek-Frontal Galveston Bay	Clear Creek	Tributary	1	Clear Creek	Natural	Unknown	Unknown	None	Unknown	None
Chambers,Harris	Multiple	Multiple	Tributary	3	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Fort Bend	Multiple	Multiple	Tributary	8	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Waller	Multiple	Multiple	Tributary	10	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Chambers	Multiple	Multiple	Tributary	8	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Harris,Waller	Multiple	Multiple	Tributary	3	Multiple Tributarys	Natural	Unknown	Unknown	None	Unknown	None
Montgomery,San Jacinto,Walker	Hostetter Creek-Conroe Lake	Peach Creek	Tributary	1	Peach Creek	Natural	Unknown	Unknown	None	Unknown	None
Galveston	Dickinson Bayou	Galveston Sea Wall	Coastal-Constructed	1	A concrete sea wall approximately 10 miles along Galveston's oceanfront, built in response to the Great Galveston Storm of 1900.	Constructed	Unknown	Unknown	Low	Deficient	Low
Montgomery	Multiple	Multiple	Storm Drain System	20	Multiple Storm Drain Systems	Constructed	Unknown	Functional	Low	Unknown	None
Harris	Multiple	Multiple	Storm Drain System	5519	Multiple Storm Drain Systems	Constructed	Unknown	Functional	Low	Unknown	None
Galveston	Multiple	Multiple	Storm Drain System	253	Multiple Storm Drain Systems	Constructed	Unknown	Functional	Low	Unknown	None
Brazoria	Multiple	Multiple	Storm Drain System	993	Multiple Storm Drain Systems	Constructed	Unknown	Functional	Low	Unknown	None
Fort Bend	Multiple	Multiple	Storm Drain System	21	Multiple Storm Drain Systems	Constructed	Unknown	Functional	Low	Unknown	None
Brazoria,Fort Bend	Multiple	Multiple	Storm Drain System	21	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Harris,Montgomery	Multiple	Multiple	Storm Drain System	8	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Brazoria,Galveston	Multiple	Multiple	Storm Drain System	5	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Montgomery	Multiple	Multiple	Storm Drain System	632	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Harris	Multiple	Multiple	Storm Drain System	223858	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Galveston	Multiple	Multiple	Storm Drain System	6780	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Brazoria	Multiple	Multiple	Storm Drain System	14034	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Fort Bend	Multiple	Multiple	Storm Drain System	4606	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Galveston,Harris	Multiple	Multiple	Storm Drain System	6	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Fort Bend,Harris	Multiple	Multiple	Storm Drain System	34	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Brazoria,Harris	Multiple	Multiple	Storm Drain System	9	Multiple Storm Drain Systems	Constructed	Unknown	Non-functional	Low	Unknown	None
Walker	Multiple	City of Huntsville Storm System	Storm Drain System	1	City of Huntsville Storm System	Constructed	Unknown	Unknown	None	Unknown	None
Montgomery	Multiple	City of Conroe Storm System	Storm Drain System	1	City of Conroe Storm System	Constructed	Unknown	Unknown	None	Unknown	None
Chambers,Harris	Multiple	City of La Porte Storm System	Storm Drain System	1	City of La Porte Storm System	Constructed	Unknown	Unknown	None	Unknown	None
Galveston,Chambers	Multiple	City of Texas City Storm System	Storm Drain System	1	City of Texas City Storm System	Constructed	Unknown	Unknown	None	Unknown	None

Appendix 1-5 Table 3: Summary of Proposed or Ongoing Flood Mitigation Projects (ExFldProjs)

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000001	6	San Jacinto	D512-01-00-E207	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000003	6	San Jacinto	A500-08-00-E002	Design and construction of Dagg Road Stormwater Detention Basin on Clear Creek	
06-06-0000000004	6	San Jacinto	B100-00-00-E002	Armand Bayou Right-of-Way Acquisition and Floodplain Preservation	
06-06-0000000005	6	San Jacinto	D111-00-00-C001	Right-of-Way, Design and Construction of Conveyance Improvements along Poor Farm Ditch	
06-06-0000000006	6	San Jacinto	F101-06-00-E002	Right-of-Way, Design and Construction of Conveyance Improvements along F101-06-00	
06-06-0000000007	6	San Jacinto	U520-01-00-E001	Design and Construction of Dinner Creek Stormwater Detention Basin	
06-06-0000000008	6	San Jacinto	D100-00-00-E016	Detention on City of Houston Right-of-Way at S. Braeswood and the West Loop. (Cost not provided)	
06-06-0000000010	6	San Jacinto	W100-00-00-R003	Investigations of Bridges and Potential Channel Bypasses over Buffalo Bayou. (Cost not provided)	
06-06-0000000016	6	San Jacinto	D512-01-00-E002	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000021	6	San Jacinto	A700-01-00-Y001	Identification, Design and Construction of the A700-01 Environmental Mitigation Bank	
06-06-0000000022	6	San Jacinto	U700-01-00-Y001	Right-of-Way Acquisition, Design and Construction of Wetland Mitigation Bank	
06-06-0000000023	6	San Jacinto	Z100-00-00-P025	Countywide Floodplain Preservation and Right-of-Way Acquisition	
06-06-0000000028	6	San Jacinto	O119-00-00-P001	flood risk reduction project seeks to address flooding issues within the Highlands Mobile Estates and Highland Ridge subdivisions north of Barbers Hill Road and across from the Highlands Reservoir. (Cost not provided)	
06-06-0000000031	6	San Jacinto	K163-00-00-E001	Construction of Channel Conveyance Improvements Along K163-00-00	
06-06-0000000036	6	San Jacinto	M528-01-00-E002	Design and Construction of Cypress Rosehill Stormwater Detention Basin	
06-06-0000000037	6	San Jacinto	H100-00-00-B004	Design and Construction of Corps of Engineers Hunting Bayou, Section 211(f) Project	
06-06-0000000040	6	San Jacinto	A100-00-00-HC001	Clear Creek Flood Mitigation Projects. (Cost not provided)	
06-06-0000000041	6	San Jacinto	Q100-00-00-HC001	Cedar Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000221)	
06-06-0000000043	6	San Jacinto	P100-00-00-HC001	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000045	6	San Jacinto	T100-00-00-HC001	Barker Reservoir Subdivision Drainage Improvements	
06-06-0000000046	6	San Jacinto	K100-00-00-HC002	Cypress Creek Subdivision Improvements	
06-06-0000000047	6	San Jacinto	B112-00-00-X011	Right-of-Way Acquisition, Design and Construction of B112-00-00 and Tributaries Conveyance Improvements	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000001	Harris	06-02-0401040401	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000003	Harris	06-02-0402040100	Ongoing	$ 7,400,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000004	Harris	06-02-0402040100	Proposed	$ 4,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000005	Harris	06-02-0401040402	Proposed	$ 31,586,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000006	Harris	06-02-0401040706	Ongoing	$ 20,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000007	Harris	06-02-0401040201	Ongoing	$ 15,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000008	Harris	06-02-0401040401	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000010	Harris	06-02-0401040703	Proposed	$ 371,420.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000016	Harris	06-02-0401040401	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000021	Harris	06-02-0401040703,06-02-0401040502,06-02-0401040501,06-02-0402040200,06-02-0402040400,06-02-0402040100	Ongoing	$ 6,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000022	Harris	06-02-0401020103,06-02-0401020104,06-02-0401040102,06-02-0401040202,06-02-0401040104,06-02-0401040201,06-02-0401040302,06-02-0401040101,06-02-0401040203,06-02-0401040303,06-02-0401040301	Ongoing	$ 20,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000023	Harris		Ongoing	$ 50,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000028	Harris	06-02-0401040705,06-02-0401040704,06-02-0402030104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000031	Harris	06-02-0401020106,06-02-0401040301	Ongoing	$ 3,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000036	Harris	06-02-0401020210	Ongoing	$ 1,100,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000037	Harris	06-02-0401040701	Ongoing	$ 80,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000040	Harris	06-02-0401040501	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000041	Harris	06-02-0402030104	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000043	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000045	Harris	06-02-0401040104	Proposed	$ 33,170,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000046	Harris	06-02-0401020104	Ongoing	$ 134,940,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000047	Harris	06-02-0402040100	Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000049	6	San Jacinto	C127-00-00-X007	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000050	6	San Jacinto	E115-00-00-X046	Right-of-Way Acquisition, Design, and Construction of Channel Conveyance Improvements on Brickhouse Gulley	
06-06-0000000054	6	San Jacinto	F101-00-00-X009	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000055	6	San Jacinto	G104-00-00-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000056	6	San Jacinto	I100-01-00-X002	Right-of-Way Acquisition, Design and Construction of General Drainage Improvements in Vince Bayou Watershed	
06-06-0000000057	6	San Jacinto	J109-01-02-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000058	6	San Jacinto	J131-00-00-X016	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000059	6	San Jacinto	U106-09-00-X019	Drainage Improvements within Spencer Road PUD. (Cost not provided)	
06-06-0000000060	6	San Jacinto	W140-00-00-X012	Rehabilitation of W140-00-00 to Restore Channel Conveyance Capacity	
06-06-0000000061	6	San Jacinto	W140-01-00-X015	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000062	6	San Jacinto	W142-00-00-X009	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000063	6	San Jacinto	T101-00-00-X054	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000064	6	San Jacinto	T101-00-00-X056	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000065	6	San Jacinto	T101-00-00-X057	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000066	6	San Jacinto	P130-00-00-X025	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000067	6	San Jacinto	P133-01-00-X002	Design and Construction of the Smith Road Channel Diversion	
06-06-0000000068	6	San Jacinto	O105-00-00-X013	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000069	6	San Jacinto	O105-03-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000070	6	San Jacinto	J114-00-00-X008	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000072	6	San Jacinto	K139-00-00-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000073	6	San Jacinto	M102-00-00-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000076	6	San Jacinto	A107-03-00-X009	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000077	6	San Jacinto	A107-03-01-X009	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000078	6	San Jacinto	A109-00-00-X001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000079	6	San Jacinto	A111-00-00-X014	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000080	6	San Jacinto	A111-00-00-X015	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000081	6	San Jacinto	A119-00-00-X012	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000082	6	San Jacinto	A119-00-00-X013	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000091	6	San Jacinto	B109-00-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000092	6	San Jacinto	B112-02-00-X020	Right-of-Way Acquisition, Design and Construction of B112-00-00 and Tributaries Conveyance Improvements. (Cost included in EXPROJ_ID: 06000047)	
06-06-0000000093	6	San Jacinto	B112-04-00-X001	Right-of-Way Acquisition, Design and Construction of B112-00-00 and Tributaries Conveyance Improvements. (Cost included in EXPROJ_ID: 06000047)	
06-06-0000000096	6	San Jacinto	C118-00-00-X010	Right-of-Way Acquisition, Design, and Construction of Stormwater Detention Basin and Channel Conveyance Improvements Along Salt Water Ditch	
06-06-0000000097	6	San Jacinto	C153-00-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000098	6	San Jacinto	T101-00-00-X055	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000099	6	San Jacinto	T101-00-00-X059	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000100	6	San Jacinto	T101-00-00-X061	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000101	6	San Jacinto	T101-03-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000102	6	San Jacinto	T101-03-00-X011	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000103	6	San Jacinto	T101-07-00-X025	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000104	6	San Jacinto	T101-08-00-X007	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000105	6	San Jacinto	T101-10-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000106	6	San Jacinto	T103-00-00-X012	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000107	6	San Jacinto	T103-01-00-X011	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000113	6	San Jacinto	K133-00-00-X025	HCFCD 2018 Bond Program. (Cost not provided)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000049	Harris	06-02-0401040501	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000050	Harris	06-02-0401040302	Ongoing	$ 35,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000054	Harris	06-02-0401040706	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000055	Harris	06-02-0401040703	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000056	Harris	06-02-0401040703	Ongoing	$ 15,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000057	Harris	06-02-0401020213	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000058	Harris	06-02-0401020209	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000059	Harris	06-02-0401040201	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000060	Harris	06-02-0401040303	Proposed	$ 2,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000061	Harris	06-02-0401040303	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000062	Harris	06-02-0401040305	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000063	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000064	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000065	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000066	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000067	Harris	06-02-0401040603	Ongoing	$ 8,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000068	Harris	06-02-0401040706	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000069	Harris	06-02-0401040706	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000070	Harris	06-02-0401020213	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000072	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000073	Harris	06-02-0401020210	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000076	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000077	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000078	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000079	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000080	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000081	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000082	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000091	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000092	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000093	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000096	Harris	06-02-0401040502	Ongoing	$ 50,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000097	Harris	06-02-0401040501	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000098	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000099	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000100	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000101	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000102	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000103	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000104	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000105	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000106	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000107	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000113	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000114	6	San Jacinto	K149-00-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000115	6	San Jacinto	E101-00-00-X039	Planning, Right-of-Way Acquisition, Design and Construction of Little White Oak Bayou Channel Conveyance Improvements	
06-06-0000000116	6	San Jacinto	E117-00-00-X024	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000117	6	San Jacinto	E121-00-00-X021	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000118	6	San Jacinto	E121-02-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000119	6	San Jacinto	E121-04-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000120	6	San Jacinto	E122-00-00-X016	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000121	6	San Jacinto	E122-00-00-X017	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000122	6	San Jacinto	E122-00-00-X018	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000123	6	San Jacinto	E124-00-00-X013	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000124	6	San Jacinto	E124-01-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000125	6	San Jacinto	P118-00-00-X053	Halls Bayou Subdivision Drainage Improvements	
06-06-0000000126	6	San Jacinto	P118-00-00-X057	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000127	6	San Jacinto	P118-00-00-X058	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000130	6	San Jacinto	U116-00-00-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000131	6	San Jacinto	U118-00-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000132	6	San Jacinto	U119-00-00-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000133	6	San Jacinto	U120-00-00-X016	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000134	6	San Jacinto	K105-00-00-X002	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000135	6	San Jacinto	K111-00-00-X025	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000136	6	San Jacinto	K111-00-00-X032	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000137	6	San Jacinto	K112-01-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000138	6	San Jacinto	K120-00-00-X019	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000139	6	San Jacinto	K120-01-00-X014	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000140	6	San Jacinto	K120-03-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000141	6	San Jacinto	K165-00-00-X007	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000145	6	San Jacinto	T101-09-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000147	6	San Jacinto	U120-00-00-X015	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000151	6	San Jacinto	P145-00-00-X009	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000152	6	San Jacinto	T100-00-00-HC002	Barker Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000045)	
06-06-0000000154	6	San Jacinto	P100-00-00-HC002	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000155	6	San Jacinto	P100-00-00-HC020	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000156	6	San Jacinto	P100-00-00-HC003	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000157	6	San Jacinto	A100-00-00-HC002	Clear Creek Flood Mitigation Projects. (Cost not provided)	
06-06-0000000158	6	San Jacinto	P100-00-00-HC005	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000159	6	San Jacinto	P100-00-00-HC006	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000160	6	San Jacinto	O100-00-00-HC003	Spring Gully and Goose Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000310)	
06-06-0000000161	6	San Jacinto	T100-00-00-HC003	Barker Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000045)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000114	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000115	Harris	06-02-0401040304	Ongoing	$ 30,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000116	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000117	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000118	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000119	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000120	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000121	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000122	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000123	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000124	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000125	Harris	06-02-0401040604	Ongoing	$ 9,500,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000126	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000127	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000130	Harris	06-02-0401040201	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000131	Harris	06-02-0401040201	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000132	Harris	06-02-0401040201	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000133	Harris	06-02-0401040201	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000134	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000135	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000136	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000137	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000138	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000139	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000140	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000141	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000145	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000147	Harris	06-02-0401040201	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000151	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000152	Harris	06-02-0401040104	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000154	Harris	06-02-0401040606	Ongoing	$ 92,640,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000155	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000156	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000157	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000158	Harris	06-02-0401040605,06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000159	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000160	Harris	06-02-0401040705	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000161	Harris	06-02-0401040104	Proposed		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000162	6	San Jacinto	P100-00-00-HC011	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000163	6	San Jacinto	P100-00-00-HC013	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000165	6	San Jacinto	C100-00-00-HC001	Sims Bayou Subdivision Drainage Improvements	
06-06-0000000166	6	San Jacinto	U100-00-00-HC008	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000167	6	San Jacinto	P100-00-00-HC016	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000168	6	San Jacinto	K100-00-00-HC008	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000169	6	San Jacinto	U100-00-00-HC010	Addicks Reservoir Subdivision Drainage Improvements	
06-06-0000000170	6	San Jacinto	U100-00-00-HC011	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000171	6	San Jacinto	P100-00-00-HC004	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000172	6	San Jacinto	P118-00-00-HC003	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000173	6	San Jacinto	K100-00-00-HC003	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000174	6	San Jacinto	L100-00-00-HC001	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000175	6	San Jacinto	K100-00-00-HC005	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000176	6	San Jacinto	U100-00-00-HC009	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000180	6	San Jacinto	K100-00-00-HC010	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000181	6	San Jacinto	K100-00-00-HC016	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000182	6	San Jacinto	K100-00-00-HC004	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000183	6	San Jacinto	K100-00-00-HC019	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000184	6	San Jacinto	K100-00-00-HC007	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000185	6	San Jacinto	U100-00-00-HC002	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000186	6	San Jacinto	U100-00-00-HC012	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000187	6	San Jacinto	L100-00-00-HC002	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000188	6	San Jacinto	T100-00-00-HC007	Barker Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000045)	
06-06-0000000189	6	San Jacinto	T100-00-00-HC005	Barker Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000045)	
06-06-0000000190	6	San Jacinto	T100-00-00-HC006	Barker Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000045)	
06-06-0000000191	6	San Jacinto	T100-00-00-HC004	Barker Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000045)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000162	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000163	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000165	Harris	06-02-0401040501	Ongoing	$ 880,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000166	Harris	06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000167	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000168	Harris	06-02-0401020106,06-02-0401040301	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000169	Harris	06-02-0401040202	Proposed	$ 83,770,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000170	Harris	06-02-0401040202	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000171	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000172	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000173	Harris	06-02-0401020106,06-02-0401040301	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000174	Harris	06-02-0401020104,06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000175	Harris	06-02-0401020104,06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000176	Harris	06-02-0401020104,06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000180	Harris	06-02-0401020106,06-02-0401040301	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000181	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000182	Harris	06-02-0401020106,06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000183	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000184	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000185	Harris	06-02-0401040203	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000186	Harris	06-02-0401040202,06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000187	Harris	06-02-0401020104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000188	Harris	06-02-0401040104	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000189	Harris	06-02-0401040104	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000190	Harris	06-02-0401040104	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000191	Harris	06-02-0401040104,06-02-0401040203	Proposed		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000192	6	San Jacinto	U100-00-00-HC016	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000193	6	San Jacinto	U100-00-00-HC014	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000194	6	San Jacinto	U100-00-00-HC015	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000195	6	San Jacinto	K100-00-00-HC014	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000196	6	San Jacinto	J100-00-00-HC001	Spring Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000196)	
06-06-0000000197	6	San Jacinto	K100-00-00-HC015	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000198	6	San Jacinto	K100-00-00-HC017	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000199	6	San Jacinto	K100-00-00-HC020	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000200	6	San Jacinto	K100-00-00-HC022	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000204	6	San Jacinto	P100-00-00-HC017	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000205	6	San Jacinto	R100-00-00-HC001	Jackson Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000386)	
06-06-0000000206	6	San Jacinto	K100-00-00-HC006	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000207	6	San Jacinto	U100-00-00-HC004	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000208	6	San Jacinto	P100-00-00-HC022	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000209	6	San Jacinto	K100-00-00-HC012	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000210	6	San Jacinto	P118-00-00-HC002	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000211	6	San Jacinto	P100-00-00-HC008	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000212	6	San Jacinto	P100-00-00-HC012	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000213	6	San Jacinto	K100-00-00-HC021	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000215	6	San Jacinto	U100-00-00-HC007	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000216	6	San Jacinto	U100-00-00-HC013	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000217	6	San Jacinto	K100-00-00-HC013	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000218	6	San Jacinto	G100-00-00-HC001	San Jacinto River Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000424)	
06-06-0000000219	6	San Jacinto	U100-00-00-HC001	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000220	6	San Jacinto	K100-00-00-HC011	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000192	Harris	06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000193	Harris	06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000194	Harris	06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000195	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000196	Harris	06-02-0401020210,06-02-0401020212	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000197	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000198	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000199	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000200	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000204	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000205	Harris	06-02-0401040704	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000206	Harris	06-02-0401020104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000207	Harris	06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000208	Harris	06-02-0401020106,06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000209	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000210	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000211	Harris	06-02-0401020107,06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000212	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000213	Harris	06-02-0401020104,06-02-0401040201	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000215	Harris	06-02-0401040203	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000216	Harris	06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000217	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000218	Harris	06-02-0401040702	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000219	Harris	06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000220	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000221	6	San Jacinto	Q100-00-00-HC002	Cedar Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000221)	
06-06-0000000222	6	San Jacinto	O100-00-00-HC001	Spring Gully and Goose Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000310)	
06-06-0000000224	6	San Jacinto	F100-00-00-HC001	Right-of-Way Acquisition, Design and Construction of General Drainage Improvements in Galveston Bay Watershed	
06-06-0000000225	6	San Jacinto	F100-00-00-HC003	Right-of-Way Acquisition, Design and Construction of General Drainage Improvements in Galveston Bay Watershed. (Cost included in EXPROJ_ID: 06000224)	
06-06-0000000226	6	San Jacinto	G100-00-00-HC003	San Jacinto River Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000424)	
06-06-0000000227	6	San Jacinto	J100-00-00-HC002	Spring Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000196)	
06-06-0000000228	6	San Jacinto	U100-00-00-HC005	Addicks Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000169)	
06-06-0000000230	6	San Jacinto	L500-09-00-E001	Right-of-Way Acquisition, Design, and Construction of Schiel Stormwater Detention Basin	
06-06-0000000233	6	San Jacinto	G103-00-00-P003	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	
06-06-0000000236	6	San Jacinto	C118-00-00-Y001	Right-of-Way Acquisition, Design, and Construction of Stormwater Detention Basin and Channel Conveyance Improvements Along Salt Water Ditch. (Cost included in EXPROJ_ID: 06000236)	
06-06-0000000237	6	San Jacinto	L100-00-00-E001	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000238	6	San Jacinto	L500-02-00-E002	Right-of-Way Acqusition, Design, and Construction of Kluge Stormwater Detention Basin	
06-06-0000000239	6	San Jacinto	L100-00-00-E002	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000241	6	San Jacinto	L500-06-00-E001	Right-of-Way Acquisition, Design, and Construction of Mueschke East Stormwater Detention Basin	
06-06-0000000243	6	San Jacinto	L500-11-00-E001	Construction of Hegar Stormwater Detention Basin Improvements	
06-06-0000000244	6	San Jacinto	L512-03-00-E001	ROW, Design and Construction of Mason Stormwater Detention Basin in Little Cypress Creek Watershed	
06-06-0000000248	6	San Jacinto	K700-01-00-E001	Identification, Design and Construction of the K700-01 Environmental Mitigation Bank. (Cost not provided)	
06-06-0000000249	6	San Jacinto	G103-00-00-P002	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	
06-06-0000000250	6	San Jacinto	C147-00-00-P002	Right-of-Way Acquisition, Design, and Construction of South Post Oak Stormwater Detention Basin and Channel Conveyance Improvements along C147-00-00. (Cost included in EXPROJ_ID: 06000629)	
06-06-0000000251	6	San Jacinto	L100-00-00-E003	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000221	Harris	06-02-0402030106	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000222	Harris	06-02-0401040705	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000224	Harris	06-02-0402040100	Proposed	$ 4,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000225	Harris	06-02-0402040100	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000226	Harris	06-02-0401040704	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000227	Harris	06-02-0401020209	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000228	Harris	06-02-0401040201	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000230	Harris	06-02-0401020105	Ongoing	$ 16,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000233	Harris		Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000236	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000237	Harris	06-02-0401020104,06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000238	Harris	06-02-0401020105	Ongoing	$ 11,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000239	Harris	06-02-0401020106,06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000241	Harris	06-02-0401020105	Ongoing	$ 15,900,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000243	Harris	06-02-0401020105	Ongoing	$ 11,800,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000244	Harris	06-02-0401020105	Ongoing	$ 13,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000248	Harris	06-02-0401020103,06-02-0401040202	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000249	Harris		Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000250	Harris	06-02-0401040501	Ongoing	$ 115,525,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000251	Harris	06-02-0401020103,06-02-0401020104,06-02-0401020106,06-02-0401020101,06-02-0401020105,06-02-0401020201,06-02-0401020205,06-02-0401020210	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000254	6	San Jacinto	W100-00-00-P011	St. George Place/TIRZ 1 Drainage Improvements Study. (Cost not provided)	
06-06-0000000255	6	San Jacinto	E100-00-00-E004	Design and Construction of Corps of Engineers White Oak Bayou Section 211 (f) Project	
06-06-0000000256	6	San Jacinto	P118-00-00-P005	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000260	6	San Jacinto	P132-00-00-X007	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000261	6	San Jacinto	G103-38-01-X014	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	
06-06-0000000262	6	San Jacinto	G103-09-00-X001	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	
06-06-0000000263	6	San Jacinto	G103-38-00-X021	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	
06-06-0000000264	6	San Jacinto	G108-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000266	6	San Jacinto	P138-01-00-X004	Planning, Right-of-Way Acquisition, Design and Construction of Channel Conveyance Improvements along P138-01-01	
06-06-0000000267	6	San Jacinto	P100-00-00-X105	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000268	6	San Jacinto	P100-00-00-X104	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000269	6	San Jacinto	L100-00-00-X008	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000270	6	San Jacinto	L100-00-00-X007	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000271	6	San Jacinto	L100-00-00-X006	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000272	6	San Jacinto	K133-00-00-X024	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000273	6	San Jacinto	K131-02-00-X022	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000274	6	San Jacinto	K131-00-00-X019	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000275	6	San Jacinto	K127-00-00-X012	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000276	6	San Jacinto	K120-03-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000277	6	San Jacinto	K117-00-00-X001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000278	6	San Jacinto	K116-00-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000279	6	San Jacinto	K112-01-00-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000280	6	San Jacinto	K112-00-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000281	6	San Jacinto	E117-00-00-X023	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000282	6	San Jacinto	P118-28-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000283	6	San Jacinto	L100-00-00-X007	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000287	6	San Jacinto	D103-02-00-X001	HCFCD 2018 Bond Program. (Cost not provided)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000254	Harris	06-02-0401040305,06-02-0401040303	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000255	Harris	06-02-0401040302,06-02-0401040301	Ongoing	$ 124,000,000.00	Yes	HCFCD Bond	2025	Reduction of flood risk.
06-06-0000000256	Harris	06-02-0401040605,06-02-0401040601,06-02-0401040302,06-02-0401040604,06-02-0401040606,06-02-0401040304,06-02-0401040603,06-02-0401040701	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000260	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000261	Harris	06-02-0401010501	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000262	Harris	06-02-0401040704	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000263	Harris	06-02-0401010501	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000264	Harris	06-02-0401040703	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000266	Harris	06-02-0401040603	Ongoing	$ 5,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000267	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000268	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000269	Harris	06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000270	Harris	06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000271	Harris	06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000272	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000273	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000274	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000275	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000276	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000277	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000278	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000279	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000280	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000281	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000282	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000283	Harris	06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000287	Harris	06-02-0401040402	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000289	6	San Jacinto	D120-00-00-X018	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000290	6	San Jacinto	D122-00-00-X015	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000291	6	San Jacinto	D134-00-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000293	6	San Jacinto	W140-04-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000294	6	San Jacinto	W142-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000295	6	San Jacinto	W156-00-00-X021	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000296	6	San Jacinto	W165-00-00-X007	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000297	6	San Jacinto	W167-00-00-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000298	6	San Jacinto	K124-00-00-X036	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000299	6	San Jacinto	K124-00-00-X042	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000300	6	San Jacinto	K124-00-00-X043	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000301	6	San Jacinto	K124-02-03-X001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000302	6	San Jacinto	K127-00-00-X014	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000303	6	San Jacinto	P118-00-00-X054	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000306	6	San Jacinto	U107-00-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000307	6	San Jacinto	U102-00-00-X024	Planning, Right-of-Way Acquisition, Design, and Construction for Ultimate Conveyance on Bear Creek	
06-06-0000000309	6	San Jacinto	O101-01-00-E002	City of Baytown Drainage Improvements. (Cost not provided)	
06-06-0000000310	6	San Jacinto	O100-00-00-HC002	Spring Gully and Goose Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000310)	
06-06-0000000311	6	San Jacinto	G103-00-00-Y007	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	
06-06-0000000312	6	San Jacinto	P518-26-01-E001	Construction of P518-26 Stormwater Detention Basin. (Cost included in EXPROJ_ID: 06000312)	
06-06-0000000313	6	San Jacinto	K100-00-00-G002	Cypress Creek Subdivision Improvements. (Costs included in EXPROJ_ID: 06000046)	
06-06-0000000314	6	San Jacinto	W100-00-00-W002	Buffalo Bayou Park Revegetation and Biostabilization. (Cost not provided)	
06-06-0000000317	6	San Jacinto	A100-00-00-HC003	Clear Creek Flood Mitigation Projects. (Cost not provided)	
06-06-0000000320	6	San Jacinto	D112-00-00-E001	Drainage Improvements in Westbury. (Cost not provided)	
06-06-0000000322	6	San Jacinto	P500-00-00-E001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000323	6	San Jacinto	O101-01-00-E001	City of Baytown Drainage Improvements. (Cost not provided)	
06-06-0000000324	6	San Jacinto	A125-00-00-E001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000325	6	San Jacinto	G100-00-00-HC002	San Jacinto River Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000424)	
06-06-0000000326	6	San Jacinto	F100-00-00-HC004	Right-of-Way Acquisition, Design and Construction of General Drainage Improvements in Galveston Bay Watershed. (Cost included in EXPROJ_ID: 06000224)	
06-06-0000000327	6	San Jacinto	F100-00-00-HC002	Right-of-Way Acquisition, Design and Construction of General Drainage Improvements in Galveston Bay Watershed. (Cost included in EXPROJ_ID: 06000224)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000289	Harris	06-02-0401040401	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000290	Harris	06-02-0401040401	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000291	Harris	06-02-0401040401	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000293	Harris	06-02-0401040303	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000294	Harris	06-02-0401040305	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000295	Harris	06-02-0401040303	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000296	Harris	06-02-0401040303	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000297	Harris	06-02-0401040303	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000298	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000299	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000300	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000301	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000302	Harris	06-02-0401020107	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000303	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000306	Harris	06-02-0401040201	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000307	Harris	06-02-0401040202	Proposed	$ 25,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000309	Harris	06-02-0401040706	Ongoing		Yes	HCFCD Bond	2025	Reduction of flood risk.
06-06-0000000310	Harris	06-02-0401040705,06-02-0402030104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000311	Harris		Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000312	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000313	Harris	06-02-0401020106,06-02-0401020107,06-02-0401040601,06-02-0401040301	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000314	Harris	06-02-0401040703,06-02-0401040402,06-02-0401040305,06-02-0401040304	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000317	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000320	Harris	06-02-0401040401	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000322	Harris	06-02-0401040601,06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000323	Harris	06-02-0401040706	Ongoing		Yes	HCFCD Bond	2026	Reduction of flood risk.
06-06-0000000324	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000325	Harris	06-02-0401040704,06-02-0402030104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000326	Harris	06-02-0402040100	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000327	Harris	06-02-0402040100	Proposed		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000328	6	San Jacinto	P118-00-00-HC001	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000329	6	San Jacinto	L100-00-00-HC004	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000330	6	San Jacinto	L100-00-00-HC003	Little Cypress Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000329)	
06-06-0000000331	6	San Jacinto	P100-00-00-HC015	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000333	6	San Jacinto	L500-01-00-E003	Design and Construction of Zube Park Stormwater Detention Basin. (Cost included in EXPROJ_ID: 06000334)	
06-06-0000000334	6	San Jacinto	L500-01-00-E002	Design and Construction of Zube Park Stormwater Detention Basin	
06-06-0000000335	6	San Jacinto	E501-02-00-E001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000337	6	San Jacinto	H500-01-00-E003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000338	6	San Jacinto	U100-00-00-G002	Existing Flood Project. (Cost not provided)	
06-06-0000000339	6	San Jacinto	L512-01-00-E002	Construction of Kleb Woods Stormwater Detention Basin Improvements. (Cost included in EXPROJ_ID: 06000377)	
06-06-0000000343	6	San Jacinto	P118-08-00-E001	Right-of-Way, Design, and Construction of Channel Conveyance Improvements on P118-08-00. (Cost included in EXPROJ_ID: 06000621)	
06-06-0000000344	6	San Jacinto	P518-10-00-E002	Design and Construction of Stormwater Detention Basin and Associated Channel Improvements	
06-06-0000000345	6	San Jacinto	C144-00-00-P001	Planning, Right-of-Way Acquisition, Design and Construction along C144-00-00. (Cost not provided)	
06-06-0000000346	6	San Jacinto	E105-00-00-P001	Partnership Project with City of Houston on Planning, Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements along E105-00-00. (Cost not provided)	
06-06-0000000352	6	San Jacinto	J100-00-00-R002	Spring Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000196)	
06-06-0000000355	6	San Jacinto	B512-02-00-E001	Brookglen Stormwater Detention Basin. (Cost not provided)	
06-06-0000000356	6	San Jacinto	C506-01-00-E004	Design and Construction of South Shaver Stormwater Detention Basin. (Cost not provided)	
06-06-0000000357	6	San Jacinto	D133-00-00-P001	Planning, Right-of-Way, Design and Construction of Conveyance Improvements along Bintiff Ditch	
06-06-0000000358	6	San Jacinto	G112-00-00-P001	Planning, Right-of-Way, Design and Construction of Conveyance Improvements along Panther Creek	
06-06-0000000359	6	San Jacinto	D118-00-00-P001	Planning, Right-of-Way Acqusition, Design and Construction of Channel Conveyance Improvements on Keegans Bayou	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000328	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000329	Harris	06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000330	Harris	06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000331	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000333	Harris	06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000334	Harris	06-02-0401020105	Ongoing	$ 1,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000335	Harris	06-02-0401040304	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000337	Harris	06-02-0401040701	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000338	Harris	06-02-0401040202,06-02-0401040104,06-02-0401040201,06-02-0401040302,06-02-0401040203,06-02-0401040303	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000339	Harris	06-02-0401020105	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000343	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000344	Harris	06-02-0401040604	Ongoing	$ 8,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000345	Harris	06-02-0401040501	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000346	Harris	06-02-0401040304	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000352	Harris		Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000355	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond	2027	Reduction of flood risk.
06-06-0000000356	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000357	Harris	06-02-0401040401	Ongoing	$ 30,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000358	Harris	06-02-0401040703,06-02-0401040701	Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000359	Harris	06-02-0401040401	Ongoing	$ 32,500,000.00	Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000361	6	San Jacinto	Q100-00-00-G001	Cedar Bayou Subdivision Drainage Improvements	
06-06-0000000362	6	San Jacinto	P118-00-00-G001	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000363	6	San Jacinto	P118-00-00-P005	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000364	6	San Jacinto	Q122-00-00-E001	Right-of-Way Acquisition, Design and Construction of Channel Conveyance Improvements along Clawson Ditch and Q124-00-00	
06-06-0000000365	6	San Jacinto	Q130-00-00-E001	Right-of-Way Acquisition, Design and Construction of Channel Conveyance Improvements along Q130-00-00	
06-06-0000000366	6	San Jacinto	Q134-00-00-E001	Planning, Right-of-Way Acquisition, Design and Construction of Channel Conveyance Improvements on Q134-00-00 and Q34-00-01	
06-06-0000000367	6	San Jacinto	C116-00-00-P001	Planning, Right-of-Way Acquisition, Design and Construction along C116-00-00. (Cost not provided)	
06-06-0000000368	6	San Jacinto	U500-00-00-P001	Right-of-Way Acquisition, Design, and Construction of a Retention Area	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000361	Harris	06-02-0401010502,06-02-0401010501,06-02-0401030205,06-02-0401040705,06-02-0401040706,06-02-0401040704,06-02-0402030105,06-02-0402030104,06-02-0402030103,06-02-0402030106,06-02-0402030102,06-02-0402030200,06-02-0402030101	Proposed	$ 2,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000362	Harris	06-02-0401040605,06-02-0401040302,06-02-0401040604,06-02-0401040606,06-02-0401040304,06-02-0401040603,06-02-0401040701	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000363	Harris	06-02-0401040605,06-02-0401040302,06-02-0401040604,06-02-0401040606,06-02-0401040304,06-02-0401040603,06-02-0401040701	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000364	Harris	06-02-0402030104	Ongoing	$ 19,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000365	Harris	06-02-0402030103	Ongoing	$ 18,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000366	Harris	06-02-0402030102	Ongoing	$ 11,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000367	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000368	Harris	06-02-0401020102,06-02-0401020103,06-02-0401020104,06-02-0401020106,06-02-0401020101,06-02-0401020105,06-02-0401020201,06-02-0401040102,06-02-0401040202,06-02-0401040201,06-02-0401040101,06-02-0401040203,06-02-0401040301	Ongoing	$ 15,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000369	6	San Jacinto	Q700-01-00-Y002	Design and Construction of Crosby Eastgate Environmental Mitigation Bank	
06-06-0000000370	6	San Jacinto	G103-48-01-X003	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	
06-06-0000000371	6	San Jacinto	B104-00-00-E002	Right-of-Way, Design and Construction of Conveyance Improvements Along Horsepen Bayou	
06-06-0000000372	6	San Jacinto	A520-03-00-E003	Construction of South Belt Stormwater Detention Basin Along Beamer Road Ditch and Dagg Road Stormwater Detention Basin on Clear Creek. (Dagg road stormwater detention basin costs included in EXPROJ_ID: 06000003).	
06-06-0000000373	6	San Jacinto	E125-00-00-X007	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000377	6	San Jacinto	L512-01-00-E001	Construction of Kleb Woods Stormwater Detention Basin Improvements	
06-06-0000000378	6	San Jacinto	T100-00-00-G001	Barker Reservoir Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000045)	
06-06-0000000379	6	San Jacinto	L500-10-00-E001	Construction of Mueschke West Stormwater Detention Basin Improvements	
06-06-0000000380	6	San Jacinto	F100-00-00-P002	Right-of-Way Acquisition, Design and Construction of General Drainage Improvements in Galveston Bay Watershed. (Cost included in EXPROJ_ID: 06000224)	
06-06-0000000381	6	San Jacinto	I100-00-00-P002	Right-of-Way Acquisition, Design and Construction of General Drainage Improvements in Vince Bayou Watershed. (Cost included in EXPROJ_ID: 06000056)	
06-06-0000000382	6	San Jacinto	J100-00-00-P002	Spring Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000196)	
06-06-0000000384	6	San Jacinto	O100-00-00-P003	Spring Gully and Goose Creek Subdivision Drainage Improvements	
06-06-0000000385	6	San Jacinto	O200-00-00-P002	Right-of-Way Acquisition, design, and Construction of General Drainage Improvements in Spring Gully	
06-06-0000000386	6	San Jacinto	R100-00-00-P004	Jackson Bayou Subdivision Drainage Improvements	
06-06-0000000387	6	San Jacinto	S100-00-00-P002	Storm Repairs in Luce Bayou Watershed	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000369	Harris	06-02-0402030103,06-02-0402030102	Ongoing	$ 1,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000370	Harris	06-02-0401010501	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000371	Harris	06-02-0402040100	Ongoing	$ 6,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000372	Harris	06-02-0402040100	Ongoing	$ 15,950,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000373	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000377	Harris	06-02-0401020105	Ongoing	$ 3,700,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000378	Harris	06-02-0401040104,06-02-0401040203	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000379	Harris	06-02-0401020105	Ongoing	$ 10,600,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000380	Harris	06-02-0401040706,06-02-0402040100	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000381	Harris	06-02-0401040703,06-02-0401040502,06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000382	Harris		Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000384	Harris	06-02-0401040705,06-02-0401040706,06-02-0401040704,06-02-0402030105,06-02-0402030104,06-02-0402030106	Ongoing	$ 8,650,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000385	Harris	06-02-0401040705,06-02-0401040706,06-02-0401040704,06-02-0402030105,06-02-0402030104,06-02-0402030106	Proposed	$ 500,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000386	Harris	06-02-0401010502,06-02-0401040704,06-02-0402030104,06-02-0402030103,06-02-0402030102	Proposed	$ 3,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000387	Harris	06-02-0401010501,06-02-0401030205,06-02-0401030402,06-02-0401030203,06-02-0401030204,06-02-0402030102,06-02-0402030101	Proposed	$ 75,000.00	Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000389	6	San Jacinto	L100-00-00-P002	Little Cypress Creek Subdivision Drainage Improvements	
06-06-0000000390	6	San Jacinto	P500-06-00-E005	Design and Construction of Lauder Stormwater Detention basin Improvements	
06-06-0000000391	6	San Jacinto	P100-00-00-E012	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000394	6	San Jacinto	P500-04-00-E005	Design and Construction of Aldine-Westfield Stormwater Detention Basin Improvements	
06-06-0000000395	6	San Jacinto	U100-00-00-G003	Existing Flood Project. (Cost not provided)	
06-06-0000000396	6	San Jacinto	C106-03-00-C006	Planning, Right-of-Way Acquisition, Design and Construction of Improvements for the Tributaries of C106-00-00	
06-06-0000000397	6	San Jacinto	C106-03-00-C007	Planning, Right-of-Way Acquisition, Design and Construction of Improvements for the Tributaries of C106-00-00. (Cost included in EXPROJ_ID: 06000396)	
06-06-0000000398	6	San Jacinto	P152-00-00-E002	Drainage Improvements within Water Control and Improvement District 109. (Cost not provided)	
06-06-0000000399	6	San Jacinto	W129-00-00-C003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000400	6	San Jacinto	B513-02-00-E003	Design and Construction of the Baywood Stormwater Detention Basin	
06-06-0000000402	6	San Jacinto	U500-01-00-E001	Design and Construction of Little York Stormwater Detention Basin	
06-06-0000000403	6	San Jacinto	U101-00-00-P003	Right-of-Way Acquisition, Design and Construction of Channel Conveyance Improvements and Bypass Channel for South Mayde Creek	
06-06-0000000407	6	San Jacinto	E101-00-00-P002	Planning, Right-of-Way Acquisition, Design and Construction of Little White Oak Bayou Channel Conveyance Improvements. (Cost included in EXPROJ_ID: 06000115)	
06-06-0000000409	6	San Jacinto	P133-00-00-Y003	Design and Construction of the Smith Road Channel Diversion	
06-06-0000000410	6	San Jacinto	A100-00-00-G002	Clear Creek Flood Mitigation Projects. (Cost not provided)	
06-06-0000000411	6	San Jacinto	A120-00-00-C003	Beamer Road Ditch Improvements. (Cost not provided)	
06-06-0000000412	6	San Jacinto	P100-00-00-G001	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000413	6	San Jacinto	P545-01-00-E005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000414	6	San Jacinto	P500-08-00-E001	HCFCD 2018 Bond Program. (Cost not provided)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000389	Harris	06-02-0401020103,06-02-0401020104,06-02-0401020106,06-02-0401020101,06-02-0401020105,06-02-0401020201,06-02-0401020205,06-02-0401020210	Ongoing	$ 14,590,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000390	Harris	06-02-0401040603	Ongoing	$ 16,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000391	Harris	06-02-0401040601,06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000394	Harris	06-02-0401040603	Ongoing	$ 1,212,240.00	Yes	HCFCD Bond	2025	Reduction of flood risk.
06-06-0000000395	Harris	06-02-0401040202,06-02-0401040201,06-02-0401040302,06-02-0401040203,06-02-0401040303,06-02-0401040301	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000396	Harris	06-02-0401040502	Ongoing	$ 2,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000397	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000398	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000399	Harris	06-02-0401040402,06-02-0401040305	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000400	Harris	06-02-0402040100	Ongoing	$ 2,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000402	Harris	06-02-0401040201	Ongoing	$ 3,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000403	Harris	06-02-0401040203	Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000407	Harris	06-02-0401020104,06-02-0401020106,06-02-0401040703,06-02-0401040601,06-02-0401040305,06-02-0401040302,06-02-0401040604,06-02-0401040303,06-02-0401040304,06-02-0401040301,06-02-0401040701	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000409	Harris	06-02-0401040603	Ongoing	$ 8,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000410	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000411	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000412	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000413	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000414	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000415	6	San Jacinto	B100-00-00-P003	Armand Bayou Right-of-Way Acquisition and Floodplain Preservation. (Cost included in EXPROJ_ID: 06000004)	
06-06-0000000416	6	San Jacinto	E500-21-00-E001	Construction of Inwood Forest Stormwater Detention Basin	
06-06-0000000418	6	San Jacinto	E521-04-00-E001	Construction of Inwood Forest East Stormwater Detention Basin	
06-06-0000000419	6	San Jacinto	P118-21-00-E001	Right-of-Way, Design, and Construction of Channel Conveyance Improvements on P118-21-00	
06-06-0000000421	6	San Jacinto	P100-00-00-E011	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000423	6	San Jacinto	P118-09-00-E001	Right-of-Way, Design, and Construction of Channel Conveyance Improvements on P118-09-00. (Cost included in EXPROJ_ID: 06000620)	
06-06-0000000424	6	San Jacinto	G100-00-00-HC004	San Jacinto River Subdivision Drainage Improvements	
06-06-0000000426	6	San Jacinto	M124-00-00-E001	Design and Construction of Channel Conveyance Improvements on M124-00-00 Downstream of SH 249	
06-06-0000000427	6	San Jacinto	P100-00-00-HC026	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000428	6	San Jacinto	R100-00-00-HC003	Jackson Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000386)	
06-06-0000000429	6	San Jacinto	Q100-00-00-HC003	Cedar Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000221)	
06-06-0000000431	6	San Jacinto	U502-02-00-E007	John Paul Landing Central Cell Excavation. (Cost not provided)	
06-06-0000000436	6	San Jacinto	P100-00-00-HC010	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000437	6	San Jacinto	P100-00-00-HC025	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000438	6	San Jacinto	A500-04-00-E001	Right-of-Way Acquisition, Design and Construction of Hughes Stormwater Detention Basin on Clear Creek	
06-06-0000000439	6	San Jacinto	P100-00-00-HC007	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000440	6	San Jacinto	J100-00-00-HC003	Spring Creek Subdivision Drainage Improvements	
06-06-0000000441	6	San Jacinto	G100-00-00-HC005	San Jacinto River Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000424)	
06-06-0000000442	6	San Jacinto	R100-00-00-HC002	Jackson Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000386)	
06-06-0000000443	6	San Jacinto	P100-00-00-HC024	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000444	6	San Jacinto	J109-01-00-X008	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000445	6	San Jacinto	K142-00-00-X030	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000446	6	San Jacinto	K142-00-00-X036	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000447	6	San Jacinto	K142-00-00-X038	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000448	6	San Jacinto	K142-00-00-X039	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000449	6	San Jacinto	K145-00-00-X014	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000450	6	San Jacinto	K145-00-00-X017	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000451	6	San Jacinto	P118-00-00-X055	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000452	6	San Jacinto	P118-00-00-X056	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000453	6	San Jacinto	J131-00-00-X017	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000454	6	San Jacinto	K131-00-00-X024	HCFCD 2018 Bond Program. (Cost not provided)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000415	Harris	06-02-0401040703,06-02-0401040706,06-02-0402040100	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000416	Harris	06-02-0401040302	Ongoing	$ 7,800,000.00	Yes	HCFCD Bond	2026	Reduction of flood risk.
06-06-0000000418	Harris	06-02-0401040302	Ongoing	$ 8,350,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000419	Harris	06-02-0401040604	Ongoing	$ 14,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000421	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000423	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000424	Harris	06-02-0401040704	Ongoing	$ 6,450,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000426	Harris	06-02-0401020210	Ongoing	$ 21,000,000.00	Yes	HCFCD Bond	2028	Reduction of flood risk.
06-06-0000000427	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000428	Harris	06-02-0401040704	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000429	Harris	06-02-0402030102	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000431	Harris	06-02-0401040202	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000436	Harris	06-02-0401040605	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000437	Harris	06-02-0401040604,06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000438	Harris	06-02-0402040100	Ongoing	$ 6,100,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000439	Harris	06-02-0401040605	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000440	Harris	06-02-0401020210,06-02-0401020212	Proposed	$ 6,285,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000441	Harris	06-02-0401010502,06-02-0401040704	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000442	Harris	06-02-0401040704	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000443	Harris	06-02-0401040605	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000444	Harris	06-02-0401020213	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000445	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000446	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000447	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000448	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000449	Harris	06-02-0401020104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000450	Harris	06-02-0401020104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000451	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000452	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000453	Harris	06-02-0401020209	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000454	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000455	6	San Jacinto	K131-02-00-X024	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000456	6	San Jacinto	K131-04-00-X009	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000458	6	San Jacinto	M109-00-00-X007	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000459	6	San Jacinto	M109-00-00-X008	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000460	6	San Jacinto	M109-01-01-X001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000461	6	San Jacinto	M114-00-00-X002	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000462	6	San Jacinto	M122-00-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000463	6	San Jacinto	P100-00-00-X125	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000464	6	San Jacinto	P100-00-00-X127	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000465	6	San Jacinto	P100-00-00-X128	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000466	6	San Jacinto	P100-00-00-X132	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000467	6	San Jacinto	P145-00-00-X014	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000468	6	San Jacinto	P145-00-00-X015	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000469	6	San Jacinto	P145-03-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000470	6	San Jacinto	P146-00-00-X002	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000471	6	San Jacinto	P147-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000472	6	San Jacinto	P147-00-00-X011	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000473	6	San Jacinto	P147-05-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000474	6	San Jacinto	P149-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000475	6	San Jacinto	P151-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000476	6	San Jacinto	P164-00-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000477	6	San Jacinto	P100-00-00-X121	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000478	6	San Jacinto	P100-00-00-X122	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000479	6	San Jacinto	P100-00-00-X123	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000480	6	San Jacinto	P118-13-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000481	6	San Jacinto	P118-13-02-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000482	6	San Jacinto	P135-00-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000483	6	San Jacinto	P140-04-03-X007	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000484	6	San Jacinto	P155-00-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000485	6	San Jacinto	P155-00-00-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000486	6	San Jacinto	P156-00-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000487	6	San Jacinto	P118-09-00-X011	Right-of-Way, Design, and Construction of Channel Conveyance Improvements on P118-09-00. (Cost included in EXPROJ_ID: 06000620)	
06-06-0000000488	6	San Jacinto	K143-00-00-X013	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000489	6	San Jacinto	G103-38-00-X020	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	
06-06-0000000490	6	San Jacinto	G103-38-01-X010	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000455	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000456	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000458	Harris	06-02-0401020210	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000459	Harris	06-02-0401020210	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000460	Harris	06-02-0401020210	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000461	Harris	06-02-0401020210	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000462	Harris	06-02-0401020210	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000463	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000464	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000465	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000466	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000467	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000468	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000469	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000470	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000471	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000472	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000473	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000474	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000475	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000476	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000477	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000478	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000479	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000480	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000481	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000482	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000483	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000484	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000485	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000486	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000487	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000488	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000489	Harris	06-02-0401010501	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000490	Harris	06-02-0401010501	Proposed		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000491	6	San Jacinto	G103-41-00-X008	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study. (Cost included in EXPROJ_ID: 06000587)	
06-06-0000000492	6	San Jacinto	G104-08-00-X001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000493	6	San Jacinto	G110-00-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000494	6	San Jacinto	H102-00-00-X009	Planning, Right-of-Way, Design and Construction of a Diversion Channel from H102-00-00 to H100-00-00 through Galena Park	
06-06-0000000497	6	San Jacinto	H110-00-00-X008	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000500	6	San Jacinto	N109-01-00-X001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000501	6	San Jacinto	P100-00-00-X124	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000502	6	San Jacinto	P102-00-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000503	6	San Jacinto	P105-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000504	6	San Jacinto	P107-00-00-X018	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000505	6	San Jacinto	P107-00-00-X019	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000506	6	San Jacinto	P118-05-00-X004	Halls Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000125)	
06-06-0000000507	6	San Jacinto	P121-00-00-X014	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000508	6	San Jacinto	P121-01-00-X008	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000509	6	San Jacinto	P125-00-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000510	6	San Jacinto	P127-00-00-X016	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000511	6	San Jacinto	P130-00-00-X027	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000512	6	San Jacinto	P130-00-00-X028	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000513	6	San Jacinto	P130-03-00-X002	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000514	6	San Jacinto	Q105-00-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000515	6	San Jacinto	Q112-00-00-X020	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000518	6	San Jacinto	E112-00-00-X014	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000520	6	San Jacinto	E132-00-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000521	6	San Jacinto	E141-00-00-X025	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000522	6	San Jacinto	E141-00-00-X026	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000529	6	San Jacinto	U120-00-00-X021	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000531	6	San Jacinto	C100-00-00-B002	Sims Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000531)	
06-06-0000000532	6	San Jacinto	O100-00-00-B002	Spring Gully and Goose Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000310)	
06-06-0000000533	6	San Jacinto	O100-00-00-B003	Spring Gully and Goose Creek Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000310)	
06-06-0000000534	6	San Jacinto	E141-00-00-X024	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000535	6	San Jacinto	K146-00-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000538	6	San Jacinto	D129-00-00-X021	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000539	6	San Jacinto	D131-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000542	6	San Jacinto	E124-00-00-X004	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000543	6	San Jacinto	P130-06-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000544	6	San Jacinto	P161-00-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000545	6	San Jacinto	U201-01-01-X001	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000546	6	San Jacinto	B115-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000553	6	San Jacinto	C106-00-00-X022	Planning, Right-of-Way Acquisition, Design and Construction of Improvements for the Tributaries of C106-00-00. (Cost included in EXPROJ_ID: 06000396)	
06-06-0000000555	6	San Jacinto	K145-00-00-X019	HCFCD 2018 Bond Program. (Cost not provided)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000491	Harris	06-02-0401010501	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000492	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000493	Harris	06-02-0401040703	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000494	Harris	06-02-0401040701	Proposed	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000497	Harris	06-02-0401040701	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000500	Harris	06-02-0401040702	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000501	Harris	06-02-0401040605	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000502	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000503	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000504	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000505	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000506	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000507	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000508	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000509	Harris	06-02-0401040605	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000510	Harris	06-02-0401040605	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000511	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000512	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000513	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000514	Harris	06-02-0402030106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000515	Harris	06-02-0402030106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000518	Harris	06-02-0401040301	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000520	Harris	06-02-0401040301	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000521	Harris	06-02-0401040301	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000522	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000529	Harris	06-02-0401040201	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000531	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000532	Harris	06-02-0401040706	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000533	Harris	06-02-0401040706	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000534	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000535	Harris	06-02-0401020104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000538	Harris	06-02-0401040401	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000539	Harris	06-02-0401040401	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000542	Harris	06-02-0401040302	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000543	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000544	Harris	06-02-0401040601	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000545	Harris	06-02-0401040203	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000546	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000553	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000555	Harris	06-02-0401020104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000556	6	San Jacinto	K137-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000557	6	San Jacinto	N118-00-00-X009	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000558	6	San Jacinto	P121-01-00-X009	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000559	6	San Jacinto	P130-00-00-X029	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000560	6	San Jacinto	P130-05-00-X008	ROW, Design, and Construction of Stormwater Detention Basin Near P130-05	
06-06-0000000561	6	San Jacinto	P130-09-00-X009	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000562	6	San Jacinto	P130-00-00-X026	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000563	6	San Jacinto	T101-00-00-X026	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000564	6	San Jacinto	W167-04-00-X005	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000568	6	San Jacinto	C106-00-00-X030	Planning, Right-of-Way Acquisition, Design and Construction of Improvements for the Tributaries of C106-00-00. (Cost included in EXPROJ_ID: 06000396)	
06-06-0000000570	6	San Jacinto	D122-00-00-X016	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000571	6	San Jacinto	D140-00-00-X012	Planning, Right-of-Way Acqusition, Design and Construction of Channel Conveyance Improvements on Fondren Diversion Channel	
06-06-0000000572	6	San Jacinto	P100-00-00-X118	Greens Bayou Subdivision Drainage Improvements. (Cost included in EXPROJ_ID: 06000154)	
06-06-0000000573	6	San Jacinto	B112-00-00-X010	Right-of-Way Acquisition, Design and Construction of B112-00-00 and Tributaries Conveyance Improvements. (Cost included in EXPROJ_ID: 06000047)	
06-06-0000000574	6	San Jacinto	B112-00-00-X009	Right-of-Way Acquisition, Design and Construction of B112-00-00 and Tributaries Conveyance Improvements. (Cost included in EXPROJ_ID: 06000047)	
06-06-0000000575	6	San Jacinto	B106-00-00-X011	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000577	6	San Jacinto	P103-03-00-X002	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000578	6	San Jacinto	B115-00-00-X011	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000579	6	San Jacinto	I101-00-00-X018	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000580	6	San Jacinto	P118-36-00-X007	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000582	6	San Jacinto	P118-19-00-X011	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000583	6	San Jacinto	C106-07-00-X002	Planning, Right-of-Way Acquisition, Design and Construction of Improvements for the Tributaries of C106-00-00. (Cost included in EXPROJ_ID: 06000396)	
06-06-0000000584	6	San Jacinto	P158-00-00-X002	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000586	6	San Jacinto	B100-00-00-X011	Armand Bayou Right-of-Way Acquisition and Floodplain Preservation. (Cost included in EXPROJ_ID: 06000004)	
06-06-0000000587	6	San Jacinto	G103-24-03-X006	Funding for Future Partnership Projects Based on Results of Study - for Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements in San Jacinto River Watershed Study	
06-06-0000000588	6	San Jacinto	P118-32-01-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000589	6	San Jacinto	P130-02-04-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000592	6	San Jacinto	T101-00-00-X062	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000593	6	San Jacinto	T103-00-00-X010	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000594	6	San Jacinto	T101-08-00-X006	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000598	6	San Jacinto	O129-00-00-X002	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000601	6	San Jacinto	E101-00-00-X030	Planning, Right-of-Way Acquisition, Design and Construction of Little White Oak Bayou Channel Conveyance Improvements. (Cost included in EXPROJ_ID: 06000115)	
06-06-0000000603	6	San Jacinto	B504-01-00-X003	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000604	6	San Jacinto	C106-10-00-X004	Planning, Right-of-Way Acquisition, Design and Construction of Improvements for the Tributaries of C106-00-00. (Cost included in EXPROJ_ID: 06000396)	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000556	Harris	06-02-0401020106	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000557	Harris	06-02-0401040702	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000558	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000559	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000560	Harris	06-02-0401040602	Ongoing	$ 3,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000561	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000562	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000563	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000564	Harris	06-02-0401040303	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000568	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000570	Harris	06-02-0401040401	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000571	Harris	06-02-0401040401	Ongoing	$ 30,500,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000572	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000573	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000574	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000575	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000577	Harris	06-02-0401040606	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000578	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000579	Harris	06-02-0401040703	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000580	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000582	Harris	06-02-0401040604	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000583	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000584	Harris	06-02-0401040603	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000586	Harris	06-02-0402040100	Proposed		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000587	Harris	06-02-0401010502	Proposed	$ 75,000,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000588	Harris	06-02-0401040302,06-02-0401040604,06-02-0401040304	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000589	Harris	06-02-0401040602	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000592	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000593	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000594	Harris	06-02-0401040104	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000598	Harris	06-02-0401040706	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000601	Harris	06-02-0401040304	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000603	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000604	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000608	6	San Jacinto	B112-02-00-X019	Right-of-Way Acquisition, Design and Construction of B112-00-00 and Tributaries Conveyance Improvements. (Cost included in EXPROJ_ID: 06000047)	
06-06-0000000609	6	San Jacinto	B113-00-00-X011	HCFCD 2018 Bond Program. (Cost not provided)	
06-06-0000000610	6	San Jacinto	C106-10-00-X009	Planning, Right-of-Way Acquisition, Design and Construction of Improvements for the Tributaries of C106-00-00. (Cost included in EXPROJ_ID: 06000396)	
06-06-0000000611	6	San Jacinto	C106-00-00-X025	Planning, Right-of-Way Acquisition, Design and Construction of Improvements for the Tributaries of C106-00-00. (Cost included in EXPROJ_ID: 06000396)	
06-06-0000000613	6	San Jacinto	Taylor Gully Flood Damage Reduction	Taylor Gully is a 2.5-mile channel that extends from Montgomery County and drains southeastward toward White Oak Creek, Caney Creek, and ultimately, the East Fork of the San Jacinto River. Currently, the Taylor Gully watershed has a 10-year LOS and has u	
06-06-0000000614	6	San Jacinto	Wynnewood Acres	Wynnewood Acres, a mostly residential area, is located northeast of downtown Houston and within the Green's Bayou Watershed. It has a total area of roughly 82 acres. A 2013 study determined a number of factors that are potentially causing flooding and	
06-06-0000000615	6	San Jacinto	Woodland Trails Basin	This project involves Planning, Preliminary Engineering, Right-Of-Way acquisition, Design and Construction of a detention basin along White Oak Bayou downstream of Fairbanks North Houston in Harris County in the White Oak Bayou Watershed.	
06-06-0000000616	6	San Jacinto	Dredging of Channels that Exit Into Lake Houston	Existing Flood Project	
06-06-0000000618	6	San Jacinto	Halls Bayou Drainage Project Bond C-26 & C-27	Right-of-Way, Design, and Construction of Channel Conveyance Improvements on P118-23-00 and P118-23-02	
06-06-0000000619	6	San Jacinto	Lauder Stormwater Detention Basin	Existing Flood Project	
06-06-0000000620	6	San Jacinto	Halls Bayou Drainage Project Bond C-24	Right-of-Way, Design, and Construction of Channel Conveyance Improvements on P118-09-00	
06-06-0000000621	6	San Jacinto	Halls Bayou Drainage Project Bond C-23	Right-of-Way, Design, and Construction of Channel Conveyance Improvements on P118-08-00	
06-06-0000000622	6	San Jacinto	Halls Bayou Drainage Project Bond C-01	Construction of P518-26 Stormwater Detention Basin	
06-06-0000000624	6	San Jacinto	Ralston Acres Subdivision Drainage Improvements	Existing Flood Project	
06-06-0000000626	6	San Jacinto	Northfield Place Subdivision Drainage Improvements	Existing Flood Project	
06-06-0000000627	6	San Jacinto	Oak Glen Place Subdivision Drainage Improvements	Existing Flood Project	
06-06-0000000628	6	San Jacinto	Sandpiper Village Subdivision Drainage Improvements	Existing Flood Project	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000608	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000609	Harris	06-02-0402040100	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000610	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000611	Harris	06-02-0401040502	Ongoing		Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000613	Harris		Proposed	$ 30,000,000.00	Yes	FIF	2026	Upgrade the conveyance capacity of the channel and provide a 100-year LOS. The project will benefit 400 structures, of which 387 will see direct benefit from 100-year inundations. An additional 62 structures will be indirectly benefited.
06-06-0000000614	Harris		Proposed	$ 12,261,900.00	Yes	FIF	2026	Storm pipes and box culverts to mitigate the 10-year and 100-year storm events.
06-06-0000000615	Harris		Proposed	$ 57,130,500.00	Yes	FIF		This stormwater detention basin facilitates completion of the federal project on White Oak Bayou which could reduce the risk of flooding for 1,800 structures in the 2% floodplain.
06-06-0000000616	Harris		Proposed	$ 50,000,000.00	Yes	FIF		Reduction of flood risk.
06-06-0000000618	Harris		Proposed	$ 28,000,000.00	Yes	FIF		Reduction of flood risk.
06-06-0000000619	Harris		Proposed	$ 26,569,500.00	Yes	FIF	2028	Reduction of flood risk.
06-06-0000000620	Harris		Proposed	$ 12,000,000.00	Yes	FIF		Reduction of flood risk.
06-06-0000000621	Harris		Proposed	$ 25,000,000.00	Yes	FIF		Reduction of flood risk.
06-06-0000000622	Harris		Proposed	$ 20,332,800.00	Yes	FIF		Reduction of flood risk.
06-06-0000000624	Harris		Proposed	$ 1,234,160.00	Yes	FIF		Reduction of flood risk.
06-06-0000000626	Harris		Proposed	$ 6,437,200.00	Yes	FIF	2025	Reduction of flood risk.
06-06-0000000627	Harris		Proposed	$ 1,130,410.00	Yes	FIF	2026	Reduction of flood risk.
06-06-0000000628	Harris		Proposed	$ 415,138.00	Yes	FIF		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000629	6	San Jacinto	C147/C547 Flood Risk Reduction Project	Right-of-Way Acquisition, Design, and Construction of South Post Oak Stormwater Detention Basin and Channel Conveyance Improvements along C147-00-00	
06-06-0000000630	6	San Jacinto	Greens Bayou Mid Reach	Existing Flood Project	
06-06-0000000631	6	San Jacinto	Catalina	Existing Flood Project	
06-06-0000000632	6	San Jacinto	Spring Shadows South	Existing Flood Project	
06-06-0000000633	6	San Jacinto	San Jacinto River Sand Trap Development Preliminary Design	Existing Flood Project	
06-06-0000000638	6	San Jacinto	Brookglen Subdivision Drainage Improvements	The Brookglen subdivision is located along the western boundary of the City of La Porte, generally bounded on the north by Spencer Hwy, on the east by Canada St., on the south by Fairmont Pkwy, and on the west by Luella Blvd (ref. attached area map). The	
06-06-0000000639	6	San Jacinto	North Alexander Drainage Improvements	The North Alexander drainage area experiences frequent flooding due to insufficient storm sewer capacity. The area has been identified in the 2020 Master Drainage Plan as a critical area due to frequent complaints and maintenance history. There has been	
06-06-0000000640	6	San Jacinto	Texas Avenue Drainage Improvements	The City of Baytown has been impacted by various disaster events since 2008 (Hurricane Ike, 2015 & 2016 Floods, Hurricane Harvey, and Tropical Storm Imelda). The geographic location of the City makes it sThe identified 67-acre project area is in a low a	
06-06-0000000641	6	San Jacinto	Danubina Drainage Improvements	The Danubina drainage area experiences frequent flooding due to insufficient storm sewer and channel capacity, and street elevations at or above the finished floor elevations of homes. The area has been identified in the 2020 and 2010 Master Drainage Pla	
06-06-0000000642	6	San Jacinto	City of Friendswood - Clear Creek Inline & Offline Detention - Bay Area Blvd. Phase I	The Clear Creek Community Church (CCCC) property sits on a stretch of Clear Creek approximately 2,500 feet in length. Per the State of Texas CDBG Mitigation Action Plan, this location is at high risk for hurricane, tropical storm and depression impacts a	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000629	Harris		Proposed	$ 25,500,000.00	Yes	FIF	2026	Reduction of flood risk.
06-06-0000000630	Harris		Proposed	$ 49,100,000.00	Yes	FIF		Reduction of flood risk.
06-06-0000000631	Harris		Proposed	$ 3,465,000.00	Yes	FIF		Reduction of flood risk.
06-06-0000000632	Harris		Proposed	$ 3,186,410.00	Yes	FIF		Reduction of flood risk.
06-06-0000000633	Harris		Proposed	$ 400,000.00	Yes	FIF		Reduction of flood risk.
06-06-0000000638	Harris		Proposed	$ 4,000,000.00	Yes	HMGP	2027	Reduction of flood risk.
06-06-0000000639	Harris		Proposed	$ 15,174,600.00	Yes	CDBG		The proposed project will increase the capacity of the existing storm sewer system to contain the 2-year storm event. Additionally, it show decreases in water surface elevations for the 5-year and 100-year storm events.
06-06-0000000640	Harris		Proposed	$ 3,236,050.00	Yes	CDBG		The system will be able to convey more flow downstream ahead of extreme event storm surge and store more flow during the surge itself. Citizens will subsequently experience gains in terms of reduced flooding levels.
06-06-0000000641	Harris		Proposed	$ 62,273,200.00	Yes	CDBG	2028	The proposed project will increase the capacity of the existing storm sewer system to contain the 2-year storm event. Additionally, it show decreases in water surface elevations for the 5-year and 100-year storm events.
06-06-0000000642	Harris		Proposed	$ 78,937,296.00	Yes	CDBG	2028	Address riverine flooding and flooding due to tropical storms and hurricanes across the City.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000643	6	San Jacinto	Westador Stormwater Detention Basin	There are approximately 2655 structures located in the 100-year existing floodplains that are at risk of experiencing inundation due to riverine flooding. Approximately 598 of those structures are within an LMI block group. The risk of flooding is a dai	
06-06-0000000644	6	San Jacinto	Greens Bayou, White Oak Bayou and Cypress Creek Areas Subdivision Drainage Mitigation Project	Subdivisions throughout the Greens Bayou, White Oak Bayou and Cypress Creek Watersheds in Harris County experience localized flooding conditions during hurricanes, tropical storms, and even intense rainfall events that overwhelm drainage systems and resu	
06-06-0000000645	6	San Jacinto	Greens Bayou Drainage Partnership Application	Subdivisions and businesses throughout the Greens Bayou Watershed in Harris County experience flooding conditions during hurricanes, tropical storms, and even intense rainfall events that overwhelm drainage systems and result in riverine, or out-of-bank,	
06-06-0000000646	6	San Jacinto	Halls Bayou Watershed Mitigation Application 1	The activities in this CDBG-MIT application are designed to provide watershed-wide flood threat reduction measures in Halls Bayou. The Halls Bayou watershed is a historically underserved area of north Harris County, TX. The residents of the watershed hav	
06-06-0000000647	6	San Jacinto	Houston Kashmere Gardens Area Flood Mitigation	The Kashmere Gardens Area neighborhood drainage infrastructure was constructed beginning in the 1930's. Harris County Flood Control (HCFCD) Channel H110-00-00 provides drainage for much of the area, conveying water to Hunting Bayou. The existing draina	
06-06-0000000648	6	San Jacinto	Houston Port Area Flood Mitigation	The Pleasantville neighborhood drainage infrastructure was constructed beginning in the 1950's. The system is connected to major trunklines along IH-610 that outfall to Buffalo Bayou. The existing drainage system is curb-and-gutter and provides less th	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000643	Harris		Proposed	$ 10,000,000.00	Yes	CDBG	2027	The proposed detention basin achieved a maximum WSEL reduction of 0.40 feet for the 100-year storm event. This alternative provides the opportunity to remove 128 structures from the existing 100-year floodplain.
06-06-0000000644	Harris		Proposed	$ 99,997,200.00	Yes	CDBG		Improved capacity to mitigates death and property damage caused by flooding.
06-06-0000000645	Harris		Proposed	$ 100,000.00	Yes	CDBG		Minimize the likelihood of future flooding.
06-06-0000000646	Harris		Proposed	$ 100,000.00	Yes	CDBG		Reduce water surface elevations during flood events. A reduction in water surface elevations will remove structures from the floodplain and reduce water surface elevations in structures that are not completely removed from the floodplain.
06-06-0000000647	Harris		Proposed	$ 93,931,104.00	Yes	CDBG		Reduce the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship by more rapidly conveying water from the identified service areas to reduce flooding.
06-06-0000000648	Harris		Proposed	$ 98,031,104.00	Yes	CDBG		Reduce the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship by more rapidly conveying water from the service areas to reduce flooding and by establishing a “lily pad” central to the service area.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000649	6	San Jacinto	Houston Fifth Area Flood Mitigation	The Houston 5th Ward Area Flood Mitigation Project (5th Ward Project) will address risks associated with hurricanes/tropical storms/tropical depressions in the Greater 5th Ward area. Hydraulic and hydrologic (H&H) modeling identified flooding under exist	
06-06-0000000650	6	San Jacinto	Aldine Westfield Stormwater Detention Basin --- Phase II	The proposed project is located along Greens Bayou near the intersection of Beltway 8 and Adeline Westfield Road, and the proposed site is approximately 113 acres in size. It is intended to address current flood damage reduction needs within the Greens B	
06-06-0000000651	6	San Jacinto	Houston Sunnyside Area Flood Mitigation	The Sunnyside Area drainage infrastructure was constructed beginning in the 1950's. The area is also served by Salt Water Ditch (Harris County Flood Control District Channel C118-00-00) as well as Channels C122-00-00 and C128-00-00. All drainage infras	
06-06-0000000652	6	San Jacinto	Houston Huntington Village Area Flood Mitigation	The Huntington Village area drainage systems were constructed in the 1970's and do not have sufficient capacity to drain the 2-year Atlas 14 rainfall event. Major trunk lines are located on Cook Road, Huntington Place, Dairy Ashford Road, and within a	
06-06-0000000653	6	San Jacinto	North Pasadena Flood Mitigation	The watersheds of the northern portion of the City of Pasadena combined hydraulically during the Hurricane Harvey event. The area is heavily populated by Low to Moderate Income (LMI) residents with many flood claims and repetitive loss properties. The ar	
06-06-0000000654	6	San Jacinto	Blalock Road Drainage Improvement Project	The City of Piney Point Village (the City) is at risk of flooding during Hurricanes, Tropical Storms, Tropical Depressions and other intense rainfall events. While the City has made substantial investments to improve the drainage infrastructure throughou	
06-06-0000000655	6	San Jacinto	City of Southside Place - Auden Street Drainage Improvement Project	According to the GLO's CDBG-MIT Action Plan, flooding is the hazard that has the greatest impact in Texas, causing significant damage to housing, infrastructure, and businesses. The City of Southside Place has felt this impact repeatedly, both from nam	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000649	Harris		Proposed	$ 100,000.00	Yes	CDBG		Reduce the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship by more rapidly conveying water from the identified service areas to reduce flooding.
06-06-0000000650	Harris		Proposed	$ 10,000,000.00	Yes	CDBG		Address the repetitive flooding in the Greens Bayou watershed area.
06-06-0000000651	Harris		Proposed	$ 100,000.00	Yes	CDBG		Reduce the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship by more rapidly conveying water from the identified service areas to reduce flooding.
06-06-0000000652	Harris		Proposed	$ 77,802,400.00	Yes	CDBG		Reduce the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship by more rapidly conveying or detaining water from the service area to reduce flooding.
06-06-0000000653	Harris		Proposed	$ 47,279,000.00	Yes	CDBG	2029	Provide for reduction of flood decimation from storm surge and high intensity rain storms.
06-06-0000000654	Harris		Proposed	$ 9,651,800.00	Yes	CDBG	2025	Reduce flood risk throughout the project area by increasing the capacity of the stormwater system. This will result in reduced risk of property damage, injury, and suffering from future disaster events.
06-06-0000000655	Harris		Proposed	$ 5,350,520.00	Yes	CDBG	2025	Alleviate flooding and increase stormwater conveyance for both the City of Southside Place and their neighboring communities.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000657	6	San Jacinto	Houston Alief Forest Area Flood Mitigation	Alief Parks Area Flood Mitigation Project will address flood losses due to inadequate stormwater system. Losses total 203 FEMA single claims, 173 FEMA repetitive claims, and 567 Individual Assistance claims.	
06-06-0000000658	6	San Jacinto	Tomball Mitigation Application	Tomball has become more accessible to Houston through the completion of Highway 249 and Grand Parkway. In the past year, 1,600 single-family homes have been approved for construction. The City has been preparing for this growth. By partnering with the	
06-06-0000000659	6	San Jacinto	TC Jester Detention Basin	TC Jester is a Detention mitigation project within the Cypress Creek Watershed that is intended to address current flood damage reduction needs within the Cypress Creek Watershed and serve LMI (Low to Moderate Income) areas. The benefit of this project i	
06-06-0000000660	6	San Jacinto	Jacinto City Drainage Project	The City of Jacinto City's has flooding issues throughout the majority of the collector streets within the City. Ponding and street blockage create unsafe conditions for emergency access and hinders residents from be able to leave their homes in the ca	
06-06-0000000661	6	San Jacinto	Barker Reservoir Flood Risk Reduction and Park Project	Existing Flood Project	
06-06-0000000662	6	San Jacinto	Sims Bayou Watershed	Without any improvements to Salt Water Ditch, many properties along the Salt Water Ditch and those neighborhoods that have storm sewer outfalls connected to Salt Water Ditch will continue to experience frequent flooding at a significantly low level of se	
06-06-0000000663	6	San Jacinto	Alvin-Manvel Regional Flood Control Mitigation	Existing Flood Project	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000657	Harris		Proposed	$ 8,183,190.00	Yes	CDBG	2025	Reduce the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship by removing and detaining water from the identified service area to reduce flooding.
06-06-0000000658	Harris		Proposed	$ 8,397,170.00	Yes	CDBG		Improve the flood water conveyance from this area to an acceptable 2-year capacity at the top of the watershed and 100-year current condition capacity within the channels based on Harris County Flood Control (HCFCD) Criteria.
06-06-0000000659	Harris		Proposed	$ 10,000,000.00	Yes	CDBG		There are approximately 2689 structures located in the 100-year existing floodplains that are at risk of experiencing inundation due to riverine flooding. Approximately 479 of those structures are within an LMI block group.
06-06-0000000660	Harris		Proposed	$ 5,319,720.00	Yes	CDBG		Help bring water out of the City quicker and reduce the number of flooded streets and flooded houses in the City during high impact events.
06-06-0000000661	Harris		Proposed	$ 48,880,000.00	Yes	FIF		Reduction of flood risk.
06-06-0000000662	Harris		Proposed	$ 100,000,000.00	Yes	CDBG		Reduce the flood risks within the Salt Water Ditch watershed while not causing adverse impacts to Sims Bayou.
06-06-0000000663	Brazoria	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040100	Proposed	$ 5,000,000.00	Yes	FIF		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000665	6	San Jacinto	Texas Historical Commission & Brazoria County Joint Mitigation Application 1 FINAL	The proposed is located immediately adjacent to the Columbia Lakes housing community (with more than 1200 homes and a population of approximately 3,000 people) in Brazoria County, and less than one mile from the City of West Columbia, TX (which has appro	
06-06-0000000667	6	San Jacinto	Spindletop Bayou Drainage Improvements - Multi-Jurisdictional Application with Liberty Co. and TBCD	Chambers County, Texas has suffered from the recent increase of major flood events in and around the county. Storm events such as Hurricane Harvey and Tropical Storm Imelda have put severe strain on the drainage capabilities of Chambers County, and the s	
06-06-0000000668	6	San Jacinto	TBCD Double Bayou Drainage Improvements	The drainage system in the region is owned and maintained by the Trinity Bay Conservation District (TBCD) and encompasses over 1,400 miles of drainage ditches and channels. Due to the low elevation of the region and the history of flooding from major sto	
06-06-0000000669	6	San Jacinto	Barker Reservoir Flood Risk Reduction and Park Project	Portions of the District are located within the elevated flood pool of the U.S. Army Corps of Engineers (USACE) Barker Reservoir. This reservoir, together with Addicks Reservoir, was created as part of a federal project to control flooding on Buffalo Bay	
06-06-0000000673	6	San Jacinto	City of Texas City HMGP Supplemental - State MID	Moses Lake Pump Station - This proposed pump station will afford the City the opportunity to pump down Moses Lake approximately 1 vertical foot ahead of an impending storm surge (3 day pump down period). Doing so accomplishes an additional detention stor	

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06-06-0000000665	Brazoria	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040100	Proposed	$ 8,211,000.00	Yes	CDBG		Repairs and infrastructure upgrades to the drainage system around the San Jacinto Monument to slow and filter runoff into the San Jacinto River.
06-06-0000000667	Chambers	06-02-0402030105,06-02-0402030104,06-02-0402030106,06-02-0402030200,06-02-0402040200,06-02-0402040100	Proposed	$ 34,527,400.00	Yes	CDBG		Reduce flood waters within the region by an average of 4', significantly reducing environmental impacts. Significantly reduce the amount of time that flood waters would stay in an area before draining - improving response time of first responders.
06-06-0000000668	Chambers	06-02-0402030105,06-02-0402030104,06-02-0402030106,06-02-0402030200,06-02-0402040200,06-02-0402040100	Proposed	$ 11,339,500.00	Yes	CDBG		Estimated to reduce flood waters within the region by an average of 1', improve about 6 road crossings, and reduce the amount of time that flood waters would stay in an area before draining.
06-06-0000000669	Fort Bend	06-02-0401040102,06-02-0401040103,06-02-0401040104,06-02-0401040101,06-02-0401040401,06-02-0401040501,06-02-0402040400,06-02-0402040100	Proposed	$ 48,880,000.00	Yes	FIF	2026	Increase Barker Reservoir Storage, on a cost-effective basis, while simultaneously creating an active park space, and positive environmental outcomes through coastal prairie restoration, and establishing aquatic features and wetlands.
06-06-0000000673	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Ongoing	$ 17,874,600.00	Yes	CDBG		Will help adequately convey the runoff to the outfalls and to Moses Lake. The results will be less flooding and stagnant water, improved housing quality and health conditions, and reduced human injury and possible death caused by flooding.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000674	6	San Jacinto	City of La Marque 2015 Flood Mitigation	The City of La Marque is located in the low-lying areas adjacent to the Galveston Bay. The City is mostly developed as small-to- medium sized single-family residential with commercial developments. The topography is extremely flat, and the drainage infra	
06-06-0000000675	6	San Jacinto	Dickinson Flood Mitigation & Diversion	The City Dickinson has suffered significant hardship for its residents and incurred substantial damage to residential and commercial property as a result of Hurricane Harvey DR-4332. Geographically, the City of Dickinson is located in the lower portion	
06-06-0000000676	6	San Jacinto	51st Street Drainage Project	The City of Galveston, located on Galveston Island, is the largest community in the United States established on a barrier island. The Gulf of Mexico forms the southern boundary, and Galveston Bay serves as the northern boundary of the city. This geograp	
06-06-0000000677	6	San Jacinto	37th Street Drainage Project	The City of Galveston, located on Galveston Island, is the largest community in the United States established on a barrier island. The Gulf of Mexico forms the southern boundary, and Galveston Bay serves as the northern boundary of the city. This geograp	
06-06-0000000678	6	San Jacinto	South Shore Drainage Project	The City of Galveston, located on Galveston Island, is the largest community in the United States established on a barrier island. The Gulf of Mexico forms the southern boundary, and Galveston Bay serves as the northern boundary of the city. This geograp	
06-06-0000000679	6	San Jacinto	Unincorporated Areas of Bacliff and San Leon Roadside Ditches & Driveway Culverts Improvements	Heavy rainfall from Hurricanes, Tropical Storms, or Tropical Depressions exceed the capacity of the roadside ditches causing the main streets to flood and prevent the access of emergency vehicles and residents to evacuate. After any rainfall event, water	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000674	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 7,493,140.00	Yes	CDBG		The proposed project activities will address the identified hazards by minimizing and reducing floodwaters into the wastewater collection system.
06-06-0000000675	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 49,272,900.00	Yes	CDBG		It is believed that completing the proposed improvements will allow the City achieve a major milestone of long-term recovery with the focus on addressing additional critical infrastructure.
06-06-0000000676	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 87,308,896.00	Yes	CDBG		Reduce long-term risk of damage to and loss of property, suffering, and hardship for residents within the designated improvement and service areas by increasing the capacity of the existing storm drainage system.
06-06-0000000677	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 84,420,600.00	Yes	CDBG	2026	Reduce long-term risk of damage to and loss of property, suffering, and hardship for residents within the designated improvement and service areas by increasing the capacity of the existing storm drainage system.
06-06-0000000678	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 54,310,000.00	Yes	CDBG		Reduce long-term risk of damage to and loss of property, suffering, and hardship for residents within the designated improvement and service areas by increasing the capacity of the existing storm drainage system.
06-06-0000000679	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 13,920,900.00	Yes	CDBG		Mitigate against heavy rainfall by increasing the roadside ditch capacity by re-grading the roadside ditches and increasing the size of the driveway culverts.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000680	6	San Jacinto	Unincorporated Areas of Bacliff and San Leon Roadside Ditches & Driveway Culverts Improvements	Existing Flood Project	
06-06-0000000681	6	San Jacinto	Unincorporated Areas of Bacliff and San Leon Roadside Ditches & Driveway Culverts Improvements	Existing Flood Project	
06-06-0000000682	6	San Jacinto	City of Hitchcock Harvey HUD Mitigation Application	The City of Hitchcock experiences heavy rains, floods and hurricanes that flood the city and the public infrastructure. Heavy rain events in this area impacts the wastewater system by overflowing the lines, disrupting sewer service, and exceeding permitt	
06-06-0000000683	6	San Jacinto	City of La Marque Harvey HUD MID	The City of La Marque is located in the low-lying areas adjacent to the Galveston Bay. The City's wastewater collection system, which consists of sanitary sewer manholes, pipes and lift stations is prone to infiltration and inflows during heavy rain ev	
06-06-0000000684	6	San Jacinto	City of Texas City Harvey HUD MID	Texas City is located in Galveston County with significant coastal frontage along Galveston Bay. As a result, it has experienced both storm surge and torrential rains and has borne the brunt of hurricanes, and tropical storms over the past 20 years and m	
06-06-0000000685	6	San Jacinto	Drainage Improvements (Cleveland)	The City of Cleveland has suffered significant hardship for its residents and incurred substantial damage to residential and commercial property due to various declared disasters. Specifically, the City of Cleveland was impacted by the following events:	
06-06-0000000696	6	San Jacinto	Bear Branch Drainage Improvements	Drainage improvements, including widening of creeks, new mitigation ponds, and reduction in water surface elevations along the creeks are needed to mitigate flooding. The 100-yr floodplain may be expanded as wide as the existing 500-yr floodplain.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000680	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 13,920,900.00	Yes	CDBG		Reduction of flood risk.
06-06-0000000681	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 13,920,900.00	Yes	CDBG		Reduction of flood risk.
06-06-0000000682	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 3,598,610.00	Yes	CDBG		Reduce maintenance on wastewater treatment plant, improve treatment of wastewater, and increase the reliability of the wastewater delivery and treatment during heavy rain and storm events.
06-06-0000000683	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 48,904,000.00	Yes	CDBG		lintended to reduce the impact of hurricanes/floods on the City's lift stations and WWTP, thus reducing the impact to the entire wastewater collection system.
06-06-0000000684	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 14,965,400.00	Yes	CDBG		Increase the resiliency and functionality of the drainage system in the City, moving water, pumping to Moses Lake, and preventing flooding.
06-06-0000000685	Liberty	06-02-0401030201,06-02-0401030108,06-02-0401030109,06-02-0401030205,06-02-0401030402,06-02-0401030203,06-02-0401030204,06-02-0401030202,06-02-0401030401,06-02-0402030104,06-02-0402030103,06-02-0402030102,06-02-0402030101	Proposed	$ 10,515,900.00	Yes	CDBG		Mitigate severe flooding, water and sewer system issues as a result of flooding events. The enhanced functionality of the system will ensure the long-term protection of life, property, and alleviate/lessen the potential for injury and suffering.
06-06-0000000696	Montgomery	06-02-0401020211,06-02-0401020212	Proposed	$ 11,300,000.00	Yes	FIF	2029	Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000694	6	San Jacinto	West Fork, Canal and Tributary Phase 1 and Phase 2 Dredging	The 87th Texas Legislature appropriated to the TWDB $50,000,000 for the purposes of removing accumulated siltation and sediment deposits with particular attention to the inlets, coves, and tributaries around the reservoir.	
06-06-0000000695	6	San Jacinto	Harris County Flood Project	The 86th Texas Legislature appropriated to the TWDB $30,000,000 for the purpose of providing a grant to Harris County to remove accumulated siltation and sediment deposits located at the confluence of the San Jacinto River and Lake Houston.	
06-06-0000000697	6	San Jacinto	HMGP North Canal Project	The North Canal project reduces flooding in downtown and upstream along White Oak and Buffalo Bayous through a high-flow diversion channel, an overflow channel, and bridge and channel improvements.	
06-06-0000000698	6	San Jacinto	Historic District Drainage Improvements	Project advances Historic District Drainage Study improvements, starting with Wisconsin St. upgrades. Kansas St./FM518 drainage work is planned for FY2024–26, pending district consensus on recommended improvements.	061000088
06-06-0000000699	6	San Jacinto	Hickory Creek Subdivision Drainage Improvement	Northeast city project improves drainage in area bound by Garden Rd, Hickory Slough, Oday Rd, and Dublin Ln by regrading ditches, replacing culverts/driveways, adjusting utilities, repaving roads, and upgrading to EDCM standards.	
06-06-0000000700	6	San Jacinto	Herridge Miller/Brookland Acre Subdivision Drainage Improvement	Project upgrades drainage in Herridge Miller and Brookland Acre subdivisions by regrading ditches, replacing culverts/driveways, adjusting utilities, repaving roads, and meeting EDCM standards, complementing earlier GLO-funded work.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000694	Harris,Montgomery	06-02-0401010502,06-02-0401010501,06-02-0401030110,06-02-0401030205,06-02-0401030402,06-02-0401040704	Proposed	$ 50,000,000.00	Yes	FIF	2026	Prevent future flooding and preserve capacity
06-06-0000000695	Harris	06-02-0401010502,06-02-0401010501,06-02-0401030110,06-02-0401030205,06-02-0401030402,06-02-0401040704	Proposed	$ 30,000,000.00	Yes	FIF		Prevent future flooding and preserve capacity
06-06-0000000697	Harris	06-02-0401040703,06-02-0401040304	Ongoing	$ 123,713,000.00	Yes	Local	2026	Regional mitigation reduces structural flooding across multiple neighborhoods by improving stormwater channels and detention basins. These upgrades protect existing properties and offset higher flows from improved local drainage systems.
06-06-0000000698	Galveston	06-02-0402040100	Proposed	$ 2,142,740.00	No	Local	2026	Address flooding issues within the Historic district.
06-06-0000000699	Brazoria	06-02-0402040100	Ongoing	$ 5,441,000.00	No	Local	2026	Hickory Creek Subdivision, north of FM 518 between Garden Rd and O'Day Rd, has an outdated drainage system and a long flood history since 1965. homes built before current standards face repetitive flood losses despite being outside the 100-y floodpla
06-06-0000000700	Brazoria	06-02-0402040100	Ongoing	$ 1,499,000.00	No	Local	2026	Herridge Miller and Brookland Acre, north of Hickory Slough between Mykawa and Hatfield, have substandard drainage and flooding since 1963. In the FEMA 100-year floodplain, many homes have repetitive losses and predate current engineering standards.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000701	6	San Jacinto	Friendswood Regional Stormwater Detention Basin	Project builds a 1,700 ac-ft offline detention pond near Dixie Farm Rd in partnership with HCFCD, Galveston County, GCCDD, and the State, adding major mitigation capacity for future flood control efforts.	063000424
06-06-0000000702	6	San Jacinto	HCMOD_HMID_LMI_22-129-000-D405_F&D	Drainage Improvements for Pine Trails Subdivision, North Forest Subdivision, Ralston Acres Subdivision Ralston Acres Subdivision, Barwood Subdivision, and Tower Oaks Meadows Subdivision Drainage Improvements projects	
06-06-0000000703	6	San Jacinto	Freeway Manor/Gulfway Terrace Detention	Project provides for the design and construction of detention and conveyance improvements along C106-10 channel and Hartsook Rd.	
06-06-0000000704	6	San Jacinto	FM 518 & Wesley Drive Drainage Improvements	Project regrades Wesley Dr., adds flow path to Corum Ditch, builds subsurface system with large inlets, and a detention pond discharging to Corum Ditch. Funded by CDBG-DR, HMGP, and FEMA, with USACE permits required for environmental review.	061000123
06-06-0000000705	6	San Jacinto	Drainage Rehab - Alligator Creek	Project rehabilitates 1,230 LF of channel: 900 LF rebuilt as a rectangular section with retaining walls and concrete bottom, and 330 LF reconstructed with sloped paving in a trapezoidal section.	
06-06-0000000706	6	San Jacinto	Drainage Master Plan	Huntsville submitted 2022 drainage plans to Flood Infrastructure Fund and was invited to apply to TWDB in 2024. Projects: Master Drainage Plan $700K (10% match), Elkins Lake $300K (25%), Spring Lake $300K (25%). City match $220K.	061000248
06-06-0000000707	6	San Jacinto	Cypress Creek Right-of-Way Acquisition and Floodplain Preservation	This Bond ID provides funding for right-of-way acquisition in the Cypress Creek watershed for flood risk reduction projects and floodplain preservation.	062000067
06-06-0000000709	6	San Jacinto	Countryside Subdivision Drainage Improvements	Project conducts a drainage study and HEC-RAS model of Magnolia Creek, adds overflow swales at 8 easements, converts 3 to drainage ROW, and may add slope paving to protect Landing Ditch banks from erosion while preventing downstream impacts.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000701	Galveston	06-02-0402040100	Proposed	$ 8,000,000.00	No	Local	2028	City's initiative to study and construct flood control projects along Clear Creek and its tributaries; Comprehensive Plan
06-06-0000000702	Harris	06-02-0401020107,06-02-0401040605,06-02-0401040601,06-02-0401040606,06-02-0401040301	Ongoing	$ 160,696,000.00	Yes	Texas GLO, CDBG-MIT, Hurricane Harvey State Mitigation Competition	2026	Reduction of flood risk.
06-06-0000000703	Harris	06-02-0401040502	Proposed	$ 45,955,000.00	Yes	Local	2029	Project will construct storm drainage improvements to address and reduce the risk of structural flooding. Improvements include modification of conveyance and detention for mitigation.
06-06-0000000704	Galveston	06-02-0402040100	Proposed	$ 3,626,080.00	Yes	CDBG-DR, HMGP, FEMA	2026	The project will reduce chronic flooding and lower water levels on Main St. (FM518) by 0.5–1 ft, keeping roads open for emergency access during extreme events. It will also remove flow restrictions causing 100-year sheet flow to flood nearby properties
06-06-0000000705	Montgomery	06-02-0401010207	Proposed	$ 4,690,000.00	No	Local	2029	Reduction of flood risk.
06-06-0000000706	Walker	06-02-0401010104,06-02-0401010102,06-02-0401010201,06-02-0401010202,06-02-0401030302	Proposed	$ 700,000.00	No	Local	2029	Reduction of flood risk.
06-06-0000000707	Walker	06-02-0401010104,06-02-0401010102,06-02-0401010201,06-02-0401010202,06-02-0401030302	Ongoing	$ 117,285,000.00	Yes	HCFCD Bond	2029	Reduction of flood risk.
06-06-0000000709	Galveston	06-02-0402040100	Proposed	$ 416,104.00	No	Local	2026	Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000710	6	San Jacinto	Cottage Grove East Area	Project provides for the design and construction of storm drainage improvements, necessary concrete paving, curbs, sidewalks, driveways, and underground utilities. This project includes seven sub-projects.	061000477,061000557
06-06-0000000711	6	San Jacinto	Veterans drainage improvements	Installs an underground stormwater system to replace roadside ditches, linking Walnut Rd to Mary's Creek. Includes parcel acquisition, 3,000 LF of pipe, pavement overlay, and swales. Designed to EDCM standards with capacity for future 4-lane expansion.	
06-06-0000000713	6	San Jacinto	Southwest Quadrant of Old Town (McLean to SH35 South of Broadway)	Old Town project upgrades drainage by regrading ditches, replacing culverts, driveways, and sidewalks, adjusting utilities, and repaving roads. Work spans Broadway to Walnut and McLean to the railroad, meeting EDCM standards.	
06-06-0000000716	6	San Jacinto	Southland Area	Project provides for the design and construction of storm drainage improvements, necessary concrete paving, curbs, sidewalks, driveways, and underground utilities. This project includes three (3) sub-projects.	
06-06-0000000719	6	San Jacinto	DR2203 Baytown Central Stormwater Detention Basin Improvements	Acquires property to expand the existing stormwater detention basin, reducing current and future flood risks. Identified in the 2010 Drainage Master Plan as an area needing drainage improvements.	
06-06-0000000721	6	San Jacinto	DR2102 West Baytown Drainage Improvements	Project improves neighborhood drainage with new storm sewers, detention pond, rebuilt streets, sidewalks, water/sewer. Phase 1 ($7.1M with Harris Co. Pct 2) funds trunkline; Phase 2 ($17.5M) installs laterals in neighborhood streets.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000710	Harris	06-02-0401040304	Proposed	$ 28,434,000.00	Yes	Local	2025	The project, prioritized through the ReBuild Houston Process using worst-first criteria and cost-benefit analysis, will improve street drainage and reduce structural flooding risk through updated design and construction.
06-06-0000000711	Brazoria	06-02-0402040100	Ongoing	$ 11,330,000.00	Yes	Local	2026	The Walnut Rd area floods during heavy rain. Its storm system, built 2 ft below the Veterans Rd ditch, traps water and limits flow. A preliminary engineering report recommends drainage upgrades to improve capacity and conveyance.
06-06-0000000713	Brazoria	06-02-0402040100	Ongoing	$ 10,179,000.00	Yes	Local	2026	1894 neighborhood lies in a 100-y floodplain and faces repetitive flooding from undersized culverts, poor maintenance, weak downstream conveyance along Veterans Dr. Though not in the Harvey report, it flooded, and a study suggests some fixes.
06-06-0000000716	Harris	06-02-0401040402	Proposed	$ 13,653,000.00	Yes	Local	2028	The project, prioritized through the ReBuild Houston Process using worst-first criteria and cost-benefit analysis, will improve street drainage and reduce structural flooding through upgraded design and construction.
06-06-0000000719	Harris, Chambers	06-02-0401040706	Ongoing	$ 5,814,140.00	Yes	Local	2026	Reduction of flood risk.
06-06-0000000721	Harris, Chambers	06-02-0401040706	Ongoing	$ 4,156,480.00	Yes	Local	2028	Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000722	6	San Jacinto	Clear Creek Tributaries Clearing & Desnagging	League City will clear/engineer channels draining to Clear Creek, including Cedar Gully, Landing, Newport, and Magnolia. FY20–26 work totals $3.2M, with construction on Cedar Gully and Magnolia pending neighborhood consensus.	
06-06-0000000723	6	San Jacinto	Clear Creek - FM270 Bypass Channel	Project partners with USACE to design/construct the FM270 bypass from the Clear Creek & Dickinson Bayou study. Under CAP 205, it could cut flood risk for 80+ structures, with up to $10M in federal funds and construction 3 years post-feasibility.	
06-06-0000000724	6	San Jacinto	Bayside Terrace Drainage Improvement	This project will design and construct the needed improvements to redirect, provide adequate capacity and improve drainage in the Bayside Terrace subdivision.	
06-06-0000000725	6	San Jacinto	Bayridge Flood Reduction Phase 4	Culvert and ditch upgrades along SH96/Gum Bayou: 30% design done in FY2019. Final design and land acquisition in FY24–25. Construction in FY26 to widen 12,000 LF of Gum Bayou by 25%, with possible delay to FY27 due to permitting.	
06-06-0000000726	6	San Jacinto	Battleground Estates Drainage Improvements Design	This project funds the city's portion of funding to partner with HCFC to redesign or widen the F101 drainage channel to reduce the effects of multiple pipeline crossings that affect channel elevation and ultimate capacity	
06-06-0000000727	6	San Jacinto	Battleground Estates	The drainage improvement project is focused on the Lomax Area north of P Street, Mitigation efforts include adjustments to existing roadside ditches, increasing culvert sizes and drainage channel improvements	
06-06-0000000729	6	San Jacinto	Autumn Road Drainage Project	City share $250K (25% match for $812K GLO grant). Phase I design & construction $350K (FY24–25 via drainage fees). Phase II $950K (FY25–28 via fees). Includes downstream channel rehab.	
06-06-0000000730	6	San Jacinto	Spring Shadows (North)	Project designs and builds storm drainage, paving, curbs, sidewalks, driveways, and underground utilities to serve Spring Shadows Subdivision and nearby areas in the Buffalo Bayou and White Oak Bayou watersheds.	061000480

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000722	Galveston	06-02-0402040100	Proposed	$ 3,207,140.00	No	Local	2026	A city study found that clearing and desnagging Cedar Gully, Landing Ditch, Magnolia Creek, and Newport Ditch would boost flow capacity—Magnolia 53% (649 cfs), Cedar 38% (774 cfs), Landing 34% (965 cfs), and Newport 56% (1,495 cfs).
06-06-0000000723	Galveston	06-02-0402040100	Proposed	$ 11,351,600.00	No	Local	2027	The implementation of the bypass will help reduce the amount of flood risk associated to 80+ structures.
06-06-0000000724	Harris	06-02-0402040100	Ongoing	$ 6,947,220.00	Yes	Local	2025	Reduction of flood risk.
06-06-0000000725	Galveston	06-02-0402040200	Proposed	$ 12,000,000.00	No	GO Bonds	2026	Proposed upgrades will let culverts convey at least the 0.2% (500-y) storm flow from South Shore Harbor to Gum Bayou and prevent overflow during 1% events. The project will also eliminate frequent ponding along League City Pkwy and Columbia Memorial Pkwy
06-06-0000000726	Harris	06-02-0401040703,06-02-0401040706,06-02-0402040100	Ongoing	$ 65,000.00	Yes	Coronavirus Local Fiscal Recovery Fund (CLFRF)		Reduction of flood risk.
06-06-0000000727	Harris	06-02-0401040703,06-02-0401040706,06-02-0402040100	Ongoing	$ 300,000.00	Yes	Coronavirus Local Fiscal Recovery Fund (CLFRF)		Reduction of flood risk.
06-06-0000000729	Walker	06-02-0401010201,06-02-0401010202	Ongoing	$ 2,112,000.00	No	Local	2028	Reduction of flood risk.
06-06-0000000730	Harris	06-02-0401040302,06-02-0401040303	Proposed	$ 14,785,000.00	Yes	Local	2026	Identified through the ReBuild Houston Process using worst-first criteria and cost-benefit analysis, this project will improve street drainage and reduce structural flooding through enhanced design and construction.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000733	6	San Jacinto	Arlington Heights Area	Project designs and builds storm drainage, paving, curbs, sidewalks, driveways, and utilities for Arlington Heights Subdivision, serving outfalls C0268, C0272, C0275, C0308, C0309, and C0814. Includes two sub-projects.	
06-06-0000000735	6	San Jacinto	Turkey Gully Diversion	Project will build a storm trunk system to divert flow from Turkey Gulley to White Oak Bayou, including storm drainage upgrades, paving, curbs, sidewalks, driveways, and utilities on Bevis and 20th.	061000483
06-06-0000000740	6	San Jacinto	Westridge and Braes Terrace Area	Project will design and construct storm drainage improvements with paving, curbs, sidewalks, driveways, and utilities. The effort includes four sub-projects to enhance drainage capacity and infrastructure.	
06-06-0000000742	6	San Jacinto	Westbury Area	Project will design and construct storm drainage improvements with paving, curbs, sidewalks, driveways, and utilities, including six sub-projects to enhance infrastructure and reduce flooding risks.	061000475
06-06-0000000745	6	San Jacinto	Deepwood Flood Control	Deepwood project reduces flooding by adding storage in Clear Creek's overbank through property buyouts, structure demolition, clearing, and de-grubbing, funded in part by CDBG-DR funds.	
06-06-0000000747	6	San Jacinto	Brookland Acres Drainage Improvements	Brookland Acres project regrades ditches and replaces culverts/driveways along 4,100 LF of Scott Ln and 4,500 LF of Woody St. Improvements boost conveyance, reduce flooding, and were identified in the Harvey Drainage Assessment Report.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000733	Harris	06-02-0401040502	Proposed	$ 21,388,000.00	Yes	Local	2026	The project, prioritized through the ReBuild Houston Process using worst-first criteria and cost-benefit analysis, will improve street drainage and reduce structural flooding through targeted design and construction upgrades.
06-06-0000000735	Harris	06-02-0401040304	Proposed	$ 14,143,000.00	Yes	Federal Grant		Project will construct storm drainage improvements to address and reduce the risk of structural flooding. Improvements include modification of conveyance and detention for mitigation.
06-06-0000000740	Harris	06-02-0401040402	Proposed	$ 26,286,000.00	Yes	Local	2028	The project, prioritized through the ReBuild Houston Process using worst-first criteria and cost-benefit analysis, will enhance street drainage and reduce the risk of structural flooding through improved design and construction.
06-06-0000000742	Harris	06-02-0401040401	Proposed	$ 23,758,000.00	Yes	Local	2025	The project, identified and prioritized through the ReBuild Houston Process using worst-first methodology and cost-benefit analysis, will be designed and built to improve street drainage and reduce the risk of structural flooding.
06-06-0000000745	Galveston	06-02-0402040100	Proposed	$ 4,316,910.00	Yes	Disaster Recovery Funds	2025	Preservation-Preserve and maintain infrastructure and Public Safety-Ensure a safe environment, additional storage capacity
06-06-0000000747	Brazoria	06-02-0402040100	Ongoing	$ 810,205.00	No	Local	2026	The project will help reduce the flooding of homes and streets by improving the conveyance capacity of ditches and removing storm water to Hickory Slough.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000748	6	San Jacinto	EMT-2023-FM-001-0069	Brazoria Drainage District Number 4 - Mustang, Chocolate, Chigger, and Cowart Creek Study - Capability and Capacity Building Project Scoping	
06-06-0000000751	6	San Jacinto	Chateau Forest Area	Project provides for the design and construction of storm drainage improvements, necessary concrete paving, curbs, sidewalks, driveways, and underground utilities.	061000476
06-06-0000000752	6	San Jacinto	EMT-2023-FM-001-0006	Harris County Flood Control District Buyout	
06-06-0000000754	6	San Jacinto	EMT-2022-FM-001-0042	City of Houston Project Number Two - Elevation of 24 Flood Vulnerable Properties	
06-06-0000000757	6	San Jacinto	CDBG-MIT Main & Wesley Drainage Improvements, Phase 2	Since 2021, the City has worked to replace the FM 518 storm sewer with reinforced concrete box culverts, including smaller RCBs extending into Wesley Dr. and Highland Terrace Dr. ROWs.	
06-06-0000000758	6	San Jacinto	EMT-2022-FM-001-0032	City of Conroe Project Number Two - Acquisition	
06-06-0000000759	6	San Jacinto	Stormwater Pump Station & Flood Warning	Program funds assessment, design, and construction to build new and rehabilitate existing stormwater facilities, including pump stations and flood warning systems, at multiple locations citywide.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000748	Brazoria	06-02-0402040200,06-02-0402040400,06-02-0402040100	Proposed	$ 900,000.00	No	FEMA Flood Mitigation Assistance		Reduction of flood risk.
06-06-0000000751	Harris	06-02-0401040302	Proposed	$ 15,755,000.00	Yes	Local	2025	The project, prioritized through the ReBuild Houston Process using worst-first methodology, objective data, and cost-benefit analysis, will improve street drainage and reduce the risk of structural flooding.
06-06-0000000752	Harris		Proposed	$ 4,250,150.00	No	FEMA		Reduction of flood risk.
06-06-0000000754	Harris		Proposed	$ 3,696,320.00	No	FEMA		Reduction of flood risk.
06-06-0000000757	Galveston	06-02-0402040100	Proposed	$ 5,073,170.00	No	Local	2025	This project was awarded the Community Development Block Grant - Mitigation Program (CDBG-MIT) in May 2024. Costs associated with this project are expected to be 100% reimbursable through the CDBG-MIT program.
06-06-0000000758	Montgomery	06-02-0401010207,06-02-0401010403,06-02-0401010308,06-02-0401010401,06-02-0401010402,06-02-0401010205,06-02-0401010206,06-02-0401020211	Proposed	$ 1,521,080.00	No	FEMA	2027	Reduction of flood risk.
06-06-0000000759	Harris		Ongoing	$ 5,000,000.00	Yes	Local	2029	The program is necessary to identify and prioritize the need for safety enhancements, improved functionality, and advance flood warning system to alert the traveling public.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000760	6	San Jacinto	CDBG-MIT Interurban Neighborhood Drainage	Project implements Alternative 7 from the May 2020 drainage study, adding lined ditches, culverts, storm sewers, inlets, roadway upgrades, and a detention pond on Galveston St., benefiting the Interurban watershed and nearby streets.	
06-06-0000000761	6	San Jacinto	EMT-2022-FM-001-0029	Harris County - Acquisition of 29 Residential Properties	
06-06-0000000763	6	San Jacinto	EMT-2022-FM-001-0021	City of Conroe Project Number One - Elevation	
06-06-0000000764	6	San Jacinto	Shadow Creek Ranch – Ocean Point Ct 100 Year Overflow at Cul-De-Sac	Homes near Ocean Point Ct. in Shadow Creek Ranch flooded up to 6” during Harvey. Project removes curb and grades cul-de-sac to Clear Creek Relief Ditch, creating an extreme event path to reduce flooding risk.	
06-06-0000000765	6	San Jacinto	EMT-2022-FM-001-0019	Brazoria Drainage District 4: Cannon Ditch Channel Localized Flood Risk Reductions Project Flood Control	
06-06-0000000768	6	San Jacinto	EMT-2022-FM-001-0016	City of Baytown Elevation	
06-06-0000000769	6	San Jacinto	Oaks of CC Drainage Improvements Ph 2 (Detention)	Project designs two ponds near Bradshaw Ditch: an 8 ac-ft pond (SW side, DR2101A) and a 60 ac-ft pond (NW side, DR2101B). Work includes internal drainage re-routing and upsizing parts of the existing storm sewer system.	
06-06-0000000770	6	San Jacinto	EMT-2022-FM-001-0005	City of Houston Project Number One - Elevation of Seven Flood Vulnerable Properties	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000760	Galveston	06-02-0402040100	Proposed	$ 8,238,940.00	No	Local	2026	This project was awarded the Community Development Block Grant - Mitigation Program (CDBG-MIT) in May 2024. Costs associated with this project are expected to be 100% reimbursable through the CDBG-MIT program.
06-06-0000000761	Harris		Proposed	$ 14,850,600.00	No	FEMA		Reduction of flood risk.
06-06-0000000763	Montgomery	06-02-0401010207,06-02-0401010403,06-02-0401010308,06-02-0401010401,06-02-0401010402,06-02-0401010205,06-02-0401010206,06-02-0401020211	Proposed	$ 153,640.00	No	FEMA	2027	Reduction of flood risk.
06-06-0000000764	Brazoria	06-02-0402040100	Ongoing	$ 100,000.00	Yes	Local	2026	The area lies outside the 100- and 500-year floodplains with a functional drainage system. The project will add an extreme event structure to improve conveyance and reduce flooding during major storms like Hurricane Harvey.
06-06-0000000765	Brazoria	06-02-0402040100	Proposed	$ 21,602,400.00	Yes	FEMA Flood Mitigation Assistance		Reduction of flood risk.
06-06-0000000768	Harris, Chambers	06-02-0401040705,06-02-0401040706,06-02-0402030105,06-02-0402030106,06-02-0402030200	Proposed	$ 749,700.00	No	FEMA		Reduction of flood risk.
06-06-0000000769	Galveston	06-02-0402040200,06-02-0402040100	Proposed	$ 9,646,600.00	No	Applied for TWDB grants	2025	The Oaks of Clear Creek floods during 1% events, causing water to pond in streets and yards and occasionally enter homes or vehicles. The project will reduce street ponding and lower flood risk during major rainfall events.
06-06-0000000770	Harris		Proposed	$ 1,837,490.00	No	FEMA		Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000771	6	San Jacinto	EMT-2021-FM-022-003	City of Conroe Texas Home Elevation Grant - Greater than 50% SRL ii	
06-06-0000000773	6	San Jacinto	EMT-2021-FM-022	Montgomery County, Texas - Acquisition of 32 Homes	
06-06-0000000775	6	San Jacinto	Lower Clear Creek and Dickinson Bayou Watershed Studies	A partnership between Clear Creek and Dickinson Bayou to evaluate and develop options to improve drainage in the lower Clear Creek and Dickinson Bayou watersheds.	
06-06-0000000776	6	San Jacinto	Longwood Park (Roadside Ditch and Culvert)	Longwood Park project improves drainage by regrading ditches, replacing culverts/driveways, adjusting utilities, and repaving roads. Work upgrades the system to current EDCM standards within subdivision limits from Clear Creek to Mary's Creek.	
06-06-0000000778	6	San Jacinto	Localized Flooding Drainage Studies	City Master Drainage Plan IDs Patton, Landing, Newport, Crestwood, Hidden Oaks & Columbia Pkwy for storm sewer studies. FY23–26 PE studies ($200K–205K each) will size sewers, assess detention needs, and guide future drainage upgrades.	
06-06-0000000779	6	San Jacinto	Benson Bayou Regional Conveyance & Mitigation Pond	Project adds detention on open tracts with bayou grade adjustments to lower water levels without downstream impacts. Feasibility analysis, scope, and funding alignment with GO Bond/PROP A will guide design and cost-benefit.	061000546

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000771	Montgomery	06-02-0401010207,06-02-0401010403,06-02-0401010308,06-02-0401010401,06-02-0401010402,06-02-0401010205,06-02-0401010206,06-02-0401020211	Ongoing	$ 1,358,130.00	No	FEMA	2027	Reduction of flood risk.
06-06-0000000773	Montgomery		Ongoing	$ 13,066,300.00	No	FEMA		Reduction of flood risk.
06-06-0000000775	Galveston	06-02-0402040200,06-02-0402040100	Proposed	$ 4,316,900.00	No	Applied for TWDB grants	2025	Continued evaluation to improve lower Clear Creek and Dickinson watersheds and look at tributary and other benefits.
06-06-0000000776	Brazoria	06-02-0402040100	Ongoing	$ 4,838,000.00	Yes	Local	2026	This 1964 neighborhood has undersized culverts and aging drainage, causing repetitive flooding. Homes flooded during Hurricane Harvey and Tropical Storm Beta. A preliminary engineering report recommends drainage improvements.
06-06-0000000778	Galveston	06-02-0402040100	Proposed	$ 767,105.00	No	Local	2026	The 2021 Master Drainage Plan created a citywide 2-D model to identify localized flooding. This project will conduct detailed studies of those areas to define flooding limits and develop drainage improvement solutions.
06-06-0000000779	Galveston	06-02-0402040200,06-02-0402040100	Proposed	$ 12,000,000.00	No	Local	2026	The project reduces chronic flooding by clearing and restoring drainage easements for unobstructed flow and bayou access. It targets severe flooding near SH 3 and LCP, protecting nearby homes in Oaks of Clear Creek and Leisure Lakes.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000781	6	San Jacinto	Woody Road Drainage Improvements	Project will regrade 2,700 LF of ditch along Woody Rd from Broadway to Orange, replacing culverts/driveways to improve conveyance and reduce flooding in Mimosa Acre and Corrigan North subdivisions, per Harvey Drainage Assessment Report.	
06-06-0000000797	6	San Jacinto	Pine Meadow at Cravens Drainage Improvements	The project entails on-site improvements to alleviate standing water issues and improve storm water drainage. The project received funding approval from General Land Office (GLO). Anticipated design to start 2025. Total estimated project cost: $2.9M	
06-06-0000000798	6	San Jacinto	Phase 2&3 Little Cedar Bayou Drainage	The CDBG Ike grant funded project will provide for the second phase of the little cedar bayou drainage improvements.	
06-06-0000000800	6	San Jacinto	F-101 Lomax Drainage Improvements - Design	This project funds the city's portion of funding to partner with HCFC to redesign or widen the F101 drainage channel to reduce the effects of multiple pipeline crossings that affect channel elevation and ultimate capacity	
06-06-0000000801	6	San Jacinto	F-101 Lomax Drainage	This project funds the city's portion of funding to partner with HCFC to redesign or widen the F101 drainage channel to reduce the effects of multiple pipeline crossings that Effect channel elevation and ultimate capacity	
06-06-0000000814	6	San Jacinto	Kuhlman Gully Mitigation	Project provides for the design and construction of detention basins and conveyance improvements in OST area and along Kuhlman Gully.	
06-06-0000000815	6	San Jacinto	La Quinta Golf Course Drainage Improvements	The project entails improvements within the Quail Valley Country Club Golf Course to improve residential drainage and reduce potential impacts from future storm events. Project is in construction with anticipated completion third quarter of 2025.	
06-06-0000000821	6	San Jacinto	Mclain at Gregory Drainage Improvements	Project will improve on-site drainage to alleviate standing water issues, funded by the GLO. Design is set to begin in 2025 with an estimated total cost of $2.4M.	
06-06-0000000822	6	San Jacinto	Master Drainage Plan Update	Master Drainage Plan update uses Atlas 14 data and 2D modeling (per HCFCD MaapNext) to assess creeks, ditches, and flooding, recommending mitigation measures and updating Section 5 of the Engineering Drainage Criteria Manual.	
06-06-0000000823	6	San Jacinto	Master Drainage Plan and Feasibility Study	Engineering study of current drainage system throughout the city with recommendation as to the feasibility of various alternatives to improve drainage	061000011

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000781	Brazoria	06-02-0402040100	Ongoing	$ 272,181.00	No	Local	2026	The project will help reduce the flooding of homes and streets by improving the conveyance capacity of ditches and removing storm water to the storm sewer system along Orange Street.
06-06-0000000797	Fort Bend	06-02-0401040501	Ongoing	$ 2,900,000.00	No	Local		Reduction of flood risk.
06-06-0000000798	Harris	06-02-0402040100	Ongoing	$ 2,560,860.00	Yes	Local		Reduction of flood risk.
06-06-0000000800	Harris	06-02-0401040703,06-02-0401040706,06-02-0402040100	Ongoing	$ 4,850,000.00	Yes	Local		Reduction of flood risk.
06-06-0000000801	Harris	06-02-0401040703,06-02-0401040706,06-02-0402040100	Ongoing	$ 1,500,000.00	Yes	Local		Reduction of flood risk.
06-06-0000000814	Harris	06-02-0401040402	Ongoing	$ 18,700,000.00	Yes	Local	2028	Project will construct storm drainage improvements to address and reduce the risk of structural flooding. Improvements include modification of conveyance and detention for mitigation.
06-06-0000000815	Fort Bend	06-02-0402040400	Ongoing	$ 7,500,000.00	No	Local	2025	Reduction of flood risk.
06-06-0000000821	Fort Bend	06-02-0401040401	Ongoing	$ 2,400,000.00	No	Local		Reduction of flood risk.
06-06-0000000822	Brazoria	06-02-0401040501,06-02-0402040200,06-02-0402040400,06-02-0402040100	Ongoing	$ 1,200,000.00	No	Local	2026	The 5-year Master Drainage Plan update uses new NOAA Atlas 14 rainfall data and 2D modeling to revise flood maps, CIP recommendations, and assess ditch and bayou capacity, enabling neighborhood-level drainage improvements.
06-06-0000000823	Galveston	06-02-0402040300,06-02-0402040200,06-02-0402040400,06-02-0402040500,06-02-0402040100	Proposed	$ 3,148,140.00	Yes	Local	2025	Reduction of flood risk.

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000824	6	San Jacinto	Master Drainage Plan	This project involves updating the City's Master Drainage Plan. The study would include riverine and street-level flood modeling to identify and prioritize future drainage and flood control projects.	061000237
06-06-0000000825	6	San Jacinto	Magnolia Park Area	Project provides for the design and construction of storm drainage improvements, necessary concrete paving, curbs, sidewalks, driveways, and underground utilities. Project has 4 sub-projects.	
06-06-0000000826	6	San Jacinto	Magnolia Creek & Cedar Gully Channel Improvements	Project regrades Magnolia Creek, Cedar Gully, and tributaries for Atlas 14 flows, modifies 5 detention basin outlets, and upgrades Summer Place culvert. Includes desnagging and requires a USACE Individual Permit for environmental approval.	
06-06-0000000827	6	San Jacinto	Advanced Emerging Technologies for Flood Damage Reduction	This Bond ID provides funding for investigations of new methods to reduce the risk of flooding and associated damages in Harris County.	
06-06-0000000828	6	San Jacinto	F216 Phase III	Phase III - This project will fund construction of Phase III of little cedar bayou drainage improvements, from Madison street to sens road, including a drainage analysis to evaluate potential improvements to mitigate flooding along H street	
06-06-0000000712	6	San Jacinto	Corps of Engineers Section 216 Study -Addicks and Barker Reservoirs	This Bond ID provides local match funding for projects and/or operational changes that the US Army Corps of Engineers recommends to improve the effectiveness and safety of the Addicks and Barker Reservoirs.	
06-06-0000000714	6	San Jacinto	Upgrades and Expansion of the Harris County Flood Warning System	Funds upgrades and expansion of the Harris County Flood Warning System to deliver near real-time rainfall and stream level data for emergency managers, officials, first responders, and the public.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000824	Harris, Galveston	06-02-0402040200,06-02-0402040100	Proposed	$ 1,661,000.00	Yes	Local	2026	City's initiative to study and construct flood control projects city-wide; Comprehensive Plan
06-06-0000000825	Harris	06-02-0401040703,06-02-0401040402	Proposed	$ 13,386,000.00	Yes	Local	2025	Project identified through ReBuild Houston using worst-first, data-driven, and cost-benefit analysis. It will improve street drainage and reduce structural flooding through design and construction upgrades.
06-06-0000000826	Galveston	06-02-0402040100	Proposed	$ 9,958,300.00	No	GO Bonds, applied for more	2025	Funded by the May 2019 GO Bond, this project benefits multiple neighborhoods by repairing and hardening channels to prevent erosion, stabilize slopes, improve stability, cut maintenance costs, and maintain flood control capacity.
06-06-0000000827	Harris		Ongoing	$ 25,000,000.00	Yes	HCFCD Bond	2026	Reduction of flood risk.
06-06-0000000828	Harris	06-02-0402040100	Ongoing	$ 1,500,000.00	Yes	Coronavirus Local Fiscal Recovery Fund (CLFRF)		Reduction of flood risk.
06-06-0000000712	Harris	06-02-0401020103,06-02-0401020104,06-02-0401020106,06-02-0401040102,06-02-0401040202,06-02-0401040103,06-02-0401040104,06-02-0401040201,06-02-0401040302,06-02-0401040101,06-02-0401040203,06-02-0401040303,06-02-0401040301,06-02-0401040401	Ongoing	$ 7,738,300.00	Yes	HCFCD Bond	2026	Reduction of flood risk
06-06-0000000714	Harris		Ongoing	$ 2,560,020.00	Yes	HCFCD Bond		Reduction of flood risk

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000715	6	San Jacinto	Construction of the Luce Bayou Stormwater Detention Basin	This Bond ID provides funding for any of various project lifecycle stages to construct projects to reduce flood risks in the Luce Bayou watershed.	
06-06-0000000717	6	San Jacinto	Construction of Linear Detention on Buffalo Bayou	This Bond ID provides funding for any of various project lifecycle stages for linear detention along Buffalo Bayou between the Sam Houston Tollway and State Highway 6.	
06-06-0000000718	6	San Jacinto	Construction of General Drainage Improvements East of Lake Houston	This Bond ID provides funding for various project lifecycle stages to investigate flooding problems and to identify and implement potential projects to reduce flood risks east of Lake Houston in the San Jacinto River watershed.	
06-06-0000000720	6	San Jacinto	Construction of Control Structures and Stormwater Quality Features for the Upper Langham Creek Program	Funds multiple project stages under the Upper Langham Creek Frontier Program to reduce flooding for 2,500+ structures in the Addicks Reservoir watershed and mitigate development-related flood risks upstream and downstream.	
06-06-0000000736	6	San Jacinto	Bond implementation Management (BIM) of the Right-of-Way Acquisition, Design and Construction in Halls Bayou Watershed	Funds administrative costs for the Halls Bayou Flood Risk Management Plan to reduce flooding for 2,400+ structures, cut the floodplain by 1,000+ acres, and lessen flooding on 22 miles of roads during 500-year pre-Atlas 14 events.	063000397
06-06-0000000737	6	San Jacinto	Bond implementation Management (BIM) of the Right-of-Way Acquisition, Design and Construction in Cedar Bayou Watershed	Funds administrative costs for the Cedar Bayou Flood Risk Management Plan, aiming to reduce flooding for 500+ structures, shrink the floodplain by 13,000 acres, and lessen flooding on 40+ miles of roads during 100-year Atlas 14 events.	
06-06-0000000739	6	San Jacinto	Design and Construction of Secondary Outfall for John Pauls Landing for the Upper Langham Creek Program	This Bond ID provides funding for any of the various project lifecycle stages associated with constructing a secondary outfall for John Paul Landing as part of the Upper Langham Creek Frontier Program.	
06-06-0000000741	6	San Jacinto	Design and Construction of Additional Gates on Lake Houston in Partnership with the City of Houston	This Bond ID provides funding support for a 50/50 local partnership with the City of Houston, after state and federal shares have been applied, on the design and construction of additional gates at Lake Houston.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000715	Harris	06-02-0401010502,06-02-0401010501,06-02-0401030205,06-02-0401030402,06-02-0402030102	Ongoing	$ 18,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000717	Harris	06-02-0401040303	Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000718	Harris		Ongoing	$ 22,839,400.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000720	Harris	06-02-0401020103,06-02-0401020104,06-02-0401040202,06-02-0401040201	Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000736	Harris	06-02-0401040605,06-02-0401040302,06-02-0401040604,06-02-0401040606,06-02-0401040304	Ongoing	$ 48,040,000.00	Yes	HCFCD Bond	2030	Reduction of flood risk
06-06-0000000737	Harris	06-02-0401010502,06-02-0401010501,06-02-0401030205,06-02-0401040705,06-02-0401040706,06-02-0401040704,06-02-0402030105,06-02-0402030104,06-02-0402030103,06-02-0402030106,06-02-0402030102,06-02-0402030200,06-02-0402030101	Ongoing	$ 9,200,000.00	Yes	HCFCD Bond		Reduction of flood risk.
06-06-0000000739	Harris	06-02-0401020103,06-02-0401020104,06-02-0401040202,06-02-0401040201	Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000741	Harris	06-02-0401010502,06-02-0401010501,06-02-0401030205,06-02-0401030402,06-02-0401040702,06-02-0401040602,06-02-0401040704,06-02-0402030102	Ongoing	$ 55,378,200.00	Yes	HCFCD Bond	2030	Reduction of flood risk

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000744	6	San Jacinto	Design and Construction of a Stormwater Detention Basin in Brock Park	Funds multiple project stages for a stormwater detention basin at Houston's Brock Park, coordinated with the City of Houston, and advancing through as many phases as possible with available funding.	061000403
06-06-0000000750	6	San Jacinto	EMT-2023-FM-001-0010	Cloverleaf Area Drainage Improvements - Phase 2 - Harris County Flood Control District	
06-06-0000000782	6	San Jacinto	B509-00-00	Funds design and construction of the B509-03-00 and B509-04-00 Genoa Red Bluff Stormwater Detention Basin, which will reduce flood risk for over 400 structures during an Atlas 14 1% (100-year) rainfall event.	
06-06-0000000783	6	San Jacinto	Q114-00-00	Bond funds ROW, design, and construction of conveyance improvements along Magee Gully (Cedar Bayou tributary Q114-00-00), advancing through as many project stages as funding allows.	
06-06-0000000784	6	San Jacinto	Preliminary Engineering for Large Diameter Tunnels for Stormwater Conveyance	This Bond ID provides funding for any of various project lifecycle stages in consideration of deep underground, large-diameter tunnels to reduce the risk of flooding across Harris County.	
06-06-0000000785	6	San Jacinto	P118-27-00	Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-27-00. This Bond ID provides funding for any of the various project lifecycle stages for channel conveyance improvements near Halls Bayou tributary P118-27-00.	061000400
06-06-0000000786	6	San Jacinto	Planning, Right-Of-Way, Design and Construction of Halls Bayou Flood Risk Management Project	This Bond ID provides funding for any of the various project lifecycle stages for the implementation of the Halls Bayou Flood Risk Management Plan.	
06-06-0000000787	6	San Jacinto	P118-26-00	This Bond ID provides funding for any of the various project lifecycle stages for stormwater detention storage near Halls Bayou tributary P118-26-00. Design and Construction of Helms Stormwater Detention Basin	
06-06-0000000788	6	San Jacinto	Planning, Right-Of-Way Acquisition, Design and Construction of General Drainage Improvements Near Kingwood	This Bond ID provides funding for various project lifecycle stages to investigate flooding problems and to identify and implement potential projects to reduce flood risks in the Kingwood area in the San Jacinto River watershed.	
06-06-0000000789	6	San Jacinto	P118-25-00	ROW, design, and construction of conveyance improvements on channels P118-25-00 & P118-25-01 near Halls Bayou, with bond funds supporting any stage of the project lifecycle.	061000399
06-06-0000000790	6	San Jacinto	Planning, Right-Of-Way Acquisition, Design and Construction of General Drainage Improvements Near Atascocita	Bond funds support investigation and implementation of projects to reduce flooding in Atascocita within the San Jacinto River watershed, advancing through as many lifecycle stages as funding allows.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000744	Harris	06-02-0401040605,06-02-0401040604,06-02-0401040606	Ongoing	$ 5,000,000.00	Yes	HCFCD Bond	2026	Reduction of flood risk
06-06-0000000750	Harris	06-02-0401040702,06-02-0401040606	Proposed	$ 39,439,700.00	Yes	FEMA Flood Mitigation Assistance		Reduction of flood risk
06-06-0000000782	Harris	06-02-0402040100	Ongoing	$ 4,750,000.00	Yes	HCFCD Bond	2027	Reduction of flood risk
06-06-0000000783	Harris	06-02-0402030105,06-02-0402030106	Ongoing	$ 33,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000784	Harris		Ongoing	$ 22,720,000.00	Yes	HCFCD Bond	2030	Reduction of flood risk
06-06-0000000785	Harris	06-02-0401040604,06-02-0401040304	Ongoing	$ 32,689,600.00	Yes	HCFCD Bond	2028	Reduction of flood risk
06-06-0000000786	Harris	06-02-0401040605,06-02-0401040302,06-02-0401040604,06-02-0401040606,06-02-0401040304	Ongoing	$ 143,808,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000787	Harris	06-02-0401040604	Ongoing	$ 4,788,180.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000788	Harris	06-02-0401010501,06-02-0401030110	Ongoing	$ 41,422,600.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000789	Harris	06-02-0401040604	Ongoing	$ 21,237,200.00	Yes	HCFCD Bond	2028	Reduction of flood risk
06-06-0000000790	Harris	06-02-0401010502,06-02-0401010501,06-02-0401040602,06-02-0401040704	Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000792	6	San Jacinto	Planning, Right-Of-Way Acquisition, and Design of General Drainage Improvements Near Huffman	This Bond ID provides funding for various project lifecycle stages to investigate flooding problems and to identify and implement potential projects to reduce flood risks in the Huffman area in the Luce Bayou watershed.	
06-06-0000000793	6	San Jacinto	E500-28-00	Investigation of Additional Stormwater Detention Basins in the White Oak Bayou Watershed. This Bond ID provides funding for an investigation of additional stormwater detention basins in the White Oak Bayou Watershed.	
06-06-0000000794	6	San Jacinto	Planning, Right-Of-Way Acquisition, and Design of a Reservoir along Spring Creek	This Bond ID provides funding to investigate stormwater detention sites in the Spring Creek watershed (both within and beyond the Harris County boundary).	
06-06-0000000795	6	San Jacinto	E500-25-00	This Bond ID provides funding for design and construction of the Arbor Oaks Stormwater Detention Basin, E500-25-00, which could reduce the risk of flooding to area homes and businesses. Design and Construction of Arbor Oaks Stormwater Detention Basin	
06-06-0000000799	6	San Jacinto	Partnership Project with the City of Houston for Feasibility Study of General Drainage Improvements around Hidden Lake Townhomes	Bond funds a drainage analysis with Houston to assess improvements reducing flood risk for 80+ homes in Hidden Lakes Townhomes during an Atlas 14 100-year rainfall event.	
06-06-0000000804	6	San Jacinto	Q136-00-00	Bond funds ROW, design, and construction of conveyance improvements on Cedar Bayou tributary Q136-00-00, advancing through as many project stages as funding allows.	
06-06-0000000803	6	San Jacinto	Q500-00-00	Funds multiple stages of a stormwater detention basin near Coastal Waterway Canals and IH-10, advancing through as many project phases as possible with available funding.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000792	Harris	06-02-0401010502,06-02-0401010501,06-02-0401030205,06-02-0401030402,06-02-0401040704,06-02-0402030103,06-02-0402030102	Ongoing	$ 5,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000793	Harris	06-02-0401020104,06-02-0401040703,06-02-0401040201,06-02-0401040305,06-02-0401040302,06-02-0401040604,06-02-0401040203,06-02-0401040303,06-02-0401040304,06-02-0401040301,06-02-0401040701	Ongoing	$ 250,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000794	Harris,Montgomery	06-02-0401010501,06-02-0401010404,06-02-0401020107,06-02-0401020212,06-02-0401020213,06-02-0401040602	Ongoing	$ 12,500,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000795	Harris	06-02-0401040302	Ongoing	$ 53,438,700.00	Yes	HCFCD Bond	2027	Reduction of flood risk
06-06-0000000799	Harris	06-02-0401040304	Ongoing	$ 175,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000804	Harris	06-02-0401010502,06-02-0401010501,06-02-0401030205,06-02-0402030102	Ongoing	$ 10,500,000.00	Yes	HCFCD Bond	2028	Reduction of flood risk
06-06-0000000803	Harris	06-02-0401040705,06-02-0401040706,06-02-0401040704,06-02-0402030105,06-02-0402030104,06-02-0402030103,06-02-0402030106,06-02-0402030200	Ongoing	$ 19,900,000.00	Yes	HCFCD Bond		Reduction of flood risk

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000802	6	San Jacinto	Q500-01-00	Bond funds ROW, design, and construction of the Q500-01 stormwater detention basin near IH-10 and SH 146, advancing through as many project stages as funding allows.	
06-06-0000000805	6	San Jacinto	Q128-00-00	Bond funds ROW, design, and construction of conveyance improvements along Adlong Ditch (Cedar Bayou tributary Q128-00-00), advancing through as many project stages as funding allows.	
06-06-0000000806	6	San Jacinto	Garden Road/O'Day Road Drainage Improvements	Project regrades 5,700' of ditches along Garden and O'Day Rds from Broadway, replacing culverts and driveways to boost conveyance and cut flooding in nearby neighborhoods. Identified in the Harvey Drainage Assessment Report.	
06-06-0000000807	6	San Jacinto	Garden Acres Subdivision Drainage Improvements	Northeast city project improves drainage by regrading ditches, replacing culverts/driveways, adjusting utilities, and repaving roads. Complements prior GLO Garden/O'Day project and upgrades system to current EDCM standards.	
06-06-0000000808	6	San Jacinto	C146-00-00	Partnership with the City of Houston to restore channel conveyance capacity along Sims Bayou tributary C146-00-00 (Whiteheather Ditch), advancing through as many project stages as funding allows.	
06-06-0000000809	6	San Jacinto	A214-00-00	Rehabilitation of the A214-00-00 channel to Restore Channel Conveyance Capacity. This Bond ID provides funding for various major maintenance activities to restore channel conveyance capacity.	061000425
06-06-0000000810	6	San Jacinto	A135-00-00	Funds ROW, design, and construction for the Morningside Place Drainage Improvements Project to reduce flood risks along Clear Creek tributary A135-00-00, advancing through multiple project stages.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000802	Harris	06-02-0401040705,06-02-0401040706,06-02-0401040704,06-02-0402030105,06-02-0402030104,06-02-0402030103,06-02-0402030106,06-02-0402030200	Ongoing	$ 22,900,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000805	Harris	06-02-0402030103	Ongoing	$ 20,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000806	Harris	06-02-0402040100	Ongoing	$ 2,126,800.00	No	HCFCD Bond		The project will help reduce the flooding of homes and streets by improving the conveyance capacity of ditches and removing storm water to Hickory Slough.
06-06-0000000807	Harris	06-02-0402040100	Ongoing	$ 4,091,000.00	No	HCFCD Bond		Hickory Creek Subdivision, north of FM 518, has outdated drainage and flooding history since 1965. Homes face repetitive flood losses despite being outside the 100-year floodplain. Streets and ditches predate current engineering standards.
06-06-0000000808	Harris	06-02-0401040703,06-02-0401040402,06-02-0401040305,06-02-0401040401,06-02-0401040502,06-02-0401040501,06-02-0402040200,06-02-0402040400,06-02-0402040100	Ongoing	$ 15,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000809	Harris		Ongoing	$ 500,000.00	Yes	HCFCD Bond	2025	Reduction of flood risk
06-06-0000000810	Harris	06-02-0402040100	Ongoing	$ 2,950,000.00	Yes	HCFCD Bond	2025	Reduction of flood risk

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000811	6	San Jacinto	D115-00-00	Restore Channel Conveyance Capacity Along D115-00-00. This Bond ID provides funding for a project to restore channel conveyance capacity near Brays Bayou tributary D115-00-00, also known as Cypress Slough Ditch, in the City of Bellaire.	061000015
06-06-0000000812	6	San Jacinto	A104-00-00	This Bond ID provides funding for various major maintenance activities to restore channel conveyance capacity along Clear Creek tributary A104-00-00.	
06-06-0000000813	6	San Jacinto	W141-00-00	Funds planning, ROW, design, and construction along Soldiers Creek (Buffalo Bayou tributary W141-00-00) to reduce flood risks. Supports multiple project stages with available funding.	
06-06-0000000816	6	San Jacinto	C124-00-00	Funds planning, ROW acquisition, design, and construction for drainage improvements near Sims Bayou tributary C124-00-00, advancing through as many project stages as funding allows.	
06-06-0000000817	6	San Jacinto	C102-00-00	artnership with the City of Houston to restore channel conveyance capacity along Sims Bayou tributary C102-00-00 (Plum Creek) to improve drainage and reduce flood risk.	
06-06-0000000819	6	San Jacinto	C143-00-00	Planning, Right-Of-Way Acquisition, Design and Construction Along C143-00-00. This Bond ID provides funding for a project that will reduce the risk of flooding and could also facilitate future local drainage projects near Sims Bayou tributary C143-00-0	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000811	Harris	06-02-0401040402,06-02-0401040102,06-02-0401040202,06-02-0401040103,06-02-0401040104,06-02-0401040201,06-02-0401040305,06-02-0401040203,06-02-0401040303,06-02-0401040401,06-02-0401040502,06-02-0401040501,06-02-0402040100	Ongoing	$ 15,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000812	Harris	06-02-0401040703,06-02-0401040706,06-02-0401040502,06-02-0401040501,06-02-0402040200,06-02-0402040400,06-02-0402040100	Ongoing	$ 5,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000813	Harris		Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000816	Harris	06-02-0401040703,06-02-0401040402,06-02-0401040305,06-02-0401040401,06-02-0401040502,06-02-0401040501,06-02-0402040400,06-02-0402040100	Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk
06-06-0000000817	Harris	06-02-0401040703,06-02-0401040402,06-02-0401040305,06-02-0401040401,06-02-0401040502,06-02-0401040501,06-02-0402040400,06-02-0402040100	Ongoing	$ 25,000,000.00	Yes	HCFCD Bond	2028	Reduction of flood risk
06-06-0000000819	Harris	06-02-0401040703,06-02-0401040402,06-02-0401040305,06-02-0401040401,06-02-0401040502,06-02-0401040501,06-02-0402040200,06-02-0402040400,06-02-0402040100	Ongoing	$ 10,000,000.00	Yes	HCFCD Bond		Reduction of flood risk

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Cycle 1 FMP or FMS ID
06-06-0000000818	6	San Jacinto	K500-00-00	Funds design and construction of stormwater detention basins along Cypress Creek and evaluates added detention in buyout areas, contributing to the 26,500 ac-ft goal in the 2022 Cypress Creek Watershed Implementation Plan.	

Table 3. Summary of proposed or ongoing flood mitigation projects

Existing Project ID	County	Watersheds	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit
06-06-0000000818	Harris		Ongoing	$ 48,631,900.00	Yes	HCFCD Bond	2027	Reduction of flood risk

Chapter 2

Appendix 2A-1: Map 4 - Existing Condition Flood Hazard

Legend

Flood Type

- Riverine
- Other
- Coastal
- Local

Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles

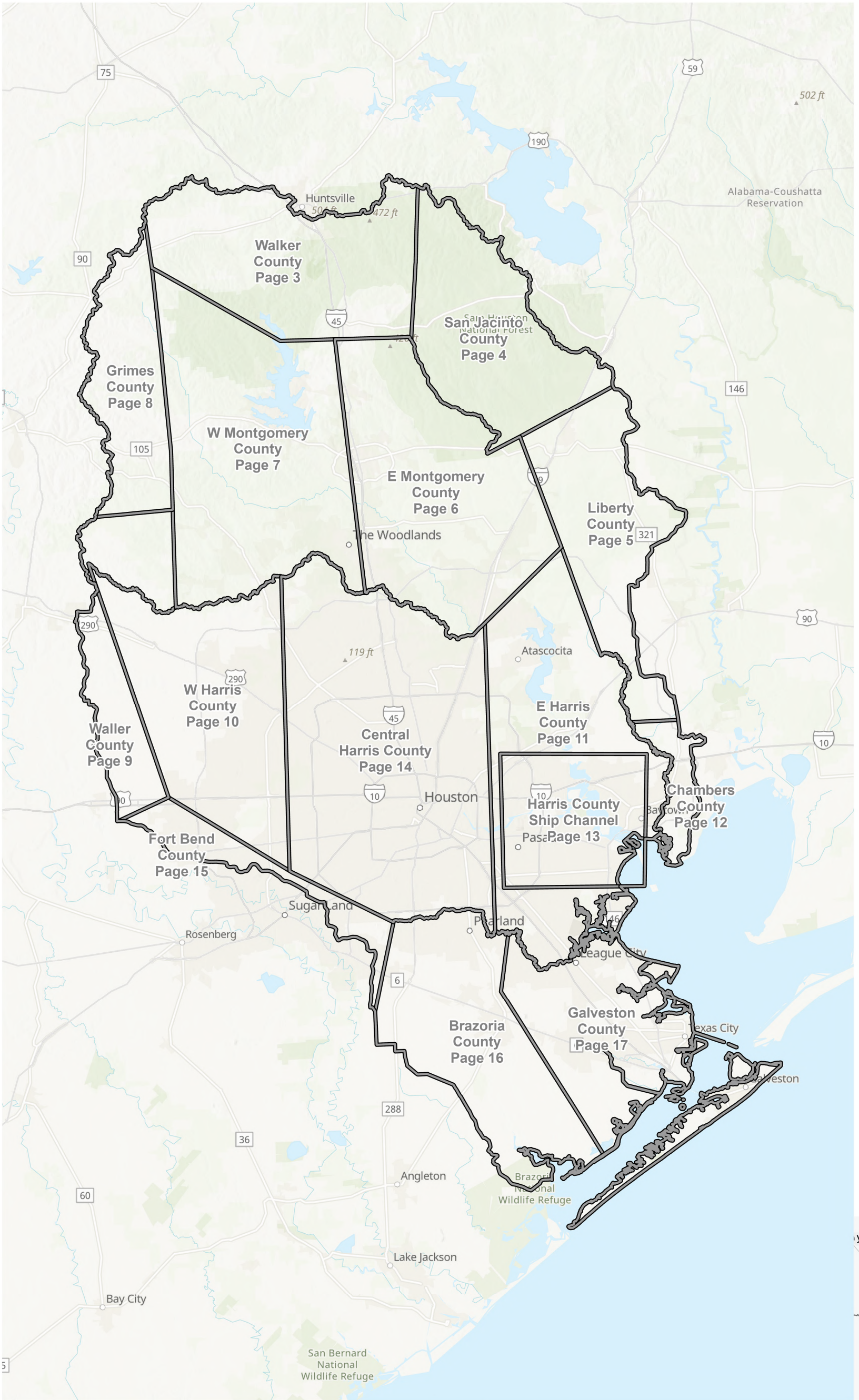


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
1 of 17 in series



Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
2 of 17 in series

Legend

Flood Type

- Riverine
- Other
- Coastal
- Local

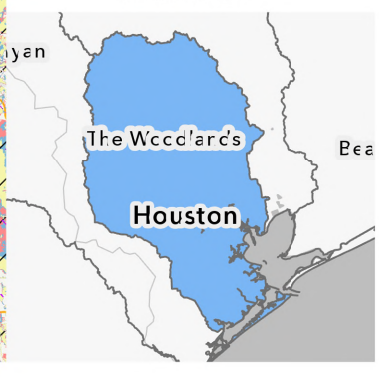
Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles

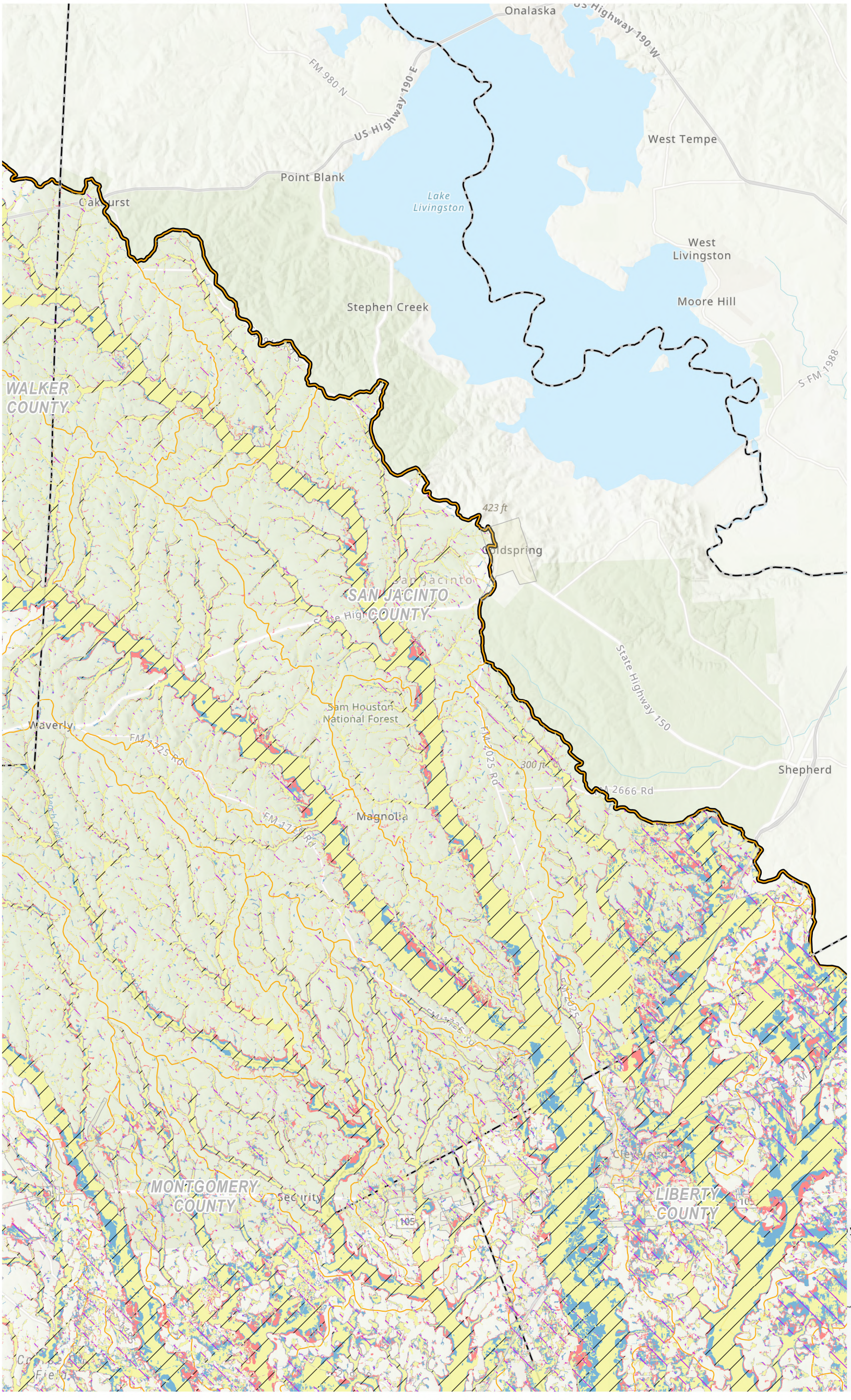


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
3 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
4 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Legend

Flood Type

- Riverine
- Other
- Coastal
- Local

Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
5 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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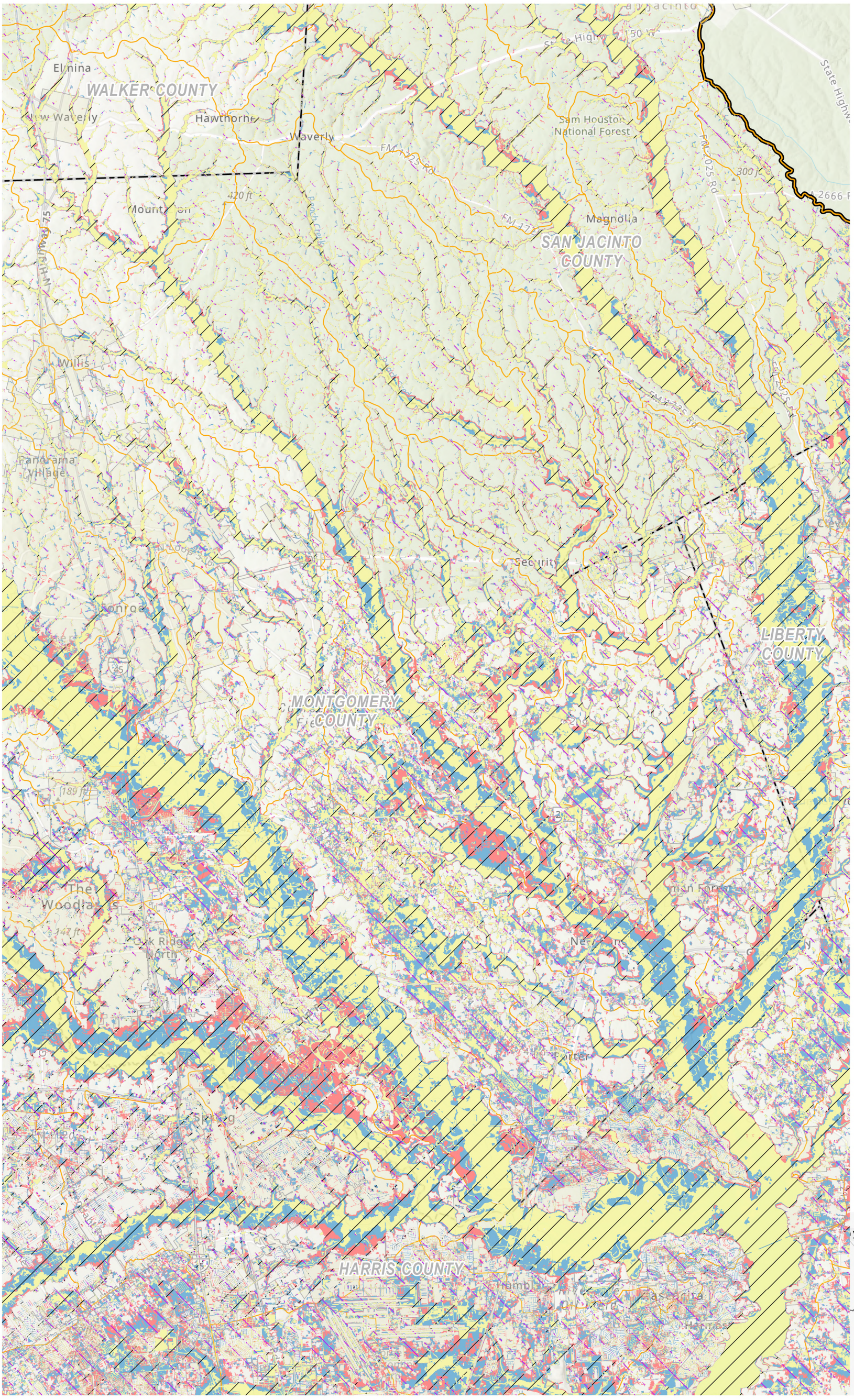

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
6 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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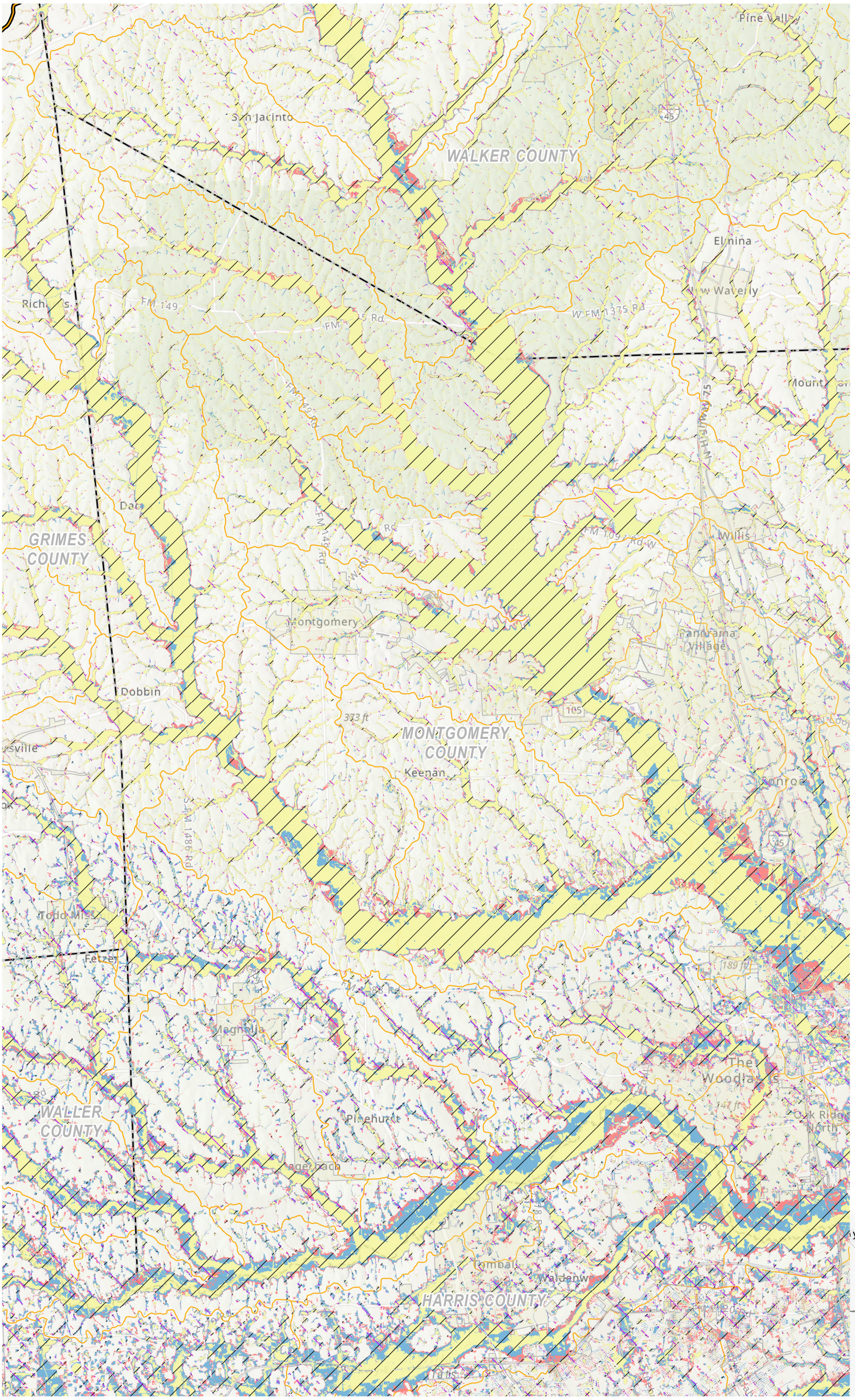

Legend

Flood Type

- Riverine
- Other
- Coastal
- Local

Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
7 of 17 in series

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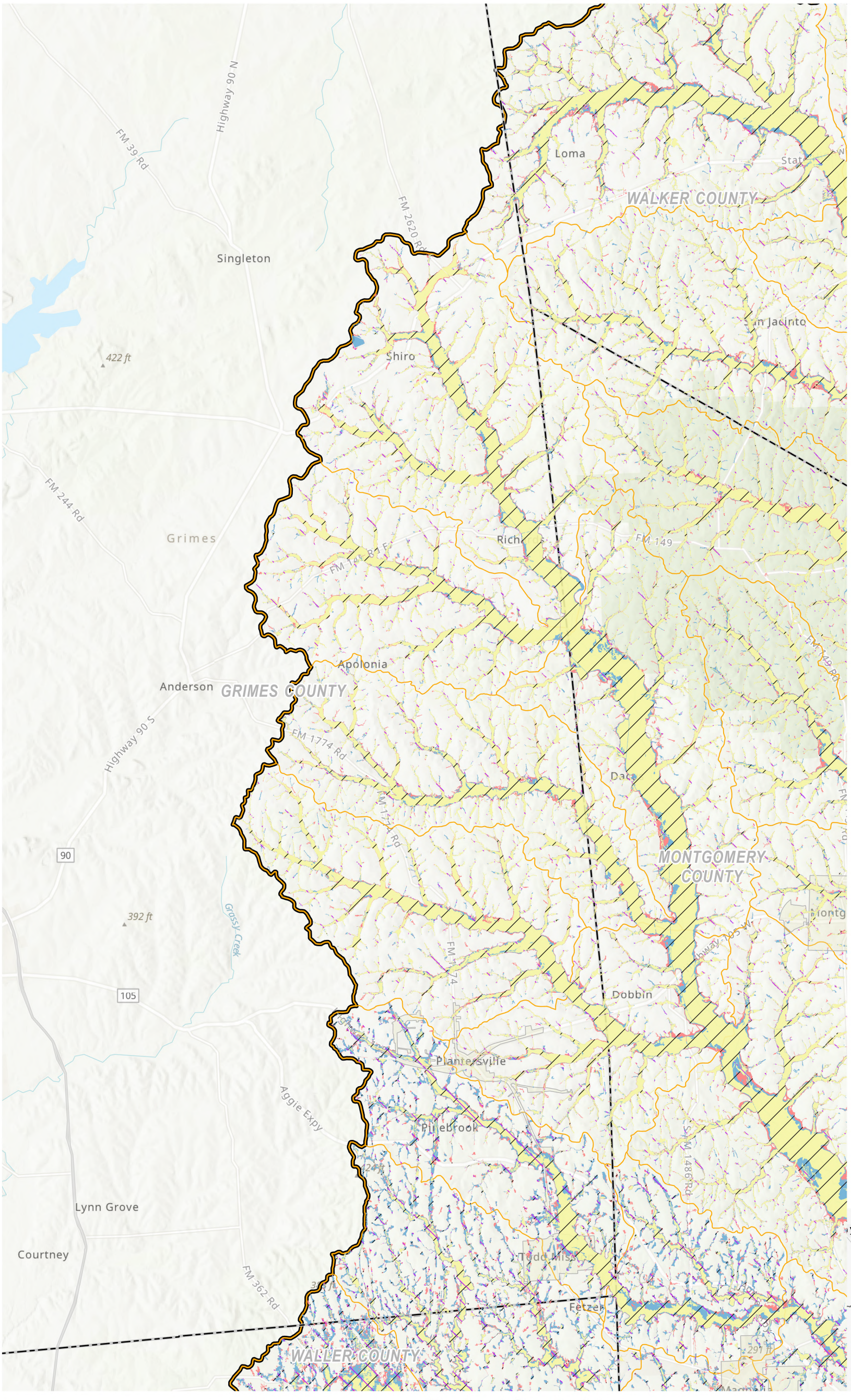
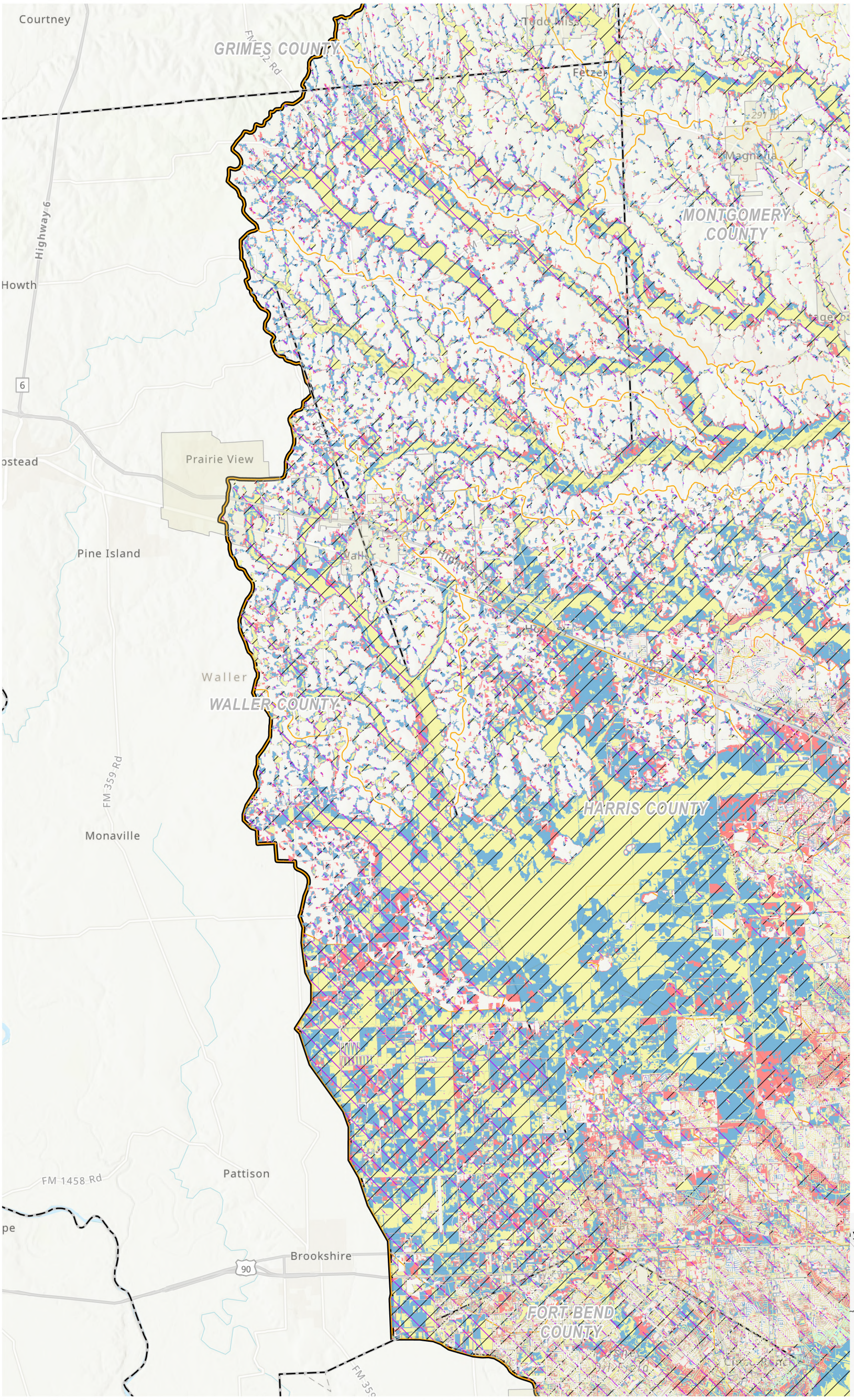


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
8 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

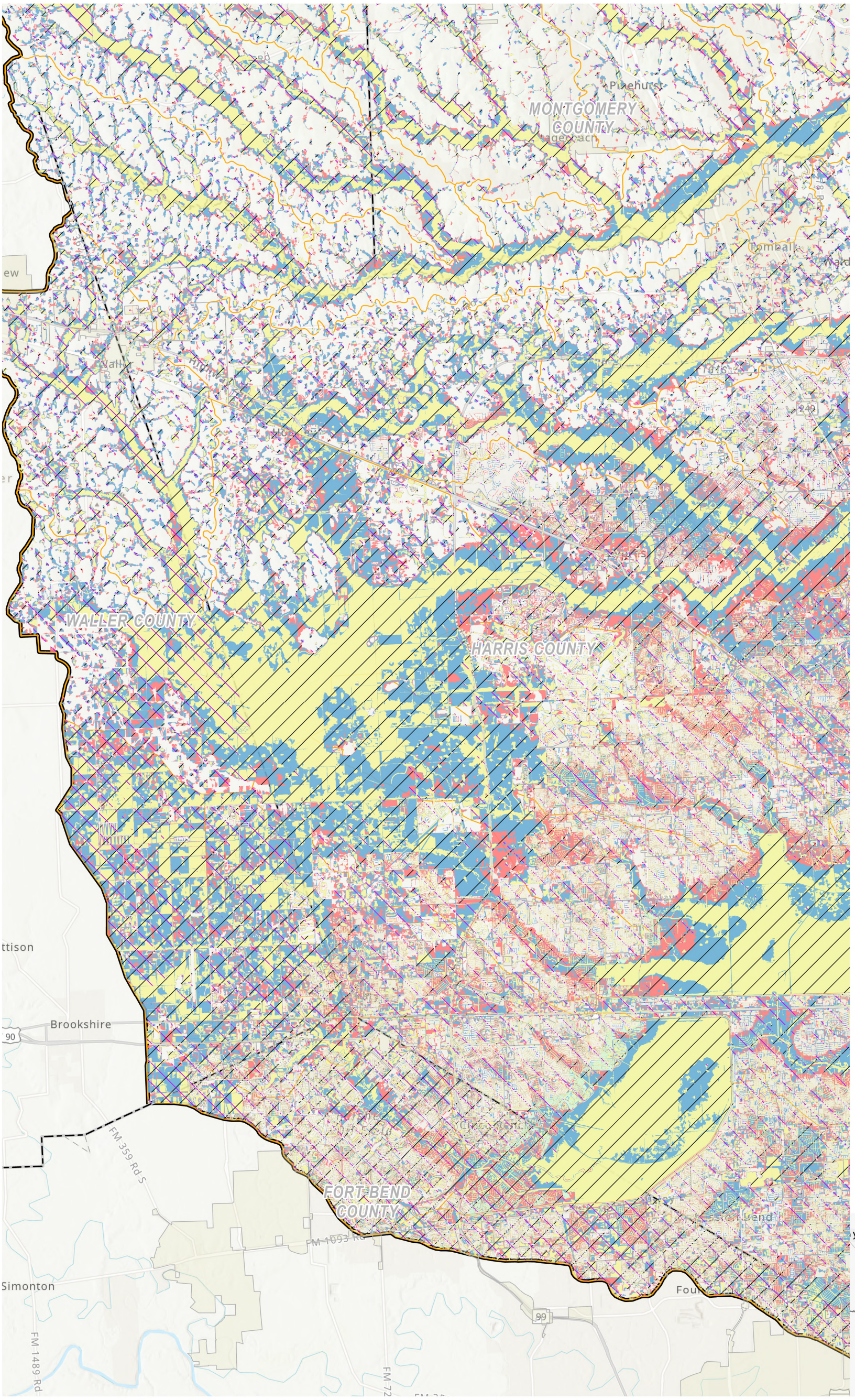


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
9 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Flood Type

- Riverine
- Other
- Coastal
- Local

Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles

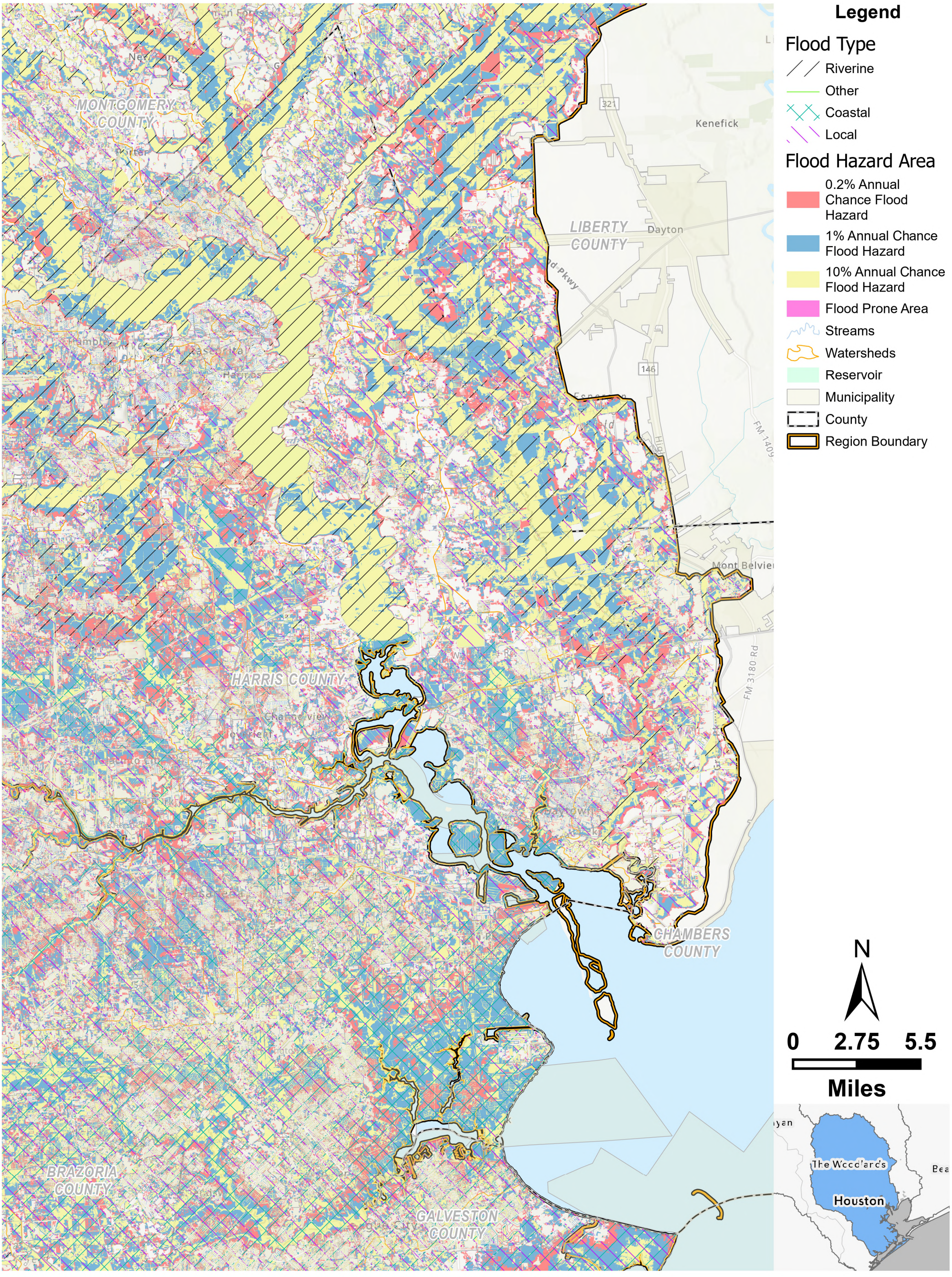


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
10 of 17 in series

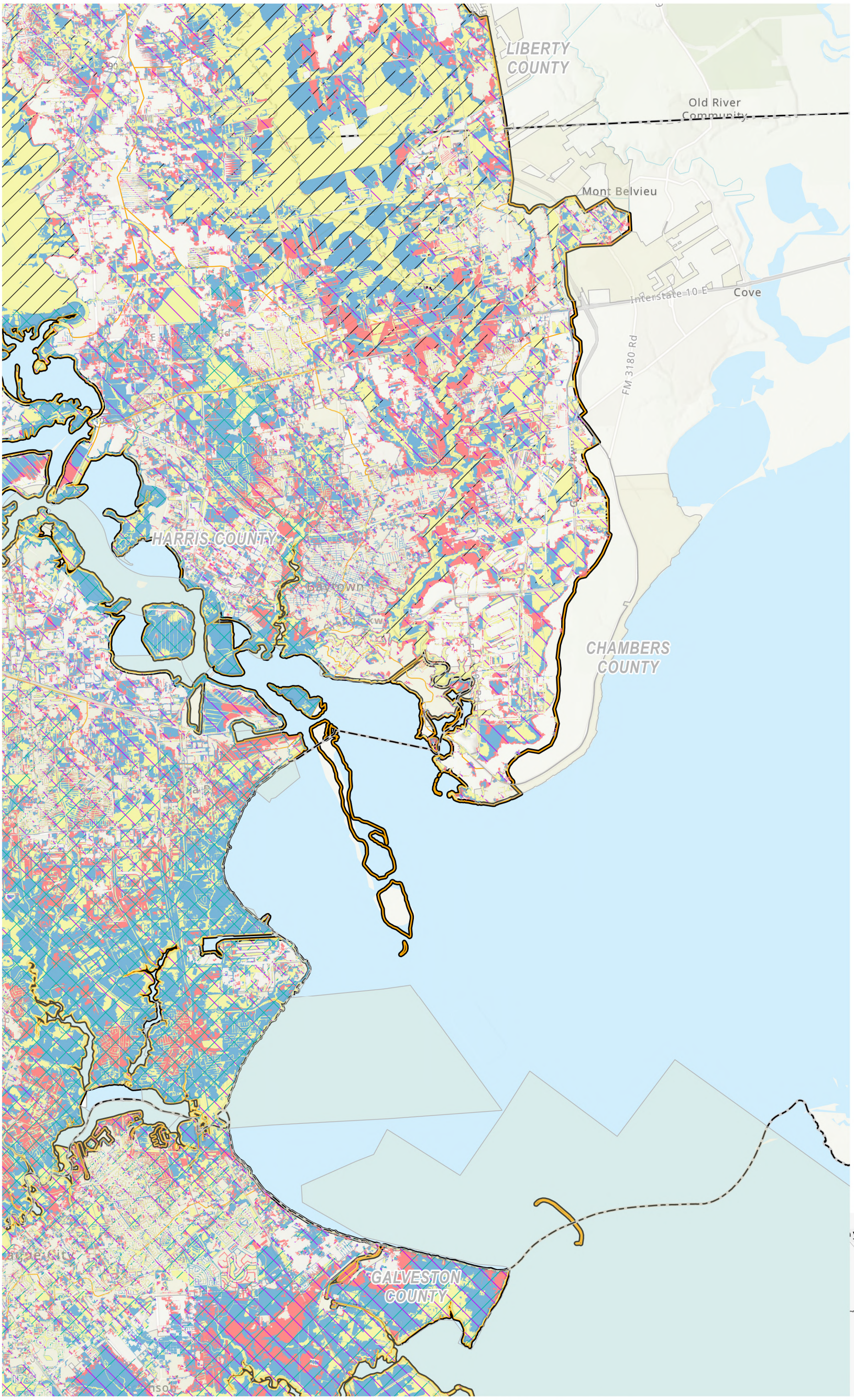


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
11 of 17 in series

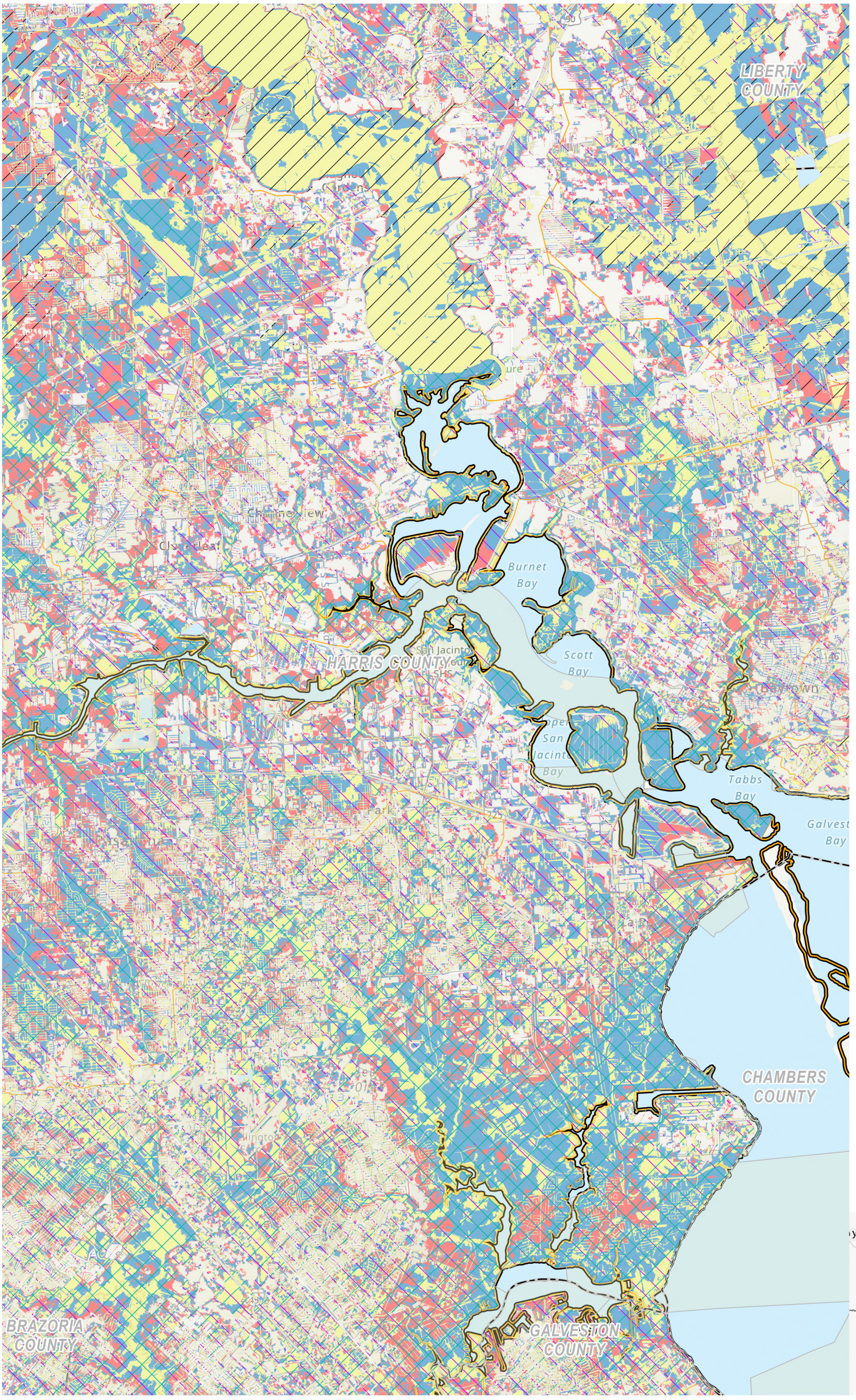


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
12 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
13 of 17 in series

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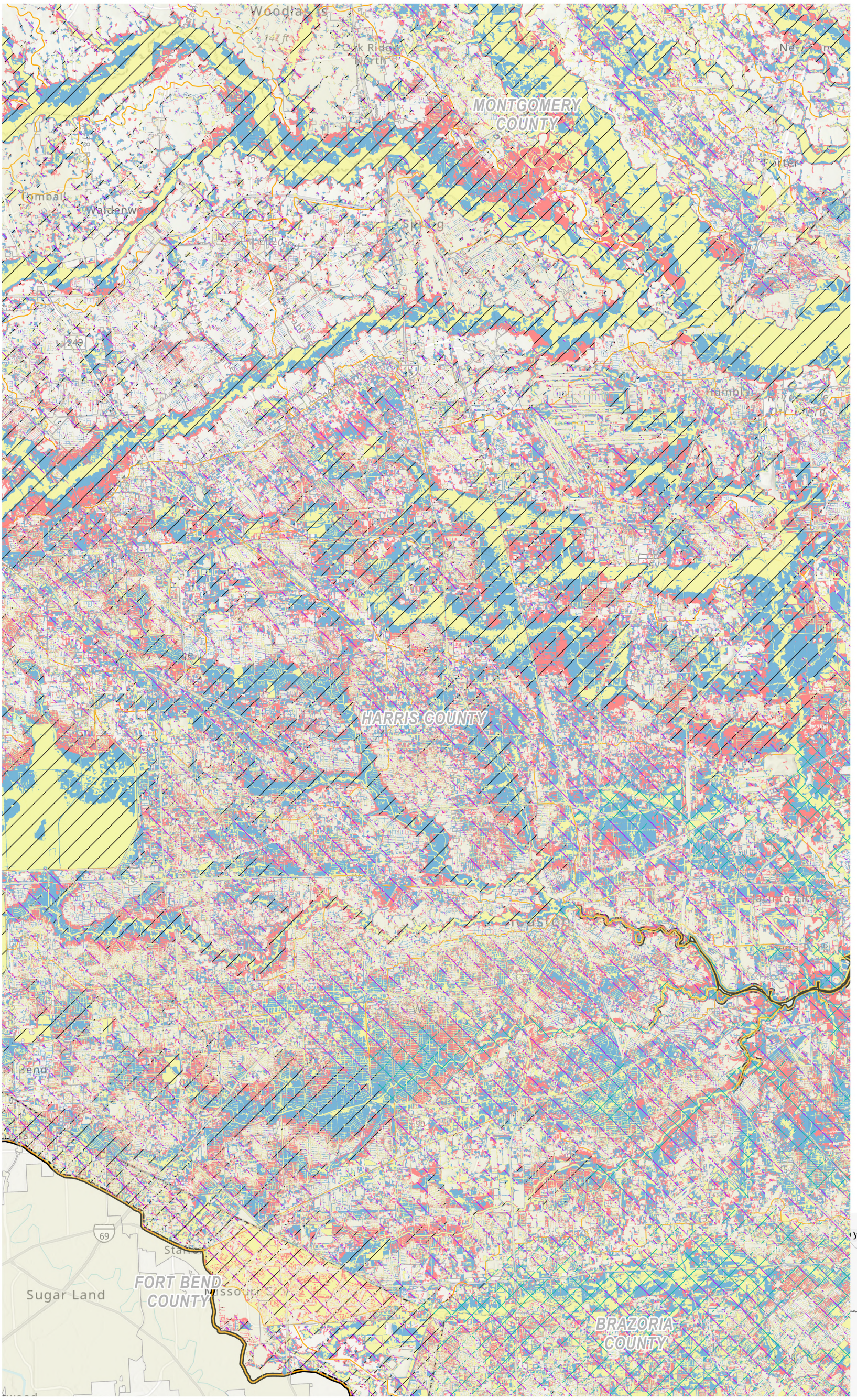


Legend

Flood Type

- Riverine
- Other
- Coastal
- Local

Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
14 of 17 in series

Legend

Flood Type

- Riverine
- Other
- Coastal
- Local

Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles

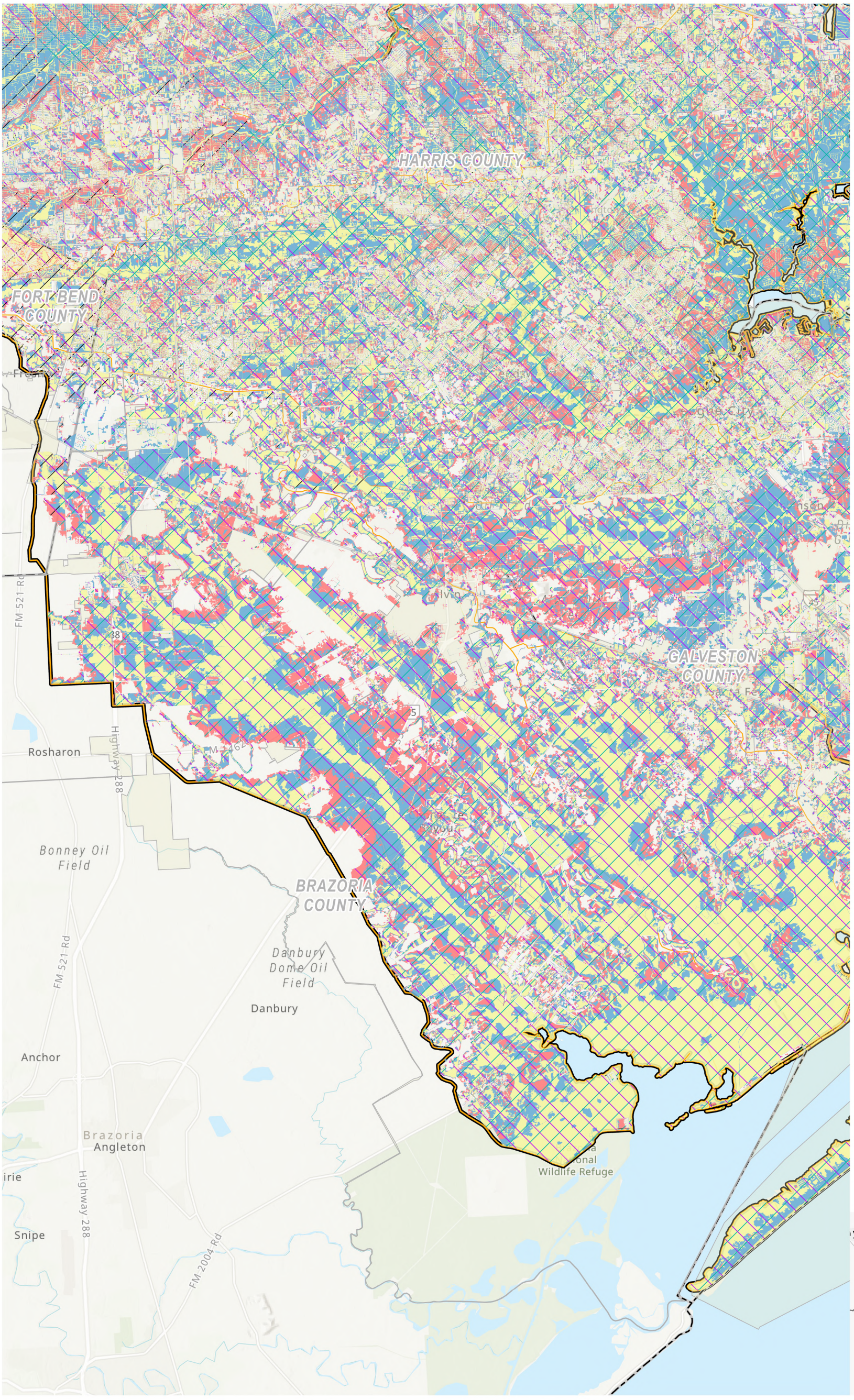
WALLER COUNTY
HARRIS COUNTY
FORT BEND COUNTY
BRAZORIA COUNTY
Pecan Grove
Sugar Land
New Territory
Richmond
Rosenberg
Greatwood
Booth
Fort Bend
Pleak
Thompsons
Sienna
Smithers Lake
Oil Creek Oil Field
Thompsons Oil Field
Fairchilds
Needville
Needville Oil Field
Brazos Bend
Guy
Rosharon
Nash Dome Oil Field
Damon
Otey
Bonney Oil Field
The Woodlands
Houston
FM 359 Rd
E Highway 90A
FM 762 Rd
FM 1462 Rd
W FM 1462
FM 521 Rd
FM 442 Rd
Big Creek

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
15 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Flood Type

- Riverine
- Other
- Coastal
- Local

Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
16 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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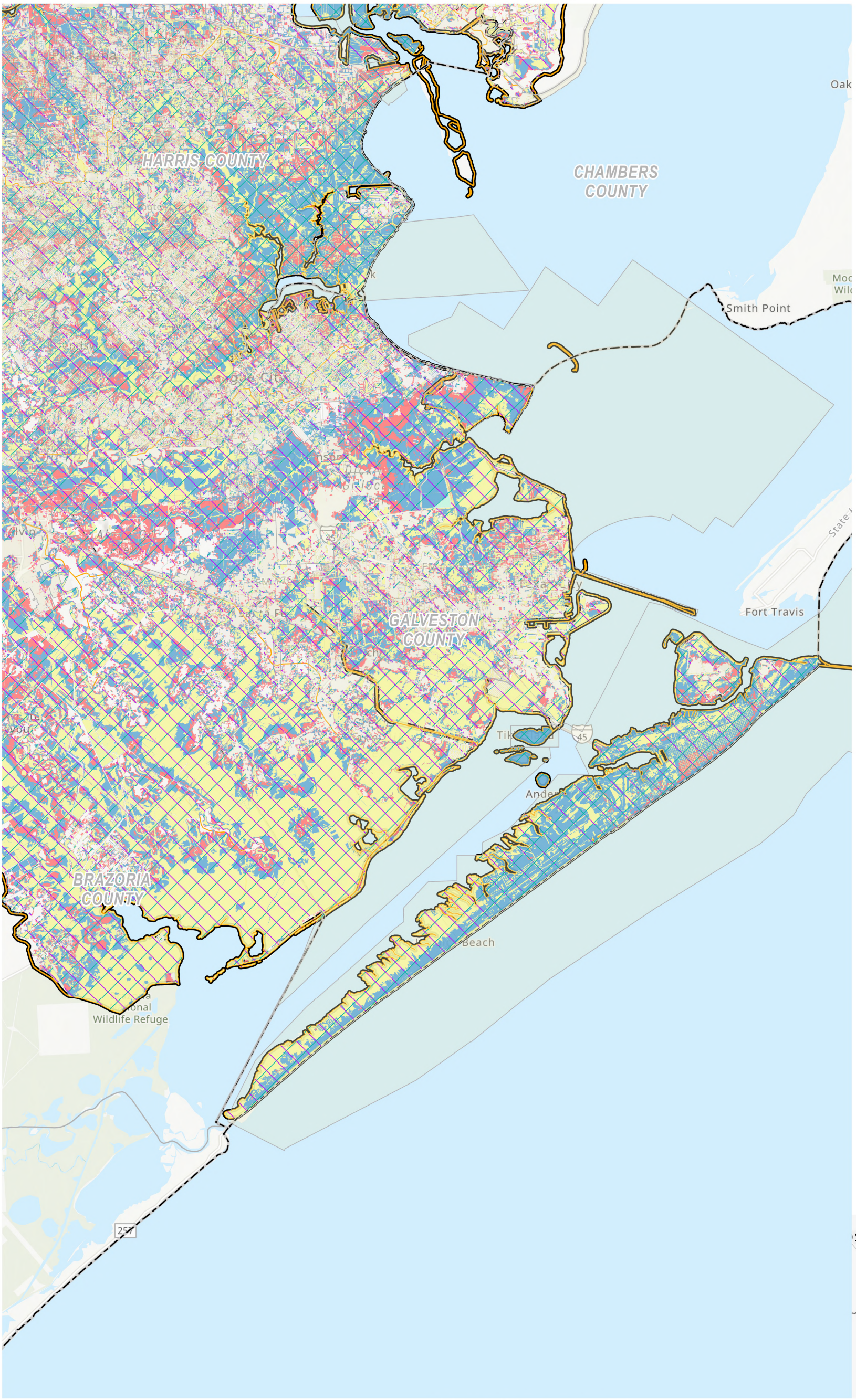
NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



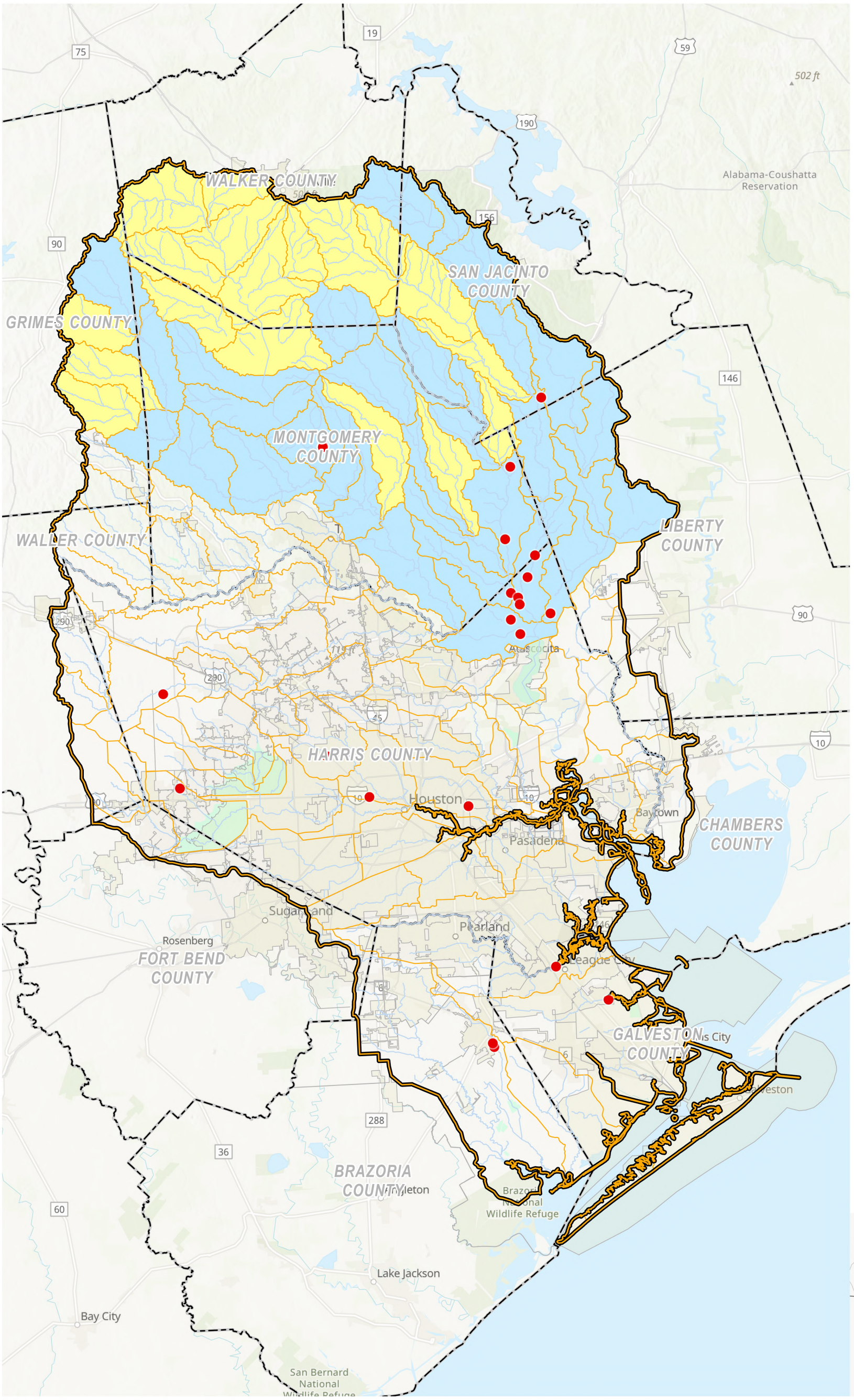
Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard

MAP 4
17 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Appendix 2A-2: Map 5 - Gaps in Inundation Mapping and Flood Prone Areas



Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Hazard Map Gaps

MAP 5

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

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NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Appendix 2A-3: Map 6 - Existing Condition Flood Exposure

Legend

Flood Exposure Feature Density

- Low
- High
- Streams
- Municipality
- County
- Watersheds
- Region Boundary

N

0 5 10

Miles



Region 6 San Jacinto
2028 Regional Flood Plan
Existing Condition Flood Exposure

MAP 6

1 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Legend

Index

Walker County Page 3

San Jacinto County Page 4

Grimes County Page 8

W Montgomery County Page 7

E Montgomery County Page 6

Liberty County Page 5

W Harris County Page 10

E Harris County Page 11

Waller County Page 9

Central Harris County Page 14

Harris County Ship Channel Page 13

Chambers County Page 12

Fort Bend County Page 15

Brazoria County Page 16

Galveston County Page 17

Huntsville

The Woodlands

Houston

Atascocita

Alabama-Coushatta Reservation

Sugar Land

Rosenberg

Pearland

League City

Texas City

Angleton

Lake Jackson

Bay City

San Bernard National Wildlife Refuge

N

0 5 10

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
2 of 17 in series

Legend

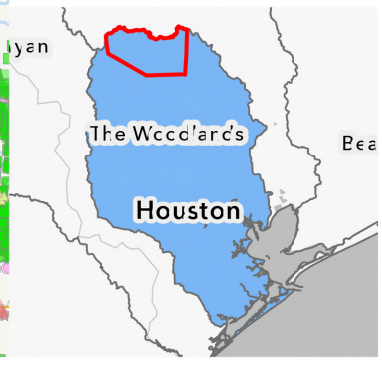
Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 2.75 5.5

Miles



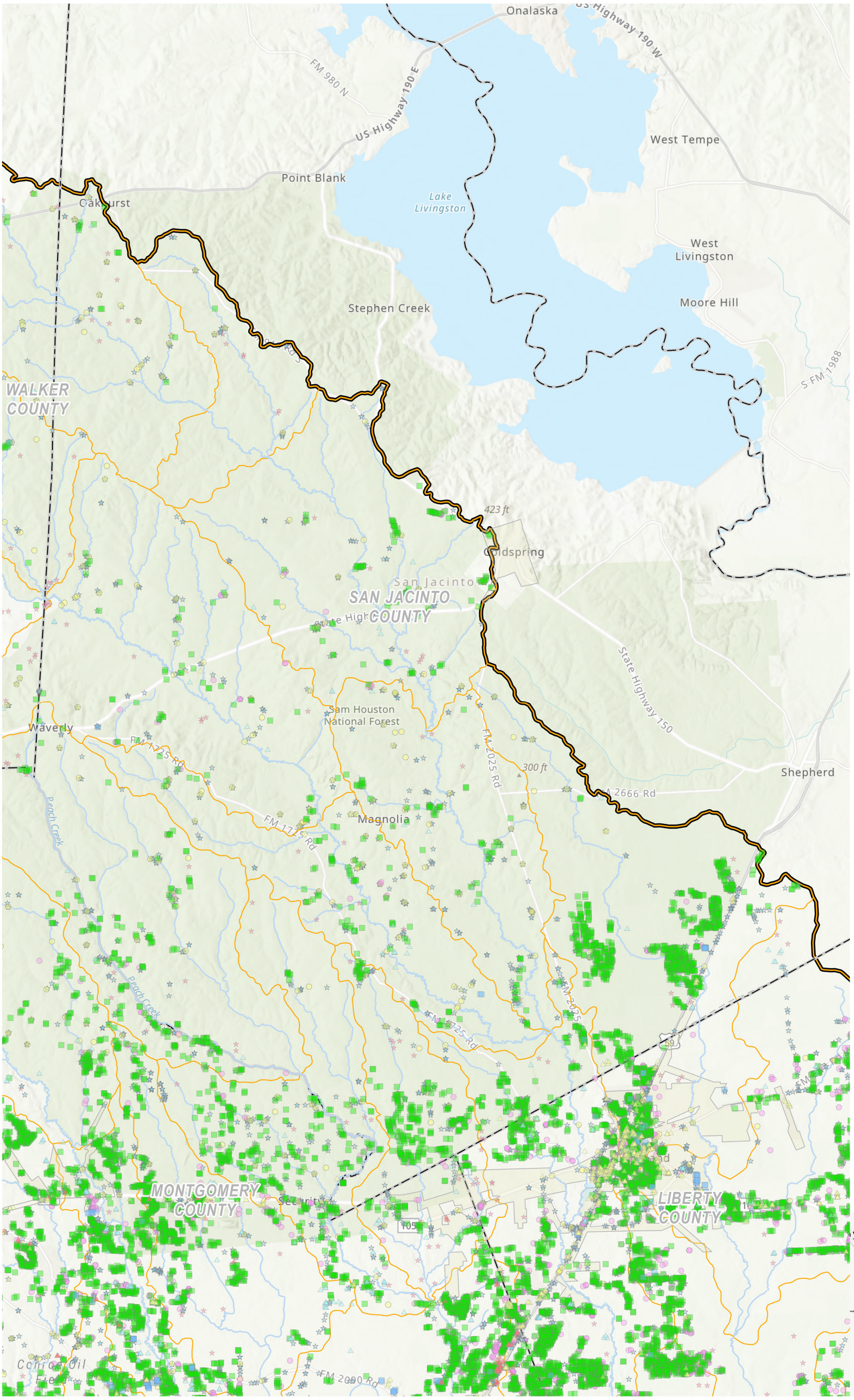
Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6

3 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

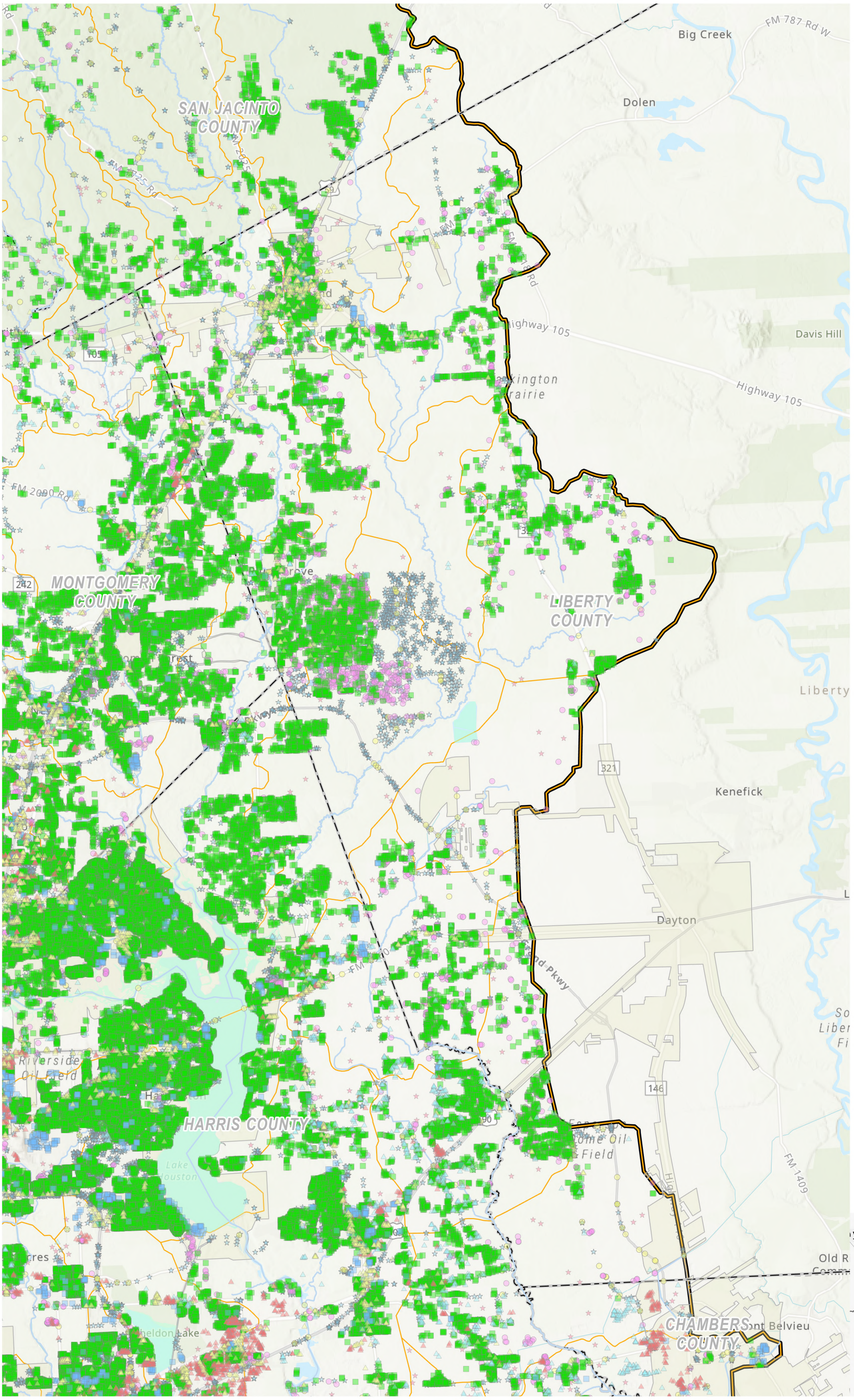
MAP 6
4 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles



Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
5 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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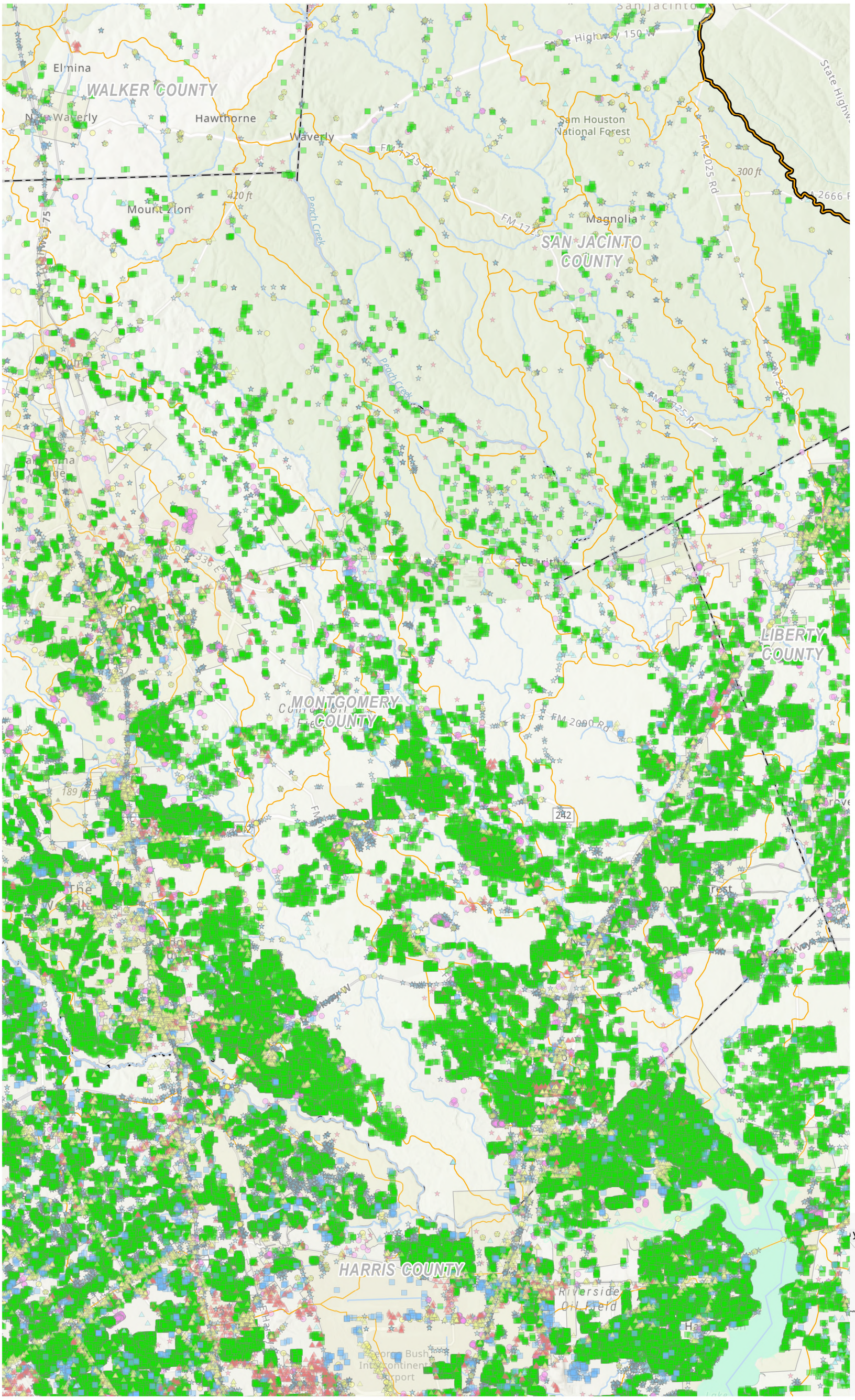


Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
6 of 17 in series

Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles

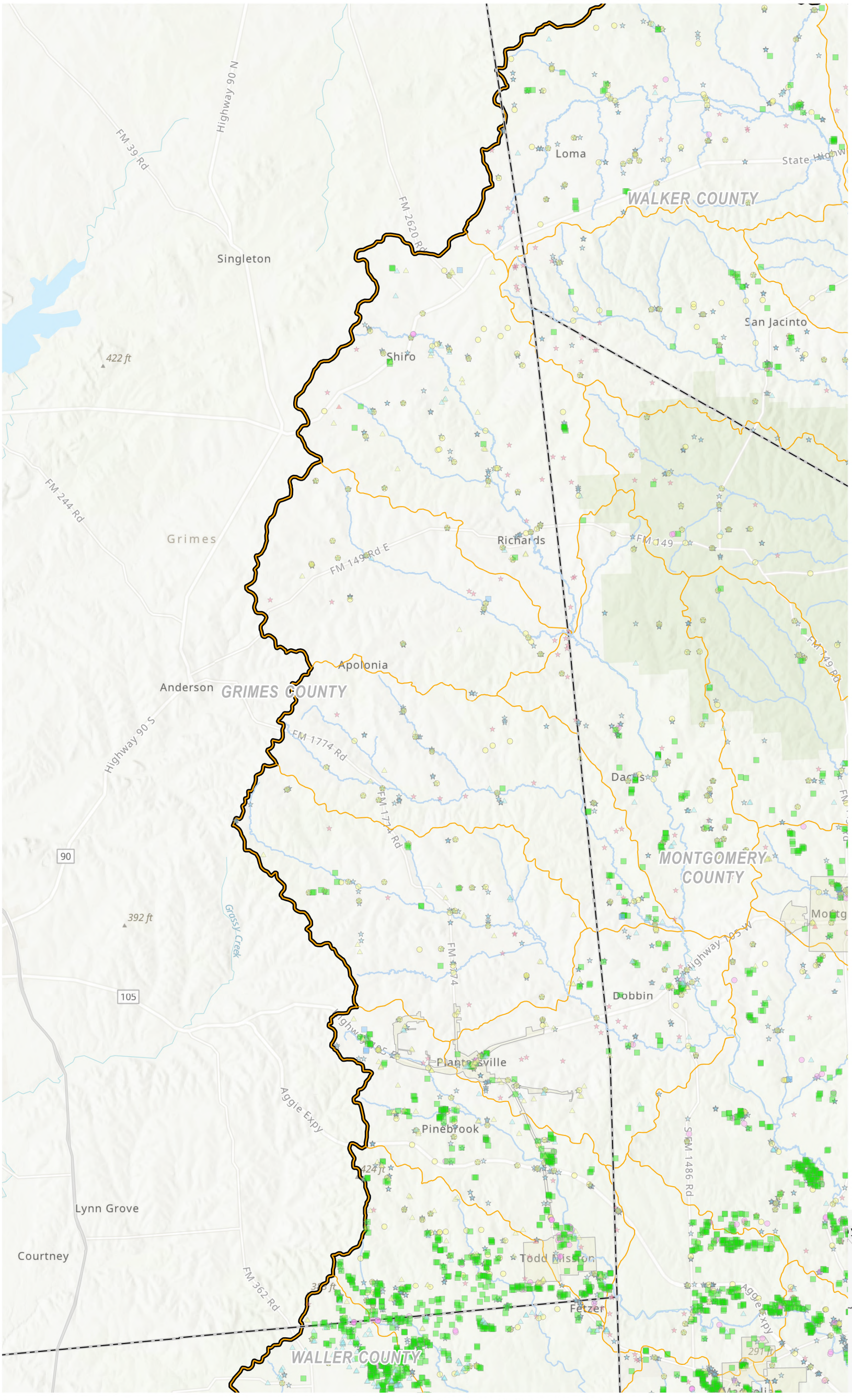


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
7 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

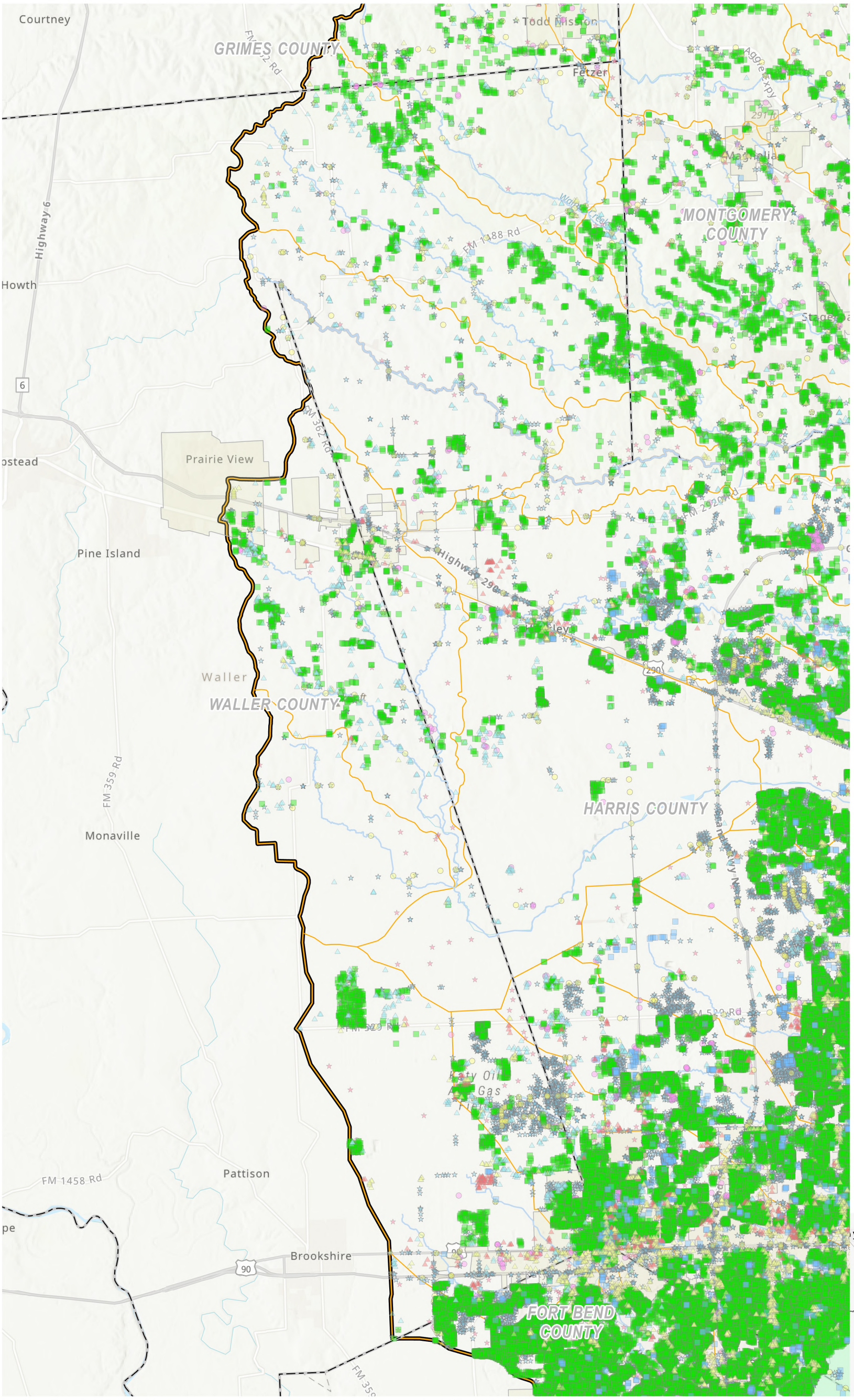


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
8 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.5 3

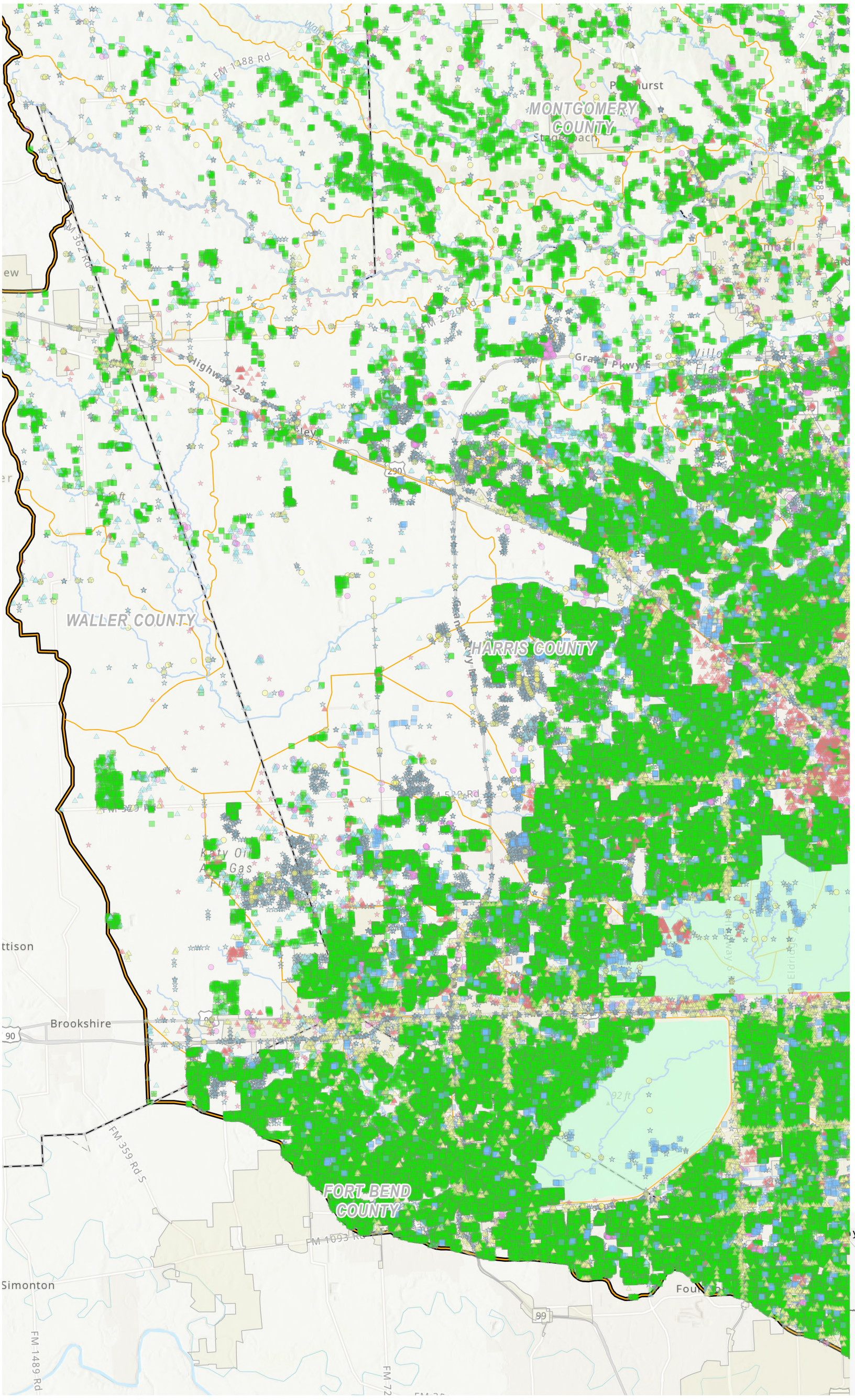
Miles

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
9 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.5 3

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
10 of 17 in series

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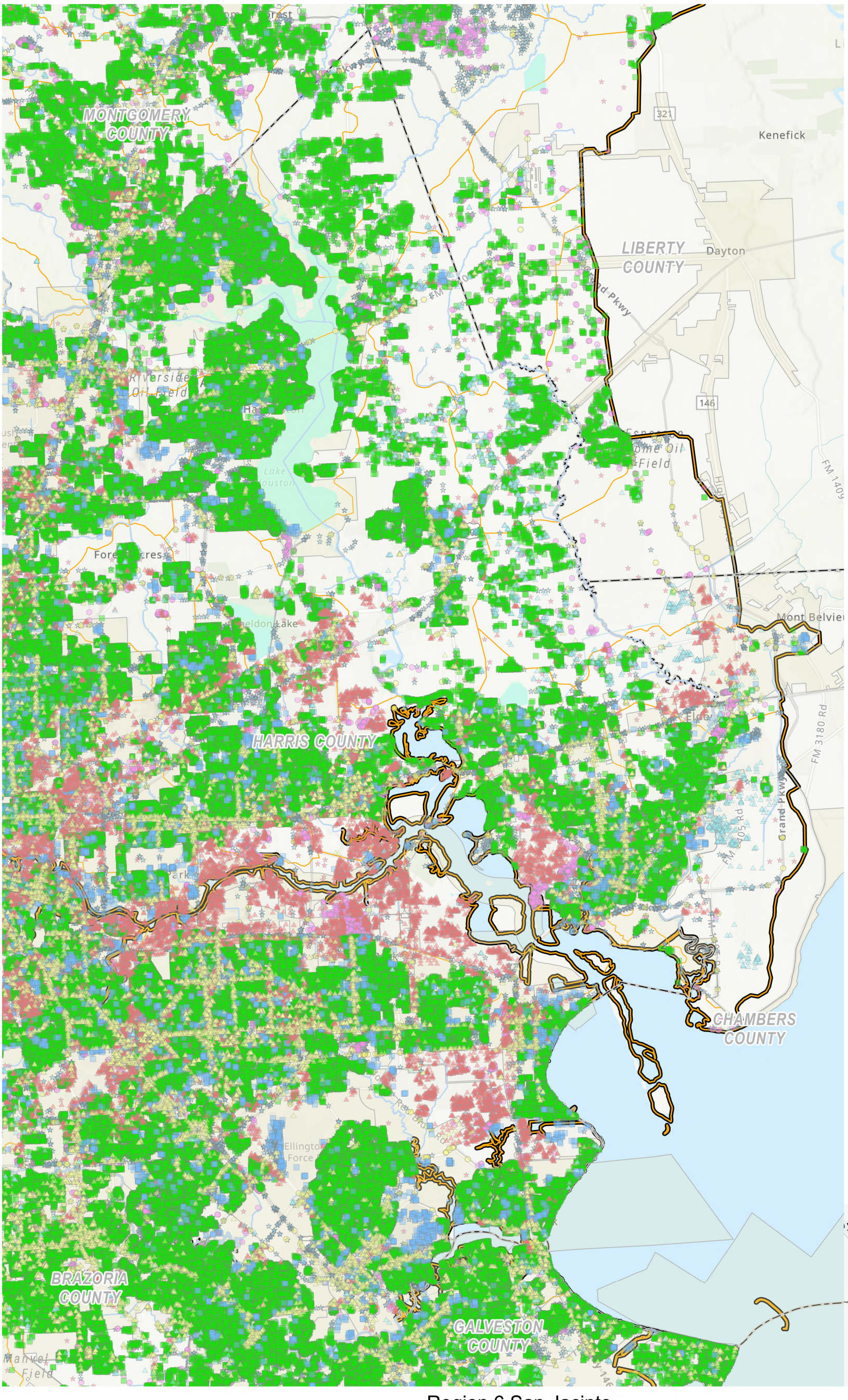
NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

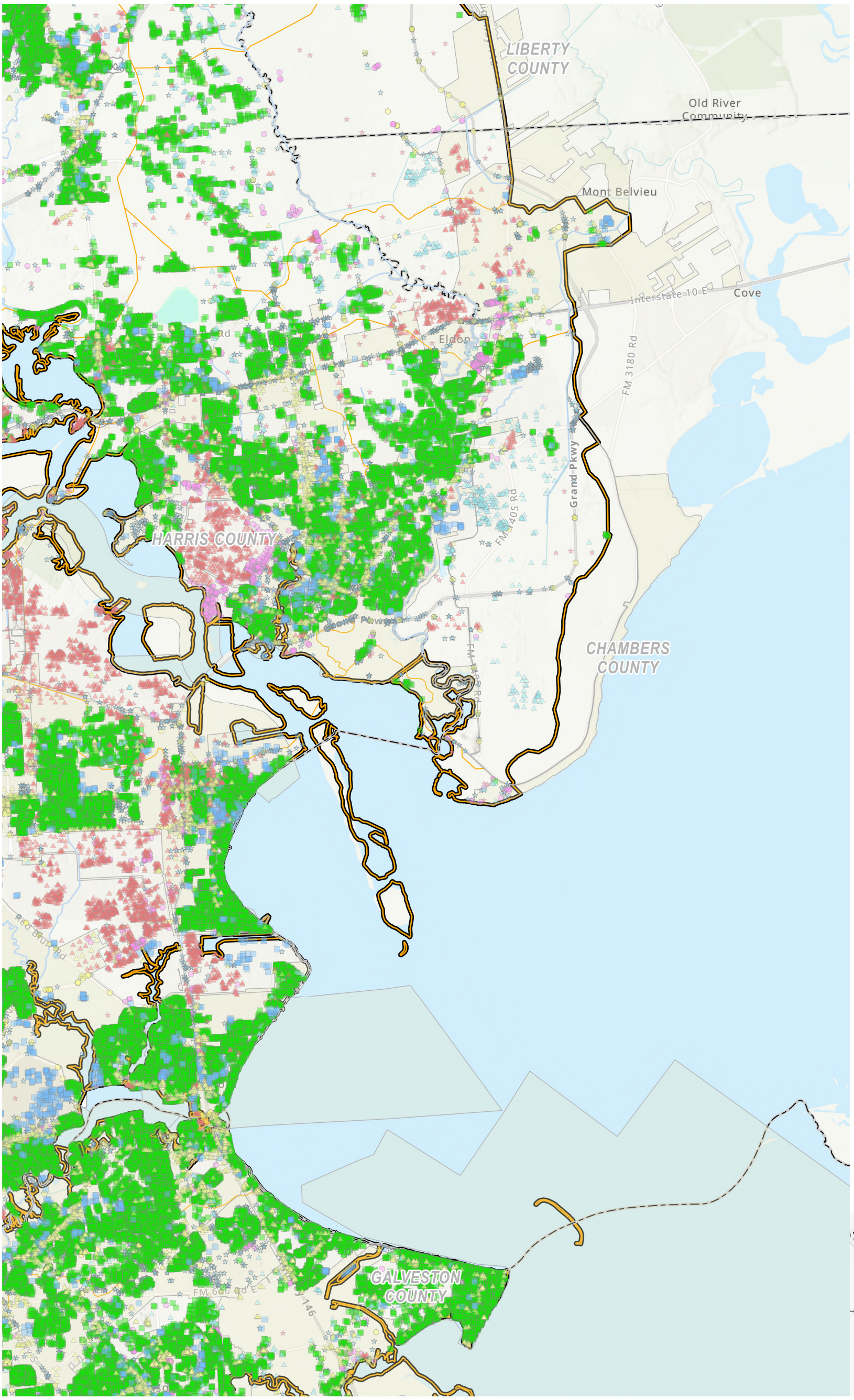


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
11 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.25 2.5

Miles

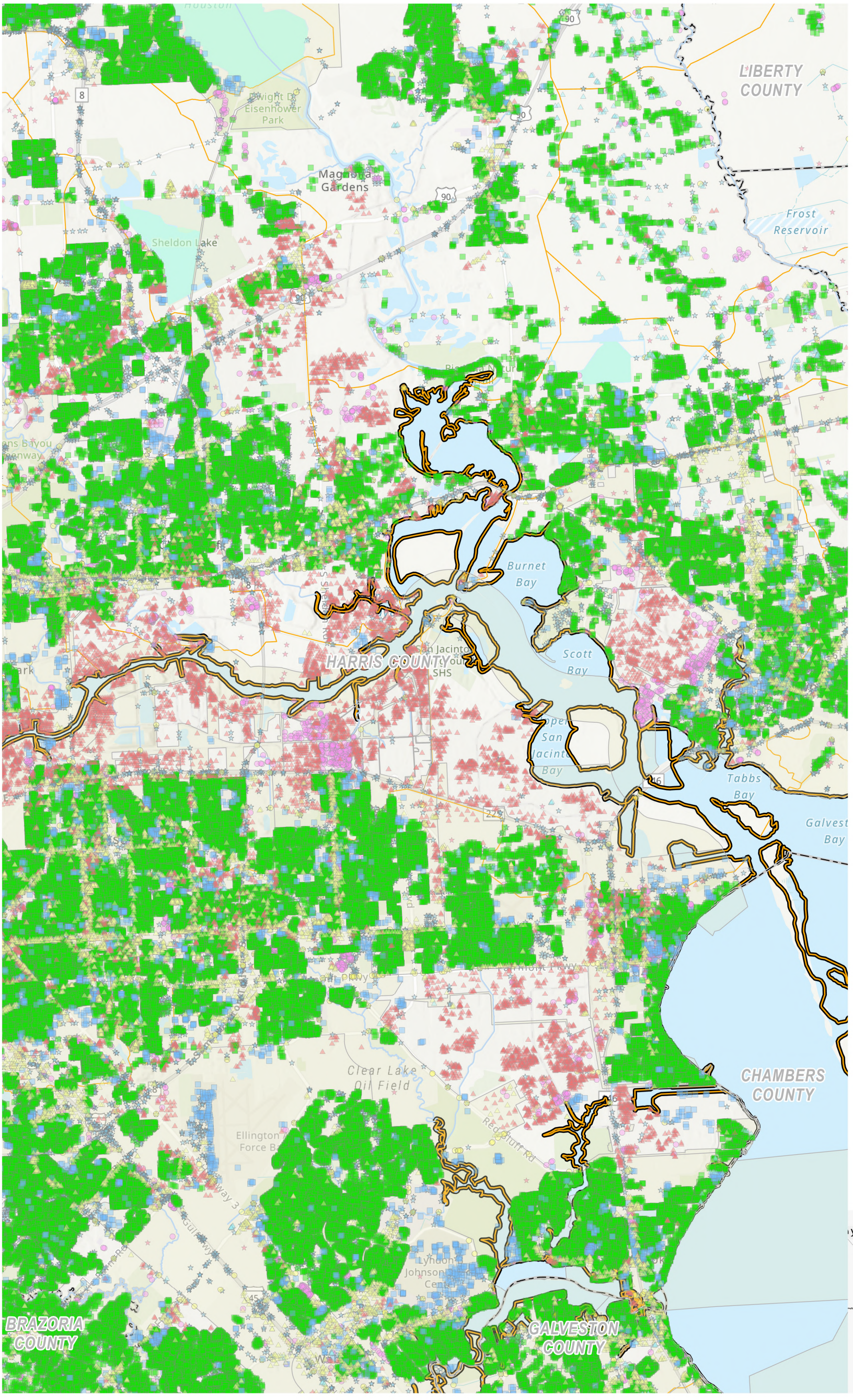


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
12 of 17 in series



Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1 2

Miles

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
13 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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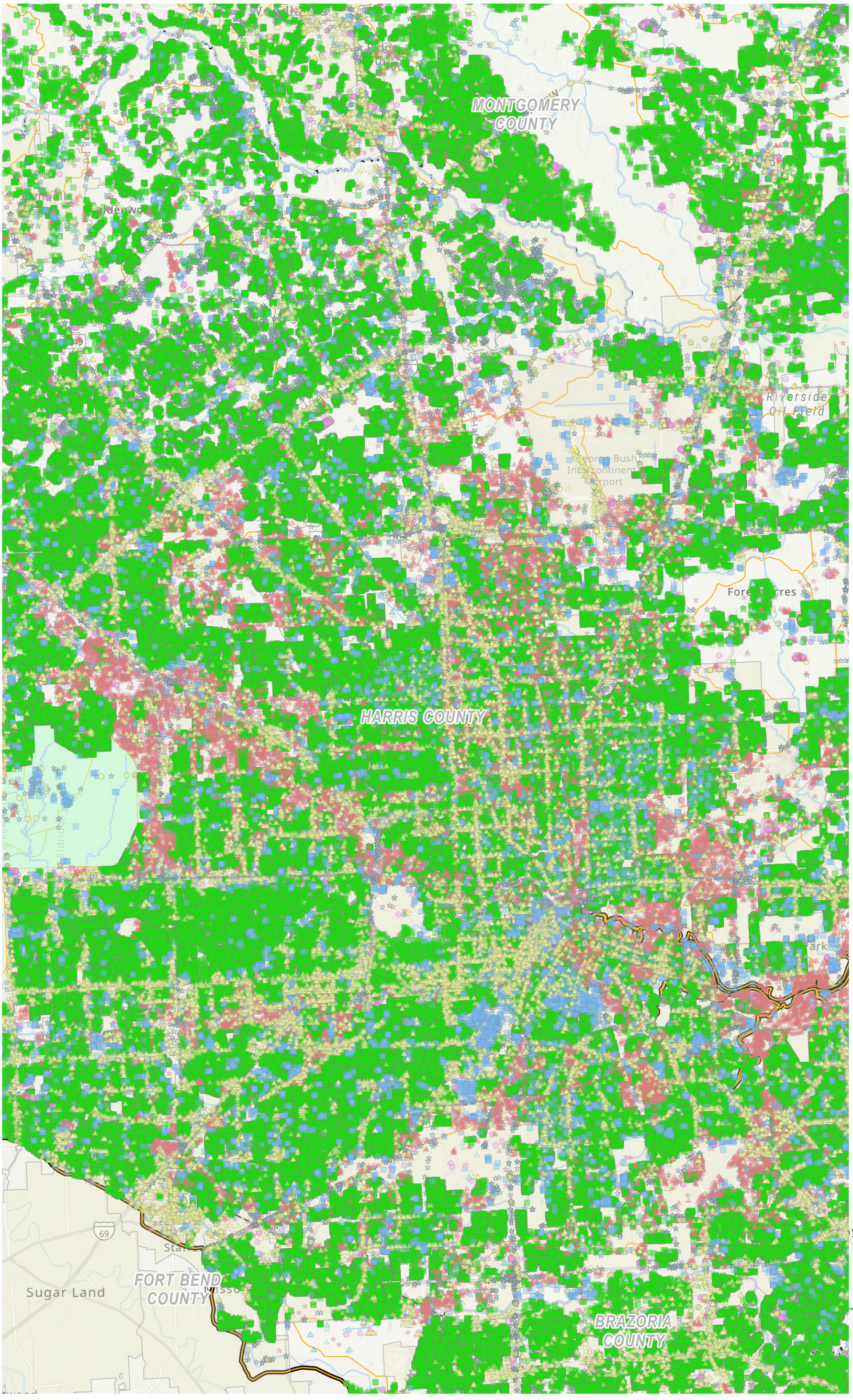
Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Legend

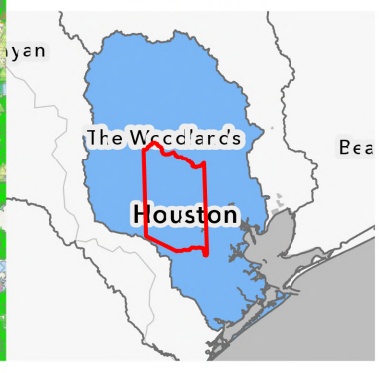
Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
14 of 17 in series

Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles



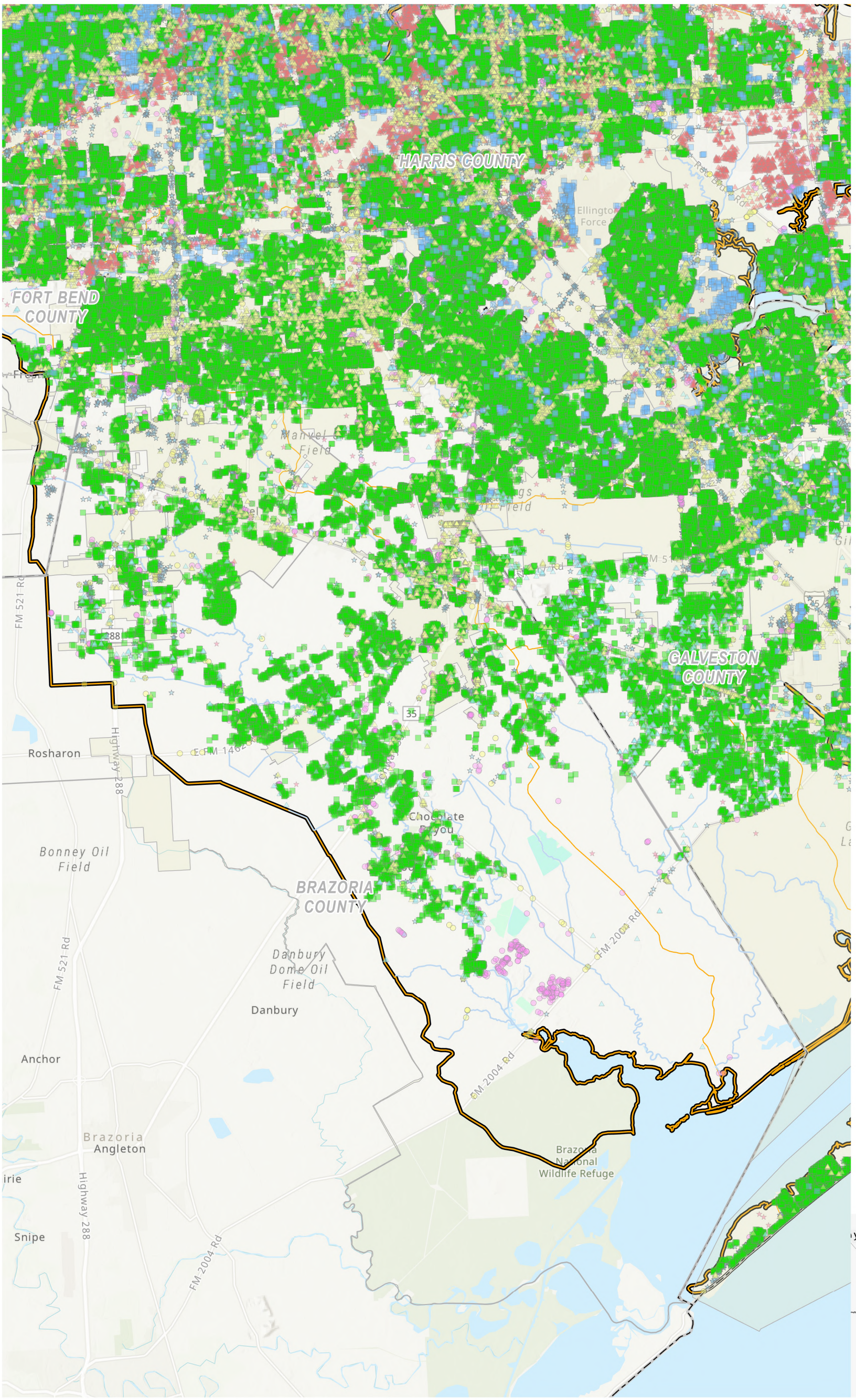
Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6

15 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles

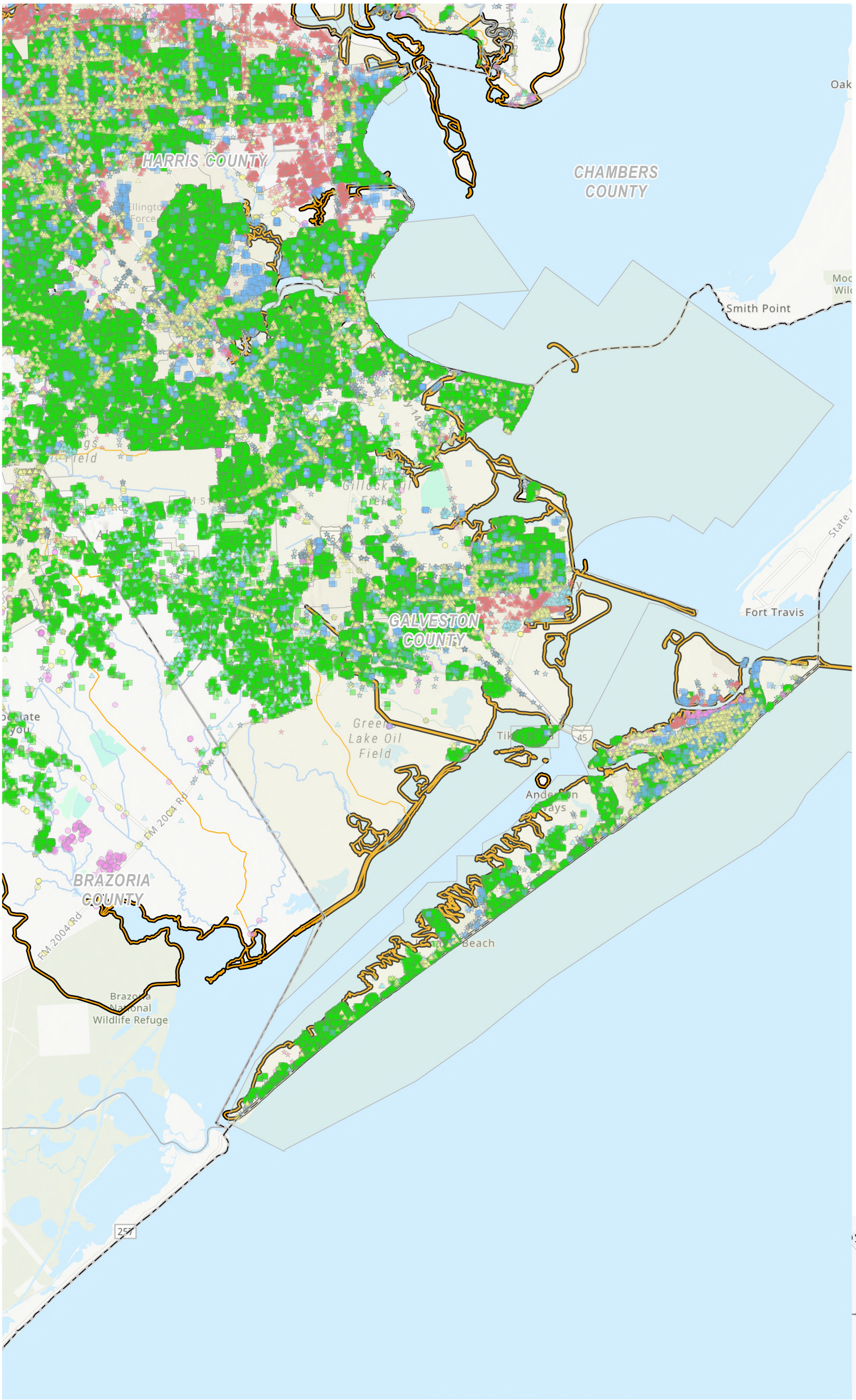


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
16 of 17 in series



Legend

Existing Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 2.25 4.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Flood Exposure

MAP 6
17 of 17 in series

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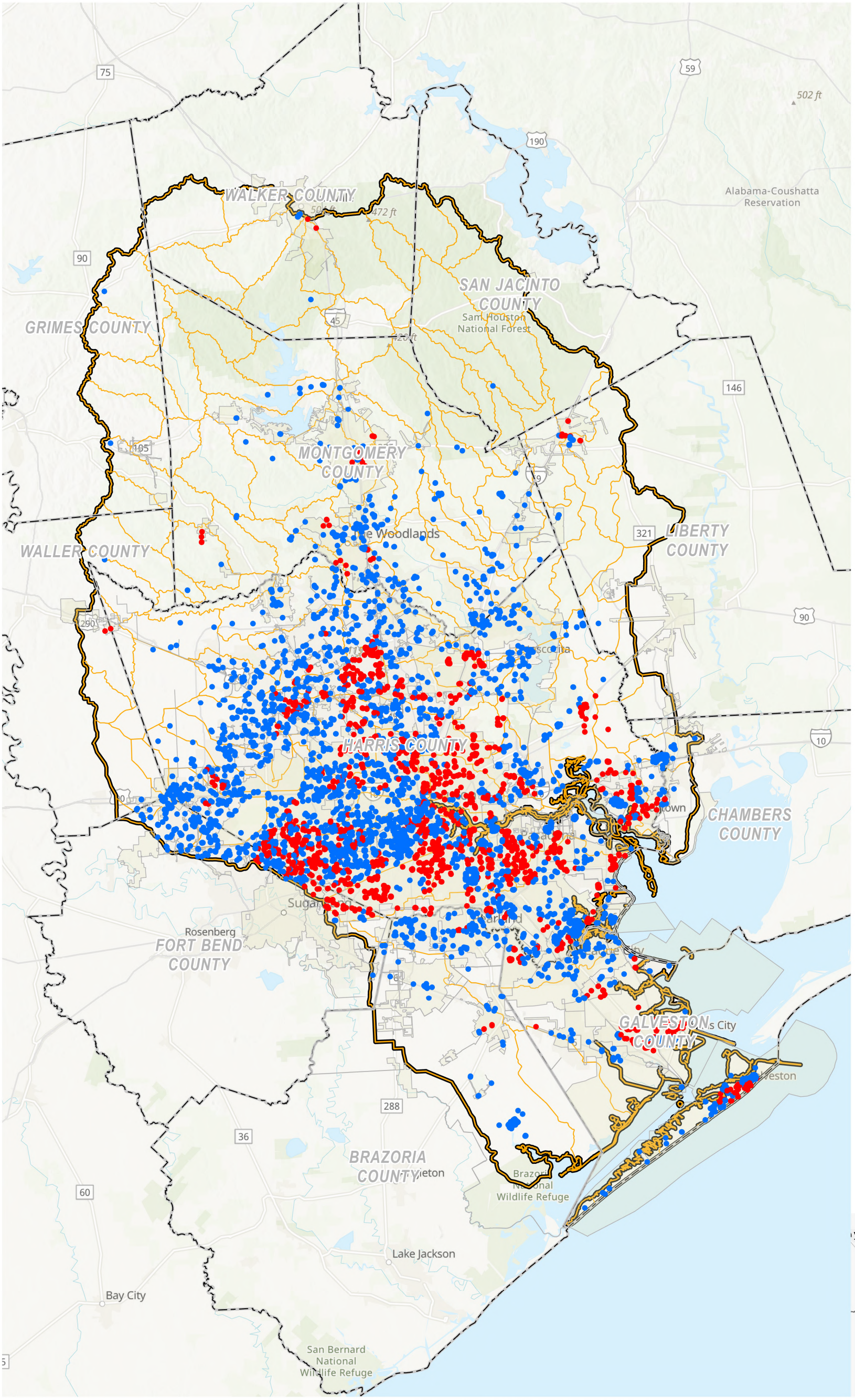
Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Appendix 2A-4: Map 7 - Existing Condition Vulnerability and Critical Infrastructure

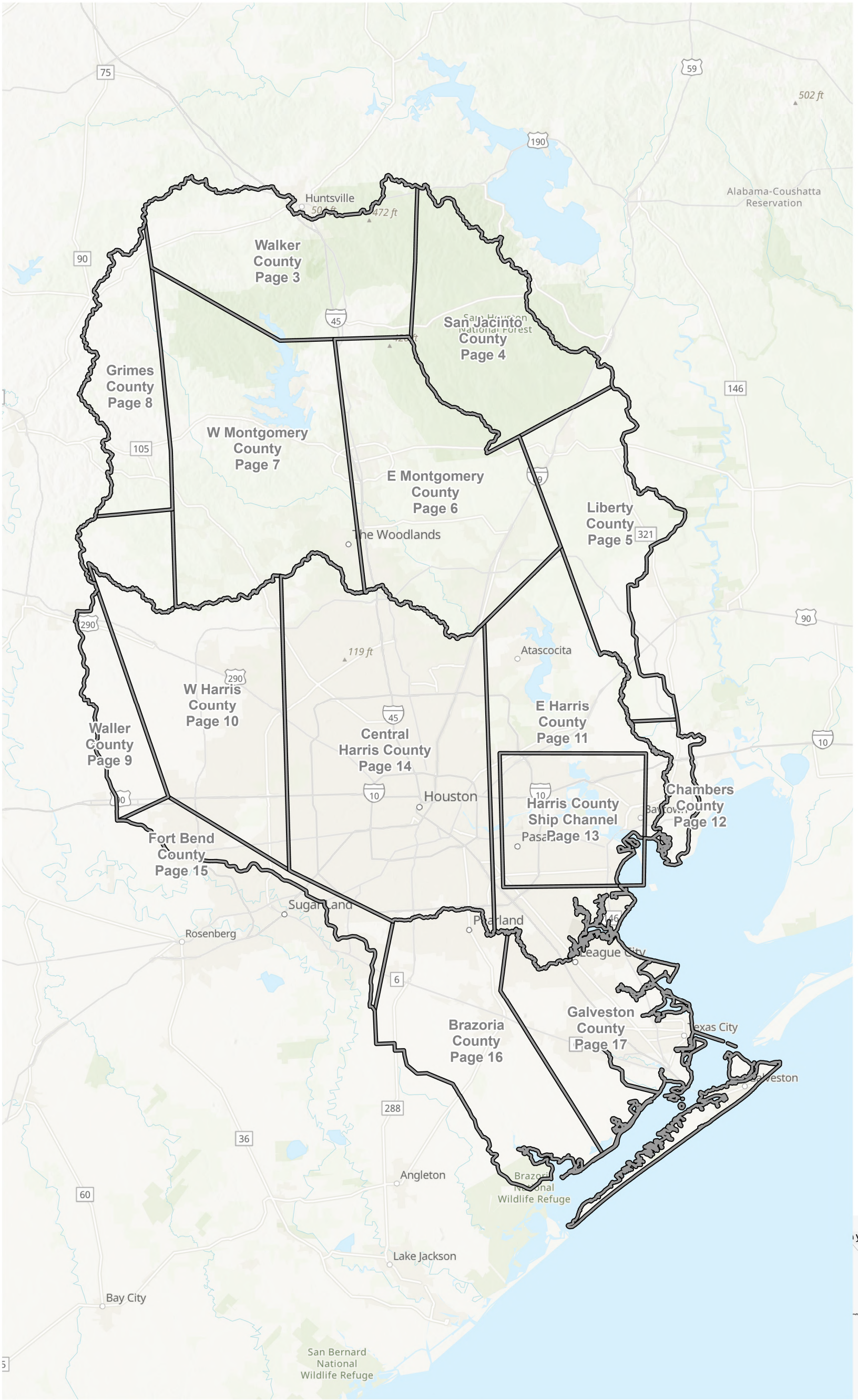


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
1 of 17 in series

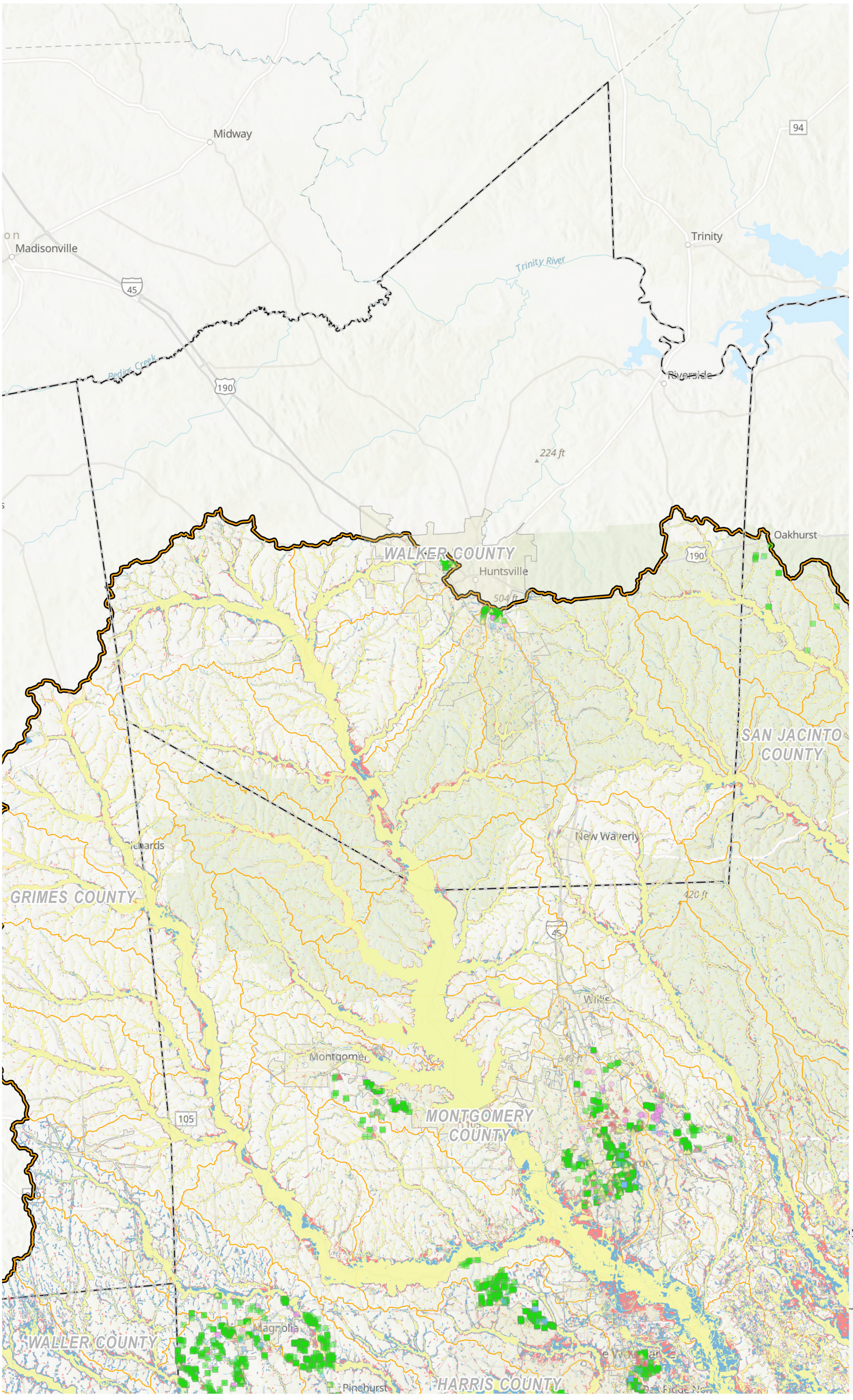
SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
2 of 17 in series



Legend

Existing Flood Exposure TXF-SVI >0.75

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

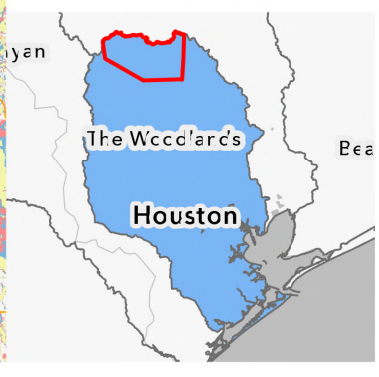
Existing Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 2.75 5.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
3 of 17 in series

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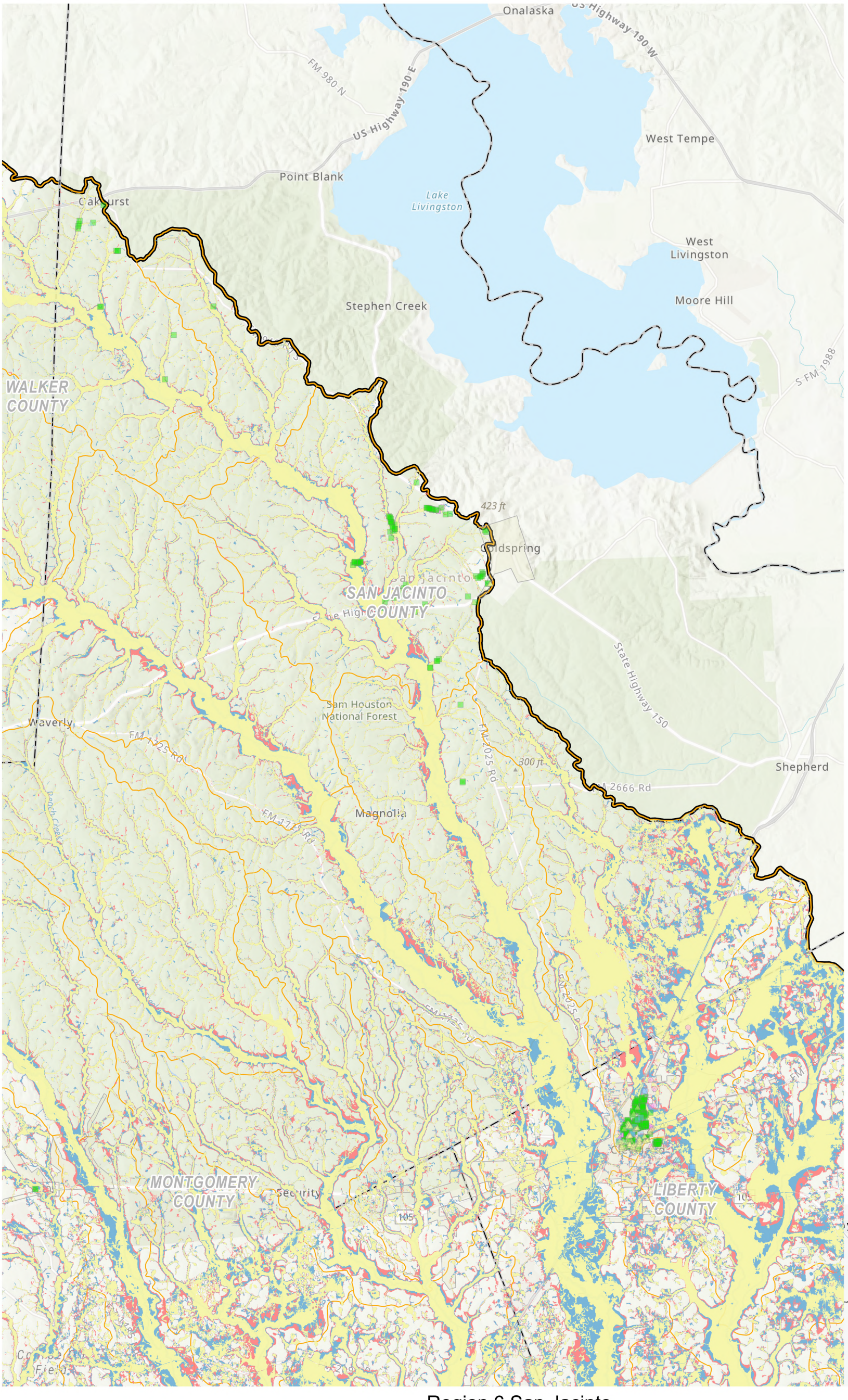
Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

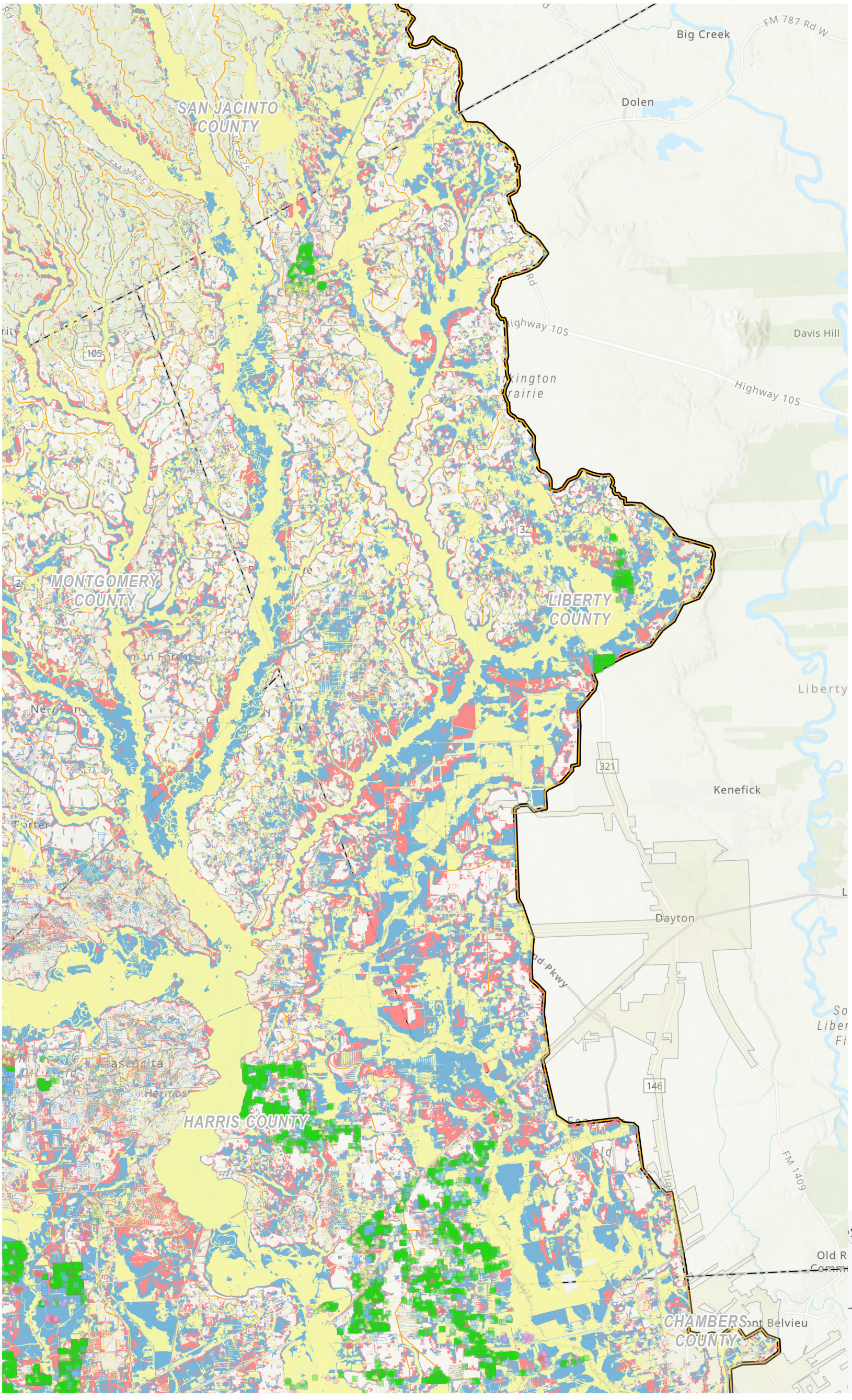


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
4 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Existing Flood Exposure TXF-SVI >0.75

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Existing Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
5 of 17 in series

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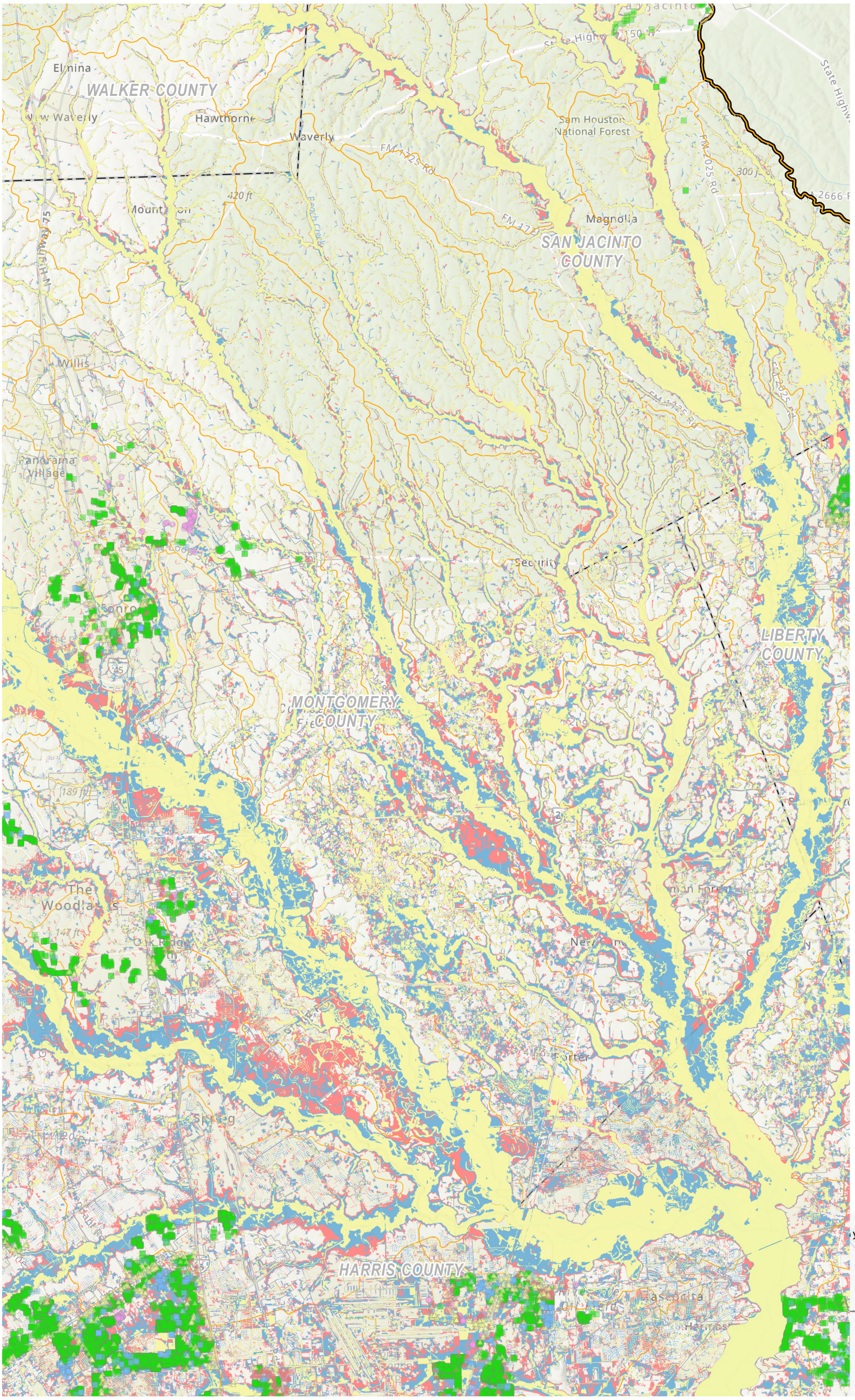
Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Legend

Existing Flood Exposure TXF-SVI >0.75

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Existing Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
6 of 17 in series

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Prepared by Freese and Nichols, Inc.

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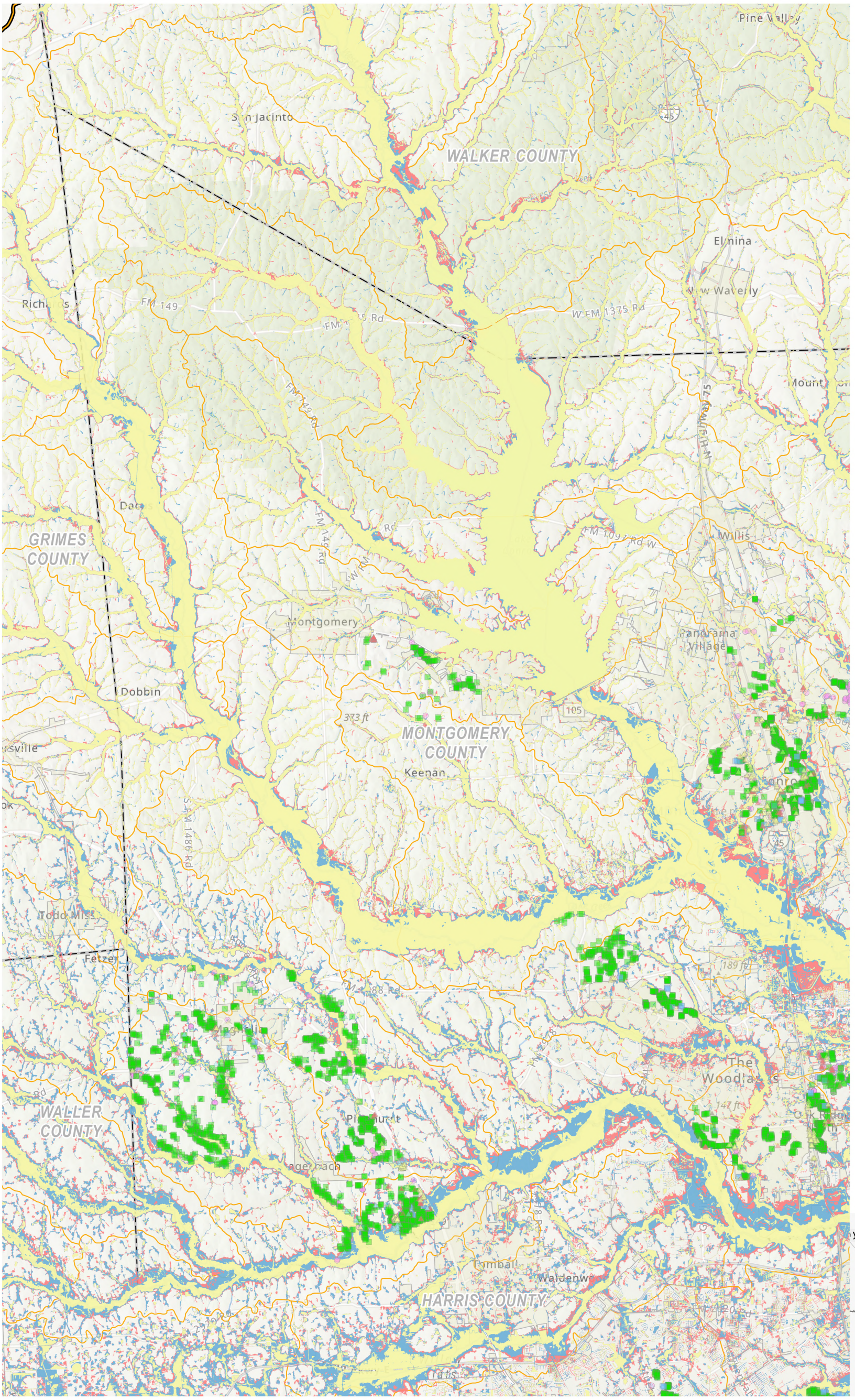


Legend

Existing Flood Exposure TXF-SVI >0.75

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Existing Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles

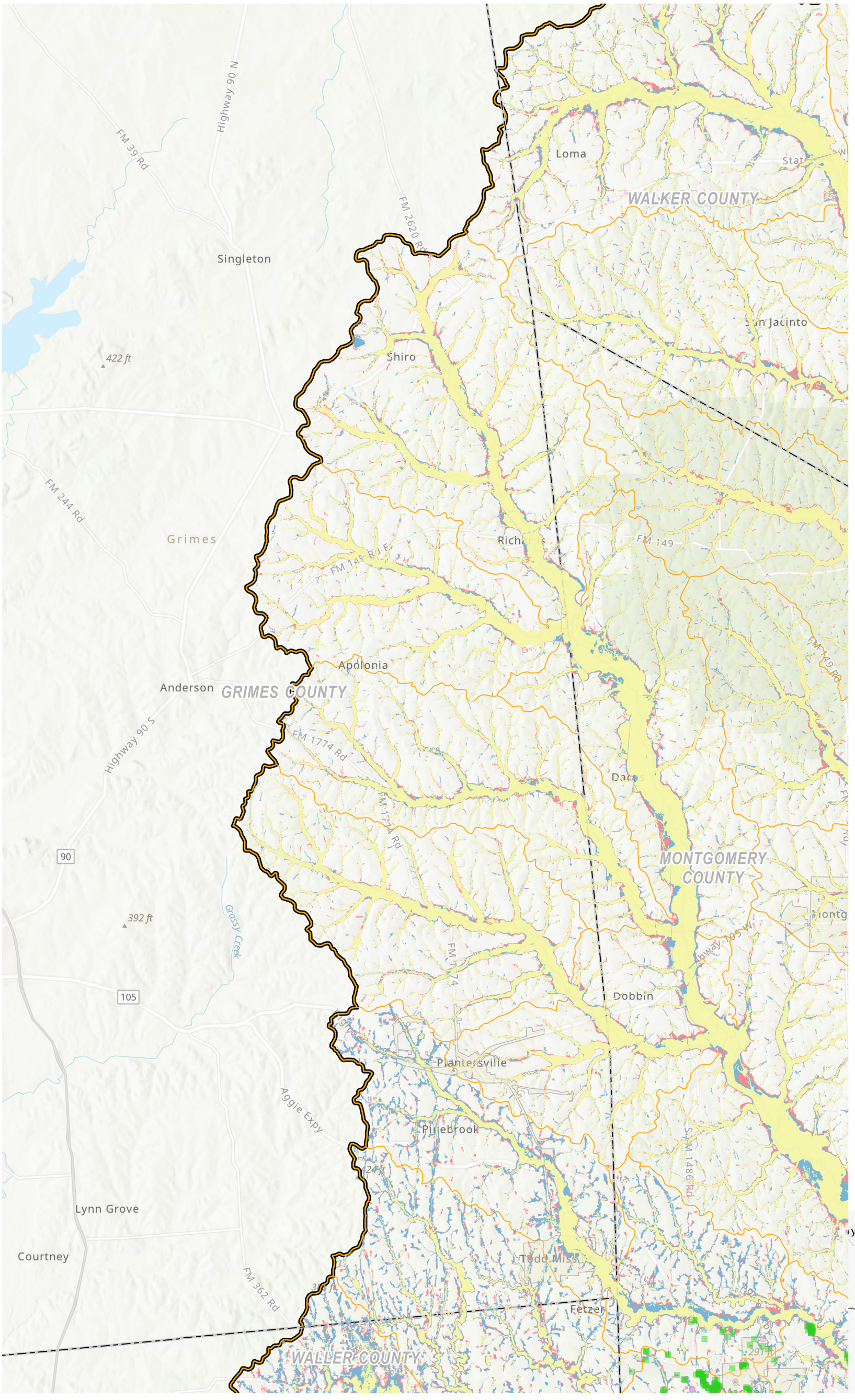


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
7 of 17 in series

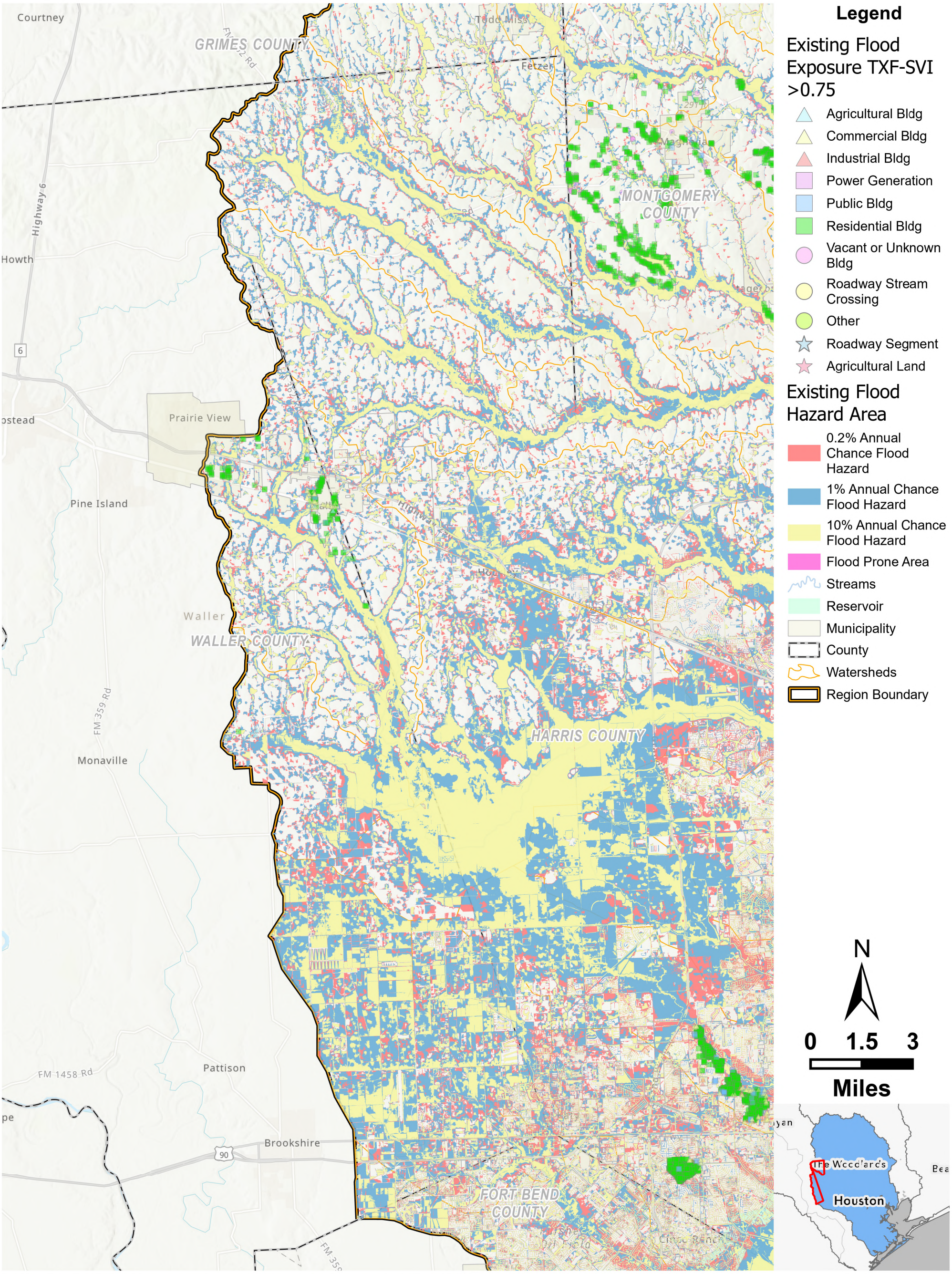


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
8 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
9 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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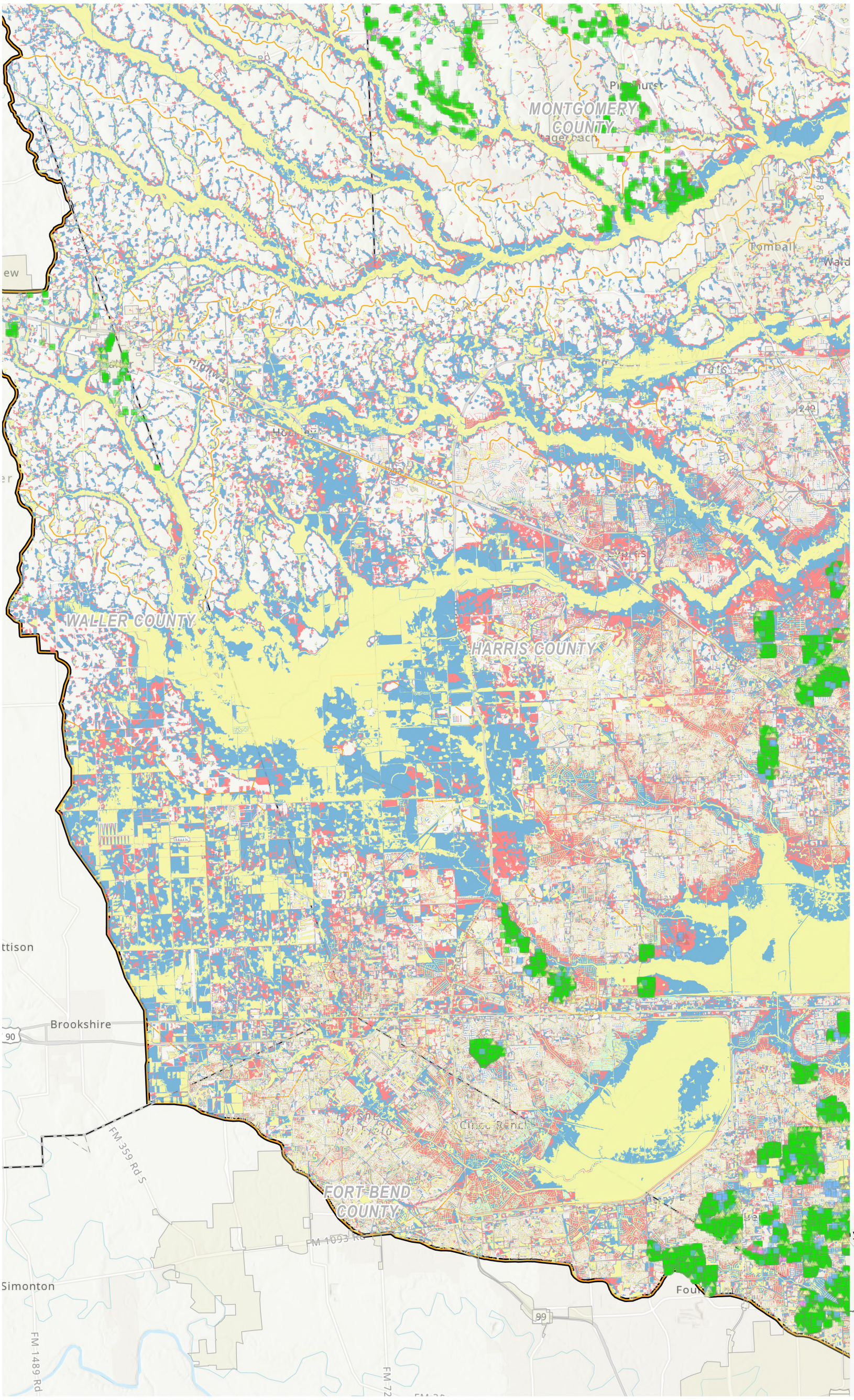
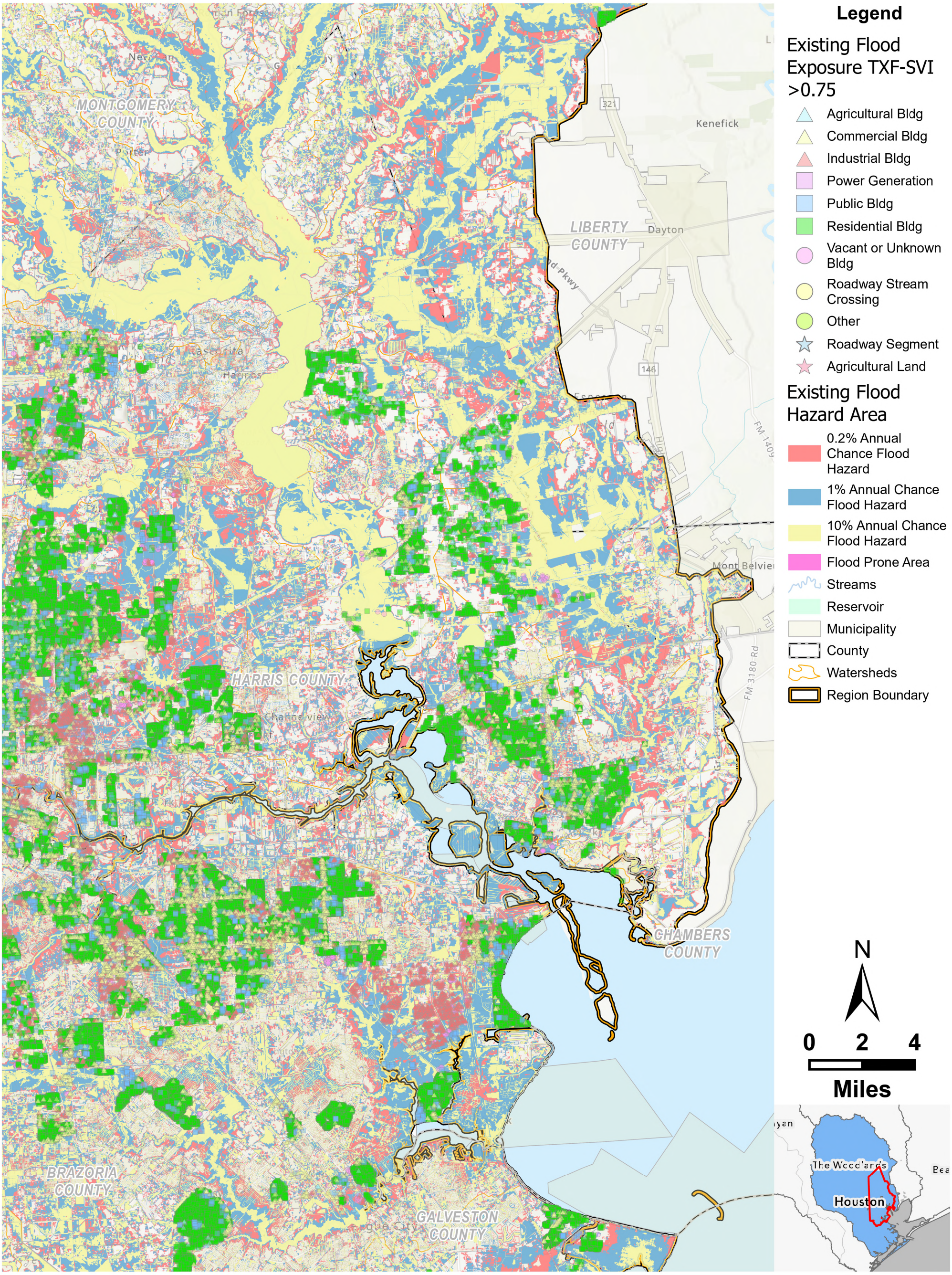


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
10 of 17 in series

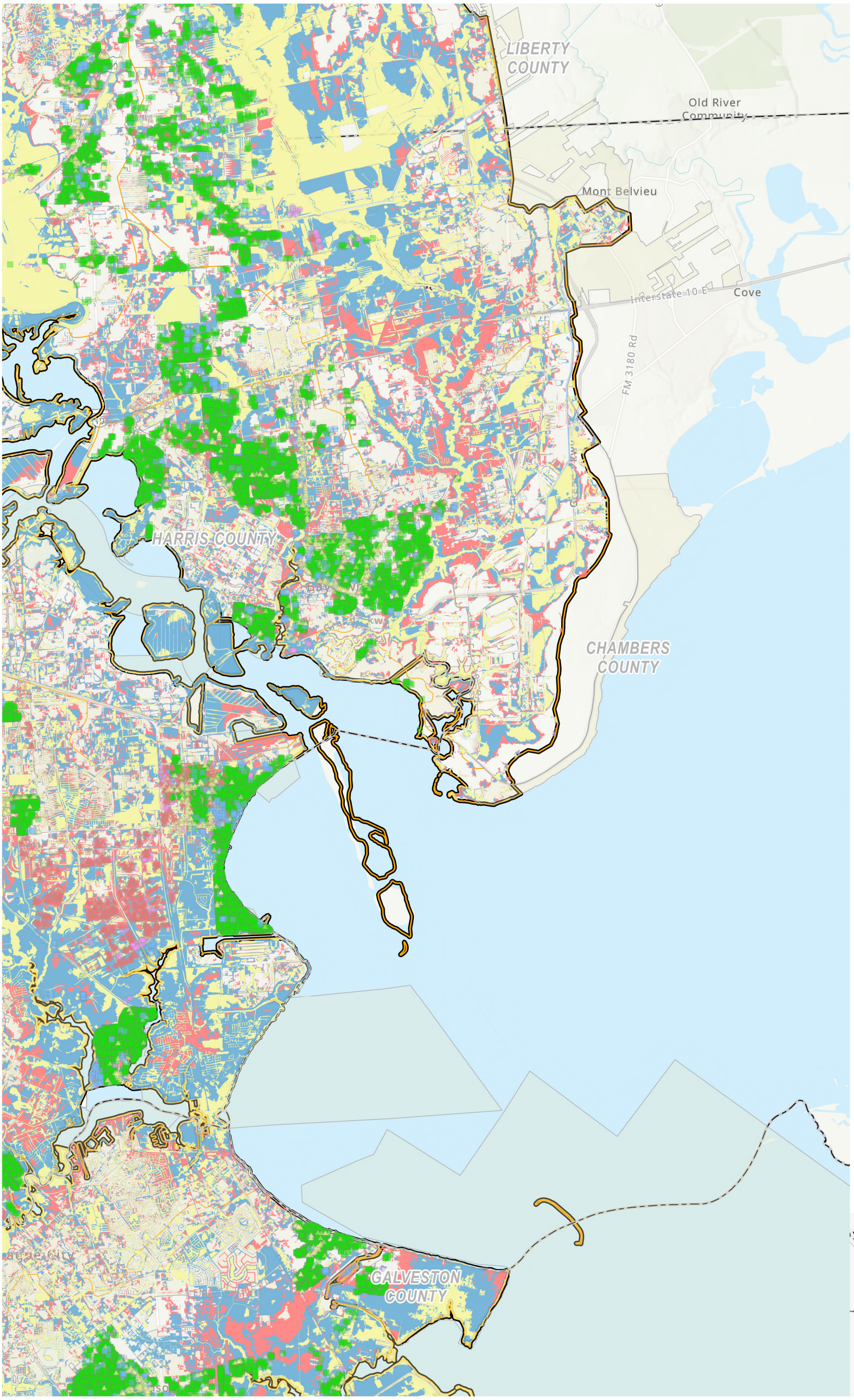


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
11 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

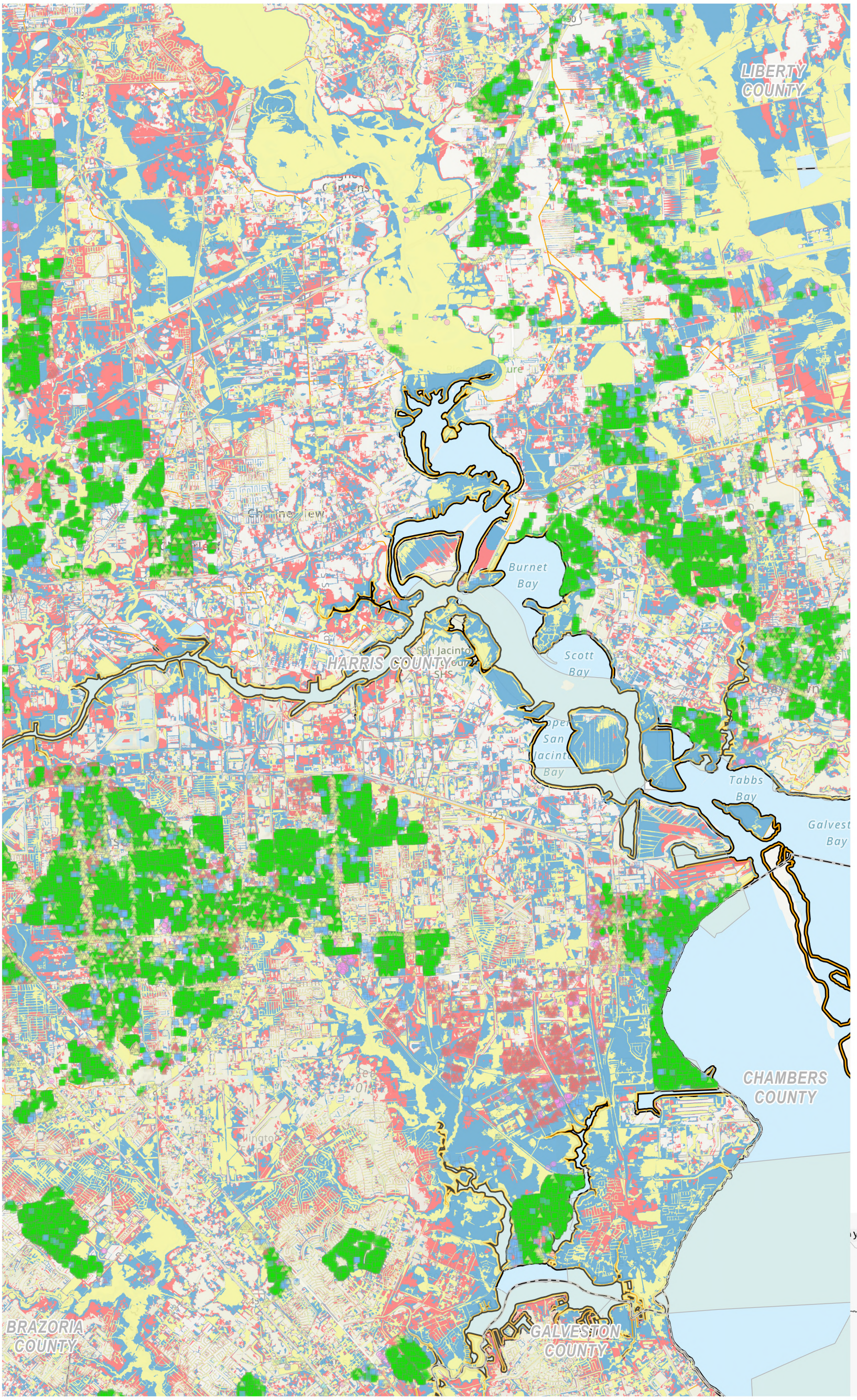


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
12 of 17 in series



Legend

Existing Flood Exposure TXF-SVI >0.75

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Existing Flood Hazard Area

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1 2

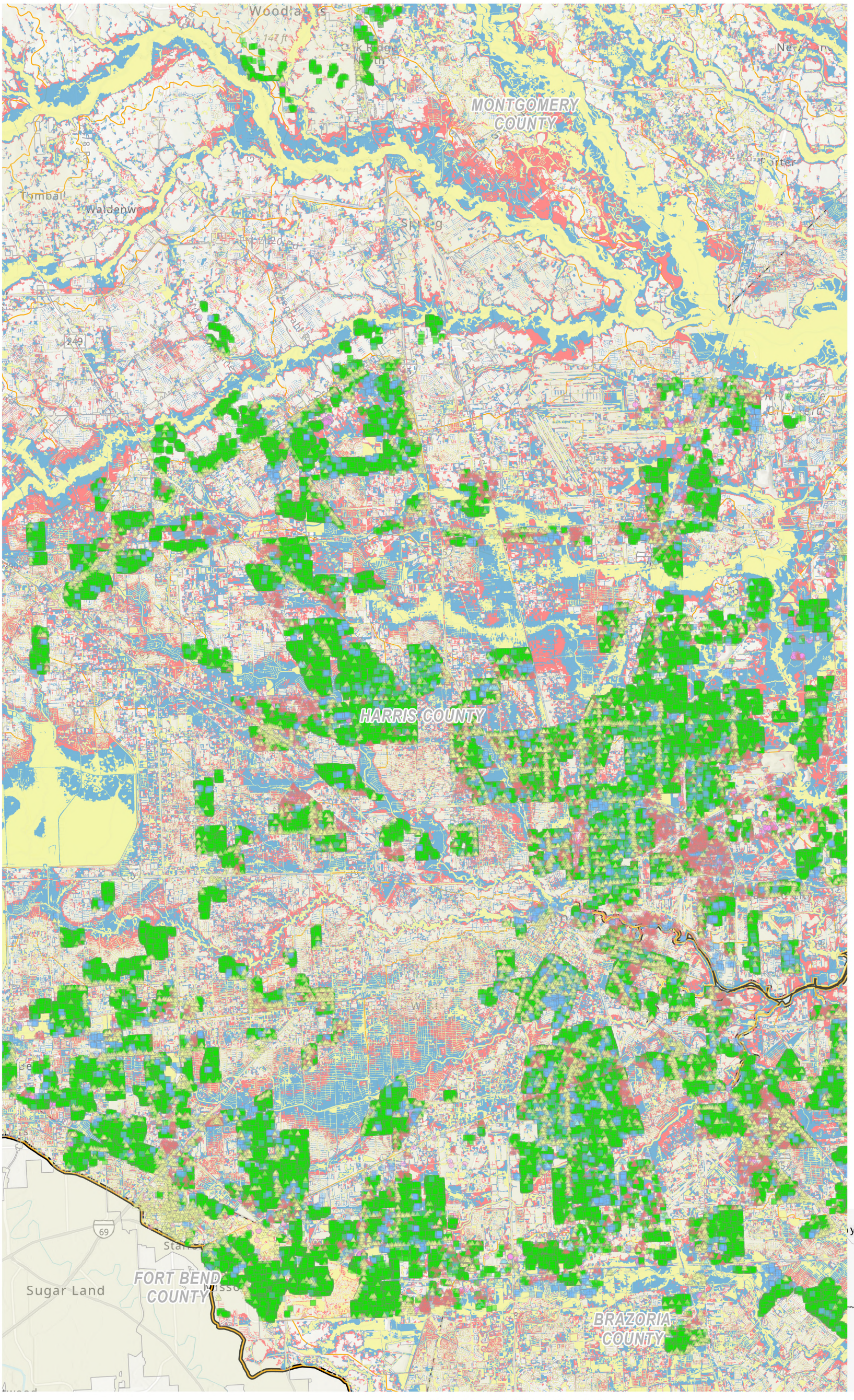
Miles

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
13 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Existing Flood Exposure TXF-SVI >0.75

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
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- Roadway Segment
- Agricultural Land

Existing Flood Hazard Area

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- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

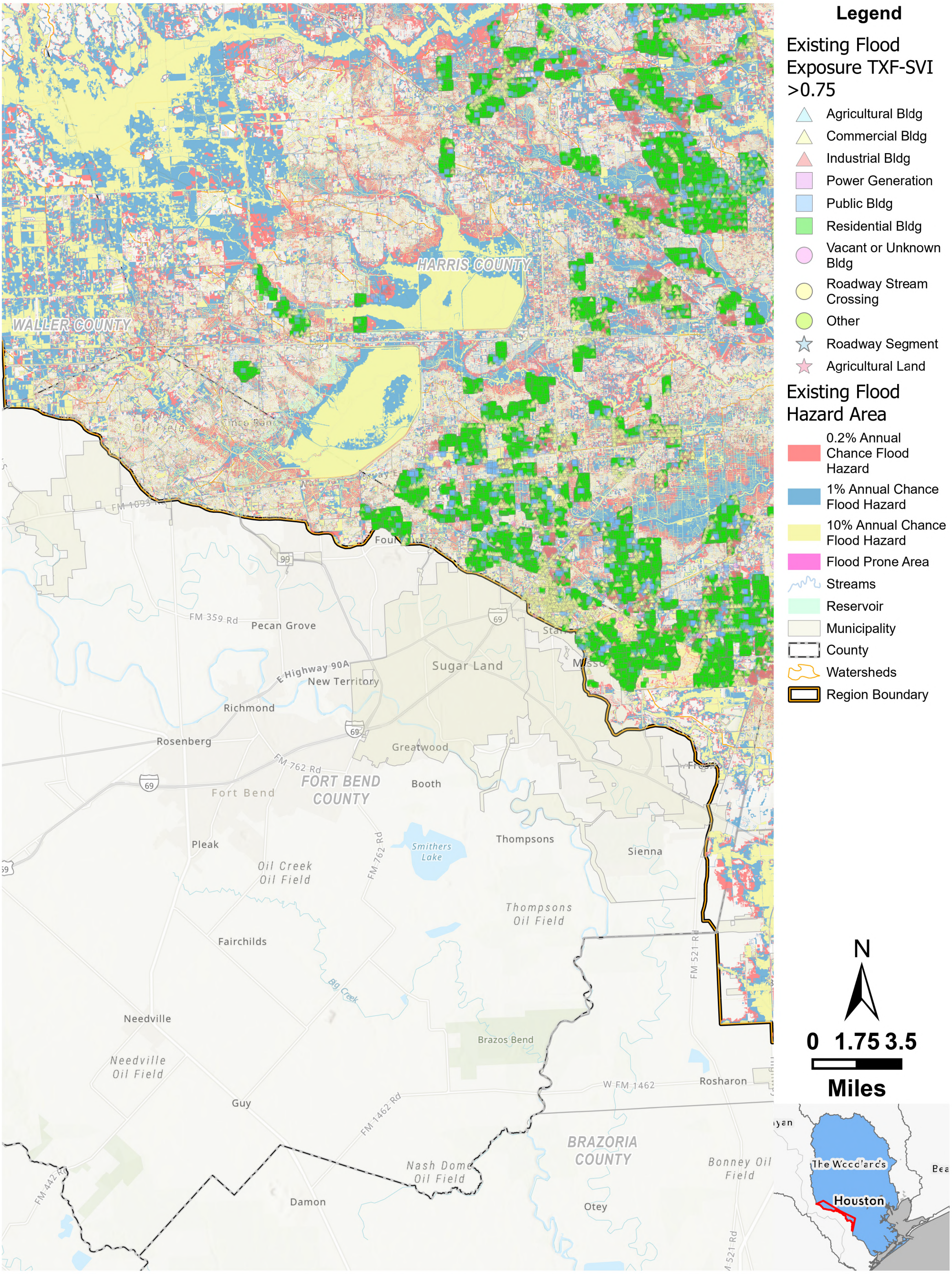
Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
14 of 17 in series

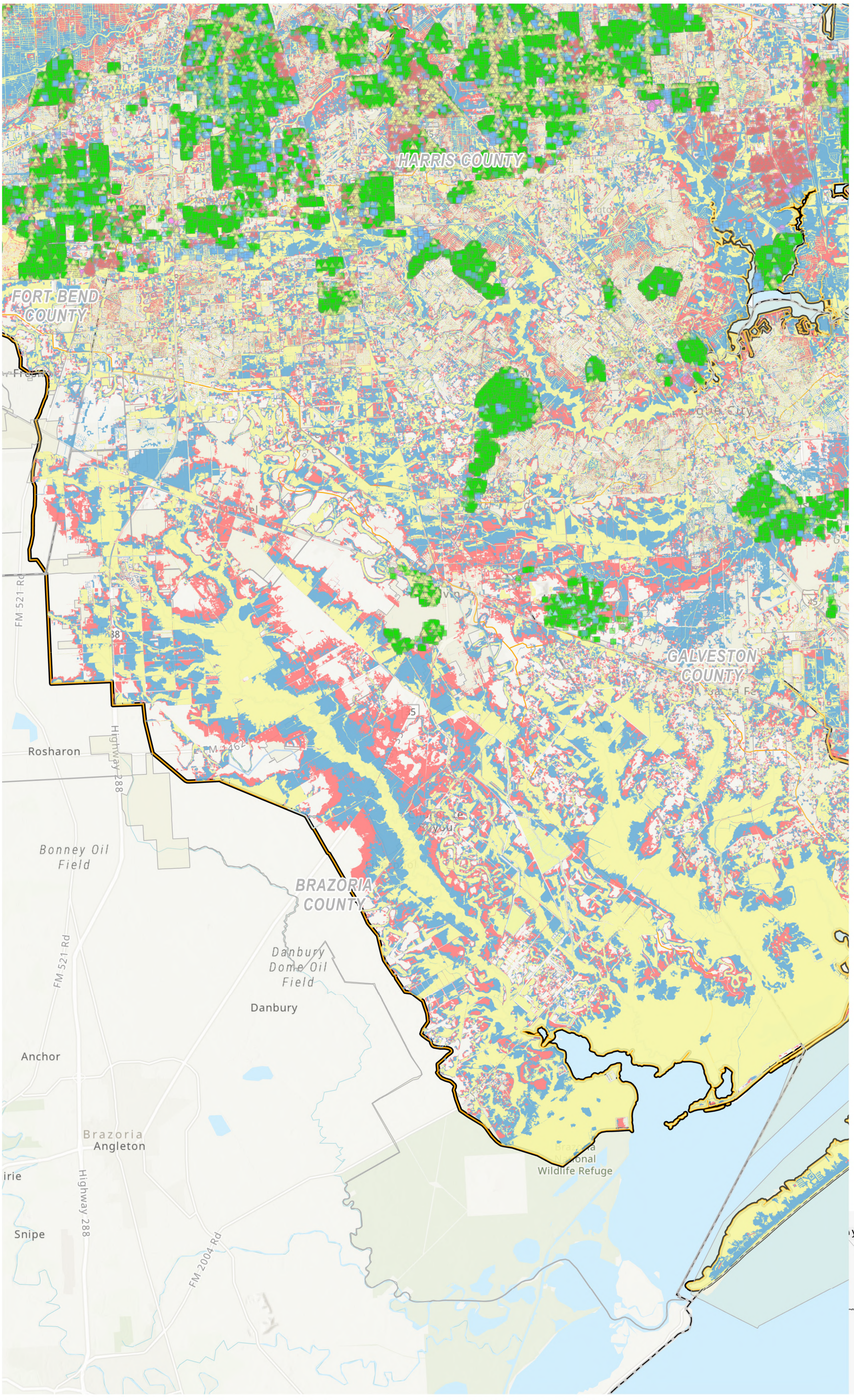


Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
15 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Existing Flood Exposure TXF-SVI >0.75

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Existing Flood Hazard Area

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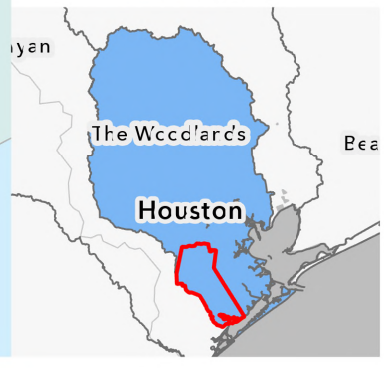
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 1.75 3.5

Miles

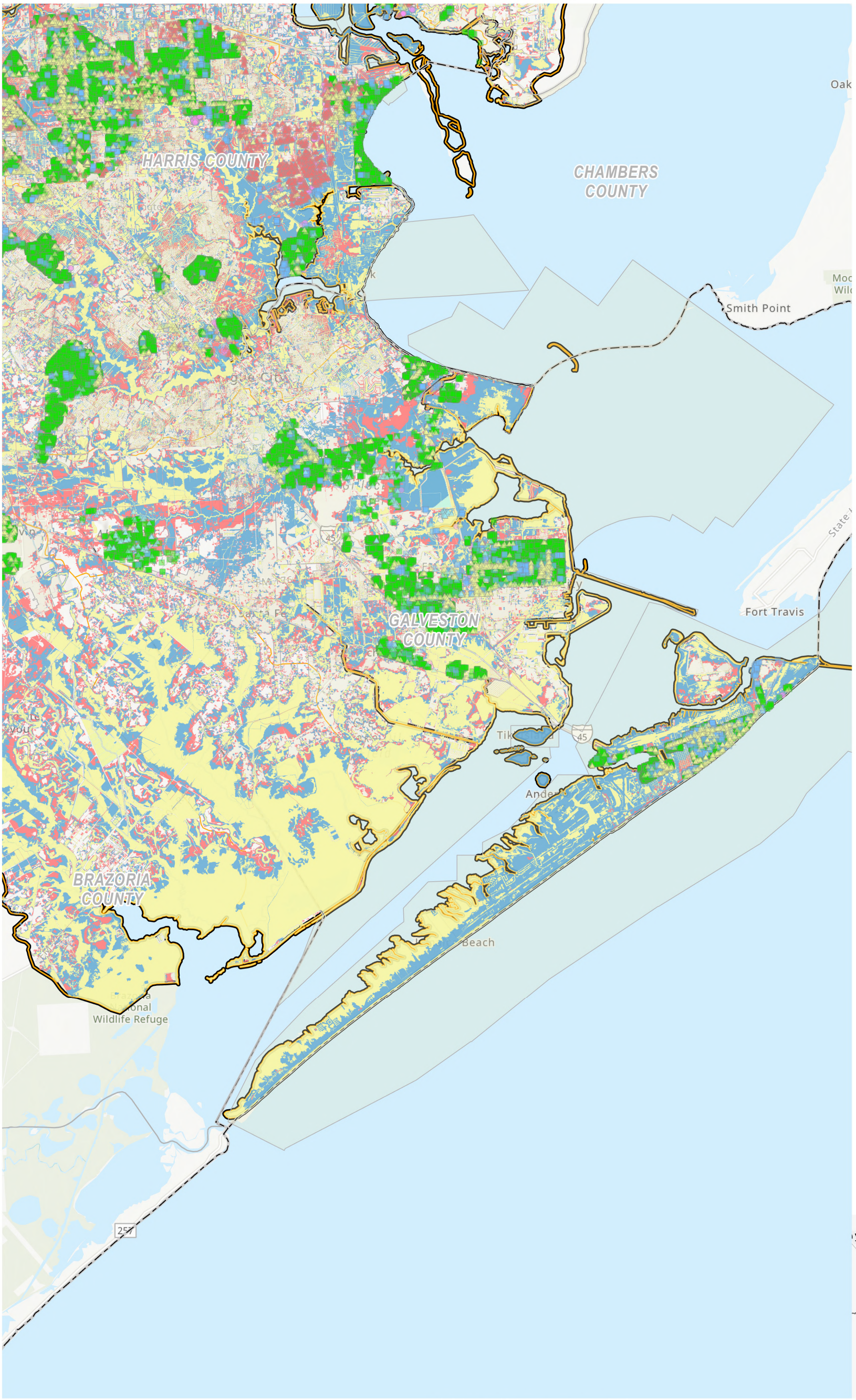


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
16 of 17 in series



Legend

Existing Flood Exposure TXF-SVI >0.75

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
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Existing Flood Hazard Area

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- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Reservoir
- Municipality
- County
- Watersheds
- Region Boundary

N

0 2.25 4.5

Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Existing Condition Vulnerability

MAP 7
17 of 17 in series

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Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Appendix 2A-5: Table - Existing Hydrologic and Hydraulic Models

Model Name	Date Avaialable
Addicks Reservoir Model HEC-HMS 3.4	2021
Carpenters Bayou Model HEC-HMS 3.3	2007
Buffalo Bayou Model HEC-HMS 3.3	2021
Barker Reservoir Model HEC-HMS 3.3	2007
Hunting Bayou Model HEC-HMS 3.3	2016
Sims Bayou Model HEC-HMS 3.4	2019
White Oak Bayou Model HEC-HMS 3.5	2014
Cypress Creek Model HEC-HMS 3.3, 3.4	2021
Spring Creek Model HEC-HMS 3.3	2021
Willow Creek Model HEC-HMS 3.3	2022
Luce Bayou Model HEC-HMS 3.3	2007
Cedar Bayou Model HEC-HMS 3.3	2007
Brays Bayou Model HEC-HMS 3.3	2007
Clear Creek Model HEC-HMS 3.3	2021
Vince Bayou Model HEC-HMS 3.3	2007
Armand Bayou Model HEC-HMS 3.3	2015
Little Cypress Creek Model HEC-HMS 3.3, 3.4	2017
Jackson Bayou Model HEC-HMS 3.3	2021
San Jacinto River Model HEC-HMS 3.3	2007
Greens Bayou Model HEC-HMS 3.3	2020
Spring Gully & Goose Creek Model HEC-HMS 3.3	2019
San Jacinto & Galveston Bay Model HEC-HMS 3.3	2007
Galveston Bay Surge Protection Coastal Storm Risk Management Unknown Unknown	-
Brays Cdbg-Mit: Bintliff Unknown Unknown	-
Sims Cdbg-Mit: C147 Unknown Unknown	-
Sims Cdbg-Mit: Salt Water Ditch Unknown Unknown	-
White Oak Bayou Cdbg Mit: Little White Oak Unknown Unknown	-
Kingwood Drainage Study Models HEC-RAS 3.0.1	-

Model Name	Date Avaialable
Cdbg Armand Bayou Watershed Plan HEC-HMS 5.07	-
Cdbg Spring Creek Watershed Plan HEC-RAS 5.07	-
Cdbg Jackson Bayou Watershed Plan HEC-HMS 3.0.1	-
Cdbg Galveston Bay Watershed Plan HEC-HMS 5.07	-
Sims Cdbg-Mit: C506 Unknown Unkown	-
Fort Bend County Willow Fork HEC-RAS 5.0.7	-
D111 Poor Farm Ditch Conveyance HEC-RAS 5.0.3	-
Greens Bayou (P100-00-00) Mid-Reach Channel Conveyance Improvements HEC-RAS 5.0.7	-
Cypress Creek Implementation Plan - Various Detention Sites HEC-RAS 6	-
E116 Flood Reduction Feasibility HEC-RAS 6.1	-
Galveston Bay - Right-Of-Way Acquisition, Design And Construction Of General Drainage Improvements Along F101-06-00 HEC-RAS 5.0.7	-
Goose Creek O119-00-00-P001 HEC-RAS 5.0.7	-
Greens Bayou Tributary P138-01-01-P001 HEC-RAS 5.06	-
H103 Wallisville HEC-RAS 5.07	-
Addicks Reservoir Model HEC-HMS 4.1.0	2021
Carpenters Bayou Model HEC-HMS 3.0.1	2007
Buffalo Bayou Model HEC-HMS 3.0.1	2021
Barker Reservoir Model HEC-HMS 3.0.1	2007
Hunting Bayou Model HEC-HMS 3.0.1	2016
Sims Bayou Model HEC-HMS 4.1.0	2019
Spring Creek Model HEC-HMS 3.0.1	2021
Willow Creek Model HEC-HMS 3.0.1	2022
Luce Bayou Model HEC-HMS 3.0.1	2007

Model Name	Date Avaialable
Cedar Bayou Model HEC-HMS 3.0.1	2007
Brays Bayou Model HEC-HMS 3.0.1	2007
Clear Creek Model HEC-HMS 3.0.1	2021
Vince Bayou Model HEC-HMS 3.0.1	2007
Armand Bayou Model HEC-HMS 3.0.1	2015
Jackson Bayou Model HEC-HMS 3.0.1	2021
San Jacinto River Model HEC-HMS 3.0.1	2007
Greens Bayou Model HEC-HMS 3.0.1	2020
Spring Gully & Goose Creek Model HEC-HMS 3.0.1	2019
San Jacinto & Galveston Bay Model HEC-HMS 3.0.1	2007
White Oak Bayou Model HEC-HMS 4.0.0, 3.0.1	2014
Cypress Creek Model HEC-HMS 3.1.3, 3.0.1	2021
Little Cypress Creek Model HEC-HMS 3.0.1	2017
San Jacinto Master Drainage Plan HEC-RAS: 5.0.7, HEC-HMS: 4.3	-
Cdbg Vince Bayou Watershed Plan HEC-RAS: 3.0.1, HEC-HMS:3.4	-
Cdbg Willow Creek Watershed Plan HEC-HMS HEC-RAS: 5.07, HEC-HMS:4.3	-
Cdbg Carpenters Bayou Watershed Plan HEC-HMS HEC-RAS: 5.07, HEC-HMS:4.3	-
Cdbg Goose Creek Watershed Plan HEC-RAS: 5.0.7, HEC-HMS:3.3	-
Cdbg Spring Gully Watershed Plan HEC-RAS:5.07, HEC-HMS:4.3	-
Cdbg Luce Bayou Watershed Plan HEC-HMS HEC-RAS: 5.07, HEC-HMS:4.3	-
Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan HEC-RAS: 5.0.7, HEC-HMS:4.3	-
Halls Cdbg-Mit HEC-RAS: 5.0.3, 5.0.5, HEC-HMS: 3.4	-

Model Name	Date Avaialable
Dickinson Bayou Model HEC-RAS: 5.0.7, HEC-HMS:4.3	-
Hughes Swd Basin HEC-HMS HEC-RAS:4.10, HEC-HMS: 3.3	-
Keegans Bayou HEC-RAS: 5.07, HEC-HMS: 4.3	-
Pleasantville Detention Analysis InfoWorks ICM 10	-
City Of Houston Fifth Ward Area Flood Mitigation XPSWMM XPSWMM: Unknown	-
City Of Houston Sunnyside Area Flood Mitigation XPSWMM Unknown	-
City Of Houston Kashmere Gardens Area Flood Mitigation XPSWMM: 2018.2, HEC-HMS: 3.3	-
Poor Farm Ditch HEC-RAS 5.03	-
Design And Construction Of Dinner Creek Stormwater Detention Basin (2018 Bond Project C-38) HEC-HMS 3.4	-
P118-E006 (Hardy West) (2018 Bond Project C-41) HEC-RAS 5.05	-
City Of Friendswood - Clear Creek Inline & Offline Detention - Bay Area Blvd. Phase I HEC-RAS 5.07	-
Design And Construction Of Dinner Creek Stormwater Detention Basin (2018 Bond Project C-38) HEC-HMS 5.03	-
Cypress Creek Watershed Major Tributaries Regional Drainage Plan Update, Alternative 1 Basin K500-1 And Stuebner Airline Road (2018 Bond Projects Ci-36 And Ci-20) HEC-RAS 5.0.6	-
Woodland Trails Stormwater Detention Basin HEC-RAS 5.0.7	-
Armand Bayou Conveyance Improvements B500-04-00-E004 And Channel Improvements B115-00-00 HEC-RAS: 5.0.7, HEC-HMS:4.3	-

Model Name	Date Avaialable
Clear Creek Mid Reach Project HEC-RAS 5.0.7	-
Design And Construction Of The B509-03-00 And B509-04-00 Stormwater Detention Basin Plan (Includes 2018 Bond Project C-07) HEC-RAS 5.0.7	-
Halls Bayou - Right-Of-Way, Design, And Construction Of Channel Conveyance Improvements On P118-25-00 & P118-25-01 HEC-Ras: 5.0.7 and HEC-HMS: 3.4	-
Mainstem Evaluation Projects - Parker Basin (2018 Bond Project C-41) HEC-RAS 5.0.3	-
Halls Bayou - Right-Of-Way, Design, And Construction Of Channel Conveyance Improvements On P118-27-00 HEC-RAS 5.0.5	-
P518-11-E002 (P118-21 Phase Ii Detention) (2018 Bond Project C-41) HEC-RAS 5.0.3	-
Right-Of-Way Acquisition, Design And Construction Of A Stormwater Detention Basin On South Mayde Creek Near The Grand Parkway (2018 Bond Project C-48) HEC-RAS 5.0.7	-
Mainstem Evaluation Projects - Hahl Basin (2018 Bond Project C-41) HEC-RAS 5.0.3	-
Hall Bayous Drainage Project Bond C-01 HEC-RAS 4.1	-
Right-Of-Way Acquisition, Design And Construction Of A Stormwater Detention Basin On South Mayde Creek (Basin 1) (2018 Bond Project C-46) HEC-RAS 5.0.7	-
Design And Construction Of Little York Stormwater Detention Basin (2018 Bond Project C-37) HEC-RAS 5.0.3	-

Model Name	Date Avaialable
Halls Bayou - Right-Of-Way, Design, And Construction Of Channel Conveyance Improvements On P118-23-00 And P118-23-02 HEC-RAS 5.0.5	-
Mainstem Evaluation Projects - Veterans Memorial (2018 Bond Project C-41) HEC-RAS 5.0.3	-
Cypress Creek Program Implementation Plan, 23 Stormwater Detention Basin Plan (Includes 2018 Bond Project Ci-36 And Ci-20) HEC-RAS 6	-
Mary'S Creek Lower Segment HEC-RAS 5.0.5	-
Addicks Reservoir - Right-Of-Way Acquisition, Design And Construction Of Channel Conveyance Improvements, Bypass Channel, And Detention For South Mayde Creek HEC-RAS 5.0.5	-
Blalock Road Drainage Improvement Project XPSWMM 12.62	-
Rivershire West - Grand Lake Creek Watershed HEC-RAS 6.2	-
P125 Hydraulics Rasv641 HEC-RAS 6.4.1	-
Sjrtrib G103-09&G103-05 Ras HEC-RAS 6.0, HEC-HMS 4.3	-
G103-07-00 Sheldon Pa4 HEC-RAS 6.3.1	-
G103-24-00 Atascotia Pa1 HEC-RAS 6.3.1	-
Q130 HEC-RAS 5.0.7	-
Bear Panther Branch Drainahe Improvements Project Prop HEC-RAS 6.3.1	-
Cypress Ditch Conveyance Improvement Project HEC-RAS 6.2	-
E116Subwatershed Models April2022 HEC-RAS 6.1	-
Q136-00-00 HEC-RAS 5.0.7, HEC-HMS 4.3	-

Model Name	Date Avaialable
Vince Bayou I100 HEC-RAS 6.3.1	-
Q128-00-00-E001 HEC-RAS 5.0.7	-
Scott Ost HEC-RAS 5.0.7, XPSWMM 2018.2.2	-
Prop Cb Kilgoreregdet HEC-RAS 6.4.1, HEC-HMS 4.8	-
Cedar Bayou B HEC-RAS 6.4.1	-
Prop Cb Sawpit HEC-RAS 6.4.1	-
Prop Cb Staples HEC-RAS 6.4.1	-
Hunnington Village XPSWMM 2014.1	-
Richmond Exist XPSWMM 2023.2	-
Sping Shadow South Area A XPSWMM 2021.3	-
Krikwood Nottingham XPSWMM 2021.3	-
Westbury HEC-HMS 3.4	-
Q122-E001 HEC-RAS 5.0.7	-
Q534-01-00 HEC-RAS 5.0.7, HEC-HMS 4.2.1	-
Southland XPSWMM 2021.3	-
C-106 XPSWMM 2019.1.2	-
Saltwater Ditch Epaswmm EPASWMM 5.1.014	-
Spring Shadow South Existing XPSWMM 2021.3	-
Tlv Drainage Improvement Project InfoWorks ICM Unknown	-
Sping Shadow South Area B XPSWMM 2021.3	-
Sping Shadow South Area C XPSWMM 2021.3	-
Bear Panther Branch Drainahe Improvements Project Exist HEC-RAS 6.3.1	-
Richmond Prop XPSWMM 2023.2	-
Glo Central Region River Basin Flood Study	-
MAAPnext	-
GLO Central Region River Basin Flood Study	2025
San Jacinto Regional Watershed Master Drainage Plan	2020

Model Name	Date Avaialable
Chambers County Flood Infrastructure Fund Study	2025
1D/2D BLE	2018

Appendix 2A-6: Table - Expected Loss of Function Summary

Appendix 2A-6: Expected Loss of Function Summary

County	Residential Structures in 1% ACE Floodplain	Non-Residential Structures in 1% ACE Floodplain	Low Water Crossings in 1% ACE Floodplain	Medical Facilities in 1% ACE Floodplain	Water Facilities in 1% ACE Floodplain	Wastewater Facilities in 1% ACE Floodplain
Brazoria	27,609	5,974	44	12	1	7
Chambers	583	881	2	0	0	0
Fort Bend	44,057	2,559	35	29	12	44
Galveston	63,391	9,098	70	67	6	23
Grimes	314	187	11	0	0	0
Harris	477,156	88,278	519	520	115	270
Liberty	5,411	3,220	18	2	0	4
Montgomery	40,566	9,599	82	77	0	46
San Jacinto	1,280	149	18	0	0	0
Walker	793	160	30	0	0	0
Waller	2,936	1,086	17	0	1	0

Appendix 2A-6: Expected Loss of Function Summary

County	Power Plants in 1% ACE Floodplain	Fire Stations in 1% ACE Floodplain	Emergency Shelters in 1% ACE Floodplain	Police Stations in 1% ACE Floodplain	EMS in 1% ACE Floodplain	Schools in 1% ACE Floodplain
Brazoria	61	21	2	0	0	119
Chambers	25	0	0	0	0	1
Fort Bend	0	5	2	1	2	259
Galveston	135	37	7	10	0	295
Grimes	1	0	0	0	0	0
Harris	799	202	103	84	25	3,889
Liberty	0	5	3	0	0	16
Montgomery	11	31	5	3	1	175
San Jacinto	0	0	0	0	0	0
Walker	0	1	0	0	0	6
Waller	2	0	0	0	0	1

Appendix 2A-7: Table 4 - Existing Condition Flood Risk Summary, by County

Table 4. Summary of existing condition flood risk (by county)

			10% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	130	12,334	9,771	22,175	433	337	52.96	101
2	Chambers	56	16	444	162	2,101	36	26	3.79	5
3	Fort Bend	98	33	20,919	19,685	61,609	316	767	4.28	157
4	Galveston	342	125	22,513	19,277	60,288	468	792	21.07	247
5	Grimes	205	34	165	91	49	103	12	15.75	1
6	Harris	1,742	443	126,781	100,162	1,030,124	2,922	7,524	82.65	1,726
7	Liberty	284	110	3,238	1,995	1,874	137	178	35.04	5
8	Montgomery	1,073	275	15,230	11,748	30,130	872	502	42.74	105
9	San Jacinto	318	80	947	860	591	131	37	11.54	0
10	Walker	395	76	520	425	321	214	35	21.39	3
11	Waller	193	45	1,233	917	1,290	119	68	28.75	1

			1% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	89	21,249	17,838	34,386	138	254	46.90	123
2	Chambers	56	11	1,020	421	2,397	8	18	3.82	21
3	Fort Bend	98	17	25,697	24,372	49,550	71	95	3.23	197
4	Galveston	342	104	49,976	44,114	86,442	110	631	27.30	333
5	Grimes	205	10	336	223	141	44	12	4.11	0
6	Harris	1,742	490	438,653	376,994	1,655,335	1,115	4,517	88.92	4,489
7	Liberty	284	72	5,393	3,416	5,825	58	182	29.79	25
8	Montgomery	1,073	122	34,935	28,818	88,931	425	643	21.67	244
9	San Jacinto	318	19	482	420	203	37	30	3.27	0
10	Walker	395	15	433	368	710	63	25	5.15	4
11	Waller	193	48	2,789	2,019	3,449	59	67	36.17	3

			10% + 1% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	219	33,583	27,609	56,561	571	591	99.86	224
2	Chambers	56	27	1,464	583	4,498	44	44	7.61	26
3	Fort Bend	98	50	46,616	44,057	111,159	387	862	7.52	354
4	Galveston	342	230	72,489	63,391	146,730	578	1,423	48.38	580
5	Grimes	205	44	501	314	190	147	24	19.86	1
6	Harris	1,742	933	565,434	477,156	2,685,459	4,037	12,042	171.57	6,215
7	Liberty	284	182	8,631	5,411	7,699	195	360	64.83	30
8	Montgomery	1,073	397	50,165	40,566	119,061	1,297	1,146	64.41	349
9	San Jacinto	318	99	1,429	1,280	794	168	67	14.81	0
10	Walker	395	90	953	793	1,031	277	60	26.54	7
11	Waller	193	93	4,022	2,936	4,739	178	134	64.91	4

Table 4. Summary of existing condition flood risk (by county)

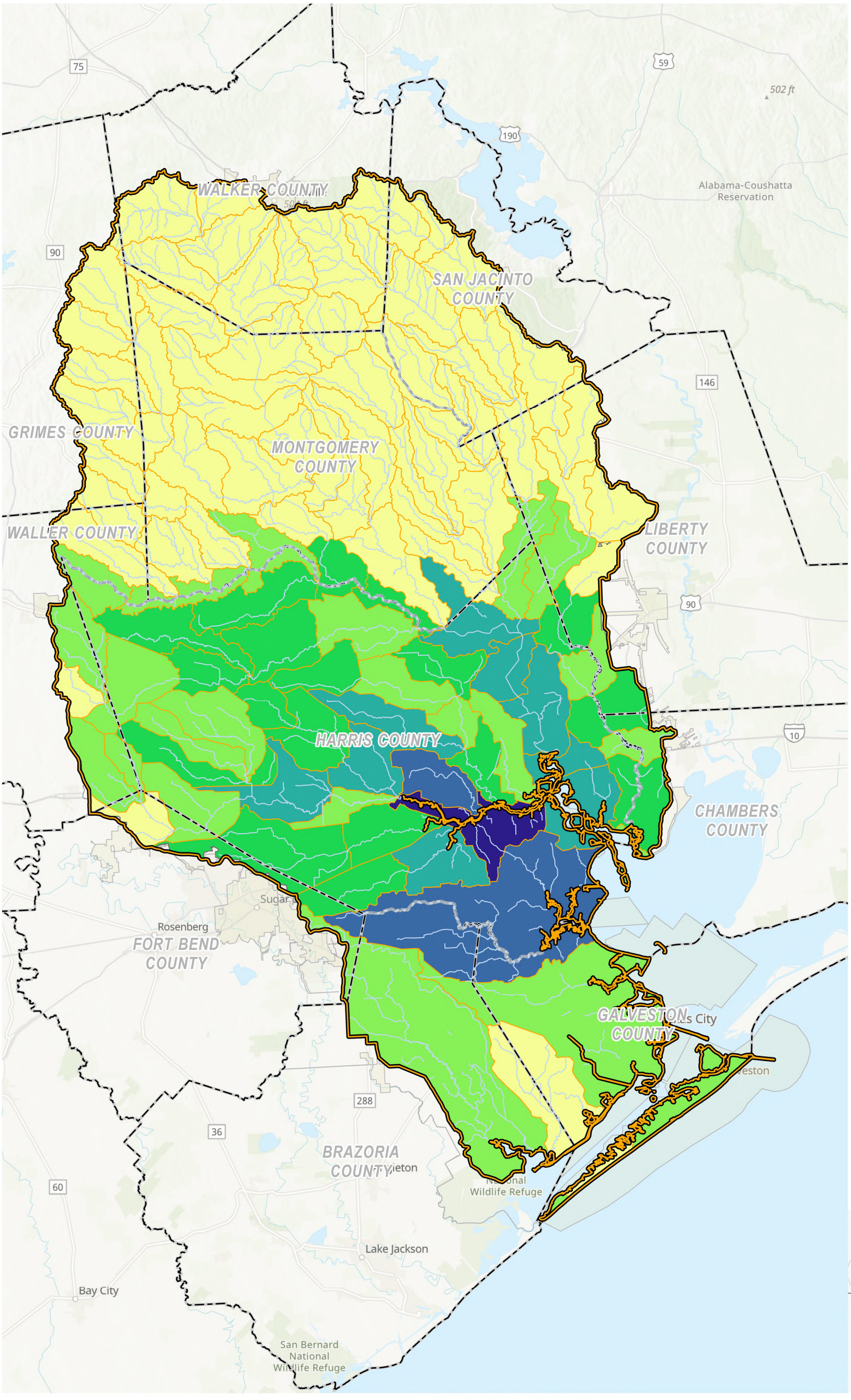
			0.2% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	54	17,649	15,075	38,523	86	199	28.88	139
2	Chambers	56	7	1,484	793	2,346	6	19	2.09	21
3	Fort Bend	98	15	22,751	21,789	42,993	23	70	1.84	119
4	Galveston	342	45	26,135	23,334	50,138	41	239	14.21	233
5	Grimes	205	6	193	137	483	16	9	3.00	1
6	Harris	1,742	274	325,796	288,449	953,102	385	1,812	35.29	2,877
7	Liberty	284	32	2,913	1,910	3,142	23	94	13.73	15
8	Montgomery	1,073	74	30,764	26,442	56,281	199	428	12.28	221
9	San Jacinto	318	14	387	348	234	18	21	2.41	1
10	Walker	395	12	333	275	993	38	18	4.02	3
11	Waller	193	18	1,883	1,397	2,045	19	39	12.69	6

			10% + 1% + 0.2% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	273	51,232	42,684	95,084	657	790	128.75	363
2	Chambers	56	34	2,948	1,376	6,844	50	63	9.70	47
3	Fort Bend	98	64	69,367	65,846	154,152	410	932	9.36	473
4	Galveston	342	275	98,624	86,725	196,868	619	1,662	62.59	813
5	Grimes	205	50	694	451	673	163	33	22.86	2
6	Harris	1,742	1,206	891,230	765,605	3,638,561	4,422	13,854	206.86	9,092
7	Liberty	284	214	11,544	7,321	10,841	218	454	78.56	45
8	Montgomery	1,073	471	80,929	67,008	175,342	1,496	1,574	76.69	570
9	San Jacinto	318	113	1,816	1,628	1,028	186	88	17.22	1
10	Walker	395	102	1,286	1,068	2,024	315	78	30.56	10
11	Waller	193	111	5,905	4,333	6,784	197	173	77.61	10

Table 4. Summary of existing condition flood risk (by county)

			Possible Flood Prone Areas								Average SVI of features in flood hazard areas	Average TX F-SVI of features in flood hazard areas
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)		
1	Brazoria	367	0	0	0	0	0	0.18	0.00	0	0.33	0.34
2	Chambers	56	0	0	0	0	0	0.00	0.00	0	0.28	0.26
3	Fort Bend	98	0	0	0	0	0	0.00	0.00	0	0.35	0.35
4	Galveston	342	0	0	0	0	0	0.00	0.00	0	0.40	0.56
5	Grimes	205	0	0	0	0	0	0.00	0.00	0	0.56	0.46
6	Harris	1,742	0	2	2	2	0	0.02	0.00	0	0.55	0.56
7	Liberty	284	0	0	0	0	0	0.00	0.00	0	0.71	0.33
8	Montgomery	1,073	0	0	0	0	0	0.00	0.00	0	0.33	0.29
9	San Jacinto	318	0	0	0	0	0	0.00	0.00	0	0.49	0.22
10	Walker	395	0	0	0	0	0	0.00	0.00	0	0.42	0.45
11	Waller	193	0	0	0	0	0	0.00	0.00	0	0.34	0.23

Appendix 2A-8: Map 14 - Model Coverage



Legend

Number of Models Overlapping HUC12s

- 1 - 7
- 8 - 12
- 13 - 18
- 19 - 23
- 24 - 29
- 30 - 36
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 5 10

Miles

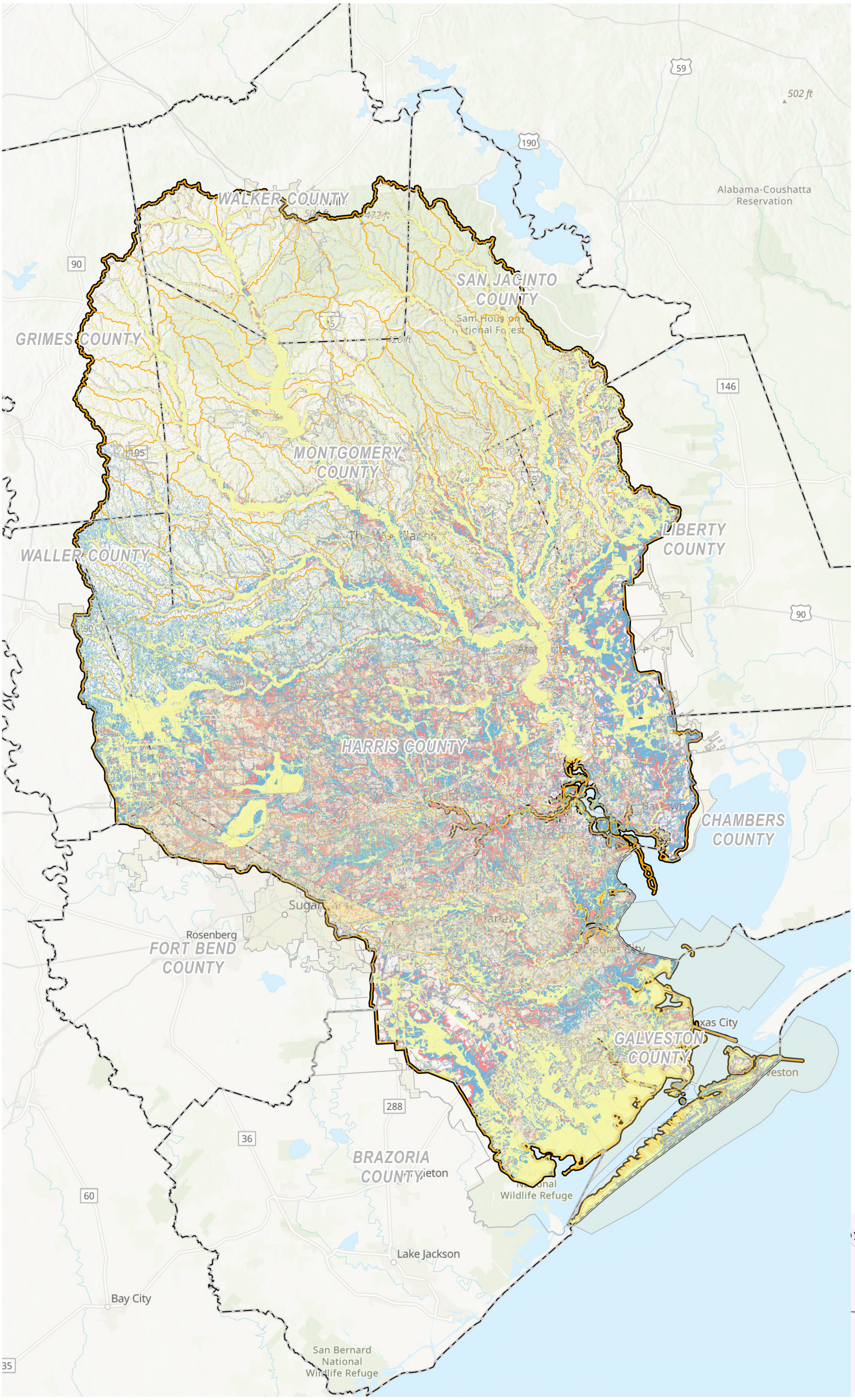


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan
Model Coverage

MAP 14

Appendix 2B-1: Map 8 - Future Condition Flood Hazard



Legend

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Municipality
- County
- Region Boundary

N

0 5 10

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
1 of 17 in series

Legend

Index

Walker County Page 3

San Jacinto County Page 4

Grimes County Page 8

W Montgomery County Page 7

E Montgomery County Page 6

Liberty County Page 5

W Harris County Page 10

Central Harris County Page 14

E Harris County Page 11

Chambers County Page 12

Waller County Page 9

Harris County Ship Channel Page 13

Fort Bend County Page 15

Brazoria County Page 16

Galveston County Page 17

Huntsville

The Woodlands

Atascocita

Houston

Sugar Land

Pearland

Rosenberg

Angleton

Lake Jackson

Bay City

Alabama-Coushatta Reservation

Brazoria National Wildlife Refuge

San Bernard National Wildlife Refuge

N

0 5 10

Miles

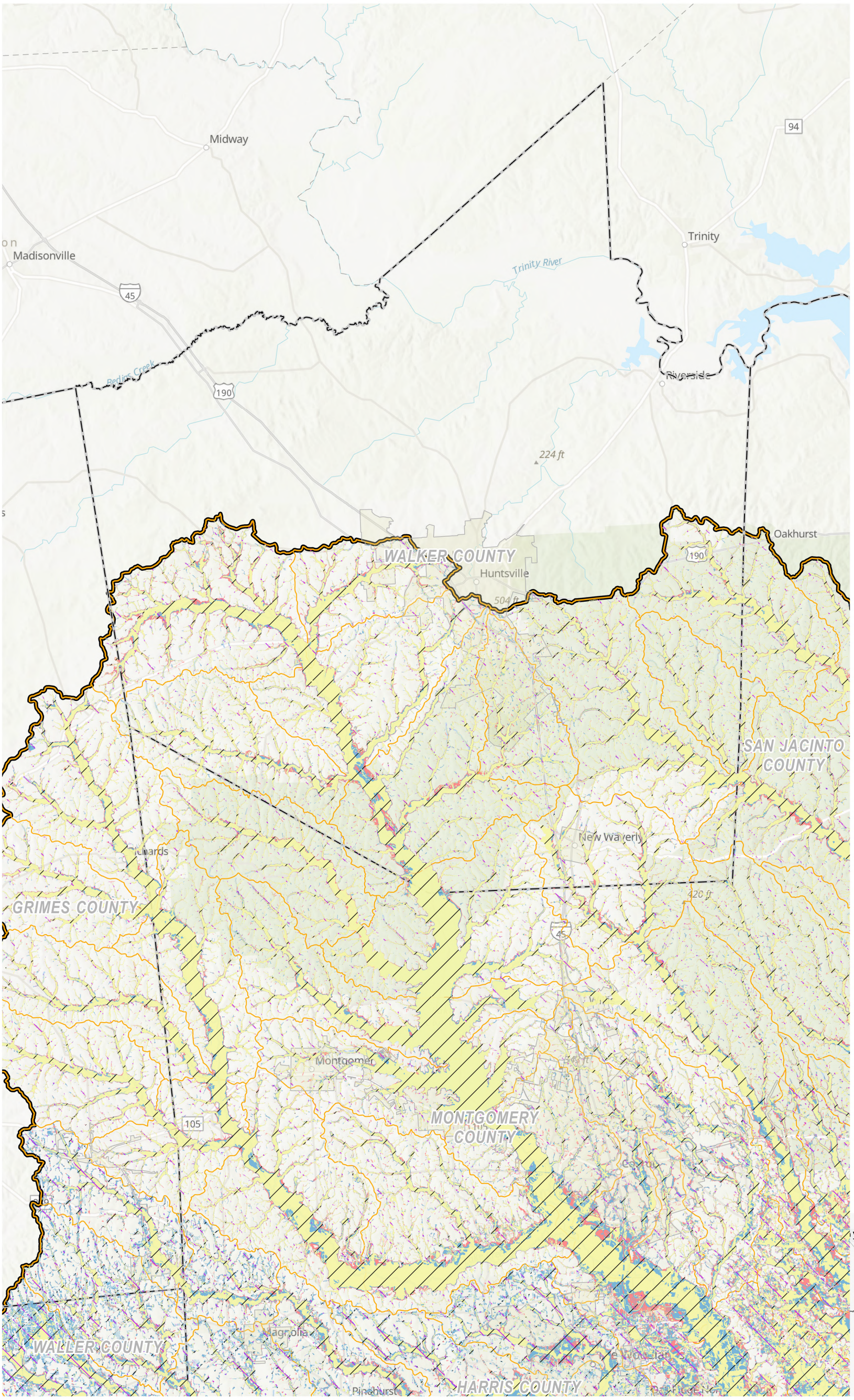


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
2 of 17 in series



Legend

Flood Type

- Riverine
- Coastal
- Local

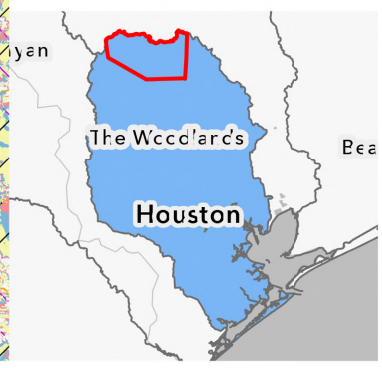
Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles

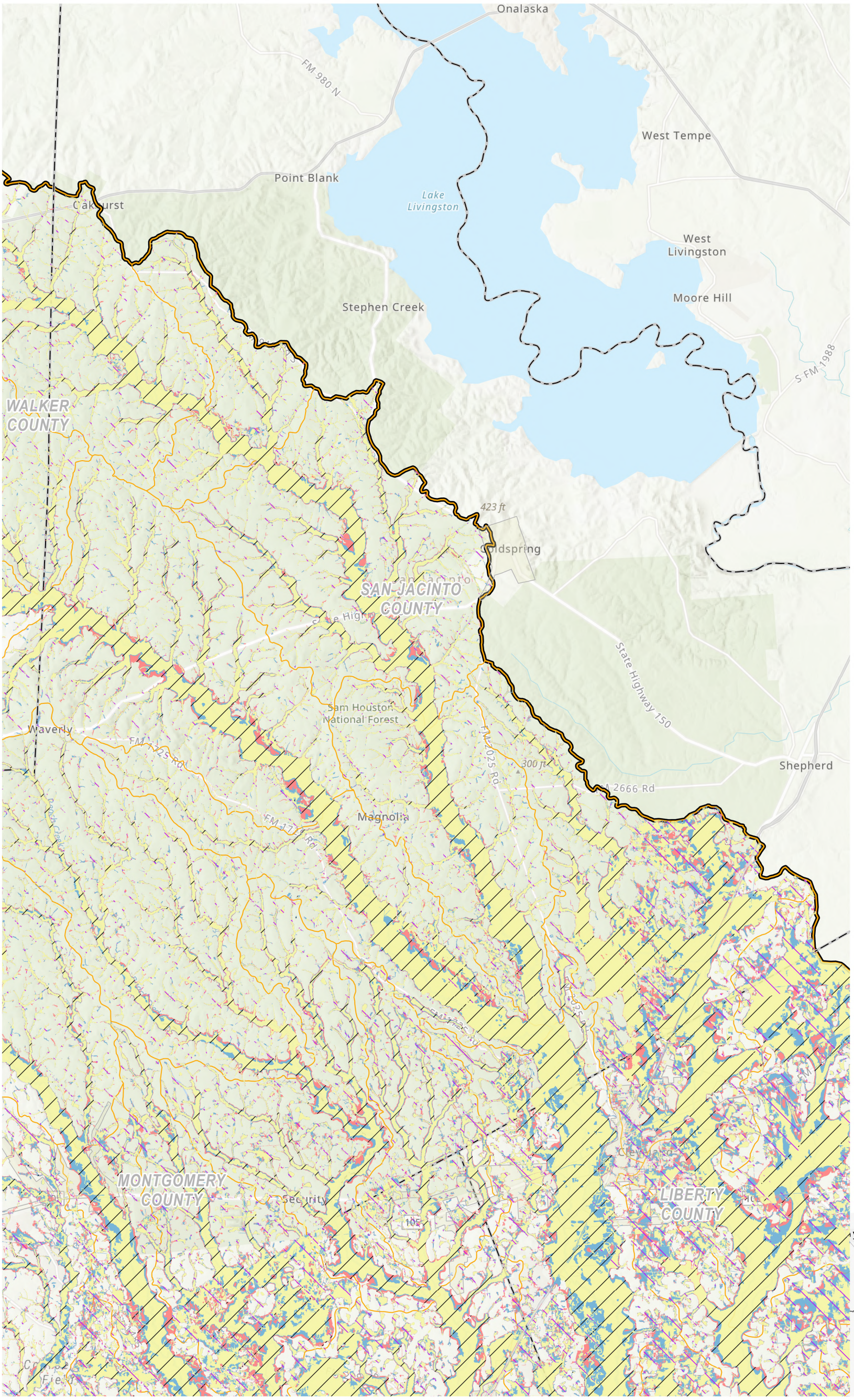


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
3 of 17 in series



Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

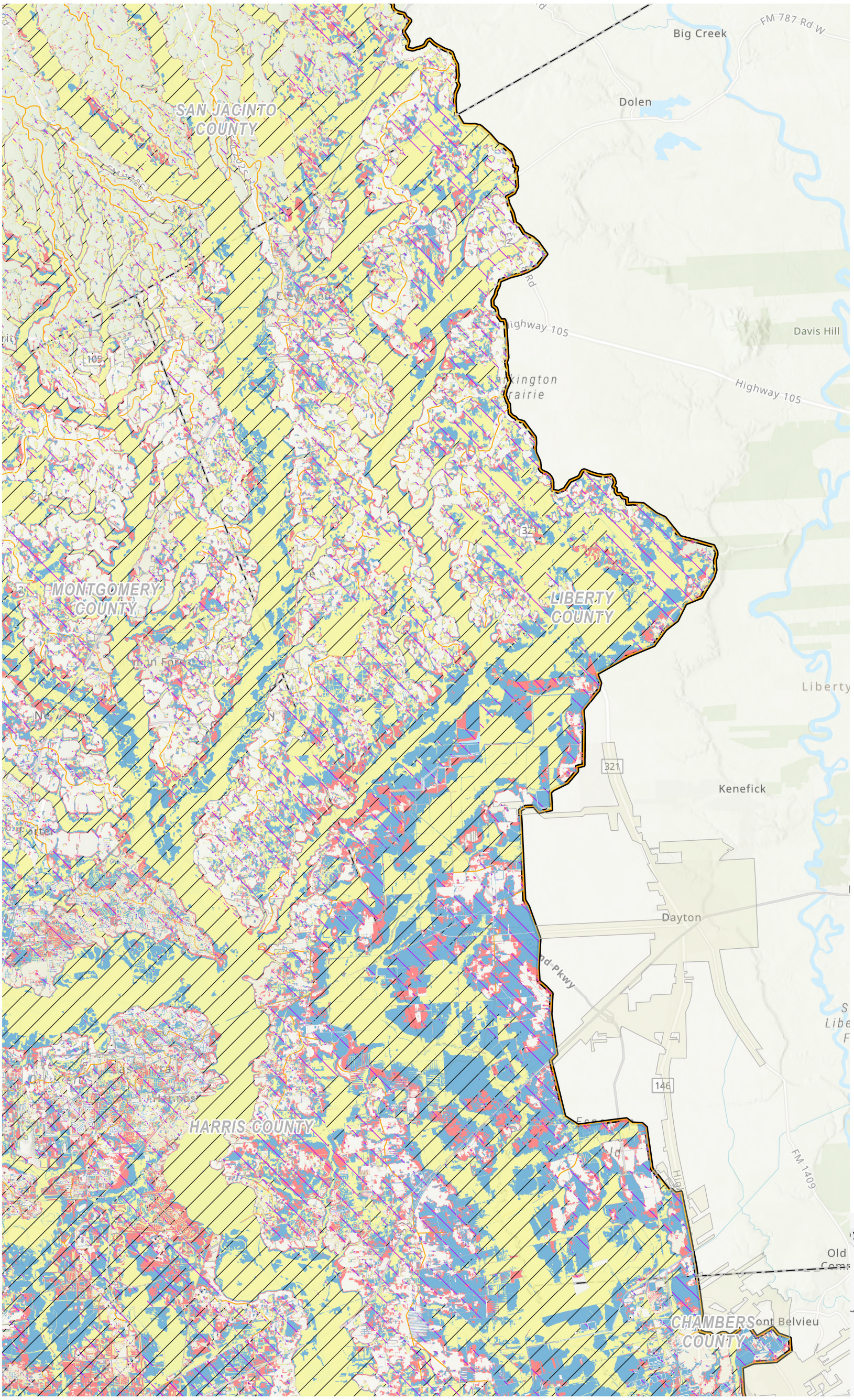
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
4 of 17 in series



Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area

- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
5 of 17 in series

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Prepared by Freese and Nichols, Inc.

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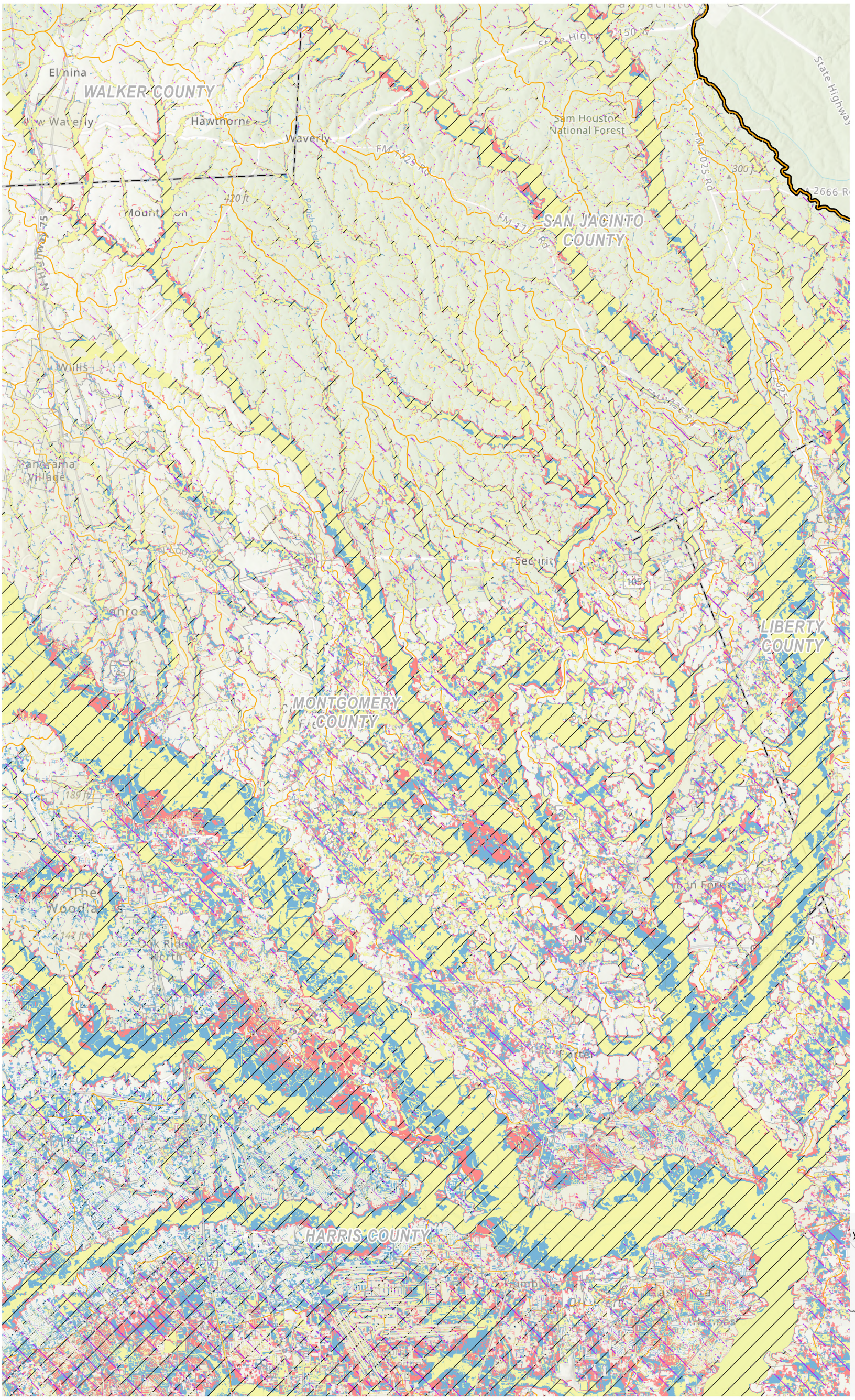


Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area

- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

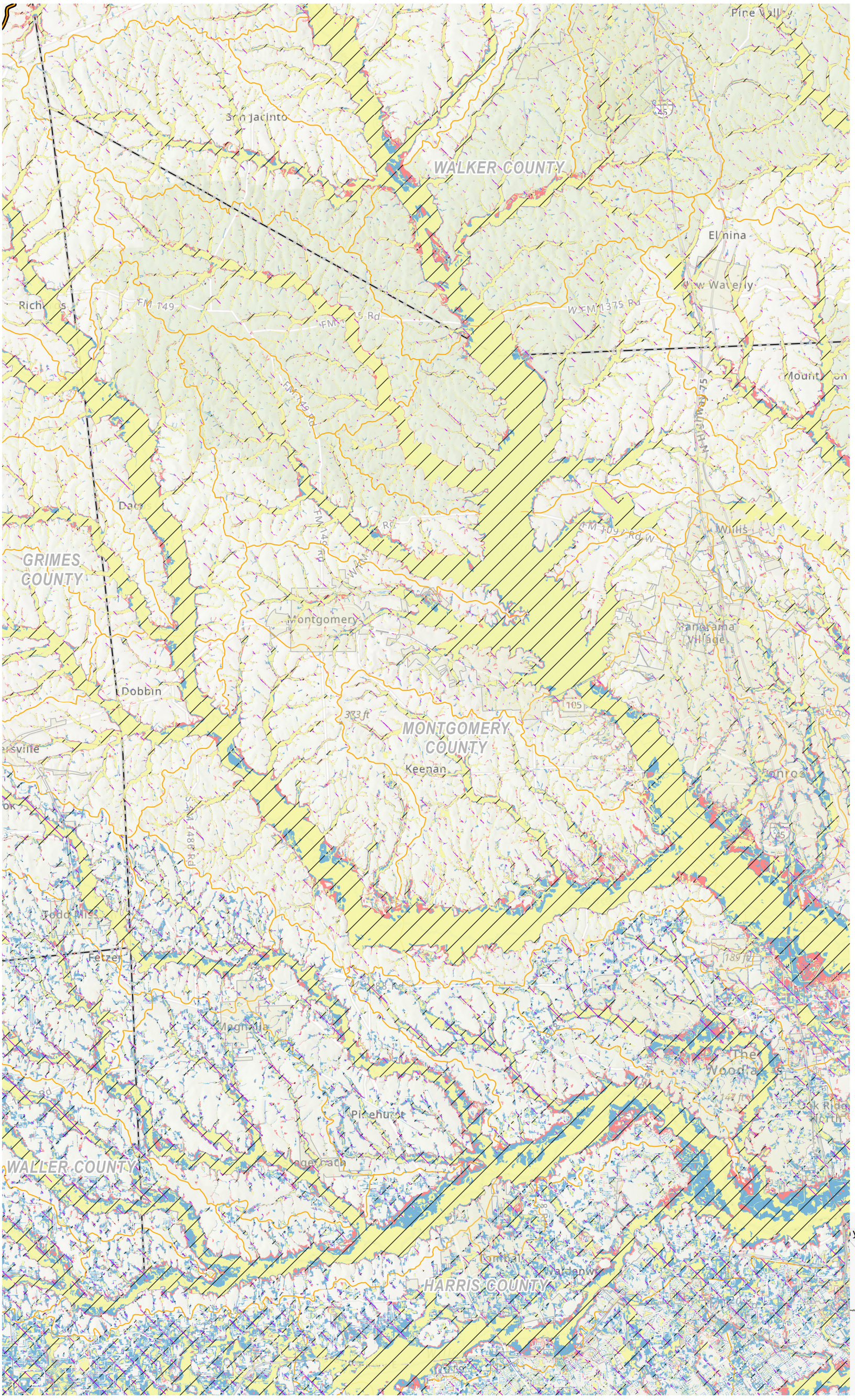


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
6 of 17 in series



Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

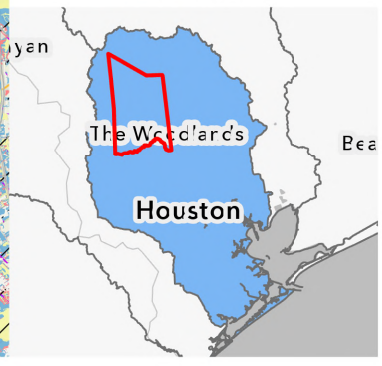
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area

- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

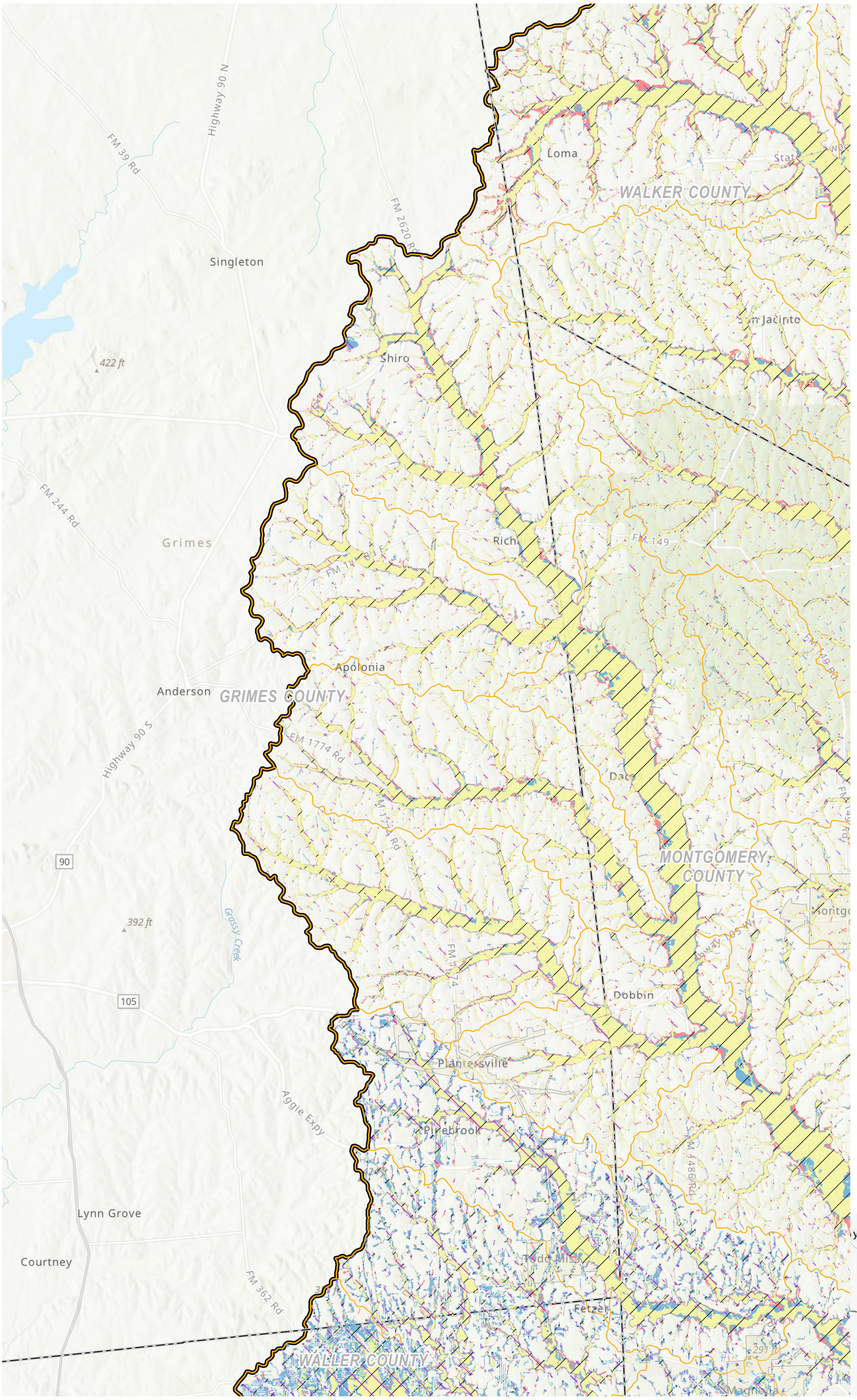


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
7 of 17 in series

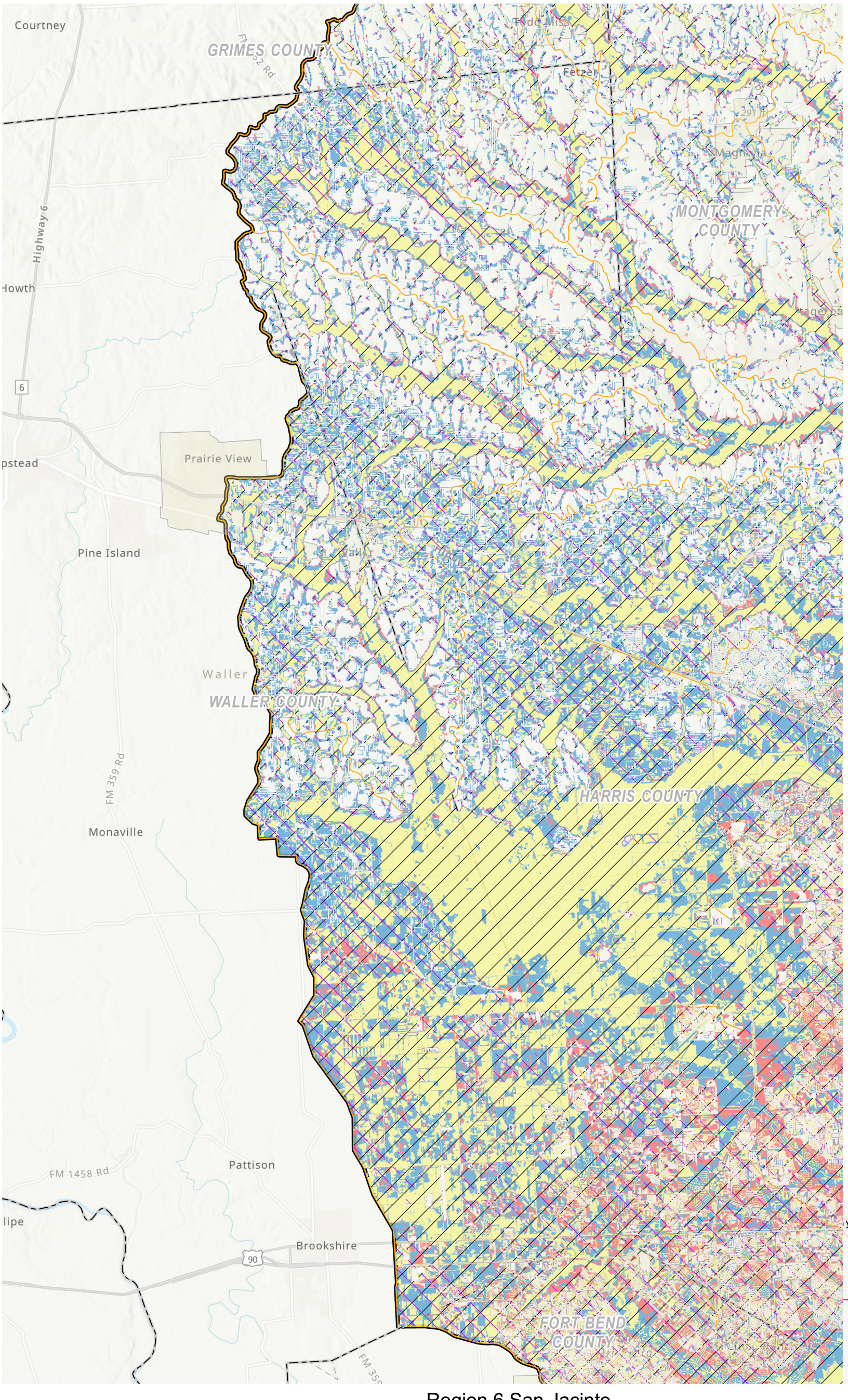


Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
8 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

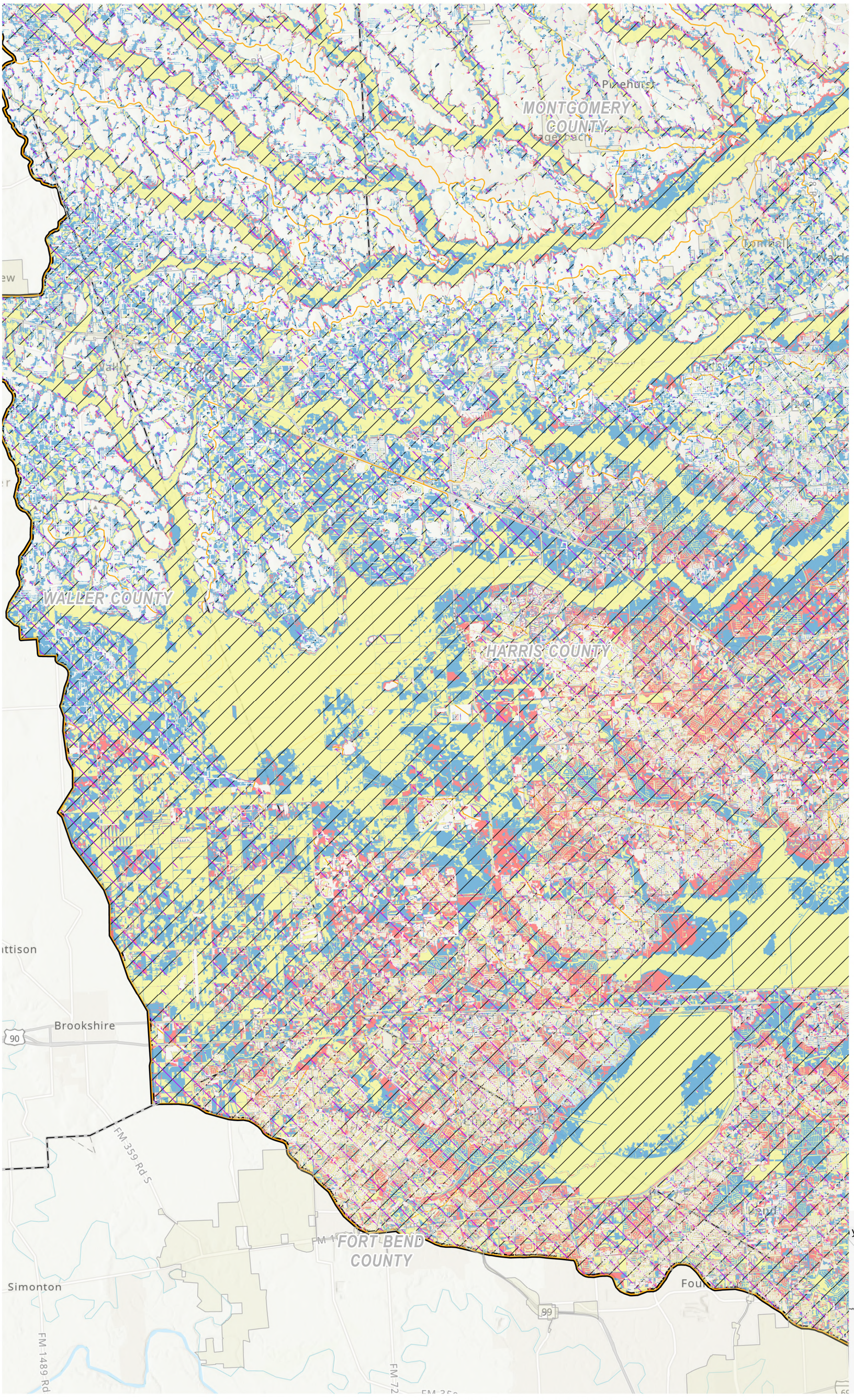


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
9 of 17 in series



Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area

- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.5 3

Miles

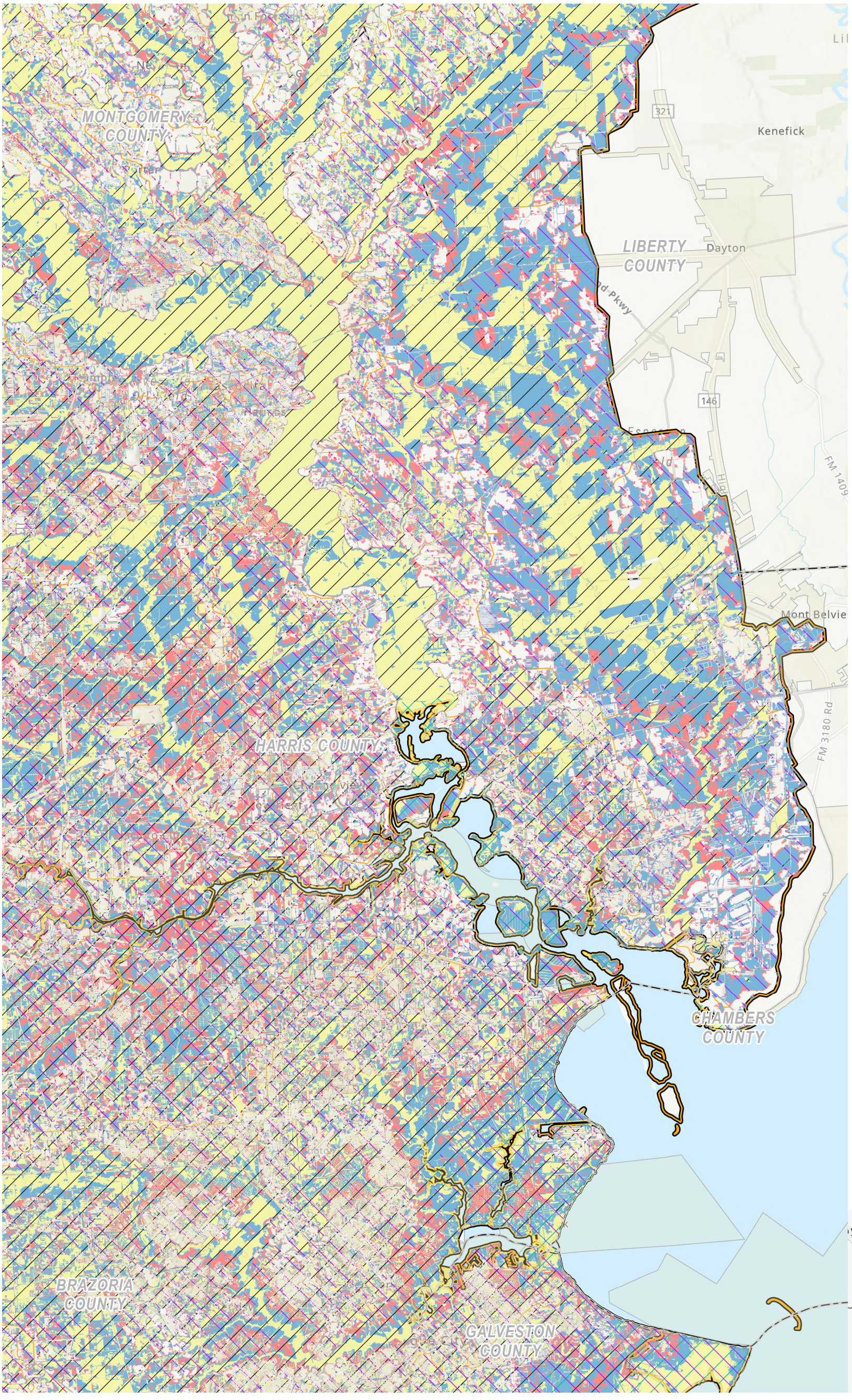


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
10 of 17 in series



Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
11 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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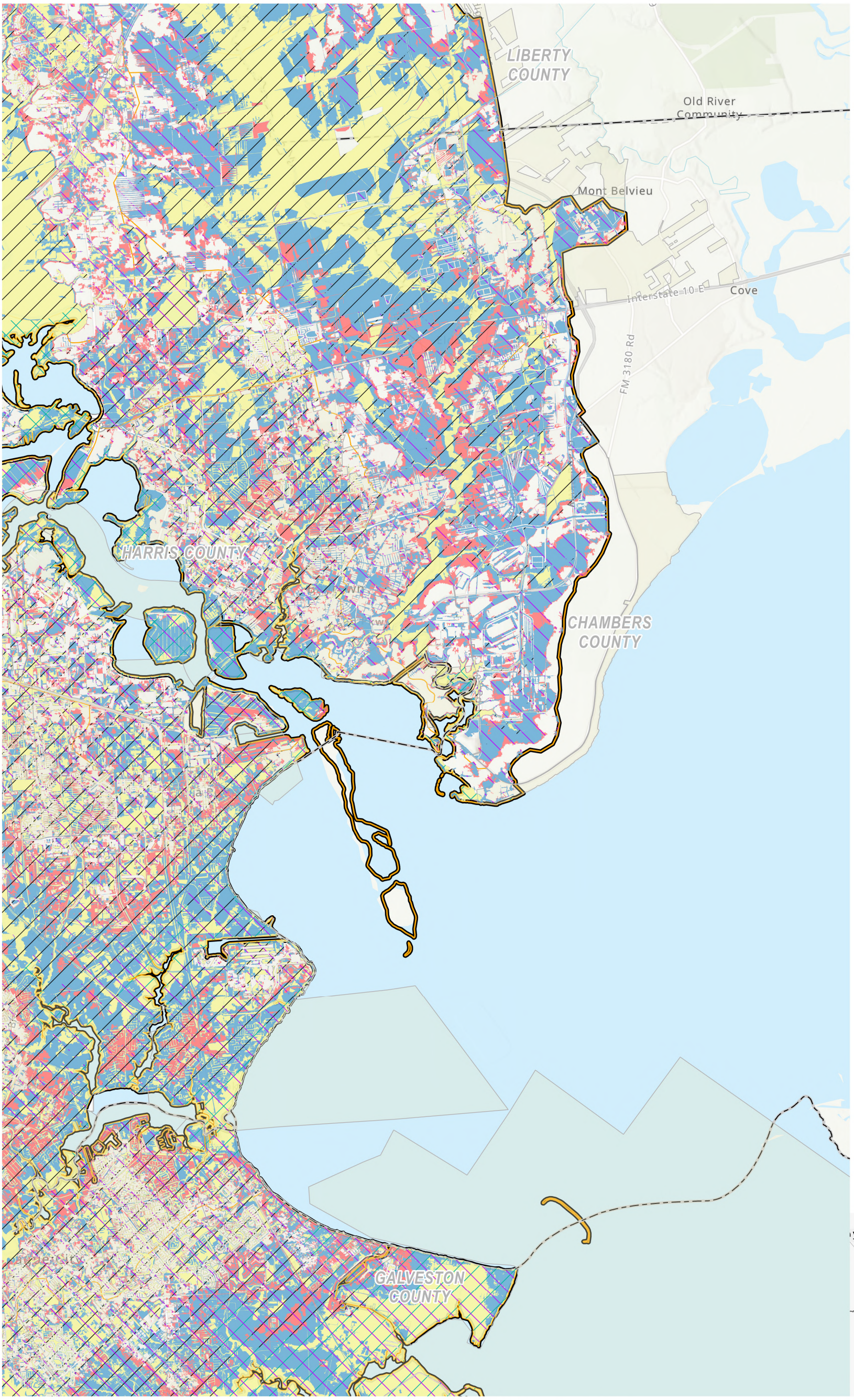

Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.25 2.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
12 of 17 in series

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Prepared by Freese and Nichols, Inc.

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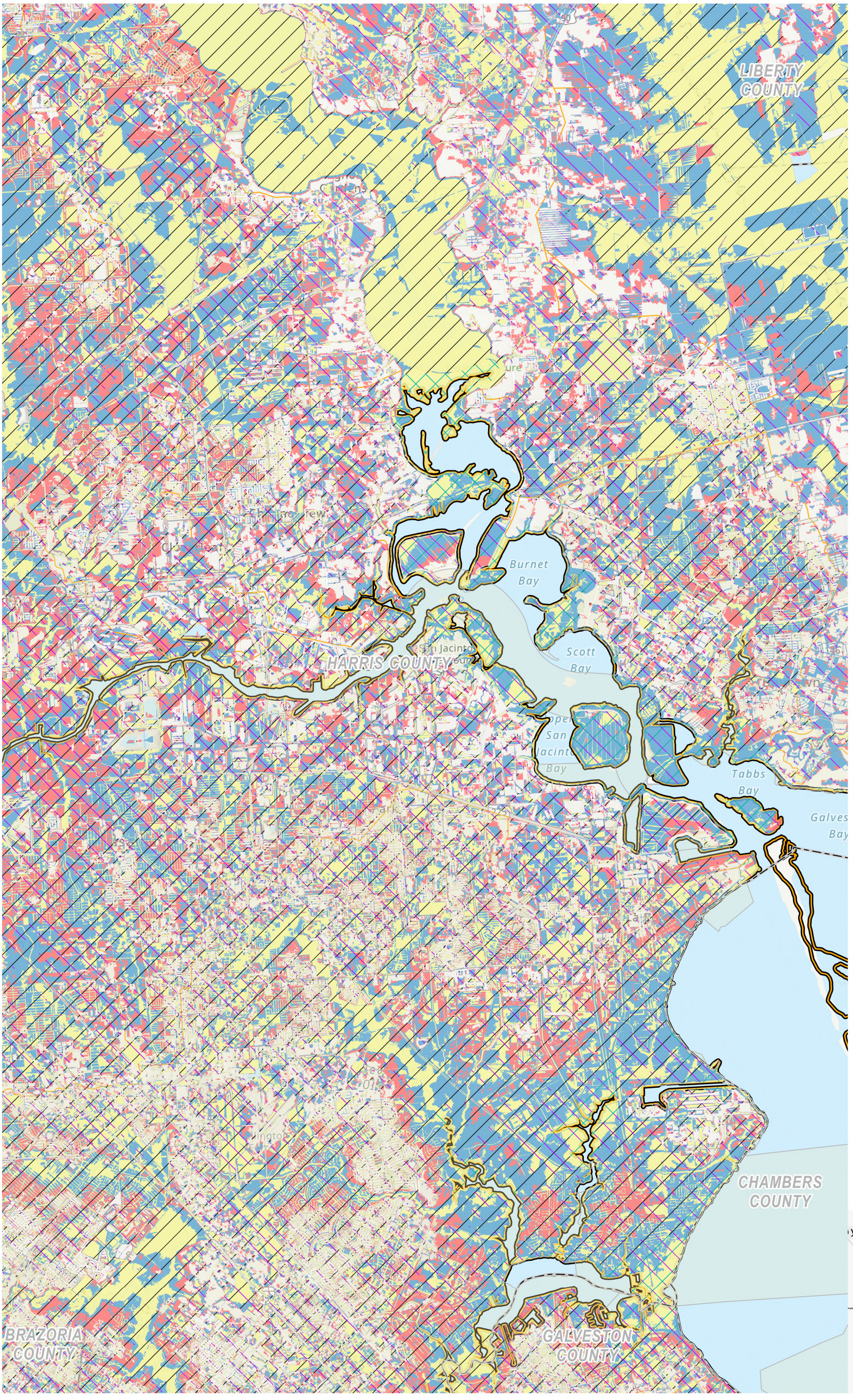
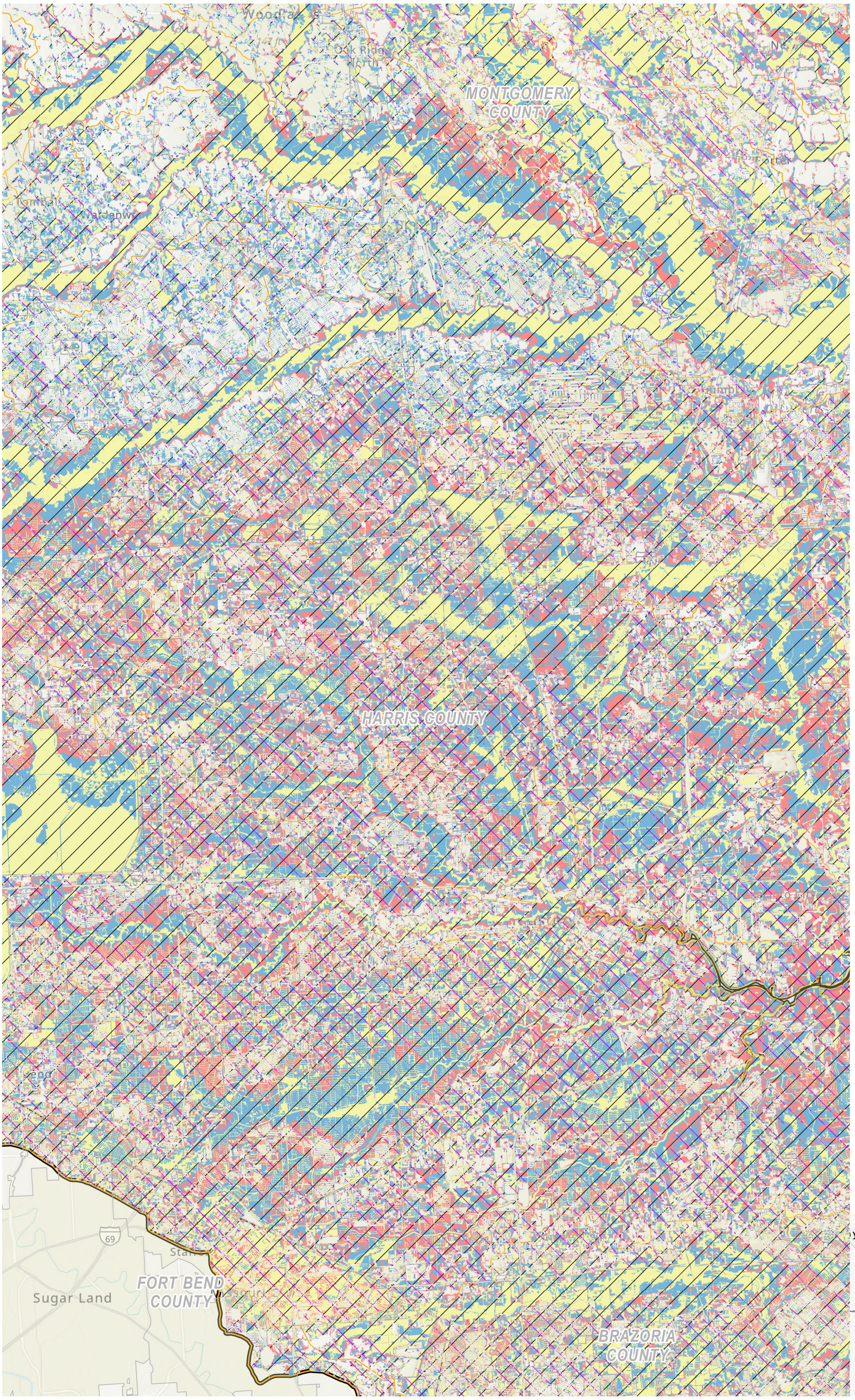


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
13 of 17 in series



Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

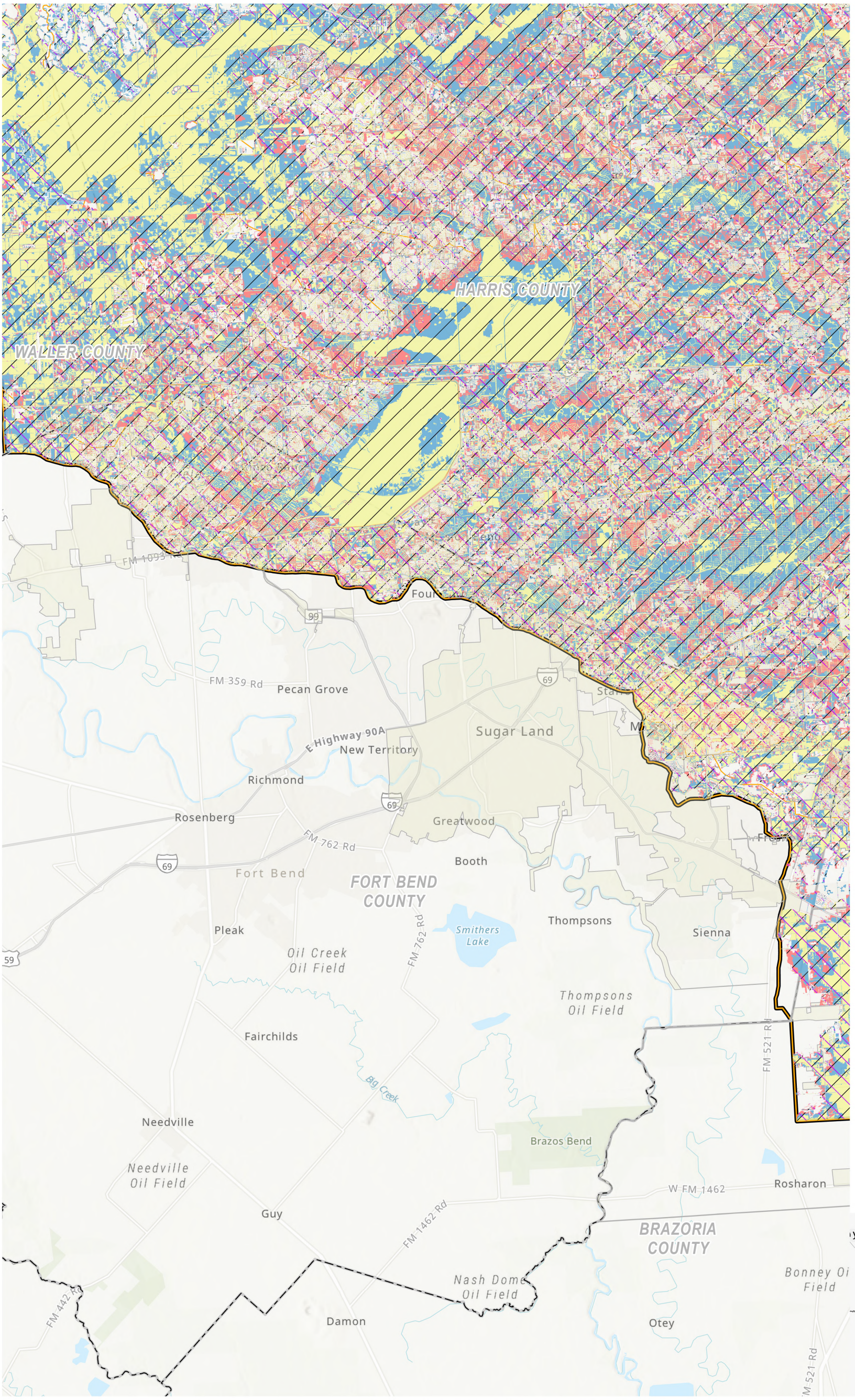


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
14 of 17 in series



Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

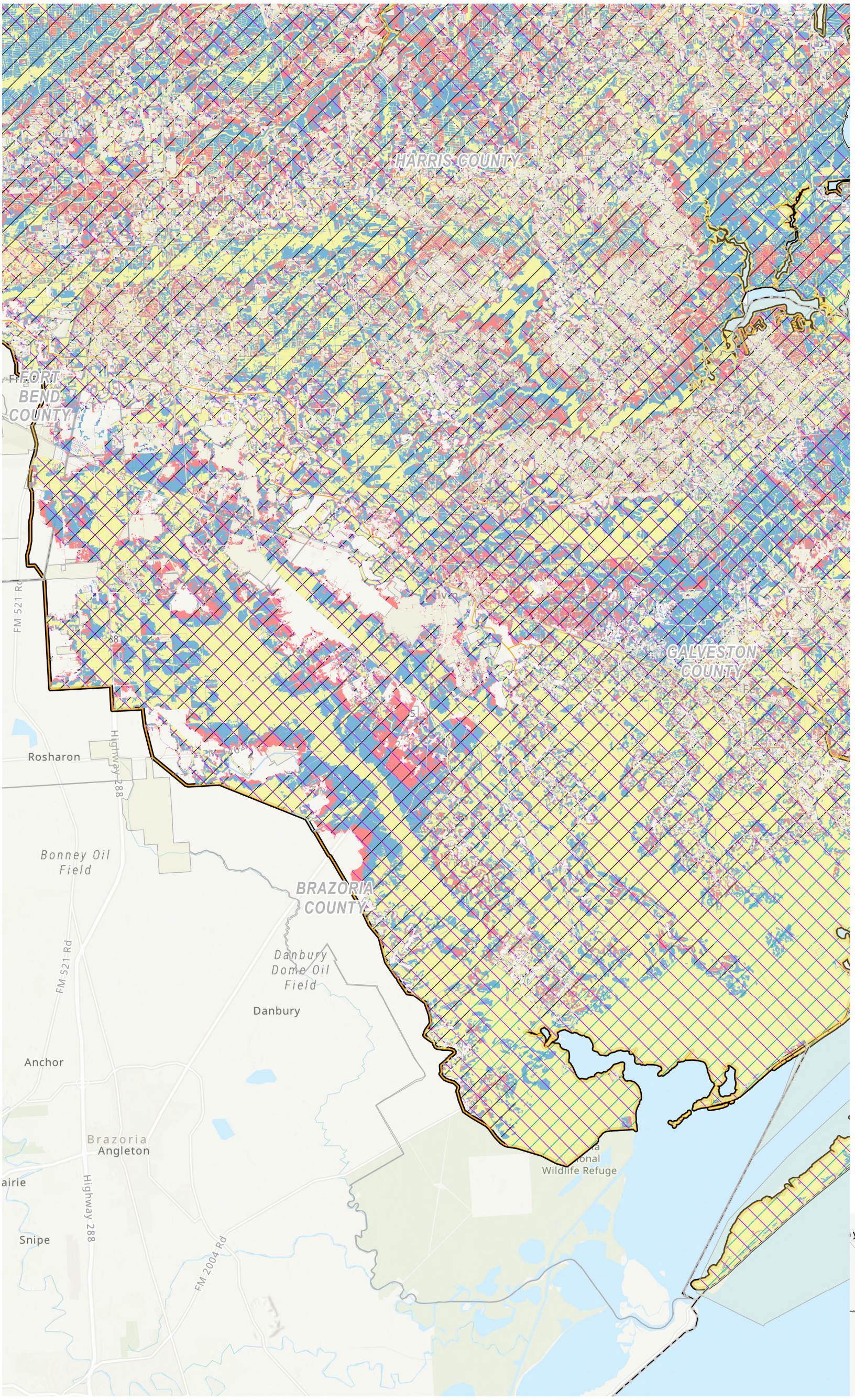


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
15 of 17 in series



Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

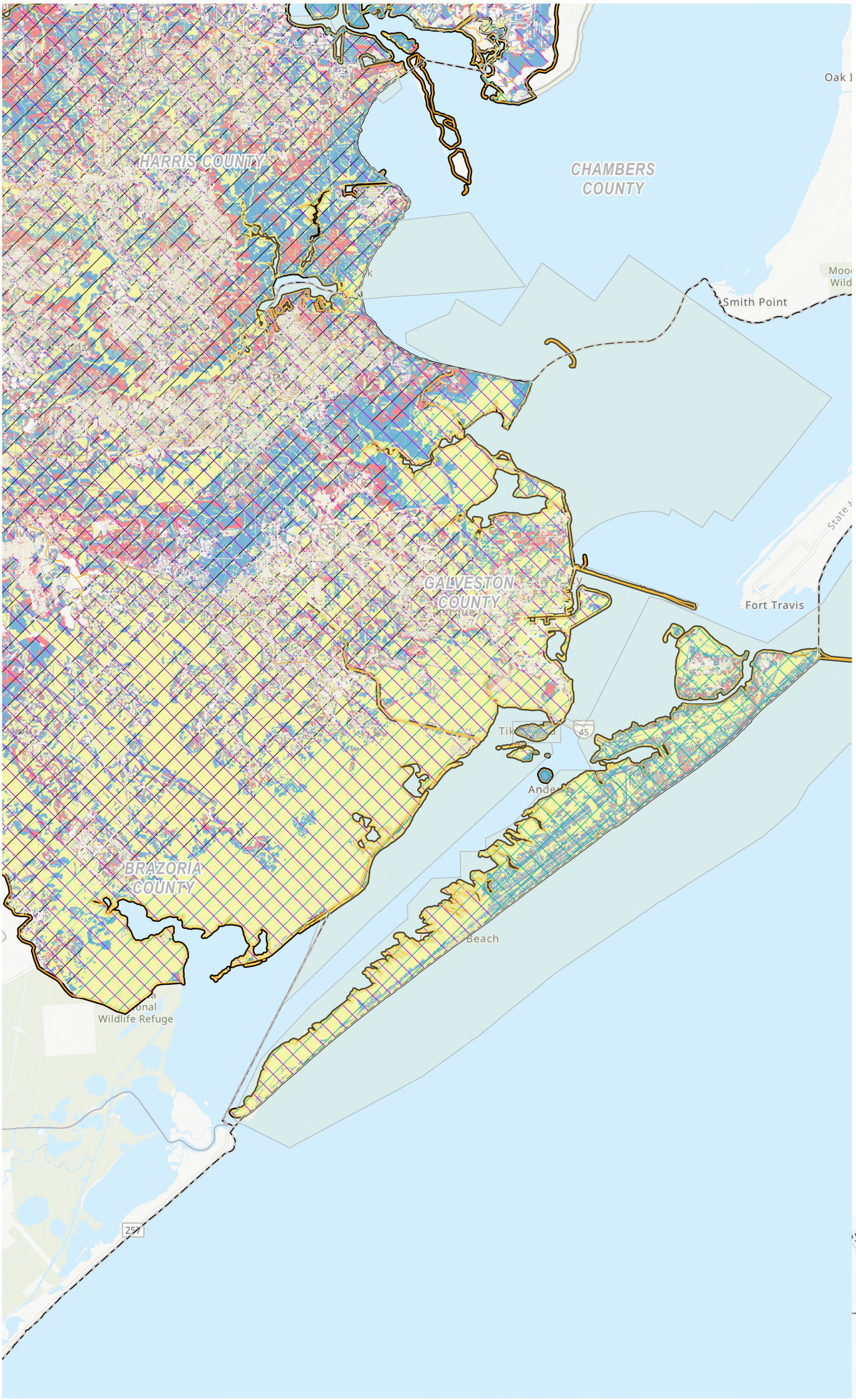


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
16 of 17 in series



Legend

Flood Type

- Riverine
- Coastal
- Local

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.25 4.5

Miles



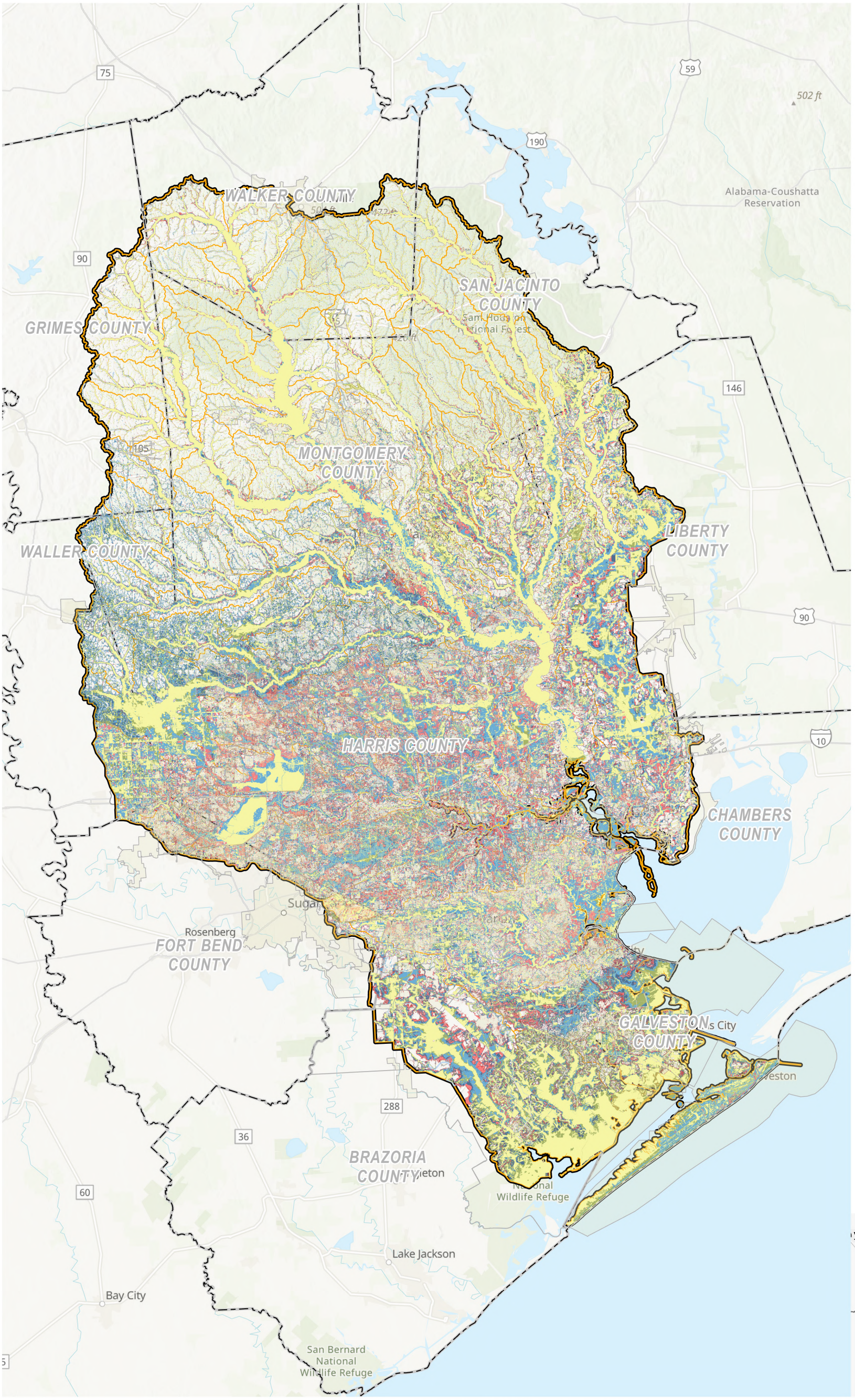
SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard

MAP 8
17 of 17 in series

Appendix 2B-2: Map 9 - Extent Increase of Flood Hazard Compared to Existing Condition



Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Municipality
- County
- Region Boundary

N

0 5 10

Miles

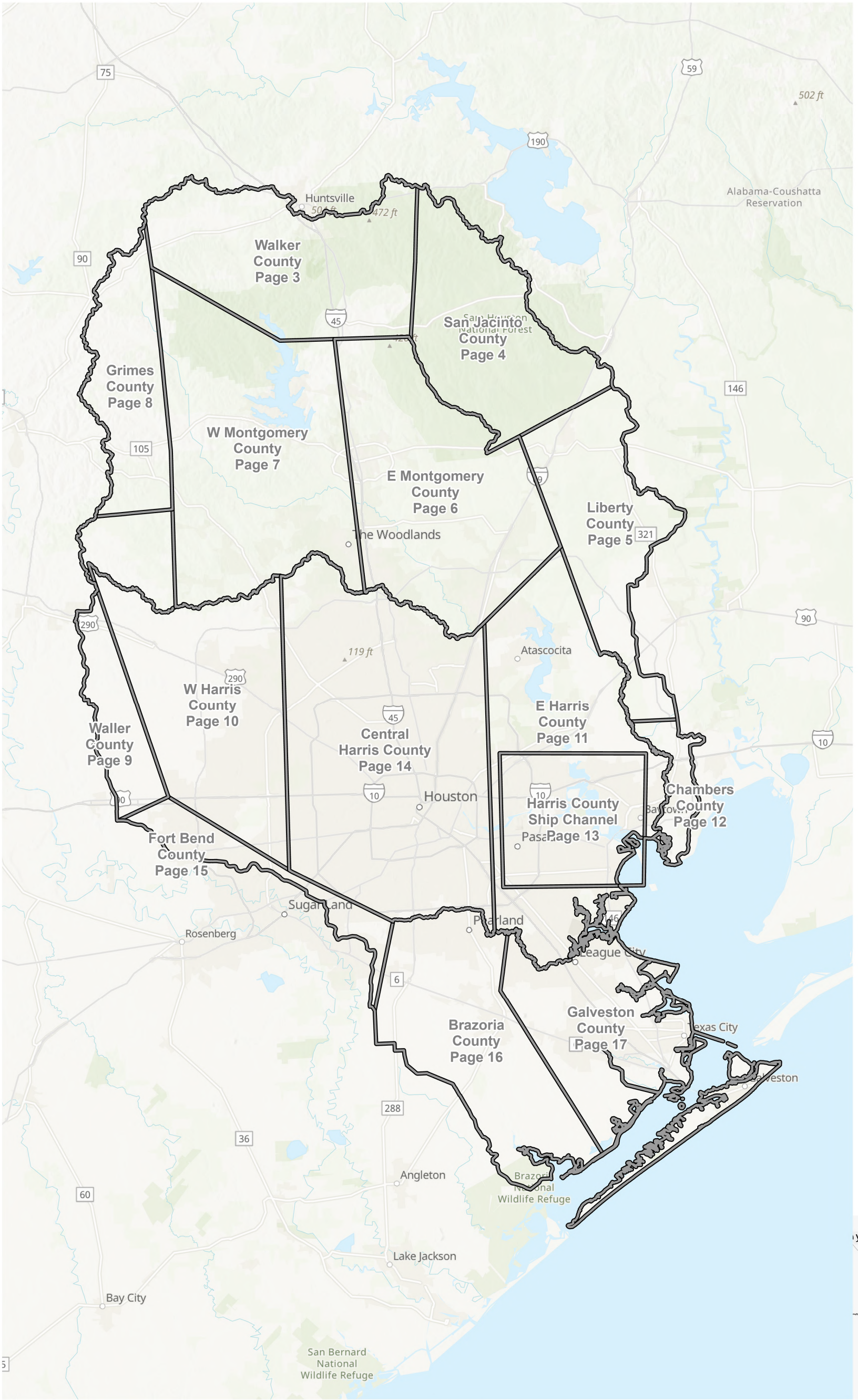


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
1 of 17 in series



Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
2 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

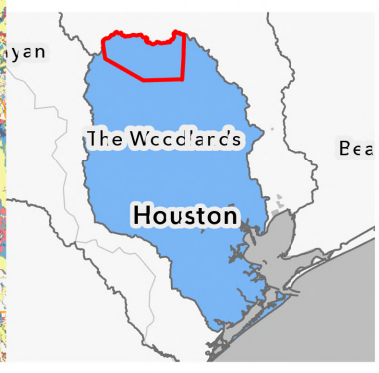
Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

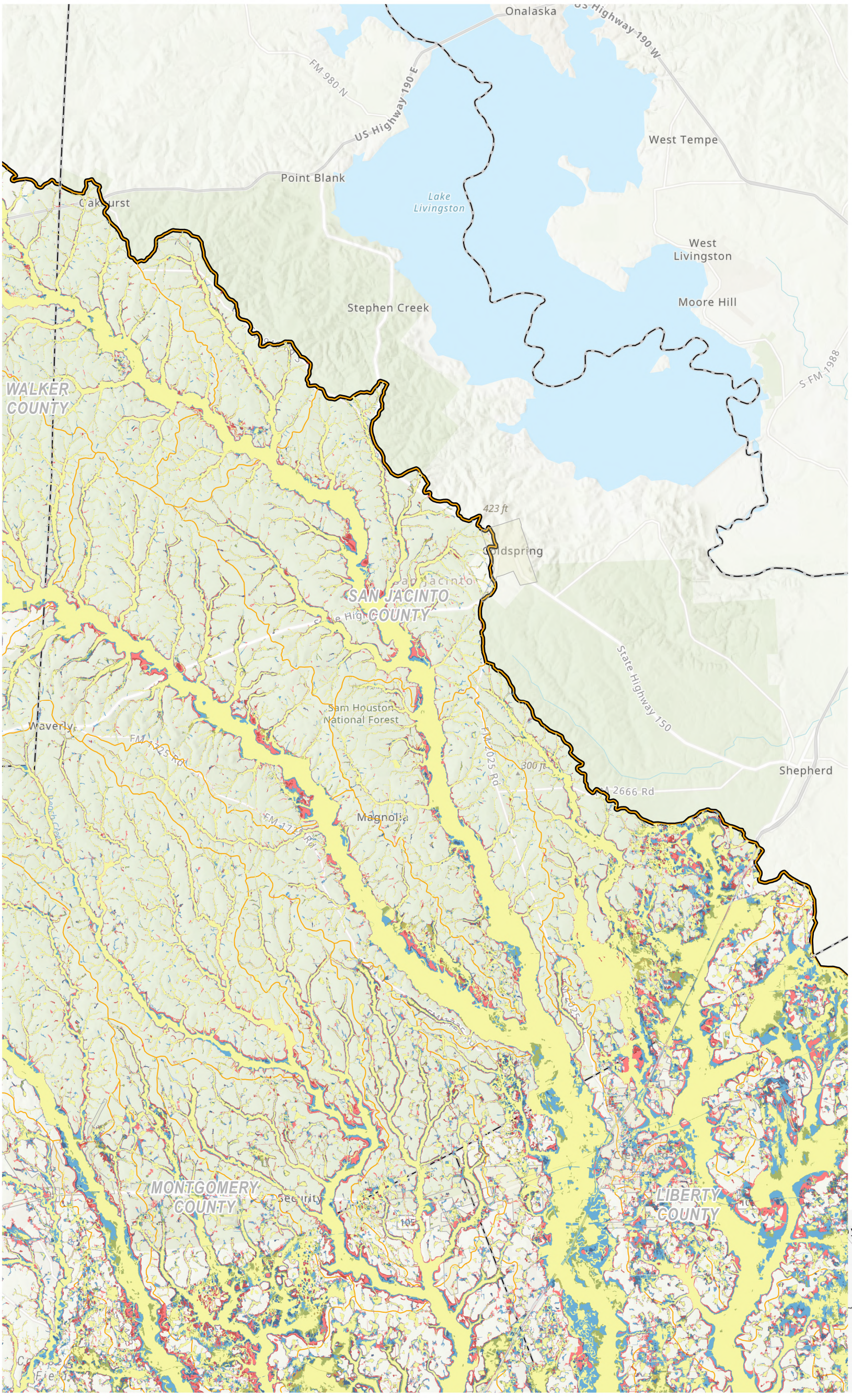
Extent Increase of Flood Hazard

MAP 9
3 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.5 3

Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
4 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

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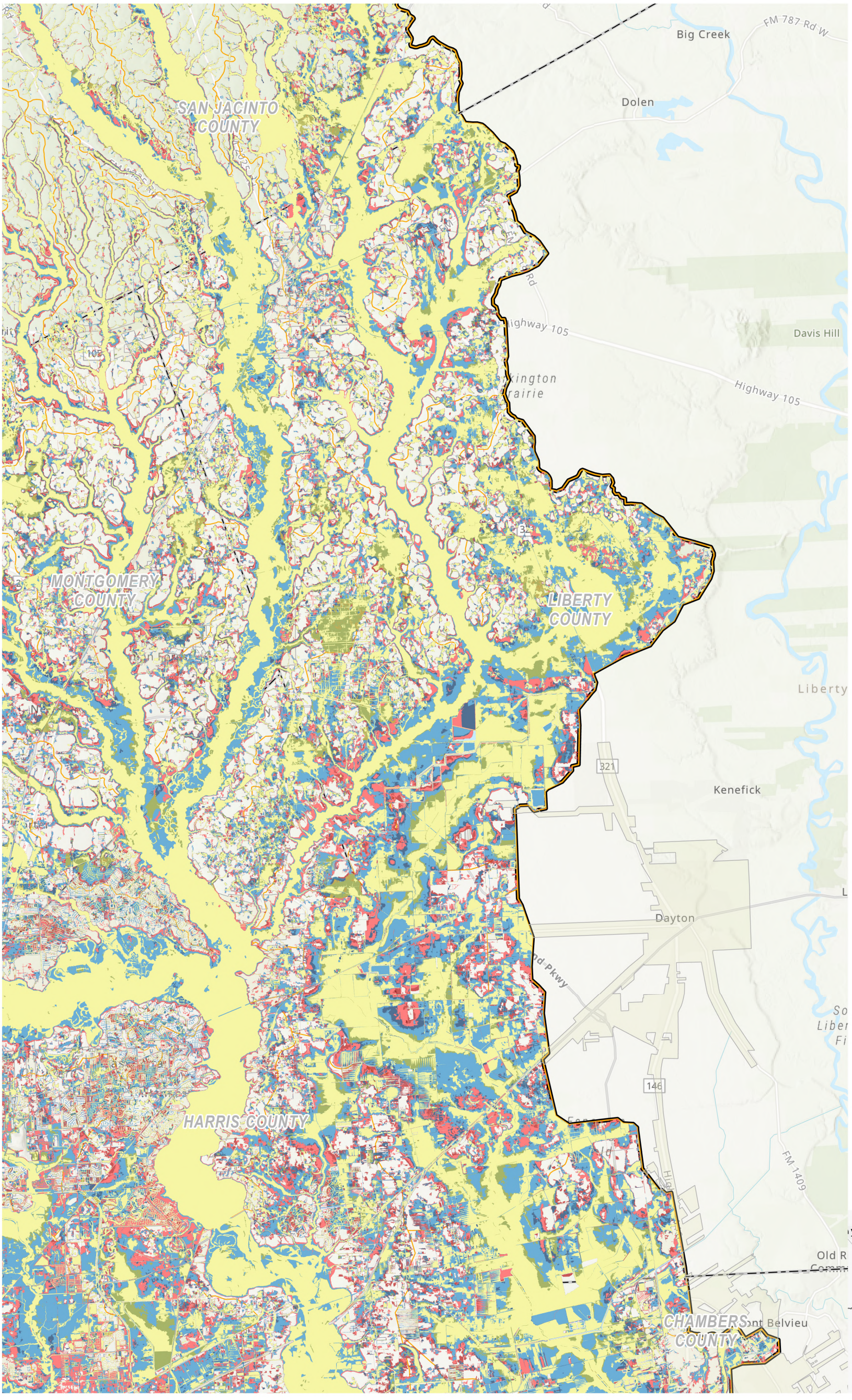

Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
5 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

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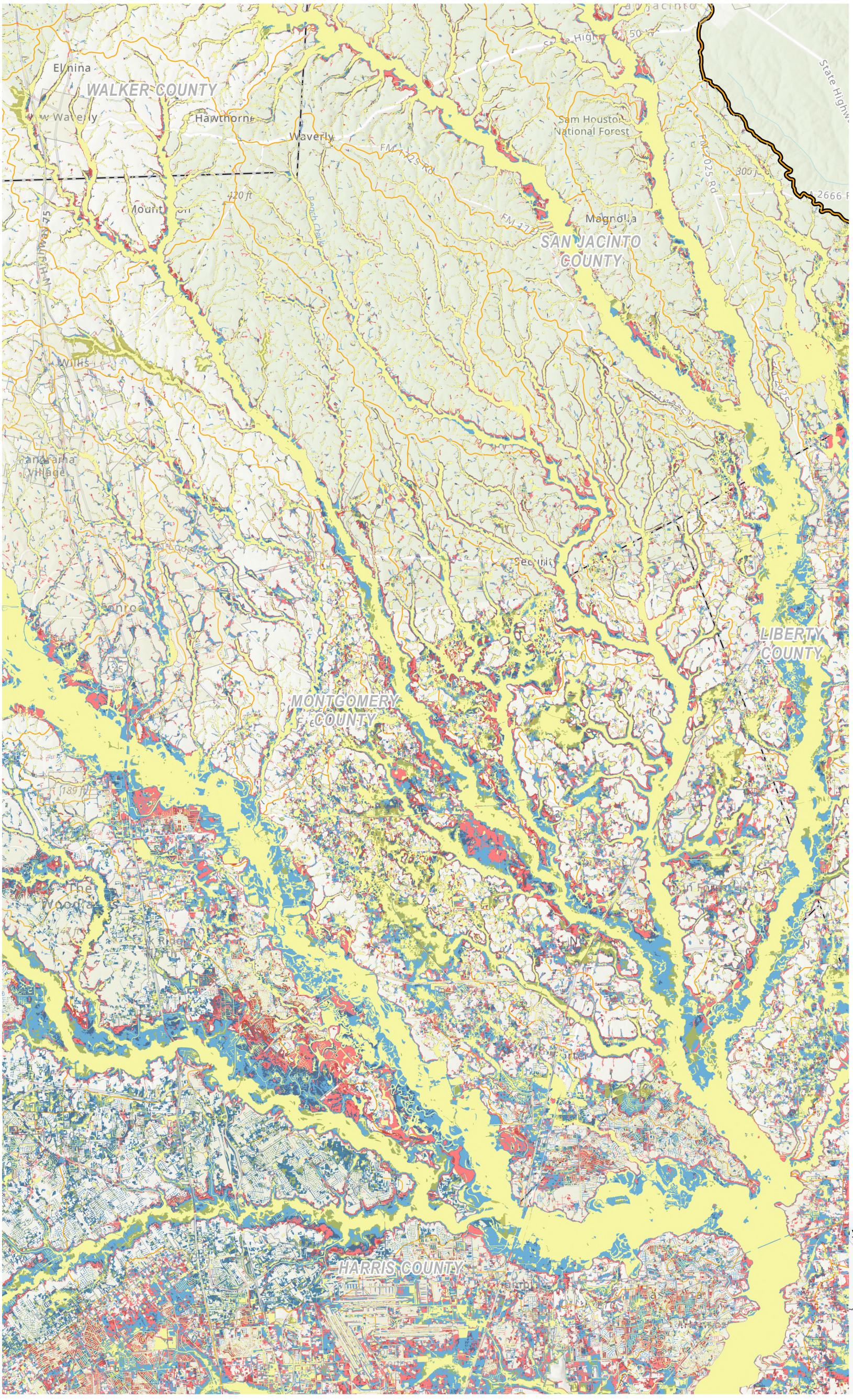


Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
6 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
7 of 17 in series

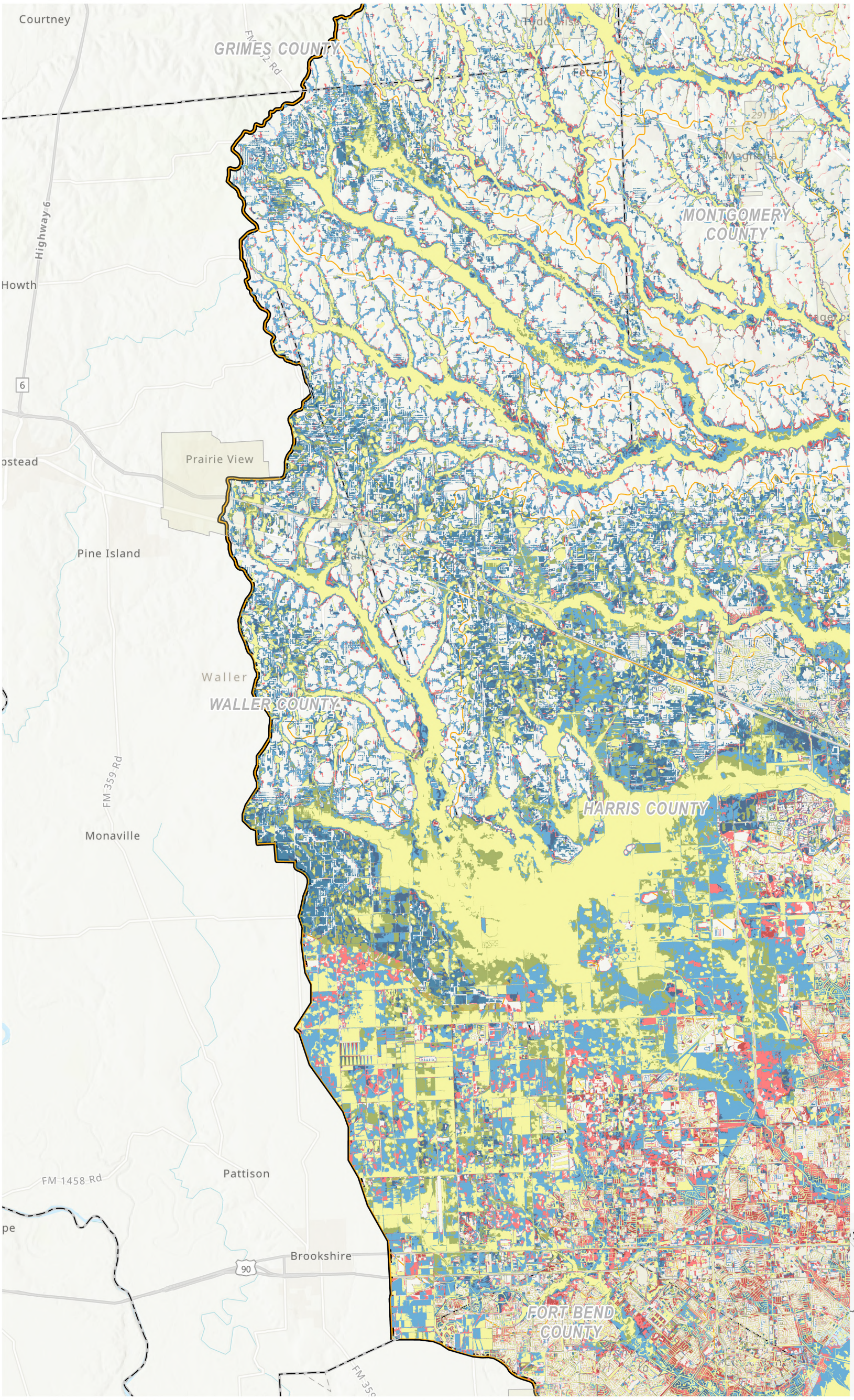


Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
8 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

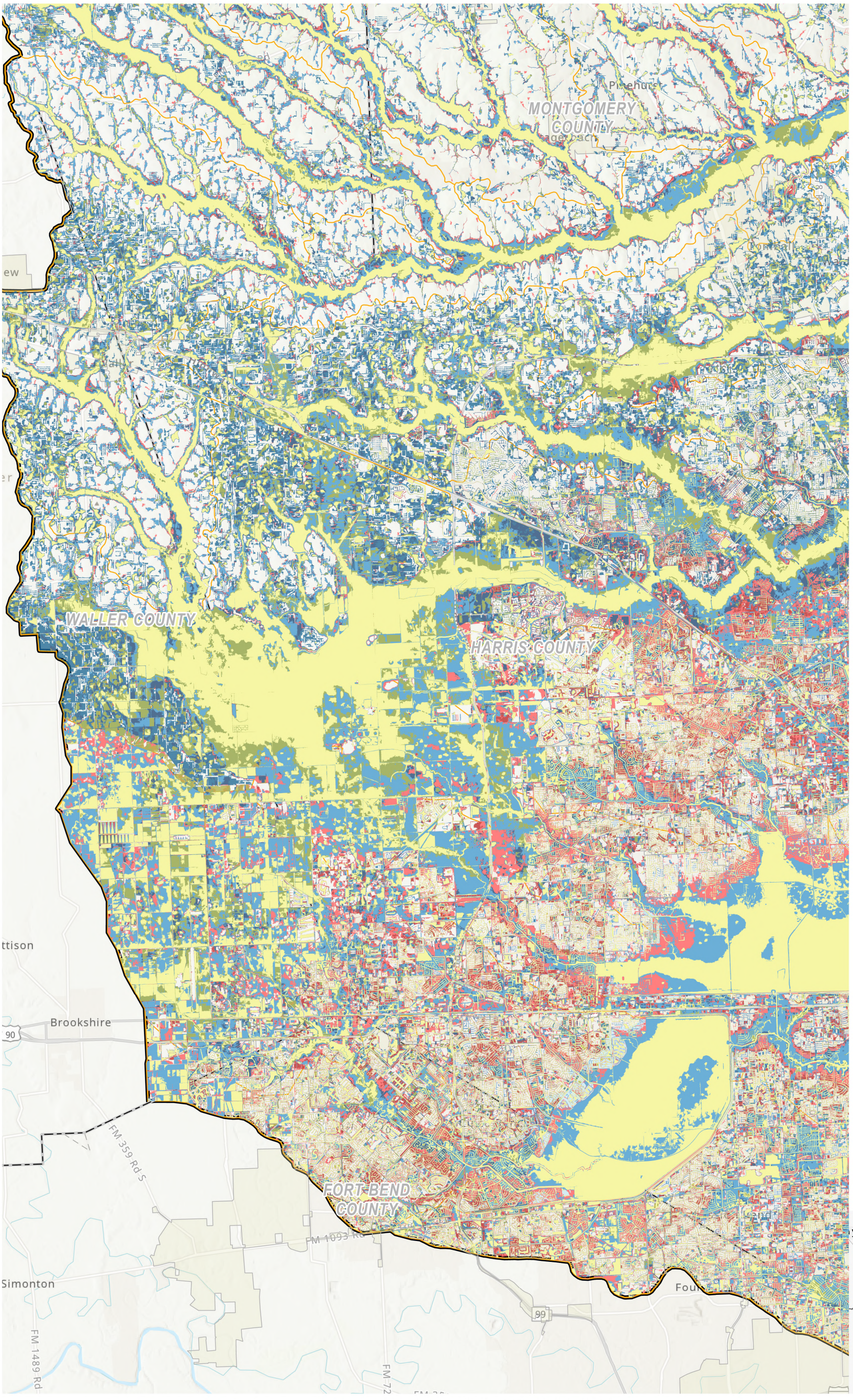


Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
9 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.5 3

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

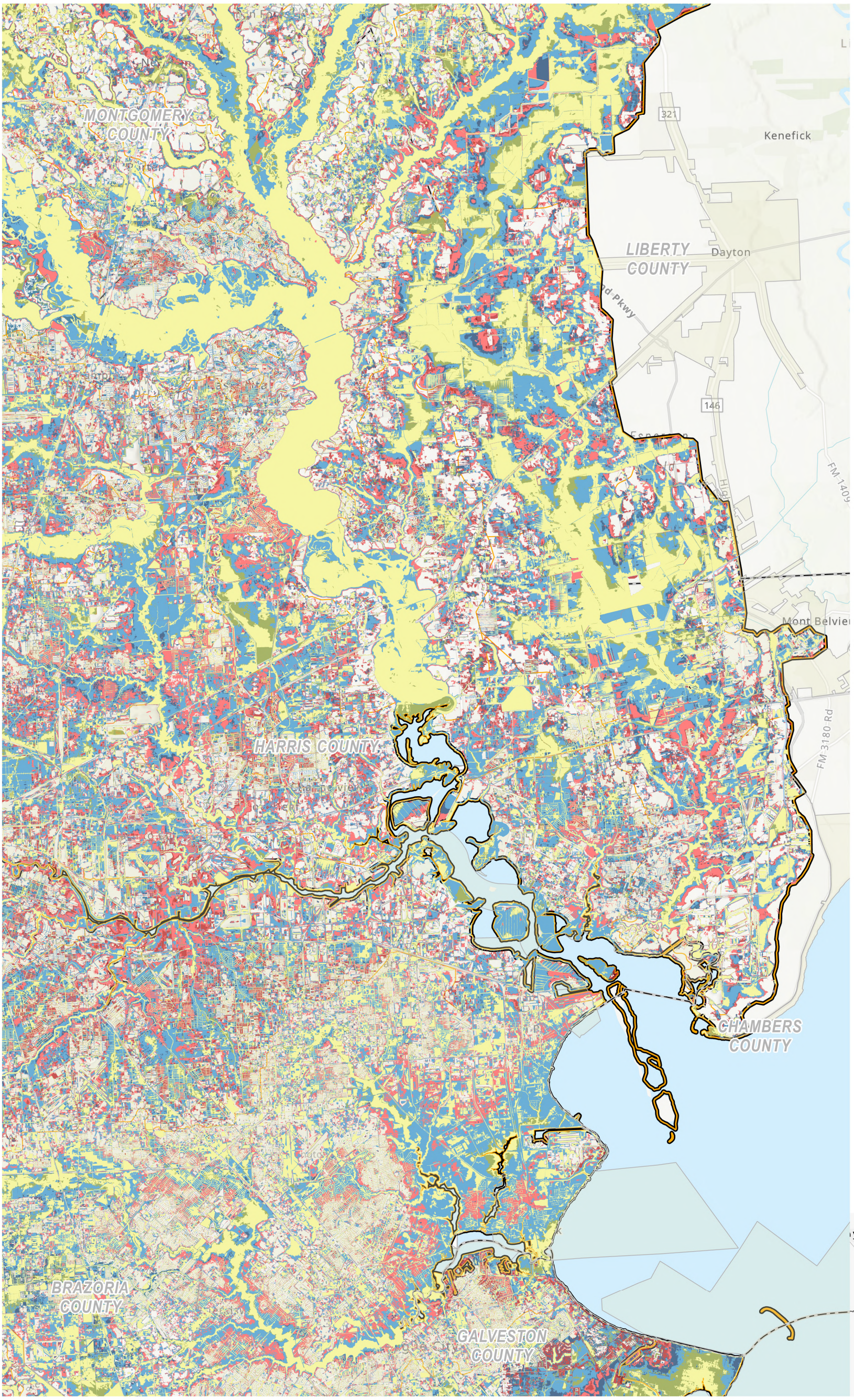
Extent Increase of Flood Hazard

MAP 9
10 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

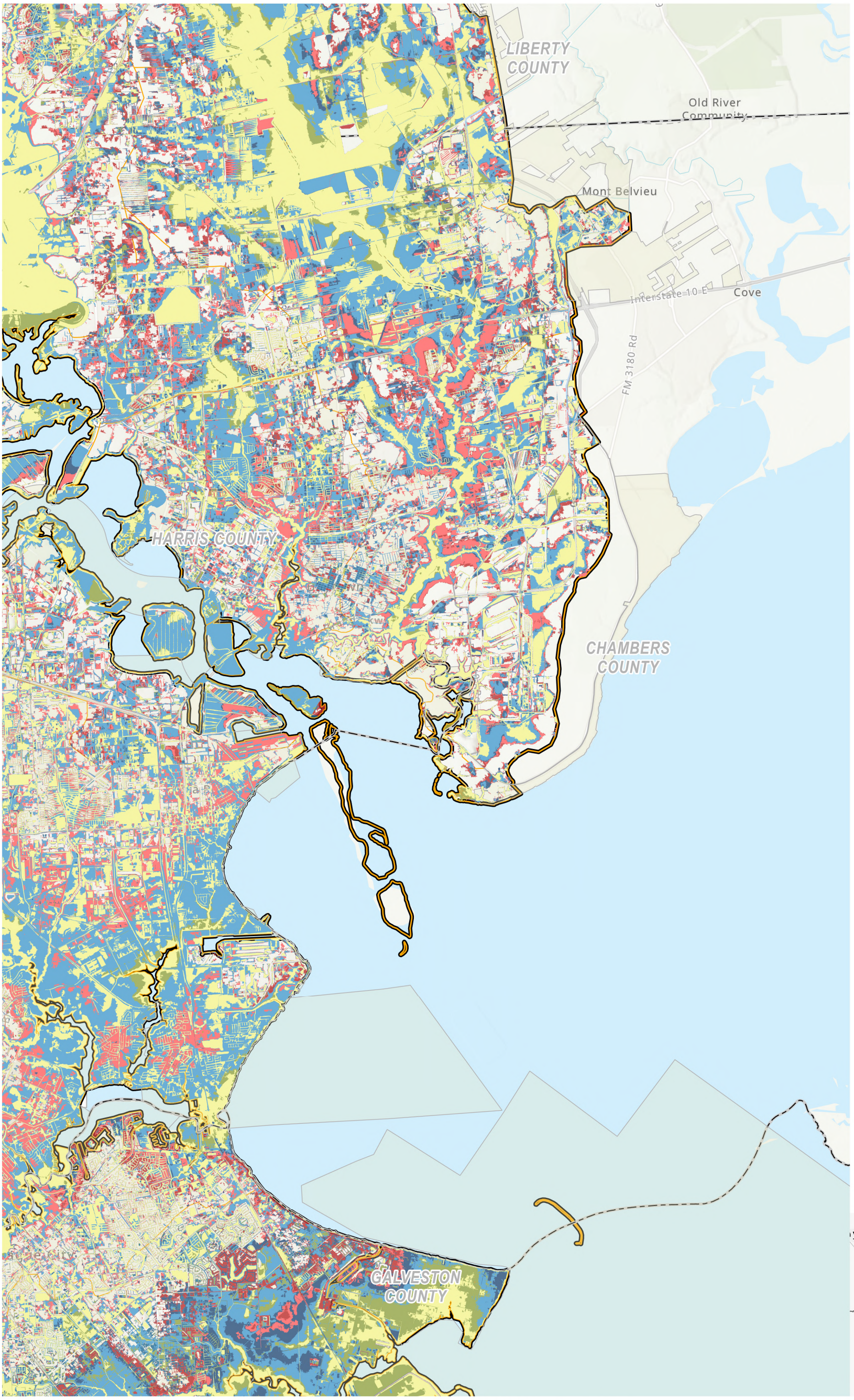


Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
11 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.25 2.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

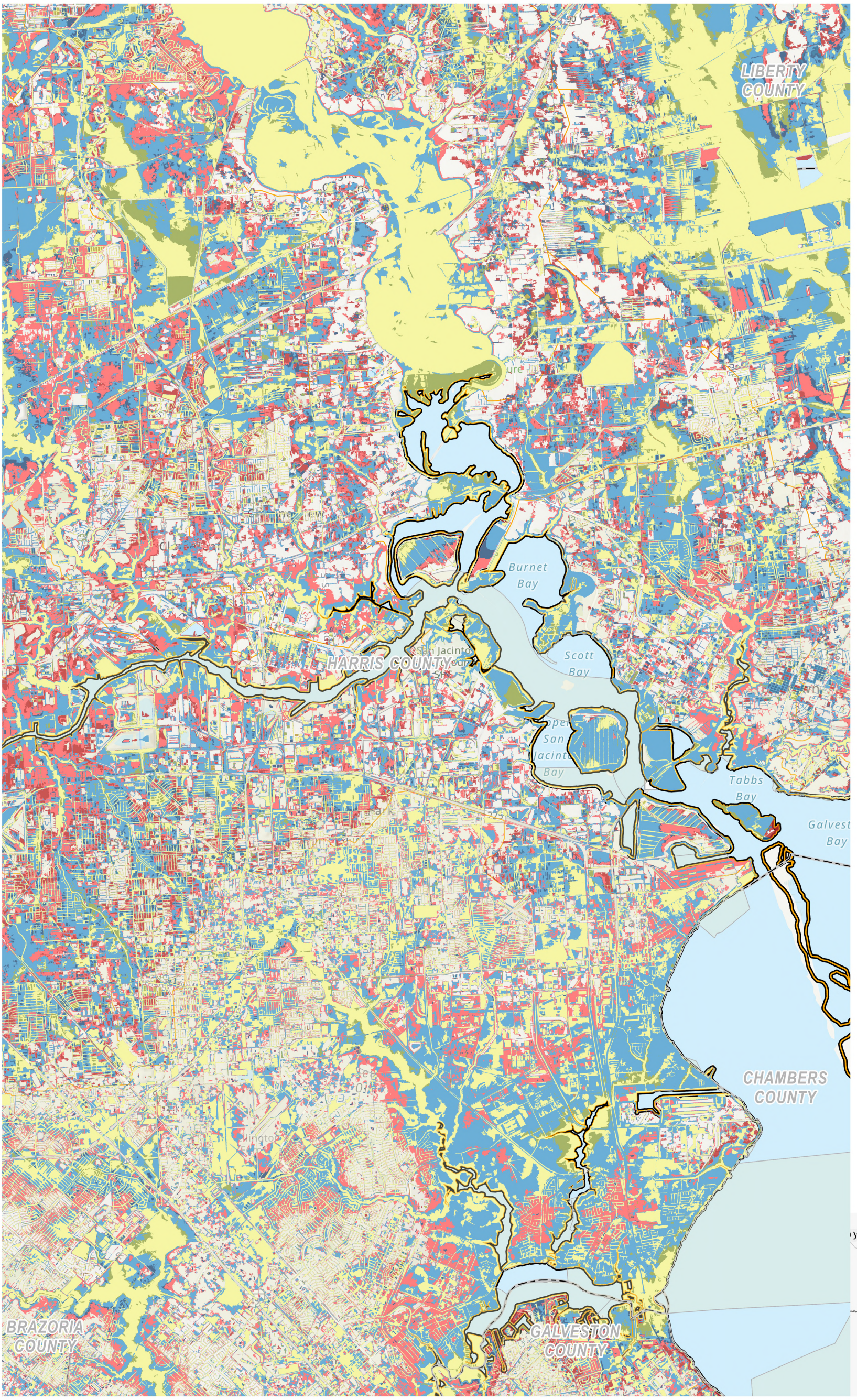
Extent Increase of Flood Hazard

MAP 9
12 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1 2

Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

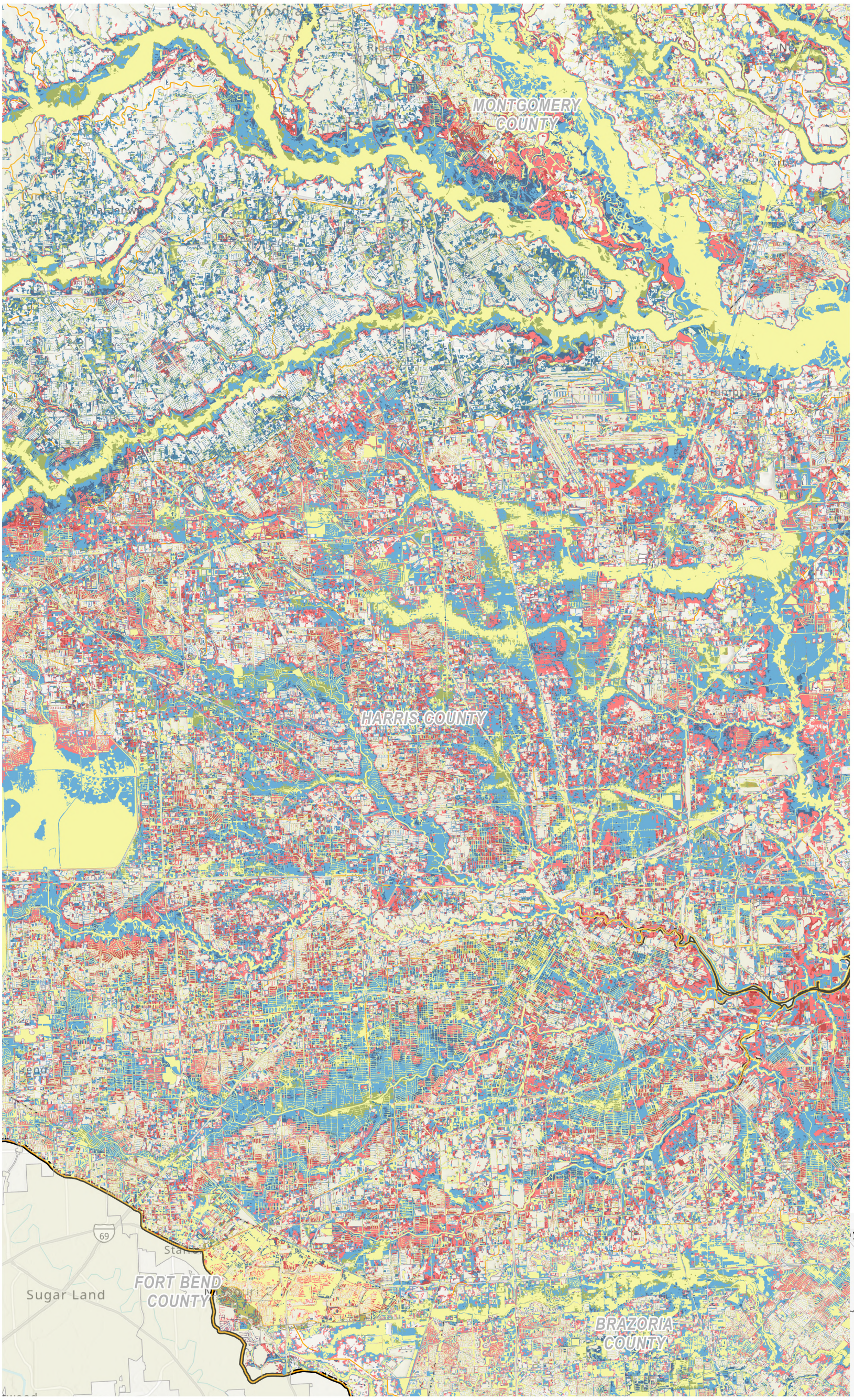
Extent Increase of Flood Hazard

MAP 9
13 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
14 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles



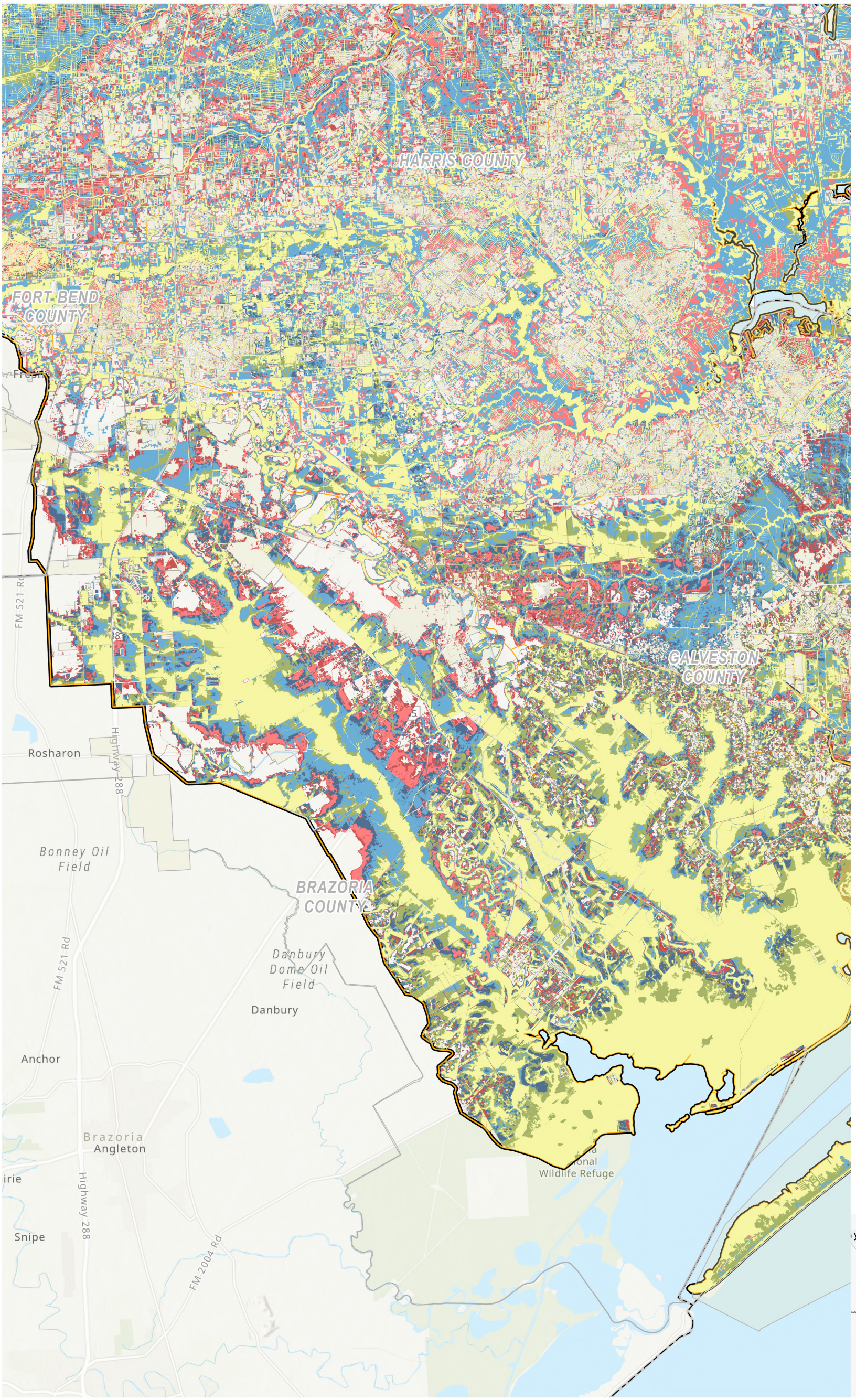
Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9

15 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

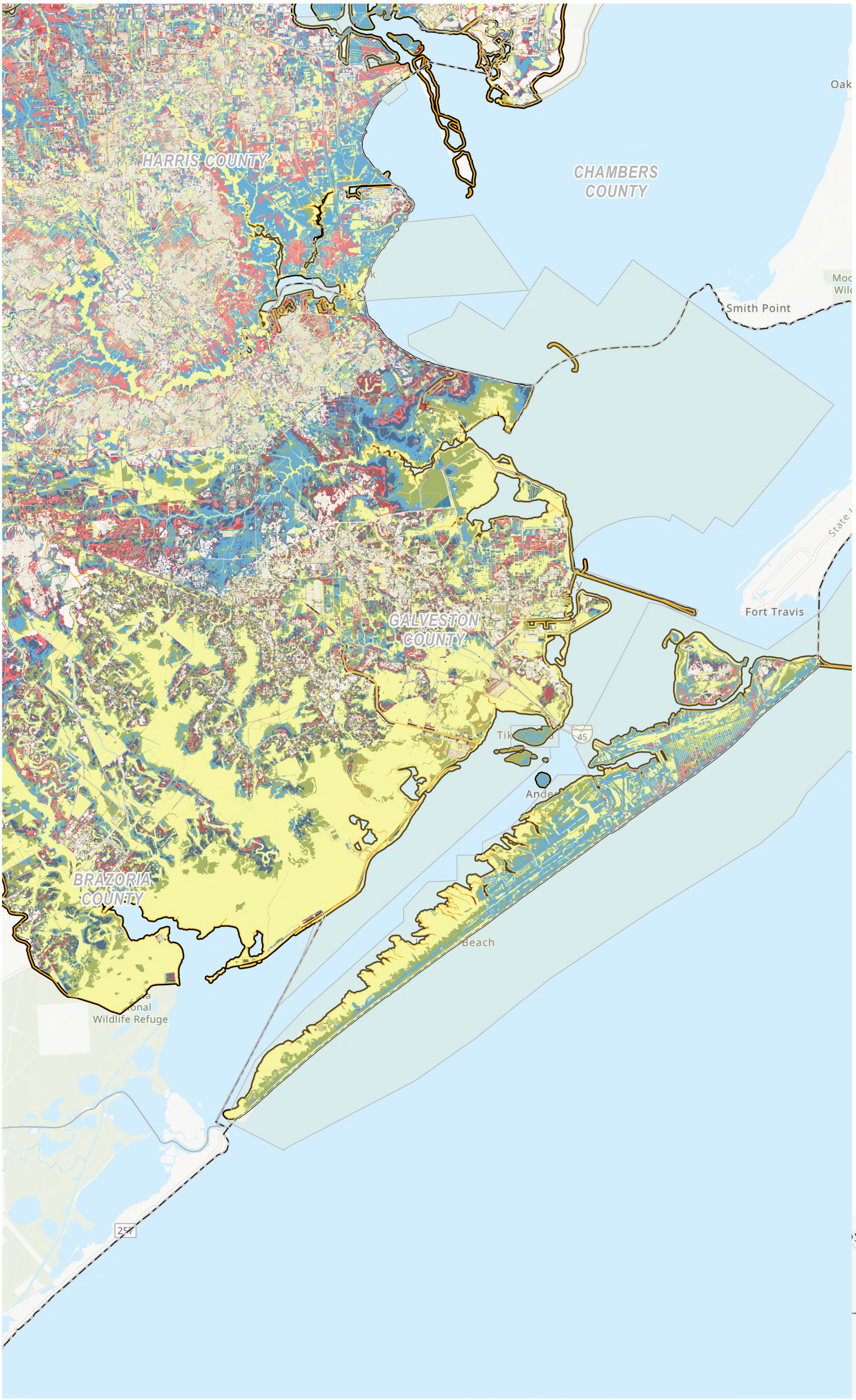


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

MAP 9
16 of 17 in series



Legend

Flood Hazard

- Existing 10yr
- Future10yr
- Existing 100yr
- Future 100yr
- Existing 500yr
- Future 500yr
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.25 4.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Extent Increase of Flood Hazard

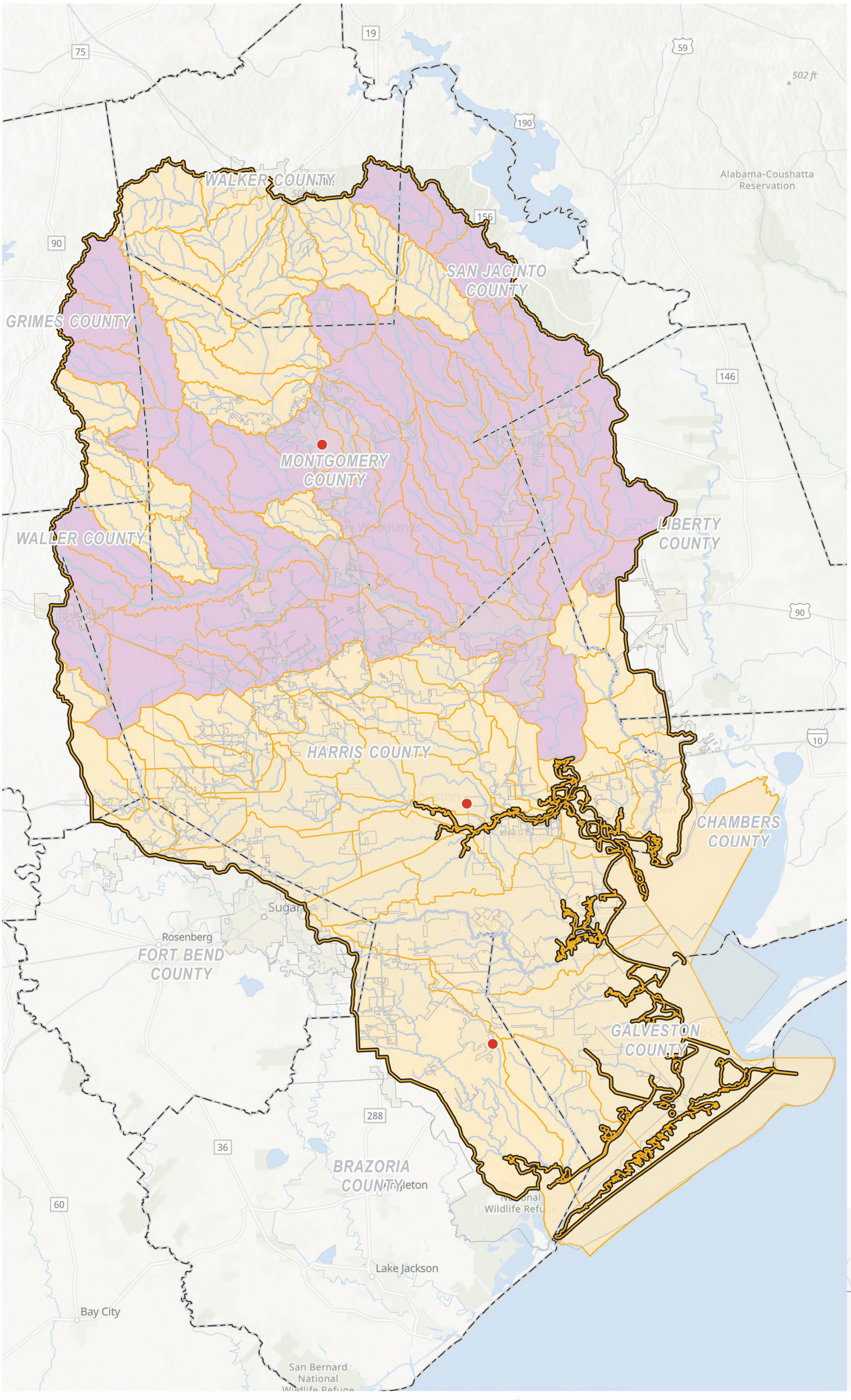
MAP 9
17 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Appendix 2B-3: Map 10 - Future Condition Flood Hazard Map Gaps



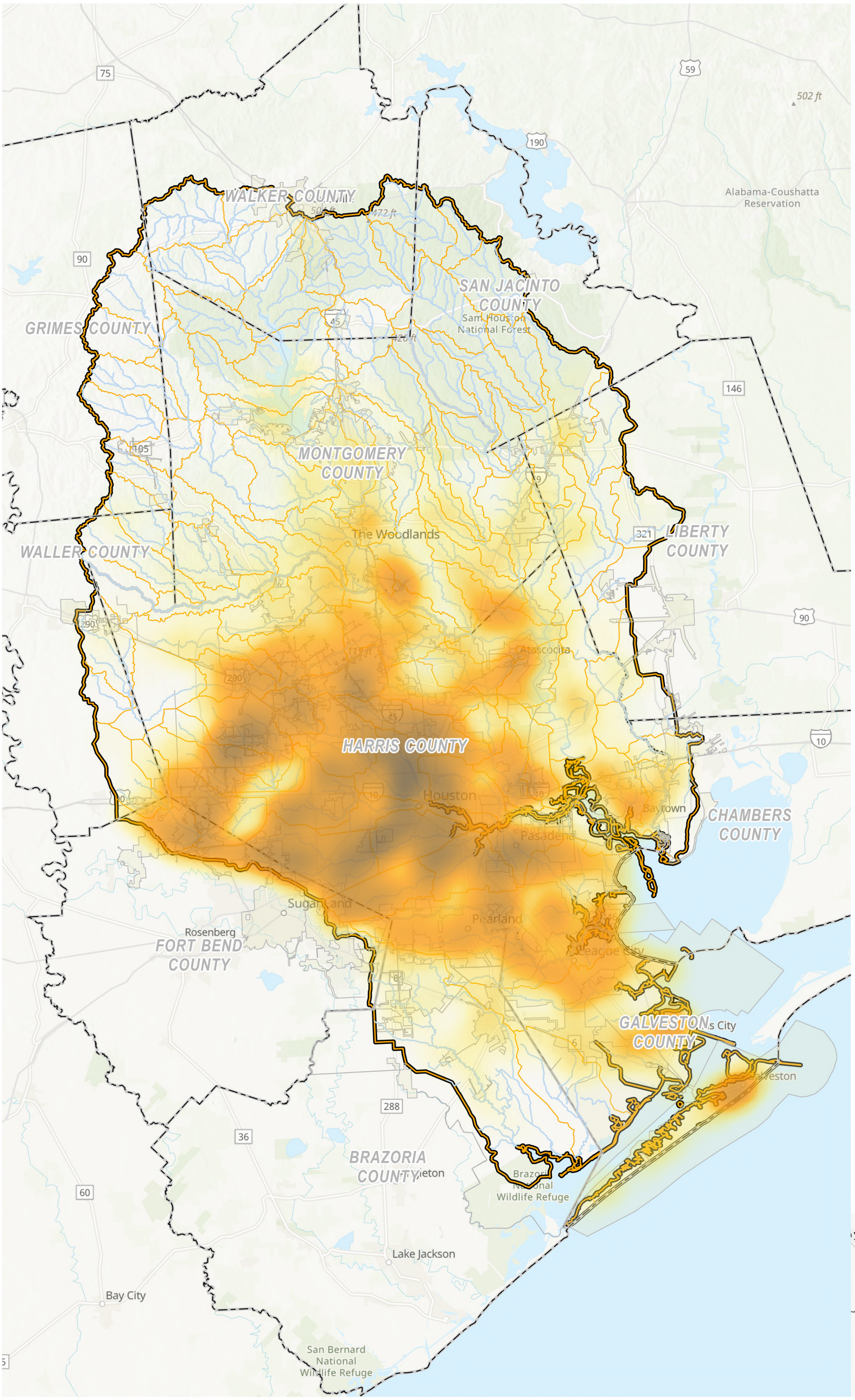
Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Hazard Map Gaps

MAP 10

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Appendix 2B-4: Map 11 - Future Condition Flood Exposure



Legend

Flood Exposure Feature Density

- Low
- High
- Streams
- Watersheds
- Municipality
- County
- Region Boundary

N

0 5 10

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

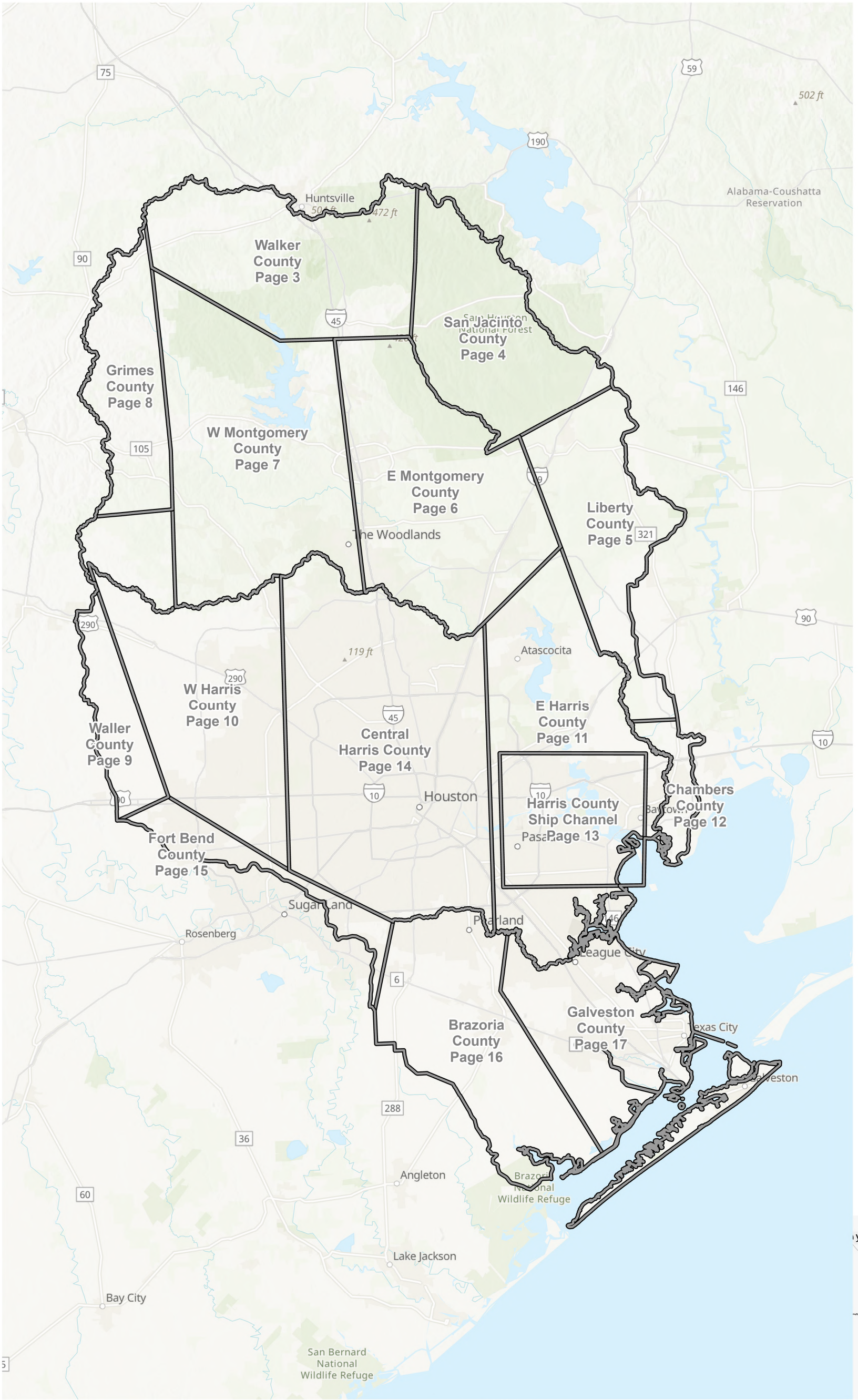
Future Condition Flood Exposure

MAP 11
1 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
2 of 17 in series

Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

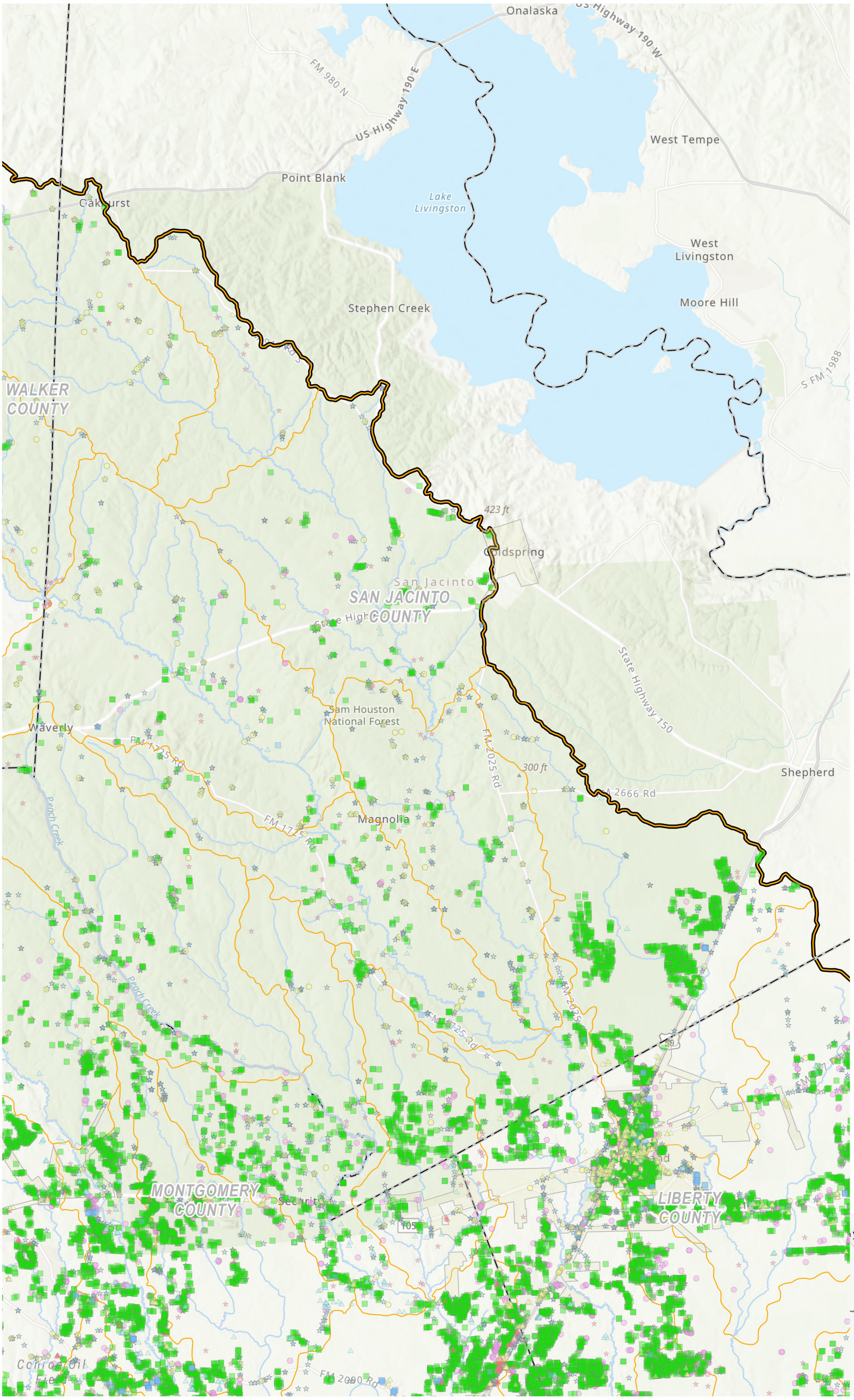
MAP 11
3 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.5 3

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
4 of 17 in series

Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles



Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
5 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

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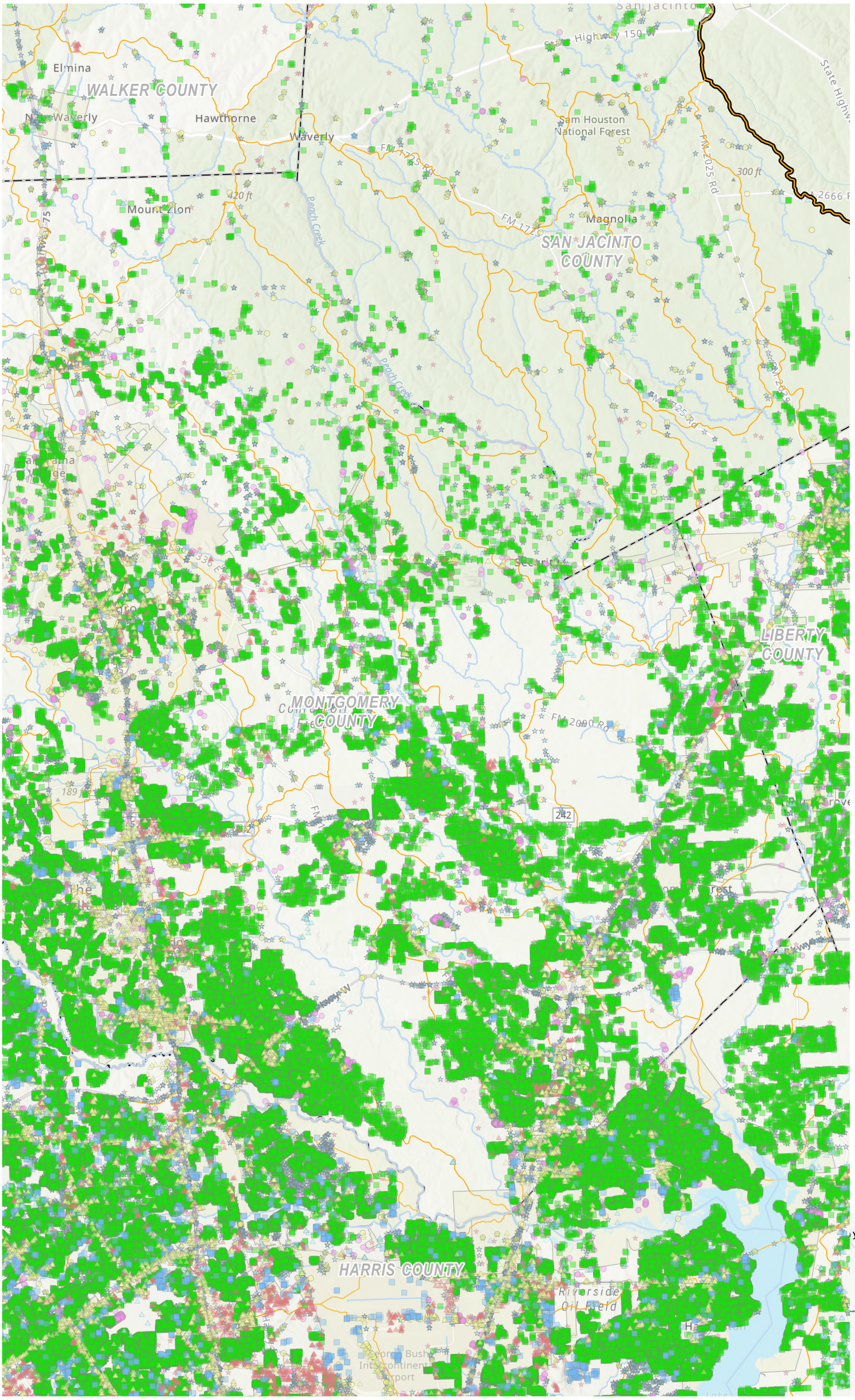


Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

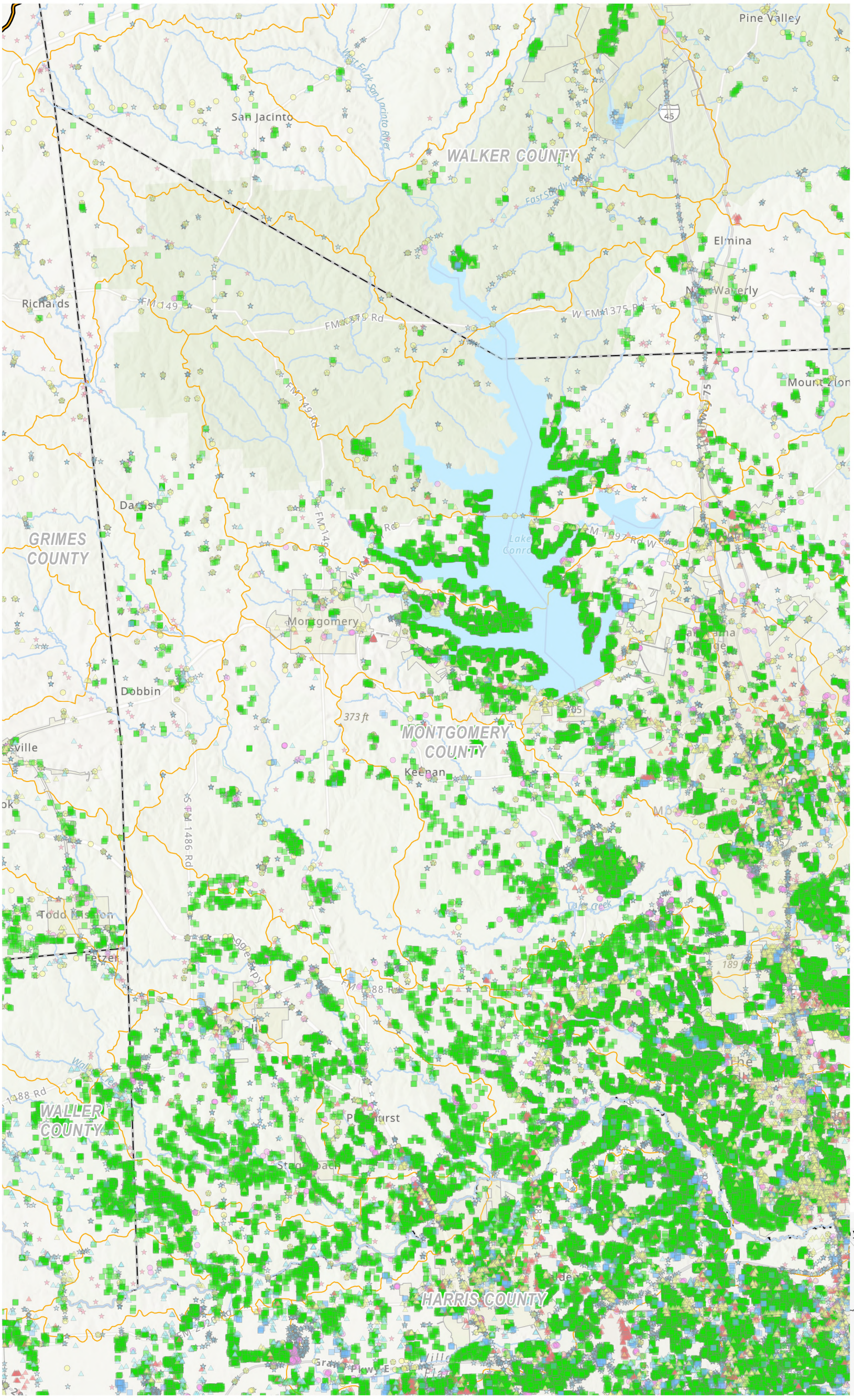
Miles

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
6 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
7 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.5 3

Miles

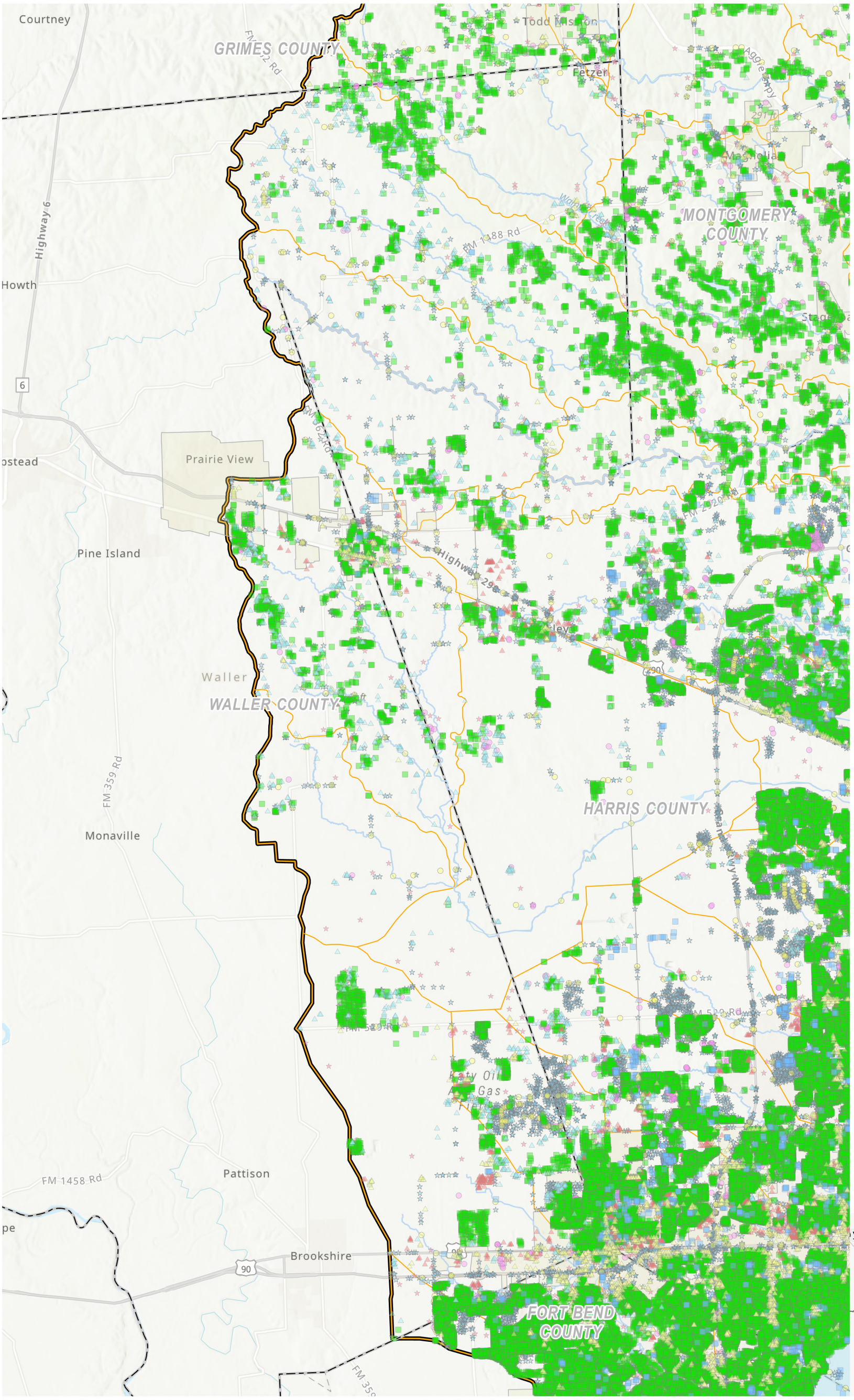


Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
8 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

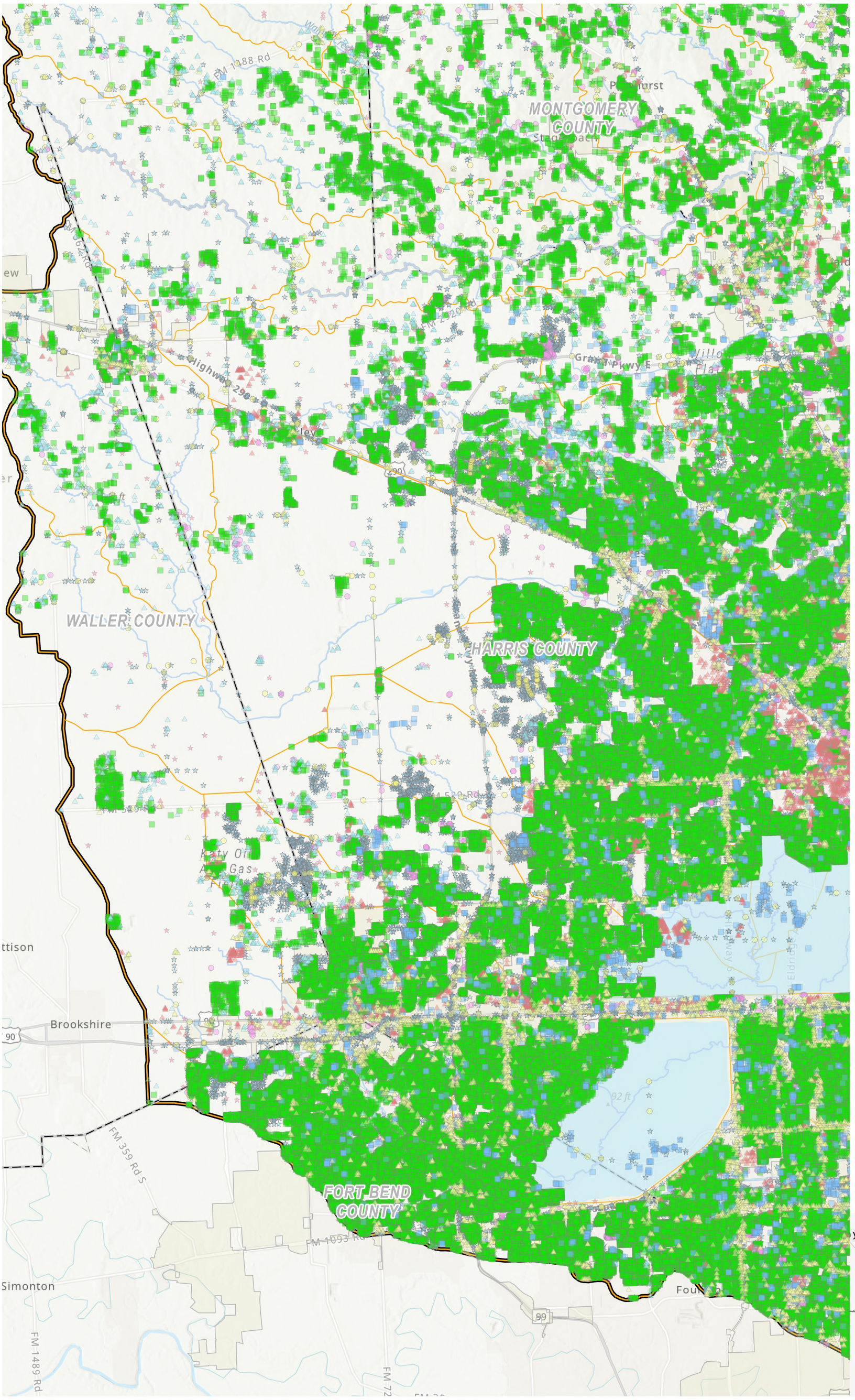


Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
9 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.5 3

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
10 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

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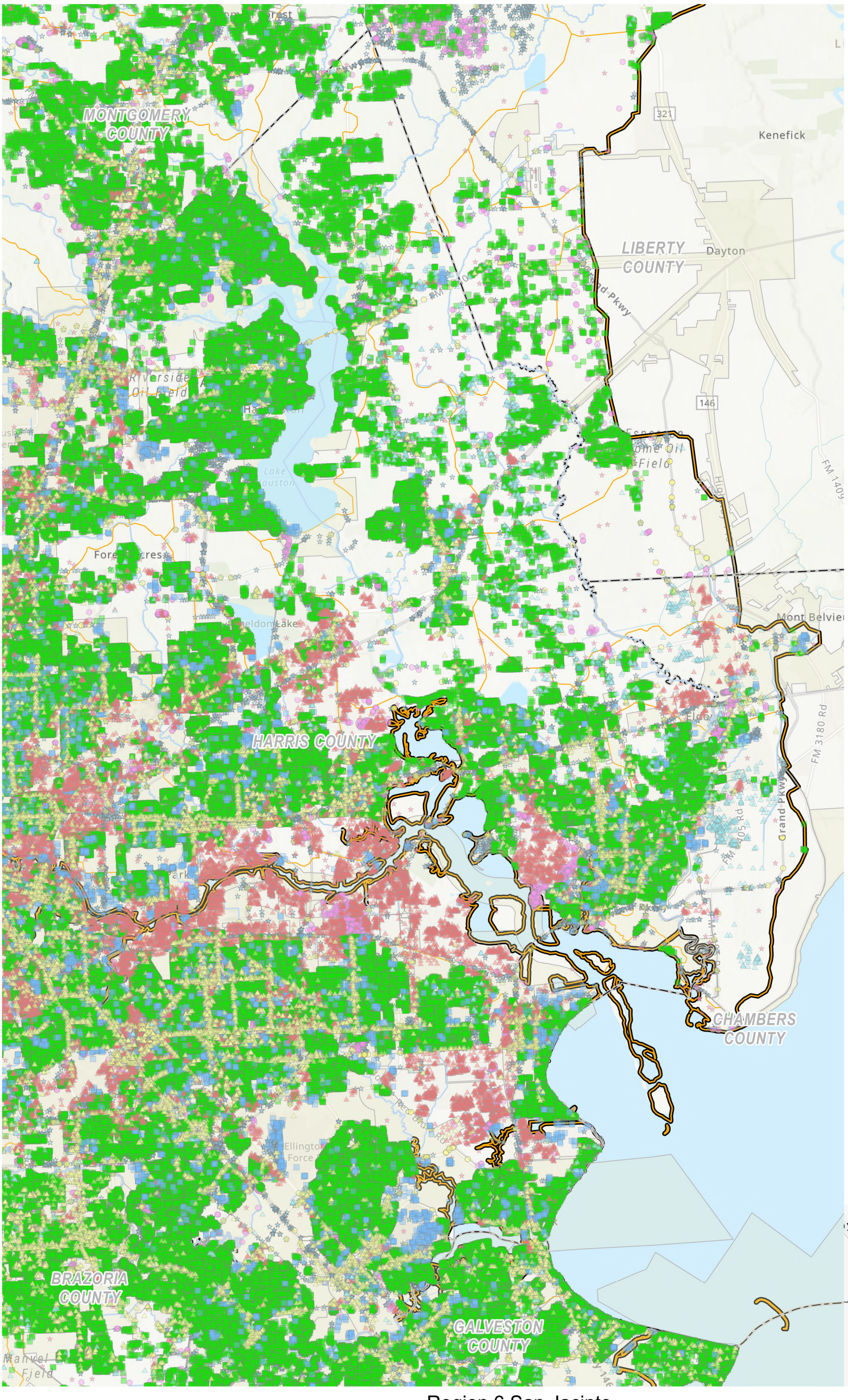
NAD 1983 StatePlane Texas South Central FIPS 4204 Feet



Legend

Future Flood Exposure

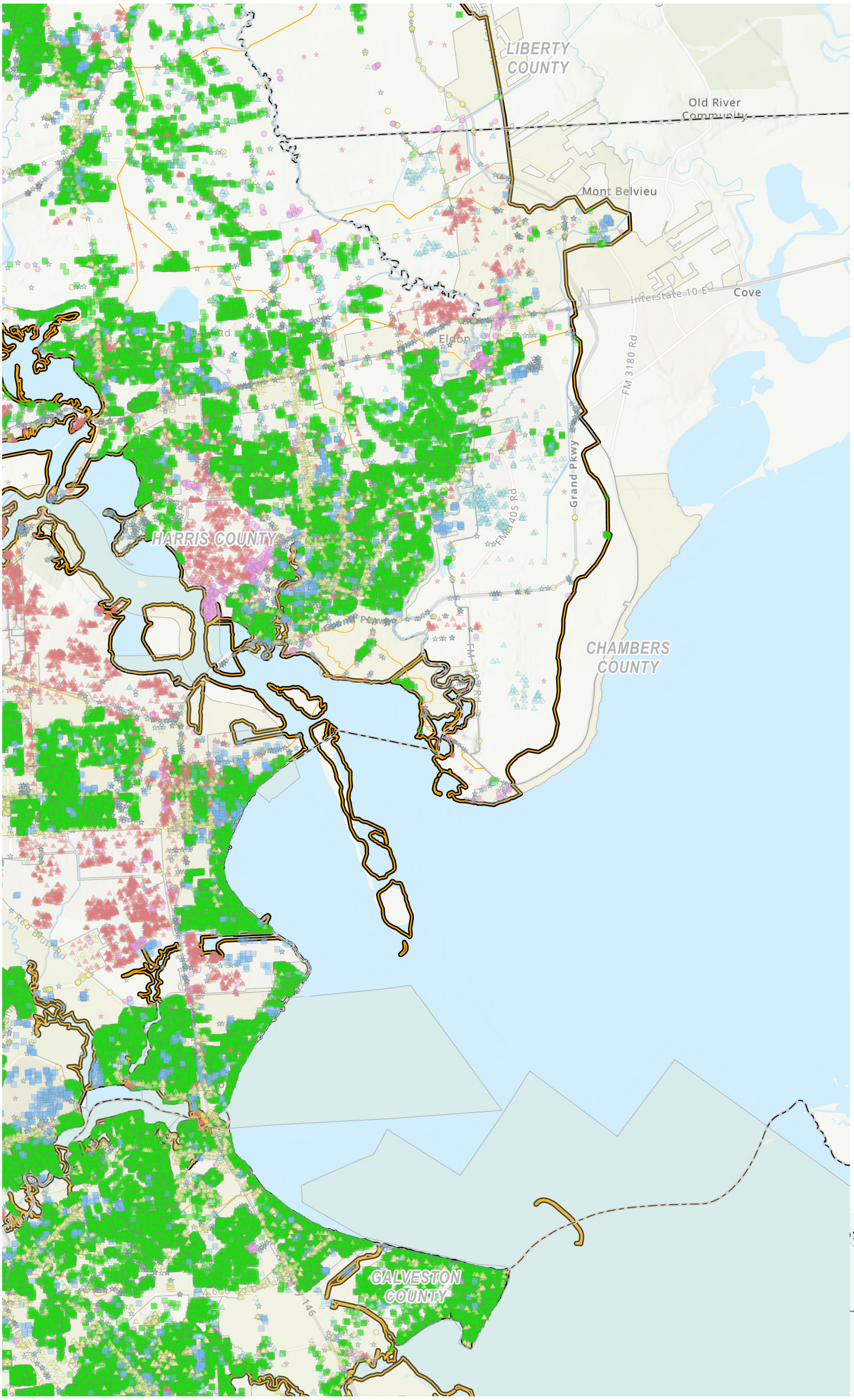
- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
11 of 17 in series

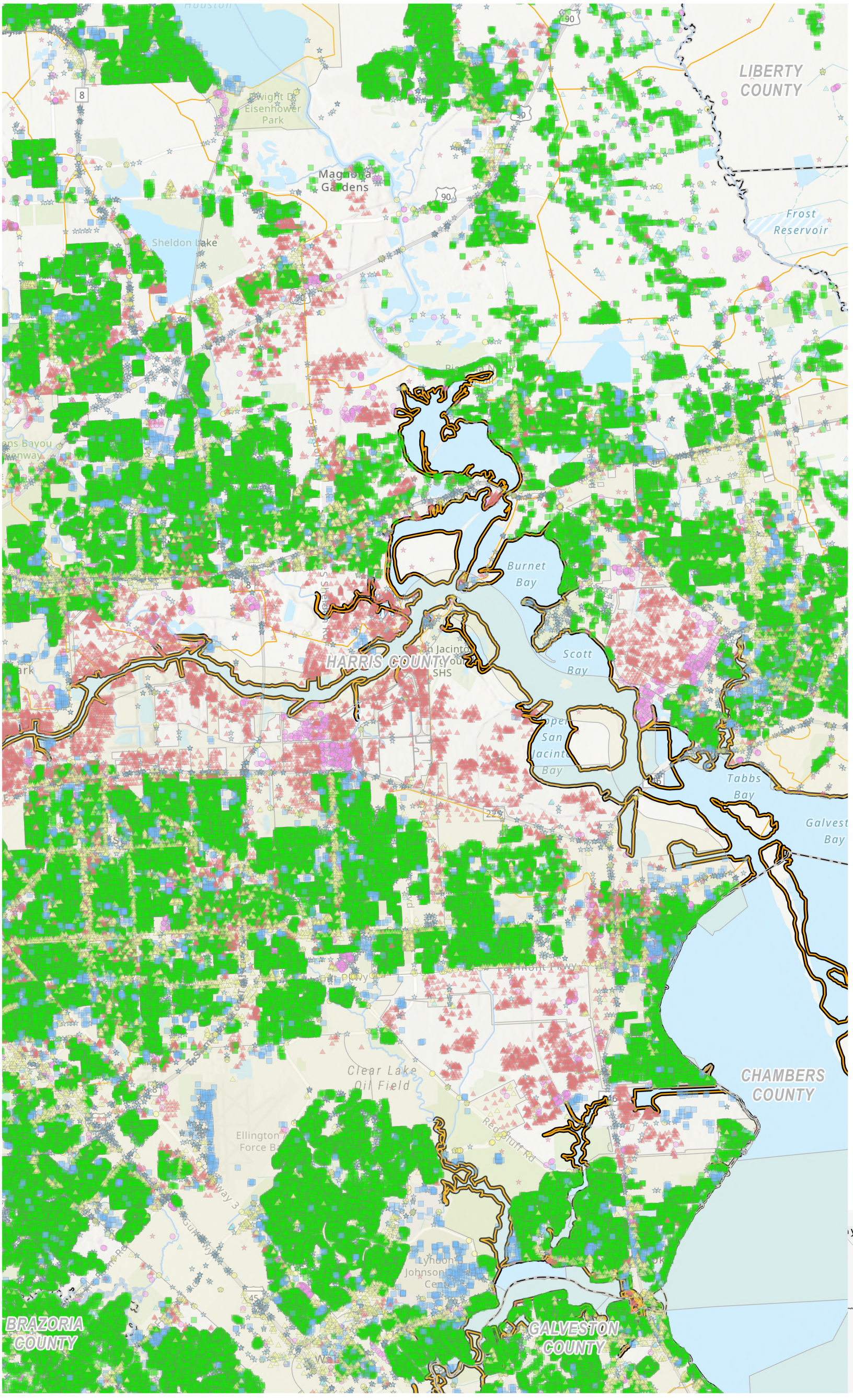


Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
12 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
13 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

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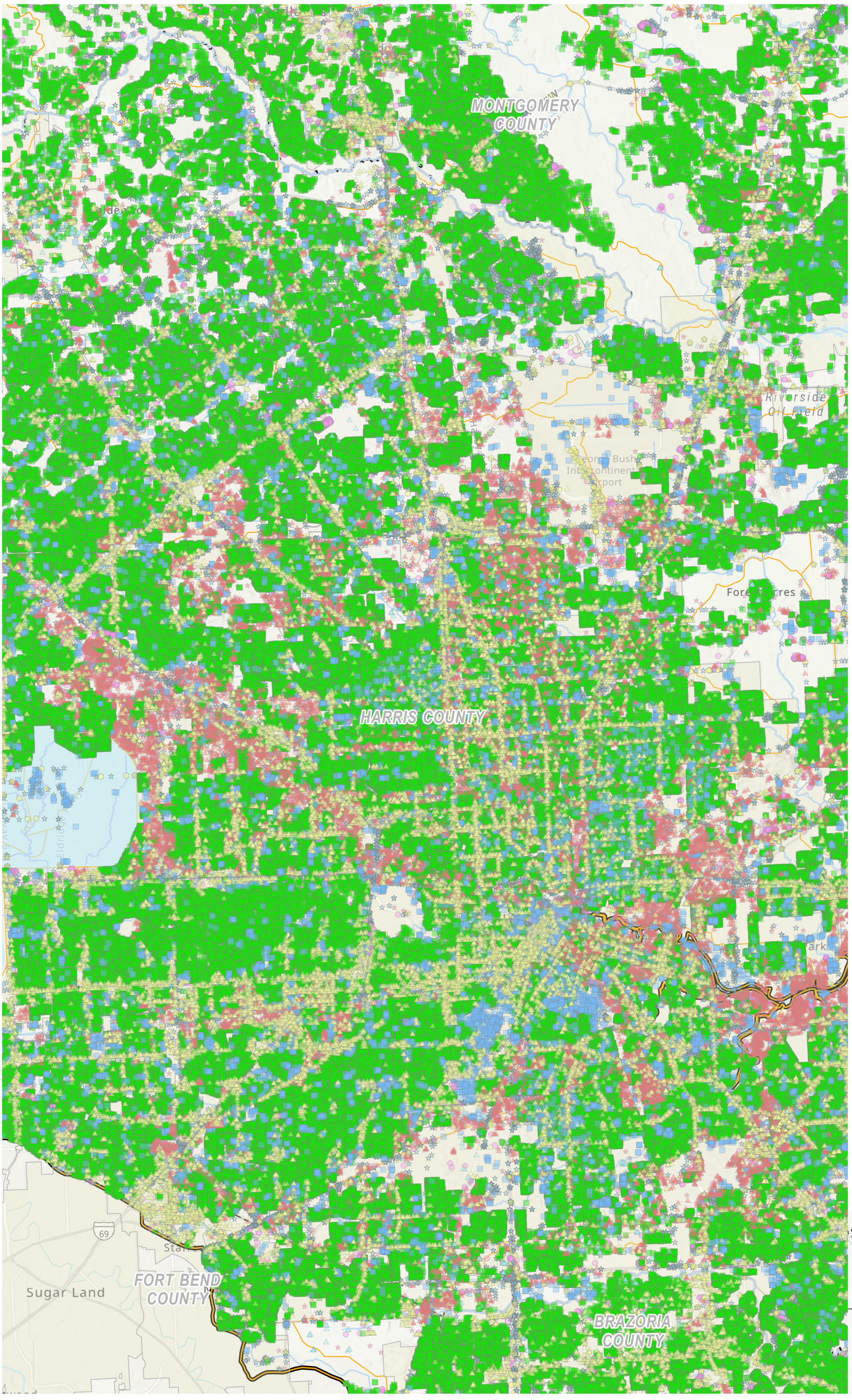


Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
14 of 17 in series

Path: T:\Working_GIS\Working\DraftReport\LayoutProProject\FPR06_Cycle2_MapsLayouts.aprx

Prepared by Freese and Nichols, Inc.

NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

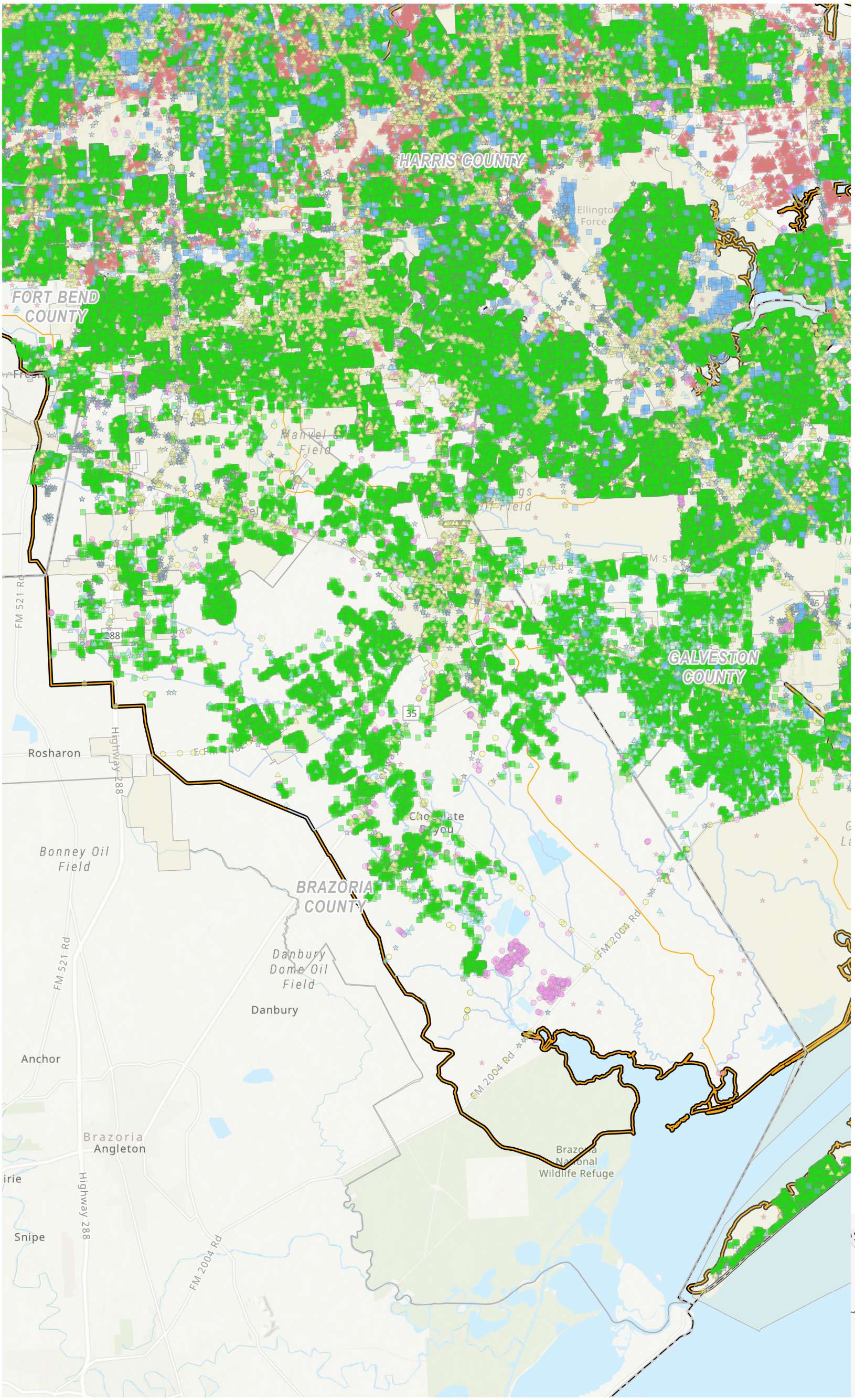


Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
15 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
16 of 17 in series

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REGION 6

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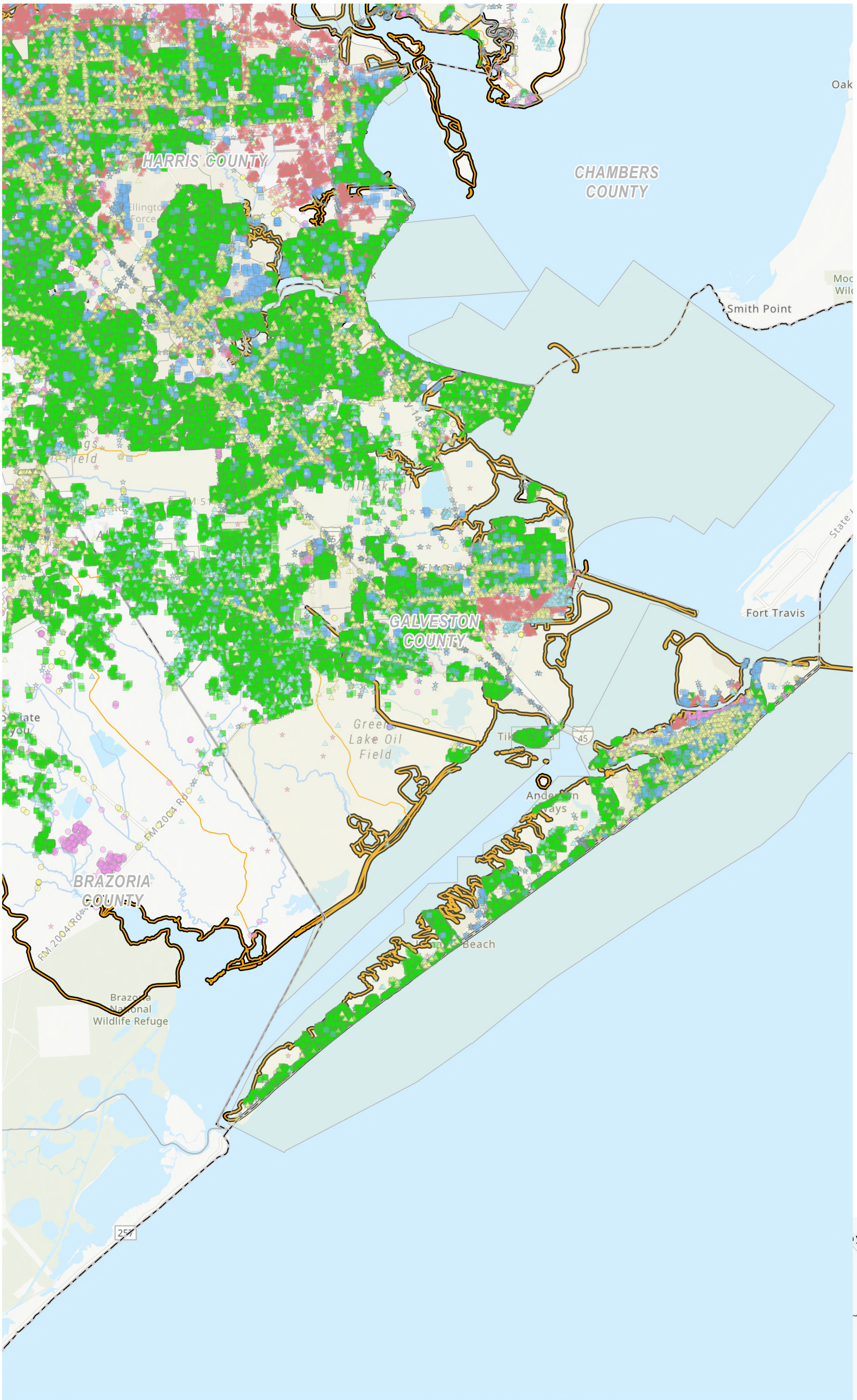


Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.25 4.5

Miles



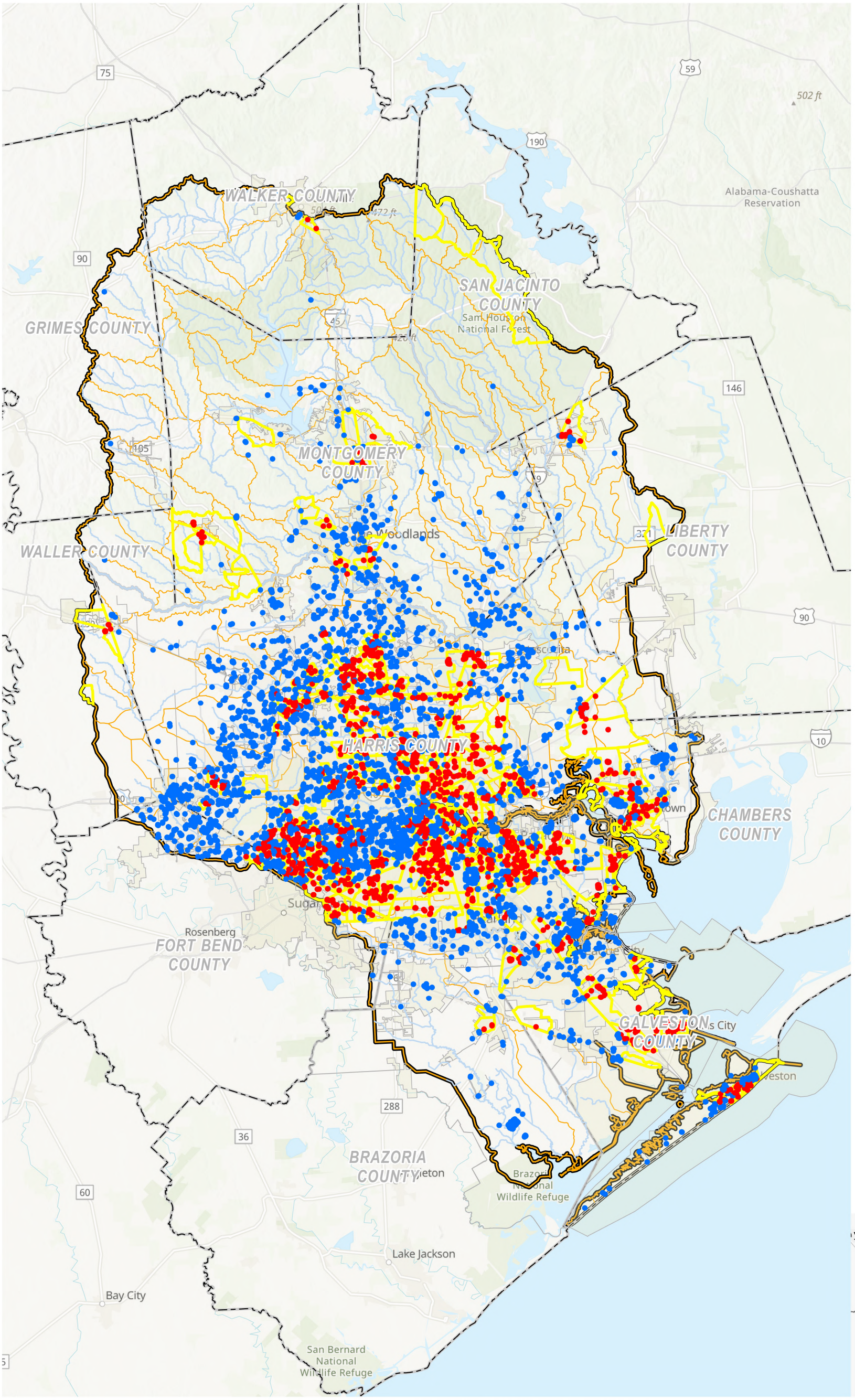
SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Flood Exposure

MAP 11
17 of 17 in series

Appendix 2B-5: Map 12 - Future Condition Vulnerability and Critical Infrastructure



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Future Critical Facilities TXF-SVI

- <0.75
- 0.75 - 1
- Census Tract TXF-SVI >0.75
- Streams
- Watersheds
- Municipality
- County
- Region Boundary

N

0 5 10

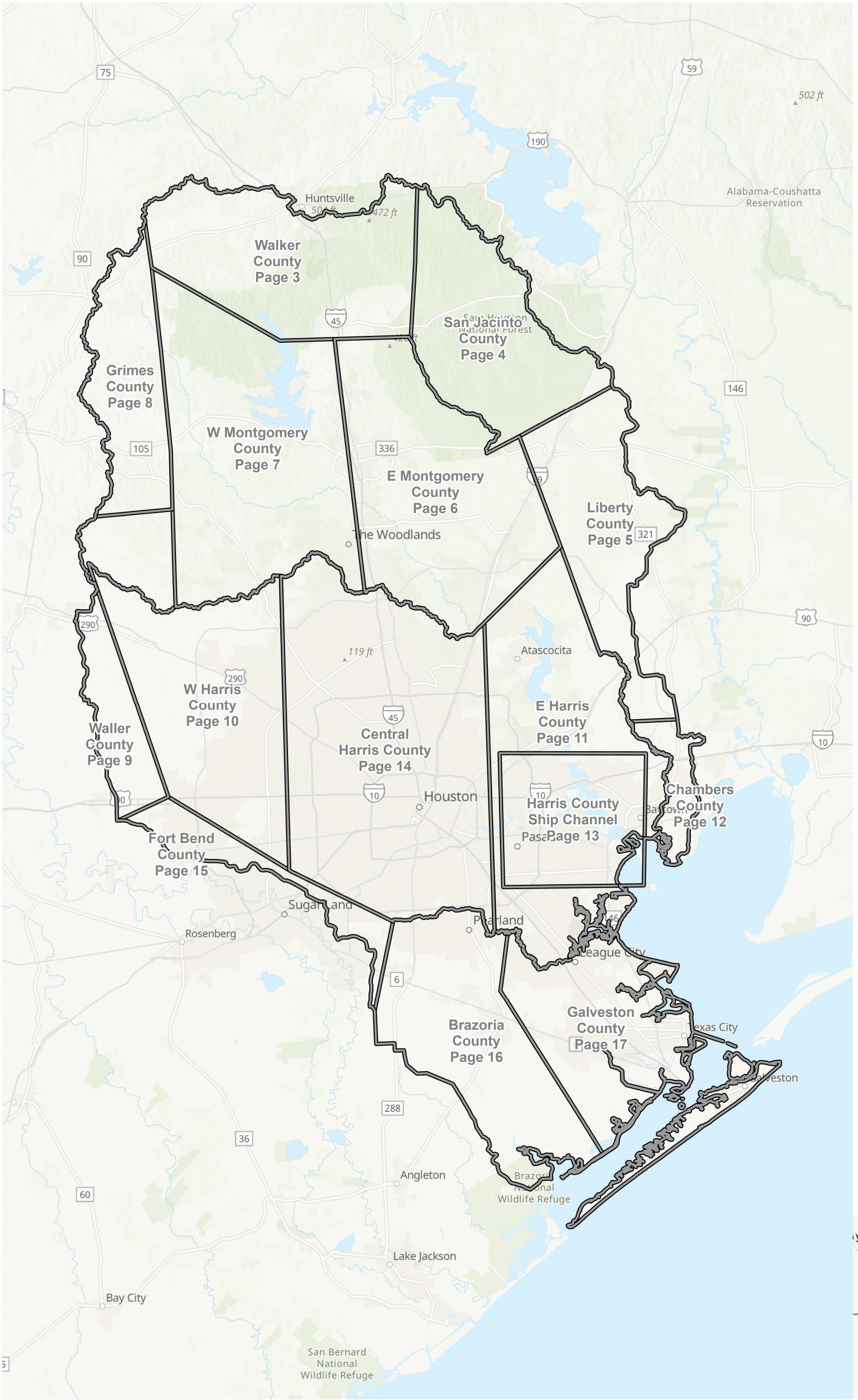
Miles

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

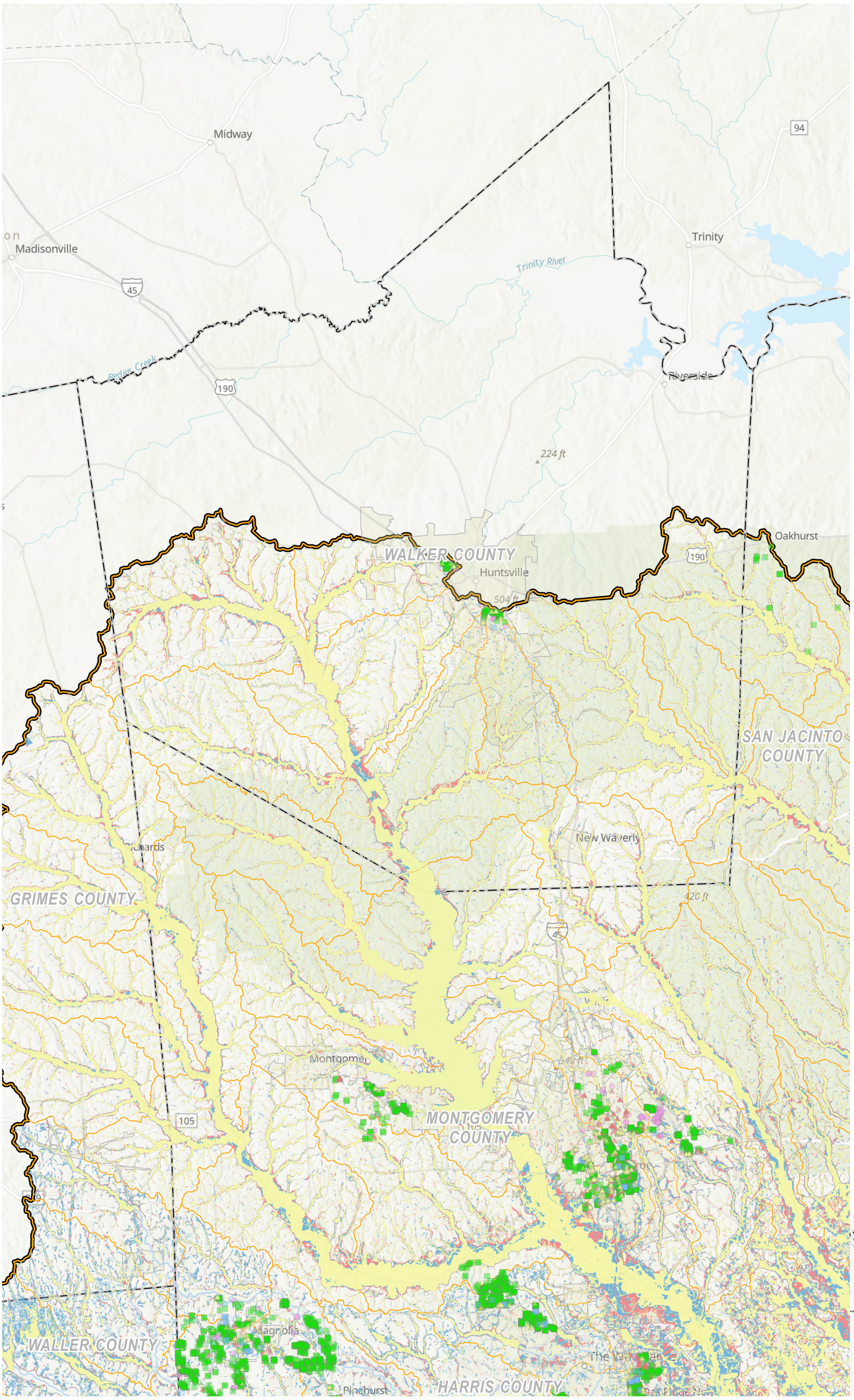
MAP 12
1 of 17 in series



Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
2 of 17 in series



Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

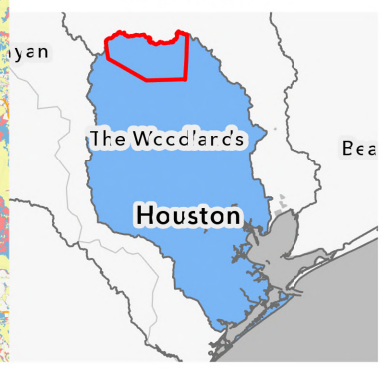
Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 2.75 5.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
3 of 17 in series

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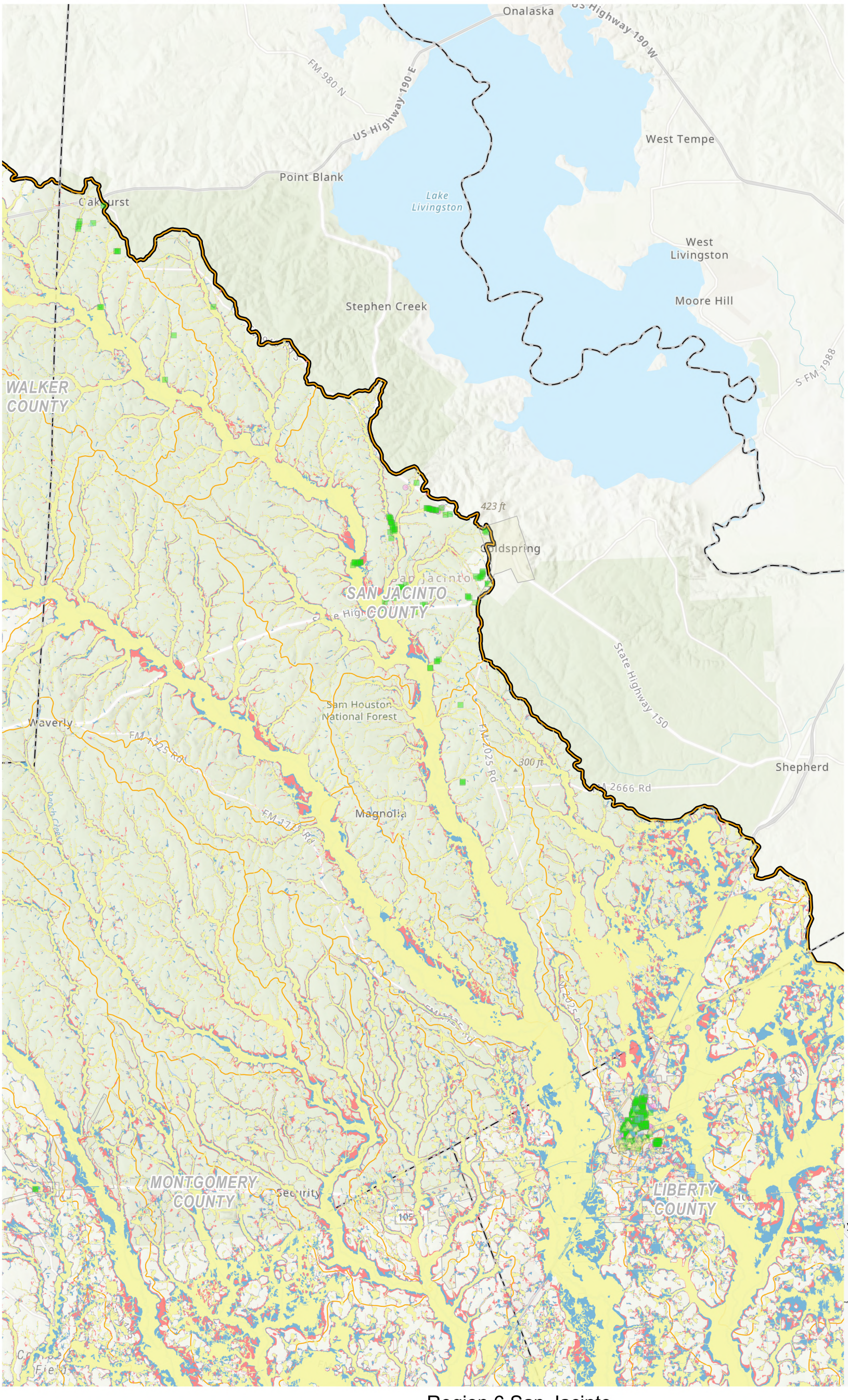


Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Future Flood Hazard

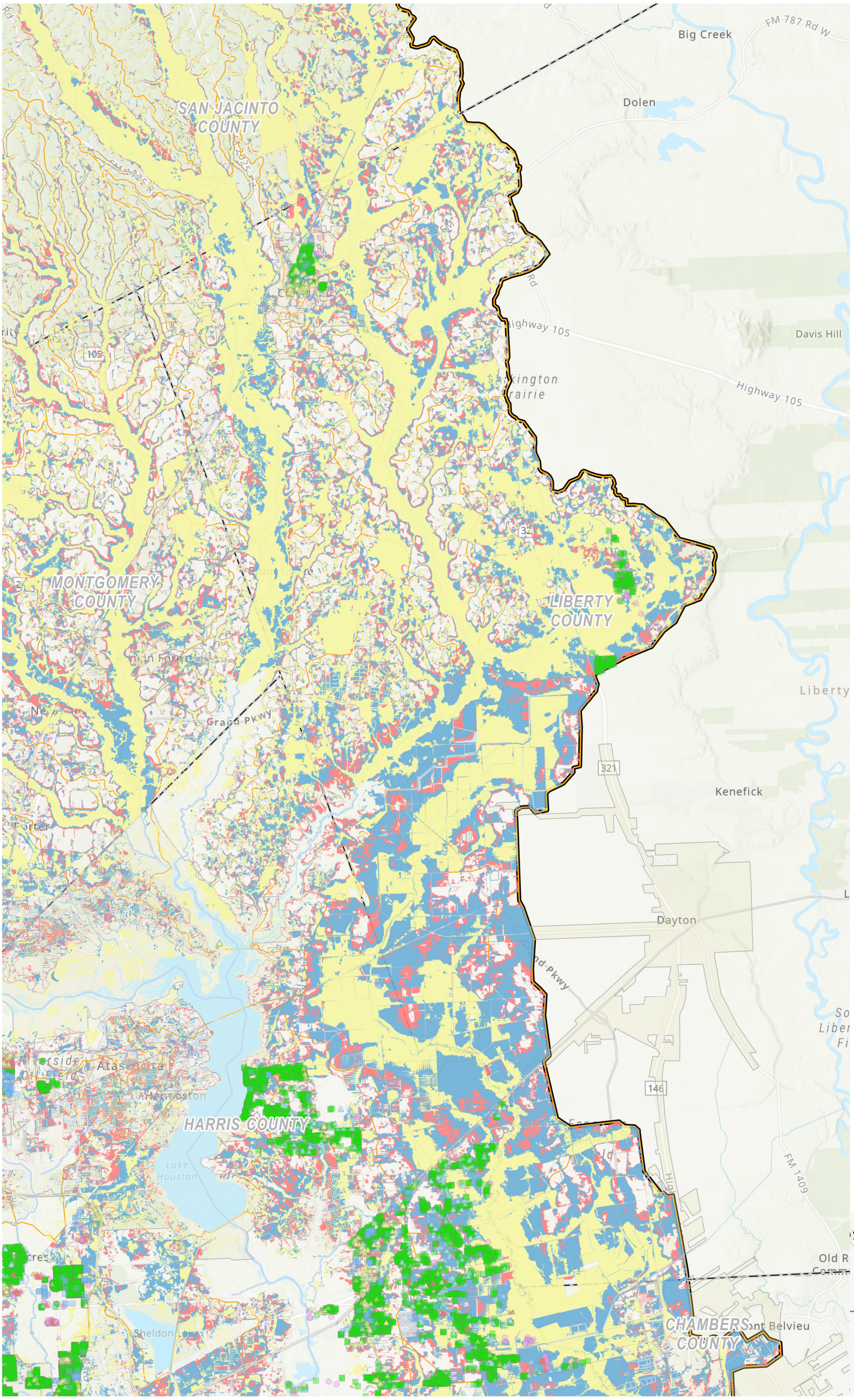
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
4 of 17 in series



Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles

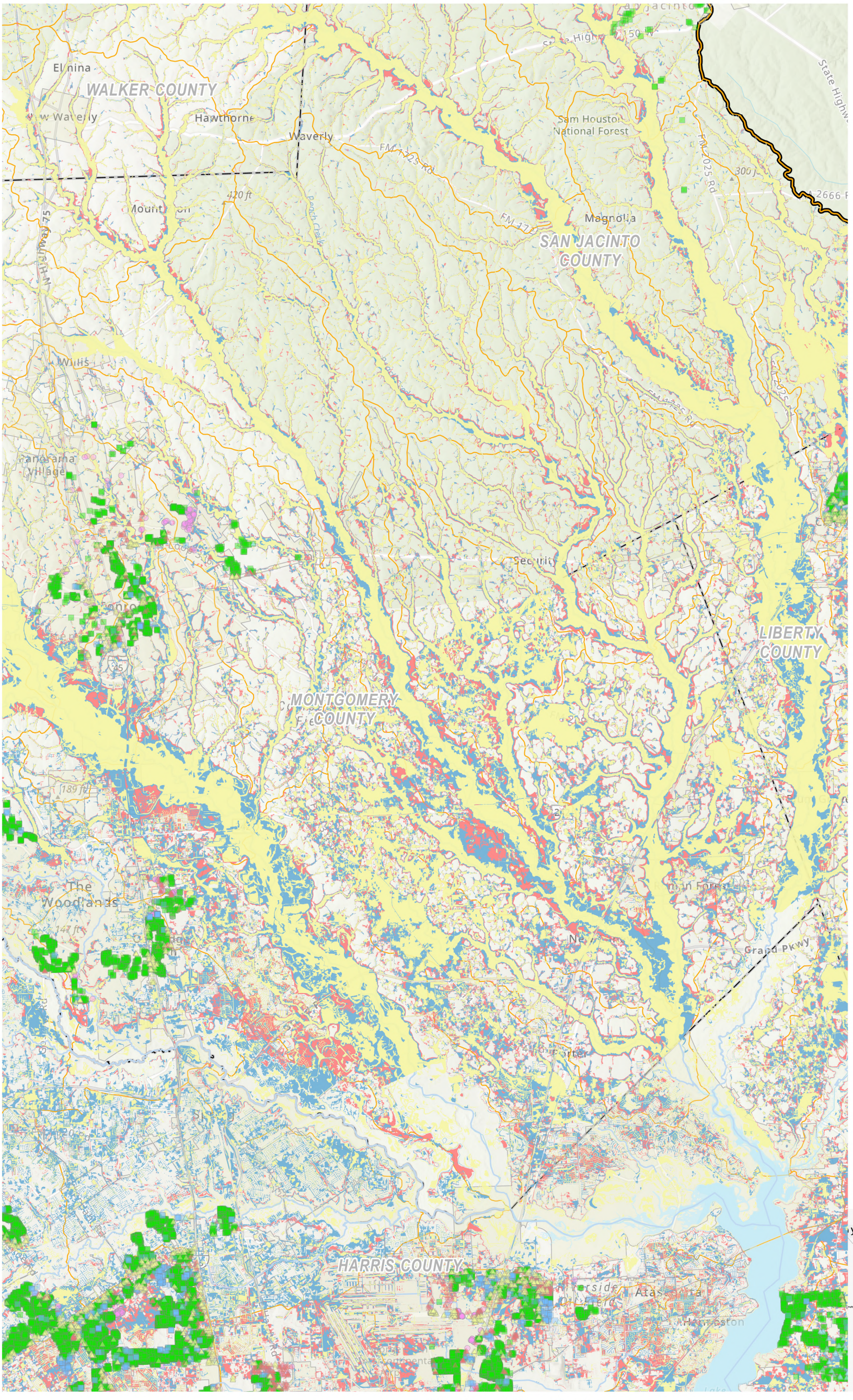


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
5 of 17 in series



Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
6 of 17 in series

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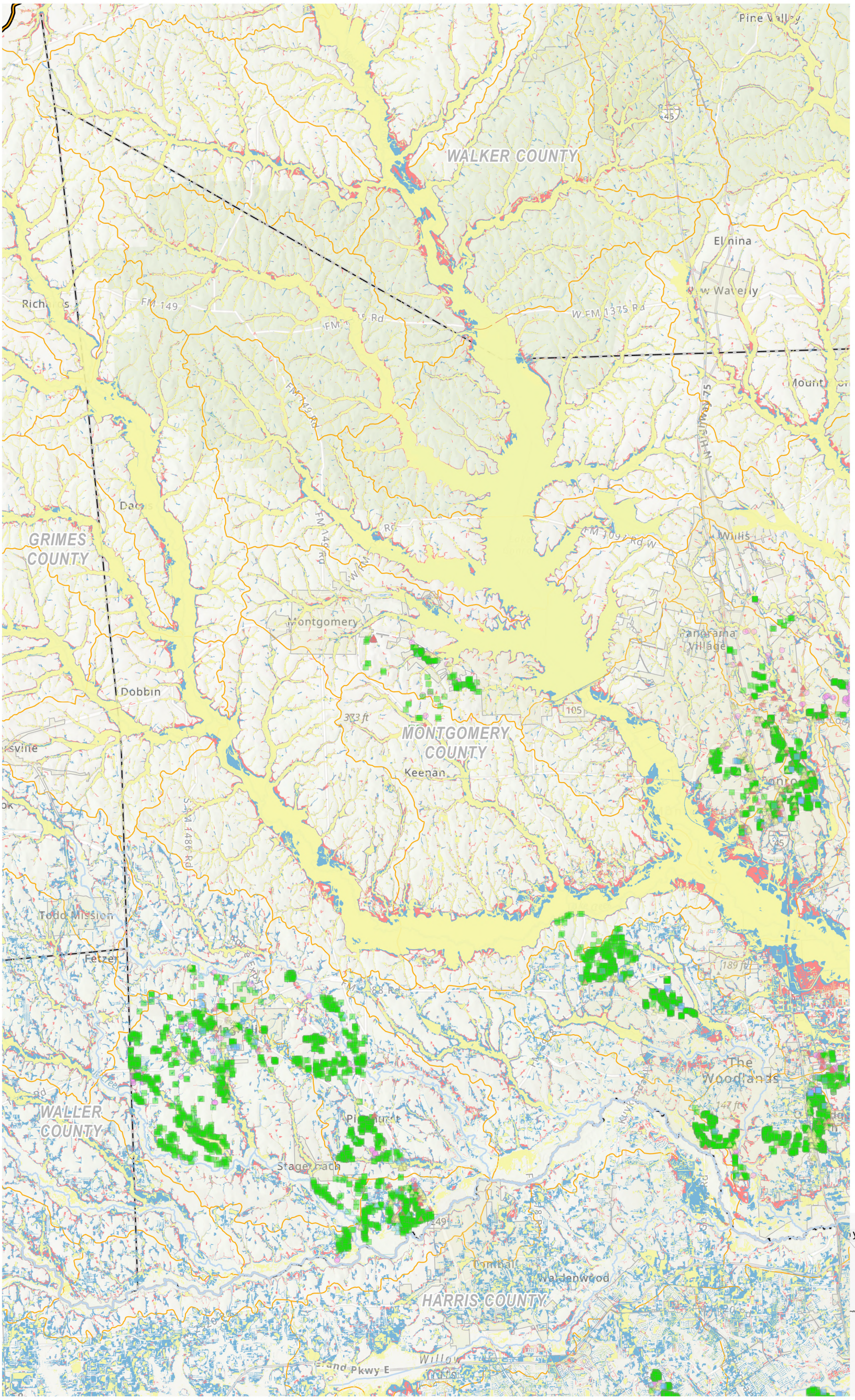

Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.75 3.5

Miles



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
7 of 17 in series

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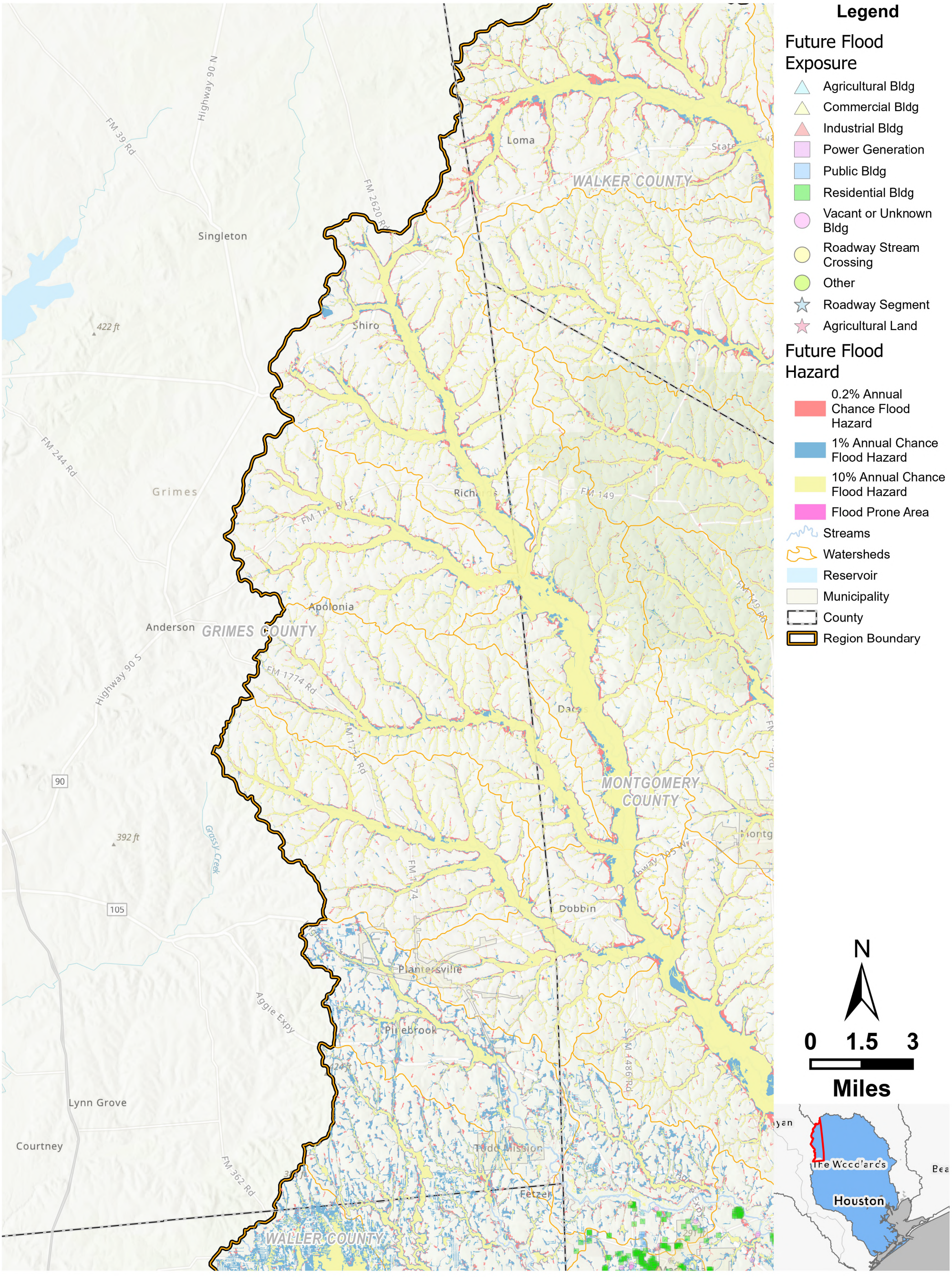

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
8 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

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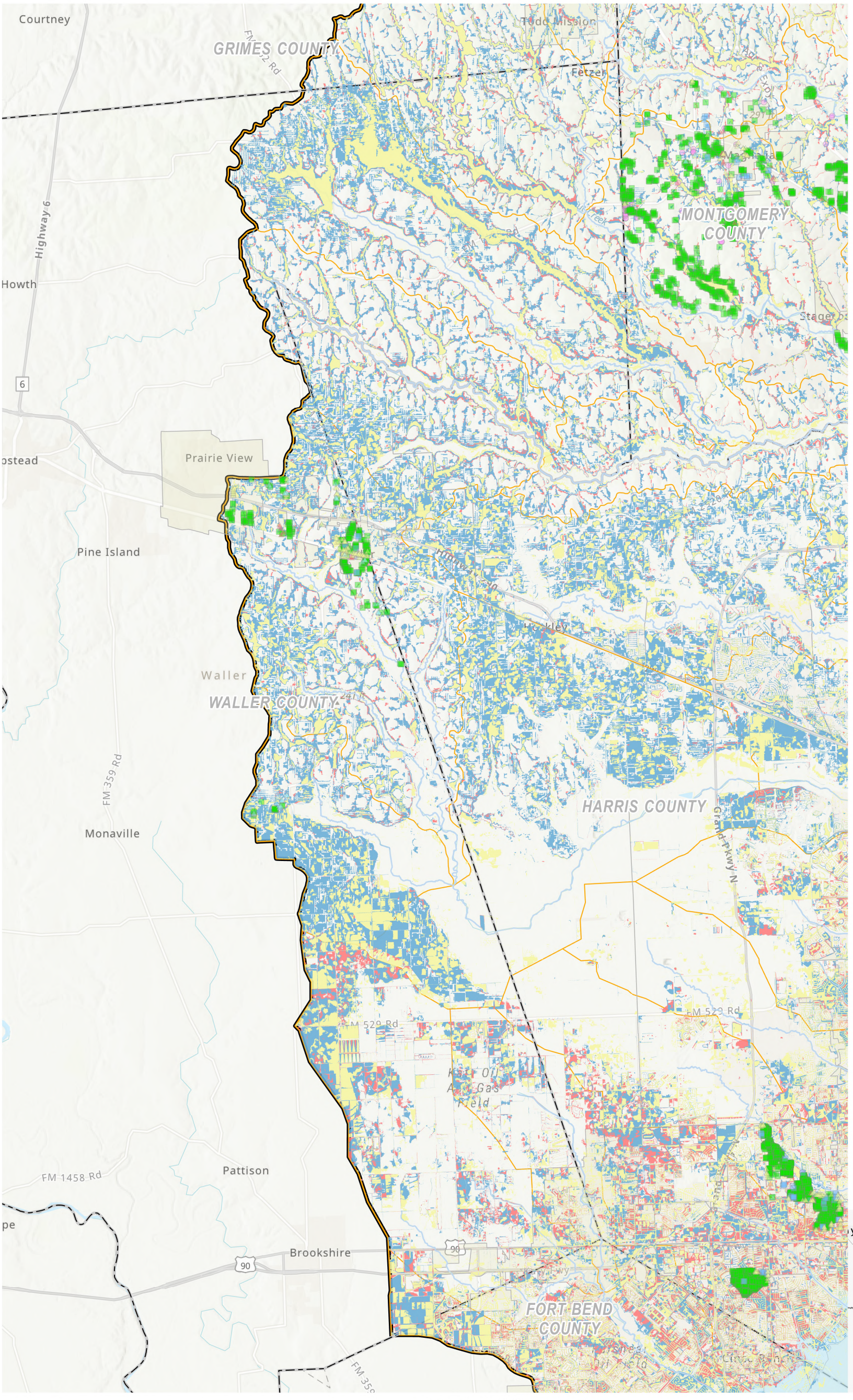


Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
9 of 17 in series

Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Future Flood Hazard

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

N

0 1.5 3

Miles

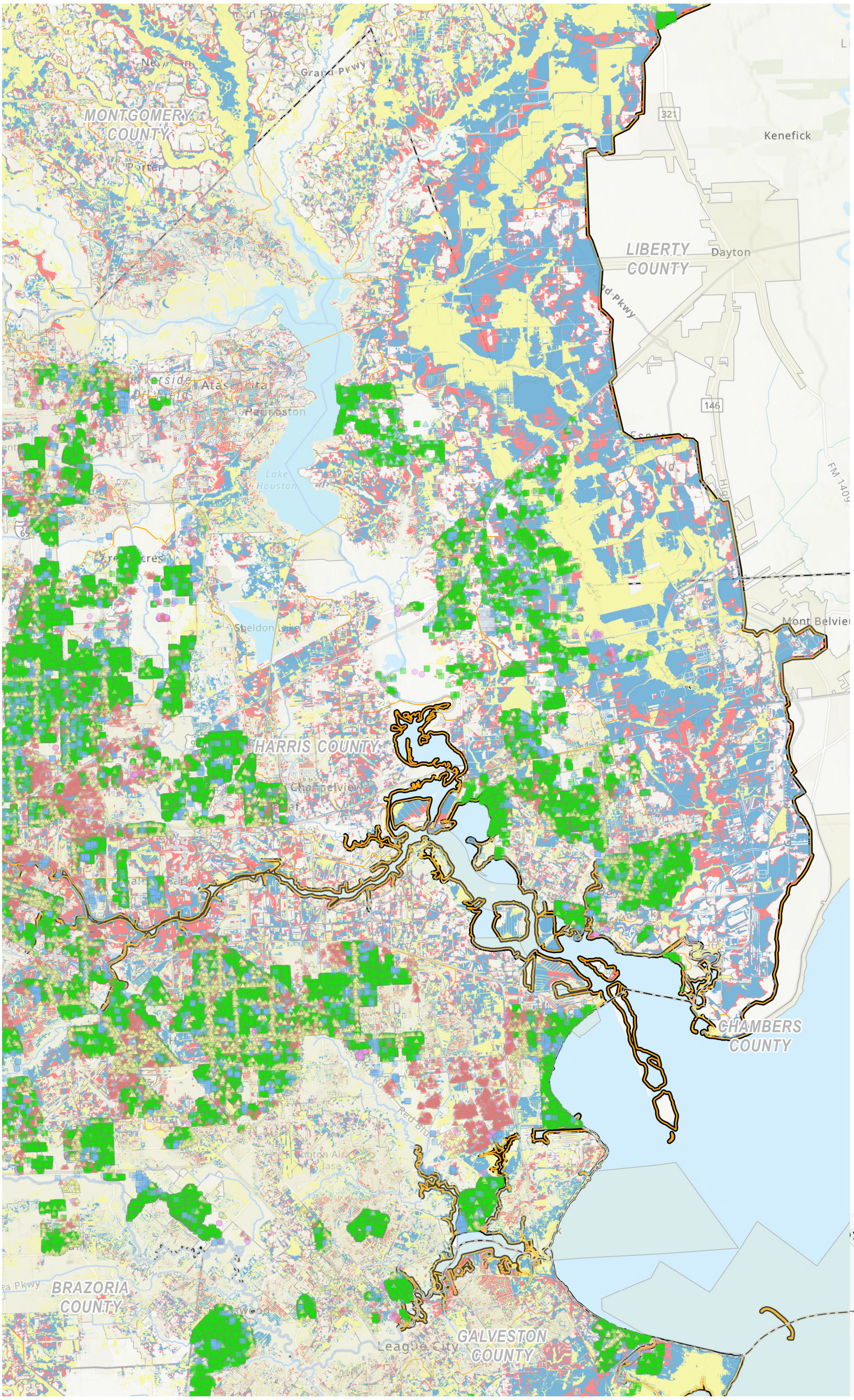


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
10 of 17 in series



Legend

Future Flood Exposure

- Agricultural Bldg
- Commercial Bldg
- Industrial Bldg
- Power Generation
- Public Bldg
- Residential Bldg
- Vacant or Unknown Bldg
- Roadway Stream Crossing
- Other
- Roadway Segment
- Agricultural Land

Future Flood Hazard

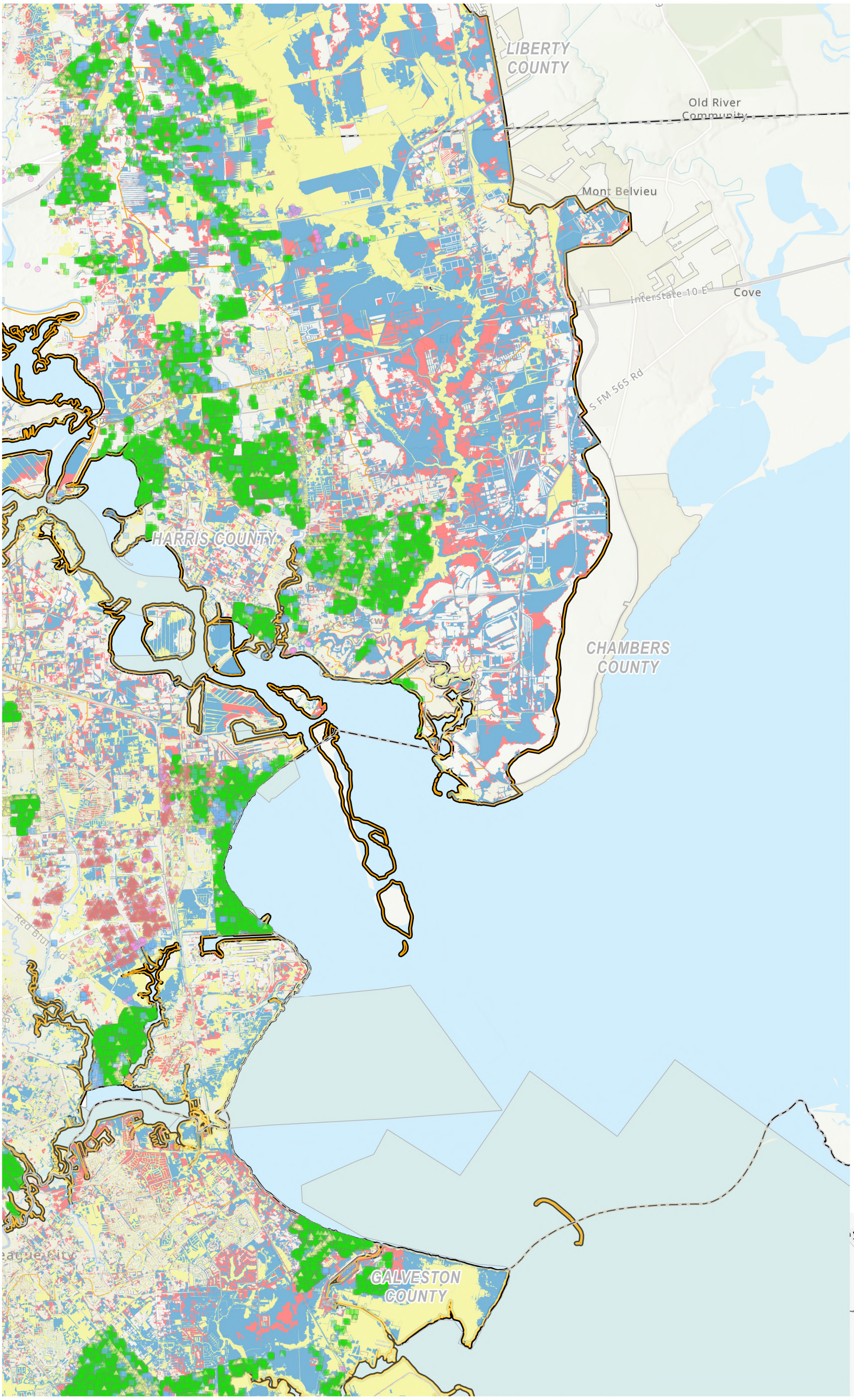
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- 10% Annual Chance Flood Hazard
- Flood Prone Area
- Streams
- Watersheds
- Reservoir
- Municipality
- County
- Region Boundary

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
11 of 17 in series

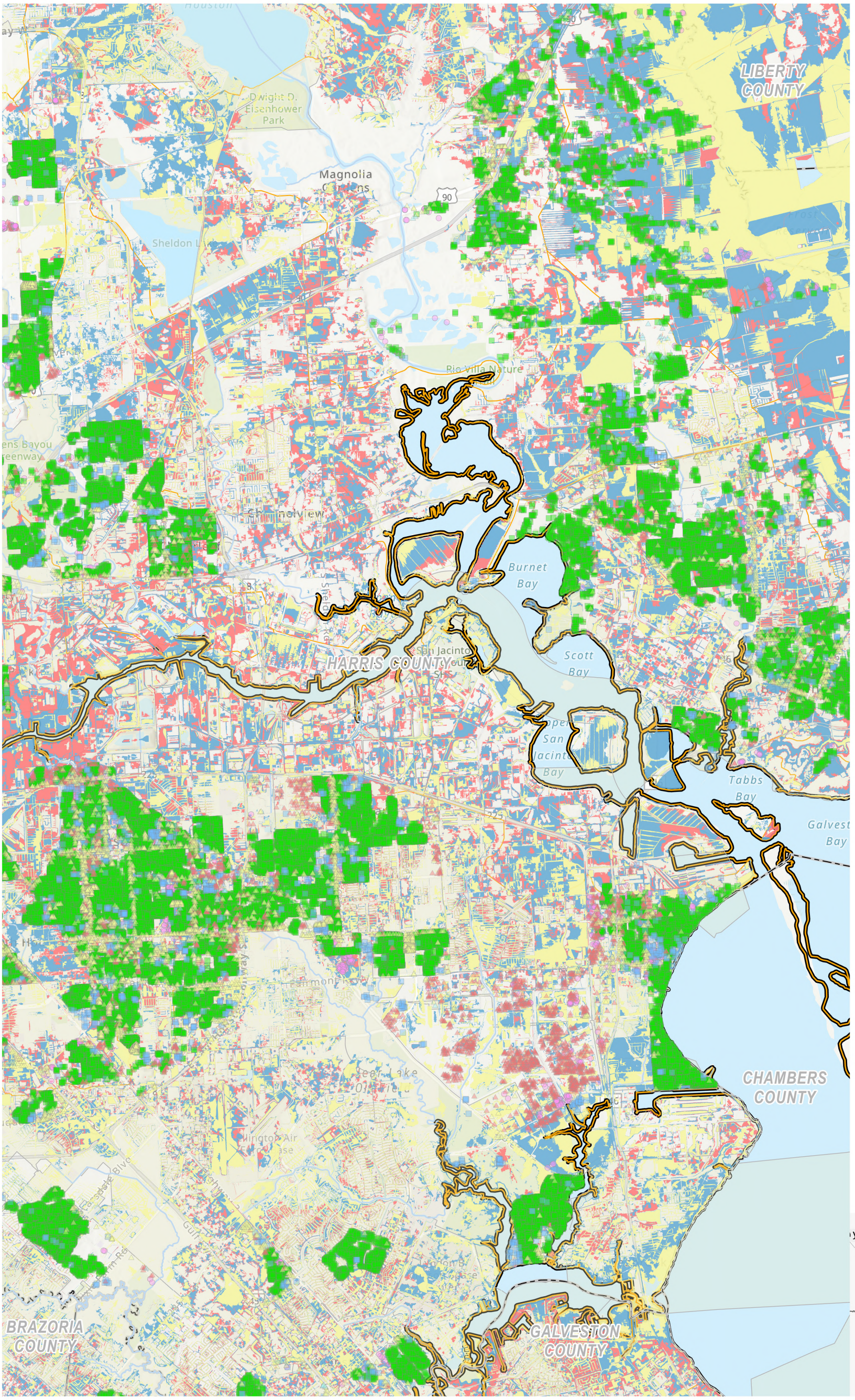


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
12 of 17 in series

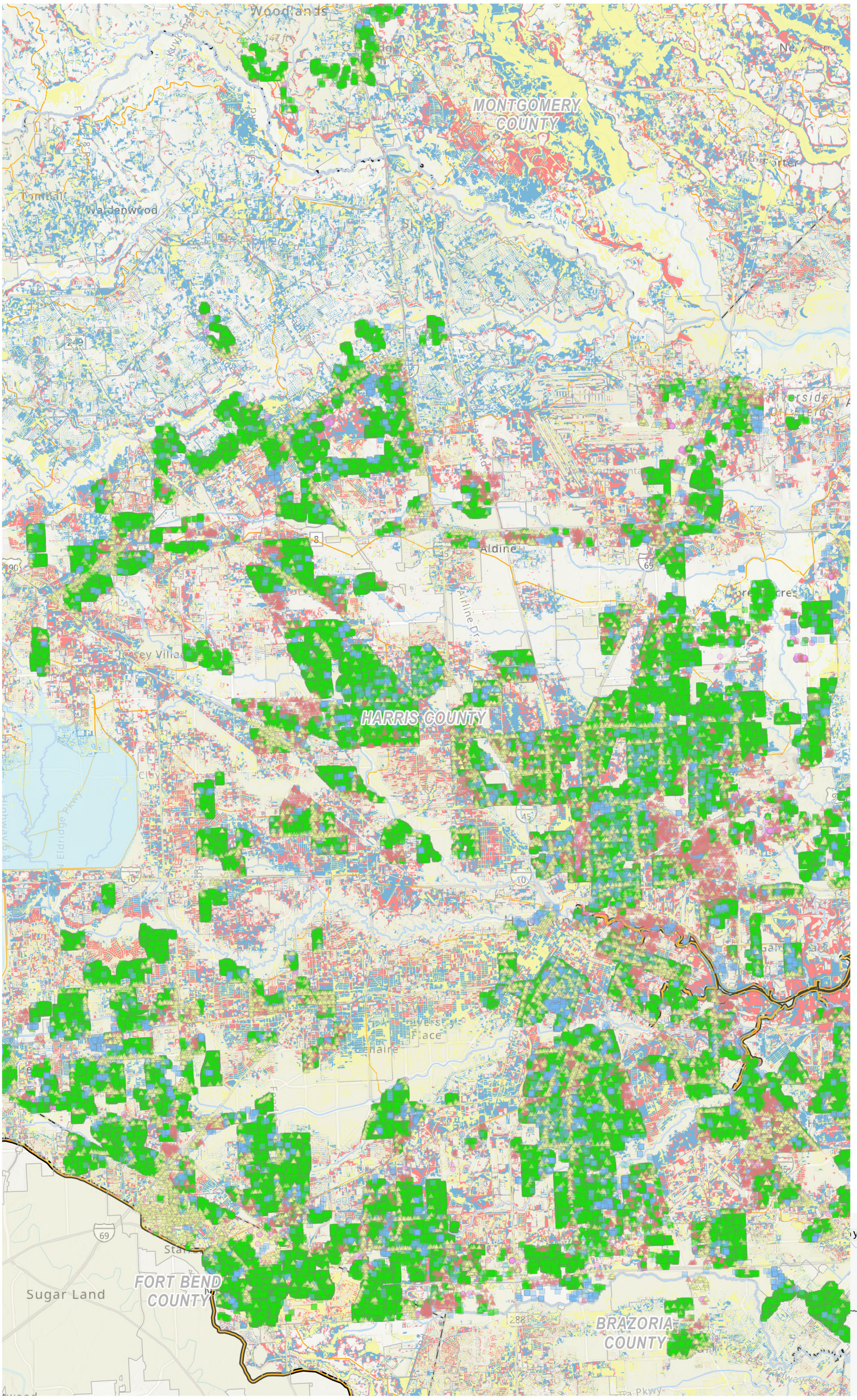


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
13 of 17 in series



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
14 of 17 in series

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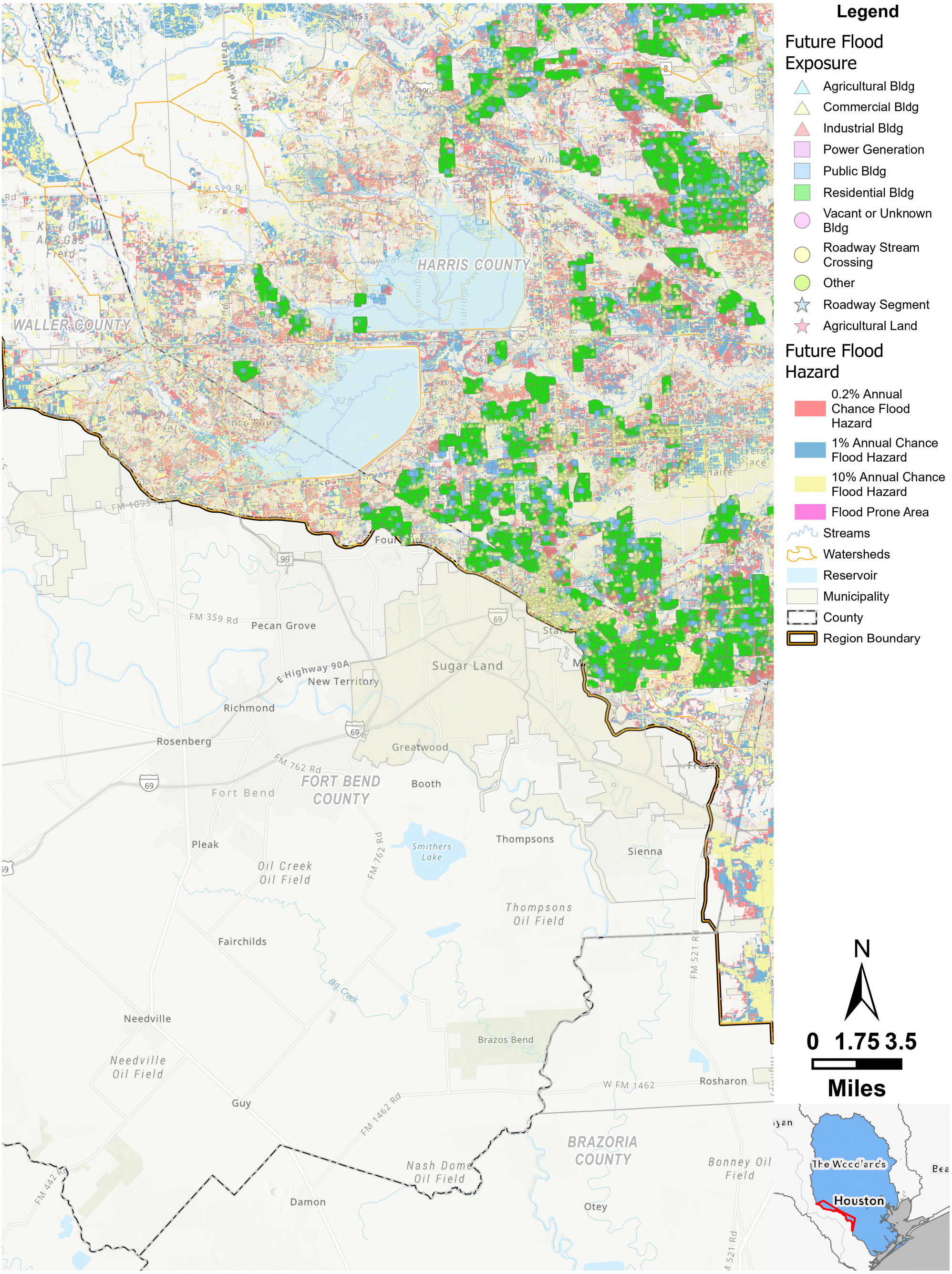
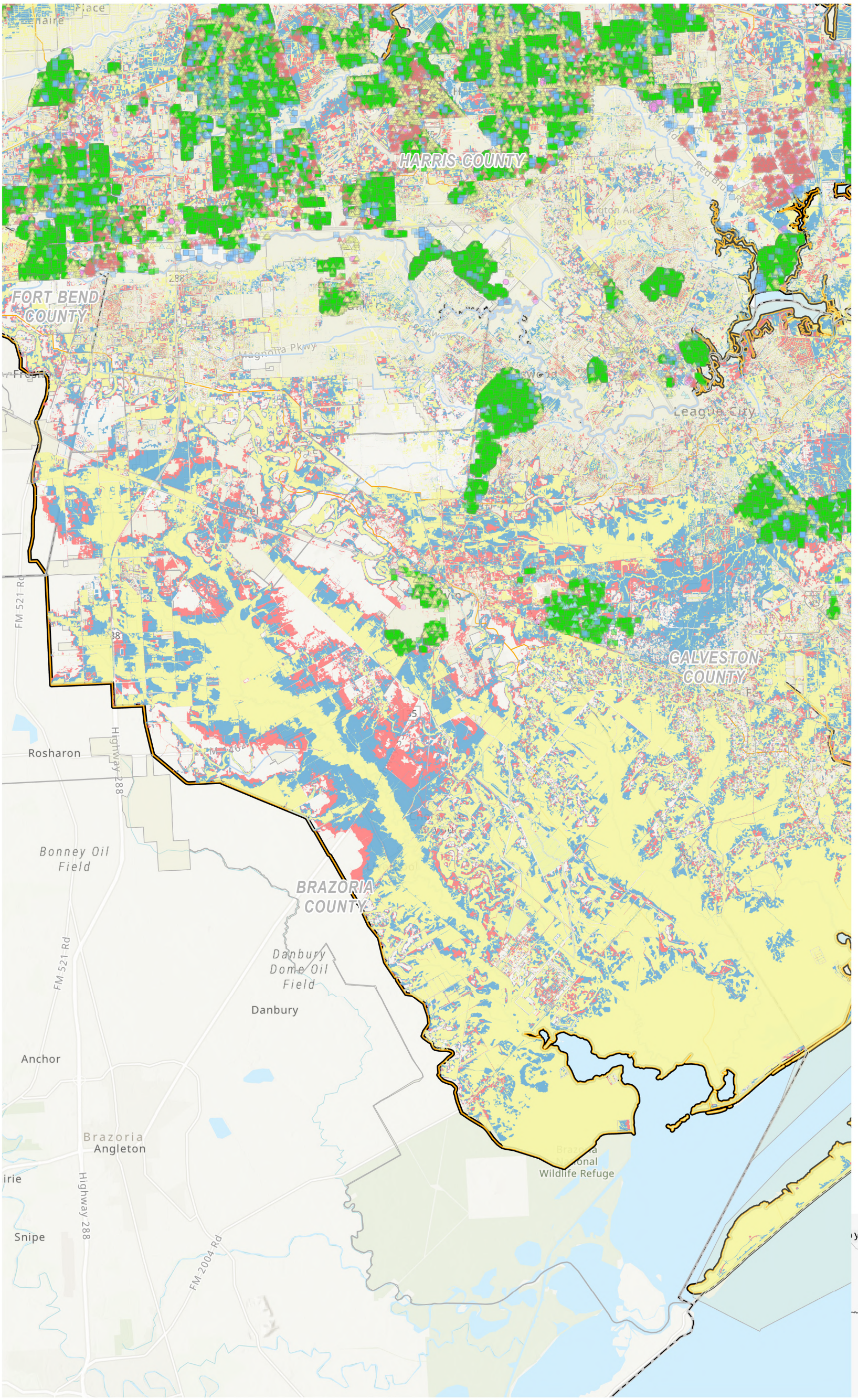


SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
15 of 17 in series

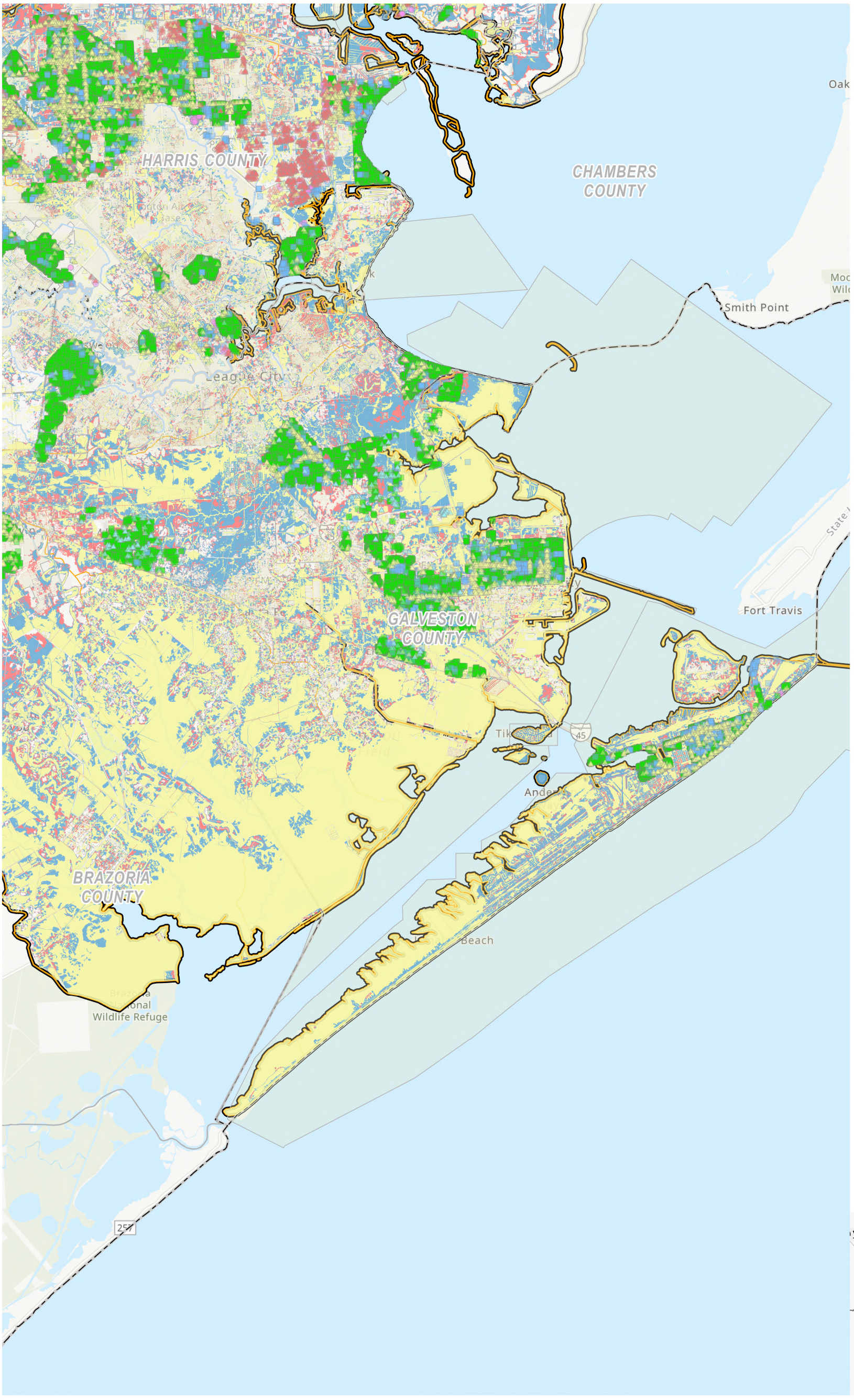


Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
16 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6



Region 6 San Jacinto
2028 Regional Flood Plan

Future Condition Vulnerability

MAP 12
17 of 17 in series

SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

Appendix 2B-6: Task 2B - Future Condition Flood Risk Analysis Technical Memorandum

Texas Water Development Board

2028 REGIONAL FLOOD PLAN INTERIM TECHNICAL MEMORANDUM

REGION 6

SAN JACINTO

January 2026



PREPARED FOR THE **SAN JACINTO REGIONAL FLOOD PLANNING GROUP**

2028 REGIONAL FLOOD PLAN
INTERIM TECHNICAL MEMORANDUM

PREPARED FOR:

TWDB on behalf of Region 6 San Jacinto Regional Flood Planning Group

PREPARED BY:

Freese and Nichols, Inc.

Halff Associates, Inc.

Hollaway Environmental + Communications Services, Inc.

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EXECUTIVE SUMMARY

Freese and Nichols Inc. (FNI) has been retained as the Technical Consultant to the San Jacinto Regional Flood Planning Group (San Jacinto RFPG) to develop the second regional flood plan (RFP), as part of the state flood planning process administered by the Texas Water Development Board (TWDB). This Technical Memorandum serves as a preliminary check on the Regional Flood Planning Group (RFPGs) progress towards the complete RFP by providing an overview of various tasks, processes used, and data collected. All the materials provided in this memo are subject to change prior to the submittal of the full draft flood plan due in May of 2027.

Definitions

This section provides definitions of key terms and acronyms.

A **Flood Management Evaluation (FME)** is a proposed flood study of a specific, flood-prone area that is needed in order to assess flood risk and/or determine whether there are potentially feasible FMSs or FMPs.

A **Flood Management Strategy (FMS)** is a proposed plan to reduce flood risk or mitigate flood hazards to life or property. At a minimum, RFPGs should include as FMSs any proposed action that the group would like to identify, evaluate, and recommend that does not qualify as either a FME or FMP.

A **Flood Mitigation Project (FMP)** is a proposed project, either structural or non-structural, that has non-zero capital costs or other non-recurring costs and when implemented will reduce flood risk or mitigate flood hazards to life or property.

Annual Chance Exceedance (ACE) represents the probability of a specific magnitude event occurring in a year.

INTRODUCTION

In 2019, the 86th Texas Legislature enacted Senate Bill 8 directing the creation of the first State Flood Plan. The Texas Legislature also adopted changes to the Texas Water Code §16.061 to establish the regional and state flood planning processes that are overseen by the TWDB. As outlined by the Texas Water Code, the purpose of the Regional and State Flood Plans is to:

- Provide orderly preparation and response to flood conditions to protect against loss of life and property;
- Guide state and local flood control policy; and
- Contribute to water development, where possible.

TWDB established 15 flood planning regions based on river basin boundaries. **Figure 1** shows the delineation of the 15 flood planning regions as well as the boundary of and counties within the San Jacinto Flood Planning Region.

In addition to effort in this second cycle of flood planning, the San Jacinto RFPG has adopted the following regional flood planning documents and amendments that informed the development of and content reflected in this technical memorandum:

- 2023 San Jacinto Regional Flood Plan – submitted to TWDB on January 10th, 2023
- 2023 San Jacinto Regional Flood Plan Amendment No.1 – submitted to TWDB on July 14th, 2023
- 2023 San Jacinto Regional Flood Plan Amendment No.2 – submitted to TWDB on April 1st, 2025

The San Jacinto Region encompasses all the San Jacinto River and its tributaries, covering an area of approximately 5,089 square miles containing approximately 3,696 stream miles, according to the TWDB website, with 83 municipalities and 11 counties are included within the region. The San Jacinto region is depicted below in **Figure 1**.



Figure 1: San Jacinto Flood Planning Region

The first deliverable for the 2028 RFP, due to the TWDB on January 7, 2026, is an interim Technical Memorandum intended to demonstrate progress towards compiling the necessary technical information and analyses needed to develop the RFP and meet contract requirements. The Technical Memorandum includes the information required in the Scope of Work and guidance documents provided by the TWDB that pertain to aspects of the following project tasks:

- Task 1: Planning Area Description
- Task 2: Flood Risk Analysis
- Task 3: Floodplain Management Practices and Flood Protection Goals
- Task 4: Assessment and Identification of Flood Mitigation Needs

As outlined in Exhibit D, *Data Submittal Guidelines*, the spatial feature deliverables required with the submission of the Technical Memorandum are listed below in **Table 1**.

Table 1: Technical Memorandum Spatial Deliverables

Feature Class Name	Description
Entities	Entities with flood-related authority
ExFldInfraPol/ExFldInfraLn/ExFldInfraPt	Existing natural flood mitigation features and constructed flood infrastructure
ExFldProjs	Proposed or ongoing flood mitigation projects
Watersheds	Watersheds (HUC-8, -10, -12)
ExFldHazard	Existing conditions inundation boundary for the 10%, 1.0% and 0.2% ACE events
Ex_Map_Gaps	Existing gaps in inundation boundary mapping
ExFldExpPol / ExFldExpLn / ExFldExpPt / ExFldExpAll	Existing conditions flood exposure layer identifying people and places at risk for the 10%, 1.0% and 0.2% ACE events
FutFldHazard	Future conditions inundation boundary for the 10%, 1.0% and 0.2% ACE events
Fut_Map_Gaps	Future gaps in inundation boundary mapping
FutFldExpPol /FutFldExpLn / FutFldExpPt FutFldExpAll	Future conditions flood exposure layer identifying people and places at risk for the 10%, 1.0% and 0.2% ACE events
ExFpMng	Areas with existing floodplain management practices
Goals	Adopted flood mitigation and floodplain management goals with associated areas
Streams	Streams relevant to proposed FMEs, FMSs, and FMPs
FME/FMS/FMP	Proposed FMEs, FMSs, and FMPs with associated areas
Model Coverage	Spatial extent of each model used to identify FMP, FME, and FMSs

TASK 4B – TECHNICAL MEMORANDUM

Task 1 – Planning Area Description

Existing Political Subdivisions

In compliance with Exhibit C, Section 2.4.B -Task 4B, Item 1, Attachment A, this section provides a list of existing political subdivisions within the San Jacinto region that have flood-related authorities or responsibilities. The list of political subdivisions actively involved in the San Jacinto region with flood-related authority was created based on the Entities layer provided in the TWDB Data Hub. Entities and political subdivisions that have flood-related authority can be defined as, but are not limited to, entities that have the authority to enact and enforce National Flood Insurance Program (NFIP) floodplain regulations and those that construct, maintain, manage, sponsor, or perform various actions associated with drainage infrastructure or flood control.

For the purpose of populating the required table as part of the January 2026 Technical Memorandum submittal, political subdivisions were defined as those entities whose leadership are determined through open elections. All political subdivisions that were identified as having flood-related authority within the San Jacinto Region are shown in **Table 2**, **Table 3**, and **Appendix 1-A**, listing 1,037 political subdivisions that have flood-related authority,

104 of which are active in flood planning. Political subdivisions active in flood planning include 82 municipalities, 11 counties, and 11 special districts. All other special district political subdivision types such as Utility Districts, Management Districts, Improvement Districts, etc. are included in **Appendix 1-A**.

Table 2: Political Subdivisions with Flood-Related Authority - Counties

Entity	Actively Involved in Flood Planning?
Brazoria	Yes
Chambers	Yes
Fort Bend	Yes
Galveston	Yes
Grimes	Yes
Harris	Yes
Liberty	Yes
Montgomery	Yes
San Jacinto	Yes
Walker	Yes
Waller	Yes

Table 3: Political Subdivisions with Flood-Related Authority - Municipalities

Entity	Actively Involved in Flood Planning?
City of Alvin	Yes
City of Arcola	Yes
City of Bayou Vista	Yes
City of Baytown	Yes
City of Beach City	Yes
City of Bellaire	Yes
City of Brookside Village	Yes
City of Bunker Hill Village	Yes
City of Clear Lake Shores	Yes
City of Cleveland	Yes
City of Coldspring	Yes
City of Conroe	Yes
City of Cut and Shoot	Yes
City of Dayton	Yes
City of Deer Park	Yes
City of Dickinson	Yes
City of El Lago	Yes
City of Friendswood	Yes
City of Fulshear	Yes
City of Galena Park	Yes
City of Galveston	Yes
City of Hedwig Village	Yes
City of Hillcrest	Yes
City of Hillshire Village	Yes
City of Hitchcock	Yes

Entity	Actively Involved in Flood Planning?
City of Missouri City	Yes
City of Mont Belvieu	Yes
City of Montgomery	Yes
City of Morgan's Point	Yes
City of Nassau Bay	Yes
City of New Waverly	Yes
City of North Cleveland	No
City of Oak Ridge North	Yes
City of Panorama Village	Yes
City of Pasadena	Yes
City of Patton Village	Yes
City of Pearland	Yes
City of Piney Point Village	Yes
City of Plantersville	Yes
City of Plum Grove	Yes
City of Prairie View	Yes
City of Roman Forest	Yes
City of Santa Fe	Yes
City of Seabrook	Yes
City of Shenandoah	Yes
City of Shoreacres	Yes
City of South Houston	Yes
City of Southside Place	Yes
City of Splendora	Yes
City of Spring	Yes

Entity	Actively Involved in Flood Planning?
City of Houston	Yes
City of Humble	Yes
City of Hunters Creek Village	Yes
City of Huntsville	Yes
City of Iowa Colony	Yes
City of Jacinto City	Yes
City of Jamaica Beach	Yes
City of Jersey Village	Yes
City of Katy	Yes
City of Kemah	Yes
City of La Marque	Yes
City of La Porte	Yes
City of League City	Yes
City of Liverpool	Yes
City of Magnolia	Yes
City of Manvel	Yes
City of Meadows Place	Yes

Entity	Actively Involved in Flood Planning?
City of Spring Valley Village	Yes
City of Stafford	Yes
City of Stagecoach	Yes
City of Sugar Land	Yes
City of Taylor Lake Village	Yes
City of Texas City	Yes
City of Tiki Island	Yes
City of Todd Mission	Yes
City of Tomball	Yes
City of Waller	Yes
City of Webster	Yes
City of West University Place	Yes
City of Willis	Yes
City of Woodbranch Village	Yes
The Woodlands Township	Yes
Town of Woodloch	Yes

Task 1 - Technical Memorandum Deliverables

The following table lists the final supplemental deliverables that are submitted in support of Task 1.

Table 4: Task 1 Deliverables

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable location
1	Political Subdivisions List	Exhibit C Task 4B Item A	Included in **Appendix 1-A**
2	Entities feature class	Exhibit D Table 1	Included in geodatabase digital submittal
3	ExFldInfraPol feature class	Exhibit D Table 1	Included in geodatabase digital submittal
4	ExFldInfraLn feature class	Exhibit D Table 1	Included in geodatabase digital submittal
5	ExFldInfraPt feature class	Exhibit D Table 1	Included in geodatabase digital submittal
6	ExFldProjs feature class	Exhibit D Table 1	Included in geodatabase digital submittal
7	Watersheds feature class	Exhibit D Table 1	Included in geodatabase digital submittal

Task 2 – Flood Risk Analyses

As defined in the Scope of Work for Task 2A – Existing Condition Flood Risk Analyses and Task 2B – Future Condition Flood Risk Analyses, the RFPGs shall "perform existing [and future] condition flood hazard analyses to determine the location and magnitude of 10% annual chance, 1% annual chance and 0.2% annual chance flood events." The sections below describe the process used to create the flood hazard, respective to existing and future conditions.

In compliance with Exhibit C, Section 2.4.B - Task 4B, Item 1, Attachment C, the following sections describe the development of the Existing Flood Hazard and Future Flood Hazard layers. Each corresponding sub-task – Task 2A for existing conditions and Task 2B for future conditions – references the resulting geodatabase and associated maps for the respective conditions. These deliverables include feature classes that represent the region-wide 10.0%, 1.0% and 0.2% ACE events inundation boundaries, along with the source of flooding for each area, as applicable to both existing and future conditions.

Task 2A – Existing Condition Flood Risk Analysis

Existing Flood Hazard Approach

Task 2A is intended to identify and compile a comprehensive outlook of existing conditions flood hazards in the region including riverine (fluvial) flooding, urban (pluvial) flooding, coastal flooding, playa flooding, and possible flood-prone areas of risks. This task is primarily a data gathering and assessment task of available flood hazard information and determination of how to leverage information for use in this second flood planning cycle. This effort and the resultant mapping is not regulatory in nature but is, instead, intended to gather and present a single, coherent, continuous set of information on flood risk throughout the San Jacinto region.

The existing flood hazard developed in the first planning cycle only included 1% and 0.2% ACE events. The first planning cycle mosaiced National Flood Hazard Layer (NFHL) Effective Detailed data, NFHL Effective Approximate data, and Base Level Engineering (BLE) data with a max-on-max approach to develop existing flood hazard. This second planning cycle updated the maps to include the 10% ACE event and leveraged recent studies that incorporate Atlas 14 rainfall, recent development, and latest modeling software that have been calibrated to recent flood events.

The technical consultants presented a general overview of the data hierarchy, that was then discussed by, and approved by the Technical Committee on July 2, 2025 and the San Jacinto RFPG on August 14, 2025, as detailed below:

1. Community Models & Maps
    a. Recent modeling with Atlas 14 rainfall (GLO, FIF Studies, MDPs, and MAAPnext)
2. 2D BLE
3. FEMA Detailed NFHL
4. 1D BLE
5. Fathom

To utilize available flood hazard data applicable within the San Jacinto Region and provide the most comprehensive coverage, the region was split into 6 areas and a more refined data hierarchy was developed based on the available data within each area, following the overview presented and approved by the RFPG on August 14, 2025. **Figure 2** shows all 6 areas with varying data hierarchies.

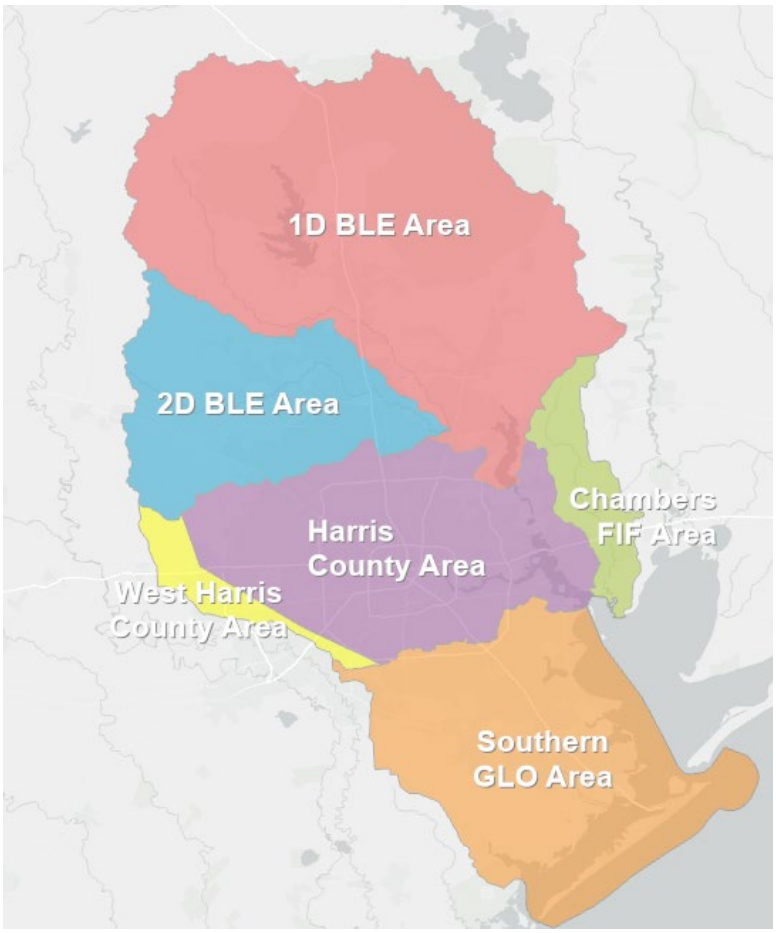

Figure 2: Subdivided Data Hierarchy Areas within the San Jacinto Region

The refined data hierarchy per area is detailed below:

<u>1D BLE Area</u>

1. Harris County Modeling, Assessment and Awareness Project (MAAPnext)
2. San Jacinto Master Drainage Plan (SJMDP)
3. FEMA Detailed NFHL
4. 1D BLE
5. Pluvial Fathom

<u>2D BLE Area</u>

1. MAAPnext
2. SJMDP
3. 2D BLE

<u>Chambers County Flood Infrastructure Fund (FIF) Area</u>

1. Chambers County FIF Study
2. Pluvial Fathom
3. NFHL Coastal Zone VE

Harris County Area

1. MAAPnext
2. Pluvial Fathom
3. NFHL Coastal Zone VE (100-year only, since 10-year and 500-year do not exist)

West of Harris County

1. MAAPnext
2. 2D BLE
3. NFHL Coastal Zone VE (100-year only, since 10-year and 500-year do not exist)

Southern General Land Office (GLO) Area

1. MAAPnext
2. GLO Central Region Combined River Basin Flood Studies (RBFS)
3. 2D BLE
4. NFHL Coastal Zone VE (100-year only, since 10-year and 500-year do not exist)

In areas with overlapping data, available modeling with higher quality and level of detail were prioritized first with subsequent available data supplemented in to capture risk, when applicable. For instance in the northern region, SJMDP was utilized as it provided the most accurate depiction of flood risk along major rivers, however smaller tributary flood risk was not captured in the study and therefore there was a need to supplement with 2D BLE data. This example is highlighted below, in **Figure 3.**

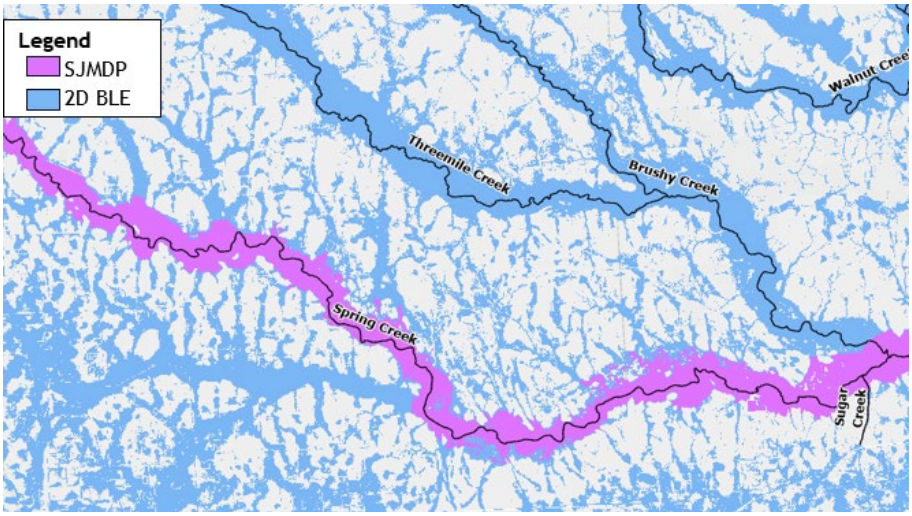

Figure 3: SJMDP and 2D BLE Comparison

Explanation of Approach

This hierarchy method was used for the San Jacinto Region in order to prioritize recent modeling and supplement with additional data to capture similar levels of detail across the entirety of the region. Since the San Jacinto Region is data rich, these recent, local models that utilize Atlas 14 rainfall, recent terrain and development, and have been calibrated served as the primary data sources to develop the Existing Flood Hazard layer. Available FEMA NFHL data can be as old as 18 years and lacks recent modeling updates, such as Atlas 14 rainfall, recent development, terrain, or 2D modeling. Due to the outdated nature of this available data, FEMA NFHL data was only utilized in the 1D BLE area and along the coast of the San Jacinto region for mapping existing flood hazard, as agreed upon by the San Jacinto RFPG on August 14, 2025.The San Jacinto RFPG chose this approach in alignment

with Goal ID: 06-20-0000000010 – expand the understanding of flood risk in the San Jacinto region, measured by the percentage of the floodplain quilt that is based on Atlas 14 rainfall – previously adopted in 2023. This approach supports the goal by leveraging investments from local stakeholders and the state to better understand flood risk and update FEMA regulatory mapping. This approach prioritizes and takes into account recent updates, such as Atlas 14 rainfall, updated terrain, recent development, utilizing updated modeling software, and calibrating to recent storm events.

The MAAPnext modeling within Harris County was ranked above other models due to the incorporation of Atlas 14 rainfall, updated terrain data, inclusion of completed flood damage reduction projects, calibrated and validated with historical events, and inclusion of previously unmapped urban flooding. In areas where MAAPnext data was available, that data source was used as the primary source. The remaining areas outside of Harris County prioritize the community models available in those areas. For instance, in the northern part of the San Jacinto region, the SJMDP is prioritized as the most recent comprehensive modeling done of the 13 major streams that utilized Atlas 14 rainfall data, calibrated and validated with historical events, and recent terrain data. Chambers County FIF modeling was also prioritized for similar reasons. The recent GLO Combined RBFS models were also used primarily in the southern portion of the region, since they incorporated Atlas 14 riverine, coastal, and compound flooding, and have also been calibrated and validated with historical events.

Although community models were the primary data source since they provide more accurate depictions of flood risk, supplemental data was also needed to map additional flood risk within the San Jacinto region. 2D BLE data was supplemented to capture the urban and tributary flood risk. **Figure 3** shows the difference in flood risk captured from community models, such as the SJMDP and 2D BLE data, to highlight the need to supplement community models with additional data to create a comprehensive view of flood risk across the San Jacinto region. FEMA Detailed NFHL and 1D BLE had similar flood risk footprint along major rivers, but FEMA Detailed NFHL was prioritized over 1D BLE due to its incorporation of structures into the model. Pluvial Fathom was prioritized last in areas of the San Jacinto region where 2D rain-on-mesh modeling was not available and captured local flooding.

FEMA NFHL Pending Data, FEMA NFHL Preliminary Flood Hazard data, FAFDS, and FEMA Approximate NFHL was considered, but was not used because flood risk coverage was achieved throughout the San Jacinto region with higher quality data sources.

Floodplain Processing Parameters

To develop a unified flood hazard layer, it was necessary to perform data processing to integrate multiple floodplain sources. The table below, **Table 5**, details the processing parameters applied to each dataset to ensure consistency and compatibility across the merged flood hazard layers.

Table 5: Floodplain Processing Parameters

Depth Filter	Island Eliminations	Filling holes	Simplifying	Smoothing
0.5 ft	< 2 Acres	< 0.5 Acre	2.5 ft	20 ft

These processing parameters were selected to reduce model noise and improve the reliability of the floodplain delineation. Specifically, small ponding areas under 2 acres and shallow inundation zones with depths less than 0.5-ft were excluded, as these areas were more indictive of modeling uncertainty. Gaps within the floodplain smaller than 0.5 acres were filled to maintain continuity. Additionally, the floodplain extents were simplified and smoothed using a tolerance of 2.5-ft and 20-ft tolerance, respectively, to remove extraneous vertices while preserving the essential extents of the floodplain and enhancing cartographic clarity.

MAAPnext Data Public Release

While HCFCD shared MAAPnext modeling with the Technical Consultant team for use in developing a more robust regional flood plan that more accurately represents flood risk in the San Jacinto region, MAAPnext flood insurance rate map information has not yet been released by FEMA and is not included in this deliverable. The following approach was shared with the TWDB in an email on July 21, 2025, prior to the delivery of this Technical Memorandum to invite feedback, concerns, or questions.

For maps of existing and future conditions flood risk for the 10%, 1.0% and 0.2% ACE events, mapping within Harris County was removed, showing no flood risk information within Harris County. MAAPnext sourced data was removed from other contributing drainage areas to Harris County. The impacted Technical Memorandum deliverable items are as follows:

- Tech Memo Deliverable Item 9: Map 4 – Existing Condition Flood Hazard
- Tech Memo Deliverable Item 16: Map 6 – Existing Condition Flood Exposure
- Tech Memo Deliverable Item 17: Map 7 – Existing Condition Vulnerability
- Tech Memo Deliverable Item 19: Map 8 – Future Condition Flood Hazard
- Tech Memo Deliverable Item 20: Map 9 – Extent of Increase of Flood Hazard Compared to Existing Condition
- Tech Memo Deliverable Item 22: Map 10 – Future Condition Flood Hazard - Gaps in Inundation Boundary Mapping and Identify known Flood Prone Areas
- Tech Memo Deliverable Item 27: Map 11 – Future Condition Flood Exposure
- Tech Memo Deliverable Item 28: Map 12 – Future Condition Vulnerability and Critical Infrastructure

MAAPnext source data was removed from the existing flood hazard and exposure data feature classes submitted in the deliverable geodatabase. Specifically, the existing flood hazard feature class excluded MAAPnext source data and all existing flood exposure feature classes were adjusted to remove any intersecting MAAPnext data. The impacted technical memorandum deliverable items are as follows:

- Tech Memo Deliverable Item 8: Completed feature class Existing Flood Hazard (ExFldHazard)
- Tech Memo Deliverable Item 10: Completed feature class Existing Flood Exposure Polygon (ExFldExpPol)
- Tech Memo Deliverable Item 11: Completed feature class Existing Flood Exposure Line (ExFldExpLn)
- Tech Memo Deliverable Item 12: Completed feature class Existing Flood Exposure Point (ExFldExpPt)
- Tech Memo Deliverable Item 13: Completed feature class Existing Flood Exposure All (ExFldExpAll)
- Tech Memo Deliverable Item 18: Completed feature class Future Flood Hazard (FutFldHazard)
- Tech Memo Deliverable Item 23: Completed feature class Future Flood Exposure Polygon (FutFldExpPol)
- Tech Memo Deliverable Item 24: Completed feature class Future Flood Exposure Line (FutFldExpLn)
- Tech Memo Deliverable Item 25: Completed feature class Future Flood Exposure Point (FutFldExpPt)
- Tech Memo Deliverable Item 26: Completed feature class Future Flood Exposure All (FutFldExpAll)

The coverage map showing the extent of increases of flood hazard compared to existing conditions for the 10%, 1.0% and 0.2% ACE events excludes areas within Harris County where MAAPnext data defines existing flood hazard conditions. The impacted technical memorandum deliverable items are as follows:

- Tech Memo Deliverable Item 20: Map 9 – Extent of Increase of Flood Hazard Compared to Existing Condition

Additional Flood-Prone Areas

In compliance with Exhibit C, Section 2.4.B - Task 4B, Item 1, Attachment D, this section describes how additional flood-prone areas were identified and incorporated based on hydrologic features, historic flooding and local knowledge. The methodology outlined below reflects the current approach used by the Technical Consultant and the San Jacinto RFPG to collect flood-prone area data. These areas are defined as locations known to experience flooding beyond the extent of the developed existing flood hazard floodplain. The spatial components will be provided with the January 2026 Technical Memorandum submission included as part of the Existing Flood Hazard and Future Flood Hazard.

Flood-prone areas are being considered as known locations that experience flooding outside the extent of the existing flood hazard area. Members of the public and regional stakeholders were provided the opportunity to identify flood-prone areas using an online interactive map where users were allowed to provide input as points and polygons. The following four questions are required for any comment submission on the web map.

1. What is impacted by the flooding?
2. How often does the area flood?
3. What level of storm intensity causes the area to flood?
4. What appears to be the main cause of the flooding at each location?

Additionally, users can provide written comments and attach photos with each submission. The online interactive map was made available for public comment on May 8, 2025. An example screenshot of a user response from the web map survey can be seen below in **Figure 4**.

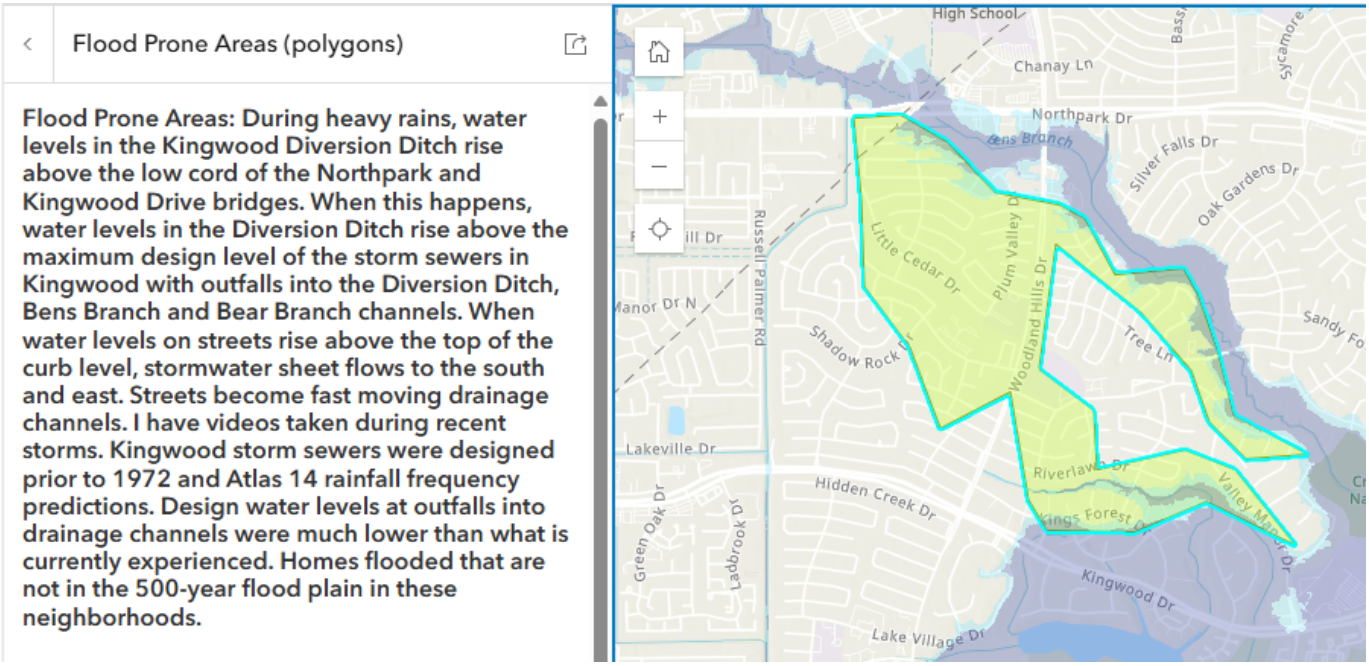

Figure 4: Flood-Prone Area Survey Response Example

First Planning Cycle & Second Planning Cycle Existing Flood Hazard Comparison

The second cycle existing flood hazard developed in this second cycle showed a significant increase in floodplain area extents compared to the first planning cycle. The extent of this change is representative of the more accurate data used to develop the floodplain, such as updated rainfall data, and the capture of pluvial flooding through rain-on-mesh modeling. **Figure 5**, shown below, highlights the differences between first and second cycle

floodplain area. One major contributing factor to these changes is, as previously mentioned, the use of better, more accurate data. First planning cycle referenced data sources that utilized pre-Atlas 14 rainfall data. This second cycle prioritized community models that utilized Atlas 14 rainfall, which showed pre-Atlas 14 500-year rainfall more comparable to the Atlas 14 100-year rainfall. That trend is similarly showcased as the results show the first cycle area in 500-year floodplain relatively similar to the second cycle area in 100-year floodplain.

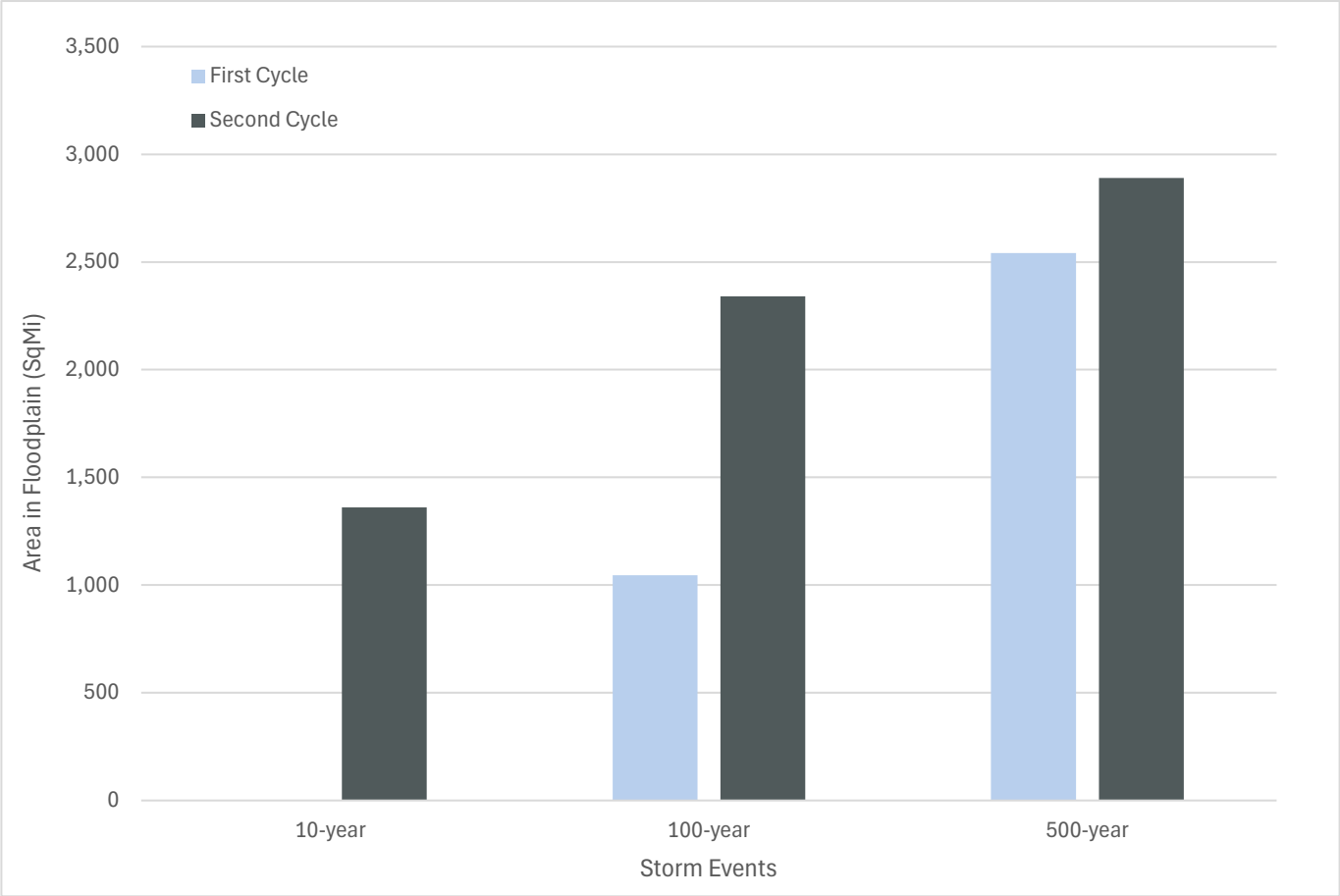

Figure 5: Comparison of First Planning Cycle and Second Cycle Floodplain Footprint Area

Task 2A - Technical Memorandum Deliverables

The following table lists the final supplemental deliverables that are submitted in support of Task 2A.

Table 6: Task 2A Deliverables

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable Location
8	ExFldHazard feature class	Exhibit D Table 1	Included in geodatabase digital submittal
9	Map 4	Exhibit D Task 4B Item C & D	Included in **Appendix 2-A**
10	ExFldExpPol feature class	Exhibit D Table 1	Included in geodatabase digital submittal
11	ExFldExpLn feature class	Exhibit D Table 1	Included in geodatabase digital submittal

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable location
12	ExFldExpPt feature class	Exhibit D Table 1	Included in geodatabase digital submittal
13	ExFldExpAll feature class	Exhibit D Table 1	Included in geodatabase digital submittal
14	Ex_Map_Gaps feature class	Exhibit D Table 1	Included in geodatabase digital submittal
15	Map 5	Exhibit D Task 4B Item C & D	Included in **Appendix 2-A**
16	Map 6	Exhibit C Task 4B Item C	Included in **Appendix 4-E** (also referenced in Task 4B deliverables)
17	Map 7	Exhibit D Task 4B Item C & D	Included in **Appendix 2-A**

Task 2B – Future Condition Flood Risk Analysis

Future Flood Hazard Approach

Task 2B is intended to characterize the future conditions for the planning area based on a "no-action" scenario of approximately 30-years, estimated to be the year 2060, of continued development and population growth under current development trends and patterns, and existing flood regulations and policies, based on the following factors:

- Current floodplain management regulations and policies
- Current land use and development trends and practices and associated projected population
- Continued development Increase and associated population growth
- Anticipated sea level rise and subsidence
- Anticipated changes to functionality of existing floodplain
- Anticipated sedimentation in flood control structures and major geomorphic changes
- Completion of flood mitigation projects currently under construction or already have designated funding

The following approach was presented to and approved by the San Jacinto RFPG at the planning meeting on August 14, 2025 and was accepted by the TWDB on October 22, 2025.

The TWDB provided Fathom's future condition flood risk products for the state of Texas to the planning groups in May 2025. The following are important conclusions from the Fathom report titled "Year 2060 Floodplain Maps for Texas – Final Report":

1. For fluvial and pluvial scenarios: When future land use and subsidence are introduced without changes in climate, the median change in water surface elevation is zero.
2. For coastal scenarios: When future land use and subsidence are introduced without changes in climate, the median increase in water surface elevation is two inches.
3. For all scenarios: Future climate forcing is the biggest driver in water surface elevation increases.

The TWDB's guidance states that for areas where future floodplain is projected to decrease, the regional flood planning groups are "required to utilize the flood hazard area that is at least equal to the existing flood hazard for the same area." The expectation within the San Jacinto region is for the future floodplain to be larger than that of the existing condition flood hazard layer.

Upon review of the combined peril Scenario 3 (significant future climate forcing) data, it was commonly found that the Scenario 3 floodplains were smaller than existing condition flood extents from detailed modeling for all storm events analyzed (10-, 100-, and 500-year). For example, **Figure 6**, below shows the comparison of 100-year floodplains between the existing Spring Creek 2D BLE study and Fathom Scenario 3. Since the existing 2D BLE flood extents are larger than Fathom Scenario 3, this is an area where Fathom Scenario 3 could not be utilized per the TWDB's guidance and the San Jacinto RFPG's expectations regarding future flood risk.

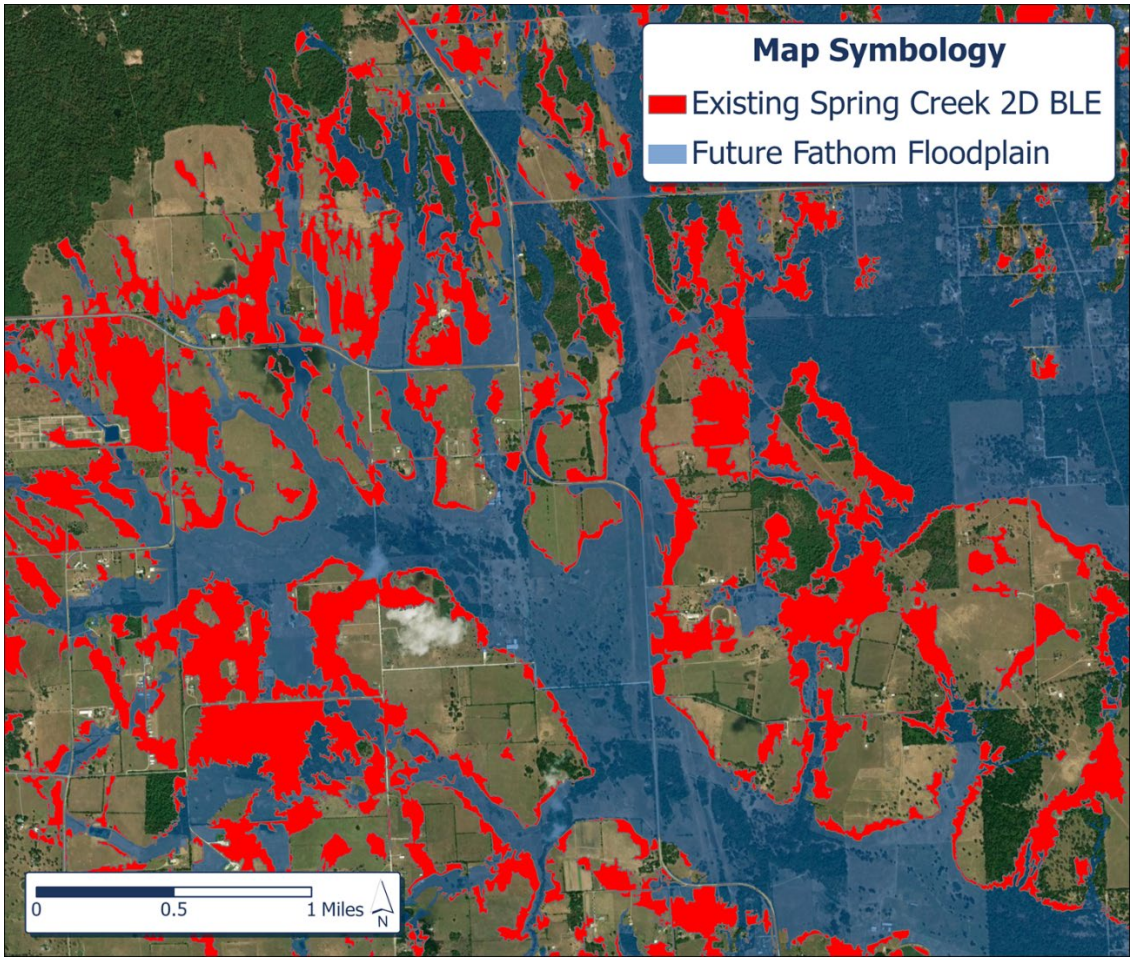

Figure 6: 100-year Floodplain Comparison between Spring Creek 2D BLE and Fathom Scenario 3 (Combined Peril)

Therefore, the San Jacinto RFPG proposed to modify more detailed existing hydrologic and hydraulic models to characterize future flood risk. Pluvial Fathom Scenario 3 will be utilized where pluvial flood risk is not already defined (e.g., in 1D BLE areas). Model prioritization for each zone in the San Jacinto region is outlined below, with the zones outlined in **Figure 7**:

<u>Northern Zone:</u>

1. San Jacinto River Master Drainage Plan future model, simulated with future rainfall
2. 1D West Fork & East Fork San Jacinto River models, vertically buffered
3. Pluvial Fathom Scenario 3

Central Zone:

1. MAAPnext models, simulated with future rainfall
2. 2D Spring Creek BLE model, simulated with future rainfall
3. Pluvial Fathom Scenario 3

Coastal Zone (south and east of Harris County):

1. Chambers FIF simulated with future rainfall
2. 2D GLO models (Clear Creek, Dickinson Bayou, Mustang Bayou), simulated with future rainfall and sea level change
3. 2D West Galveston Bay BLE model, simulated with future rainfall and sea level change
4. Pluvial Fathom Scenario 3

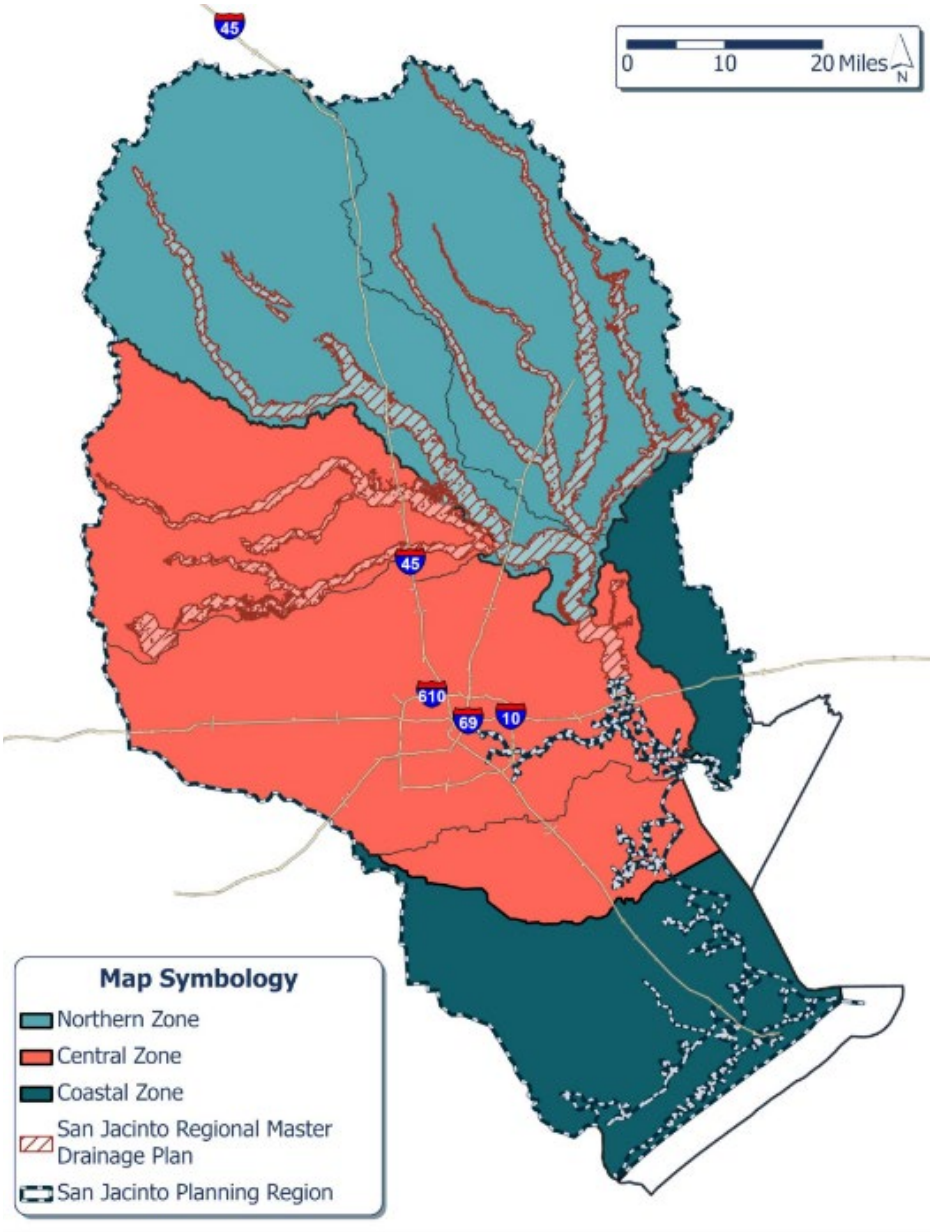

Figure 7: Delineation of Zones used for Future Conditions Analysis

Modification Techniques

Future rainfall is calculated by multiplying existing rainfall by the average pluvial change factor per watershed or model. The TWDB has laid out four (4) scenarios that future condition Fathom models can incorporate. Those four scenarios are outlined in **Table 7**.

Table 7: TWDB Future Conditions Scenarios

Future Scenarios	Future Climate Forcing	Future Subsidence and Land Use
Scenario 1	Minimal	Yes
Scenario 2	Moderate	Yes
Scenario 3	Significant	Yes
Scenario 4	Moderate	No

Scenario 3 represents the "worst case" situation. The Technical Committee of the San Jacinto RFPG determined that Scenario 3 was the most suitable scenario for the San Jacinto region. Therefore, based on Fathom's pluvial change factors, the San Jacinto region expects to see a rainfall increase of approximately 14%.

Sea level rise is applied to the models as an absolute change in the coastal boundary condition. Based on Fathom's coastal change factors, the San Jacinto coast is expected to see sea levels rise by 1.8 to 2.1 feet.

Vertical buffers are calculated as the average increase in water surface elevation between Existing Fathom and Fathom Scenario 3 (combined peril) per HUC-10 watershed and per storm event. The average increases range from 0.20 feet to 0.86 feet.

Figure 8 shows the models modified and used in developing the Future Conditions Flood Hazard Layer.

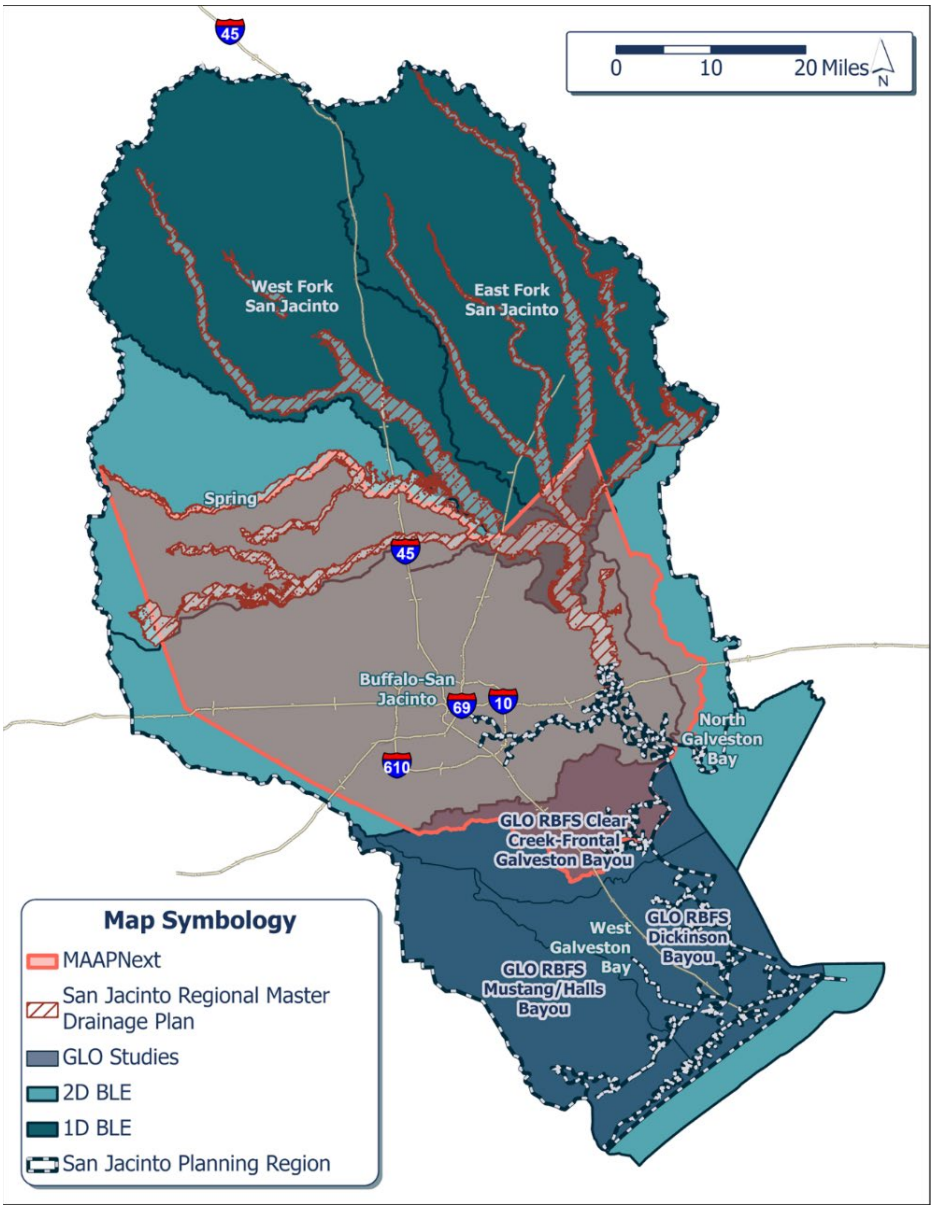

Figure 8: Available Models to be Modified to Future Conditons

Task 2B - Technical Memorandum Deliverables

The following table lists the final supplemental deliverables that are submitted in support of Task 2B.

Table 8: Task 2B Deliverables

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable location
18	FutFldHazard	Exhibit D Table 1	Included in geodatabase digital submittal
19	Map 8	Exhibit C Task 4B Item C	Included in **Appendix 2-B**
20	Map 9	Exhibit C Task 4B Item C	Included in **Appendix 2-B**
21	Fut_Map_Gaps	Exhibit D Table 1	Included in geodatabase digital submittal
22	Map 10	Exhibit C Task 4B Item C	Included in **Appendix 2-B**
23	FutFldExpPol	Exhibit D Table 1	Included in geodatabase digital submittal

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable location
24	FutFldExpLn	Exhibit D Table 1	Included in geodatabase digital submittal
25	FutFldExpPt	Exhibit D Table 1	Included in geodatabase digital submittal
26	FutFldExpAll	Exhibit D Table 1	Included in geodatabase digital submittal
27	Map 11	Exhibit C Task 4B Item C	Included in **Appendix 2-B**
28	Map 12	Exhibit C Task 4B Item C	Included in **Appendix 2-B**

Task 3 – Floodplain Management Practices, Needs Analysis, and Flood Protection Goals

Task 3A – Evaluation and recommendations on Floodplain Management Practices

Task 3A requires the RFPG to "make recommendations regarding forward-looking floodplain management and land use recommendations, and economic development practices and strategies, that should be implemented by entities within the FPR." During the July 2025 Technical Committee meeting, the committee agreed to propose five new recommended floodplain management practices for discussion at the August 2025 San Jacinto RFPG Meeting. During the August and September 2025 San Jacinto RFPG Meetings, feedback was solicited on the existing and proposed recommended floodplain management practices. During the November 13, 2025 San Jacinto RFPG meeting, the San Jacinto RFPG voted to continue to recommend 3 minimum standards, update 5 minimum standards from the first cycle, and recommend 5 new minimum standards for a total of 13 minimum standards recommended. **Table 9** includes the finalized recommended minimum floodplain management practices by the San Jacinto RFPG.

Table 9: Recommended Minimum Floodplain Management Standards

Minimum Standard to Recommend	Definition
Participation in the National Flood Insurance Program (NFIP)	• All regulatory entities to implement ordinances that meet minimum requirements per the NFIP • All regulatory entities to remain active NFIP participants in good standing • All regulatory entities to participate in the Community Rating System (CRS) Program to reduce flood insurance rate premiums across the region.
Development of No Adverse Impact Policies	• All regulatory entities to define a no adverse impact policy. • The no adverse impact policy should be focused on preventing negative impacts. Evaluation of impacts should be completed using best available hydrologic and hydraulic modeling, where appropriate.

Minimum Standard to Recommend	Definition
Establish Minimum Finished Floor Elevations	• All new habitable structures shall have a finished floor elevation established at or above or waterproofed to the FEMA effective 0.2% ACE flood elevation as shown on effective FIRMs except in areas designated as coastal flood zones. • Where regulatory mapping has been updated using Atlas 14 or newer rainfall data, all new habitable structures shall have a finished floor elevation established at or above or waterproofed to the FEMA effective 1.0% ACE flood elevation as shown on effective FIRMs except in areas designated as coastal flood zones. • In areas designated as coastal flood zones, all new habitable structures shall have a finished floor elevation established at or above or waterproofed to the FEMA effective 1.0% ACE flood elevation as shown on effective FIRMS plus 1 foot of freeboard. • All new critical facilities shall have a finished floor elevation established at or above or waterproofed to the FEMA effective 0.2% ACE flood elevation as shown on effective FIRMs plus 2 feet of freeboard except in areas designated as coastal flood zones. • Where regulatory mapping has been updated using Atlas 14 or newer rainfall data, all new critical facilities shall have a finished floor elevation established at or above or waterproofed to the FEMA effective 1.0% ACE flood elevation as shown on effective FIRMs plus 2 feet of freeboard except in areas designated as coastal flood zones. • In areas designated as coastal flood zones, all new critical facilities shall have a finished floor elevation established at or above or waterproofed to the FEMA effective 1.0% ACE flood elevation as shown on effective FIRMS plus 2 feet of freeboard.
Encourage Use of Best Available Data	• Utilize the latest rainfall data, NOAA Atlas 14 or newer rainfall data, when conducting new analyses, designing drainage infrastructure, or developing regulations and criteria.
Compensatory Storage Requirements in the 1.0% ACE Floodplain	• Any reduction in floodplain storage or conveyance capacity within the 1.0% ACE regulatory floodplain must be offset with a hydraulically equivalent (one-to-one) volume of mitigation sufficient to offset the reduction, except in areas identified as coastal flood zones. • A full hydrologic and hydraulic analysis should be performed to demonstrate that floodplain fill mitigation provided is sufficient.
Compensatory Storage Requirements in the 0.2% ACE Floodplain	• Any reduction in floodplain storage or conveyance capacity within the 0.2% ACE regulatory floodplain must be offset with a hydraulically equivalent (one-to-one) volume of mitigation sufficient to offset the reduction, except in areas identified as coastal flood zones. • A full hydrologic and hydraulic analysis should be performed to demonstrate that floodplain fill mitigation provided is sufficient.
Development of Detailed Hydrologic and Hydraulic Analysis Criteria/Requirements	• All regulatory entities to develop hydrologic and hydraulic modeling criteria or requirements. • All regulatory entities to identify features of a proposed development that would warrant a full hydrologic and hydraulic analysis.
Incentivizing the Preservation of the Floodplain	• All regulatory entities to explore and develop systems for incentivizing the preservation of the floodplain directly within the regulatory floodplain or within 100 feet of the banks of unstudied streams.
Nature-Based Solutions	• All regulatory entities to adopt criteria for design of nature-based solutions for drainage infrastructure and stormwater quality management. TWDB's nature-based solutions guidance manual should be referenced when adopting criteria. • All regulatory entities to establish criteria that would require new construction to incorporate, or minimally consider, nature-based solutions in design of drainage infrastructure and mitigation.

Minimum Standard to Recommend	Definition
Operations & Maintenance	• All flood-related authorities who own and operate drainage infrastructure to create a maintenance plan for those assets to manage and reduce future replacement costs. • All flood-related authorities who own and operate drainage infrastructure to develop and maintain an asset management plan, including GIS dataset of assets, to support maintenance of infrastructure. Datasets to leverage infrastructure toolkit that has been prepared by the TWDB to improve the assessment of drainage infrastructure condition and functionality.
Property Acquisition Program	• All regulatory entities to develop property acquisition program for repetitive loss structures.
Flood Warning System	• All regulatory entities to develop flood warning system for public awareness.
Hazard Mitigation Plan	• All regulatory entities to develop and maintain a Hazard Mitigation Plan to help prepare for, respond to, and recover from flood events and maximize funding eligibility for disaster recovery funding.

Task 3A - Technical Memorandum Deliverables

The following table lists the final supplemental deliverables that are submitted in support of Task 3A.

Table 10: Task 3A Deliverables

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable location
29	ExFldMng	Exhibit D Table 1	Included in geodatabase digital submittal

Task 3B – Flood Mitigation Needs Analysis

In compliance with Exhibit C, Section 2.4.B - Task 4B, Item 1, Attachment F, this section summarizes locations within the San Jacinto region that have the greatest flood risk and flood risk reduction needs. Associated maps are also referenced at this end of this section. Task 3B of the Scope of Work for the development of the RFP requires RFPGs to "Identify locations within the [Region] that the RFPG considers to have the greatest flood mitigation and flood risk study needs". According to the TWDB Technical Guidelines for Regional Flood Planning (Exhibit C), gaps in flood risk information should be identified as "flood prone areas with poorly defined or inadequate flood risk information to the extent that it would prevent the RFPG from identifying potentially feasible FMSs and/or FMPs to mitigate flood risks." To fulfill this requirement and identify these areas, the San Jacinto RFPG evaluated a range of factors outlined in TWDB guidance. The guidance and factors are summarized in **Table 11**. The results of this task help guide the subsequent Task 4A effort of identifying potential FMXs by highlighting:

- The areas with the greatest gaps in flood risk knowledge that should be considered for potential FMEs.
- The areas of greatest known flood risk and flood mitigation need that should be considered for implementation of potentially feasible FMSs and FMPs.

Table 11: TWDB Guidance and Factors Considered for the Needs Analysis

Needs	Guidance	Factors to Consider
Areas with Map Gaps	1. Availability of H&H models	• No BLE or Zone A FEMA floodplain mapping • Age of maps
	2. Availability of flood risk maps	
	3. Existing modeling analysis	• Master Drainage Plans • Watershed planning studies • Hazard Mitigation Plan
Areas with highest flood risk	4. Areas most prone to flooding that threaten life and property	• Floodplain areas • Number of structures • Agricultural areas • Roadway miles • Roadway stream crossings • Critical facilities
	5. Flood management practices	• Participation in NFIP • Presence of Drainage Criteria Manual • Presence of Higher Floodplain standards • Community's CRS Score • Rating of practices • Level of enforcement • Higher standards adopted
	6. Areas with emergency need	• Repetitive loss (RL)/Severe RL • Critical facilities in 0.2% floodplain • Hurricane evacuation routes
	7. Identified and evaluated plans	• Reviewing FMP list from previous cycle
Areas with highest flood risk	8. Historic events	• Number of FEMA claims • Damage of FEMA claims • Areas where there is a flood-related disaster declaration
	9. Implemented FMPs	• Areas with construction projects compared to areas without
	10. Other Factors deemed relevant by the San Jacinto RFPG	• Social Vulnerability Index (SVI) • Nighttime population density

The following process was presented informally to members of the Technical Committee and public present on October 15, 2025. Although a quorum was not present, feedback was solicited and incorporated. The process was formally presented and approved by the San Jacinto RFPG on November 13, 2025. A total of 10 data categories with 28 subcategories were used in the geospatial assessment. A scoring system was determined for each data category based on the statistical distribution of the data, with an effort made to evenly distribute the number of

HUCs with each score within a certain category to differentiate HUCs in the identification of higher need areas. The process for analyzing flood mitigation needs was as follows:

1. Determined data categories with subcategories and scores.
2. Divided the San Jacinto region into watersheds using HUC-12 boundaries, with adjustments for coastal areas to maintain consistent averages for watershed sizes.
3. Evaluated watersheds based on the categories to create a score per category per watershed.
4. Generated two composite scores per watershed: one for knowledge gaps and one for flood risk need.

The data used to score each subcategory was primarily sourced from previous tasks, including Task 1, Task 2A, Task 2B, and Task 3A. Likewise, the results of this task will directly inform Task 4A by supporting the identification of new potential FMXs within the San Jacinto region.

Task 3B - Technical Memorandum Deliverables

The following table lists the final supplemental deliverables that are submitted in support of Task 3B.

Table 12: Task 3B Deliverables

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable location
30	Description and Summary of areas the RFPG considers having greatest flood mitigation and flood risk study needs	Exhibit C Task 4B Item F	Detailed **above**
31	Map 14	Exhibit C Task 4B Item F	Included in **Appendix 4-E** (also referenced in Task 4B deliverables)
32	Map 15	Exhibit C Task 4B Item F	Included in **Appendix 3-B**
33	Map 16	Exhibit C Task 4B Item F	Included in **Appendix 3-B**

Task 3C – Flood Mitigation and Floodplain Management Goals

In compliance with Exhibit C, Section 2.4.B - Task 4B, Item 1, Attachment G, this section details the flood mitigation and floodplain management goals adopted by the San Jacinto RFPG per §361.37. Task 3C of the Scope of Work for the development of the RFP requires the San Jacinto RFPG to "identify specific and achievable flood mitigation and floodplain management goals along with target years by which to meet those goals for the flood planning region." The San Jacinto RFPG adopted the updated first cycle goals as well as the addition of two new goals (06-20-0000000016 and 06-20-0000000017) by a simple majority of voting members present at its planning committee meeting held on September 11, 2025. Additionally, one final goal (06-20-0000000018) was adopted by the San Jacinto RFPG at the planning committee meeting held on November 13, 2025.

The overarching goal of all RFPs is to protect against the loss of life and property. Identifying SMART goals (Specific, Measurable, Attainable, Relevant, and Time-bound) will allow the San Jacinto RFPG to track progress toward reducing flood risk to life and property in the San Jacinto region. To help guide the overall approach and recommendations in the plan, every project, evaluation, and strategy to mitigate flood risk identified will be associated with adopted and defined goals.

During the August 2025 San Jacinto RFPG meeting, updates to the data requirements of goals were presented. These updates included the addition of defining Goal Themes, Status of Goals, and Precent Complete which help identify progress. During the meeting, progress towards these 1st cycle goals was also presented to the group.

Additionally, San Jacinto RFPG feedback was solicited at both the July 2025 Technical Committee meeting and the August San Jacinto RFPG meeting, where 2 new goals were proposed to be adopted for the second cycle. The goals were developed by both the San Jacinto RFPG Technical Committee and the full San Jacinto RFPG. Throughout the goal development process, the Technical Committee, San Jacinto RFPG members, and members of the public were able to provide feedback and comments during multiple public meetings as well as direct comments to the Technical Consultant. **Appendix 3-C** displays the complete list of the floodplain management goals for this cycle of the RFP.

Task 3C - Technical Memorandum Deliverables

The following table lists the final supplemental deliverables that are submitted in support of Task 3C.

Table 13: Task 3C Deliverables

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable location
34	Goals feature class	Exhibit D Table 1	Included in geodatabase digital submittal
35	Table 11: Goals	Exhibit C Task 4B Item G	Included in **Appendix 3-C**

Task 4 – Assessment and identification of flood mitigation needs

Task 4A - Identification and evaluation of potential flood management evaluations and potentially feasible flood management strategies and flood mitigation projects

Identification

In compliance with Exhibit C, Section 2.4.B - Task 4B, Item 1, Attachment H, this section documents the process used by the Technical Consultant and the San Jacinto RFPG to identify potentially feasible FMPs and FMSs. The first step in identifying potential FMEs, FMSs, and FMPs (FMXs) began with conducting research on stakeholder input and publicly available data. Most projects identified thus far are primarily sourced from publicly available data. As communication with stakeholders has begun over Task 4C, the San Jacinto RFPG has leveraged these meetings to also inform stakeholders of the Regional Flood Planning process and has begun soliciting FMXs. However, most FMXs identified thus far have stemmed from reviewing publicly available data, such as previous flood studies, drainage master plans, and Hazard Mitigation Plans (HMPs).

The list of potentially feasible FMXs will continue to be compiled based on contributions from the San Jacinto RFPG, stakeholder outreach, and from sources such as previous flood studies, drainage master plans, HMPs, bond programs, Capital Improvement Plans (CIPs), Flood Infrastructure Fund (FIF) Applications, Community Development Block Grant Mitigation Program (CDBG-MIT) Applications, Building Resilient Infrastructure and Communities (BRIC) Applications, and other references as applicable.

The Flood Mitigation Needs Analysis performed in Task 3B will be used to supplement the actions identified in the public information research. The process for evaluating the greatest flood mitigation and flood risk study needs is documented in Chapter **Task 3B – Flood Mitigation Needs Analysis**. Generally, Task 3B will guide the evaluation of potential actions by highlighting the areas with the greatest gaps in flood risk knowledge that should be considered for potential FMEs and the areas of greatest known flood risk and flood mitigation needs that should be considered for implementation of potentially feasible FMSs and FMPs.

Feasibility Assessment

After conducting an initial search, approximately 410 potential actions were identified from coordination with stakeholders and reviewing publicly available data thus far. In general, actions identified that were not related to flooding or flood risk were omitted from further consideration in the assessment. Various actions that lacked direct flood risk reduction but had some relation to flooding, storms or hazard preparedness were included but were classified as infeasible. Additionally, if the source classified an action as low priority, the action was not considered for further assessment. This ensures that the highest priority actions take funding precedence for each community.

Actions pulled for this cycle were all proposed after 2020, ensuring that all of the potential models use the latest-available rainfall data, NOAA Atlas 14. The actions proposed prior to 2020 are currently considered to be infeasible due to the additional effort required to adequately evaluate these actions using the latest data.

The secondary criterion for evaluating the feasibility of an identified FMS or FMP was whether the action had a broad or undefined scope or was lacking in sufficient detail. The level of detail required to be considered feasible was defined by the FME/FMS/FMP table requirements outlined in the *Technical Guidelines.* For example, actions are required to have a brief description and a potential sponsor entity, as well as other required data.

The third criterion for evaluating the feasibility of an identified action involved considering whether the size of the proposed action was appropriate for inclusion in the RFP. Actions with a contributing drainage area less than or equal to one square mile were considered to be infeasible at this time in accordance with the *Technical Guidelines*.

The fourth criterion for evaluating the feasibility of an identified action involved considering projects that had either not documented funding sources, or listed TWDB or any other general grant funding opportunities. This was done in order to document the projects that sponsors intend on pursuing TWDB funding for and remove the projects that communities have plans to fund with other opportunities, whether that be through local or other funding opportunities, such as FEMA.

The preliminary feasibility assessment yielded approximately 90 potentially feasible actions. The San Jacinto RFPG will continue to refine this list and the approach to defining feasibility as the RFP process progresses through coordination with regional stakeholders, continued data collection efforts and coordination with the GLO *Combined River Basin Central Region Study*, and as the Task 3B needs analysis is finalized as well as Task 4C performance of flood management evaluations. Additional funding allocated to the regional flood planning effort will also be used to evaluate FMEs in order to develop and identify FMPs. The overarching goal of the feasibility assessment, at this time, is to distill the initial list of collected actions to help focus the effort of the San Jacinto RFPG towards the inclusion and recommendation of FMEs/FMSs/FMPs in Task 5.

Classification

Once potential flood risk reduction actions are identified, the Technical Consultant will perform an initial classification to sort actions into an appropriate category. The *Scope of Work* and *Technical Guidelines* require FMSs and FMPs to be developed at a sufficient level of detail (no negative impact, quantitative reporting of estimated benefits, detailed Hydrology and Hydraulic modeling, etc.) to be included in the RFP. Generally, FMEs will be recommended for remaining areas with potential flood risk and exposure that do not have a corresponding flood risk reduction action or for FMSs and FMPs that do not meet requirements for inclusion. The classification process shown below in **Figure 9** was developed by the Technical Consultant based on the requirements in the *Scope of Work* and *Technical Guidelines.* The classification of actions are preliminary classifications and are by no

means final. As additional data is collected from regional stakeholders and through efforts made possible by the additional funding allocation, classifications may be subject to change.

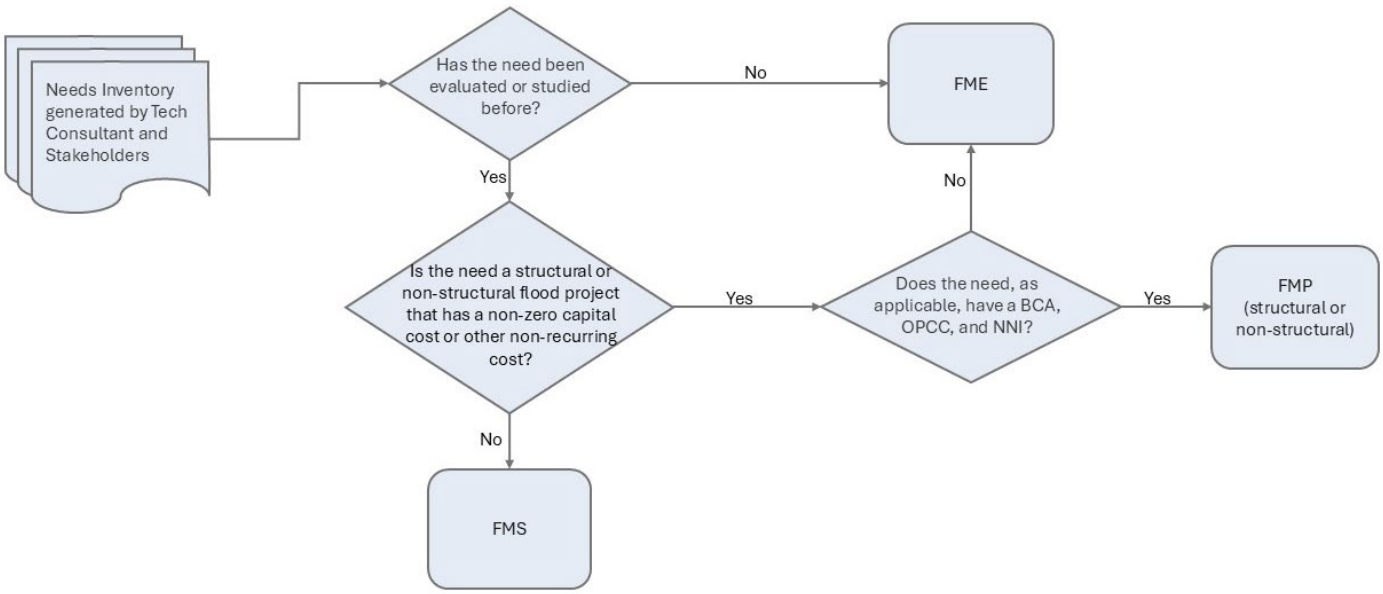

Figure 9: Flood Risk Reduction Action Classification Process

The Technical Consultant and San Jacinto RFPG will seek to identify and recommend a comprehensive list of potential flood risk reduction actions for inclusion in the RFP (not in the Technical Memorandum). All recommended actions will be required to meet the requirements outlined in the *Technical Guidelines*. However, some potential actions that meet these baseline requirements may not be appropriate for recommendation. While this is not a comprehensive list, some potential reasons a project may not be recommended in Task 5 include:

- Action does not align with the flood mitigation goal(s) adopted by the San Jacinto region and/or the guidelines and principles set forth by the state.
- Action duplicates the benefits of other included or recommended action(s).
- Action cannot obtain a Memorandum of Understanding or other form of concurrence from impacted entities.
- Sponsor has indicated they do not intend to pursue funding for the action.
- Action does not demonstrate a sensible benefit-cost ratio or other similar metrics.
- Public input regarding the action demonstrates a need for further evaluation or consensus building with regional stakeholders.
- Action does not receive a simple majority vote from a quorum of the San Jacinto RFPG members.

Additionally, there may be effort to reclassify FMX types following further coordination with sponsors to confirm project details, including available data and the sponsor's goals of the projects.

Potential FMEs and Potentially Feasible FMSs and FMPs

The process of drafting the list of potential FMEs and potentially feasible FMSs and FMPs has been described in the sections above. In compliance with Exhibit C, Section 2.4.B - Task 4B, Item 1, Attachment I, the list of potential FMEs and potentially feasible FMPs and FMSs have been provided in **Appendix 4-A**, **Appendix 4-B**, and **Appendix 4-C**, respectively.

Task 4A - Technical Memorandum Deliverables

The following table lists the final supplemental deliverables that are submitted in support of Task 4A.

Table 14: Task 4A Deliverables

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable location
36	Documented process used by RFPG to identify potentially feasible FMSs and FMPs	Exhibit C Task 4B Item H	Section **Task 4A - Identification and evaluation of potential flood management evaluations and potentially feasible flood management strategies and flood mitigation projects**
37	Streams	Exhibit D Table 1	Included in geodatabase digital submittal
38	Potential FMEs	Exhibit C Task 4B Item I	Included in **Appendix 4-A**
39	FME	Exhibit D Table 1	Included in geodatabase digital submittal
40	Potential FMPs	Exhibit C Task 4B Item I	Included in **Appendix 4-B**
41	FMP	Exhibit D Table 1	Included in geodatabase digital submittal
42	Potential FMSs	Exhibit C Task 4B Item I	Included in **Appendix 4-C**
43	FMS	Exhibit D Table 1	Included in geodatabase digital submittal

Task 4B - Preparation and submission Technical Memorandum

In compliance with Exhibit C, Section 2.4.B - Task 4B, Item 1, Attachment B, this section outlines previous and ongoing flood studies considered relevant to the development of the RFP. Several types of previous flood studies were considered to be relevant to development of the RFP including: Flood Insurance Studies and Base Level Engineering performed by FEMA, Large Watershed Studies, Hazard Mitigation Action Plans, Master Drainage Plans, and Capital Improvement Plans. The list of relevant previous flood studies can be found in Table 15**.**

Table 15: Previous Flood Studies

Flood Study	Sponsor	Study Area	Date
2017 Brazoria County Hazard Mitigation Action Plan	Brazoria County	Brazoria County	2018
Brazoria County Drainage District 5 Hazard Mitigation Plan	Brazoria County Drainage District 5	Brazoria County Drainage District No. 5	2020
Chambers County Master Drainage Plan	Chambers County	Chambers County	2014
Chambers County Hazard Mitigation Plan	Chambers County, Texas A&M AgriLife, U.S Army Corps of Engineers	Chambers County	2018
City of Arcola Fort Bend County Hazard Mitigation Plan Update	City of Arcola, City of Fresno, Fort Bend County	City of Arcola	
City of Bunker Hill Master Drainage Plan	City of Bunker Hill Village	City of Bunker Hill Village	2017
West Fork San Jacinto River Flood Protection Planning Study	City of Conroe, San Jacinto River Authority, Montgomery County	Montgomery County	2019
City of Galveston Master Drainage Plan	City of Galveston	City of Galveston	2003

Flood Study	Sponsor	Study Area	Date
Chimney Rock Master Drainage Plan	City of Houston	City of Houston	2019
Greater OST Drainage Analysis	City of Houston	City of Houston south of downtown	2021
Pleasantville Drainage Analysis	City of Houston	Pleasantville Neighborhood	2020
City of Houston Hazard Mitigation Plan Update 2018	City of Houston, Harris County Flood Control District	City of Houston	2018
Kingwood Drainage Analysis	City of Houston, Harris County Flood Control District	Kingwood Neighborhood	2020
City of Huntsville Drainage Study	City of Hunstville	City of Huntsville	2016
City of Manvel Master Drainage Plan	City of Manvel	City of Manvel	2014
City of Pearland, Texas Hazard Mitigation Plan	City of Pearland	City of Pearland	2019
City of Pearland Master Drainage Plan	City of Pearland, Brazoria County Drainage District 4	City of Pearland	2018
City of Tomball Master Drainage Plan	City of Tomball	City of Tomball	2014
Brazoria County Flood Insurance Study	FEMA	Brazoria County	2020
Chambers County Flood Insurance Study	FEMA	Chambers County	2018
Fort Bend County Flood Insurance Study	FEMA	Fort Bend County	2021
Galveston County Flood Insurance Study	FEMA	Galveston County	2019
Grimes County Flood Insurance Study	FEMA	Grimes County	2012
Harris County Flood Insurance Study	FEMA	Harris County	2019
Liberty County Flood Insurance Study	FEMA	Liberty County	2018
Montgomery County Flood Insurance Study	FEMA	Montgomery County	2014
San Jacinto County Flood Insurance Study	FEMA	San Jacinto County	2018
Walker County Flood Insurance Study	FEMA	Walker County	2011
Waller County Flood Insurance Study	FEMA	Waller County	2019
East Fork San Jacinto 1D Base Level Engineering	FEMA	East Fork San Jacinto	2018
West Fork San Jacinto 1D Base Level Engineering	FEMA	West Fork San Jacinto	2018
Fort Bend Count Hazard Mitigation Plan Update	Fort Bend County, Fort Bend CISD, Various Cities in the County	Fort Bend County	
Galveston County Multi-Jurisdiction Hazard Mitigation Plan	Galveston County	Galveston County	
Grimes County Hazard Mitigation	Grimes County	Grimes County	2018
Addicks Tributary Watershed Planning Study	Harris County Flood Control District	Addicks Watershed	
Armand Bayou Watershed Planning Project	Harris County Flood Control District	Armand Bayou Watershed	2021
Brookglen Flooding Mitigation Analysis	Harris County Flood Control District	Harris County	
Carpenters Bayou Watershed Planning Project	Harris County Flood Control District	Carpenters Bayou Watershed	2021
Cedar Bayou Flood Risk Reducing Study	Harris County Flood Control District	Cedar Bayou Watershed	

Flood Study	Sponsor	Study Area	Date
Cypress Creek Overflow Management Plan	Harris County Flood Control District	Cypress Creek Watershed	2015
Galveston Bay Watershed Planning Project	Harris County Flood Control District	Galveston Bay Watershed	2021
Goose Creek Watershed Planning Project	Harris County Flood Control District	Goose Creek Watershed	2021
Huffman Drainage Analysis	Harris County Flood Control District	Huffman Neighborhood	
Inwood Forest Stormwater Detention Basin	Harris County Flood Control District	Inwood Forest Neighborhood	
Jackson Bayou Watershed Planning Project	Harris County Flood Control District	Jackson Bayou Watershed	2021
Luce Bayou Watershed Planning Project	Harris County Flood Control District	Luce Bayou Watershed	2021
Spring Creek Watershed Planning Project	Harris County Flood Control District	Spring Creek Watershed	2021
Spring Gully Watershed Planning Project	Harris County Flood Control District	Spring Gully Watershed	2021
Study of the Feasibility of Construction Storm Water Conveyance Tunnels	Harris County Flood Control District	Harris County	2019
Vince Bayou Watershed Planning Project	Harris County Flood Control District	Vince Bayou Watershed	2021
Willow Creek Watershed Planning Project	Harris County Flood Control District	Willow Creek Watershed	2021
Saltwater Ditch Drainage Study	Harris County Flood Control District	Sims Bayou Watershed	2020
Little Cypress Creek Master Drainage Plan	Harris County Flood Control District	Little Cypress Creek Watershed	2018
San Jacinto River Regional Watershed Master Drainage Plan	Harris County Flood Control District, Montgomery County, San Jacinto River Authority, City of Houston	Lake Houston Watershed	2020
Harris County All Hazard Mitigation Plan	Harris County, Harris County Flood Control District	Harris County	
City of Bellaire Flood Hazard Mitigation Report	Harris County, Harris County Flood Control District, US Army Corps of Engineers	City of Bellaire	
Lower Clear Creek & Dickinson Bayou Flood Protection Plan	League City, Harris County Flood Control District	Lower Clear Creek Watershed	2021
Liberty County Hazard Mitigation Plan	Liberty County, Texas A&M AgriLife	Liberty County	2017
Missouri City Master Drainage Plan	Missouri City	Missouri City	2021
Montgomery County Hazard Mitigation Plan	Montgomery County	Montgomery County	
Coastal Texas Protection and Restoration Feasibility Study	USACE, Texas General Land Office	Texas Gulf Coast	2021
Walker County Hazard Mitigation Plan	Walker County	Walker County	
Upper Barker Flood Protection Planning Study	Waller County	Waller County	2014

Flood Study	Sponsor	Study Area	Date
Upper Cypress Flood Protection Planning Study	Waller County	Upper Cypress Creek Watershed	2012
Waller County Hazard Mitigation Plan	Waller County	Waller County	
Chambers County Flood Infrastructure Fund Study	Chambers County	Chambers County	2025
MAAPnext	Harris County Flood Control District	Harris County	Not Published
GLO Central Region River Basin Flood Study	GLO	Mustang/Halls Bayou, Clear Creek, Dickinson Bayou	2025
West Galveston Bay 2D Base Level Engineering	FEMA	West Galveston Bay	2021
Spring 2D Base Level Engineering	FEMA	Spring	2022
North Galveston Bay 2D Base Level Engineering	FEMA	North Galveston Bay	2022
Buffalo-San Jacinto 2D Base Level Engineering	FEMA	Buffalo-San Jacinto	
Houston Stormwater Master Plan	City of Houston	City of Houston	2024
City of Alvin 2025 Hazard Mitigation Plan Update	City of Alvin	City of Alvin	2025
Brazoria County Hazard Mitigation Plan	Brazoria County	Brazoria County	2023
Chambers County 2024 Hazard Mitigation Plan Update	Chambers County	Chambers County	2024
Fort Bend County Hazard Mitigation Action Plan	Fort Bend County	Fort Bend County	2023
Fort Bend County Levee Improvement District No. 7 Stormwater Pump Station Site Location Alternatives Analysis	Fort Bend County	Fort Bend County	2020
City of Galveston Hazard Mitigation Plan	City of Galveston	City of Galveston	2022
Grimes Hazard Mitigation Action Plan Update	Grimes County	Grimes County	2023
Harris County Multi-Hazard Mitigation Action Plan Progress	Harris County	Harris County	2024
City of Houston Hazard Mitigation Plan Update	City of Houston	City of Houston	2023
City of Kemah Master Drainage Plan	City of Kemah	City of Kemah	2020
City of Manvel Master Drainage Plan Update	City of Manvel	City of Manvel	2022
Master Drainage Plan Update	City of Pearland	City of Pearland	2019
Roman Forest Forward a Community Comprehensive Plan	City of Roman Forest	City of Roman Forest	2025
City of Shenandoah Capital Improvement Plan	City of Shenandoah	City of Shenandoah	2024
PW20-07 Street and Drainage West Preliminary Engineering Report	City of West University Place	City of West University Place	2023
SJRA Flood Management 10-Year Project Plan	SJRA	SJRA	2025
City Of Tomball Drainage Master Plan	City of Tomball	City of Tomball	2025

Flood Study	Sponsor	Study Area	Date
Walker County Hazard Mitigation Plan 2024 Update	Walker County	Walker County	2024
City of West University Place City-Wide Drainage Study	City of West University Place	City of West University Place	2021
City of West University Place West Side Drainage Modeling	City of West University Place	City of West University Place	2024
San Jacinto River Tributaries East of Lake Houston HCFCD Project ID: G103-00-00-P004 HCFCD Bond Program ID: F-111	SJRA	SJRA	2024
City Of Houston Stormwater Master Plan Executive Summary	City of Houston	City of Houston	2024
City of Baytown Hazard Mitigation Action Plan Update Draft	City of Baytown	City of Baytown	2025 Draft
DRAFT Spring Creek Watershed Flood Control Dams Conceptual Engineering Feasibility Study Flood Infrastructure Fund Category 1 Project ID 21-0016	SJRA	SJRA	2025 Draft

Flood Related Models

A geodatabase and associated maps will be provided in the January 2026 submission to identify where existing hydrologic and hydraulic (H&H) models are available to evaluate FMSs and FMPs, as well as identify where there are gaps in available data, as referenced in **Task 3B – Flood Mitigation Needs Analysis**. The San Jacinto RFPG will continue to refine the list of models as the RFP process progresses through coordination with regional stakeholders, continued data collection efforts and coordination with the GLO *Combined River Basin Central Region Study.*

In compliance with Exhibit C, Section 2.4.B - Task 4B, Item 1, Attachment E, this section lists available flood-related models considered most valuable for the RFP development. The list of all identified flood-related models can be found in **Table 16**.

Table 16: Available Flood-Related Models

Model Title	Software	Study Area	Sponsor	Date
Chambers County Master Drainage Plan	HEC-HMS/HEC-RAS	Chambers County	Chambers County	2013
City of Galveston Master Drainage Plan	XPSMM	City of Galveston	City of Galveston	2003
Chimney Rock Master Drainage Plan	XPSWMM	Houston from Westpark Tollway to Brays Bayou	City of Houston	2019
Greater OST Drainage Analysis	XPSWMM	Houston south of downtown	City of Houston	2021
Pleasantville Drainage Analysis	InfoWorks ICM	Pleasantville neighborhood in East Houston	City of Houston	2020
City of Manvel Master Drainage Plan	HEC-HMS/HEC-RAS	City of Manvel, Brazoria County	City of Manvel	2014

Model Title	Software	Study Area	Sponsor	Date
City of Pearland Master Drainage Plan	HEC-HMS/HEC-RAS	City of Pearland, Brazoria County Drainage District 4	City of Pearland and Brazoria County Drainage District 4	2018
Lake Houston Dam Spillway Improvements Project	HEC-HMS/HEC-RAS	Lake Houston	Coastal Water Authority	2022
Brazoria County Flood Insurance Study	HEC-1/HEC-2/HEC-HMS/HEC-RAS/FLOW SIM 10	Fort Bend County	FEMA	2020
Chambers County Flood Insurance Study	HEC-1/HEC-2/HEC-HMS/HEC-RAS/XP-SWMM	Chambers County	FEMA	2018
Fort Bend County Flood Insurance Study	HEC-1/HEC-2/HEC-HMS/HEC-RAS	Fort Bend County	FEMA	2021
Galveston County Flood Insurance Study	HEC-1/HEC-RAS/HEC-2/ADCIRC	Galveston County	FEMA	2019
Grimes County Flood Insurance Study	TR-20/WSP2	Grimes County	FEMA	2012
Harris County Flood Insurance Study	HEC-HMS/HEC-RAS	Harris County	FEMA	2019
Liberty County Flood Insurance Study	HEC-HMS/HEC-RAS/HEC-2/XP-SWMM/SCS WSP-2	Liberty County	FEMA	2018
Montgomery County Flood Insurance Study	HEC-1/HEC-2/HEC-HMS/HEC-RAS	Montgomery County	FEMA	2014
San Jacinto County Flood Insurance Study	HEC-RAS	San Jacinto County	FEMA	2018
Walker County Flood Insurance Study	HEC-1/HEC-RAS	Walker County	FEMA	2011
Waller County Flood Insurance Study	HEC-1/HEC-HMS/HEC-2/HEC-RAS	Waller County	FEMA	2019
Galveston County Master Drainage Study	HEC-RAS/HEC-HMS	Galveston County	Galveston County	2020
Addicks Tributary Watershed Planning Study	HEC-HMS/HEC-RAS	Addicks tributaries within Harris County	Harris County Flood Control District	2021
Armand Bayou Watershed Planning Project	HEC-HMS/HEC-RAS	Armand Bayou tributaries within Harris County	Harris County Flood Control District	2021
Brookglen Flooding Mitigation Analysis	HEC-HMS/HEC-RAS	Harris County	Harris County Flood Control District	2020
Carpenters Bayou Watershed Planning Project	HEC-HMS/HEC-RAS	Carpenters Bayou tributaries within Harris County	Harris County Flood Control District	2021
Cedar Bayou Flood Risk Reduction Study	HEC-HMS/HEC-RAS	Cedar Bayou Watershed	Harris County Flood Control District	2017

Model Title	Software	Study Area	Sponsor	Date
Cypress Creek Overflow Management Plan	HEC-HMS/HEC-RAS	Cypress Creek Watershed; Watersheds that drain to Addicks and Barker	Harris County Flood Control District	2015
Galveston Bay Watershed Planning Project	HEC-HMS/HEC-RAS	Galveston Bay tributaries within Harris County	Harris County Flood Control District	2021
Goose Creek Watershed Planning Project	HEC-HMS/HEC-RAS	Goose Creek tributaries within Harris County	Harris County Flood Control District	2021
Inwood Forest Stormwater Detention Basin	HEC-HMS/HEC-RAS	White Oak Creek, Inwood Forest subdivision	Harris County Flood Control District	2020
Jackson Bayou Watershed Planning Project	HEC-HMS/HEC-RAS	Jackson Bayou tributaries within Harris County	Harris County Flood Control District	2021
Kingwood Drainage Analysis	HEC-HMS/HEC-RAS	Kingwood Neighborhood in the City of Houston	Harris County Flood Control District	2020
Luce Bayou Watershed Planning Project	HEC-HMS/HEC-RAS	Luce Bayou tributaries within Harris County	Harris County Flood Control District	2021
Saltwater Ditch Drainage Study	HEC-HMS/HEC-RAS/XPSWMM	Saltwater ditch in Sims Bayou and surrounding storm sewer	Harris County Flood Control District	2021
Spring Creek Watershed Planning Project	HEC-HMS/HEC-RAS	Spring Creek tributaries within Harris County	Harris County Flood Control District	2021
Spring Gully Watershed Planning Project	HEC-HMS/HEC-RAS	Spring Gully tributaries within Harris County	Harris County Flood Control District	2021
Vince Bayou Watershed Planning Project	HEC-HMS/HEC-RAS	Vince Bayou tributaries within Harris County	Harris County Flood Control District	2021
Willow Creek Watershed Planning Project	HEC-HMS/HEC-RAS	Willow Creek tributaries within Harris County	Harris County Flood Control District	2021
Little Cypress Creek Master Drainage Plan	HEC-HMS/HEC-RAS	Little Cypress Creek Watershed	Harris County Flood Control District	2018
San Jacinto River Regional Watershed Master Drainage Plan	HEC-HMS/HEC-RAS	Lake Houston Watershed	Harris County Flood Control District, Montgomery County, San Jacinto River Authority, City of Houston	2020

Model Title	Software	Study Area	Sponsor	Date
Missouri City Master Drainage Plan	HEC-HMS/HEC-RAS	Missouri City	Missouri City	2020
West Fork San Jacinto River Flood Protection Planning Study	HEC-HMS/HEC-RAS	Lake Conroe and Alligator Creek Watersheds in Montgomery County	San Jacinto River Authority, City of Conroe, Montgomery County	2019
Upper Barker Flood Protection Planning Study	HEC-HMS/HEC-RAS	Waller County near I-10	Waller County	2014
Upper Cypress Flood Protection Planning Study	HEC-HMS/HEC-RAS	City of Waller	Waller County	2012
MAAPnext	HEC-HMS/HEC-RAS	Harris County	Harris County Flood Control District	Not Published Yet
GLO Central Region River Basin Flood Study	HEC-HMS/HEC-RAS	Clear Creek, Dickinson Bayou, Mustang Bayou-Halls Bayou	Texas General Land Office	2025
San Jacinto Regional Watershed Master Drainage Plan	HEC-HMS/HEC-RAS	San Jacinto Regional Watershed	San Jacinto River Authority	2020
Chambers County Flood Infrastructure Fund Study	HEC-HMS/HEC-RAS	Chambers County, Cedar Bayou, SawPit, Staples	Chambers County	2025
1D/2D BLE	HEC-RAS	San Jacinto Region	FEMA	2018

Infeasible FMSs and FMPs

The process of drafting the list of infeasible actions has been described in the **Feasibility Assessment** section. In compliance with Exhibit C, Section 2.4.B - Task 4B, Item 1, Attachment J, the list of infeasible actions has been provided in **Appendix 4-D**.

Task 4B - Technical Memorandum Deliverables

The following table lists the final supplemental deliverables that are submitted in support of Task 4B.

Table 17: Task 4B Deliverables

Checklist Item #	Deliverable Name	Requirement Reference	Deliverable location
16	Map 6	Exhibit C Task 4B Item C	Included in **Appendix 4-E**
31	Map 14	Exhibit C Task 4B Item F	Included in **Appendix 4-E**
44	Infeasible FMS/FMPs	Exhibit C Task 4B Item J	Included in **Appendix 4-D**
45	Model Coverage	Exhibit D Table 1	Included in geodatabase digital submittal
46	List of available flood-related models	Exhibit C Task 4B Item E	Included as **Table 16**
48	Ongoing Flood Studies	Exhibit C Task 4B Item B	Included as **Table 15**
49	Approval from RFPG to submit	Contract	Included in Additional Files Deliverable Folder

Appendix 2B-7: Table 5 - Future Condition Flood Risk Summary, by County

Table 5. Future condition flood risk summary (by county)

			10% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	174	16,165	12,556	27,286	472	397	78.63	174
2	Chambers	56	9	165	36	1,311	13	4	2.20	2
3	Fort Bend	98	37	24,280	22,804	70,510	343	817	4.93	188
4	Galveston	342	177	40,663	34,479	99,629	522	1,045	38.20	517
5	Grimes	205	37	217	124	67	124	14	17.11	1
6	Harris	1,742	530	180,666	145,180	1,260,087	3,212	8,435	104.10	2,193
7	Liberty	284	122	4,791	2,885	2,565	153	226	36.95	8
8	Montgomery	1,073	309	22,856	17,835	51,701	1,012	662	49.26	164
9	San Jacinto	318	87	1,139	1,024	714	152	51	12.78	0
10	Walker	395	81	668	556	367	249	44	23.25	3
11	Waller	193	62	1,853	1,346	1,685	137	88	41.95	1

			1% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	82	23,337	19,566	39,960	138	284	43.06	149
2	Chambers	56	21	1,735	758	3,934	37	47	6.37	28
3	Fort Bend	98	19	28,122	26,726	52,897	60	96	3.28	201
4	Galveston	342	82	47,321	41,841	79,791	103	522	24.14	331
5	Grimes	205	12	492	343	656	43	19	5.26	1
6	Harris	1,742	530	500,574	433,824	1,766,693	1,012	4,443	97.41	4,942
7	Liberty	284	75	5,137	3,366	6,278	60	177	34.22	22
8	Montgomery	1,073	131	46,388	38,923	125,622	411	755	22.47	369
9	San Jacinto	318	18	494	442	206	26	28	3.12	1
10	Walker	395	15	472	393	896	57	28	5.28	4
11	Waller	193	54	3,936	2,735	5,434	56	85	40.18	29

			10% + 1% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	256	39,502	32,122	67,246	610	682	121.70	323
2	Chambers	56	30	1,900	794	5,245	50	51	8.57	30
3	Fort Bend	98	56	52,402	49,530	123,407	403	913	8.22	389
4	Galveston	342	258	87,984	76,320	179,420	625	1,567	62.33	848
5	Grimes	205	49	709	467	723	167	33	22.37	2
6	Harris	1,742	1,060	681,240	579,004	3,026,780	4,224	12,878	201.51	7,135
7	Liberty	284	197	9,928	6,251	8,843	213	403	71.17	30
8	Montgomery	1,073	440	69,244	56,758	177,323	1,423	1,417	71.73	533
9	San Jacinto	318	106	1,633	1,466	920	178	79	15.90	1
10	Walker	395	96	1,140	949	1,263	306	72	28.53	7
11	Waller	193	115	5,789	4,081	7,119	193	173	82.13	30

Table 5. Future condition flood risk summary (by county)

			0.2% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	39	16,621	14,597	37,673	90	200	19.55	138
2	Chambers	56	7	1,595	862	2,722	4	19	1.96	27
3	Fort Bend	98	16	24,576	23,401	50,588	16	69	1.91	137
4	Galveston	342	36	25,972	23,292	47,152	34	258	9.17	229
5	Grimes	205	6	158	96	50	12	8	3.37	0
6	Harris	1,742	272	335,258	297,101	998,187	330	1,690	27.24	3,050
7	Liberty	284	28	2,706	1,785	3,325	18	83	12.06	29
8	Montgomery	1,073	68	27,183	23,458	45,355	160	376	11.90	175
9	San Jacinto	318	15	397	341	256	16	19	2.56	0
10	Walker	395	13	408	321	1,132	27	22	4.96	5
11	Waller	193	11	1,597	1,239	1,865	20	30	7.09	3

			10% + 1% + 0.2% Annual Chance Flood Risk							
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1	Brazoria	367	295	56,123	46,719	104,919	700	881	141.25	461
2	Chambers	56	37	3,495	1,656	7,967	54	70	10.52	57
3	Fort Bend	98	72	76,978	72,931	173,995	419	983	10.13	526
4	Galveston	342	294	113,956	99,612	226,572	659	1,825	71.50	1,077
5	Grimes	205	55	867	563	773	179	41	25.75	2
6	Harris	1,742	1,333	1,016,498	876,105	4,024,967	4,554	14,568	228.75	10,185
7	Liberty	284	225	12,634	8,036	12,168	231	486	83.23	59
8	Montgomery	1,073	508	96,427	80,216	222,678	1,583	1,793	83.63	708
9	San Jacinto	318	120	2,030	1,807	1,176	194	98	18.46	1
10	Walker	395	110	1,548	1,270	2,395	333	94	33.49	12
11	Waller	193	111	5,905	4,333	6,784	197	173	89.22	10

Table 5. Future condition flood risk summary (by county)

			Possible Flood Prone Areas								Average SVI of features in flood hazard areas	Average TX F-SVI of features in flood hazard areas
	County	Area in Flood Planning Region (sqmi)	Area in Floodplain (sqmi)	Number of Structures	Residential Structures	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)		
1	Brazoria	367	0	0	0	0	0	0.18	0.00	0	0.34	0.34
2	Chambers	56	0	0	0	0	0	0.00	0.00	0	0.28	0.25
3	Fort Bend	98	0	0	0	0	0	0.00	0.00	0	0.35	0.36
4	Galveston	342	0	0	0	0	0	0.00	0.00	0	0.41	0.56
5	Grimes	205	0	0	0	0	0	0.00	0.00	0	0.55	0.46
6	Harris	1,742	0	0	0	0	0	0.02	0.00	0	0.54	0.55
7	Liberty	284	0	0	0	0	0	0.00	0.00	0	0.71	0.34
8	Montgomery	1,073	0	0	0	0	0	0.00	0.00	0	0.33	0.29
9	San Jacinto	318	0	0	0	0	0	0.00	0.00	0	0.49	0.22
10	Walker	395	0	0	0	0	0	0.00	0.00	0	0.42	0.45
11	Waller	193	0	0	0	0	0	0.00	0.00	0	0.35	0.25