



Determination of Groundwater Withdrawal and Land Subsidence within Fort Bend County for the 2025 Calendar Year

by
Ashley Greuter, P.G.



MICHAEL J. TURCO

GENERAL MANAGER

The Fort Bend Subsidence District (District) has been monitoring water use, groundwater levels, and subsidence in Fort Bend and adjacent counties since 1989. Subsidence, the lowering of land-surface elevation, is caused by the depressurization of our aquifers due to the widespread use of groundwater. The mission of the District is to cease ongoing subsidence and prevent the occurrence of future subsidence. As part of this effort, it is important for the District to provide the public with consistent, high-quality information on groundwater use, aquifer water levels, and subsidence.

The information contained within this report is the compilation of the largest multi-agency effort in the State of Texas that leverages the resources of both the Fort Bend and Harris-Galveston Subsidence Districts with the City of Houston, the Brazoria County Groundwater Conservation District, and the United States Geological Survey. This year, local, county, regional, and federal partnerships will publish the 36th volume of this important data compilation. This report is intended to exceed the requirements of section [8834.104](#) of the District's enabling legislation.

On behalf of the Board of Directors of the Fort Bend Subsidence District, I would like to thank you for your interest in the District. We look forward to continuing to provide timely, accurate, high-quality data and research to inform the District's Plan as well as water planning throughout the region.

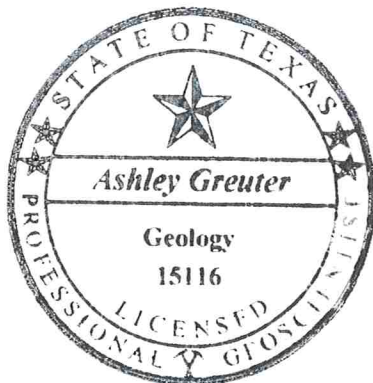
Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Turco". The signature is fluid and cursive, written over a light gray rectangular background.

Michael J. Turco
General Manager

Professional Geoscientist Seal

The contents of this report (including figures and tables) document the work of the following Licensed Professional Geoscientist:

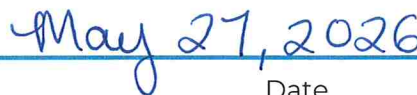


Ashley Greuter, P.G. No. 15116

Ms. Greuter was responsible for working on all aspects of the subsidence section of the report including preparation of report figures, tables, and written text. The groundwater level data collection and interpretations were performed by the USGS and are included in the report for informational purposes. The subsidence data were processed and analyzed by Dr. Guoquan Wang at the University of Houston.



Signature



Date

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Acknowledgments

The compilation of the data and analysis in this report would not be possible without the concerted efforts of many contributors to the 2025 Annual Groundwater Report. The author would like to thank the staff of the Fort Bend Subsidence District for their diligent work in managing, collecting, and reviewing water use information and raw GPS data in the field; Dr. Guoquan Wang (University of Houston) for processing and archival of all raw GPS data; and the permittees and owners that submitted detailed water use information for over 1,600 pumpage reports contained in this report.

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Public hearing notice was posted on the website:	March 3, 2026
Hearing presentation posted on the website:	April 29, 2026
Public hearing held:	April 30, 2026
Hearing Examiner:	Judge Helen Truscott
Hearing period of record held open for public comment until:	May 8, 2026
Approved by the Board of Directors:	May 27, 2026

Conversions Factors and Datum

	Multiply	By	To obtain
	inch (in)	2.54	centimeter (cm)
	foot (ft)	0.305	meter (m)
	mile (mi)	1.609	kilometer (km)
	square mile (mi ²)	2.590	square kilometer (km ²)
	gallon (gal)	3.785	liter (L)
	million gallons per day (MGD)	3785.41	cubic meter (m ³)
	million gallons per day (MGD)	3.0688	acre-feet (acre-ft)

List of Acronyms

BCGCD	Brazoria County Groundwater Conservation District
CORS	Continuously Operating Reference Station
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GRP	Groundwater Reduction Plan
HGSD	Harris-Galveston Subsidence District
InSAR	Interferometric Synthetic Aperture Radar
MGD	Million Gallons per Day
NGS	National Geodetic Survey
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
PAM	Periodically Measured Station
POR	Period of Record
TxDOT	Texas Department of Transportation
UH	University of Houston
USGS	United States Geological Survey

Introduction

The greater Houston region, including Fort Bend County, has relied on groundwater as a primary water source since the early 1900s. During and following the economic boom of the 1940s, rapid population expansion and increased water use resulted in potentiometric water level declines in the Chicot and Evangeline (undifferentiated) aquifer of 250 to 300 feet (76 to 91 meters), respectively, from 1943 to 1977 (Gabrysch, 1982). The potentiometric surface is the level to which water rises in a well. In a confined aquifer, this surface is above the top of the aquifer unit; whereas, in an unconfined aquifer, it is the same as the water table.

The reliance on groundwater and subsequent subsidence caused by regional development led to the creation of the Fort Bend Subsidence District in 1989. The District's mission is to provide groundwater regulations in Fort Bend County to prevent future subsidence.

Purpose and Scope of Report

This document comprises the 36th Annual Groundwater Report for the District. Pursuant to District Resolution No. 26-502 passed on February 25, 2026, the Board of Directors held the Annual Groundwater Hearing beginning at 2:00 p.m. on April 30, 2026. The Public Hearing was held in person in Richmond, TX. The public hearing fulfills the requirements of Section 8834.104, Texas Special Districts Local Laws Code, which requires that each year the Board of Directors hold a public hearing to take testimony on the effects of groundwater withdrawals on land subsidence within the District for the preceding year.

The 2025 Annual Groundwater Report Public Hearing was attended by 19 people, including members of the United States Geological Survey (USGS) staff, along with members of the District's staff, District Board Directors, representatives from cities and regional water authorities, as well as the public. Those giving testimony were Ashley Greuter, Director of Research and Water Conservation of the District, and Jason Ramage, Hydrologist, Gulf Coast Programs Office, Texas-Oklahoma Water Science Center, USGS. Mrs. Greuter showed 14 exhibits, including topics on precipitation, groundwater withdrawal, alternative water usage, and subsidence data. Mr. Ramage presented nine exhibits, including topics of water-level altitudes, water-level changes, and aquifer compaction.

The record was left open until May 8, 2026. Ms. Truscott asked for additional testimony and comments at the end of the Public Hearing. Public testimony and comments are provided in **Appendix C**.

This report provides an overview of the information presented during the Public Hearing, including climatic conditions, water use, groundwater levels, and subsidence within the District from January 1, 2025, through December 31, 2025. **Appendix A** of this report includes the exhibits presented at the public hearing held on April 30, 2026.

Description of Study Area

The following section provides an overview of the study area, including the hydrogeology and the District’s regulatory planning areas.

Hydrogeology

The Gulf Coast Aquifer exists as an accretionary wedge of unconsolidated sediments composed primarily of sand, silt, and clay. Indicative of a transgressive-regressive shoreline, the interbedded sands and clays are not horizontally or vertically continuous at larger than a local scale. From youngest to oldest, these hydrogeologic units include the Chicot, Evangeline, Burkeville Confining Unit, Jasper, and Catahoula Sandstone aquifers (**Figure 1**).

Geologic timescale		Prior annual water-level reports		This report		
System	Series	Geologic units ²	Hydrogeologic units ²	Geologic units ¹	Hydrogeologic units ¹	
Quaternary	Holocene	Alluvium	Chicot aquifer	Alluvial, terrace, and dune deposits	Chicot - Evangeline aquifer (undifferentiated)	
	Pleistocene	Beaumont Formation		Beaumont Formation		
		Lissie Formation		Montgomery Formation		Lissie Formation
				Bentley Formation		Bentley Formation
Willis Sand	Willis Sand					
Tertiary	Pliocene	Goliad Sand	Evangeline aquifer	Goliad Sand (upper part)	Chicot - Evangeline aquifer (undifferentiated)	
				Goliad Sand (lower part)		
	Miocene	Fleming Formation Lagarto Clay	Burkeville confining unit	Lagarto Clay (upper part)	Burkeville confining unit	
				Lagarto Clay (middle part)		
				Lagarto Clay (lower part)		
	Oligocene	Oakville Sandstone	Jasper aquifer	Oakville Sandstone	Jasper aquifer	
Catahoula Confining System				Catahoula Formation	Upper Catahoula Formation	Catahoula Confining System
	³ Catahoula Sandstone ⁴ Frio Formation	⁴ Upper part of Catahoula Sandstone Anahuac Formation	Frio Formation			

¹Modified from Young and Draper (2020) and Young and others (2010; 2012)

²Modified from Baker (1979)

³Located in the outcrop

⁴Located in the subcrop

Figure 1. Updated stratigraphic column of the Gulf Coast Aquifer System in Fort Bend and adjacent counties, Texas (Ramage, et al., 2022).

The two primary water-bearing units most widely utilized within the District are the Chicot and Evangeline (undifferentiated) aquifers. The Chicot and the Evangeline aquifers comprise the shallow system of the Gulf Coast Aquifer. They are hydrologically connected, allowing groundwater to flow between the two units. The Chicot and Evangeline aquifers have been combined into an undifferentiated shallow aquifer system called the Chicot/Evangeline (undifferentiated) aquifer in this report (**Figure 1**).

The Jasper aquifer is the deepest primary water-bearing unit, isolated by the Burkeville confining unit, and is mostly undeveloped in Fort Bend County. Currently, one well is completed in the Jasper aquifer in the District and has only been in use on a limited basis. In the region, the Catahoula Sandstone, the deepest water-bearing unit in the Gulf Coast Aquifer system, and the Burkeville confining unit are not utilized as a groundwater supply within the District.

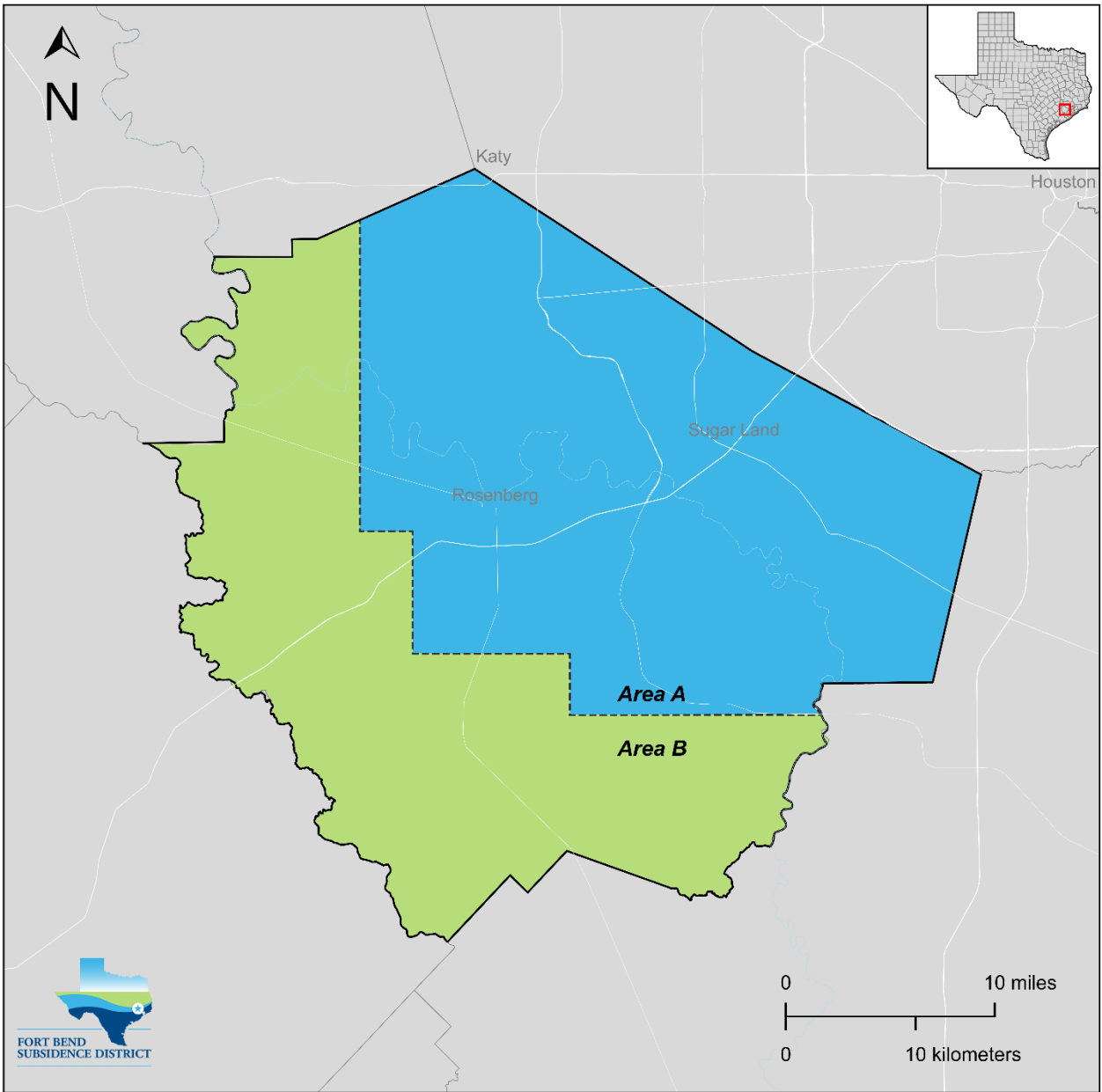
Most of the subsidence in the District is attributable to clay compaction in shallow water-bearing units associated with long-term water use. Because of the significant amount of clay material in the primary water-bearing units of the aquifer, the risk of compaction is high in areas where the developed portions of the aquifers are within about 2,000 feet (610 meters) of land surface (Yu, et al., 2014) under high stress from groundwater development, and have experienced sustained declines in water levels relative to pre-development levels.

Regulatory Planning

The District's Plan was developed to reduce groundwater withdrawal to a level that ceases ongoing subsidence and prevents future subsidence within the District. The District uses a novel approach to regulating groundwater withdrawal to prevent subsidence by allowing a portion of a groundwater user's total water demand to be met by groundwater. Total water demand is defined as the total amount of water used by an entity from all sources, including groundwater, treated surface water, reclaimed water, etc. The District adopted the most recent [Plan](#) on December 10, 2025, and was subsequently amended on February 25, 2026.

The District has historically used regulatory areas to guide groundwater conversion deadlines and regulations. The 2025 Plan has subdivided Fort Bend County into two regulatory areas (**Figure 2**). Regulatory Area A covers the northeastern portion of the county, including all major cities in Fort Bend County, such as Sugar Land, Katy, Missouri City, Rosenberg, and Richmond. Permittees in this area may source no more than 40% of their total water demand from groundwater unless operating under a District-approved groundwater reduction plan (GRP). Since 2013, permittees operating under an approved GRP can source no more than 70% of their total water demand from groundwater, and by 2030, this percentage will be reduced to no more than 40%.

Regulatory Area B comprises the western portion of Fort Bend County, including cities like Simonton, Needville, Beasley, Pleak, and Orchard. Permittees located in Regulatory Area B may source no more than 40% of their total water demand from groundwater beginning in 2035 unless operating under an approved GRP. For permittees operating under an approved GRP, groundwater withdrawals may not exceed 70% of total water demand in 2050.



EXPLANATION	
Regulatory Area A	Regulatory Area B

Figure 2. Location of the Fort Bend Subsidence District’s Regulatory Areas.

Surficial Hydrology

The District's Plan requires permittees to use alternative water supplies to reduce their reliance on groundwater. The primary alternative water supplies used in our region are treated surface water sourced from three river basins: the Brazos River Basin, the San Jacinto River Basin, and the Trinity River Basin (**Figure 3**).

The Brazos River Basin is the second-largest river basin in Texas, covering over 45,500 square miles (73,225 square kilometers) according to the Texas Water Development Board (TWDB). The headwaters of the Brazos River are located near the Texas-New Mexico border, and the river travels over 800 miles (1,287 kilometers) to discharge into the Gulf of Mexico near Freeport, Texas. The Brazos River Authority manages the eleven reservoirs within this basin, eight of which are owned by the Brazos River Authority and three are owned by the U. S. Army Corps of Engineers (Region H Water Planning Group, 2016).

The San Jacinto River Basin is the smallest river basin in Texas, covering almost 4,000 square miles (6,437 kilometers) (Texas Water Development Board, 2024). Lake Conroe and Lake Houston are the two water supply reservoirs located within the San Jacinto River Basin. Lake Conroe is jointly owned by the City of Houston and the San Jacinto River Authority. The San Jacinto River Authority operates Lake Conroe and provides water supply to Harris and Montgomery Counties. Lake Houston is owned by the City of Houston and operated by the Coastal Water Authority.

The Trinity River Basin covers almost 18,000 square miles (28,968 square kilometers), with headwaters of the basin located in north central Texas (Texas Water Development Board, 2024). The Trinity River flows through the Dallas-Fort Worth metroplex, traversing 550 miles (885 kilometers) before discharging into Trinity Bay near Anahuac, Texas. There are numerous reservoirs within this river basin, including Lake Livingston, which is operated by the Trinity River Authority.

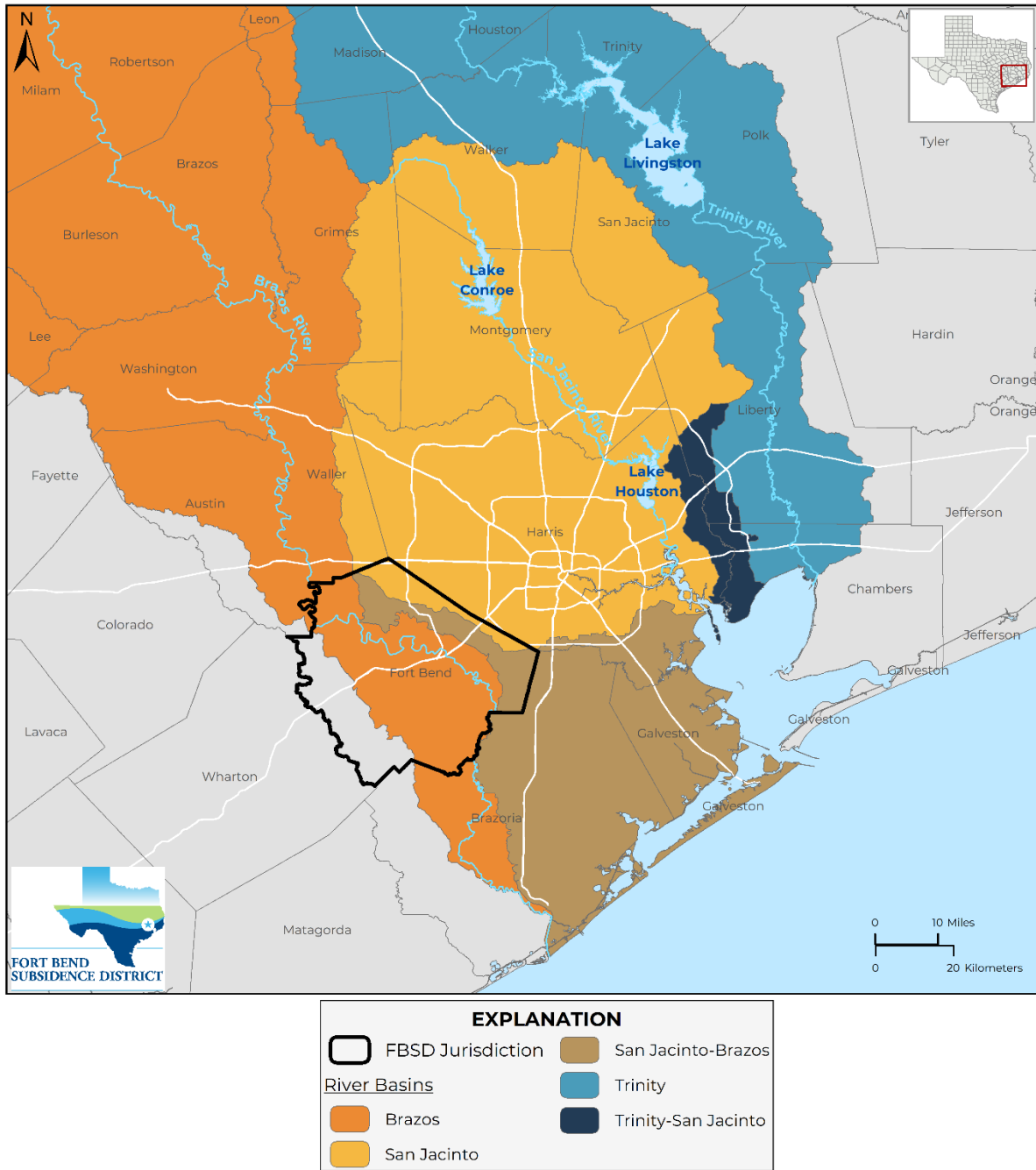


Figure 3: River basins that supply alternative water to Fort Bend and surrounding counties.

Alternative Source Waters

In the 1950s, the City of Houston, along with other entities in the region, began developing several water-supply reservoirs to provide water for the rapidly growing region within the Brazos, San Jacinto, and Trinity River Basins. The water treatment plants serving these surface water sources are operated by the City of Houston, the City of Sugar Land, the City of Missouri City, the City of Richmond, the Gulf Coast Water Authority, the Brazosport Water Authority, and others.

Two projects are currently underway to develop the necessary alternative water supply and distribution infrastructure to facilitate the District's future conversion requirements:

- Northeast Water Purification Plant Expansion provides 400 million gallons per day (MGD) of treated surface water conveyed by the Luce Bayou Interbasin Transfer Project. The expansion of the existing plant was completed in 2024 (Greater Houston Water, 2025).
- The Surface Water Supply Project will convey treated water from the expanded Northeast Water Purification Plant into western Harris County and northeastern Fort Bend County through the collaboration between the West Harris County Regional Water Authority and the North Fort Bend Water Authority (Surface Water Supply Project, 2025).
- The North Fort Bend Water Authority (NFBWA) will construct surface water lines to deliver up to 19.5 MGD to be completed by 2030 (NFBWA, 2026).

In addition to the two projects described above, the City of Houston and the NFBWA are each designing and constructing their own distribution systems to convey the treated surface water to their customers. These interrelated regional projects are planned to be completed by 2030 to provide additional surface water to Fort Bend County. **Figure 4** shows the extent of these projects. Additionally, the Luce Bayou Interbasin Transfer is operational as of 2024 and pumps untreated surface water from the Trinity River through a series of canals and water pipelines along Luce Bayou to Lake Houston.

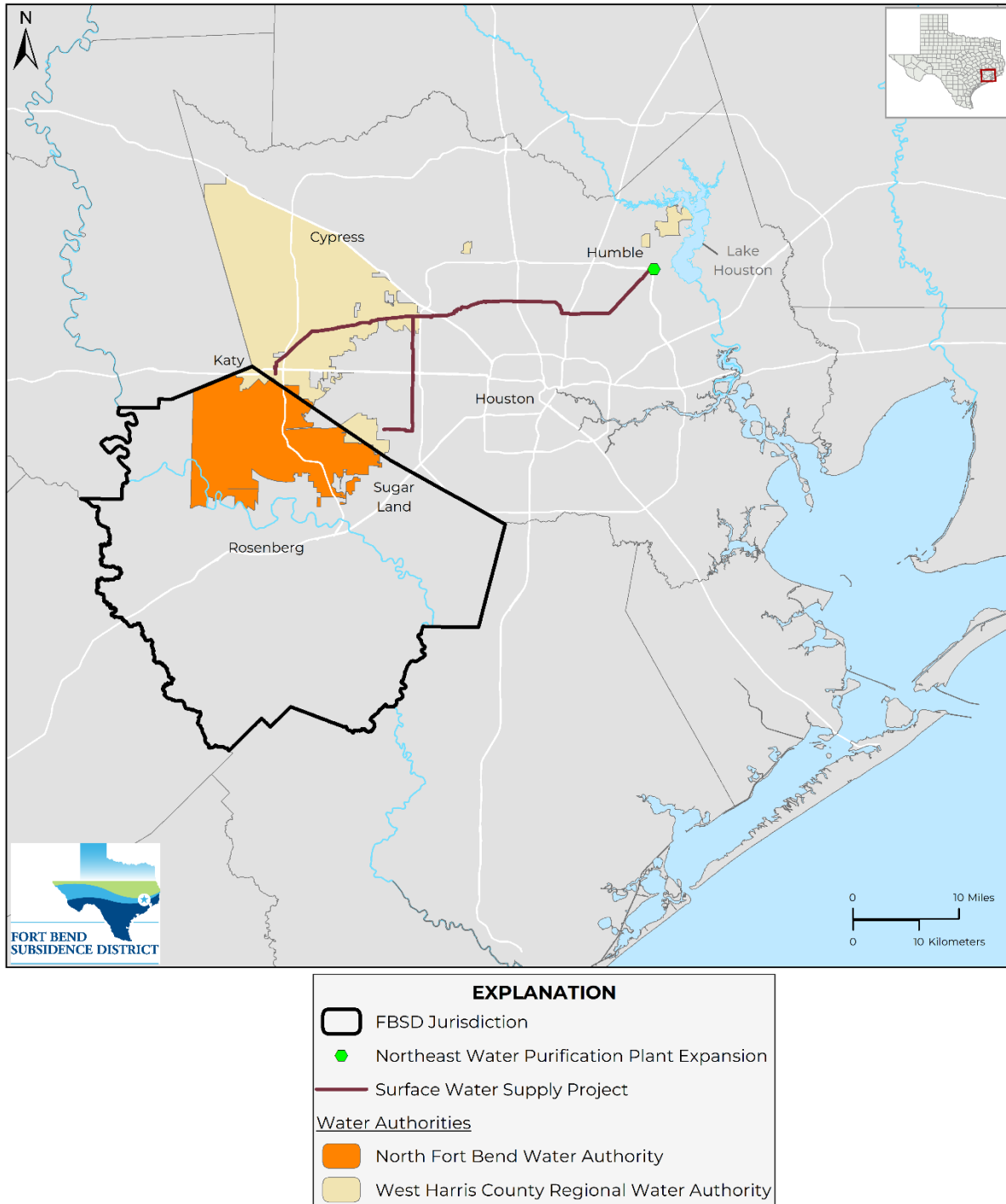


Figure 4: Alternative water supply and infrastructure distribution projects in Fort Bend County and the greater Houston region.

2025 Climate Summary

The District reviews local climatic data provided by the National Oceanic and Atmospheric Administration (NOAA) – National Weather Service (NWS) climate stations within and around Fort Bend County (**Figure 5**). Variation in local precipitation, specifically deviations from historical normal, is important to the District because it directly affects the magnitude of total water demand for users in the region and the availability of alternative water supplies, such as surface water. During periods of above-normal precipitation in the region, total water demand typically remains near or below normal due to reduced outdoor irrigation and agricultural needs. Conversely, during periods of below-normal precipitation, the region's total water demand will typically increase as water use rises to supplement reduced rainfall.

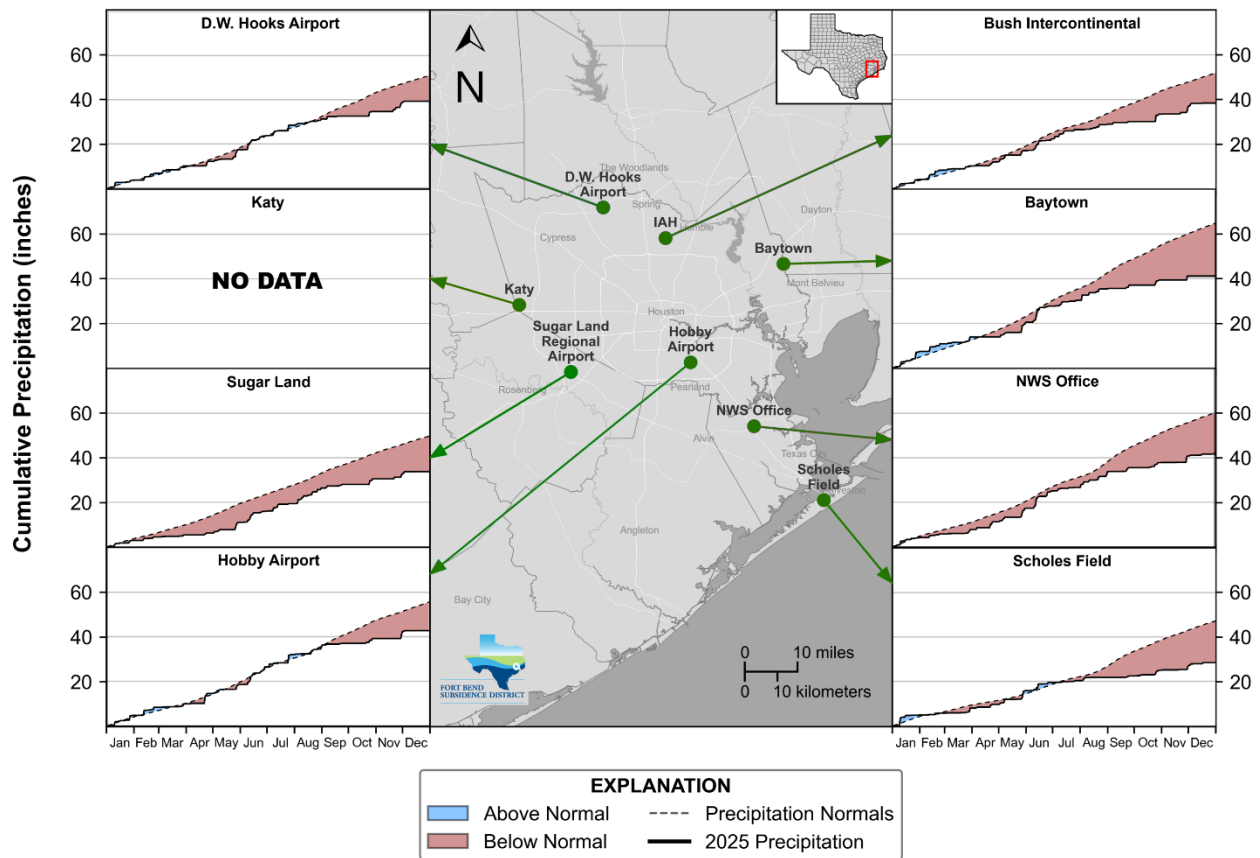


Figure 5. Location of National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) climate stations in southeast Texas analyzed for the 2025 calendar year. Graphs contain individual station cumulative precipitation, in inches, as the solid black line compared to the 1991-2020 Precipitation Normals shown in the dashed line.

Precipitation for the 2025 calendar year at the Sugar Land Regional Airport started around normal in January, then dropped below normal for the rest of the year. The Katy NWS climate station, which was included in previous Annual Groundwater Reports, did not record data for the first eight months of 2025, making the calculation of the cumulative precipitation departure from normal invalid. Therefore, the Katy station is shown as “No Data” in **Figure 5**.

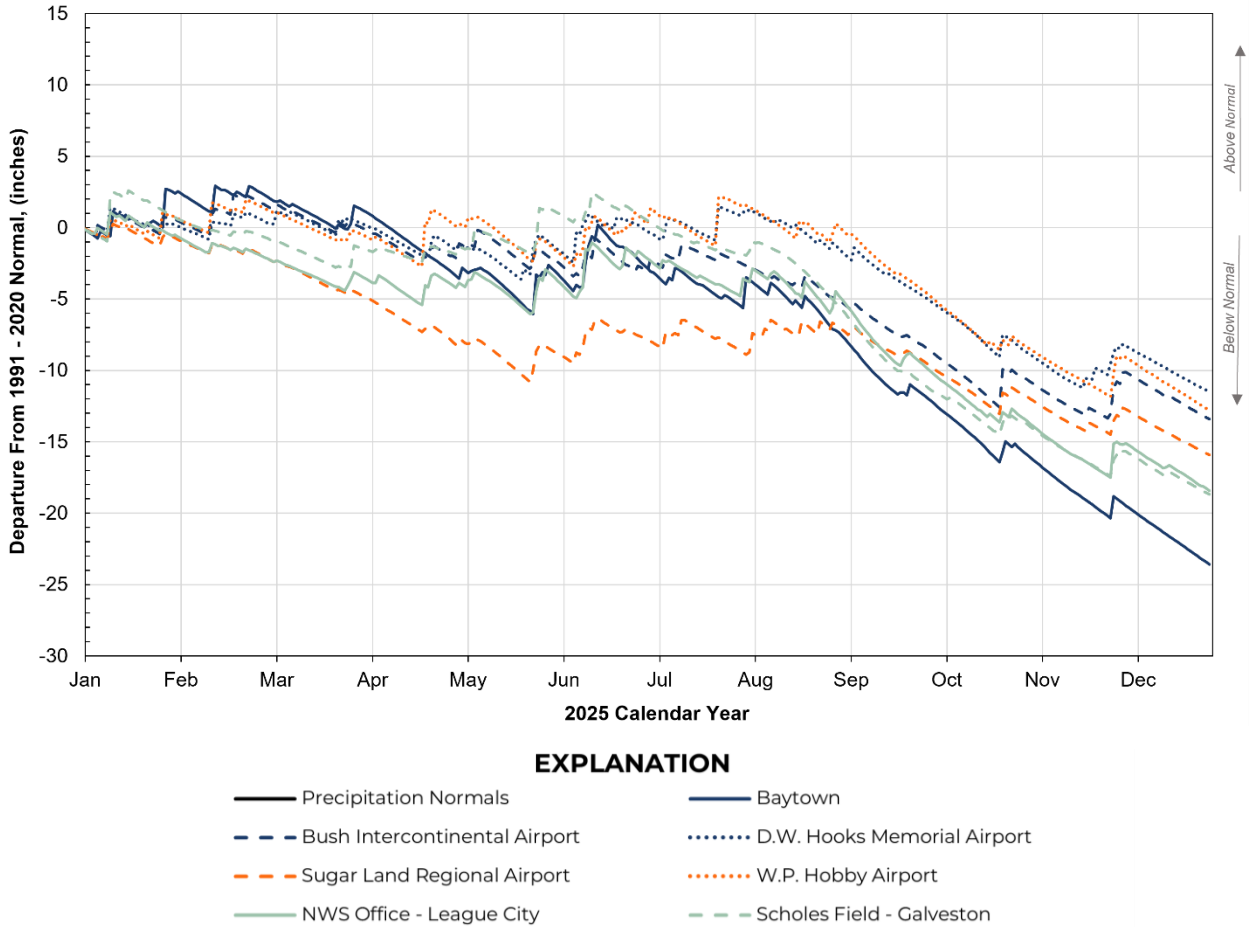


Figure 6. Cumulative 2025 precipitation, in inches, departure from 1991-2020 normal precipitation at NOAA-NWS Climate Stations within and around the District. Source: <https://www.ncei.noaa.gov/access>.

The 2025 calendar year began with normal rainfall for climate stations in Fort Bend County. The year progressed with climate stations recording below-average rainfall, which increased with intermittent summer and fall events.

The climate station at Sugar Land Regional Airport ended the year with total precipitation of almost 34 inches (86 centimeters), which is about 16 inches (41 centimeters) below normal (**Figure 6**).

The greatest departure from normal was measured at the Baytown climate station, with almost 2 feet (0.6 meters) below normal (**Figure 6**).

2025 Water Use

The District collects groundwater and alternative water use annually from permittees and other water providers in the area. This information provides an understanding of how much groundwater is being used within the District, how permittees are using groundwater, and a perspective on the conversion from groundwater to surface water for the regulatory areas.

For the 2025 reporting year, there were a total of 1,880 permitted wells in the District. As of April 2026, a total of 1,632 of these permittees had submitted their annual water use data for the District to compile and use in this report. The groundwater withdrawals associated with missing reports were estimated from permitted allocations at 3.2 MGD, which is almost 3% of the reported withdrawals.

In addition to providing water use data for 2025, this report includes updated groundwater withdrawal totals for the previously reported year, 2024. These changes are made during the normal permitting and reporting process as part of the exchange between the District and its permittees. The changes include updating estimated amounts to actual amounts, correcting data-entry errors, and including annual reports that were not submitted by the deadline. There was an increase of 0.09 MGD, which is less than a 1% increase from the previously reported 2024 value.

The following sections provide a summary of the information presented at the Public Hearing held on April 30, 2026. The exhibits used to provide testimony during the hearing are included in **Appendix A – Exhibits Presented at Public Hearing held on April 30, 2026**.

Total Groundwater Use

The four primary water uses in the District are public supply, industrial, agricultural, and other (e.g., lake/pond makeup). The total amount of groundwater withdrawal for 2025 is 88.5 MGD, a 9% increase over the previous year (**Table 1**), with public supply accounting for 81% of total use.

Groundwater withdrawals had increased slightly since the District's inception in 1989 (**Figure 7**) with a 30% increase from 62.6 MGD in 1990 to 88.5 MGD in 2025. Patterns in groundwater use have shifted over time, resulting in a roughly 33% reduction in groundwater use for agricultural needs compared with the 1990s, as well as a 105% increase in groundwater use for public supply.

Table 1. Summary of Reported Groundwater Use (in MGD) by Regulatory Area.

Groundwater Use Category	Area A			Area B			Total		
	2024	2025	1-Year Change	2024	2025	1-Year Change	2024	2025	1-Year Change
Public	63.36	65.97	4%	4.59	5.59	22%	67.95	71.56	5%
Industrial	4.13	4.14	0%	0.09	0.08	-4%	4.22	4.22	0%
Agricultural	0.11	0.10	-10%	4.91	6.60	35%	5.02	6.70	34%
Other	3.51	4.16	19%	0.68	1.89	178%	4.19	6.05	45%
Total	71.11	74.38	5%	10.26	14.17	38%	81.37	88.54	9%

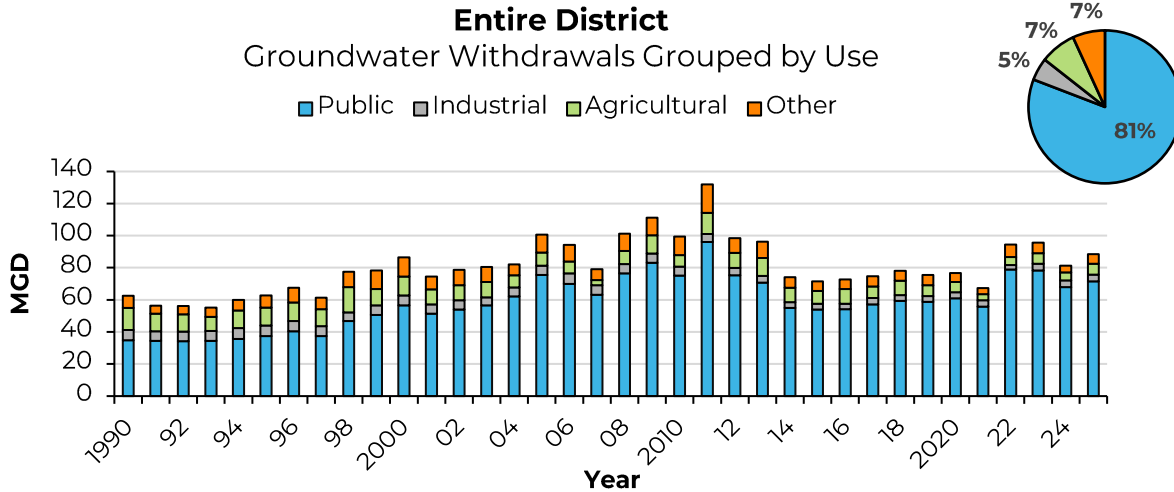


Figure 7: Groundwater withdrawals, in million gallons per day, by water use category from 1990 to 2025. The total groundwater used in the District was 88.5 MGD in 2025, with 81% used for public supply.

The District is divided into two regulatory areas that define how much groundwater may be utilized as a percentage of the total water demand (**Figure 2**). The total annual groundwater withdrawals are categorized by regulatory area in **Figure 8**. This graph shows the impact of the District’s Plan, which requires a gradual conversion from groundwater to surface water, resulting in reduced groundwater withdrawals in Regulatory Area A.

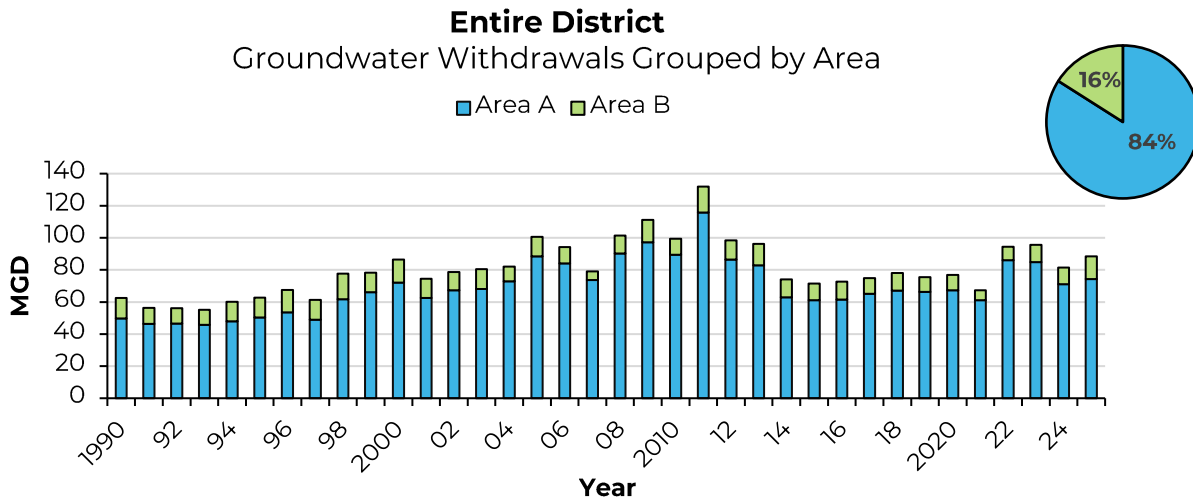


Figure 8: Groundwater withdrawals, in million gallons per day, by regulatory area from 1990 to 2025. In 2025, a total of 74.4 MGD of groundwater was used in Regulatory Area A and 14.2 MGD used in Regulatory Area B. As shown in the pie chart, the majority of groundwater is being used within Regulatory Area A.

Regulatory Area A

Regulatory Area A covers the northeastern portion of Fort Bend County. Cities and entities include Arcola, Cinco Ranch, Fulshear, Houston, Katy, Meadows Place, Missouri City, Pearland, Pleak, Richmond, Rosenberg, Sienna Plantation, Sugar Land, and Thompsons. This area began converting to alternative water sources in 2011, when the North Fort Bend Water Authority started taking water from the City of Houston.

In 2025, total groundwater withdrawal in Regulatory Area A was 74.4 MGD, a 5% increase from the previous year (**Figure 9**). The majority of groundwater used in Regulatory Area A is for public supply, comprising over 89% of the total. The amount of groundwater used for agriculture decreased by 10% to 0.1 MGD compared to the previous year, and is 96% lower than in 1990, as land use in Regulatory Area A has shifted from farmland to city centers over this period.

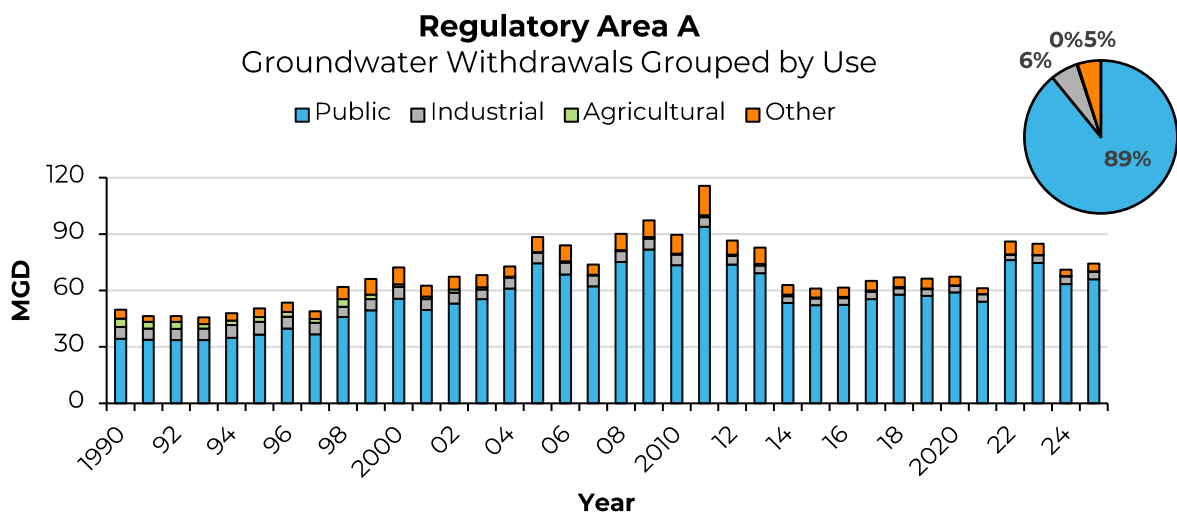


Figure 9: Groundwater withdrawals for Regulatory Area A, in million gallons per day, by water use category from 1990 to 2025. A total of 74.4 MGD of groundwater was used in Regulatory Area A in 2025, with 89% of withdrawals for public supply.

Regulatory Area B

Regulatory Area B covers the western and southern areas of the District, including Beasley, Fairchilds, Kendleton, Needville, Orchard, Simonton, and Weston Lakes.

Total groundwater withdrawal in Regulatory Area B is 14.2 MGD in 2025, which marks a 38% increase from the previous year (**Figure 10**). Public supply groundwater use increased by 22% from the previous year to 5.6 MGD. Agricultural use was reported at 6.6 MGD, a 35% increase from the previous year, while other use, such as lake/pond makeup classified as other, increased by 178% from 0.7 MGD in 2024 to 1.9 MGD in 2025. **Figure 10.**

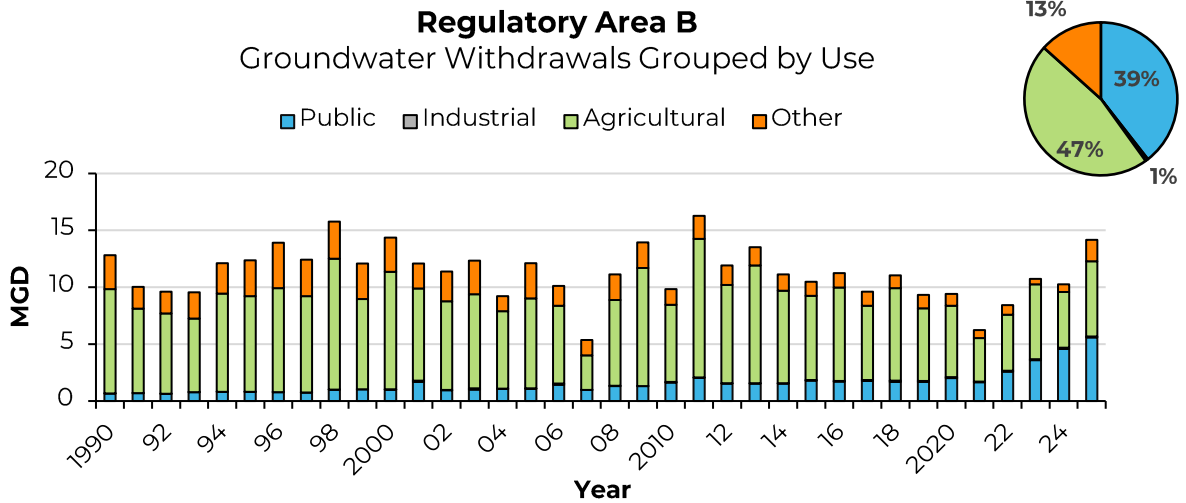


Figure 10: Groundwater withdrawals for Regulatory Area B, in million gallons per day, by water use category from 1990 to 2025. A total of 14.2 MGD of groundwater was used in Regulatory Area B in 2025, with 47% used for agricultural purposes as displayed in the pie chart.

Alternative Water Supply and Total Water Use

The District’s Plan requires permittees to convert to alternative water supplies in order to reduce their reliance on groundwater. The primary alternative water supply used in our region is surface water sourced from three river basins: the Brazos River Basin, the San Jacinto River Basin, and the Trinity River Basin (**Figure 3**). Alternative water use from these basins is provided in **Figure 11Table 2**. The San Jacinto and Trinity River totals have been lumped together because exact numbers for these two basins are not available.

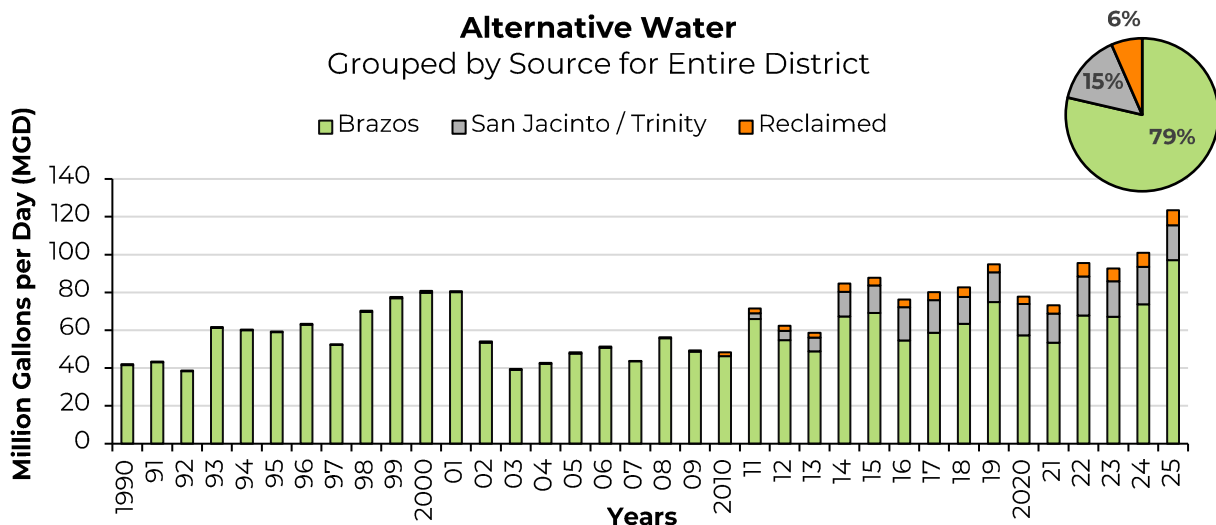


Figure 11: Total alternative water use categorized by source, in million gallons per day, from 1990 to 2025. A total of 123.5 MGD of alternative water was used in Fort Bend County in 2025 with 79% sourced from the Brazos River Basin.

The Brazos River, as it has been since 1990, is still the single largest source of alternative water used within the District, supplying almost 80% of alternative water for Fort Bend County (**Figure 11**). Compared to the previous year, use of alternative water sourced from the Brazos River increased by 22% (**Table 2**). Reclaimed water is also used as an alternative water supply and has increased from about 0.4 MGD in 1990 to 8 MGD in 2025, marking the largest increase in alternative water supply by over 1,700%. In 2025, the total alternative water was reported to be 123.5 MGD, which is 22% increase from the previous year (**Table 2**).

Table 2. Summary of One-Year Change in Reported Alternative Water Use, Groundwater Use, and Total Water Demand in Million Gallons per Day (MGD)

Source		2024	2025	1-Year Change
Alternative Supplies	Brazos River Basin	73.77	97.13	32%
	San Jacinto/Trinity River Basin	19.68	18.31	-7%
	Reuse	7.43	8.09	9%
	Alternative Supply Subtotal	100.88	123.54	22%
Groundwater		81.37	88.54	9%
Total Water Demand		182.25	212.08	16%

Use of alternative water sourced from the Brazos River Basin has more than doubled from 41.6 MGD in 1990 to 97.1 MGD in 2025 (**Figure 12**). This is the first year (i.e., 2025) in which groundwater is not the largest source of water, as the use of alternative water from the Brazos River Basin surpassed groundwater. Groundwater is the second largest source of water supply within the District, comprising 42% of the total water demand in 2025 (**Figure 12**). The total water demand for the District was determined to be 212.1 MGD in 2025, about 16% higher than the previous year.

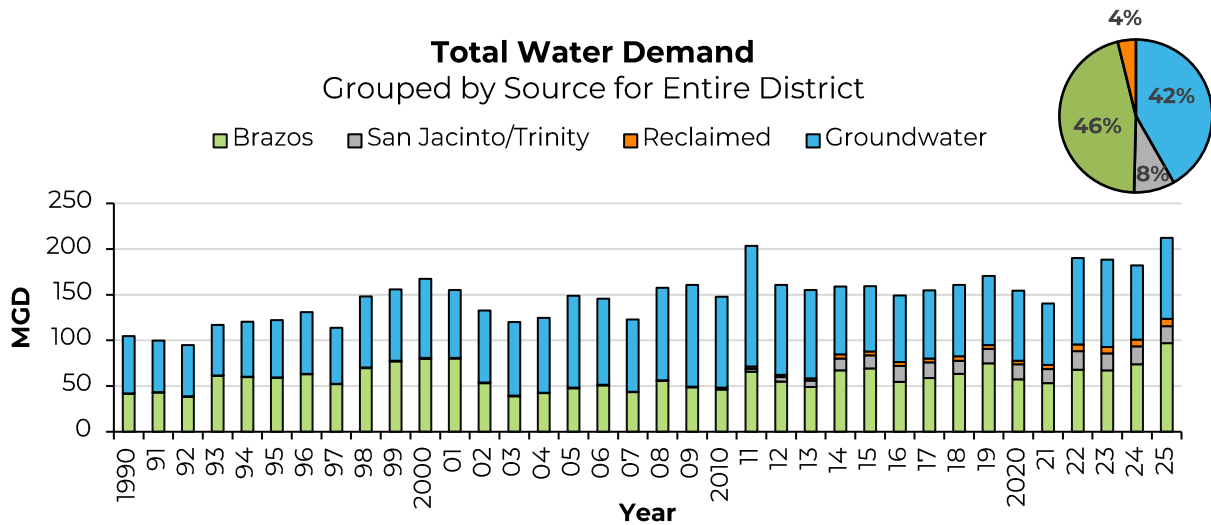


Figure 12: Total water use for the District, in million gallons per day, by source from 1990 to 2025. The total water use for the District in 2025 was 212.1 MGD with 46% sourced from the Brazos River Basin as represented in the pie chart.

2025 Groundwater Level Summary

Since 1990, the USGS has measured water levels in hundreds of wells throughout the region in cooperation with the Fort Bend Subsidence District through a joint funding agreement, along with additional cities, HGSD, and groundwater conservation districts, to monitor and provide reports on groundwater level data for the primary aquifers. Aquifer water level is the best measure of the pressure in the aquifer, and measuring this level helps to understand the impact of groundwater use on the aquifer system.

The potentiometric surface is an imaginary surface based on measured water-level data from tightly cased wells, essentially the level to which water would rise in a groundwater well drilled into the aquifer. The 2025 potentiometric surface (i.e., the interpolated surface created from water-level data) from the Chicot and Evangeline (undifferentiated) aquifer shows that the areas of primary stress on the aquifer occur in northeastern Fort Bend County (**Figure 13**). Regulatory Area A has shown a large decline in the water level over 200 feet below datum (i.e., NAVD 1988) in the Chicot and Evangeline (undifferentiated) aquifer in the northeastern portion of the District, including Fulshear, Katy, and Cinco Ranch, as well as some areas in eastern Fort Bend County, such as Sugar Land and Stafford (**Figure 13**).

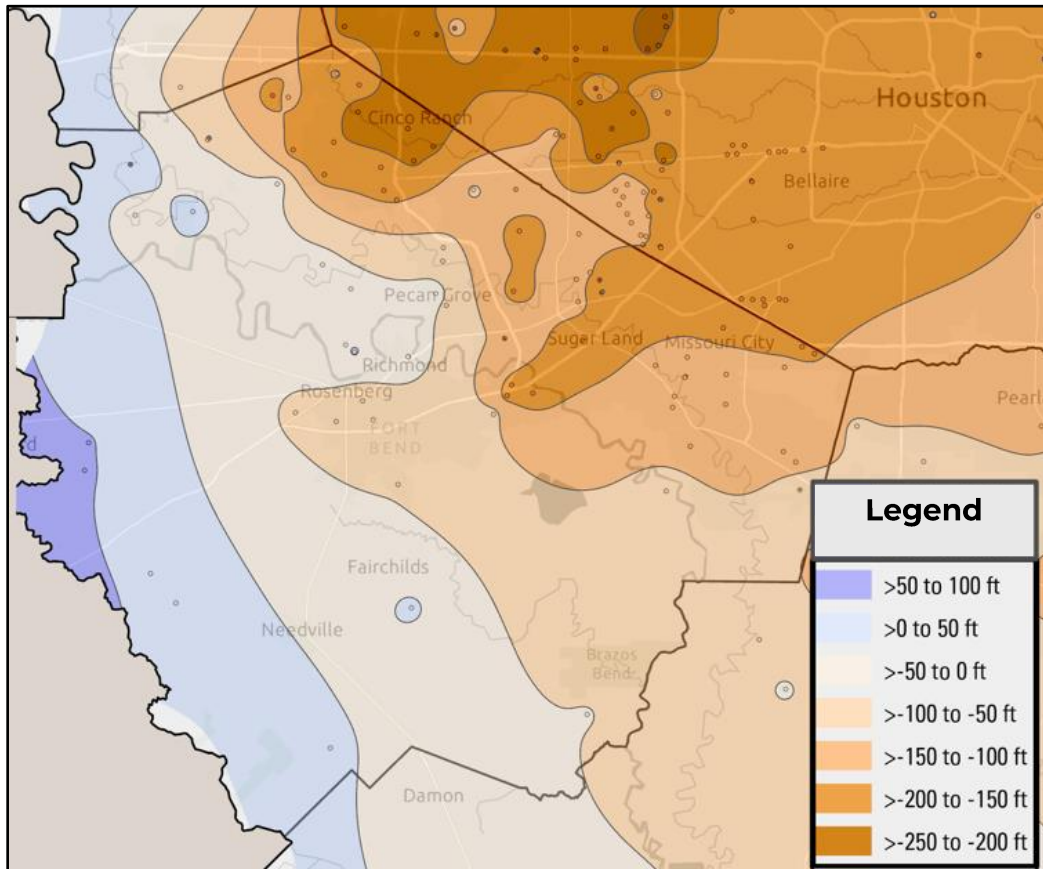


Figure 13: Altitude of the potentiometric surface determined from water-levels measured in 2026 within wells screened in the Chicot and Evangeline (undifferentiated) aquifer, Fort Bend County, Texas, and referenced from North American Vertical Datum (NAVD) 1988 (Source: USGS provisional data – preliminary and subject to change).

The change in water levels from 1990 to 2026, as shown in **Figure 14**, include areas of rise within Regulatory Area A, such as Missouri City, with almost 80 feet, and parts of Sugar Land, with almost 40 feet, in the Chicot and Evangeline (undifferentiated) aquifer, as these areas began utilizing alternative water in compliance with the District's Plan. The change in water levels from 1990 to 2026 also shows water-level declines over 200 feet in the northeastern portion of Fort Bend County in areas like Cinco Ranch, as well as almost 160 feet decline in Fulshear, and close to 120 feet decline in parts of Richmond (**Figure 14**).

The information in this section is a summary of the provisional data presented by USGS staff at the Public Hearing held on April 30, 2026. The exhibits are used to provide testimony during the hearing and are included in **Appendix A – Exhibits Presented at Public Hearing held on April 30, 2026**. A USGS Scientific Investigation Report will be released later this year, documenting groundwater level elevations and long-term changes in the aquifers.

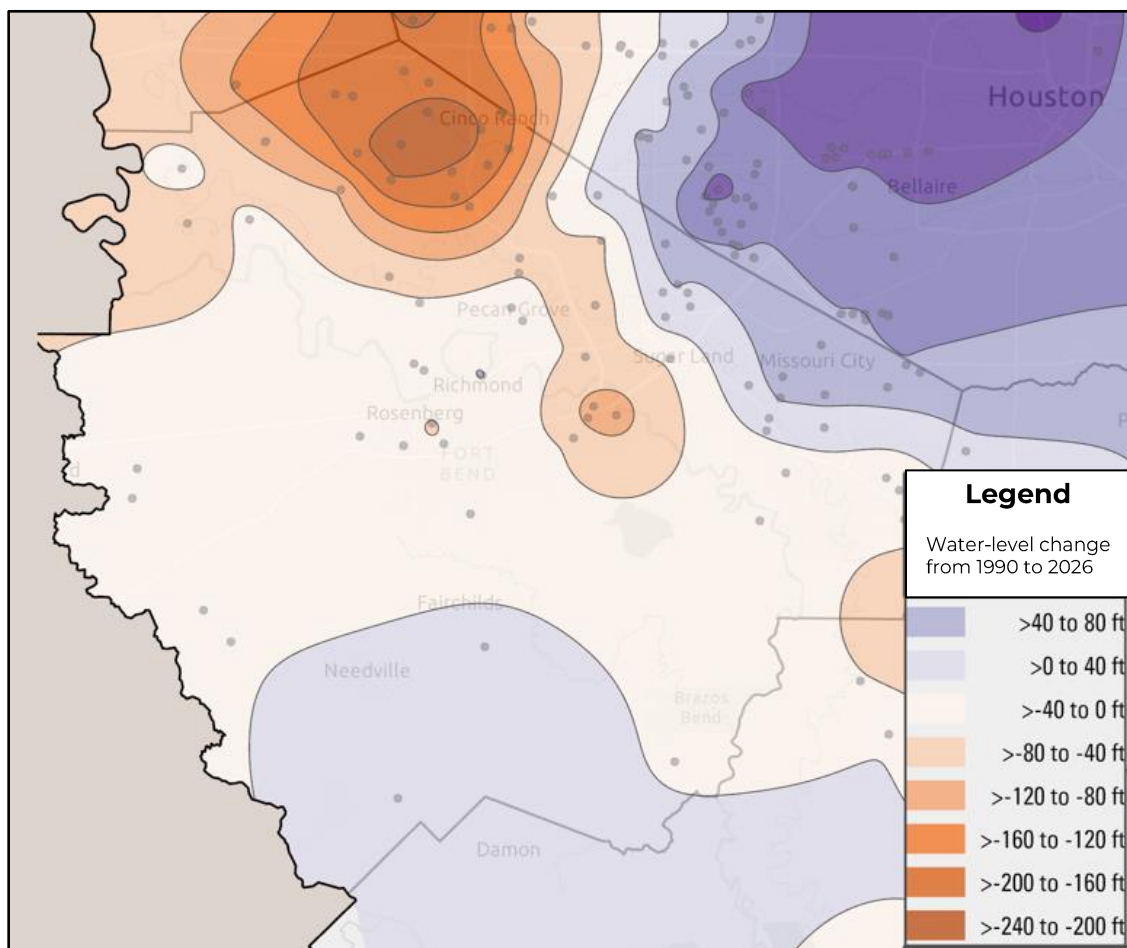


Figure 14: Water-level change at wells screened in the Chicot and Evangeline (undifferentiated) aquifer, Fort Bend County, Texas, from 1990 to 2026 (Source: USGS provisional data – preliminary and subject to change).

2025 Subsidence Trend Analysis

Subsidence is the lowering of the land surface elevation. In the greater Fort Bend County area, subsidence occurs due to compaction of subsurface clays from groundwater withdrawal. As the aquifer's water level declines, fine-grained sediments, such as silt and clay, depressurize and compact. This compaction lowers overlying stratigraphic units and is observed at the surface as subsidence.

Global positioning system (GPS) stations have been installed across southeast Texas to track changes in the land surface since the mid-1990s. This GPS network is a collaboration among FBSD, HGSD, UH, TxDOT, BCGCD, and other agencies. The GPS network had 41 active stations located inside and within a five-mile radius of Fort Bend County that collected data in 2025 and were analyzed for this report (**Figure 15**).

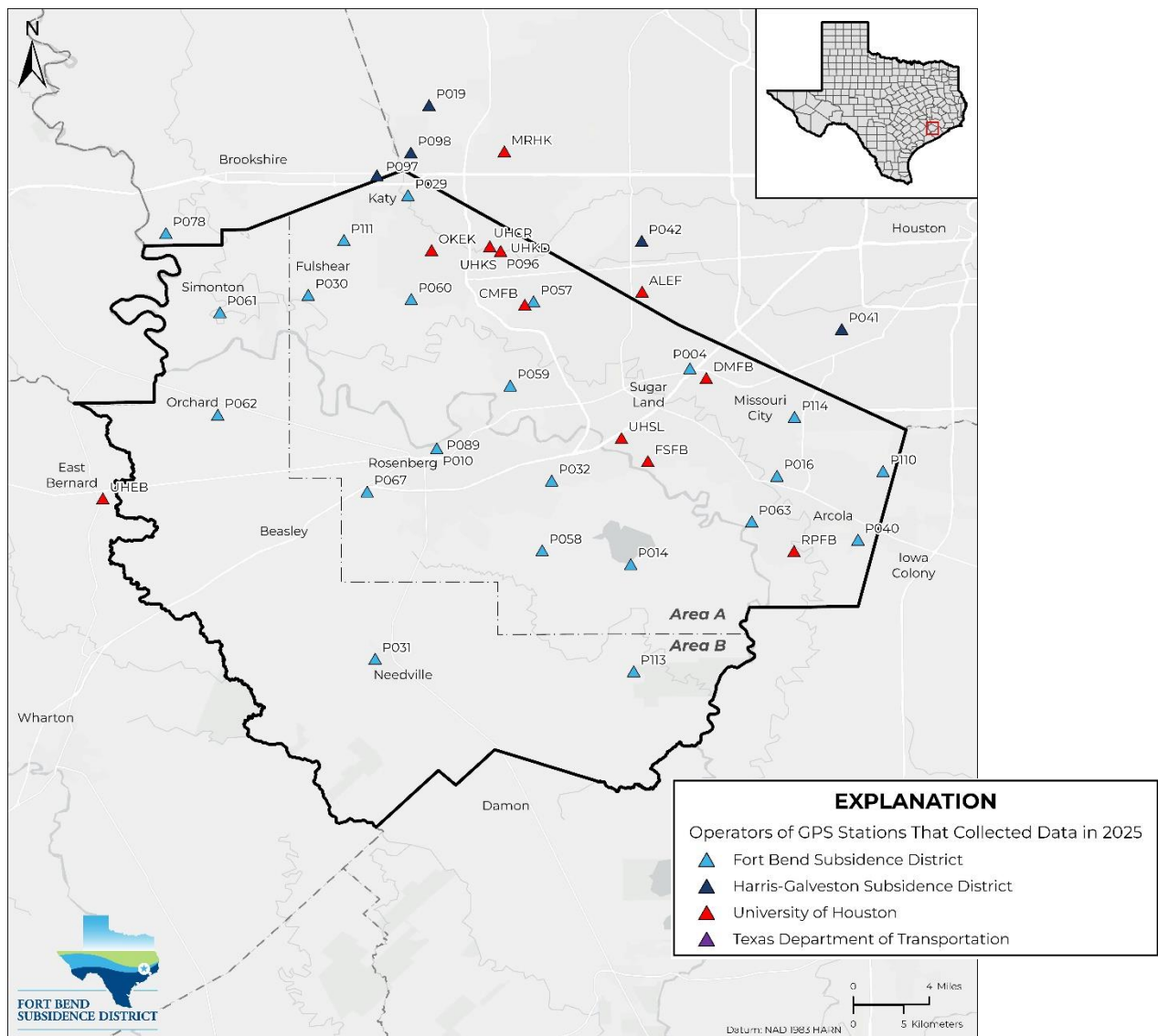


Figure 15. Subsidence monitoring network designated by operator for GPS stations that were actively collecting data in 2025 within Fort Bend County and within a five-mile radius of Fort Bend County.

The District collects raw GPS data from the active stations in the network and collaborates with Dr. Guoquan Wang at UH for processing. Aspects of GPS processing include upload to archives, data conversions, transformations to a stable reference frame designated as GOM25 to remove natural movements such as plate tectonics, and identification and removal of outliers (Wang, et al., 2022). The District uses these GPS data to evaluate long-term subsidence trends at each location over the entire period of record and to determine the average annual subsidence at each location over the most recent 5-year period.

This analysis allows the District to determine the impact of the District's Plan on the occurrence and magnitude of subsidence, as well as to identify the impacts of management strategies (or lack thereof) in adjacent counties on subsidence within the District. Additional information on the average annual subsidence rate and period-of-record data for each GPS station is provided in **Appendix B – Period of Record Data**. Active GPS stations were also located in adjacent counties that are not included in this report, as the focus is on Fort Bend County. Additionally, some GPS stations in Brazoria County were not actively monitoring in 2025 and are therefore excluded from the analysis.

Average Annual Subsidence Rate

The average annual subsidence rate is a useful measure of recent changes in land-surface deformation at each GPS station. The subsidence rate presented in this report is determined using linear regression (i.e., the statistically determined best-fit straight line through a scatter plot of data points) of the last five years of data for GPS stations with at least three years of monitoring that were actively monitoring in 2025. **Figure 16** depicts the average annual subsidence rate from 2021 through 2025 from 32 GPS stations located in Fort Bend County, as well as nine GPS stations located within a five-mile radius around Fort Bend County.

Regulatory Area A has the highest subsidence rates (greater than two centimeters per year) in the northeastern area of Fort Bend County around Katy, Fulshear, and Cinco Ranch. The southern areas of Regulatory Area A and all of Regulatory Area B show little to no subsidence, with subsidence rates below 0.5 centimeters per year.

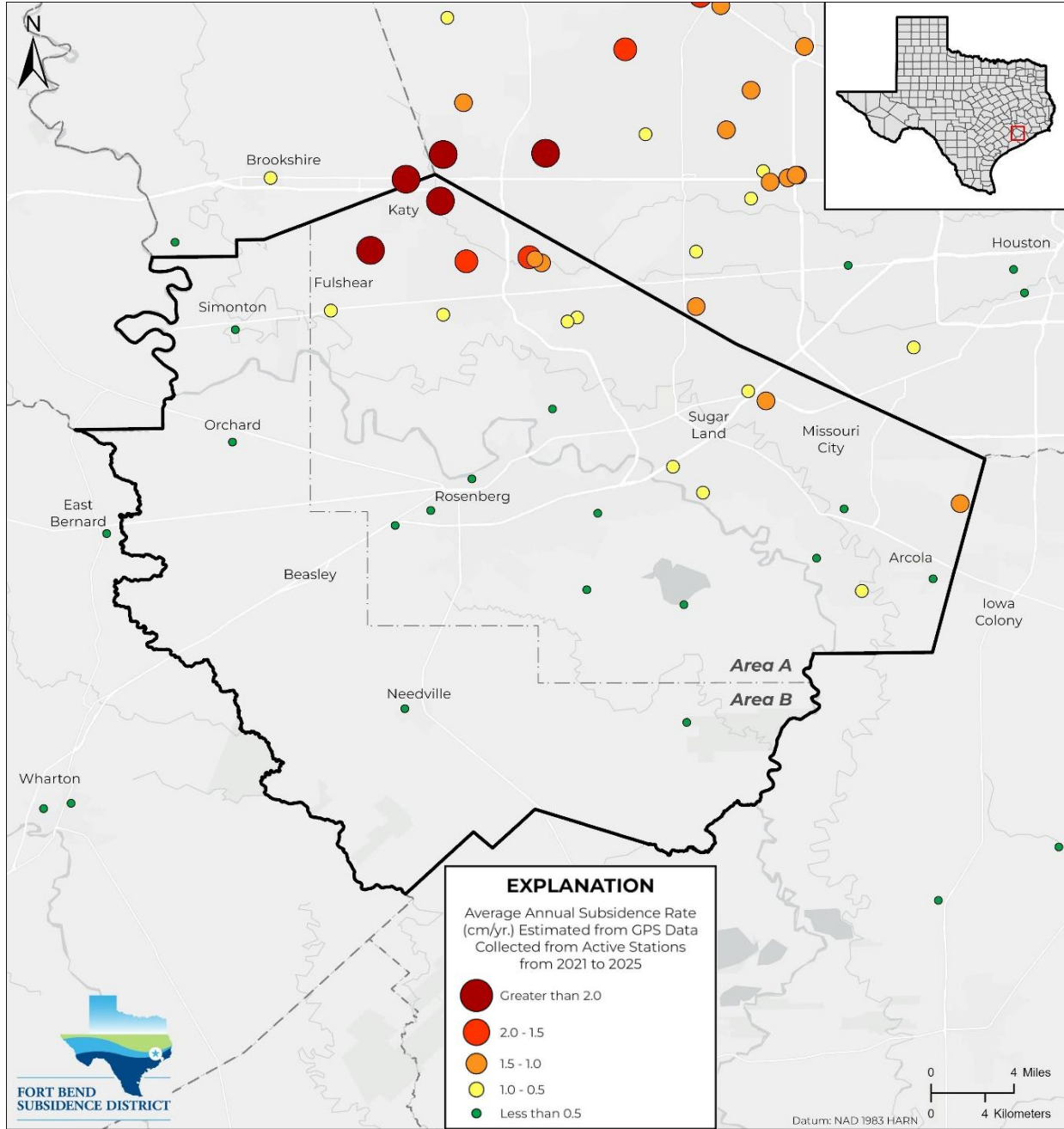


Figure 16: Average annual subsidence rate, measured in centimeters per year, from 2021 to 2025 referenced to GOM25 and estimated from three or more years of GPS data collected from active GPS stations in Fort Bend and surrounding counties, Texas.

Period of Record Data

The period of record includes GPS measurements of ellipsoidal height collected over the lifespan of each GPS station. It is used to track the full history of land-surface deformation and is represented as a vertical displacement time series scatter plot. The vertical displacement is determined by the change in ellipsoidal height, which is the distance from a point on the Earth's surface to the reference ellipsoid. The reference ellipsoid is a mathematical representation of the Earth's surface as a smoothed ellipsoid. Although the ellipsoid height is not the same as elevation, or the orthometric height, research has shown that linear trends of vertical displacement at GPS stations over the same time interval were the same for both ellipsoidal and orthometric heights (Wang & Soler, 2014). Therefore, ellipsoidal heights are used to estimate changes in the land surface. The period-of-record plots provide historical context for understanding local-to-regional subsidence trends and are provided in **Appendix B**.

Regulatory Area A contains GPS station P111, located near Fulshear, that has measured a cumulative subsidence of 15.3 cm (6 inches) since monitoring began in 2021. **Figure 17** includes the POR plot and five-year rate for P111, showing an annual subsidence rate of 3.32 cm (1.3 inches), the highest rate calculated in the monitoring network.

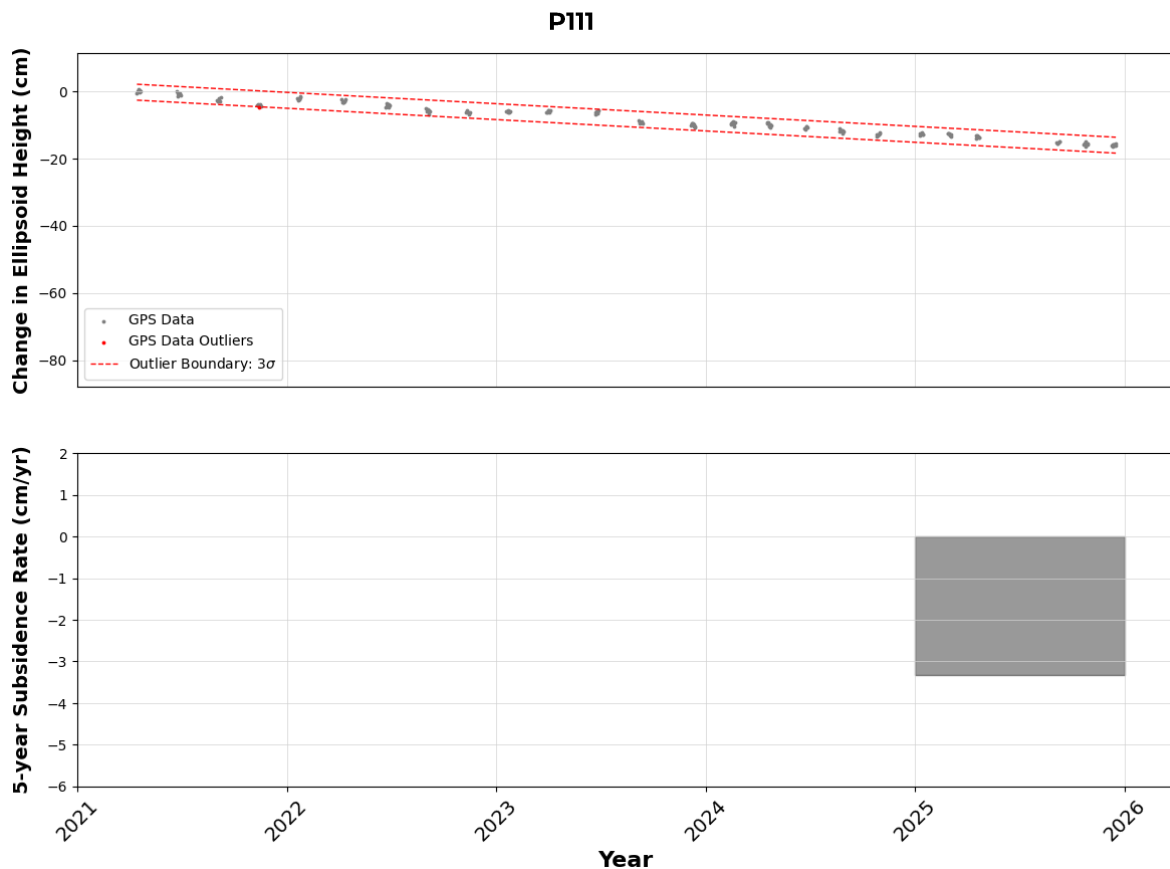


Figure 17: Period of record plot for P111 located near Fulshear, Texas, 2021 to 2025. This station measured 15.3 cm of subsidence over 5 years and the 2021-2025 annual subsidence rate is 3.32 cm per year. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by FBSD when calculating subsidence rates and are shown for informational purposes only.

Interferometric Synthetic Aperture Radar

Since 2019, the District has sponsored research by Southern Methodist University that uses a novel remote-sensing methodology to evaluate land-surface changes in Fort Bend and adjacent counties. This project uses multi-temporal interferometric synthetic aperture radar (InSAR) to estimate changes in the land surface at a regional scale and complements the District's subsidence monitoring network by providing data between the GPS stations. Synthetic aperture radar (SAR) scenes are created by transmitting electromagnetic radiation (i.e., radio waves) from the sensor to the ground, which then reflects to the sensor. The sensor circles the earth in a precise orbit and passes. It takes about 12 days for the sensor to revisit an area previously captured. Experts use information gleaned from these different passes to detect small changes in the distances between them. This processed pair of SAR images is called an interferogram and shows whether the land is moving up or down (Helz, 2005). This process was applied to the greater Fort Bend region and, using state-of-the-art processing techniques, achieved millimeter-level accuracy.

This report marks the first year that InSAR-derived subsidence rates were analyzed and presented at the Public Hearing. The District worked with technical experts from SkyGeo, Inc. to estimate the annual subsidence rate averaged from 2021 through 2025 across Fort Bend and surrounding counties. Approximately 164 SAR scenes were analyzed from January 5, 2021, through December 21, 2025, from the descending track of Sentinel-1, and processed using the persistent scatterers technique to create a vertical-velocity interferogram.

Results from InSAR-derived subsidence rates are shown in **Figure 18** and these rates closely resemble rates calculated from the GPS stations. For example, green colors indicate very minor subsidence to uplift, and warmer colors, ranging from yellow to red, indicate higher subsidence. As presented in **Figure 18**, southern portions of Regulatory Area A near Richmond/Rosenberg, as well as Regulatory Area B, show little to no subsidence. Conversely, the northeastern portion of Regulatory Area A contains subsidence rates greater than two centimeters per year near Katy and Cinco Ranch, and this continues into western Harris County and southeastern Waller County. Some isolated areas of higher subsidence rates were also detected in northwestern Brazoria County near Iowa Colony and Manvel.

The combination of remote sensing technologies, such as InSAR and GPS, enables the District to monitor land-surface changes with greater accuracy. The agreement among these datasets enhances the ability to track subsidence from regional to local scales.

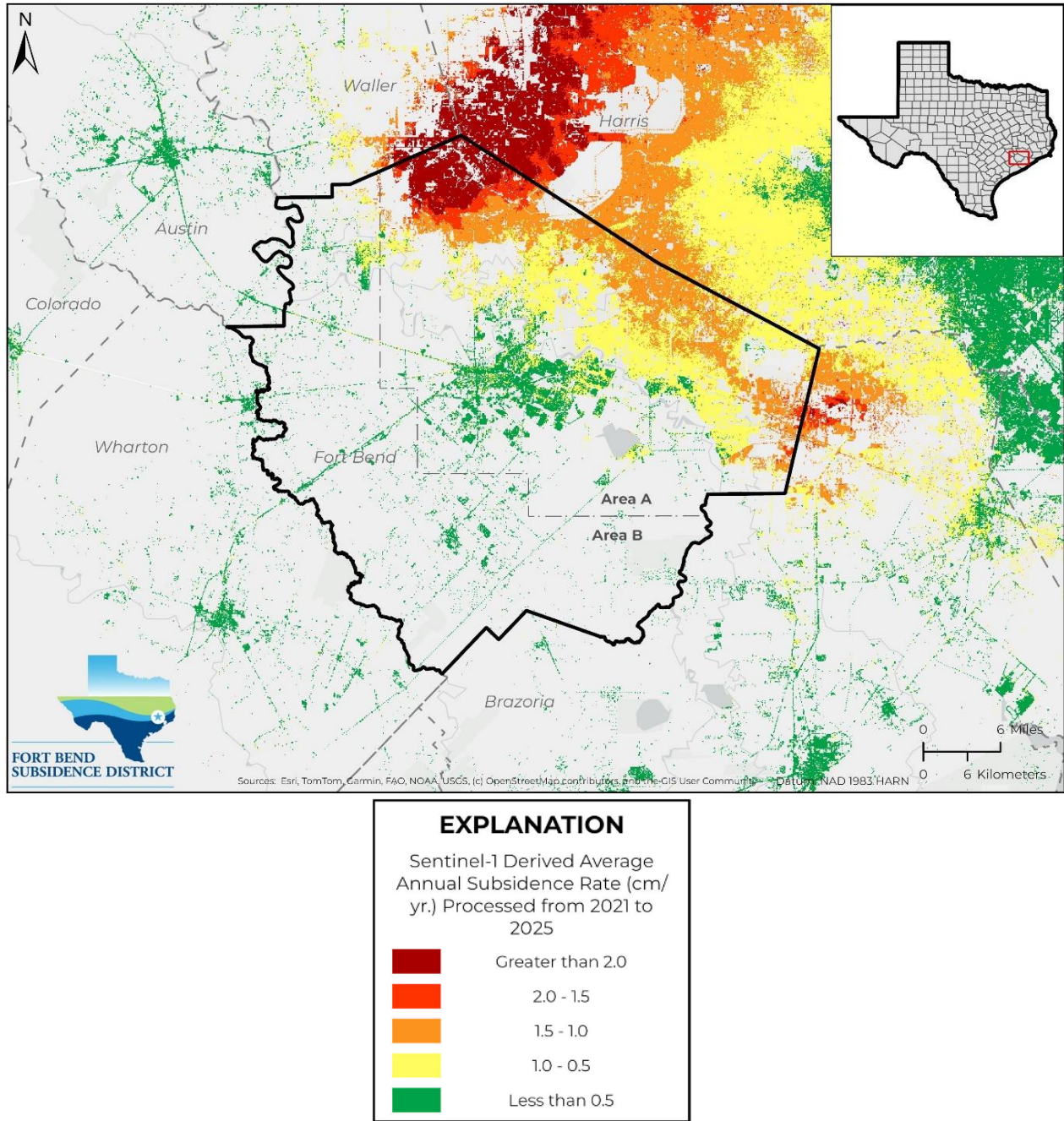


Figure 18: Interferometric Synthetic Aperture Radar (InSAR)-derived annual subsidence rate, calculated in centimeters per year, estimated from Sentinel-1 data and averaged from 2021 through 2025.

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Appendix A – Exhibits Presented at Public Hearing held on
April 30, 2026



2025 Annual Groundwater Report

Public Hearing
April 30, 2026



Fort Bend Subsidence District



The Fort Bend Subsidence District (FBSD) is a special-purpose district created by the Texas Legislature in 1989 to prevent further land subsidence in Fort Bend County.



GROUNDWATER REGULATION

Collaborate with local to state water entities and providers to manage groundwater use through water planning and well permitting.

RESEARCH & MONITORING

Utilize the highest quality data to monitor groundwater usage, aquifer characteristics, and land surface changes.

WATER CONSERVATION

Provide permittees, businesses, and educators with water conservation tools to reduce water use and empower the community to value water.

Annual Groundwater Reports



Each year, the Fort Bend Subsidence District publishes an Annual Groundwater Report to provide the latest information on subsidence in our region. This report encompasses data collected for the previous calendar year and includes the following elements:

- Climate Conditions
- Water Use
- Groundwater Levels
- Measured Subsidence

The results of the Annual Groundwater Report ultimately tell the story about our region's subsidence mitigation efforts and help to better inform local decision-makers with data that can be used to build a more resilient community.

A stylized map of Texas is shown in the background, rendered in various shades of blue. A prominent white star is located in the central part of the state, enclosed within a circular white outline. The map's edges are slightly irregular, giving it a torn-paper or hand-drawn appearance.

Table of Contents

- **Climate**
- Water Use
- Aquifer Data
- Subsidence

Exhibit 1

Location of National Weather Service (NWS) climate stations used for rainfall data for the 2025 calendar year.

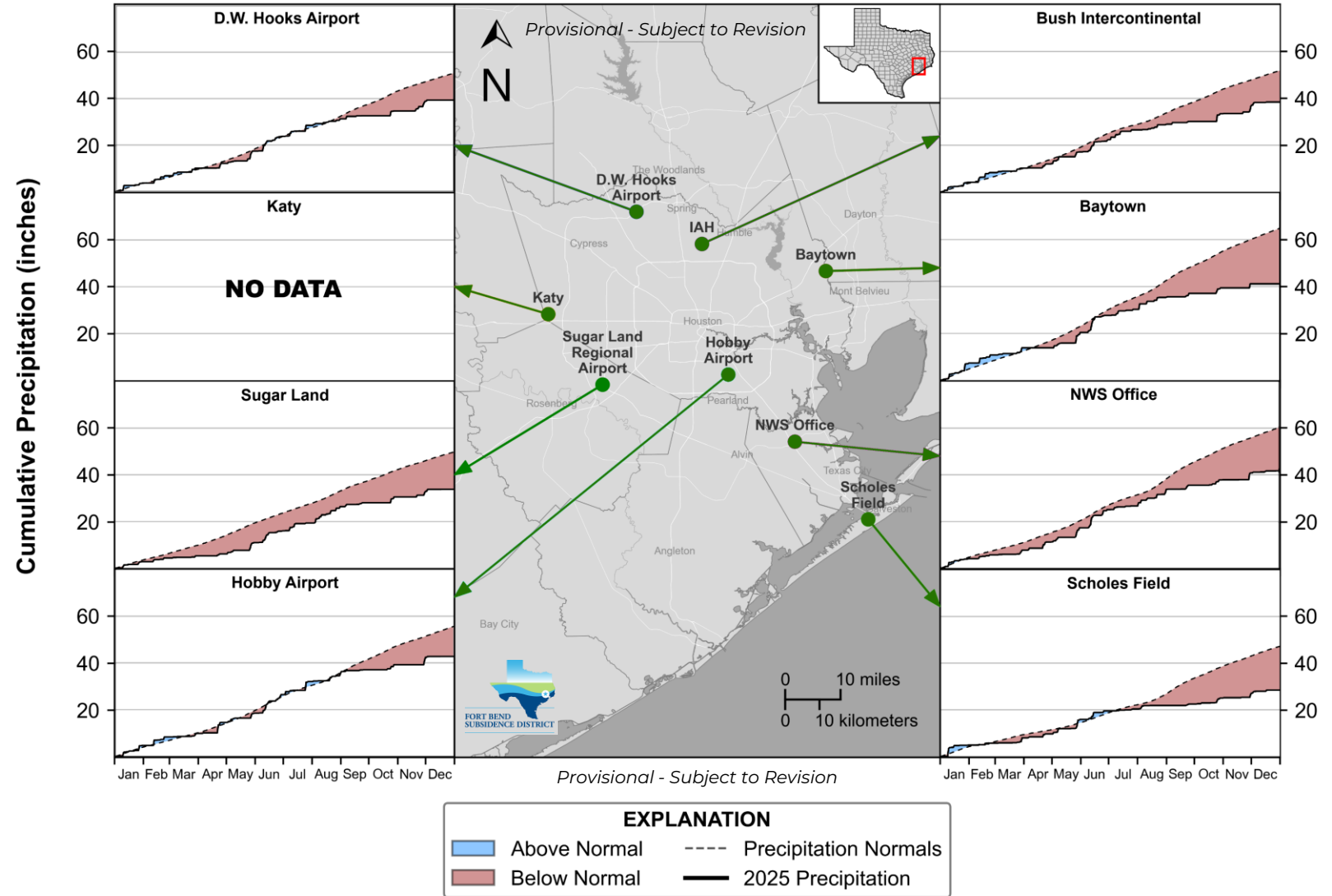
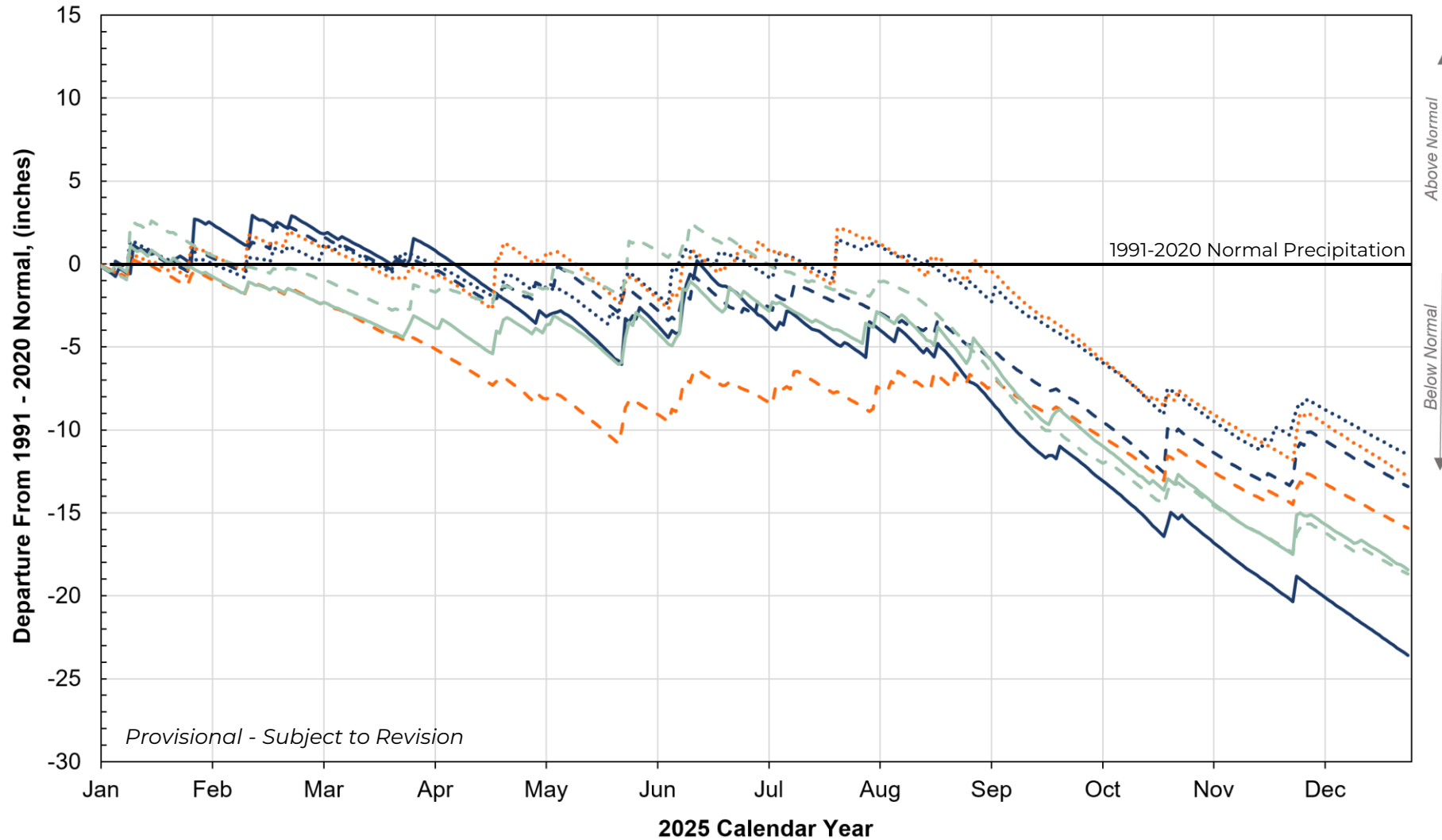


Exhibit 2 2025 Precipitation Data



Above Normal

Below Normal

EXPLANATION

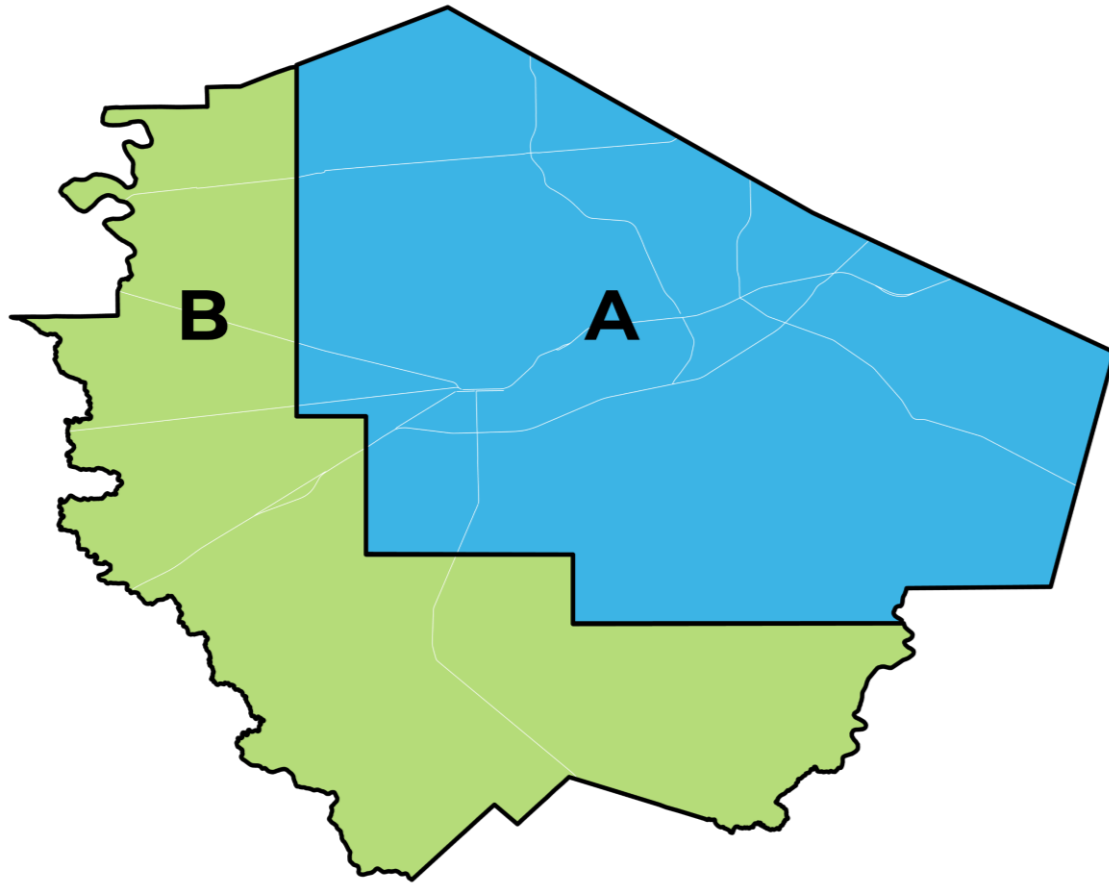
- Precipitation Normals
- Baytown
- - - Bush Intercontinental Airport
- D.W. Hooks Memorial Airport
- - - Sugar Land Regional Airport
- W.P. Hobby Airport
- NWS Office - League City
- - - Scholes Field - Galveston

A stylized map of Texas in shades of blue, with a white star in the center. The map is partially obscured by a dark blue vertical bar on the left side.

Table of Contents

- Climate
- **Water Use**
- Aquifer Data
- Subsidence

FBSD Regulatory Areas



Area A: no more than 40% of Total Water Demand (TWD) may be sourced from groundwater.

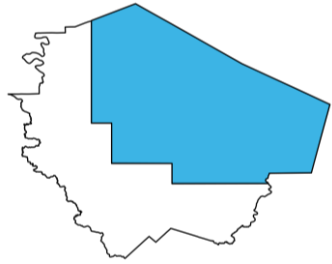
- Permittees operating within an approved Groundwater Reduction Plan have the following requirements:
 - 2030 – no more than 40% of TWD from groundwater

Area B: beginning in 2035, no more than 40% of TWD may be sourced from groundwater.

Exhibit 3 Regulatory Area A



FORT BEND
SUBSIDENCE DISTRICT



Regulatory Area A

Groundwater Withdrawals Grouped by Use

Public Industrial Agricultural Other

2025: 74.4 MGD

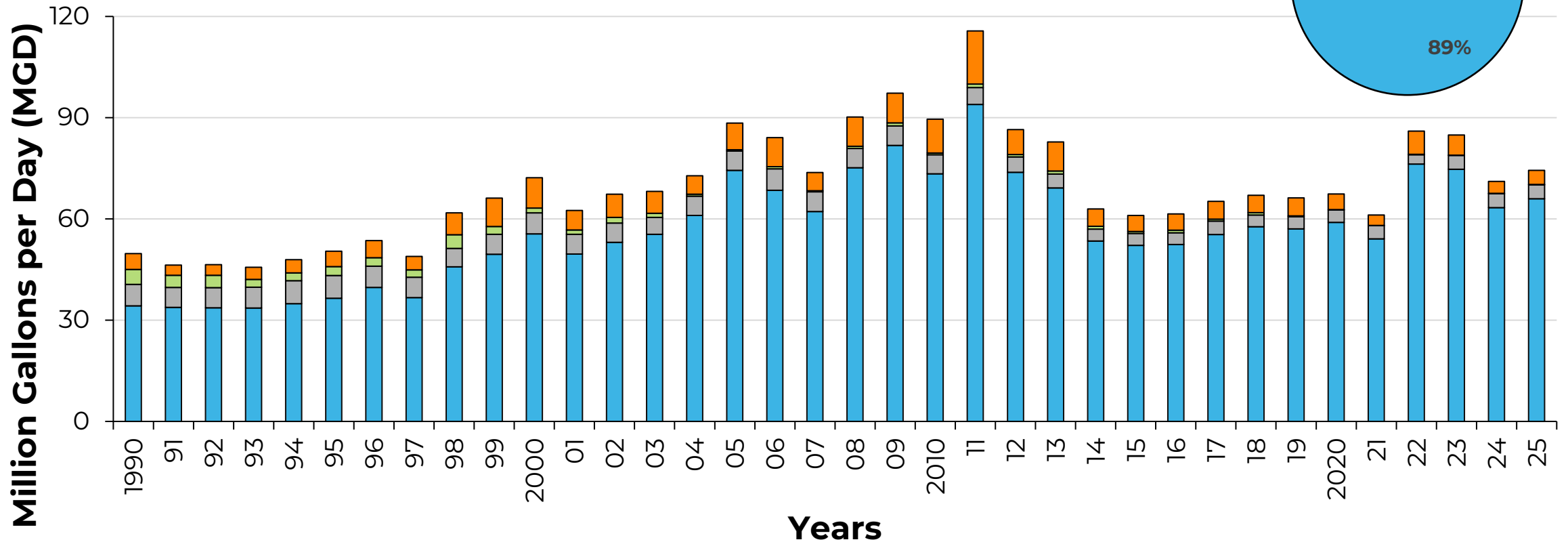
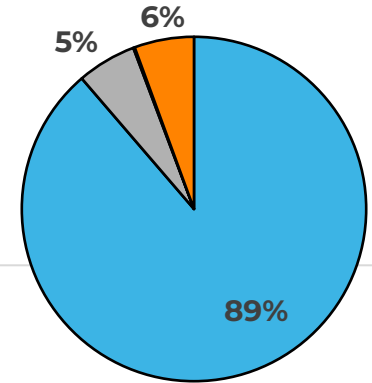
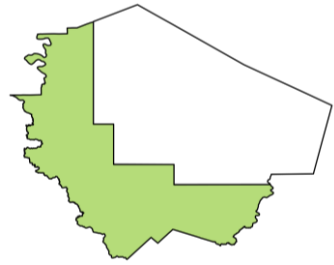


Exhibit 4 Regulatory Area B



2025: 14.2 MGD



Regulatory Area B

Groundwater Withdrawals Grouped by Use

Public Industrial Agricultural Other

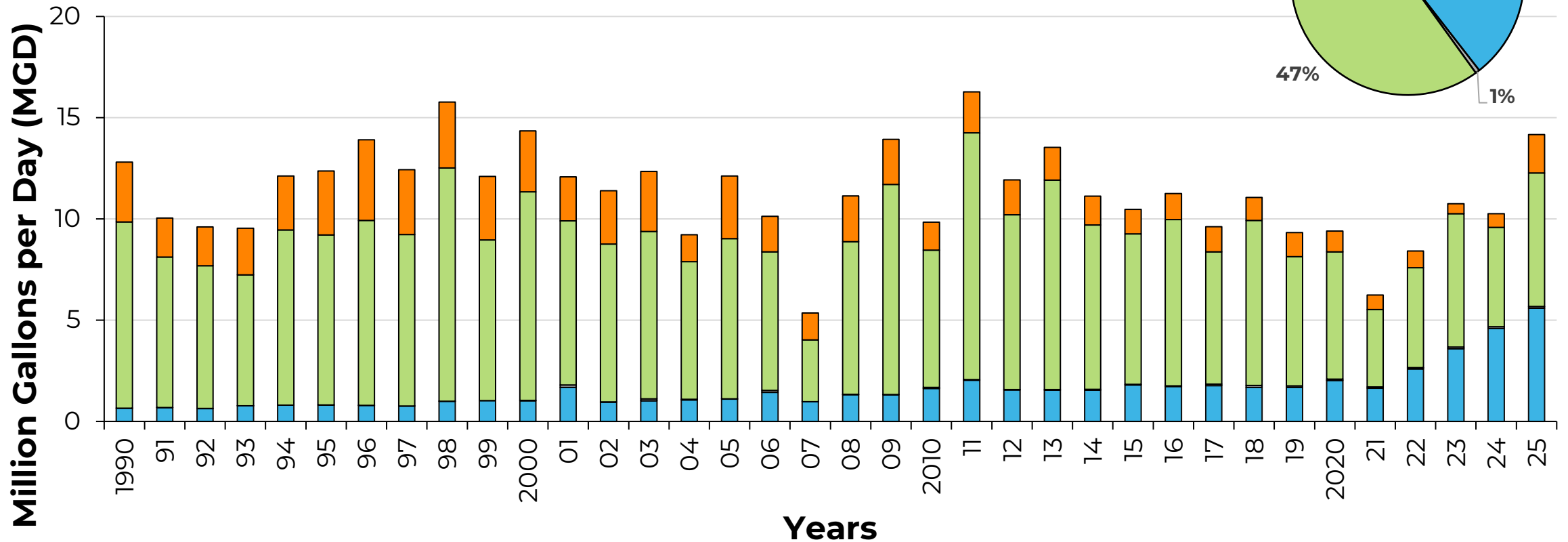
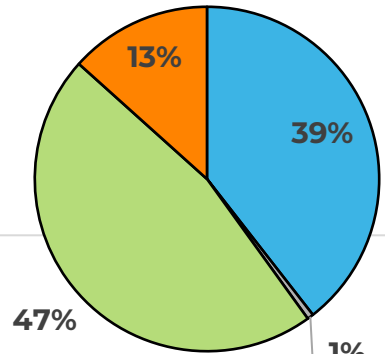
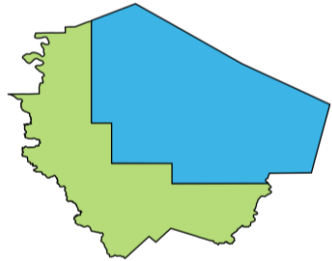


Exhibit 5 Entire District by Regulatory Area



2025: 88.5 MGD



Entire District

Groundwater Withdrawals Grouped by Area

■ Area A ■ Area B

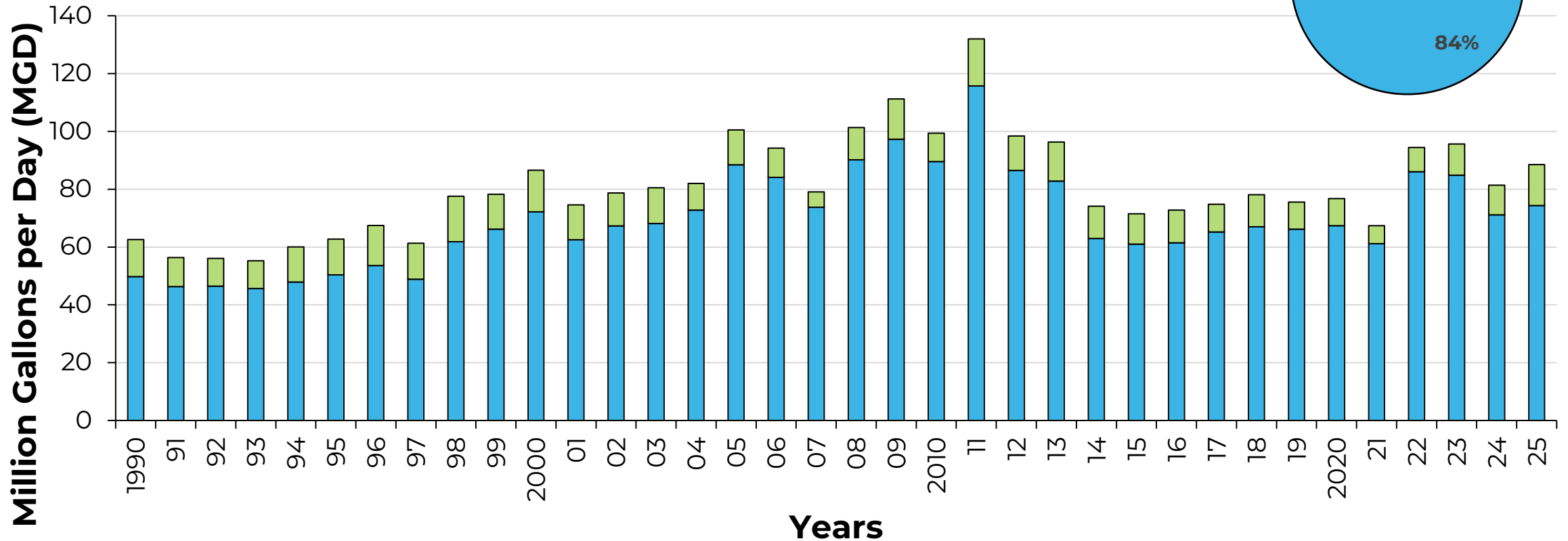
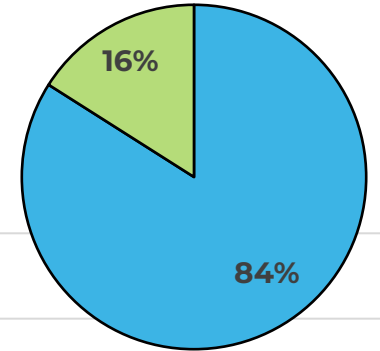


Exhibit 6 Entire District by Use Type



2025: 88.5 MGD

Entire District

Groundwater Withdrawals Grouped by Use

Public Industrial Agricultural Other

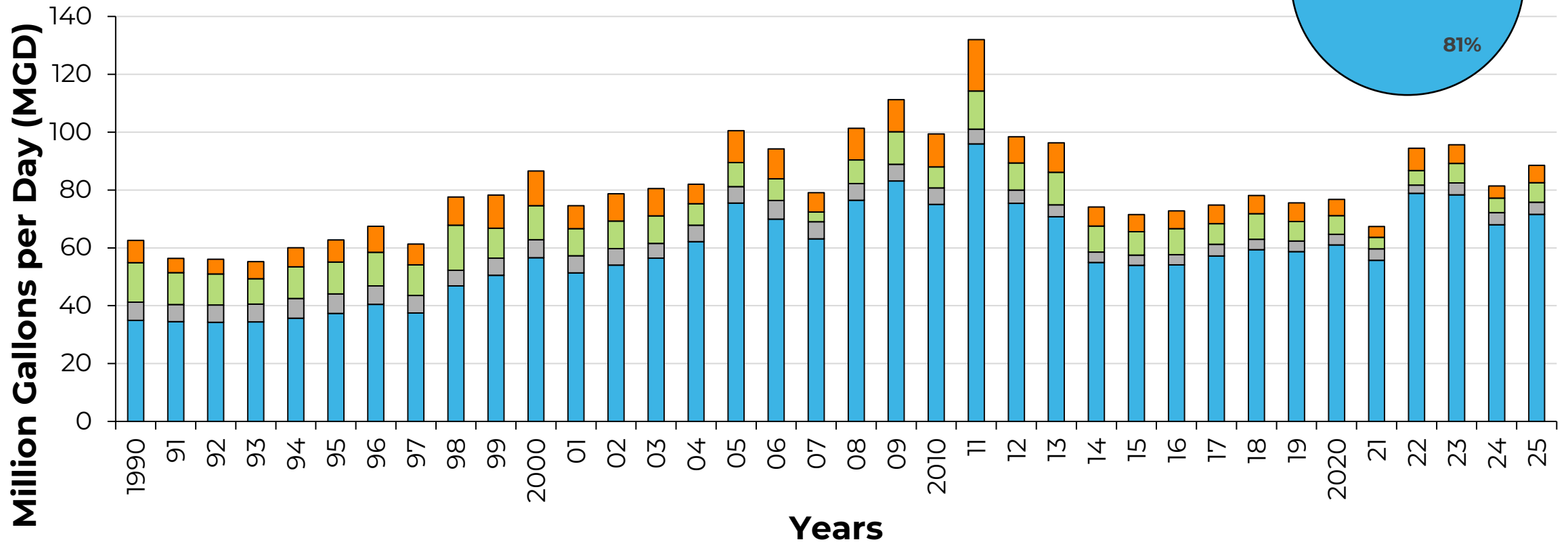
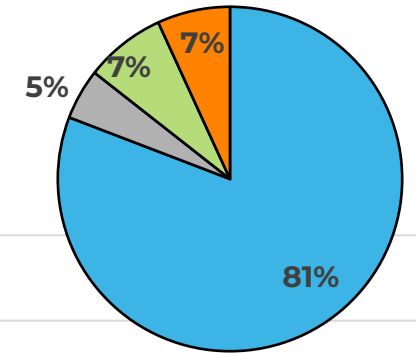


Exhibit 7 Alternative Water Use



2025: 123.5 MGD

Alternative Water

Grouped by Source for Entire District

■ Brazos ■ San Jacinto / Trinity ■ Reclaimed

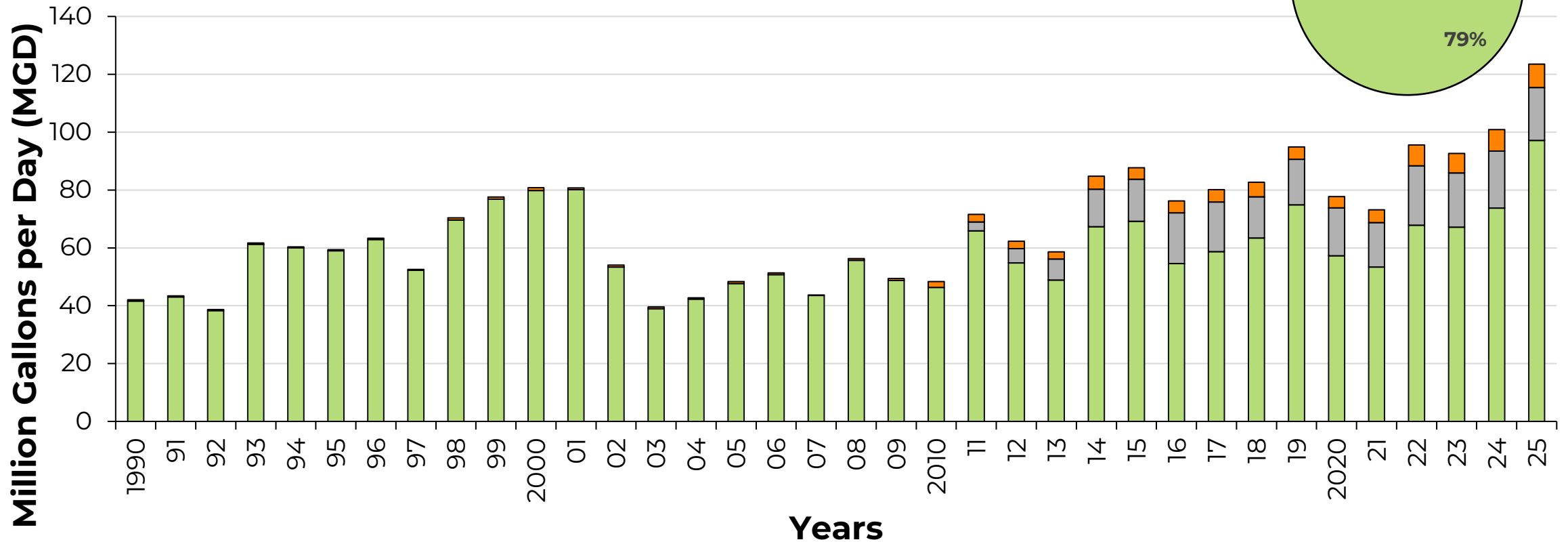
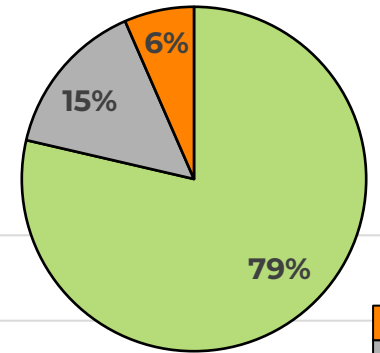


Exhibit 8 Total Water Demand

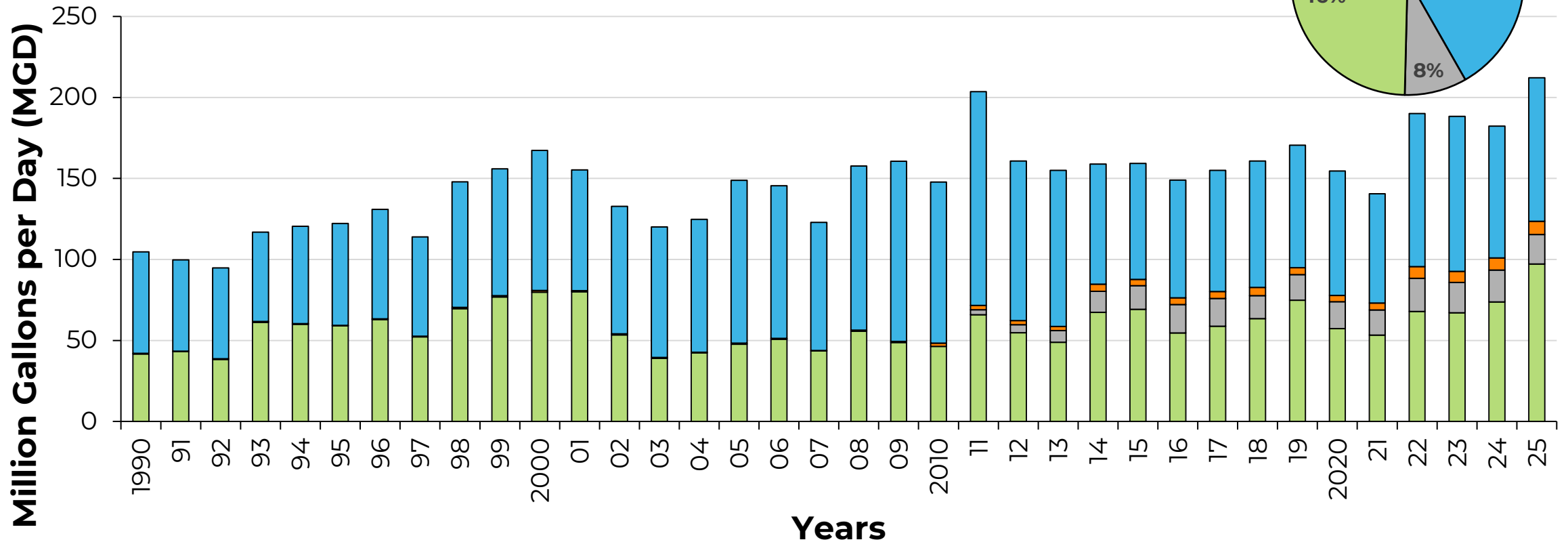
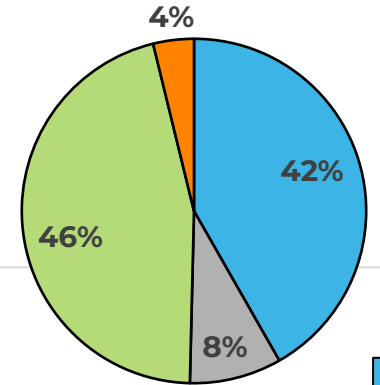


2025: 212.1 MGD

Total Water Demand

Grouped by Source for Entire District

■ Brazos
 ■ San Jacinto/Trinity
 ■ Reclaimed
 ■ Groundwater



A stylized map of Texas is shown in the background, rendered in various shades of blue. A prominent feature is a white star inside a white circle, positioned in the central-eastern part of the state, representing the state capital, Austin. The map is layered over a solid blue background.

Table of Contents

- Climate
- Water Use
- **Aquifer Data**
- Subsidence

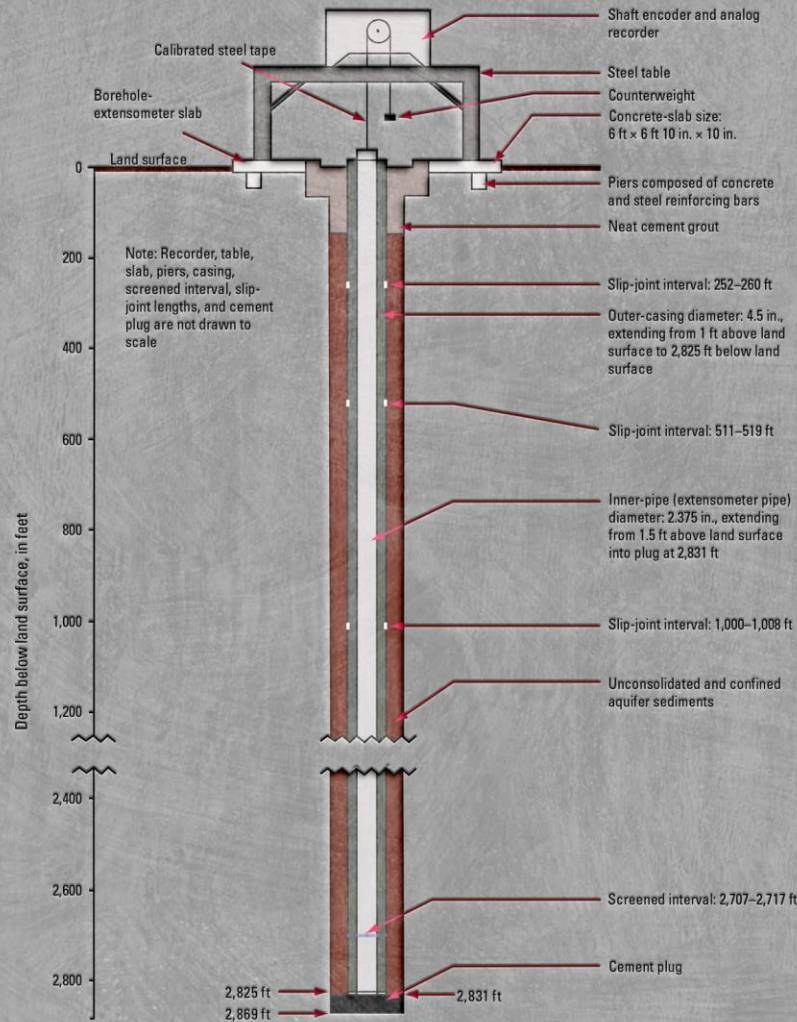


DIAGRAM OF A BOREHOLE EXTENSOMETER

Groundwater-level Altitudes, Long-Term Change & Compaction

CHICOT/EVANGELINE AND JASPER AQUIFERS

RESEARCH IN COOPERATION WITH THE HARRIS-GALVESTON & FORT BEND SUBSIDENCE DISTRICTS, BRAZORIA GROUNDWATER CONSERVATION DISTRICT, THE CITY OF HOUSTON AND LONE STAR GROUNDWATER CONSERVATION DISTRICT

2026 Water-Level Map Series

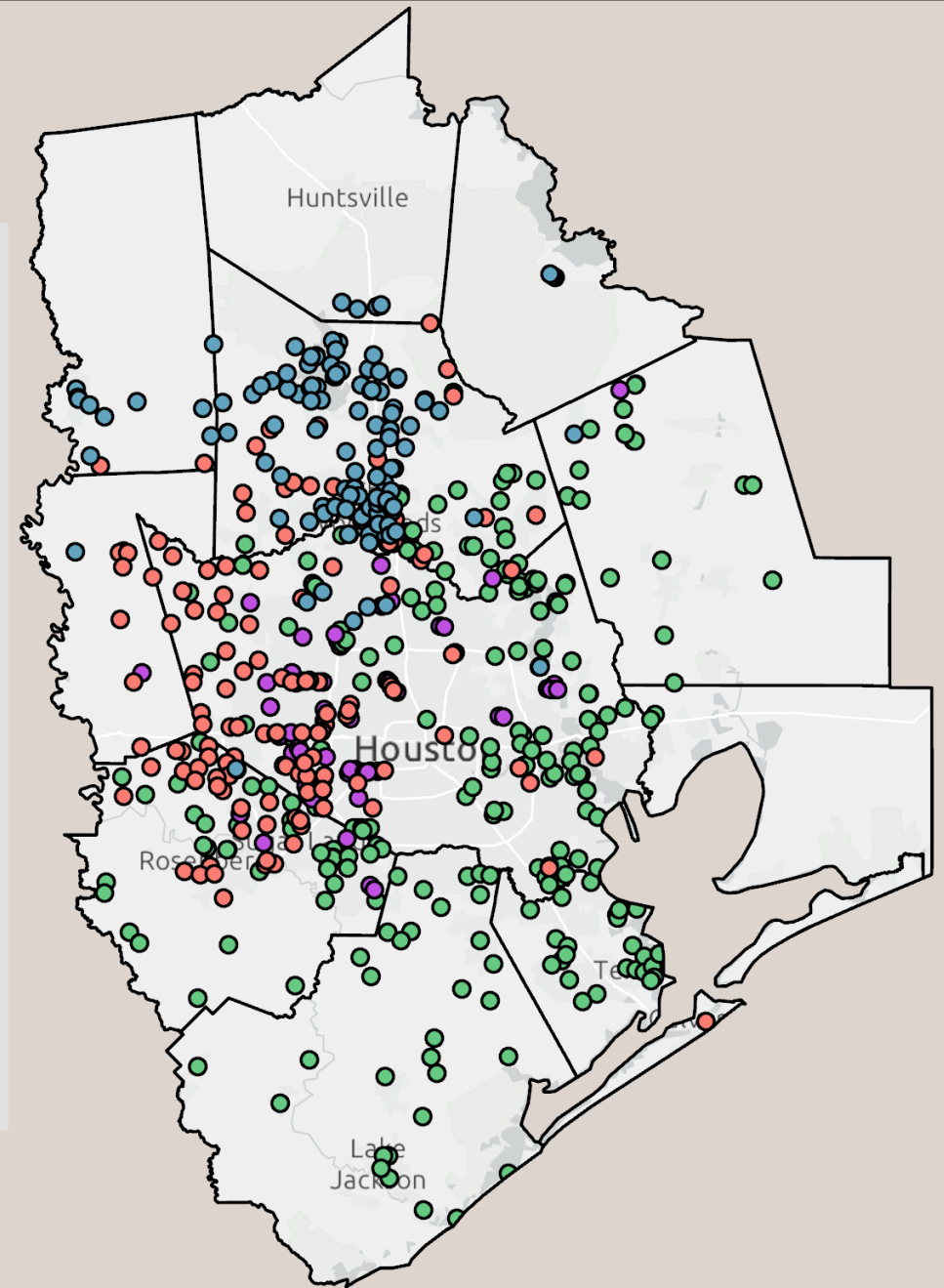
Chicot and Evangeline Aquifers (undifferentiated)

- 2026 Water-Level Altitude
- 2025 to 2026 Water-Level Change
- 2021 to 2026 Water-Level Change
- 1990 to 2026 Water-Level Change

Compaction 1973 to 2025

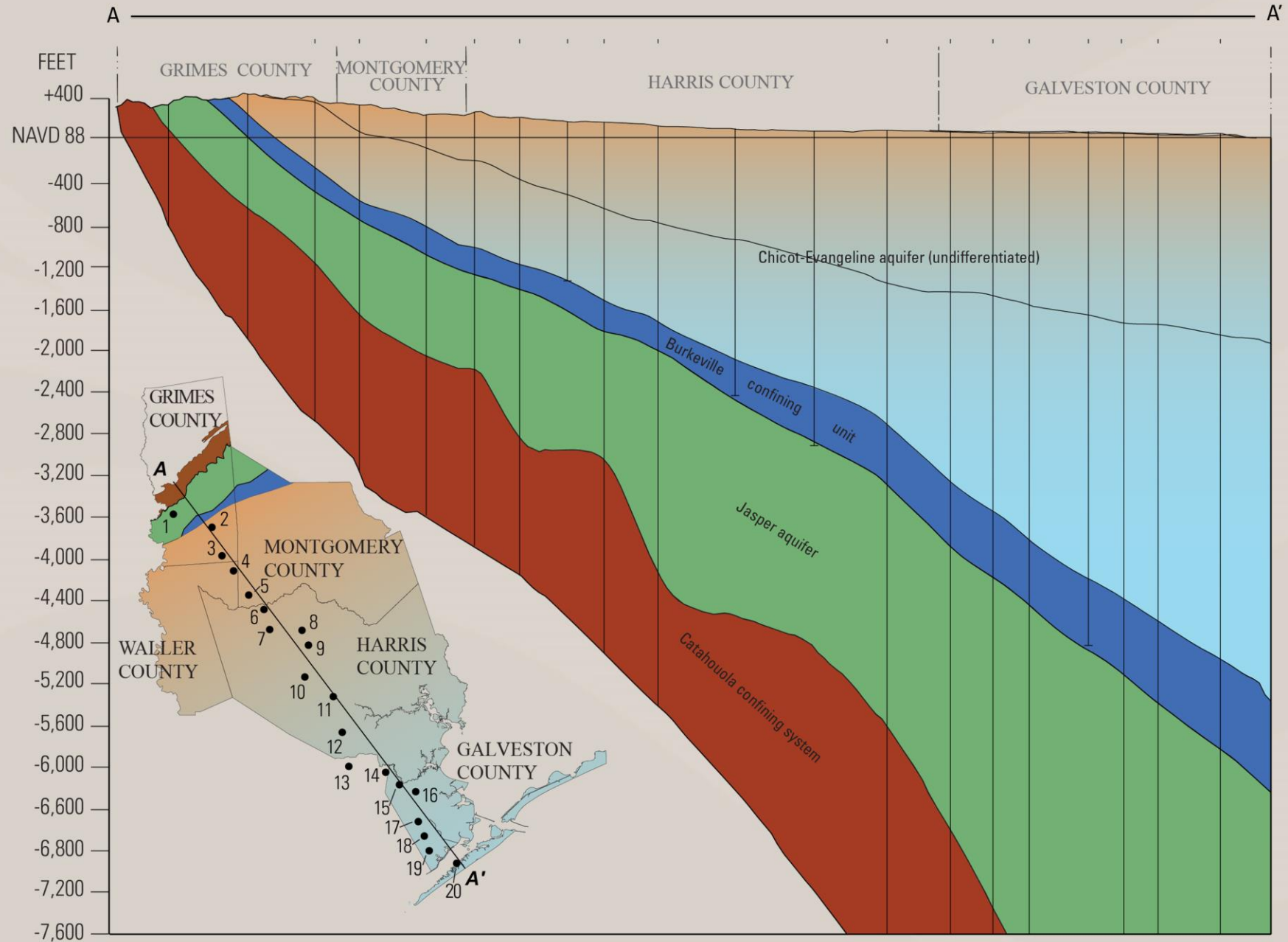
- Compaction Data from 13 Extensometers

- Chicot
- Chicot and Evangeline
- Evangeline
- Jasper



Geology and Hydrology

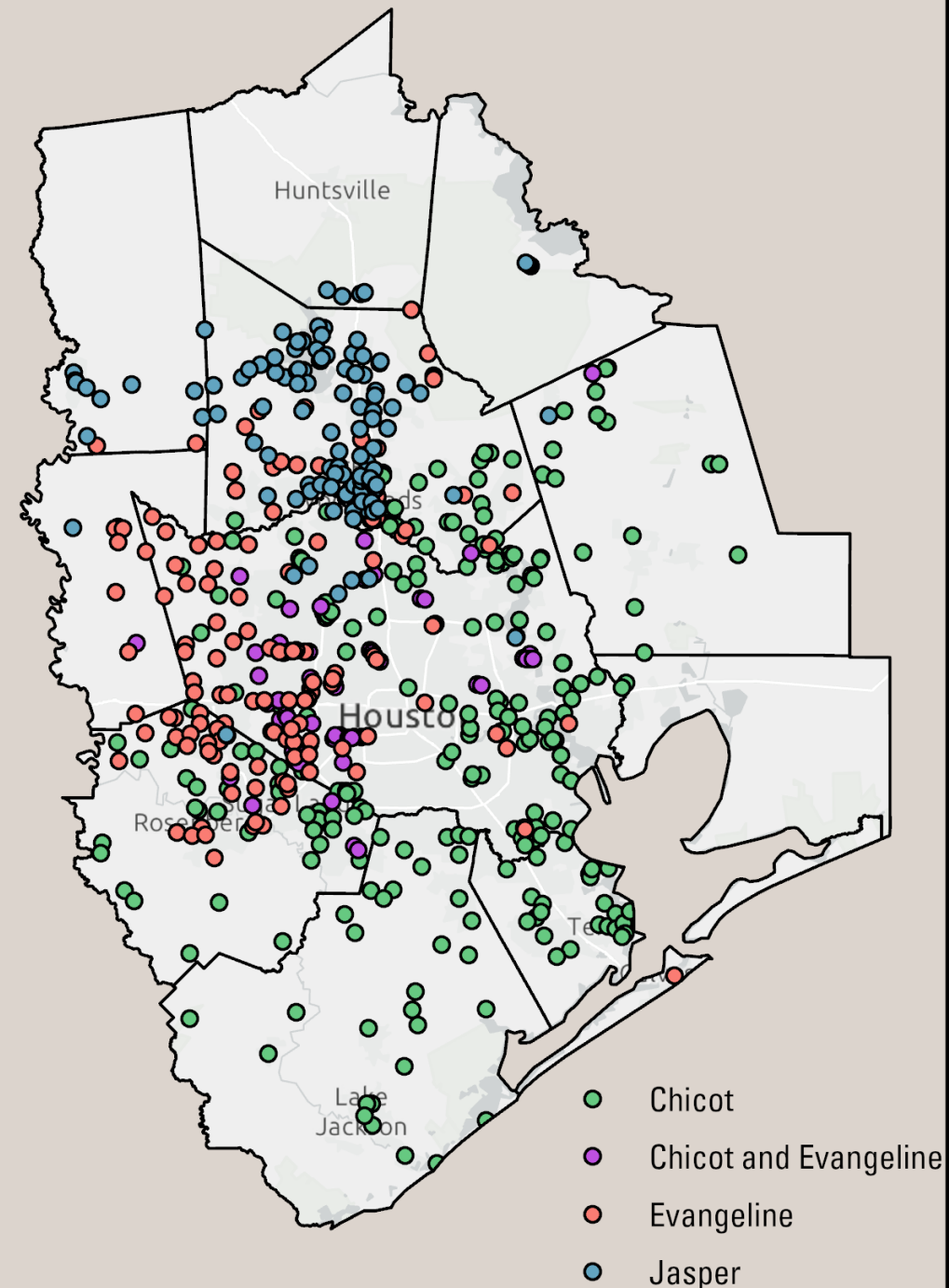
Geologic timescale		Geologic unit ¹	Hydrogeologic unit ¹	
System	Series			
Quaternary	Holocene	Alluvium	Chicot and Evangeline aquifers (undifferentiated)	
	Pleistocene	Beaumont Formation		
		Lissie Formation		Montgomery Formation
				Bentley Formation
	Willis Sand			
Tertiary	Pliocene	Goliad Sand (upper part)	Jasper aquifer	
		Goliad Sand (lower part)		
	Miocene	Lagarto Clay (upper part)		
		Lagarto Clay (middle part)		Burkeville confining unit
		Lagarto Clay (lower part)		
		Oakville Sandstone		
		Oligocene		Frio Formation
Vicksburg Formation				
Lower Oligocene- and pre-Oligocene sediments				



¹Modified from Young and others (2012, 2014) and Young and Draper (2020).

Well Network

- Data collected across 11 counties
- Data collection:
 - early December to early March
- Well types:
 - Public Supply, Irrigation, Industrial, Observation
- Number of wells measured
 - 530 - Chicot and Evangeline (undifferentiated)
 - 106 - Jasper
- Number of measurements used to create the altitude maps
 - 502 - Chicot and Evangeline (undifferentiated)
 - 106 - Jasper
- Data were estimated for:
 - 43 wells in the Chicot and Evangeline (undifferentiated)
 - 19 wells in the Jasper



Water-Level Altitude

Chicot and Evangeline (undifferentiated)

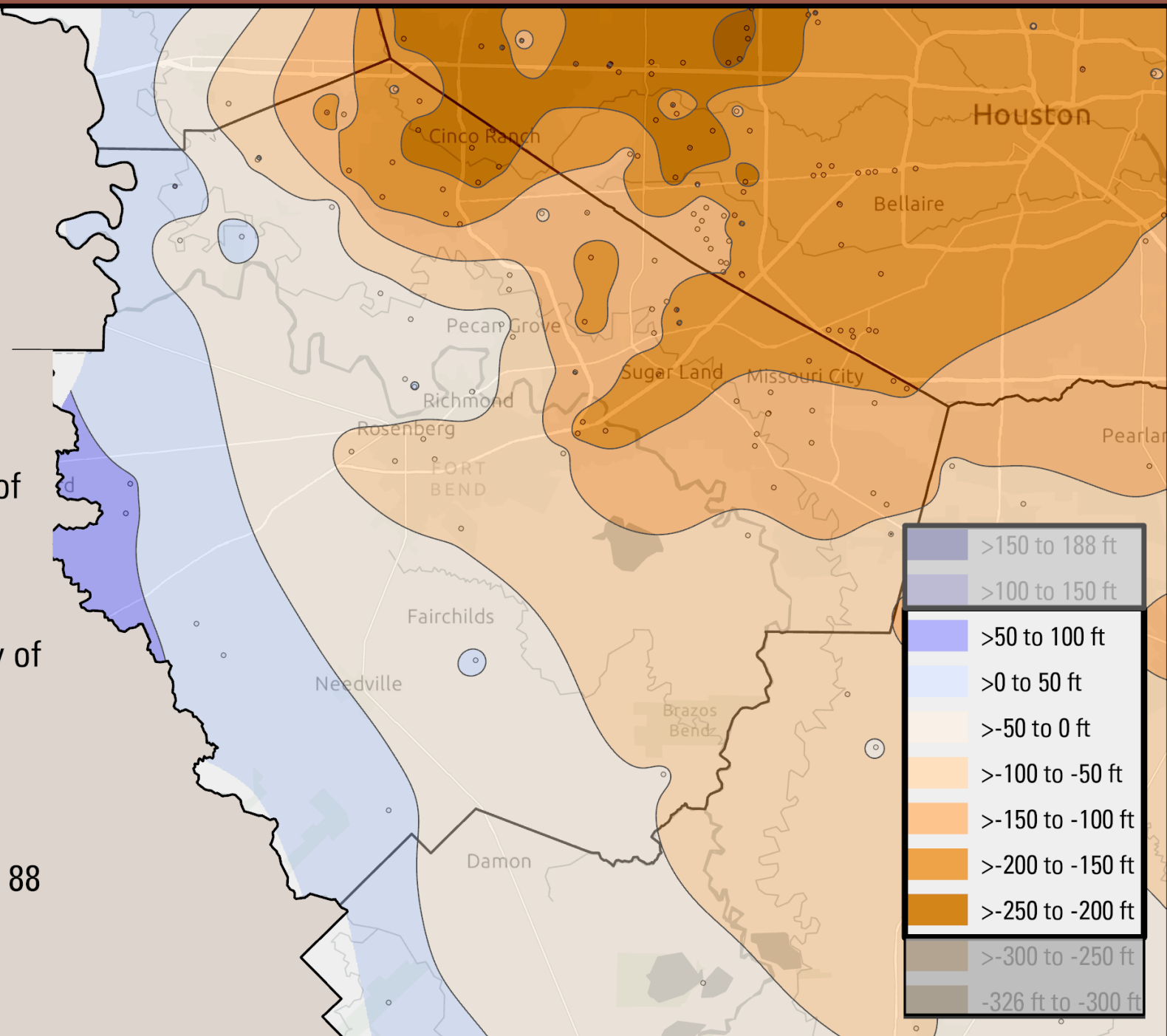
Altitudes are referenced from NAVD 88

Lowest altitudes are in the northern portions of
Fort Bend County

Highest altitudes are at the western boundary of
the study area

Range of altitudes:

-250 ft below NAVD 88 to 100 ft above NAVD 88



2025 to 2026 Water-Level Change - Chicot and Evangeline (undifferentiated)

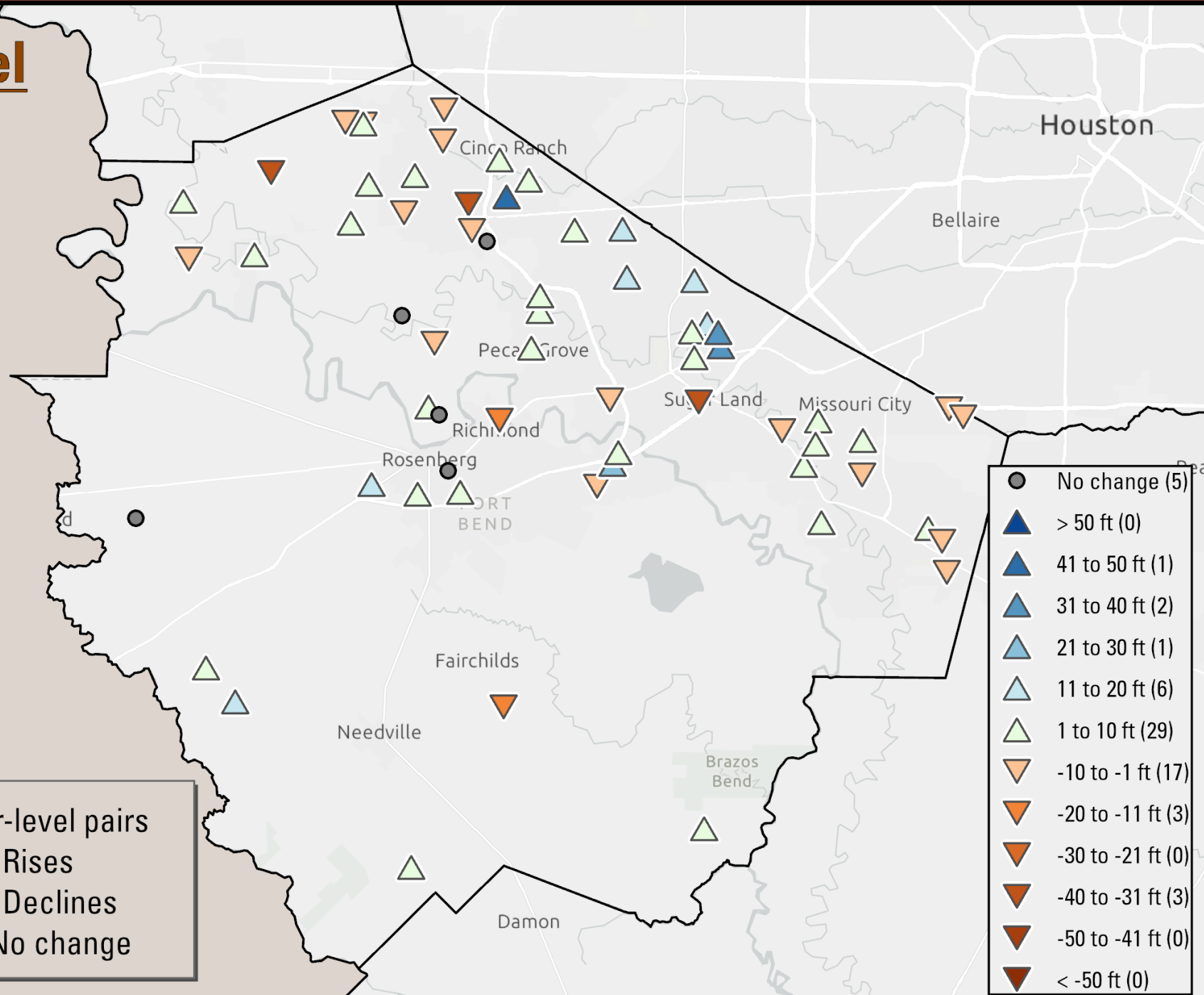
Most of the rises and declines were in the range of 1 to 10 ft.

The largest declines (> 30 ft) were in northern and east-central Fort Bend County

The largest rise (>40 ft) was in northern Fort Bend County

67 water-level pairs

- 58% Rises
- 34% Declines
- 7% No change



●	No change (5)
▲	> 50 ft (0)
▲	41 to 50 ft (1)
▲	31 to 40 ft (2)
▲	21 to 30 ft (1)
▲	11 to 20 ft (6)
▲	1 to 10 ft (29)
▼	-10 to -1 ft (17)
▼	-20 to -11 ft (3)
▼	-30 to -21 ft (0)
▼	-40 to -31 ft (3)
▼	-50 to -41 ft (0)
▼	< -50 ft (0)

2021 to 2026 Water-Level Change - Chicot and Evangeline (undifferentiated)

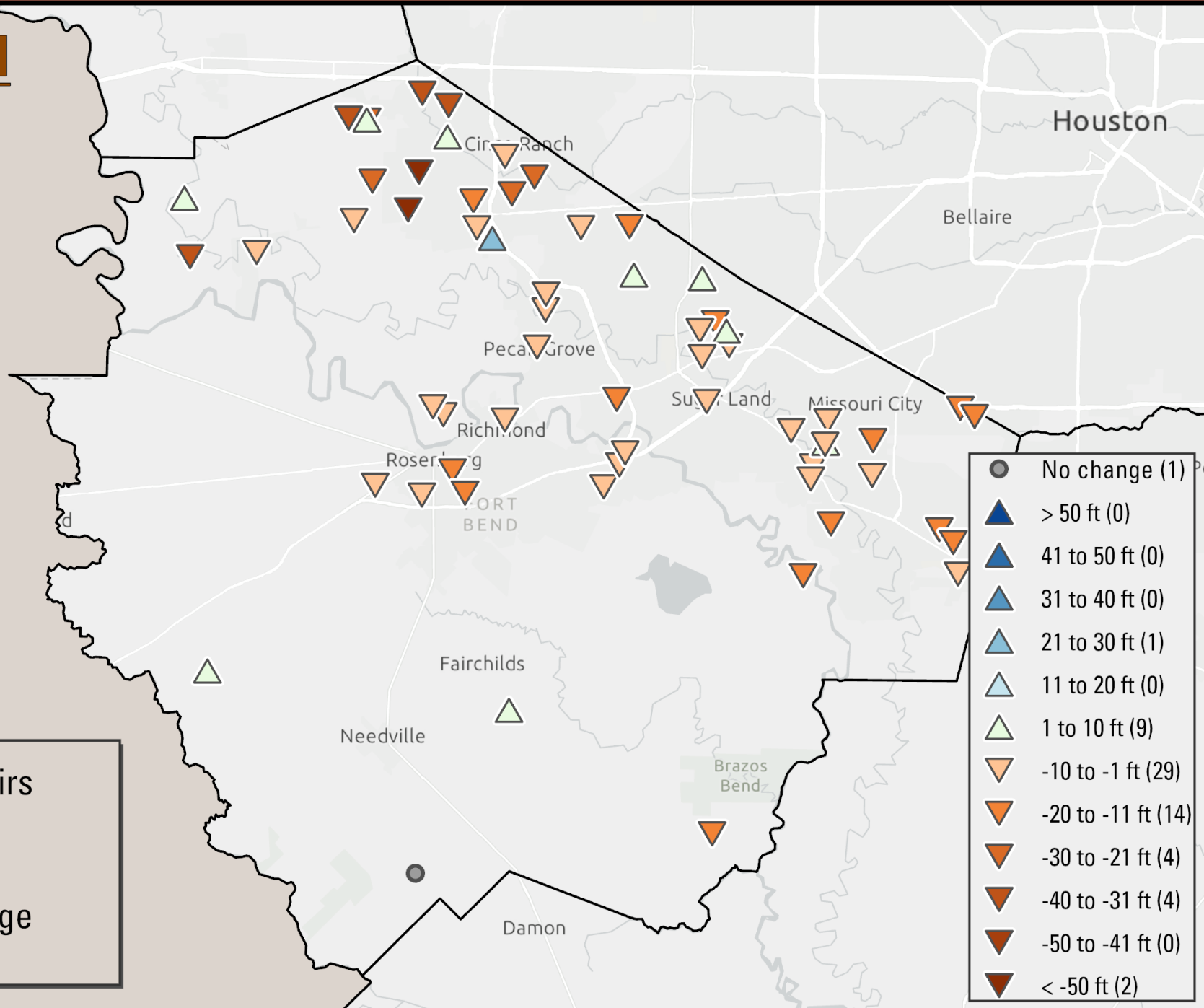
Predominantly declines across the entire study area for the period

The largest declines were concentrated in the northern portions of Fort Bend county

Rises were limited with most of them being in the 1 to 10 ft range and one in northern Fort Bend of 21 ft.

64 water-level pairs

- 16% Rises
- 83% Declines
- <2% No change



Long Term Change 1990 to 2026

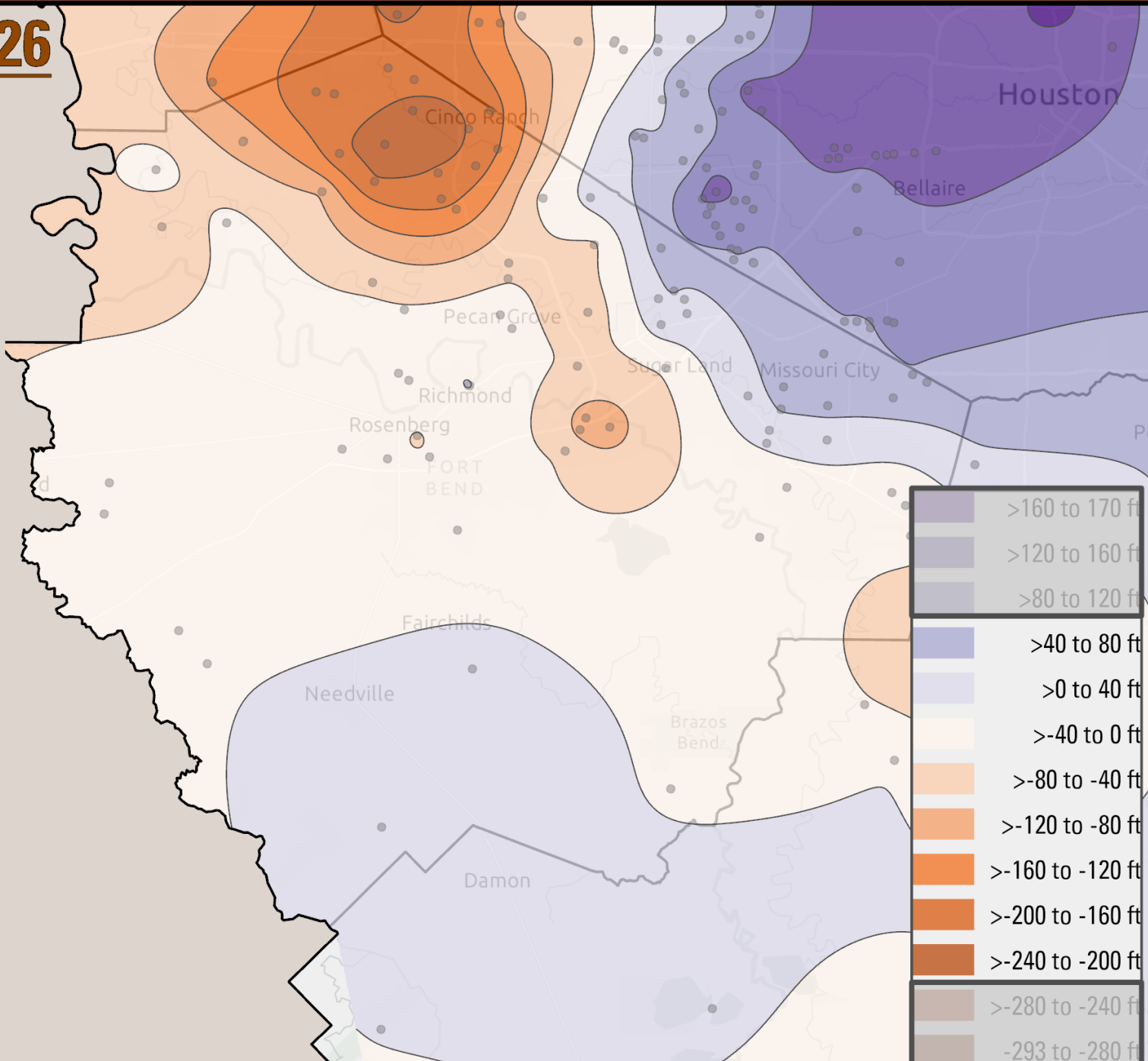
Chicot and Evangeline (undifferentiated)

Water-level rises:

- Eastern portion of Fort Bend County along the border with Harris County
- Southern portion of Fort Bend County

Water-level declines:

- Declines of <40 ft. across central Fort Bend County
- Largest declines in northern Fort Bend County of between 200 and 240 ft.



A stylized, light blue map of the state of Texas is positioned on the left side of the slide. A circular emblem containing a five-pointed star is centered over the map. The background of the slide is a solid, medium blue color.

Table of Contents

- Climate
- Water Use
- Aquifer Data
- **Subsidence**

Subsidence Monitoring

All FBSD operated global positioning system (GPS) stations are constructed in a custom design.

GPS data are collected for one week every two months. A conversion to continuous monitoring (data collection every day of the year) began in 2023 and will continue through 2027.

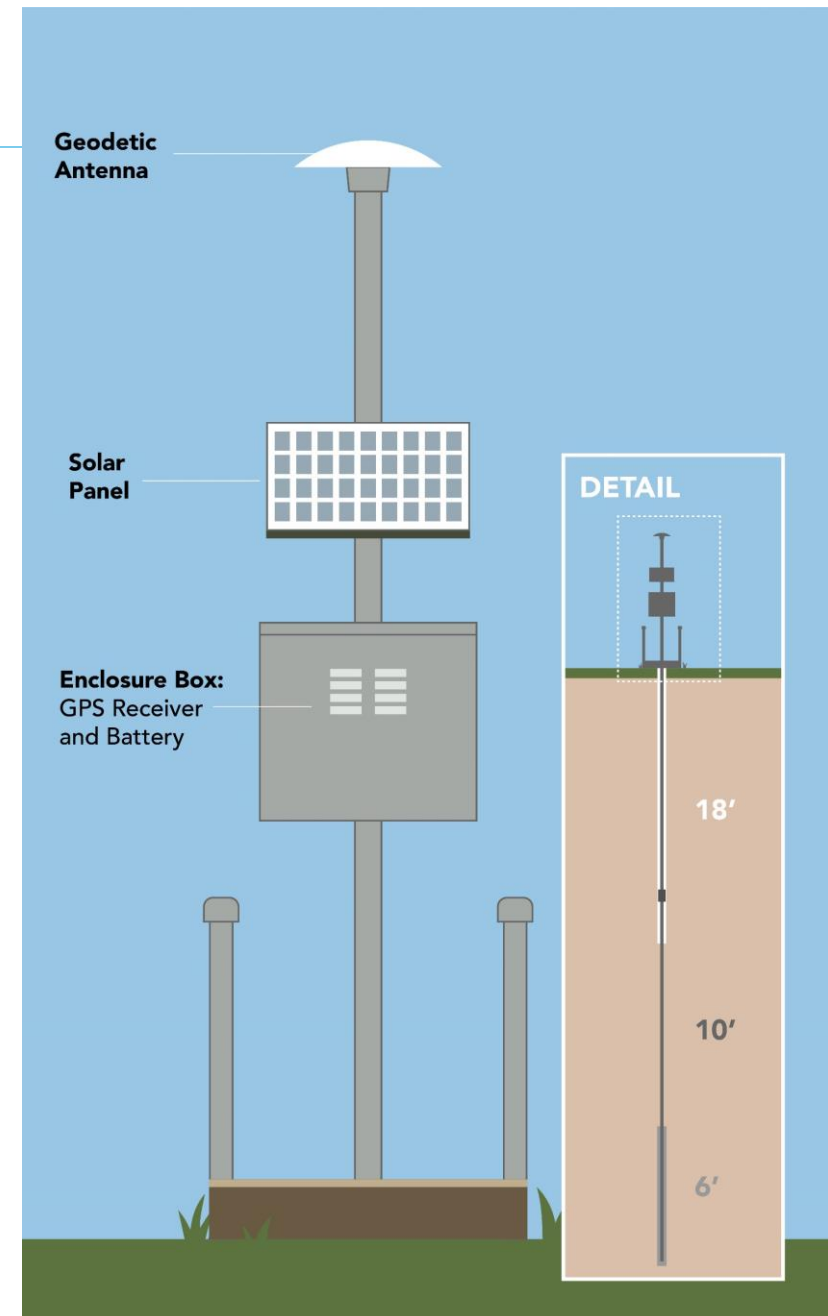


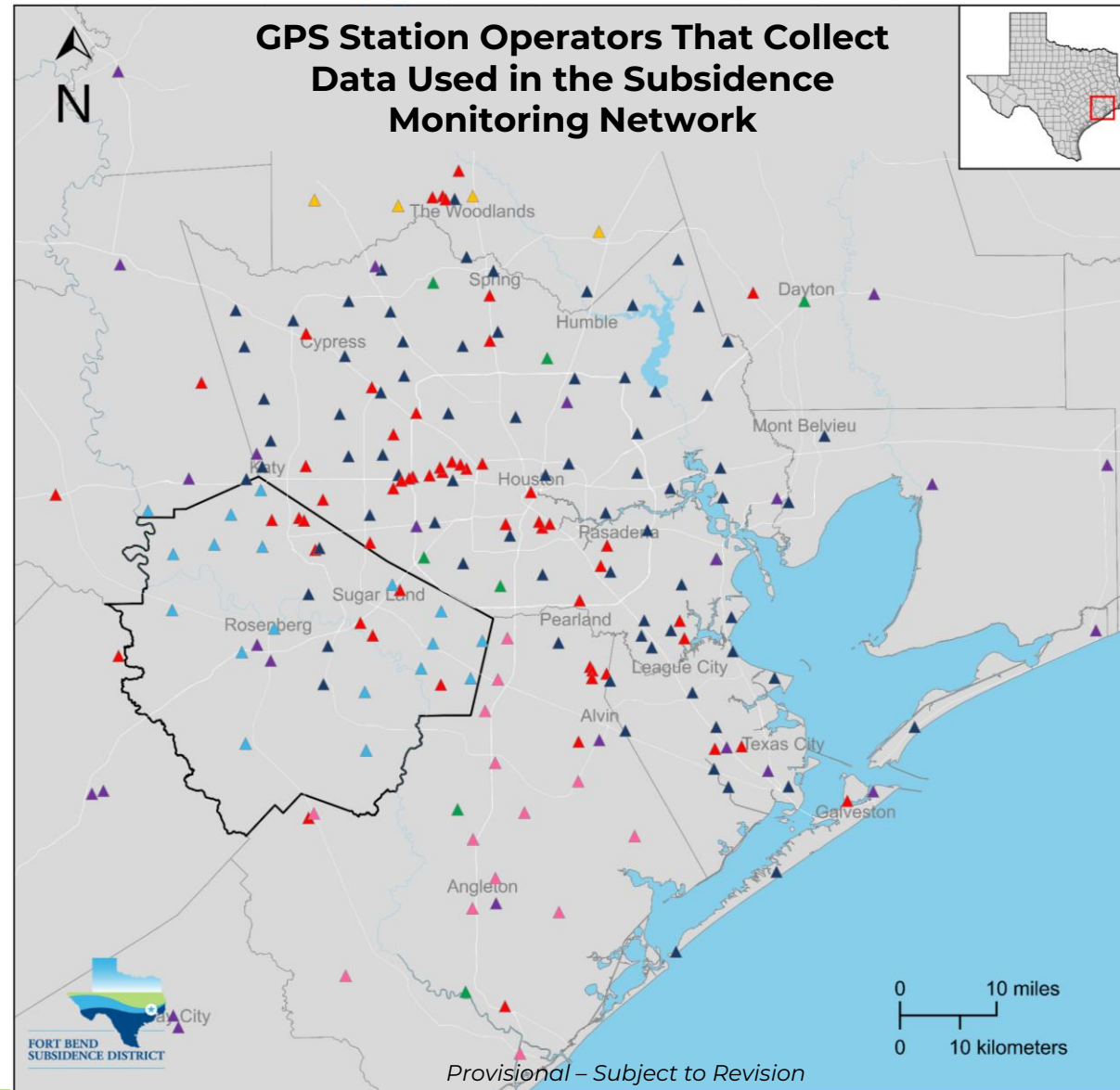
Exhibit 9 Subsidence Monitoring Network



Location and operator of GPS stations that monitor land surface deformation periodically or continuously within southeast Texas in 2025.

EXPLANATION

- FBSD Jurisdiction
- Harris-Galveston Subsidence District
- Fort Bend Subsidence District
- University of Houston
- Texas Department of Transportation
- Brazoria County Groundwater Conservation District
- Lone Star Groundwater Conservation District
- Other Operators



Provisional – Subject to Revision

Exhibit 10 Subsidence Rates in Fort Bend



Annual subsidence rate, in centimeters per year (cm/yr.), estimated from GPS data collected at active stations with three or more years of data averaged from 2021 to 2025.

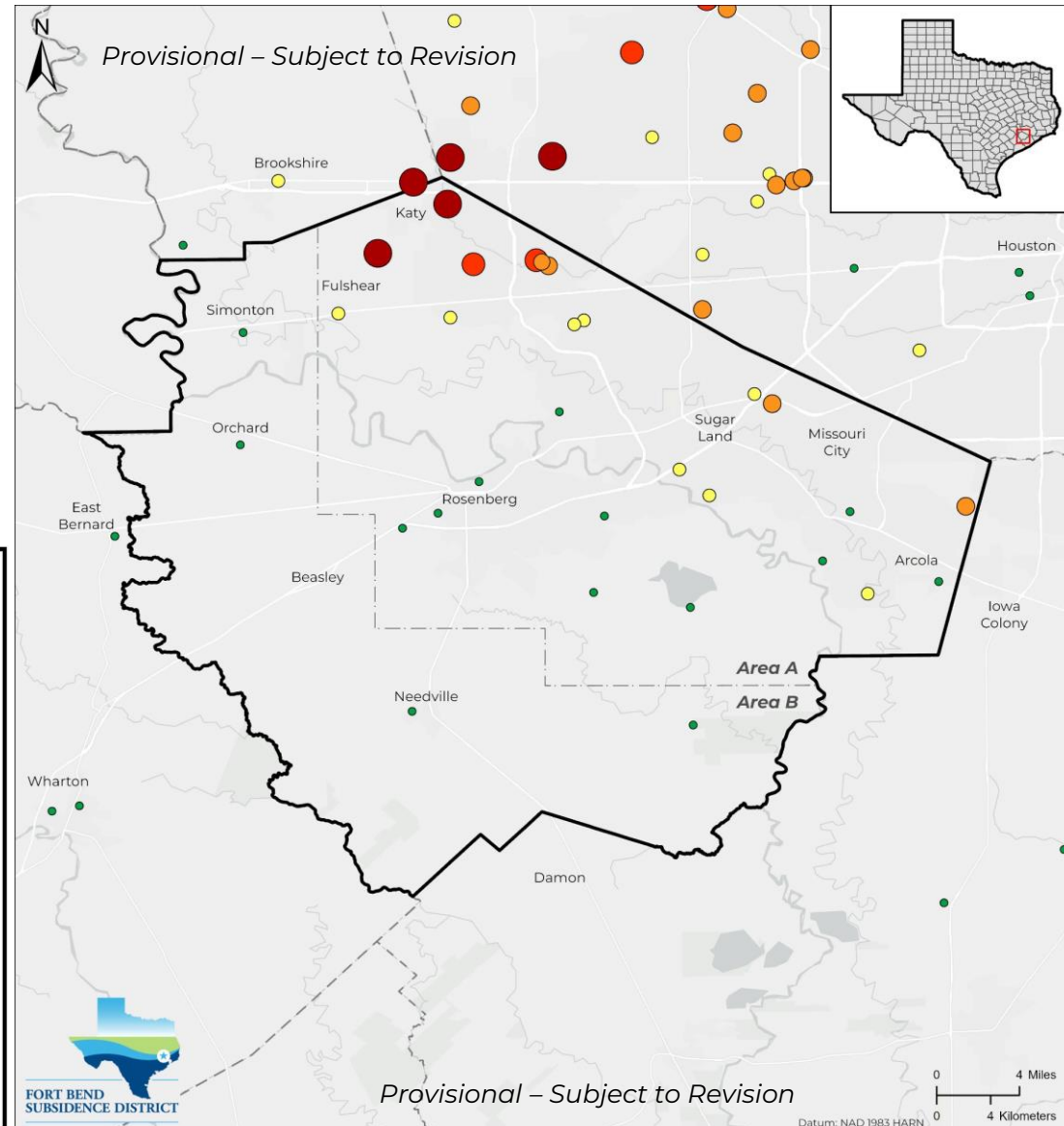
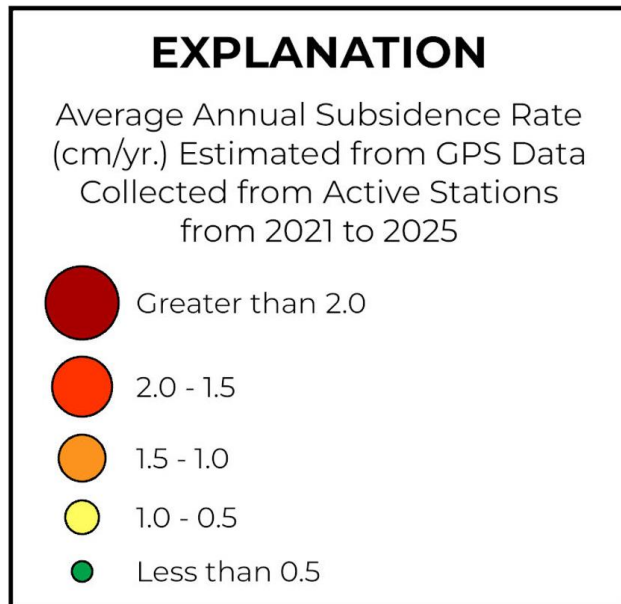
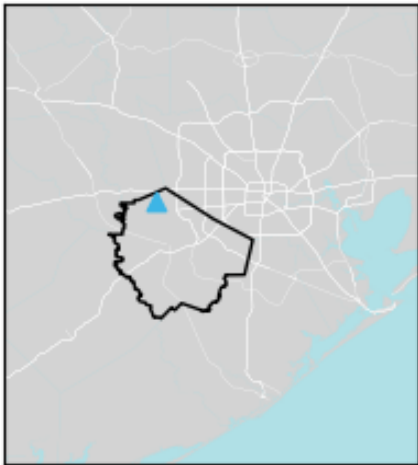


Exhibit 12 Subsidence Data in Katy/Fulshear



- GPS station **P111**, located in Katy, has measured a total of approximately 15.3 cm of subsidence since 2021.
- 2021-2025 average annual subsidence rate is **3.32 cm/yr.**



Processed GPS data (source: UH) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed lines) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by the District when calculating subsidence rates and are shown for informational purposes only.

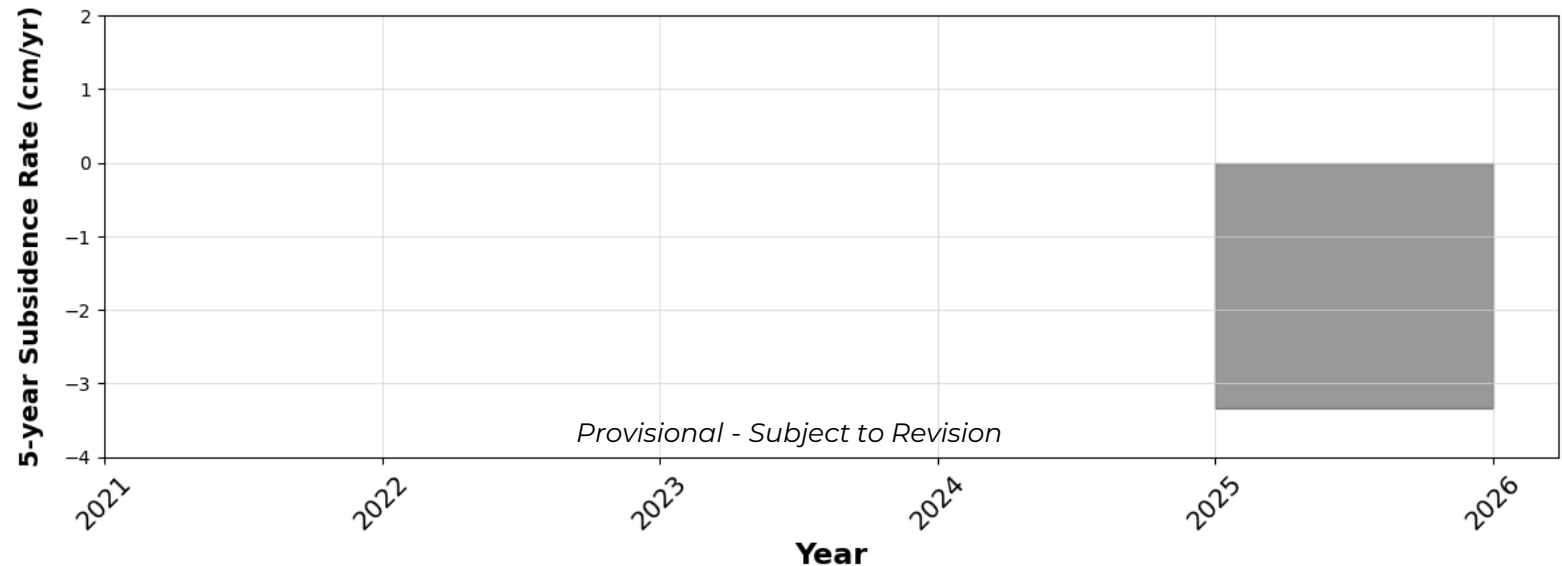
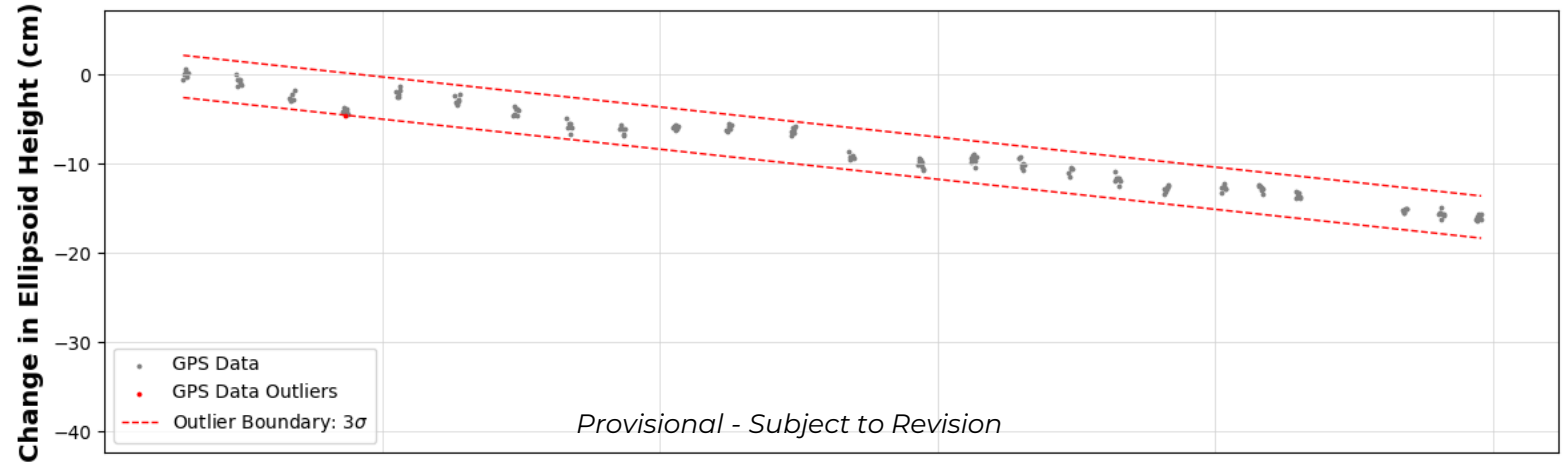
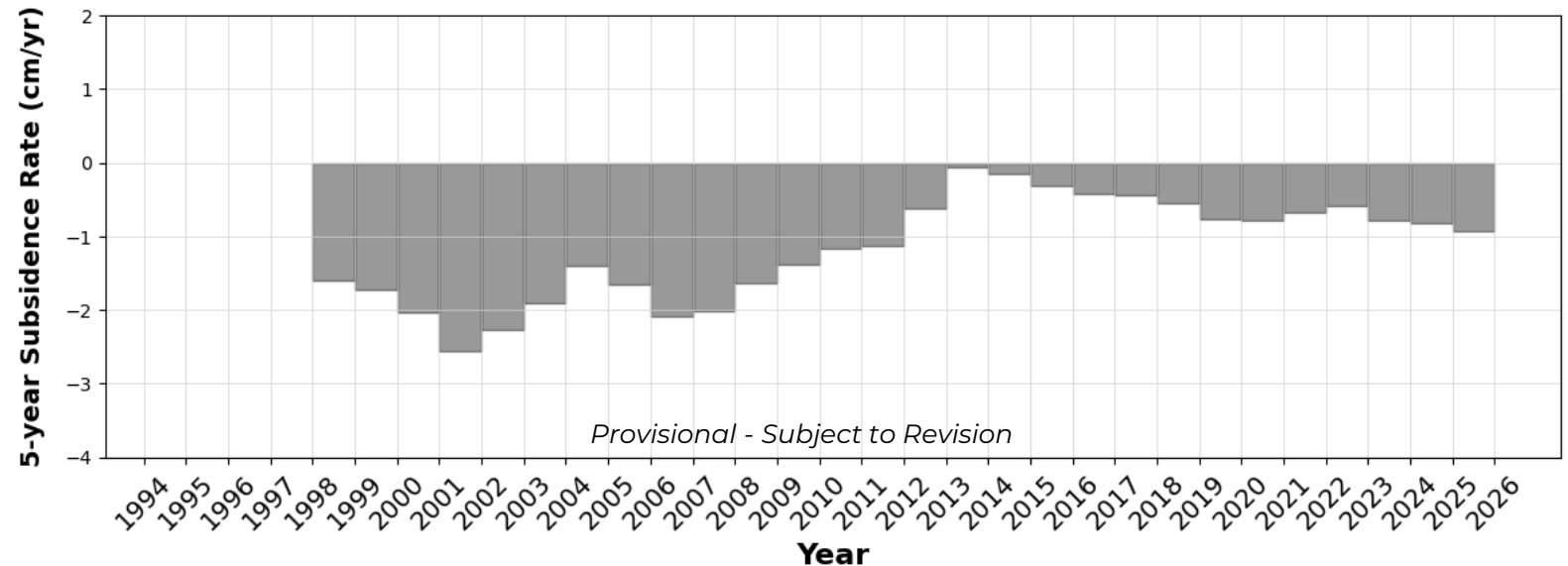
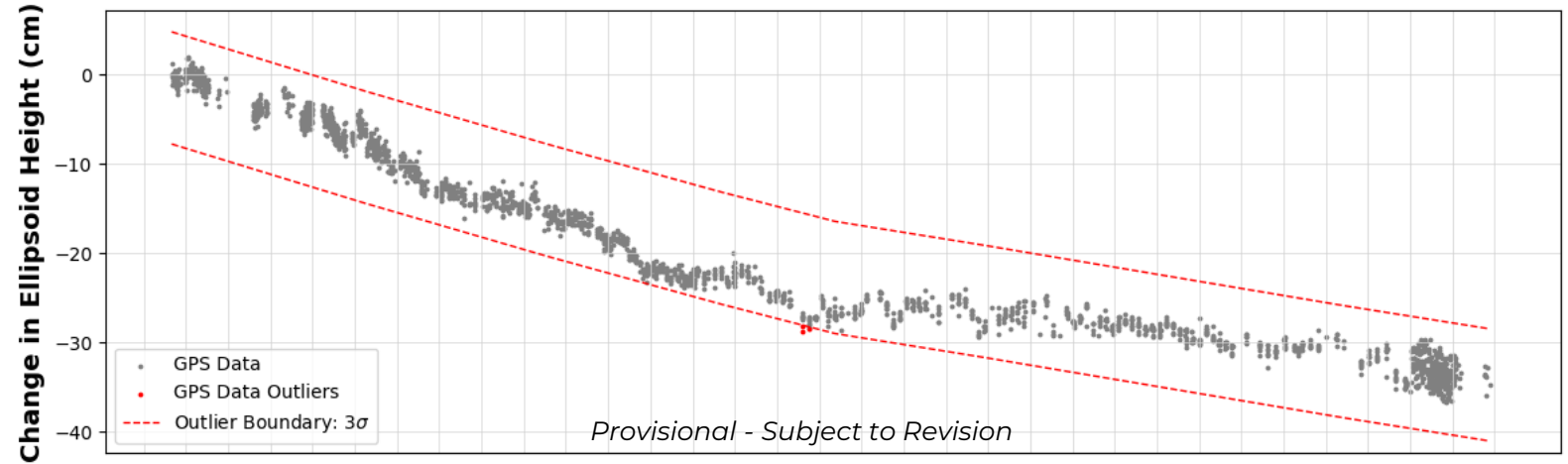
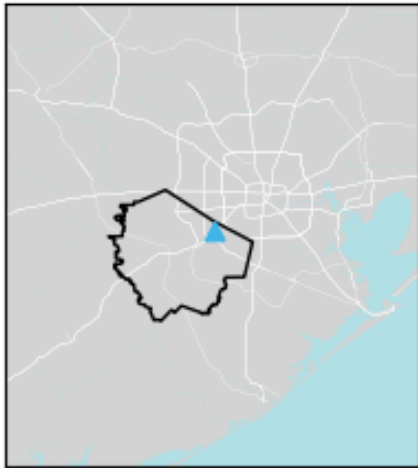


Exhibit 13 Subsidence Data in Sugar Land



- GPS station **P004**, located in Sugar Land, has measured a total of approximately 33.1 cm of subsidence since 1994.
- 2021-2025 average annual subsidence rate is **0.86** cm/yr.

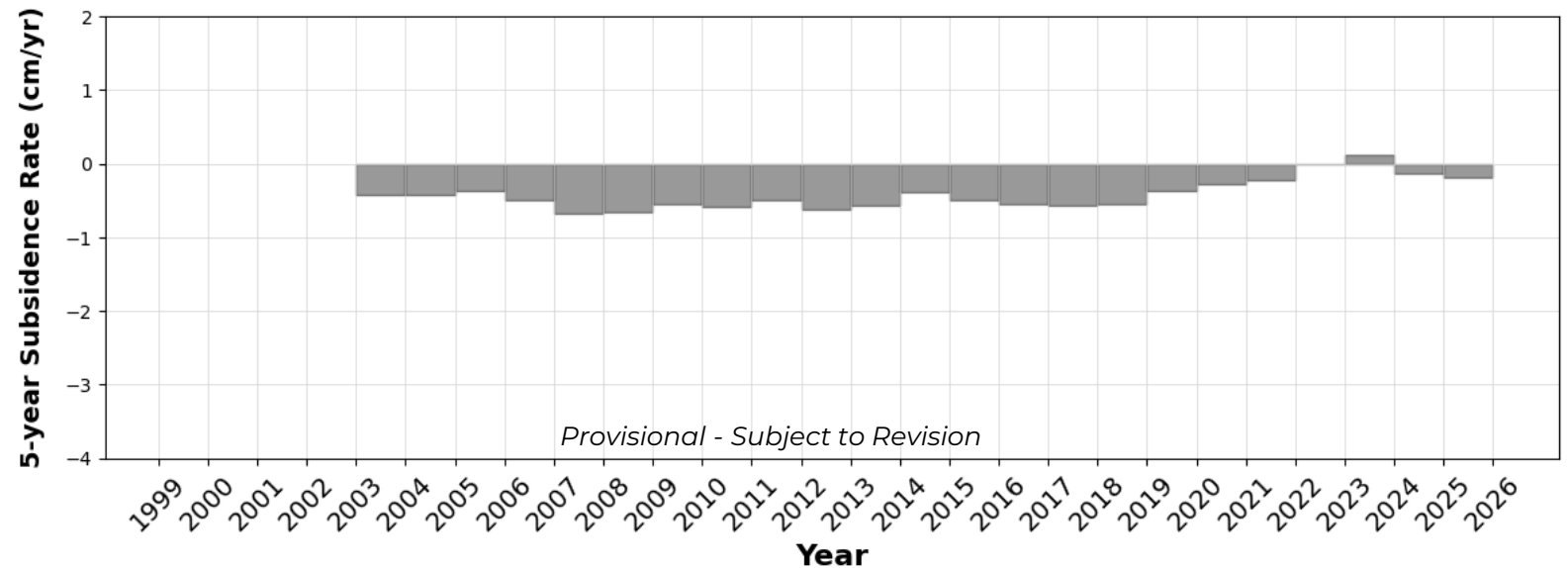
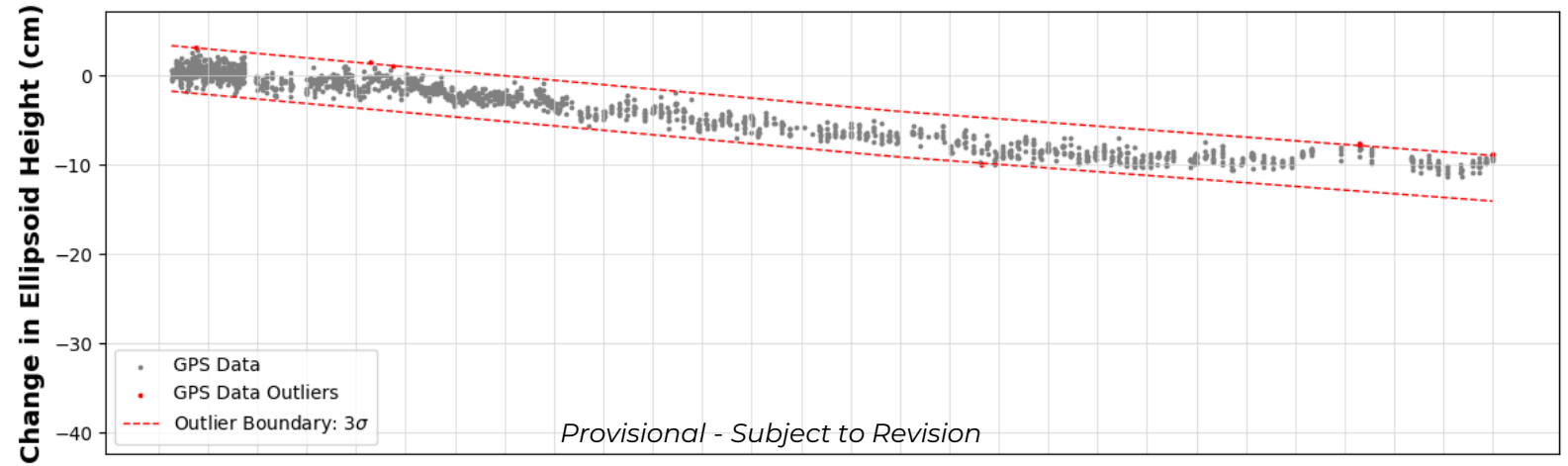
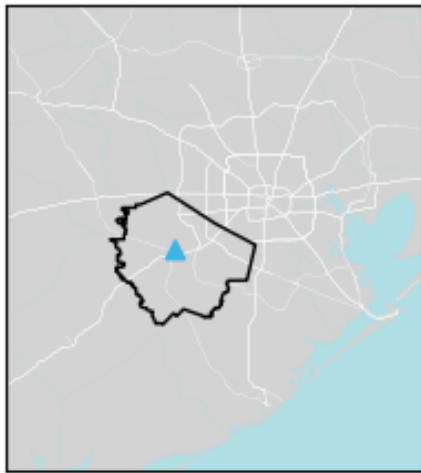


Processed GPS data (source: UH) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed lines) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by the District when calculating subsidence rates and are shown for informational purposes only.

Exhibit 14 Subsidence Data in Rosenberg



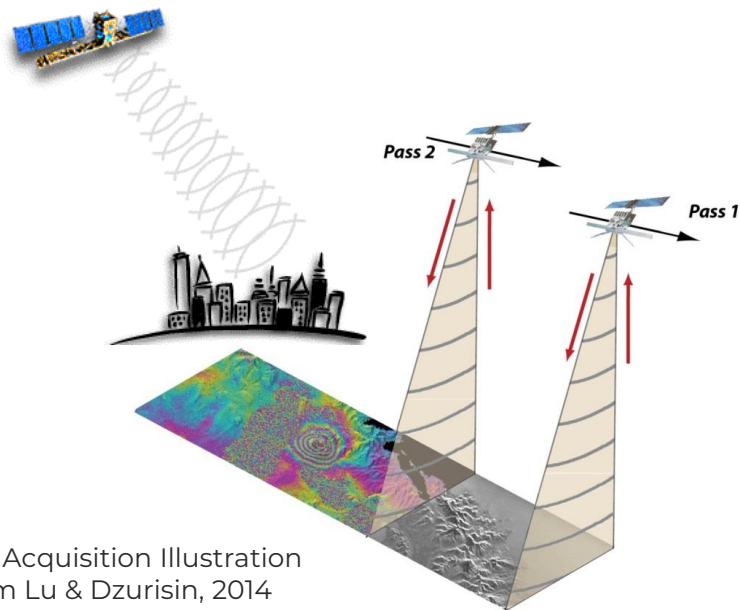
- GPS station **P010**, located in Rosenberg, has measured a total of approximately 9.9 cm of subsidence since 1999.
- 2021-2025 average annual subsidence rate is **0.23** cm/yr.



Processed GPS data (source: UH) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed lines) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by the District when calculating subsidence rates and are shown for informational purposes only.

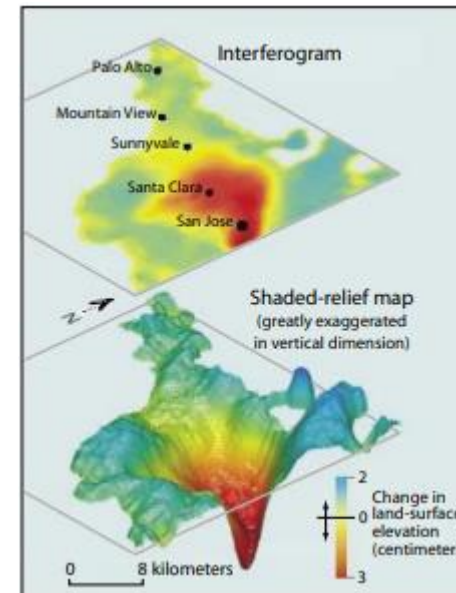
Interferometric Synthetic Aperture Radar (InSAR)

- Synthetic aperture radar (SAR) data are generated by transmitting radio waves from the sensor to the ground and back to the sensor.
- InSAR compares two SAR images of the same area at different times to detect small changes in distances between them. This processed pair of SAR images is the interferogram.
- Processing techniques can be used to achieve an accuracy of millimeters.



InSAR Acquisition Illustration
from Lu & Dzurisin, 2014

Processing
→

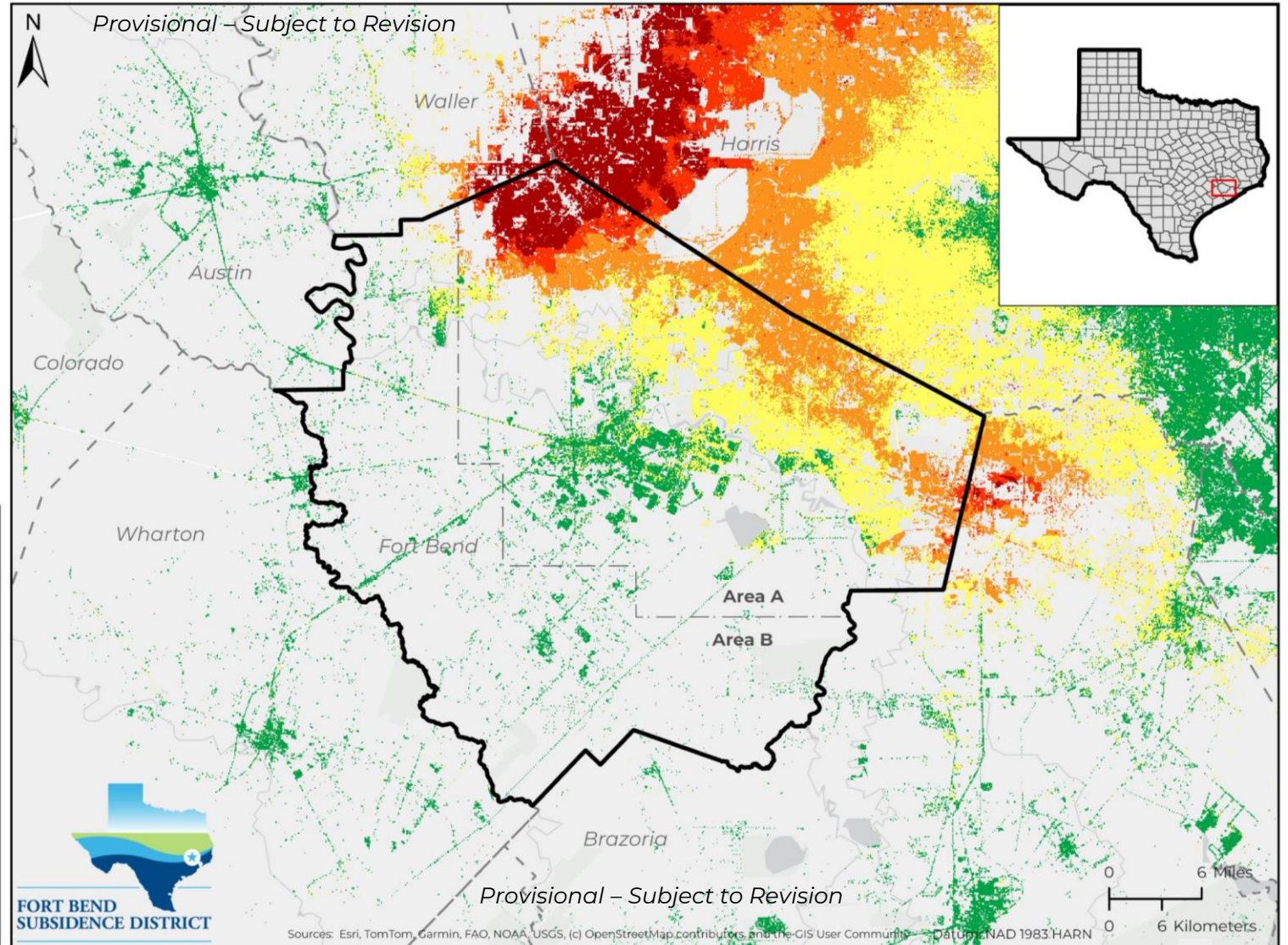


Interferogram (top) and
3-D topography (bottom)
from USGS Fact Sheet 2005-3025

Exhibit 11 Subsidence Rates from InSAR



Annual subsidence rate, in centimeters per year (cm/yr.), estimated from Sentinel 1A derived time-series interferograms averaged from 2021 to 2025.



EXPLANATION	
Sentinel-1 Derived Average Annual Subsidence Rate (cm/yr.) Processed from 2021 to 2025	
	Greater than 2.0
	2.0 - 1.5
	1.5 - 1.0
	1.0 - 0.5
	Less than 0.5

Gray areas show no data as the accuracy of InSAR decreases in rural areas due to tropospheric errors and decorrelation in vegetated areas.

Testimony and Public Comment

Any person who wishes to present testimony, evidence, exhibits, or other information may do so in person, by counsel, via email to fbinfo@subsidence.org, or any combination of these options.



Thank You for Attending!



- The record will be open until **May 8, 2026**. You may provide comments by sending an email to **fbinfo@subsidence.org**
- The 2025 Annual Groundwater Report will be presented for approval to the Fort Bend Subsidence District Board of Directors at their next meeting on **May 27, 2026**.
- Upon Board approval, the 2025 Annual Groundwater Report will be posted on our website, **fbsubsidence.org**, located within the Science & Research section.

Scan the QR code to visit the Annual Groundwater Reports page on our website. →



Contact Information

301 Jackson St. Ste 639
Richmond, TX 77469

(281)342-3273

fbinfo@subsidence.org

www.fbsubsidence.org



FORT BEND
SUBSIDENCE DISTRICT

Appendix B – Period of Record Data

A comprehensive table is provided which includes the GPS station name, coordinates in decimal degrees, dates of operation, length of monitoring in decimal years, total vertical displacement over the period of record, and annual rate of change in ellipsoidal height from 2021 to 2025. A period of record plot and five-year rate bar graph are also included for each GPS station that was actively monitored in 2025 as well as located within Fort Bend County and within a five-mile radius of Fort Bend County.

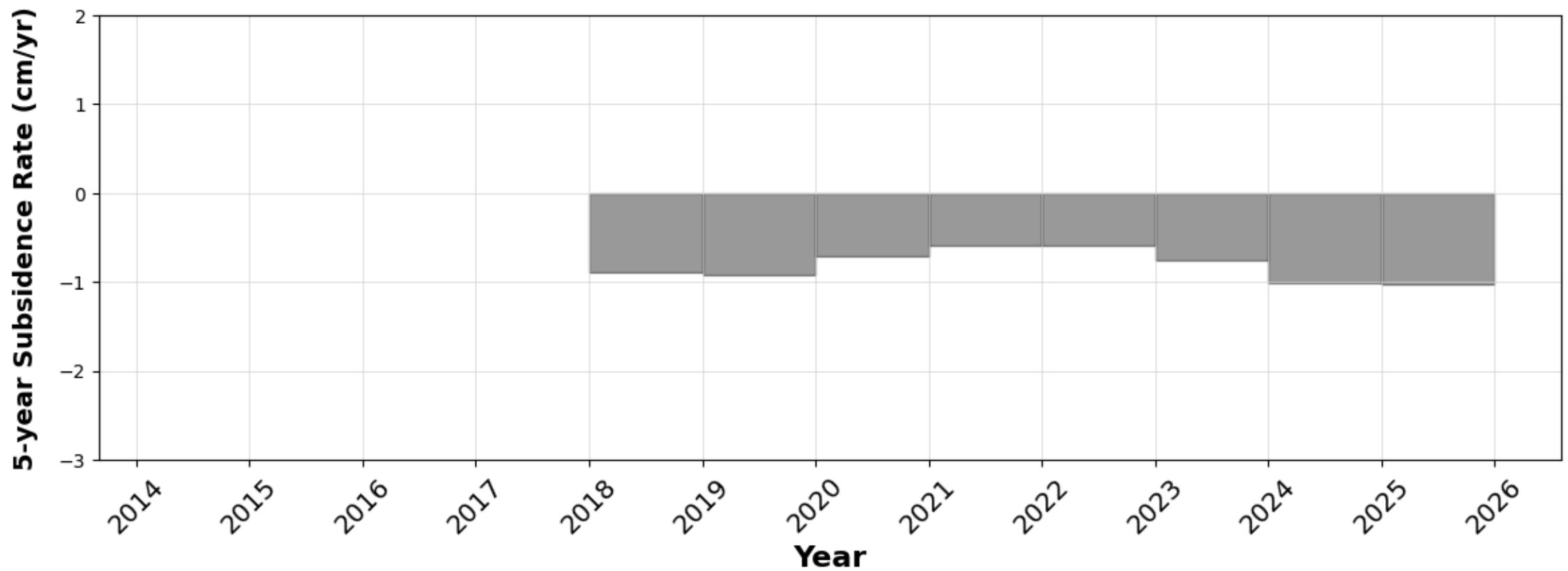
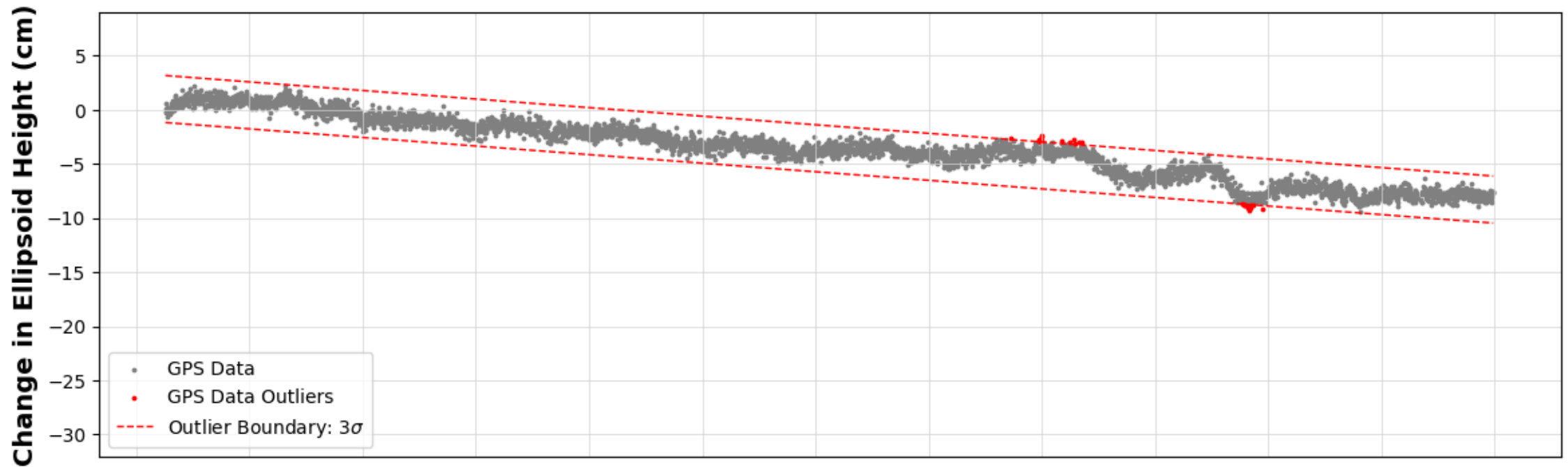
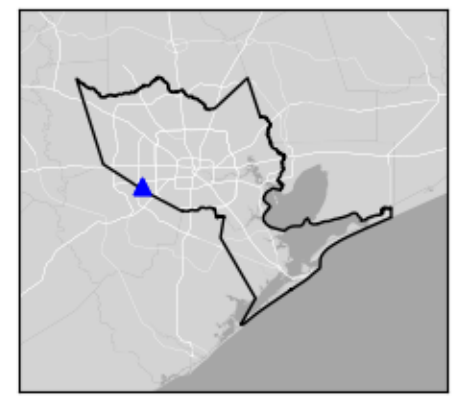
Site Name	Latitude (Decimal degrees)	Longitude (Decimal degrees)	Start of POR (Decimal year)	End of POR (Decimal Year)	Length of POR (Years)	Number of Samples (Days)	Total Vertical Displacement over POR (cm)	Annual Rate of Change in Ellipsoidal Height 2021-2025 (cm/yr.)
ALEF	29.692	-95.635	2014.259	2026.064	11.806	4296	-7.9	-1.04
CMFB	29.681	-95.729	2014.409	2026.064	11.655	4203	-7.3	-0.88
DMFB	29.623	-95.584	2014.771	2026.064	11.294	4099	-8.4	-1.02
FSFB	29.556	-95.630	2014.371	2026.064	11.693	4089	-2.9	-0.59
OKEK	29.725	-95.803	2014.575	2026.062	11.485	3611	-12.9	-1.62
P110	29.548	-95.442	2021.189	2025.999	4.810	245	-7.2	-1.28
P111	29.733	-95.873	2021.285	2025.958	4.674	182	-15.3	-3.32
P113	29.388	-95.642	2023.339	2025.898	2.561	112	1.4	0.54
P114	29.592	-95.513	2023.411	2025.786	2.367	114	-0.4	N/A
P004	29.630	-95.597	1994.660	2025.881	31.222	2549	-33.1	-0.86
P010	29.566	-95.799	1999.266	2025.994	26.728	1821	-9.9	-0.23
P014	29.474	-95.644	2000.879	2025.901	25.022	1368	-6.7	-0.21
P016	29.544	-95.527	2000.860	2025.999	25.140	1429	-6.6	-0.02
P019	29.841	-95.805	2000.892	2025.766	24.874	1348	-27.1	-1.46
P029	29.769	-95.822	2007.320	2025.936	18.616	1389	-35.0	-2.64
P030	29.689	-95.902	2007.350	2025.958	18.605	1039	-9.2	-0.59
P031	29.398	-95.848	2007.350	2025.865	18.515	933	2.3	0.40
P032	29.541	-95.707	2007.350	2025.994	18.643	1176	-1.2	-0.07
P040	29.493	-95.462	2007.353	2025.999	18.646	985	-10.3	-0.34
P041	29.662	-95.476	2007.337	2025.994	18.657	1277	-10.9	-0.65
P042	29.732	-95.635	2007.334	2025.879	18.545	883	-12.8	-0.85
P057	29.684	-95.722	2009.137	2025.917	16.780	725	-7.2	-0.71
P058	29.485	-95.715	2010.591	2025.879	15.287	701	-3.7	-0.12
P059	29.617	-95.740	2010.572	2025.994	15.422	759	-5.2	-0.40
P060	29.686	-95.820	2012.068	2025.936	13.868	931	-10.3	-0.78
P061	29.675	-95.972	2011.129	2025.955	14.827	1030	-5.7	-0.28
P062	29.593	-95.974	2011.129	2025.975	14.846	643	-3.1	0.33
P063	29.508	-95.547	2011.432	2025.999	14.567	1058	-3.3	-0.40
P067	29.532	-95.855	2011.109	2025.975	14.865	985	-2.8	0.04
P078	29.739	-96.016	2014.331	2025.972	11.641	531	-4.1	-0.03
P096	29.724	-95.748	2017.624	2025.786	8.161	2708	-3.6	-1.05
P097	29.785	-95.847	2018.104	2025.999	7.895	1067	-18.1	-2.43
P098	29.803	-95.820	2018.120	2025.991	7.871	780	-16.2	-2.15
RPFB	29.484	-95.514	2014.773	2026.064	11.291	4065	-4.0	-0.58
SISD	29.762	-96.174	2015.176	2026.064	10.888	3811	-1.8	-0.09
TXWH	29.325	-96.112	2010.426	2026.064	15.639	5631	-5.7	-0.28
UHCR	29.728	-95.757	2014.123	2026.064	11.940	4030	-14.4	-1.70
UHEB	29.526	-96.066	2014.595	2026.064	11.469	3865	-2.3	-0.13
UHKD	29.724	-95.748	2018.969	2025.317	6.346	2085	-7.2	-1.42
UHKS	29.724	-95.748	2018.411	2025.320	6.908	2384	-6.4	-1.31

Notes:

n/a: rate of change in ellipsoidal height not calculated.

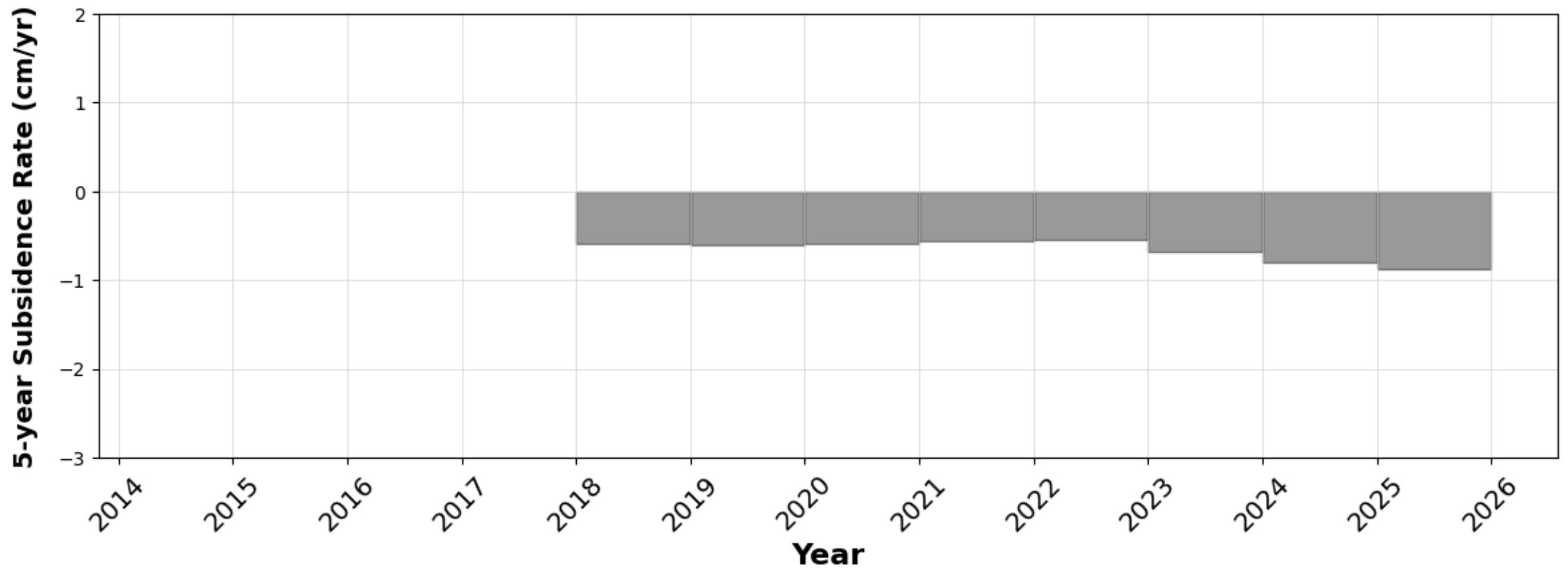
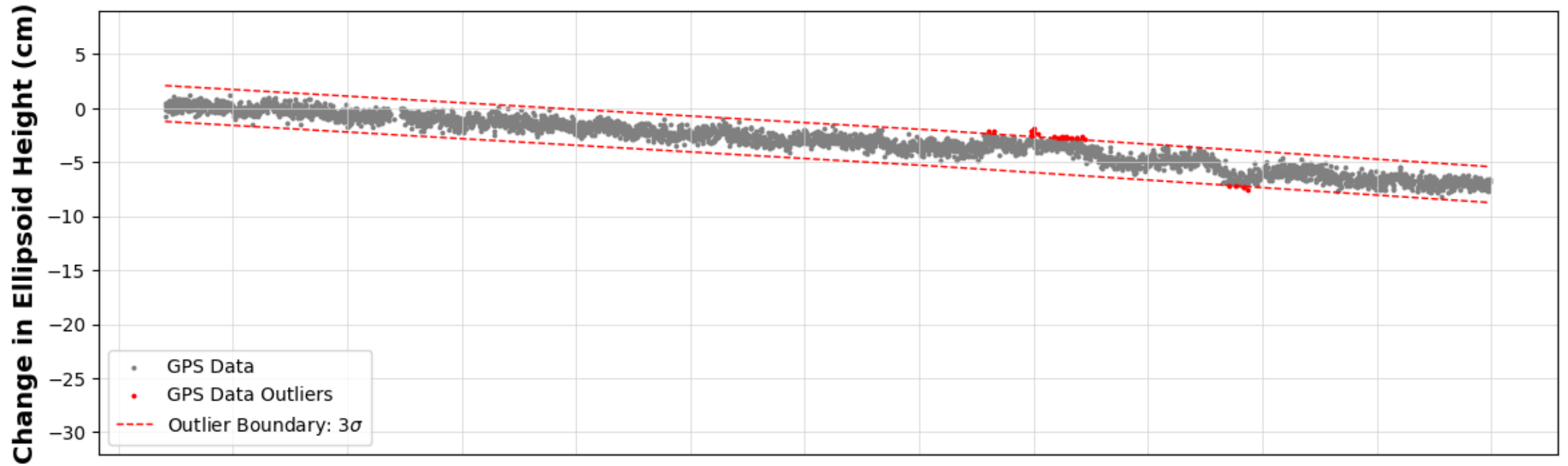
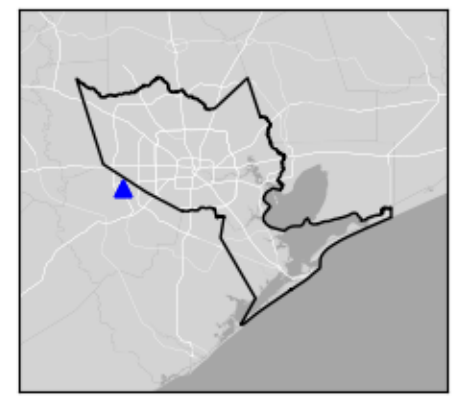
ALEF

Houston, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

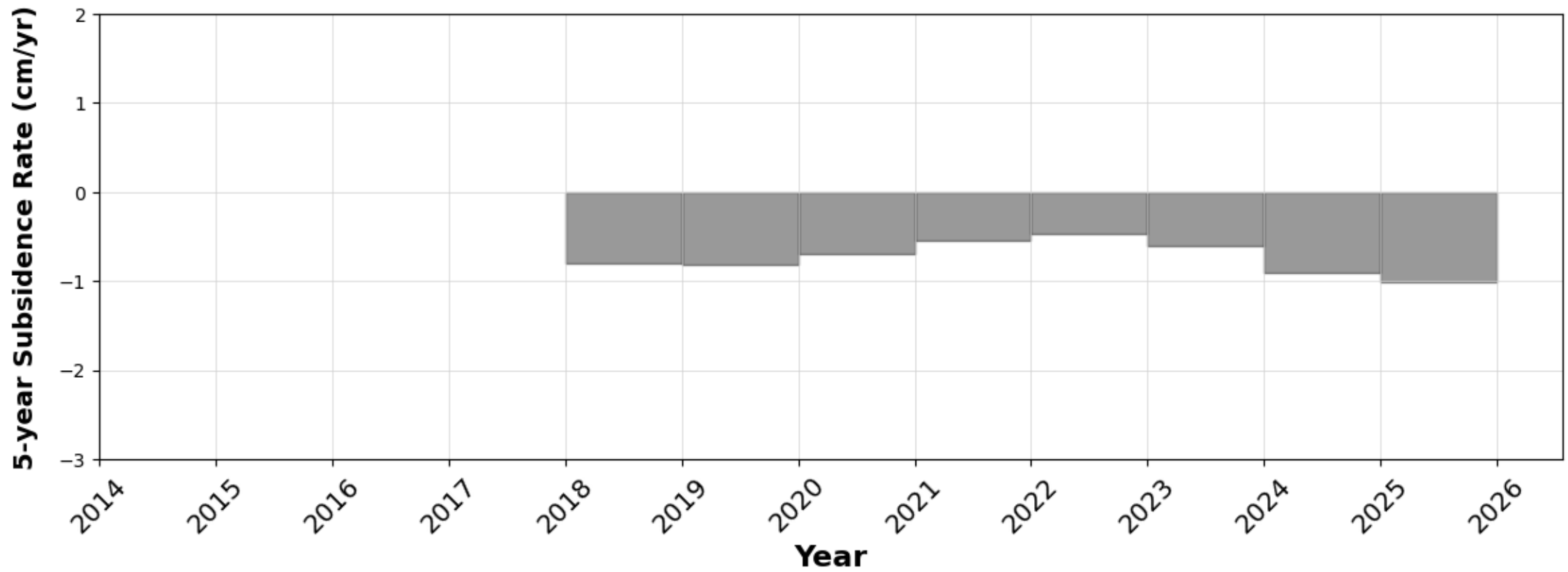
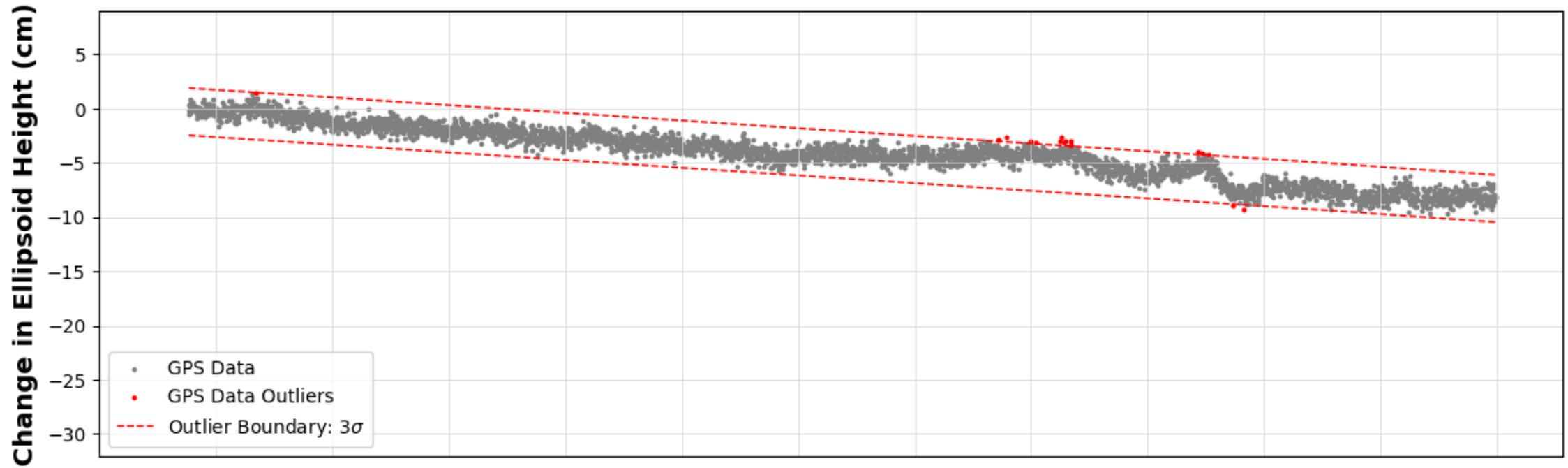
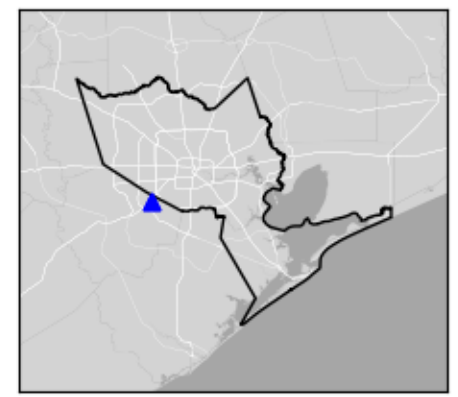
CMFB Richmond, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

DMFB

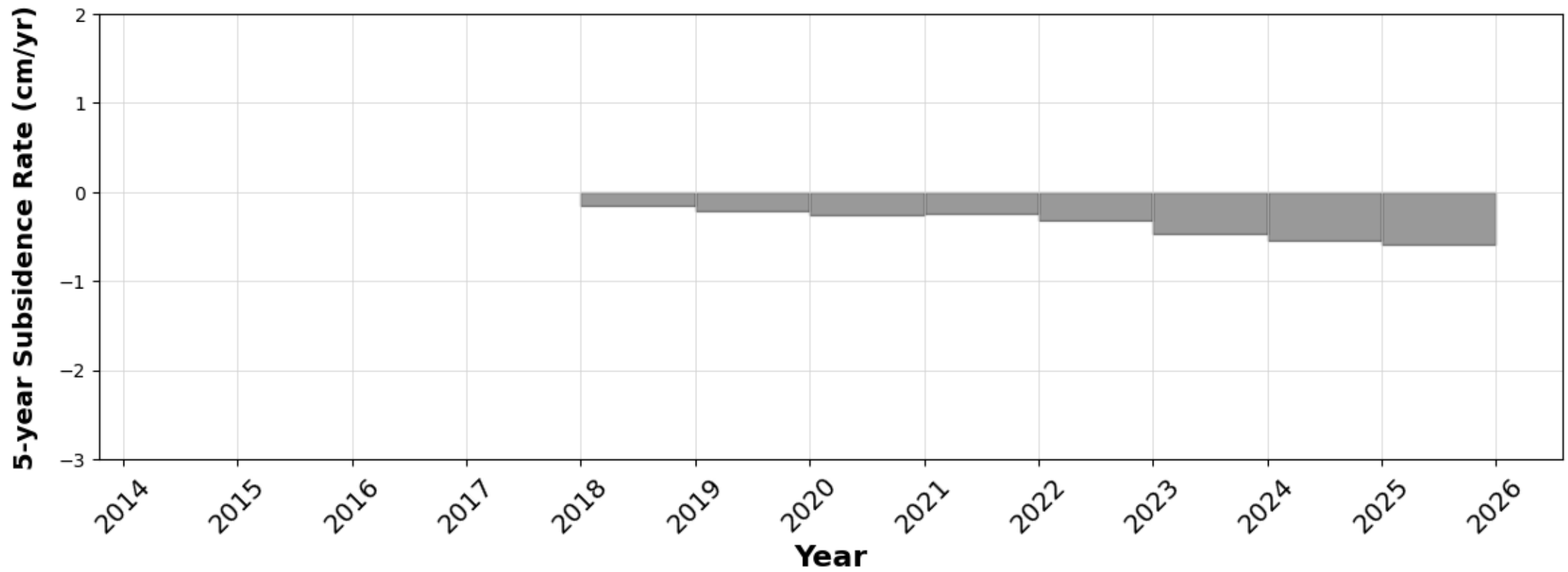
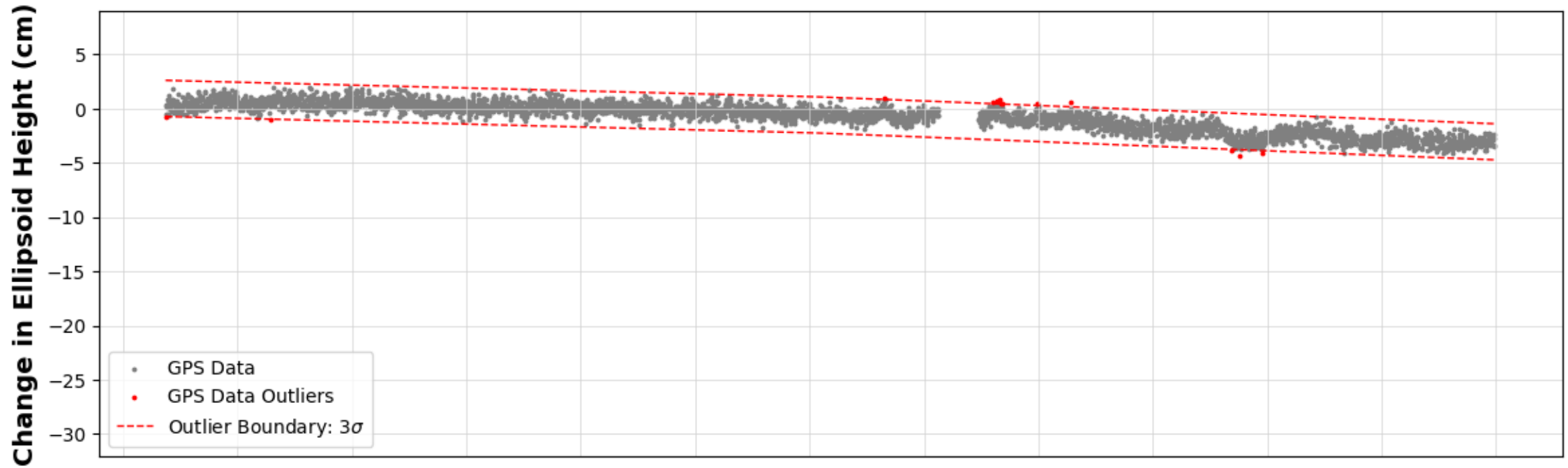
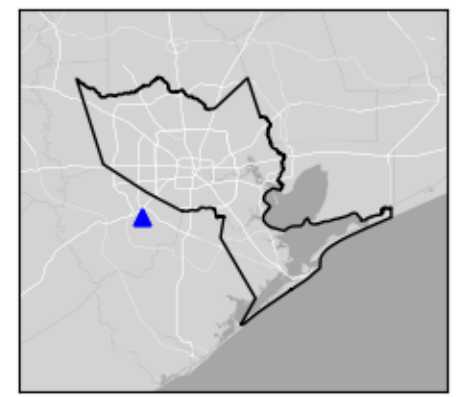
Sugar Land, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

FSFB

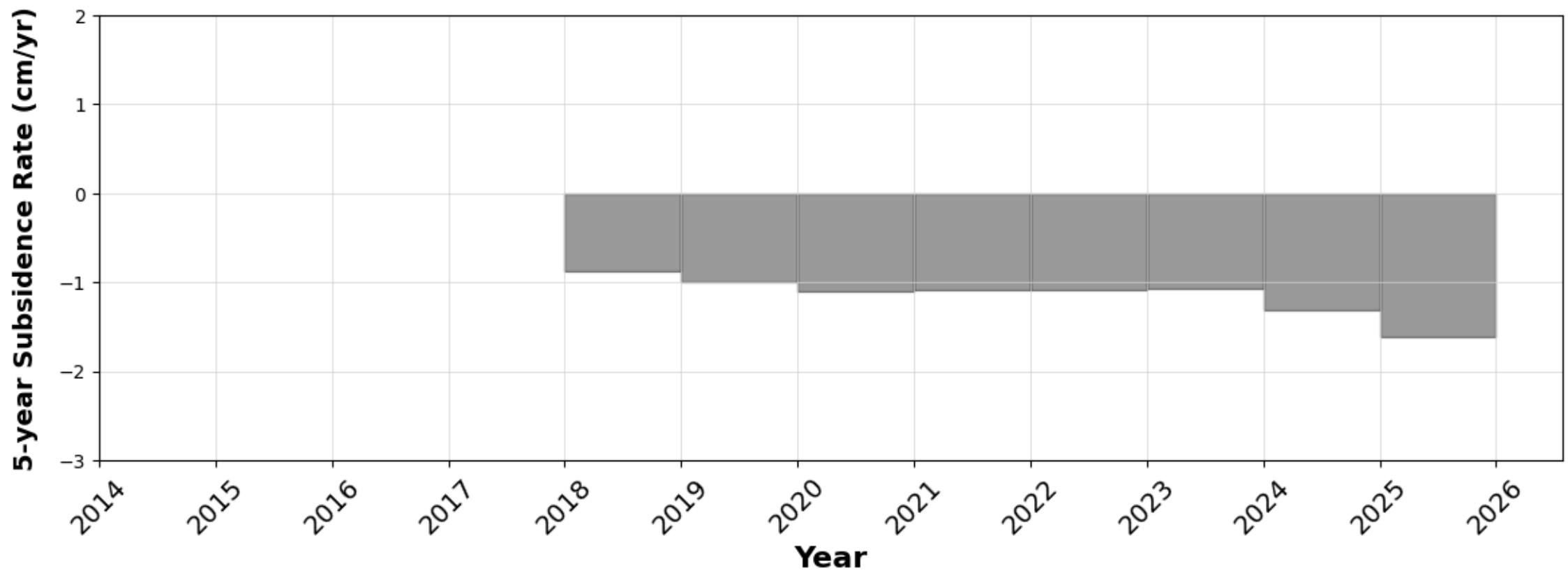
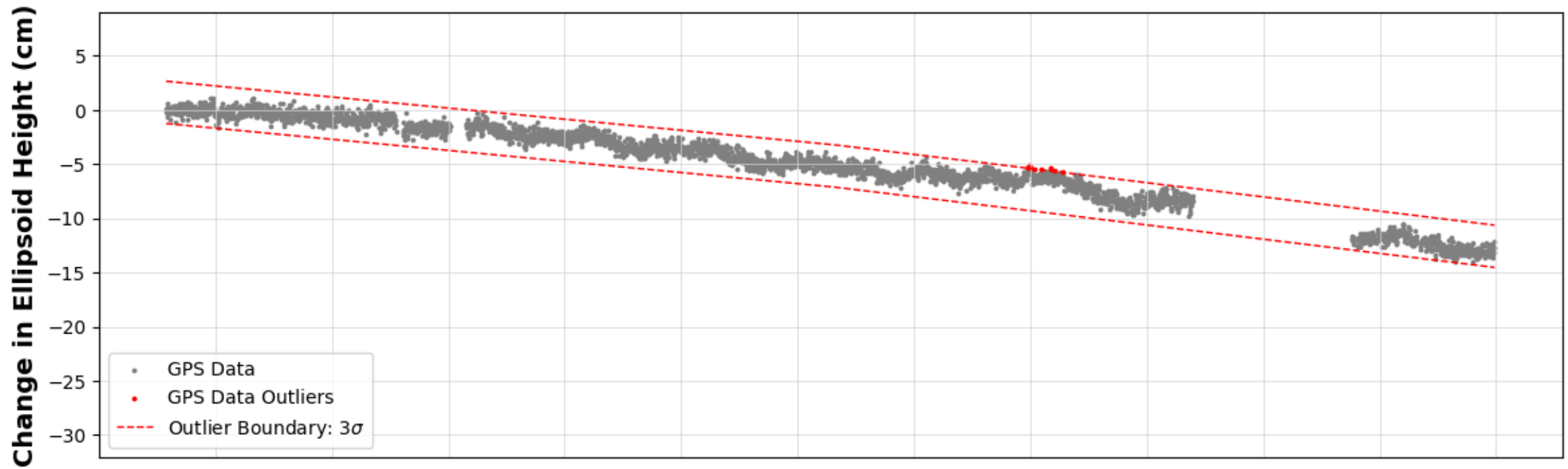
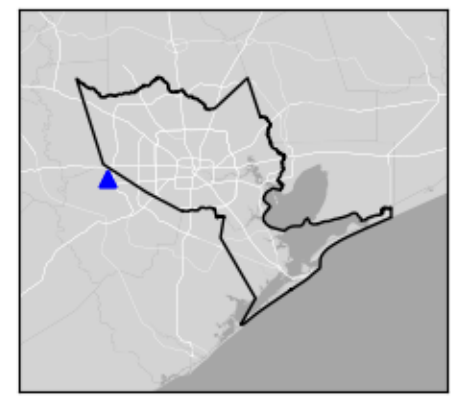
Sugar Land, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

OKEK

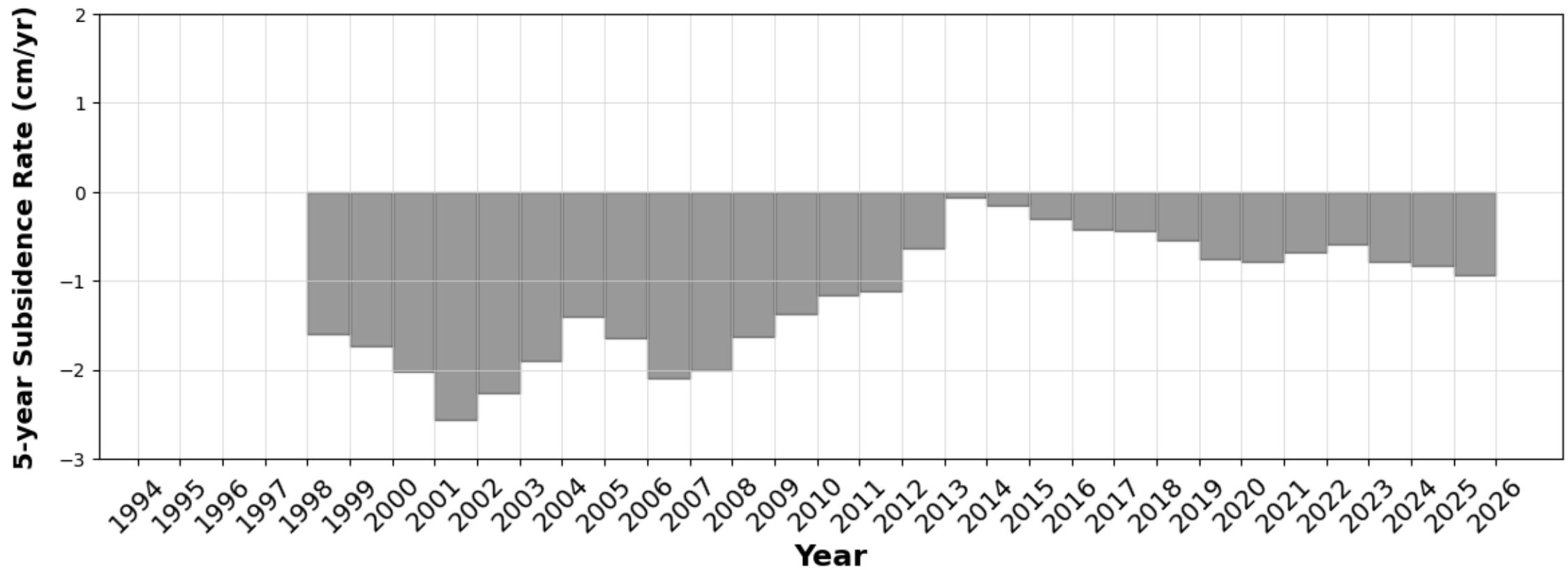
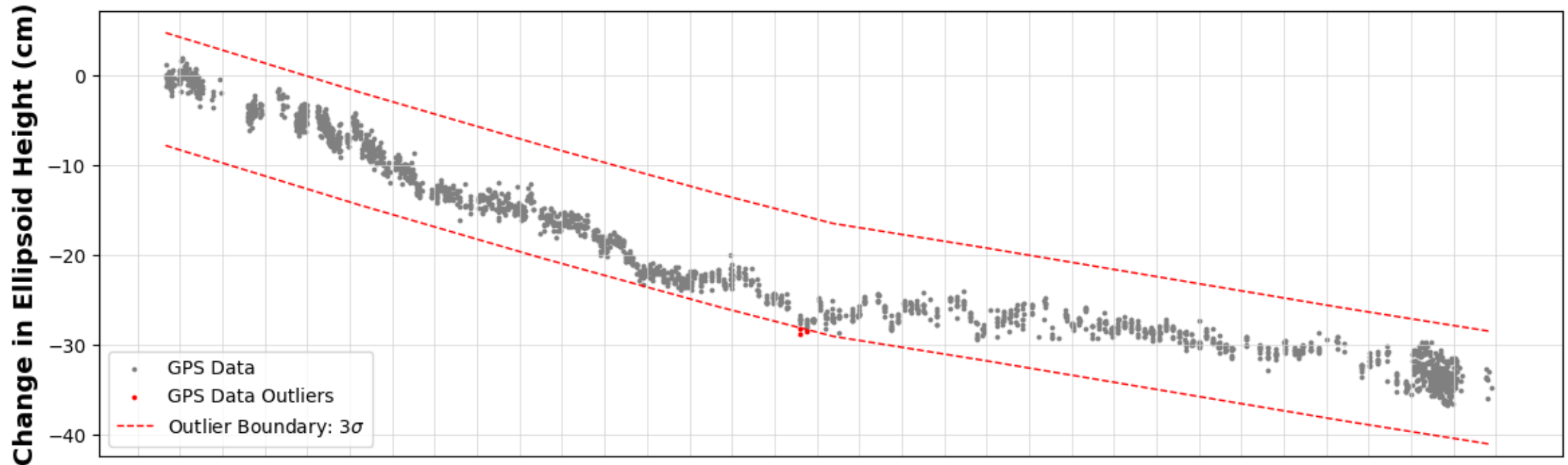
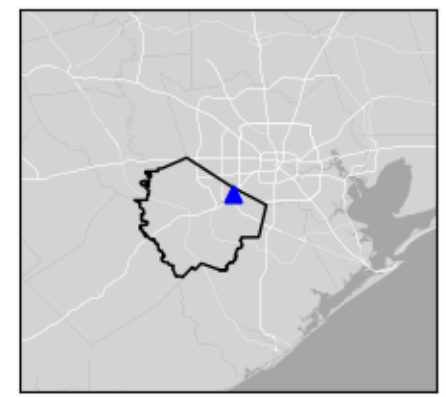
Katy, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P004

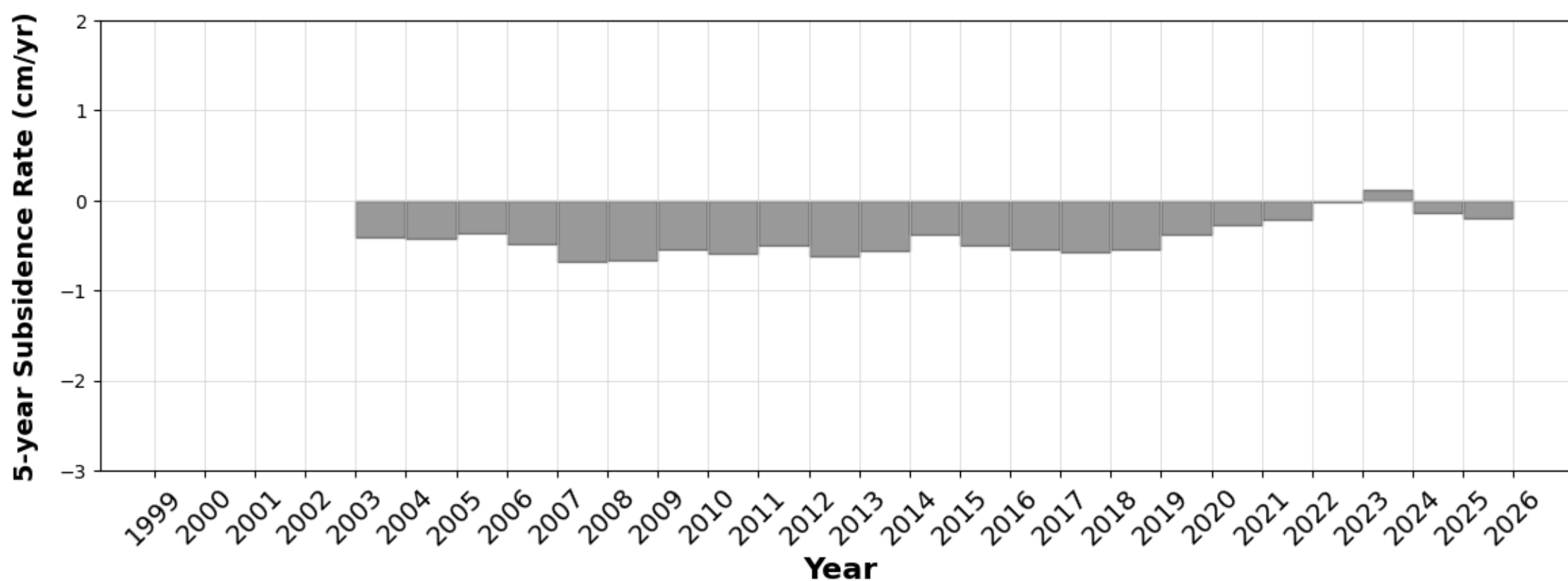
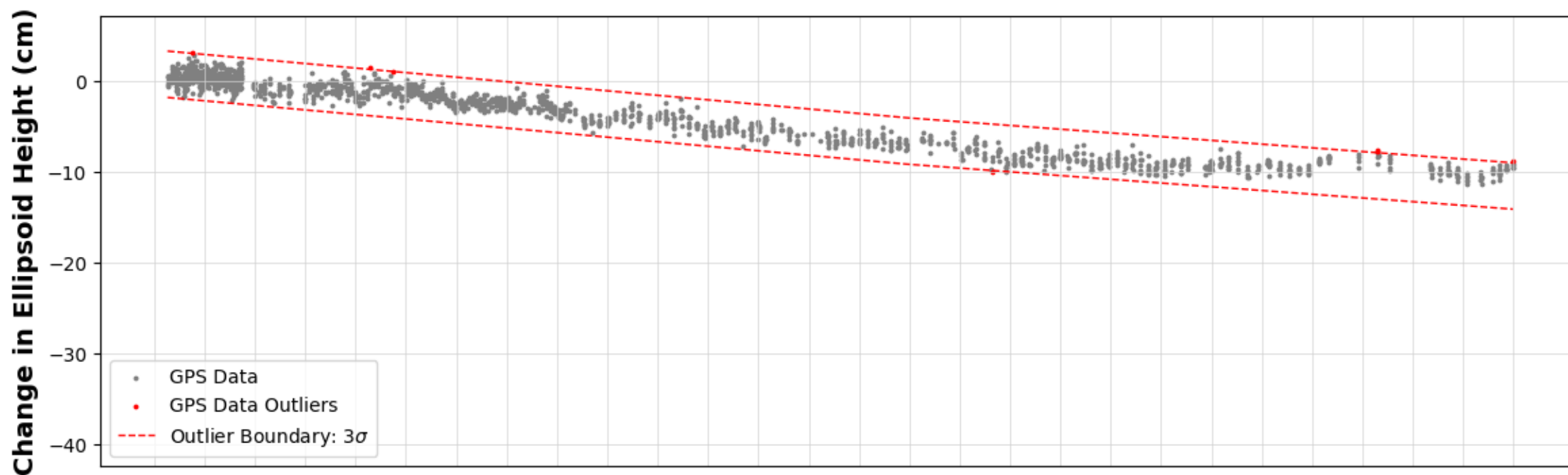
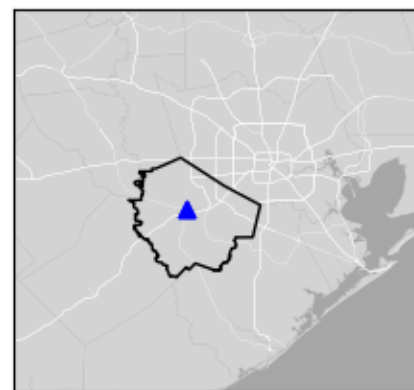
Sugar Land, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P010

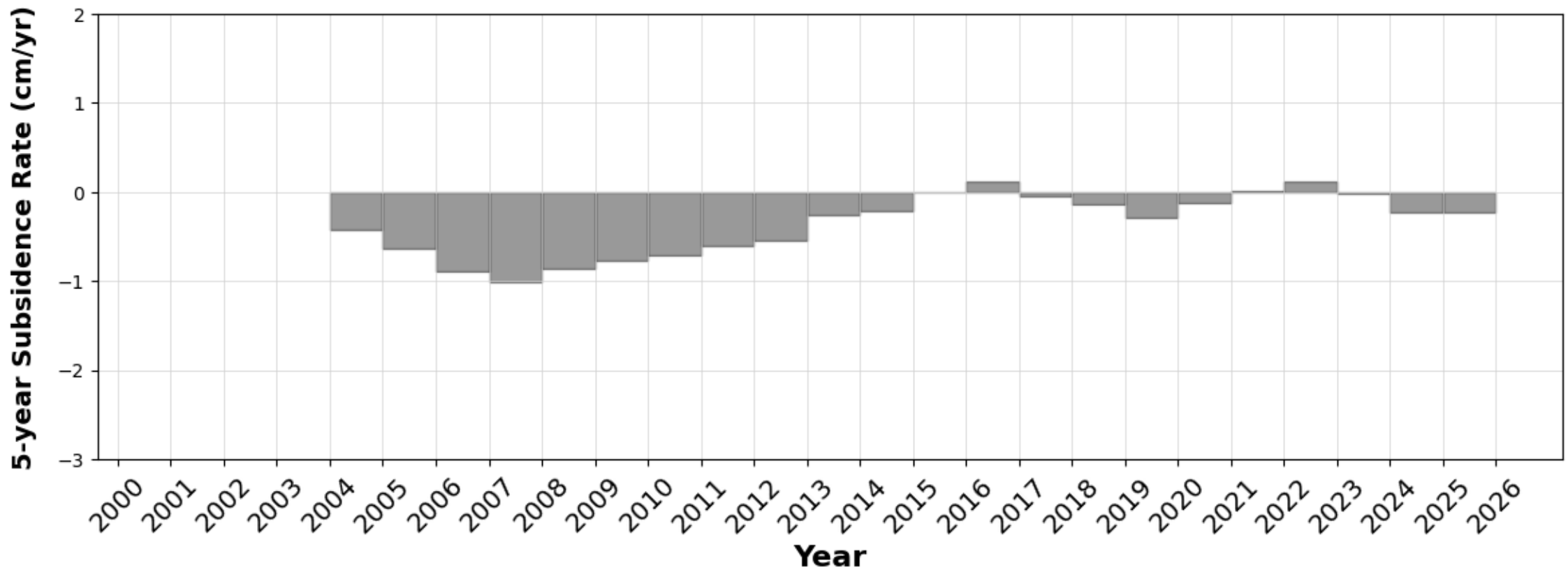
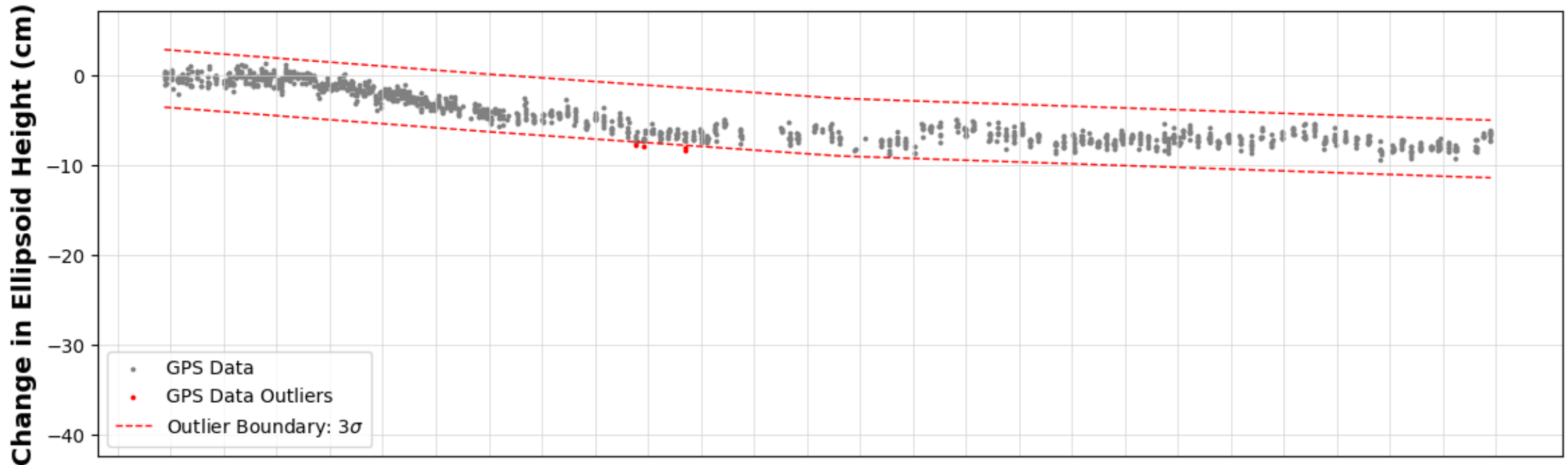
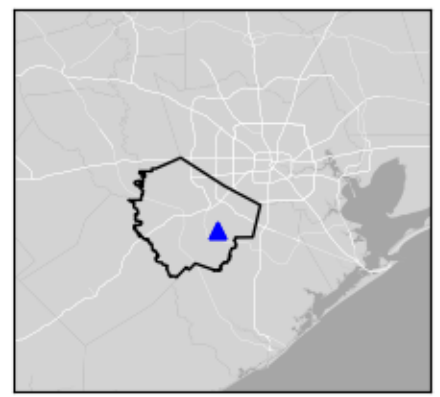
Rosenberg, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P014

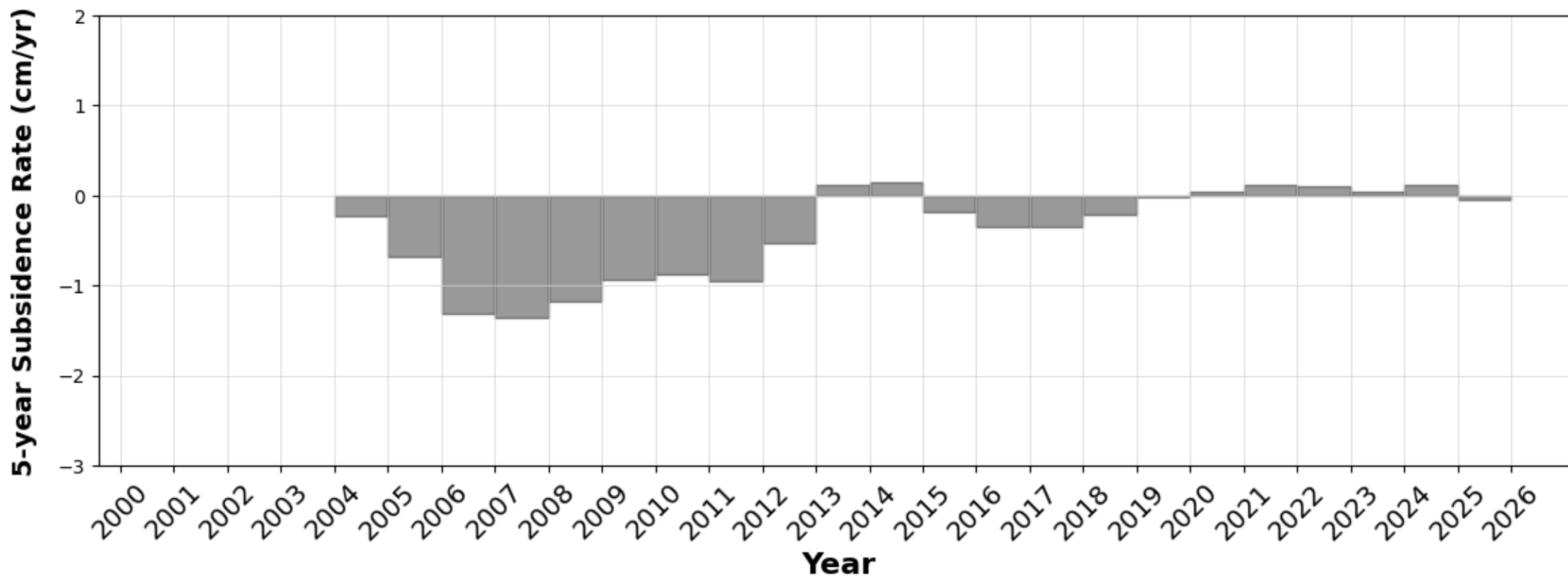
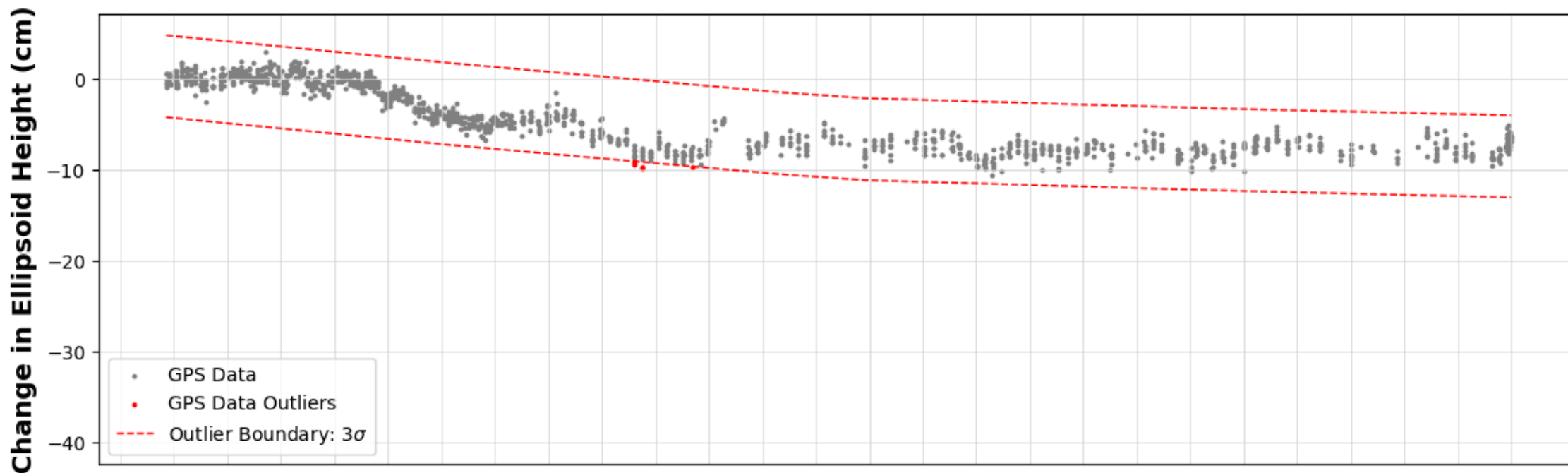
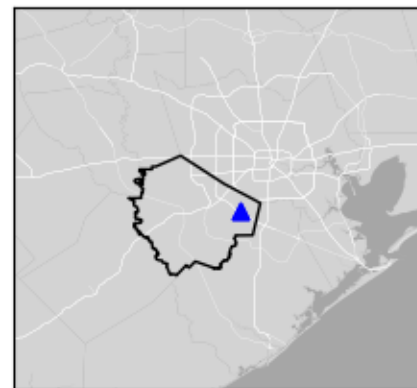
Thompsons, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P016

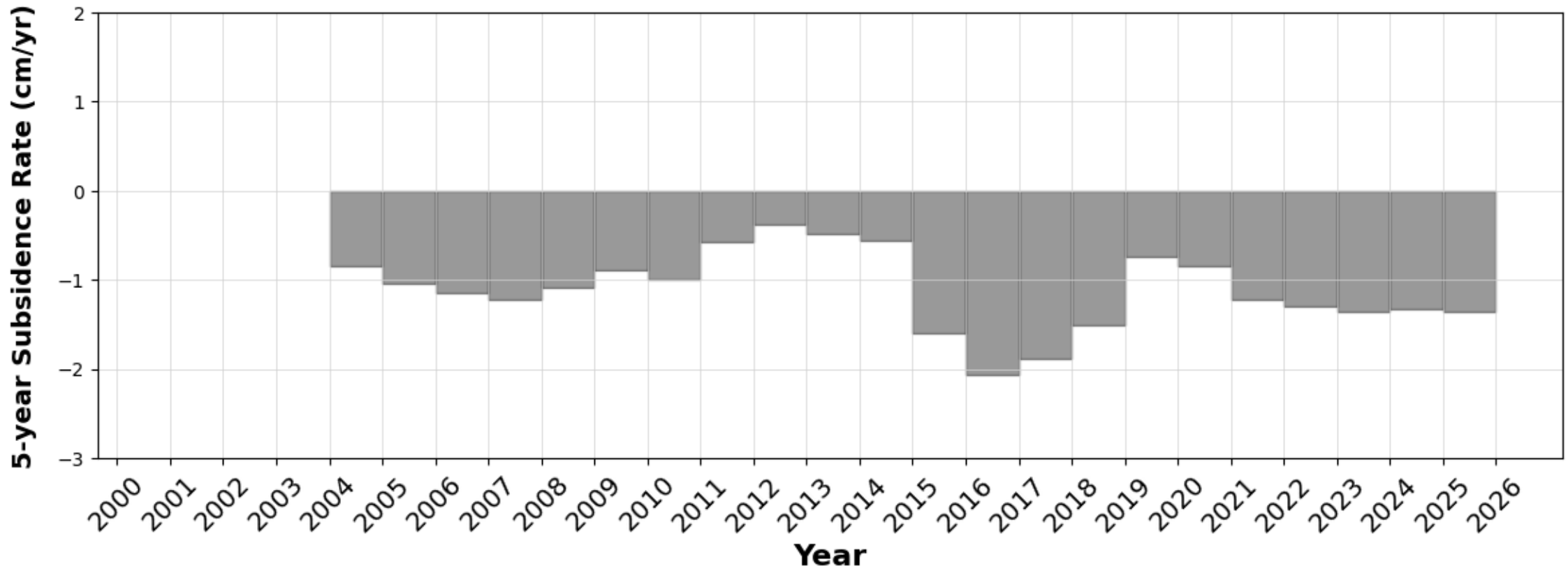
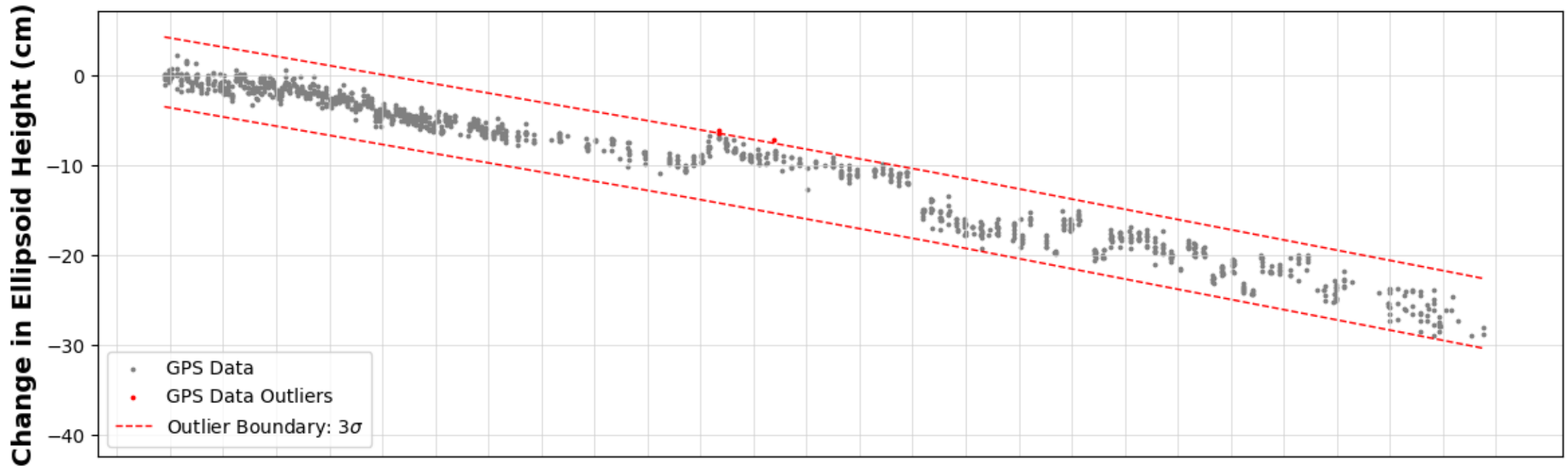
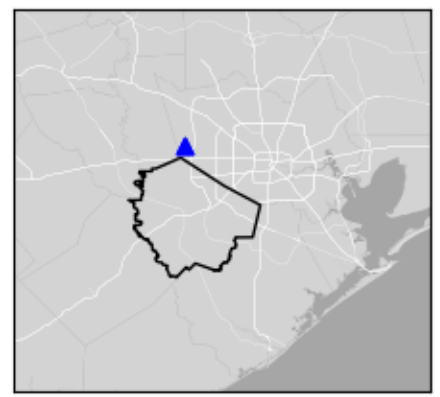
Missouri City, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P019

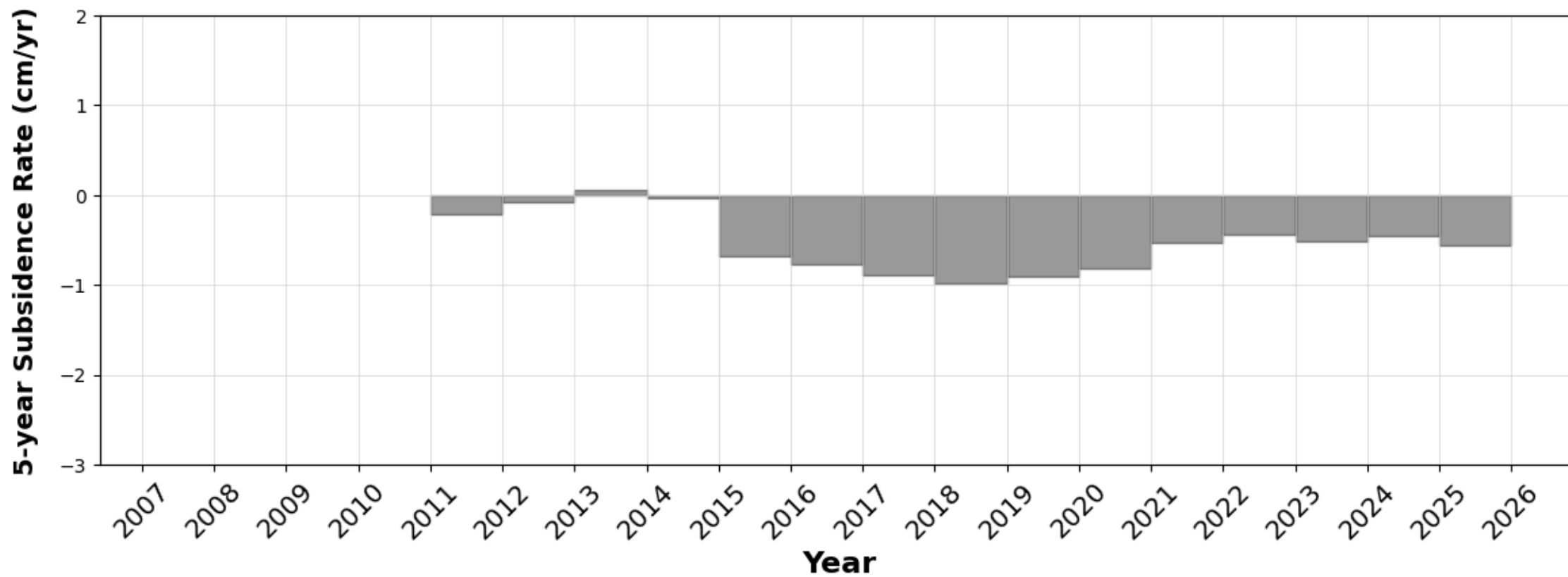
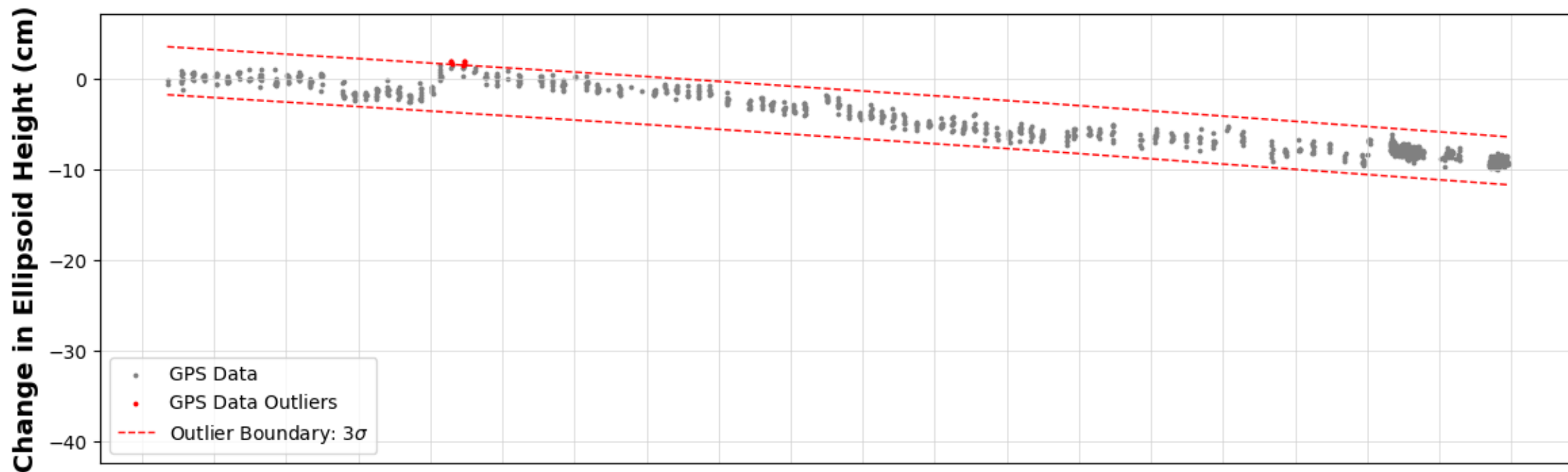
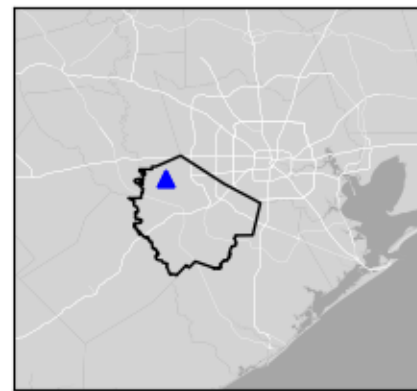
Katy, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P030

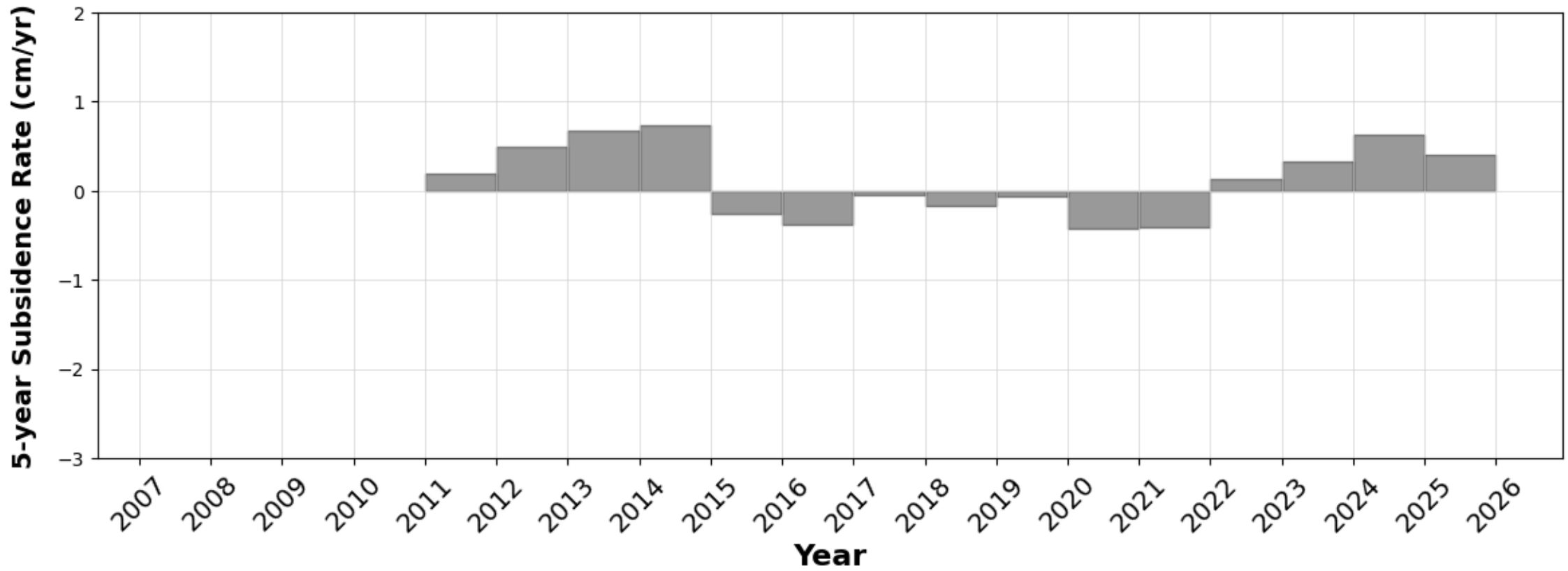
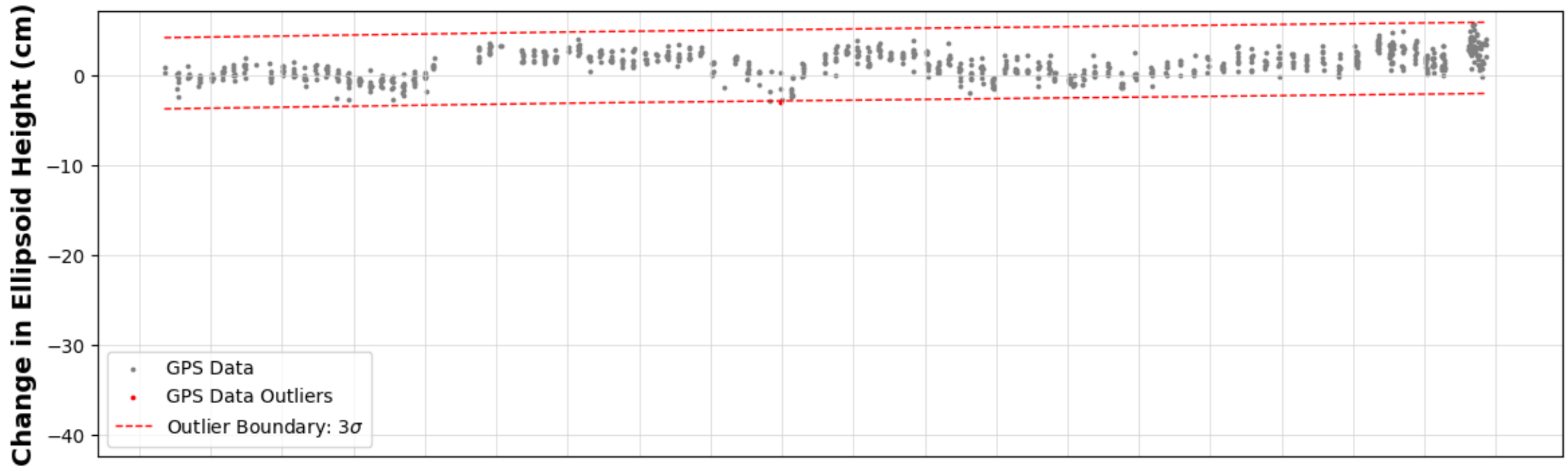
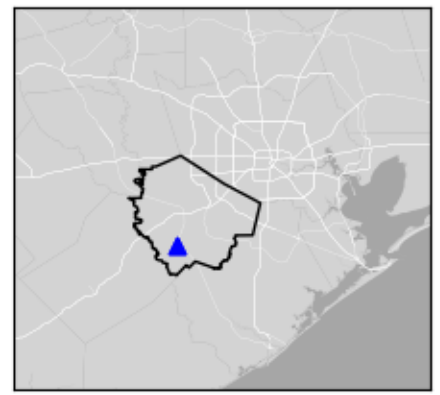
Fulshear, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P031

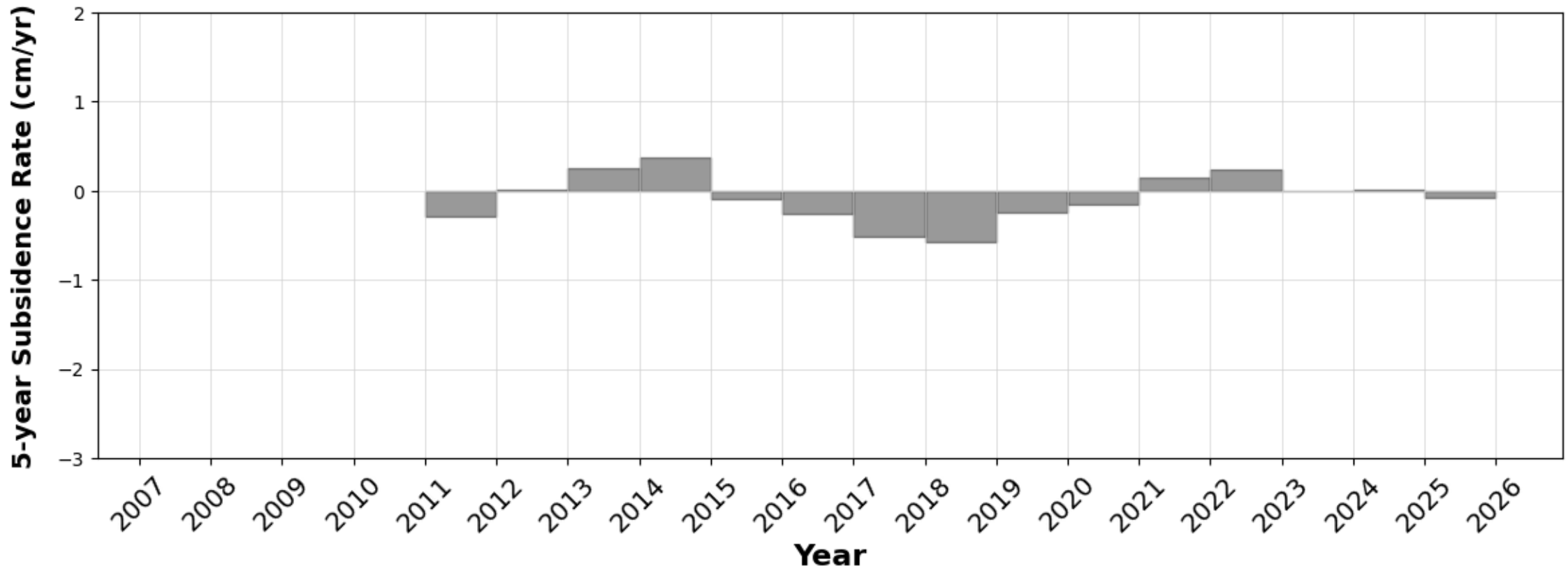
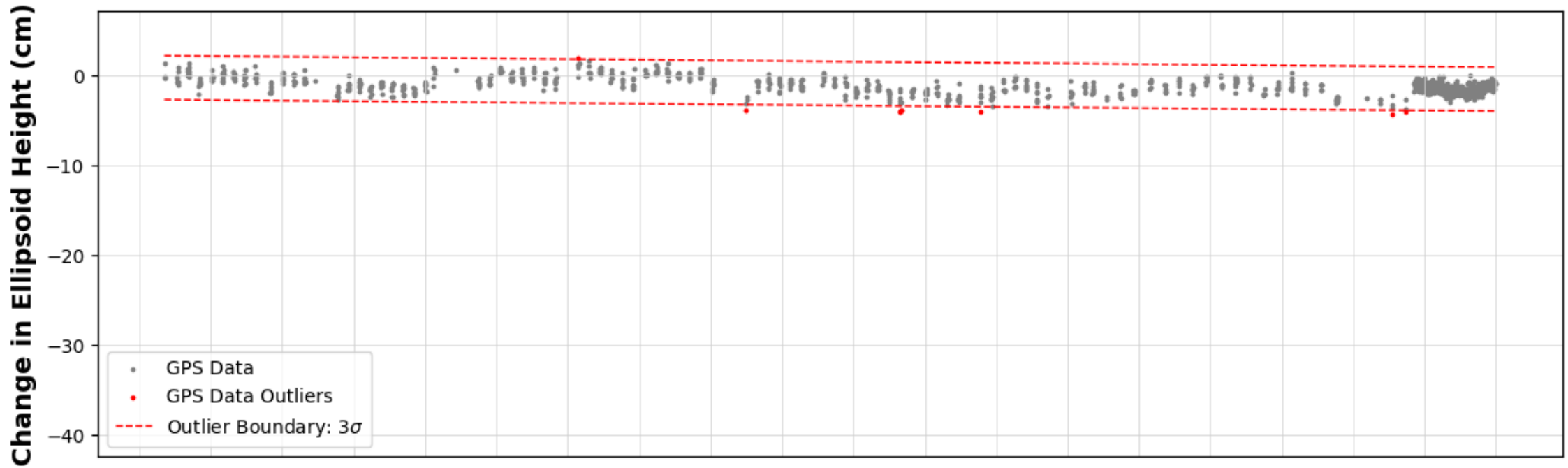
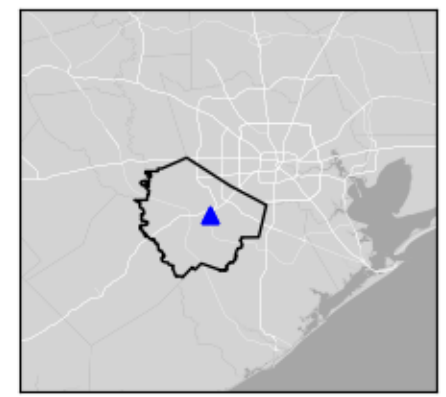
Needville, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P032

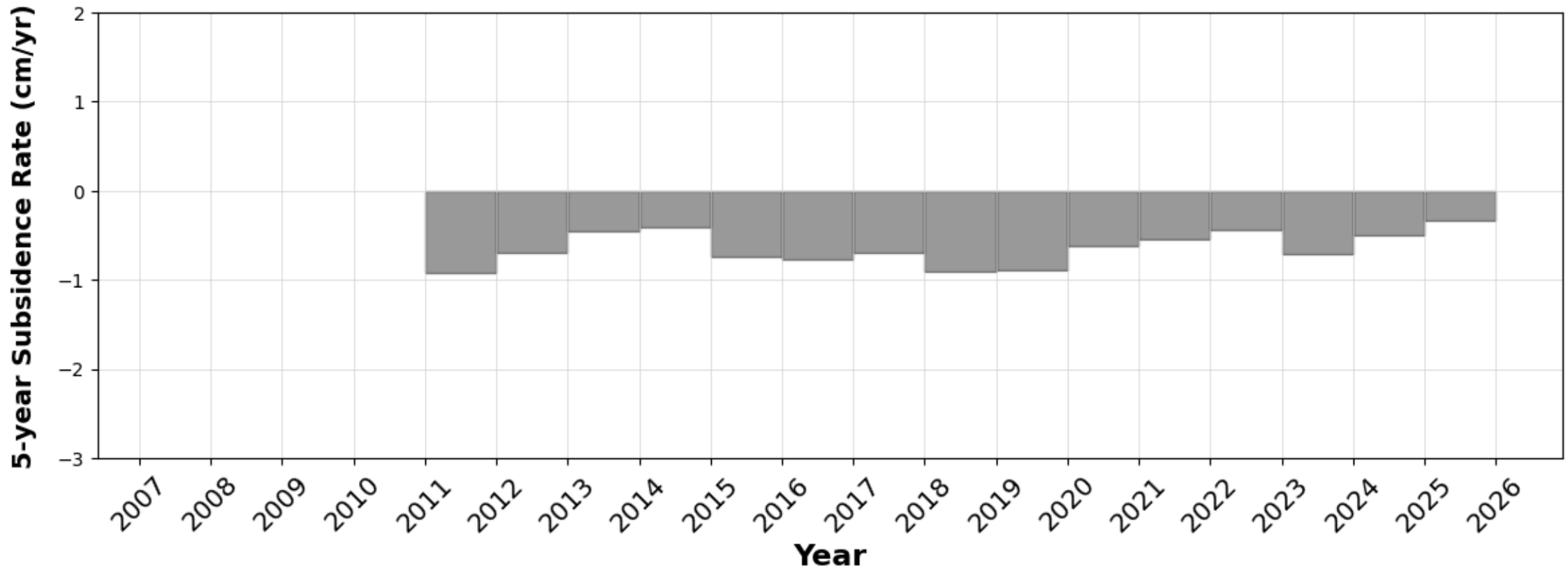
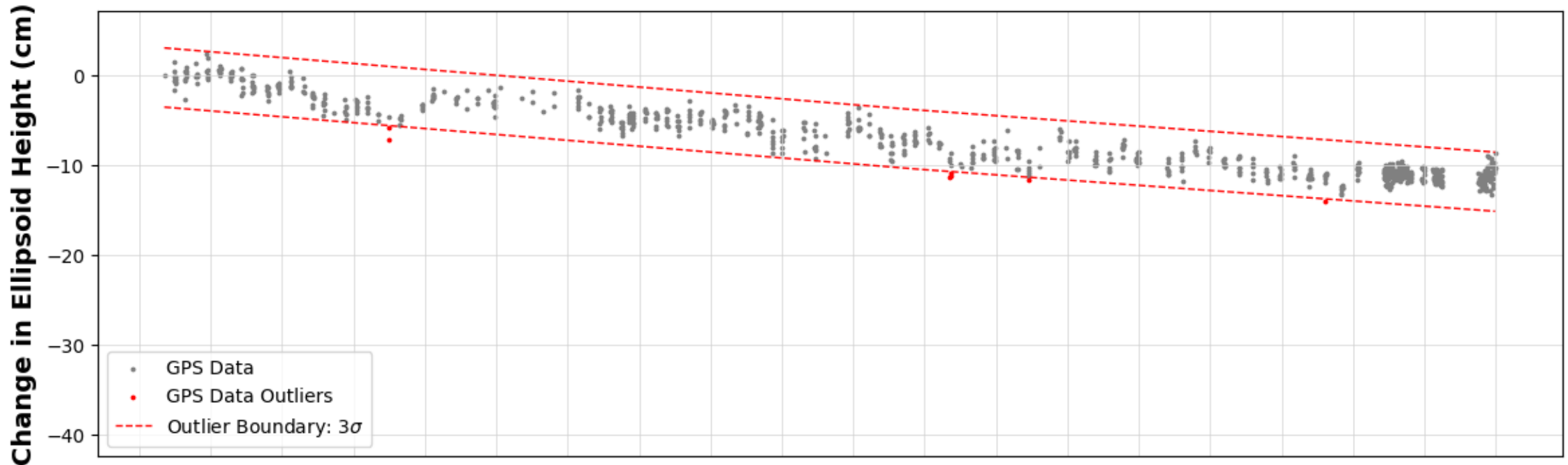
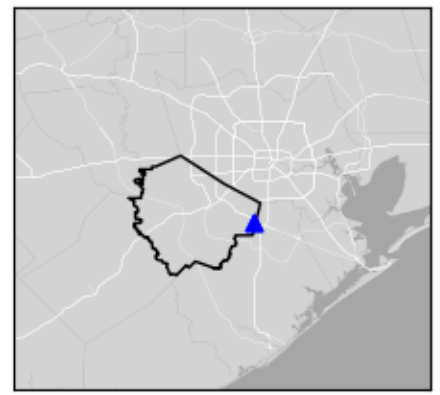
Richmond, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P040

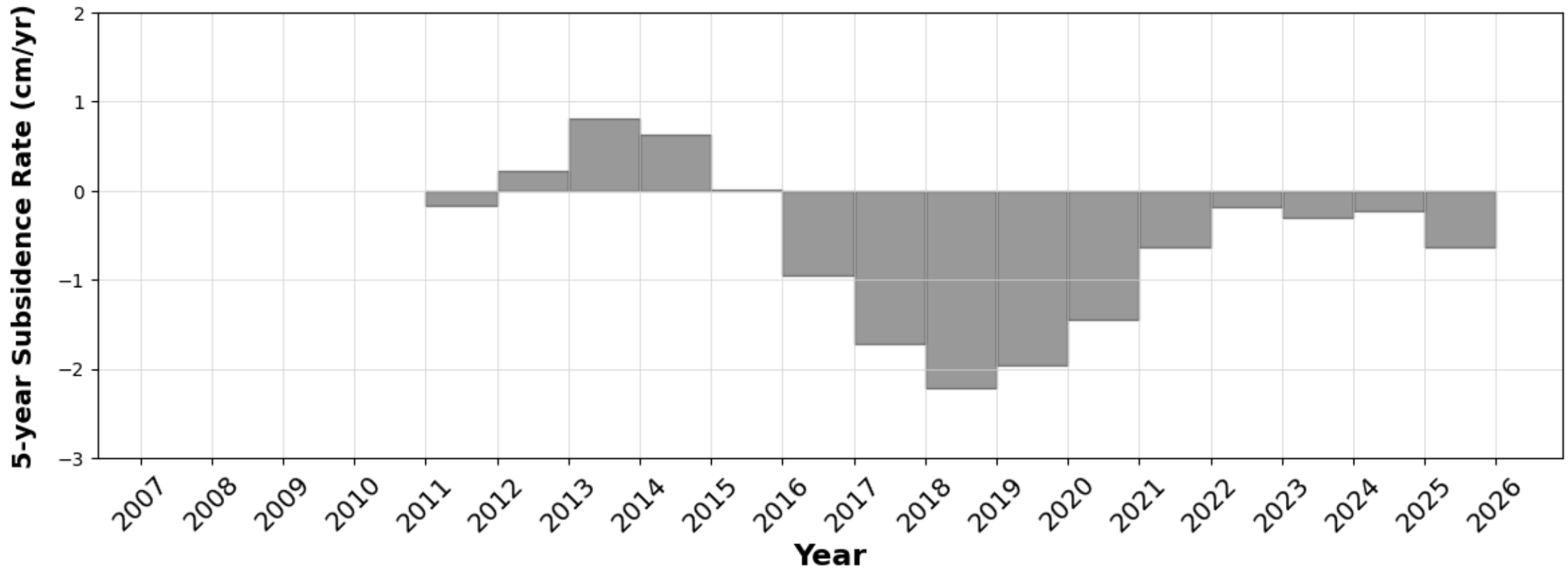
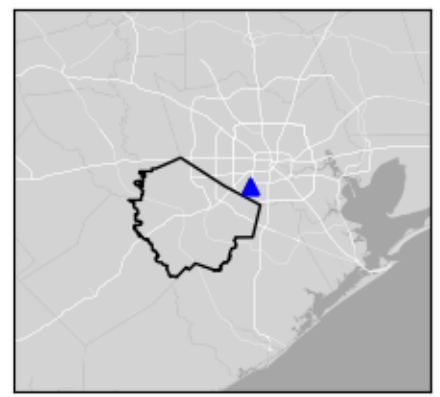
Rosharon, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P041

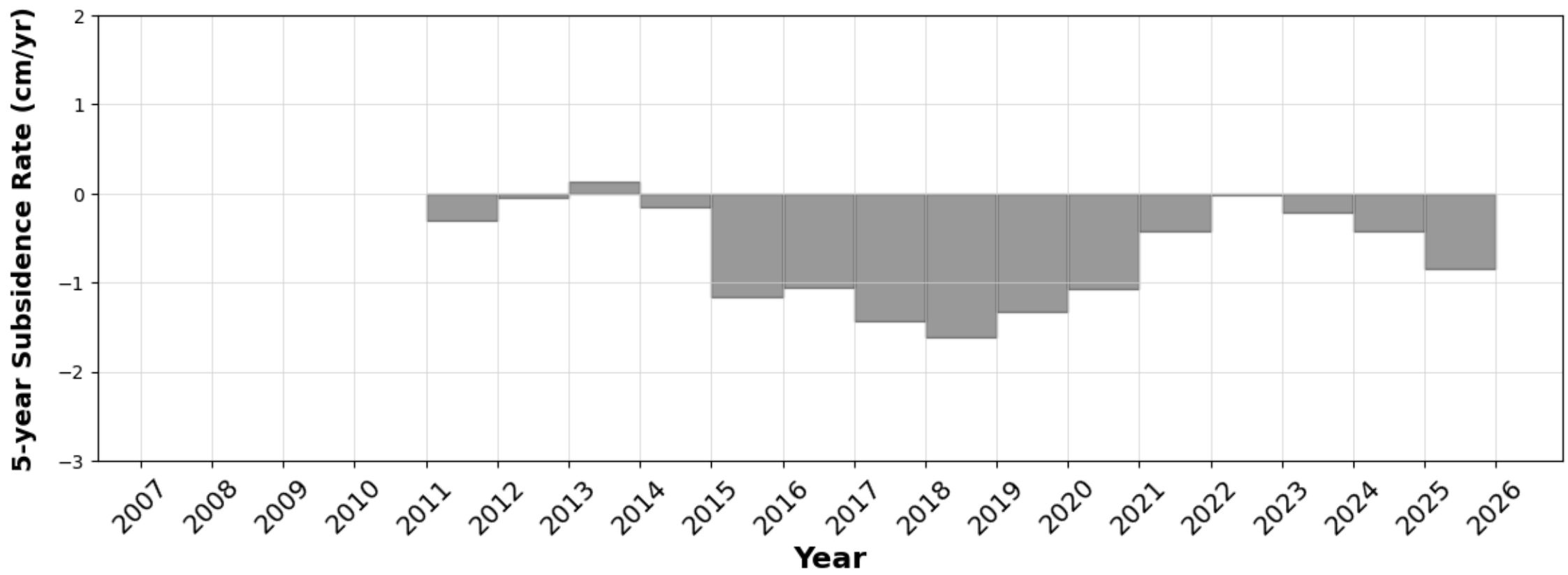
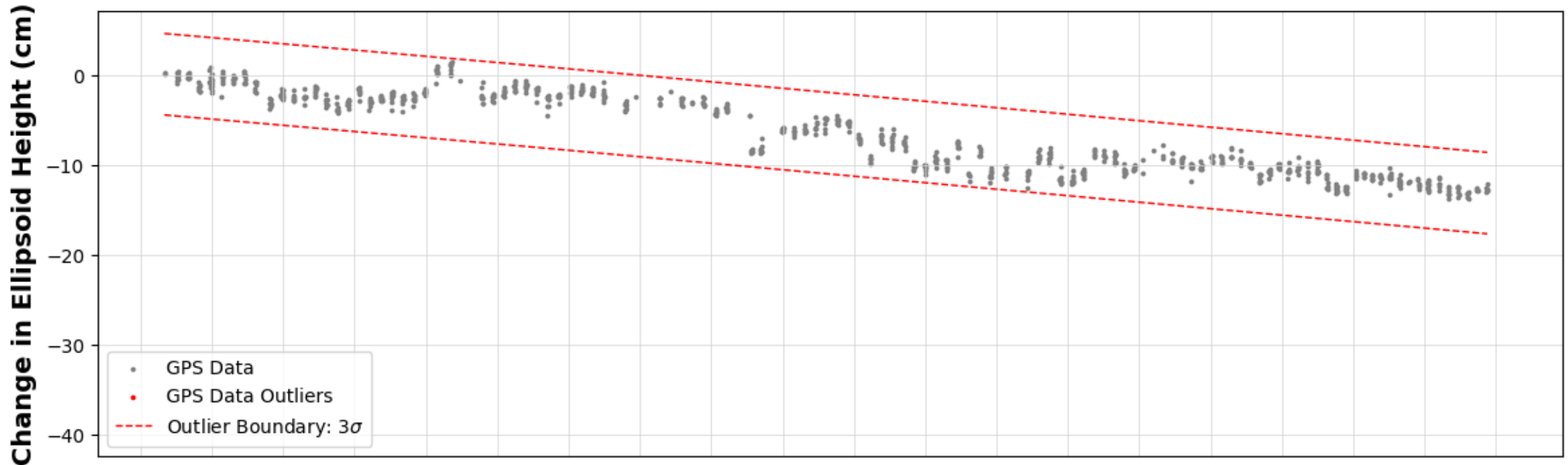
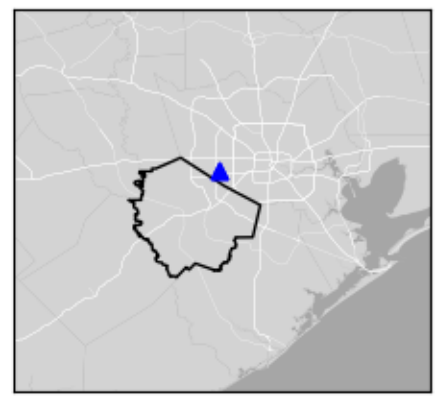
Houston, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P042

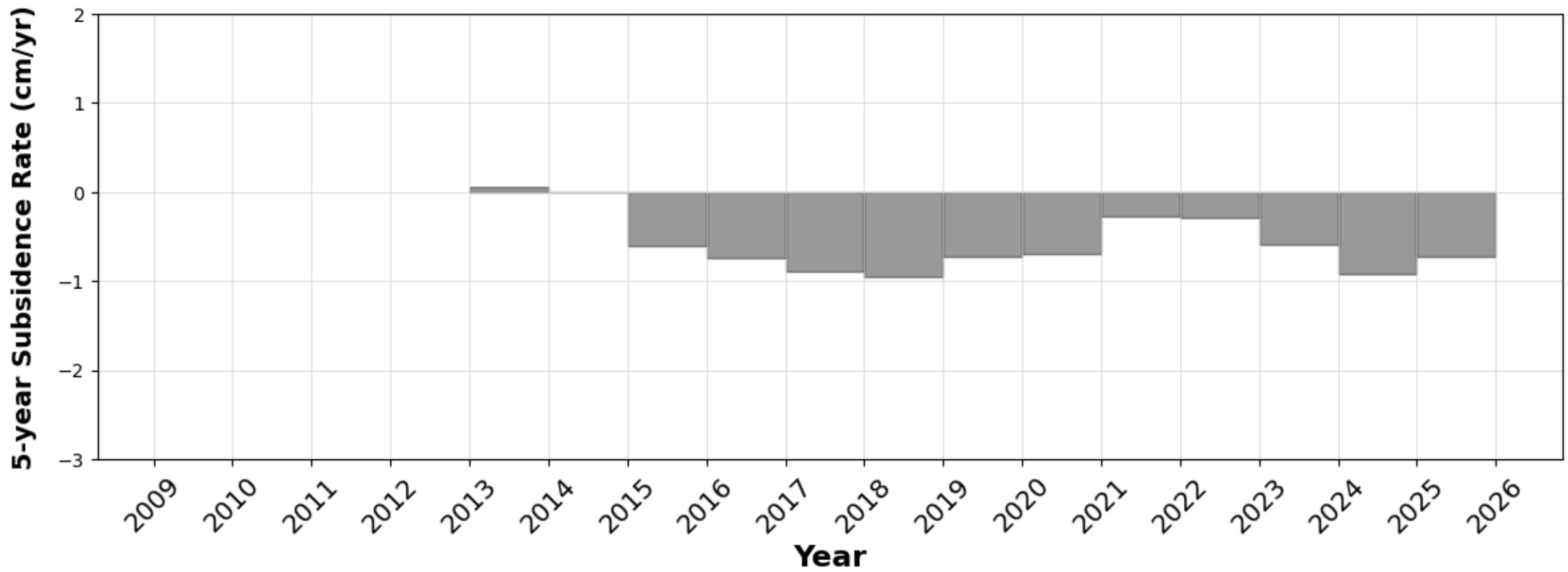
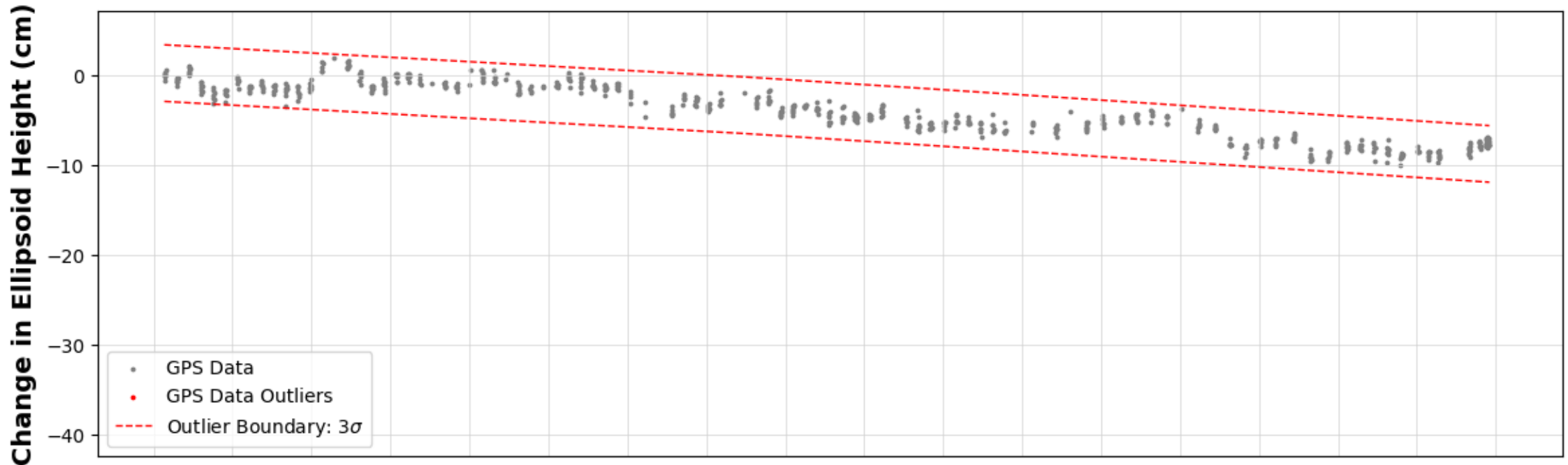
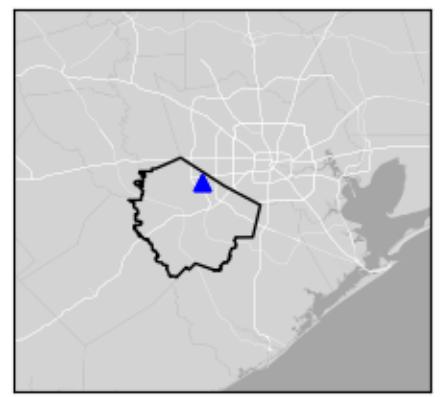
Houston, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

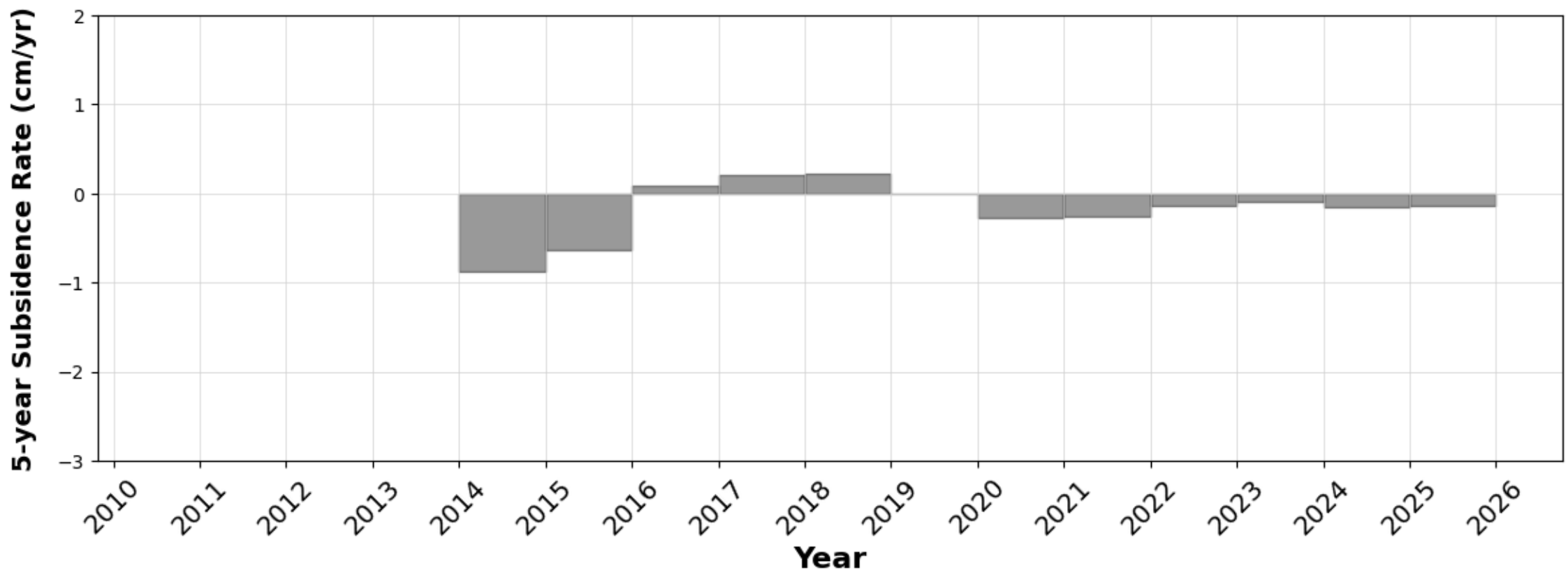
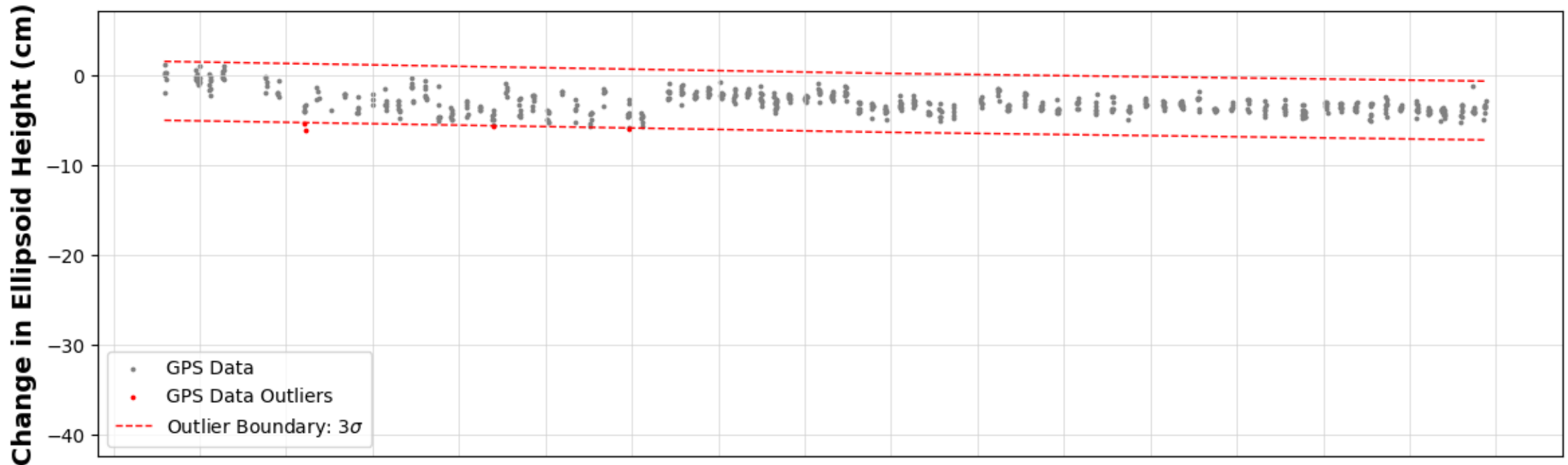
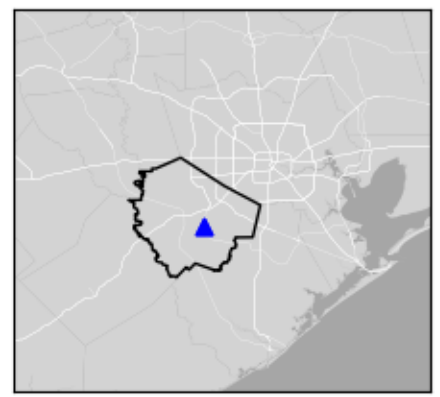
P057

Richmond, TX



P058

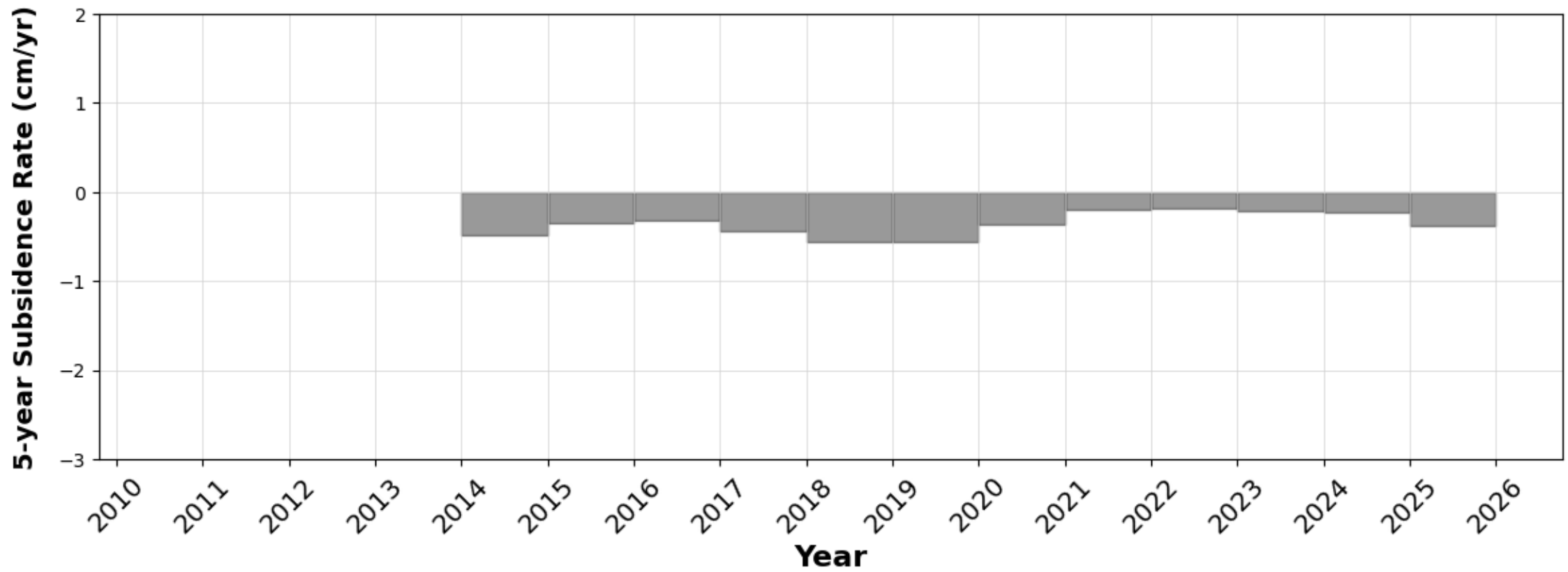
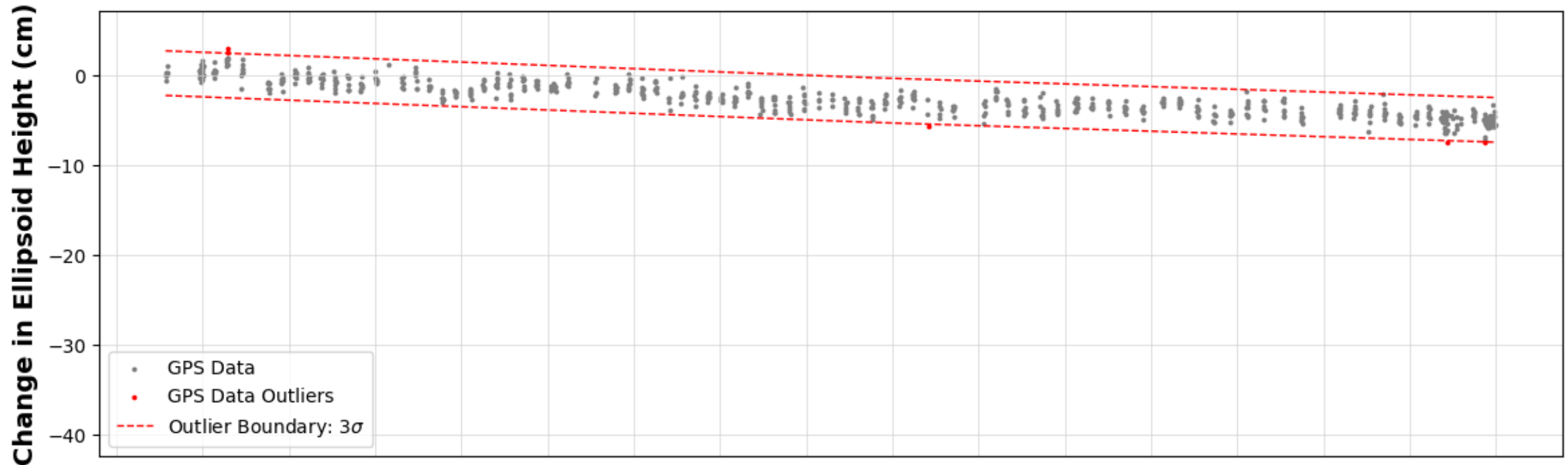
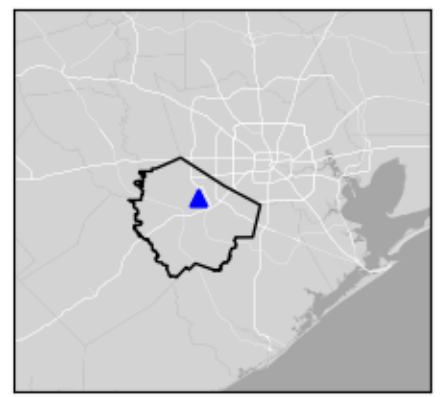
Richmond, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P059

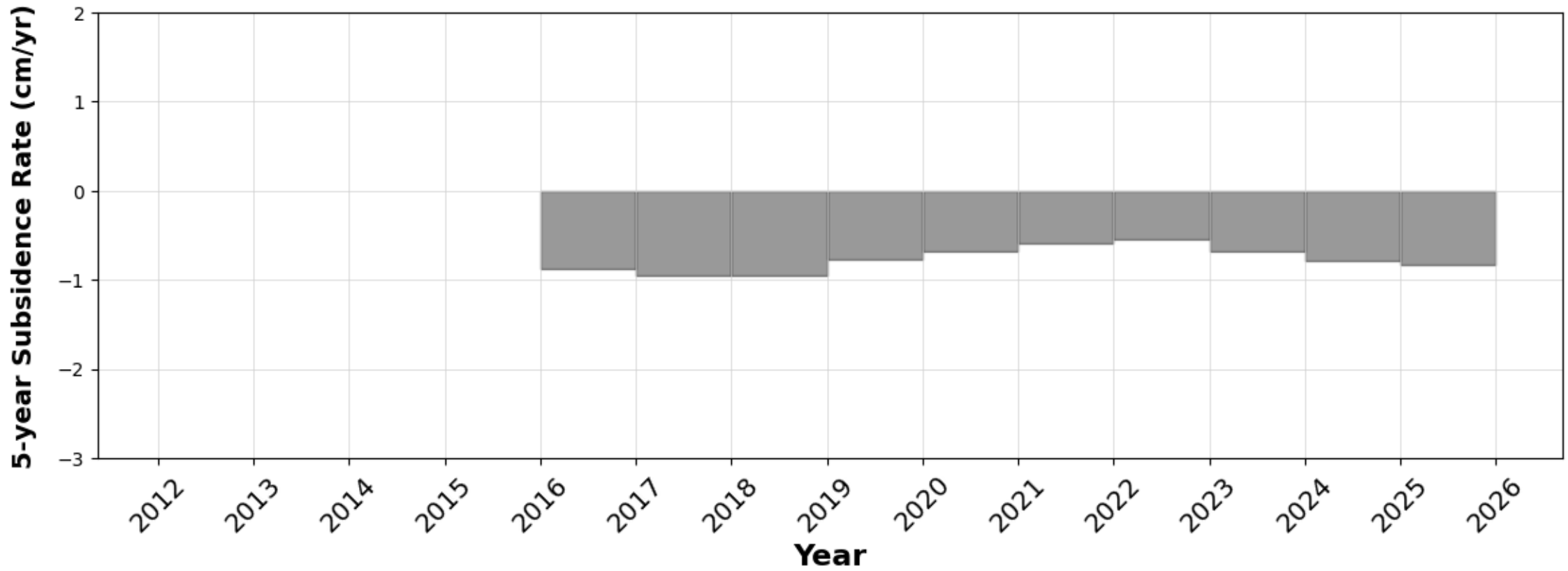
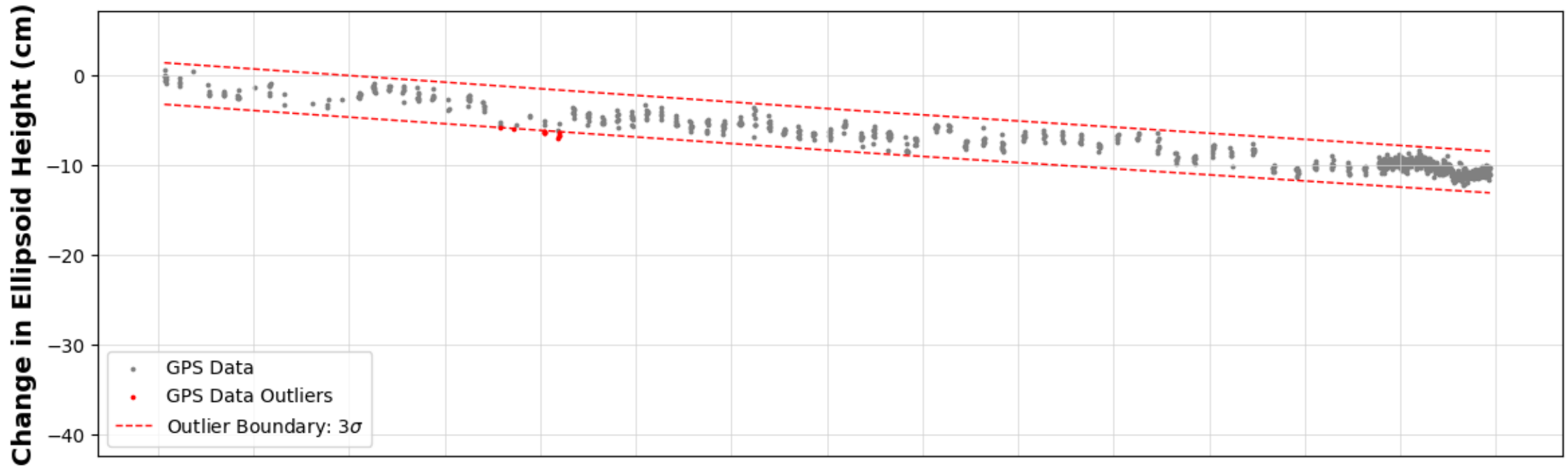
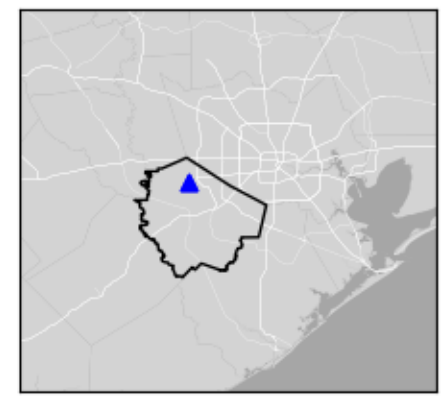
Richmond, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P060

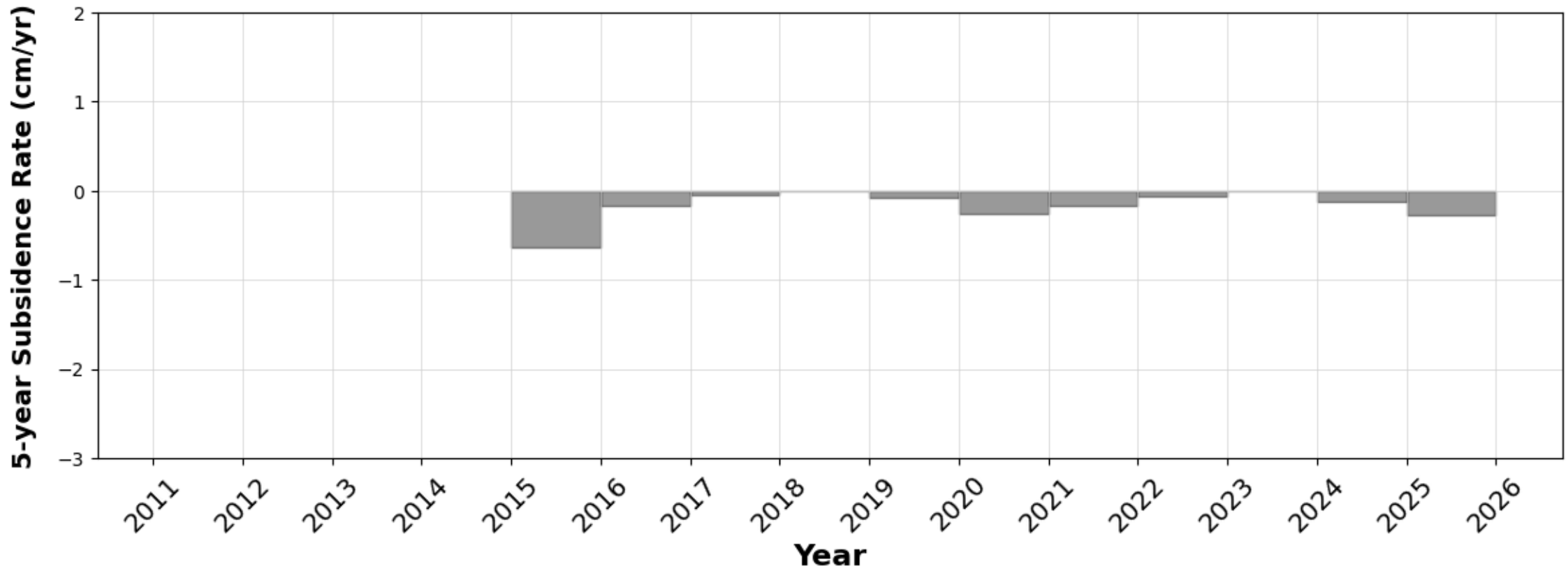
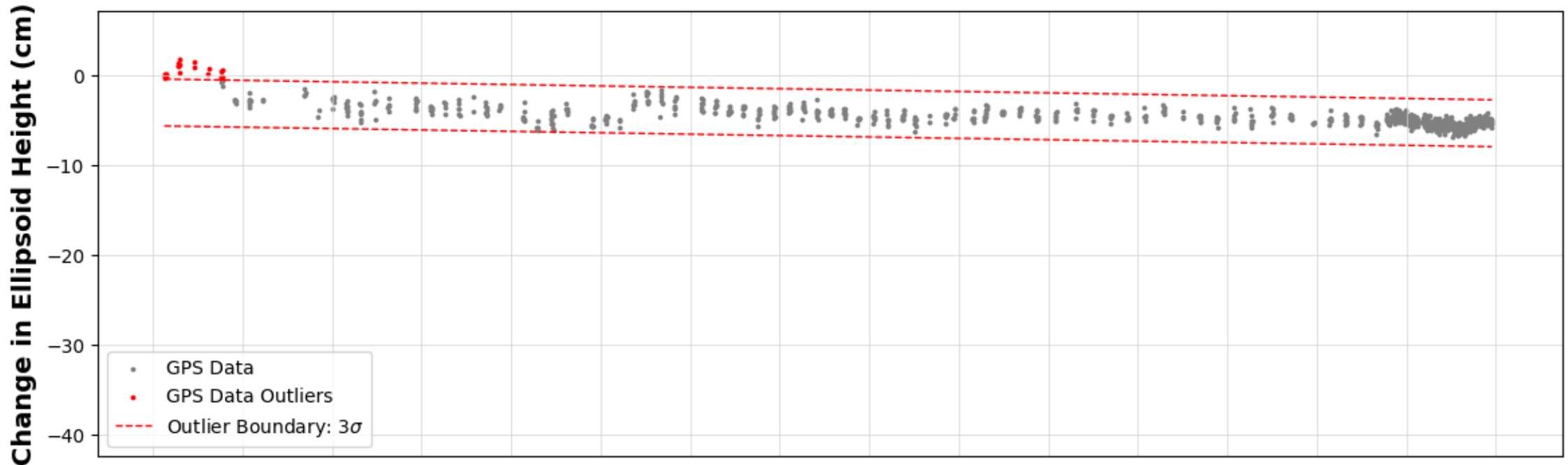
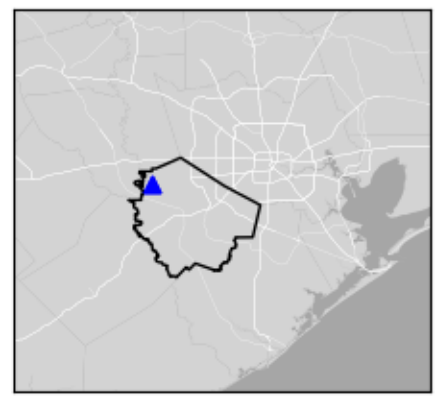
Richmond, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P061

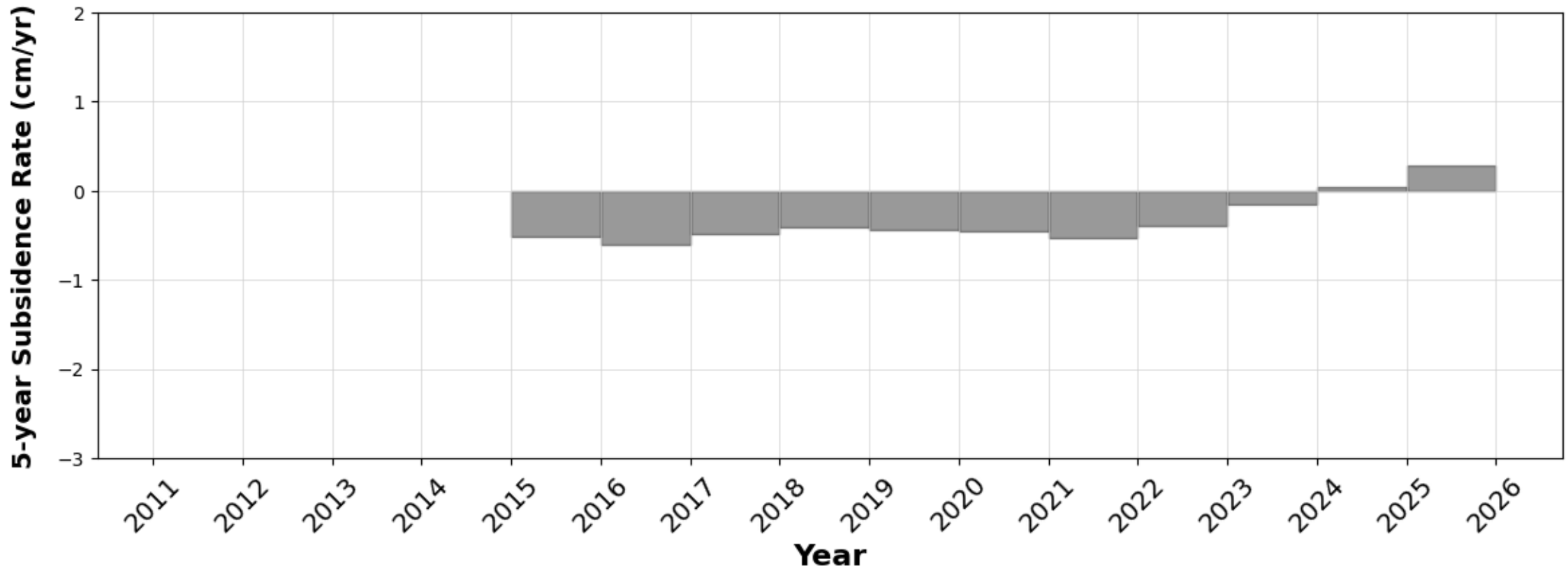
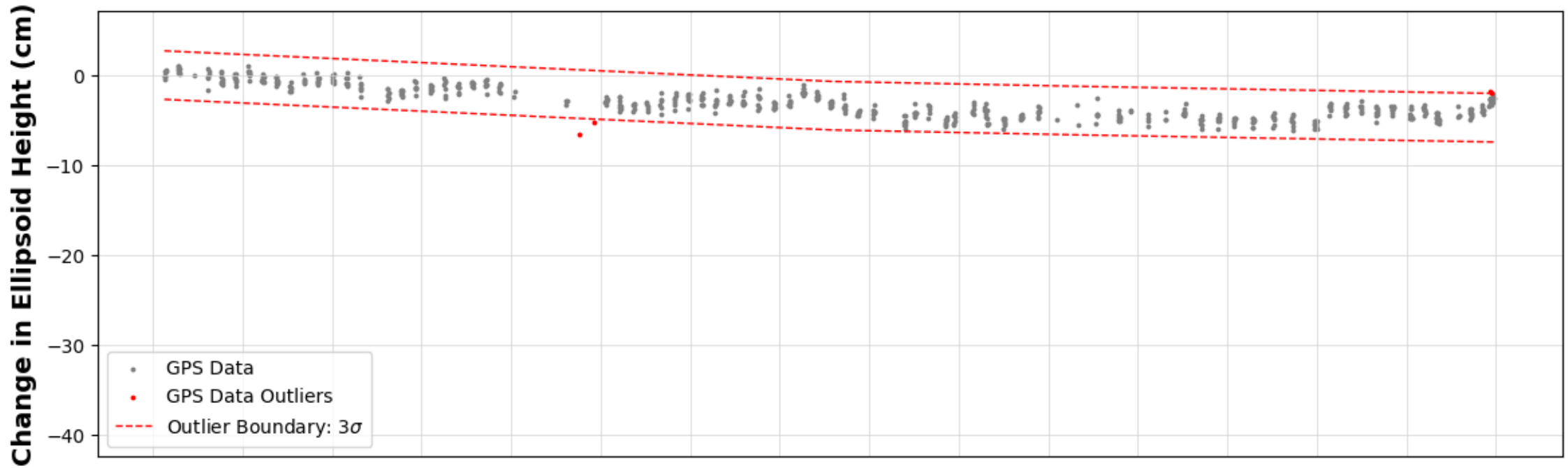
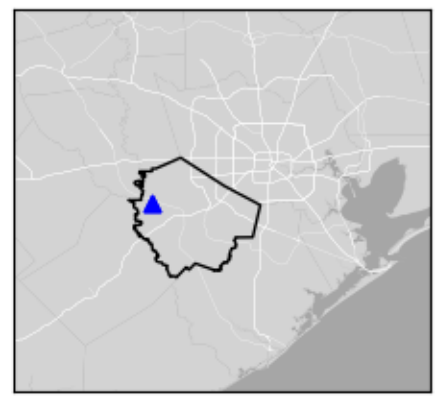
Simonton, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P062

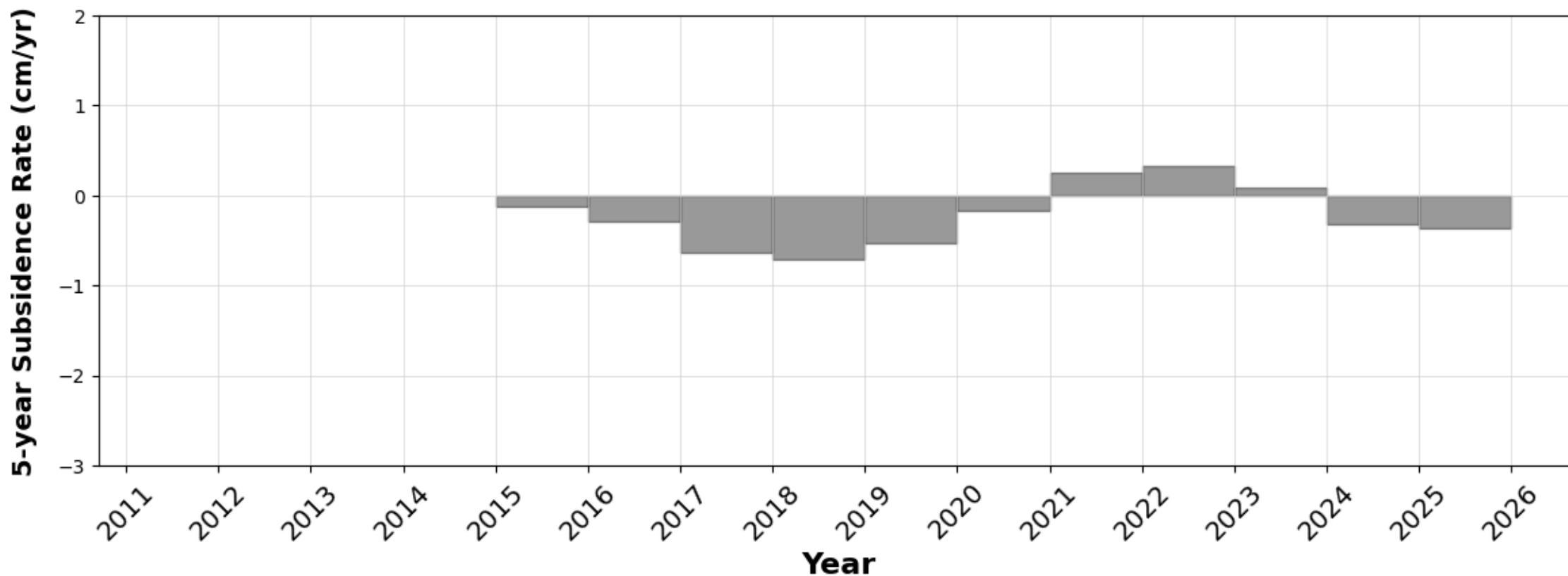
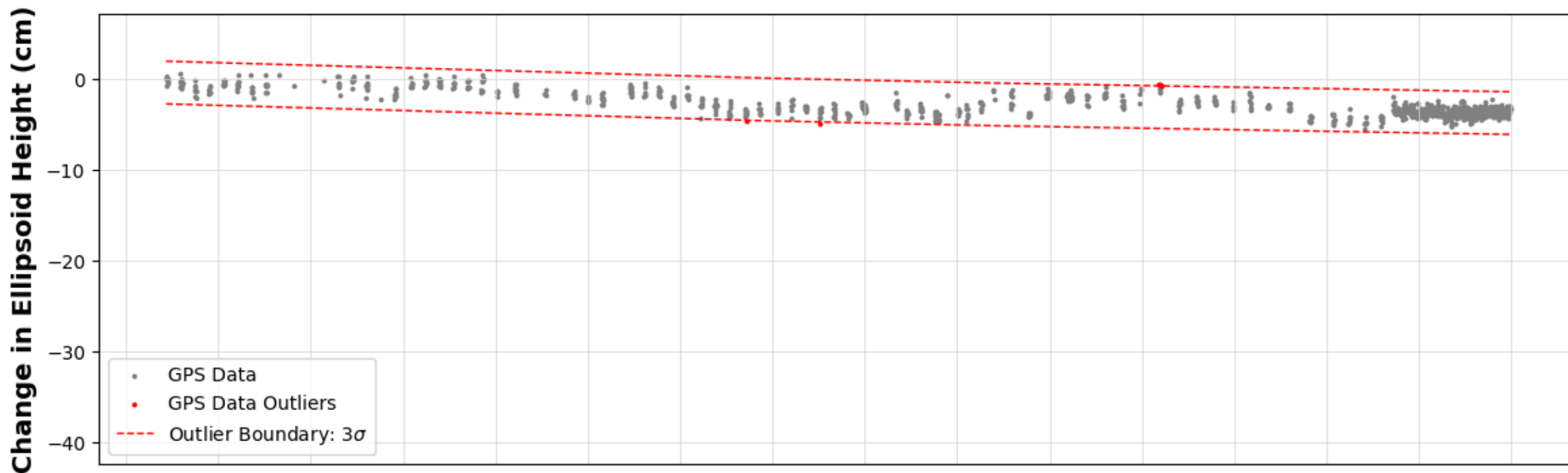
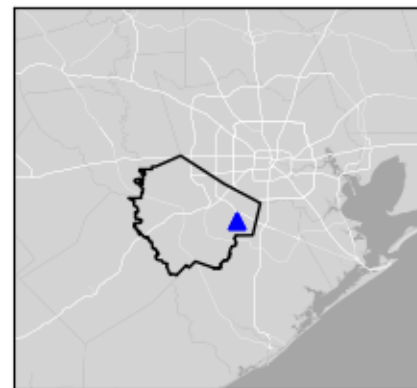
Rosenberg, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P063

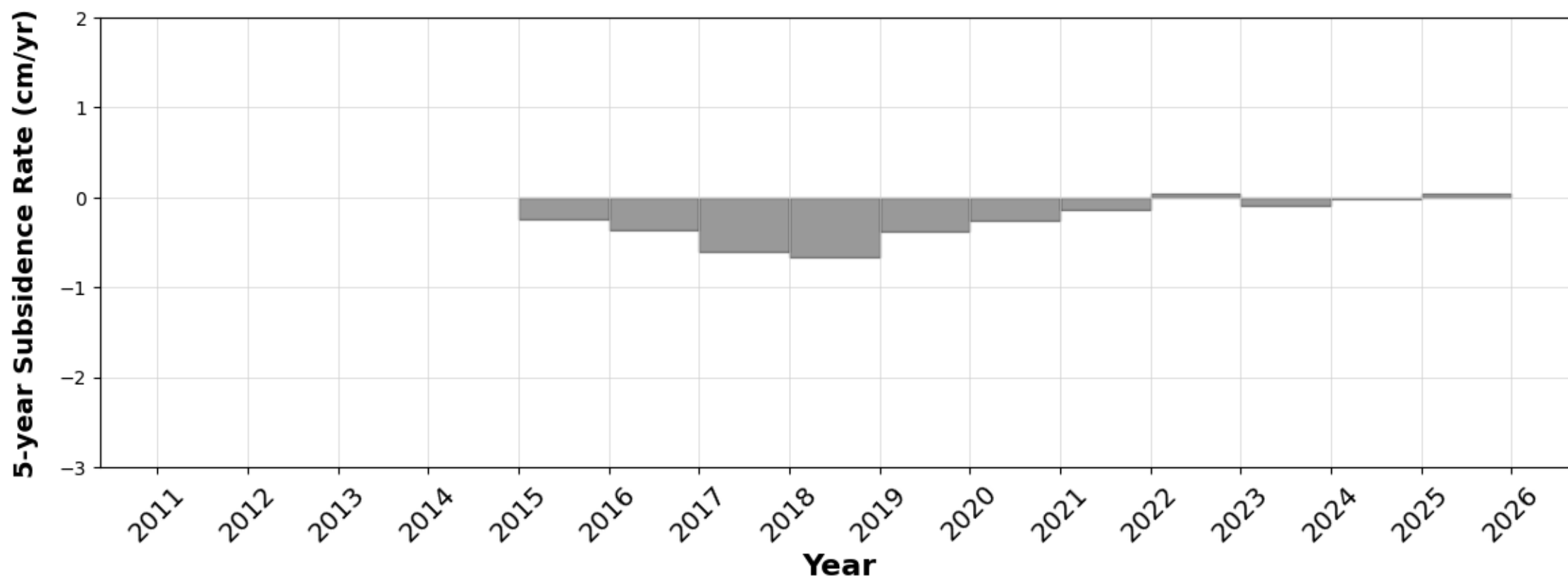
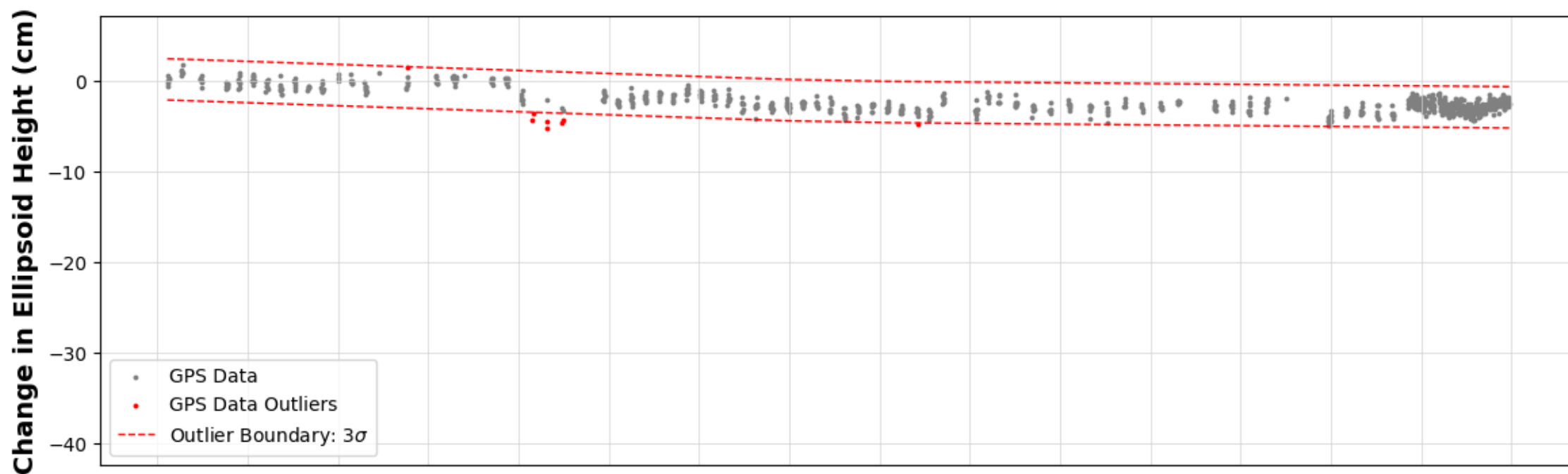
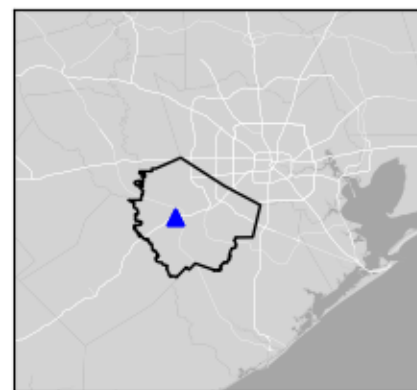
Missouri City, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P067

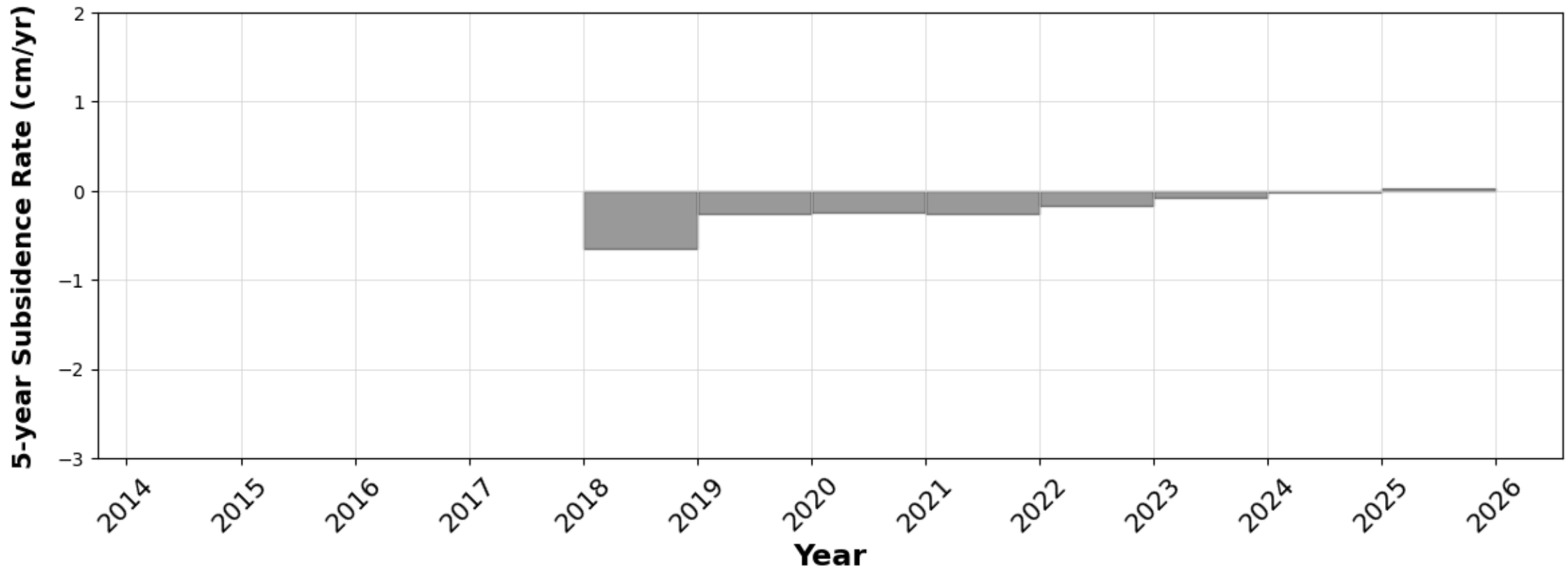
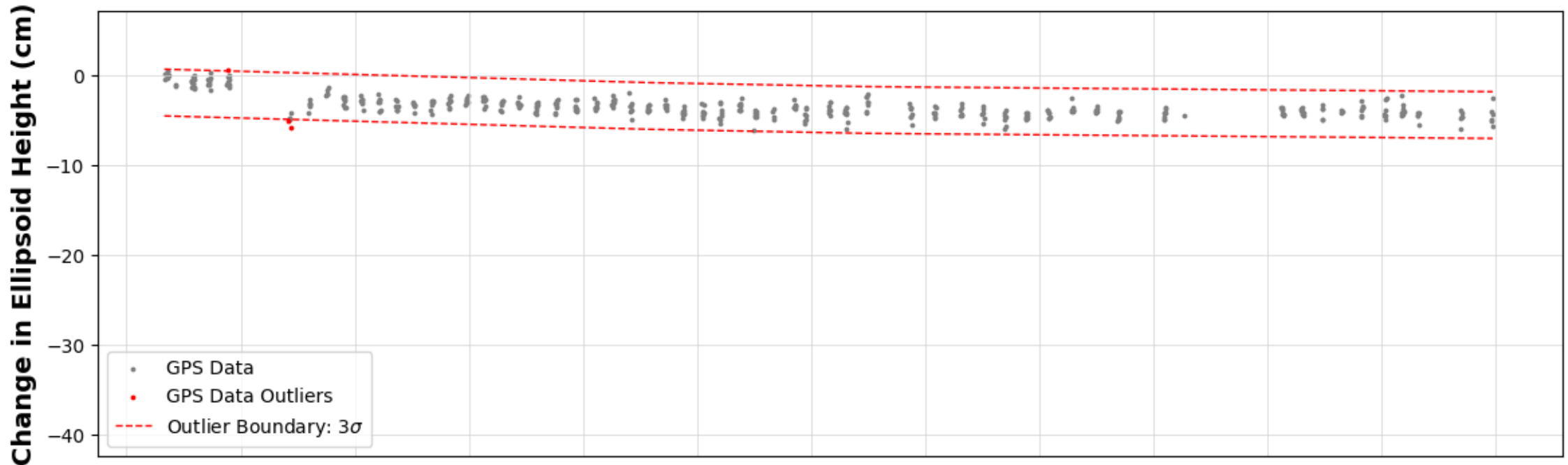
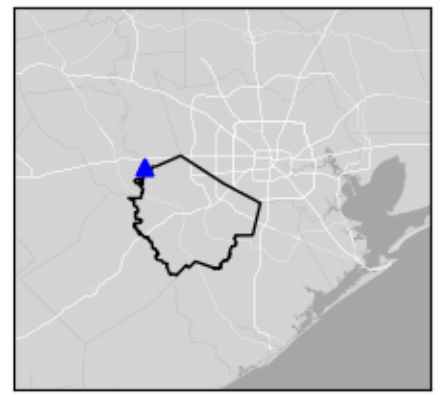
Rosenberg, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P078

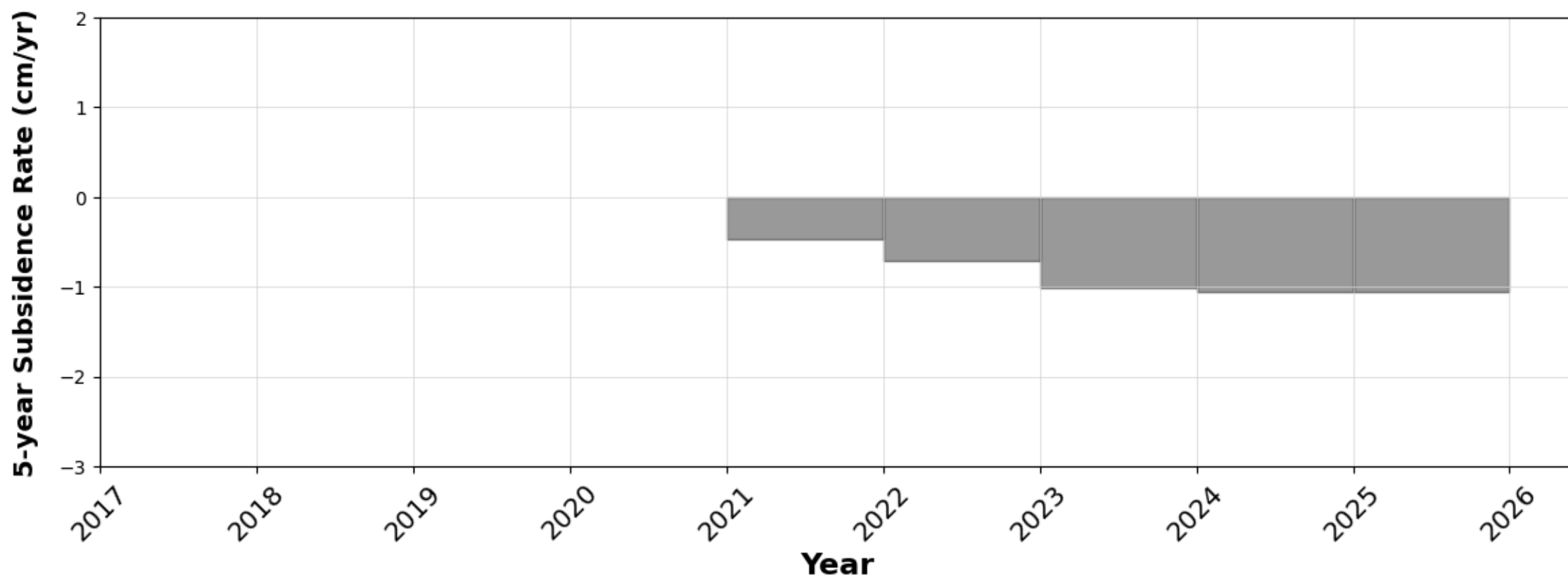
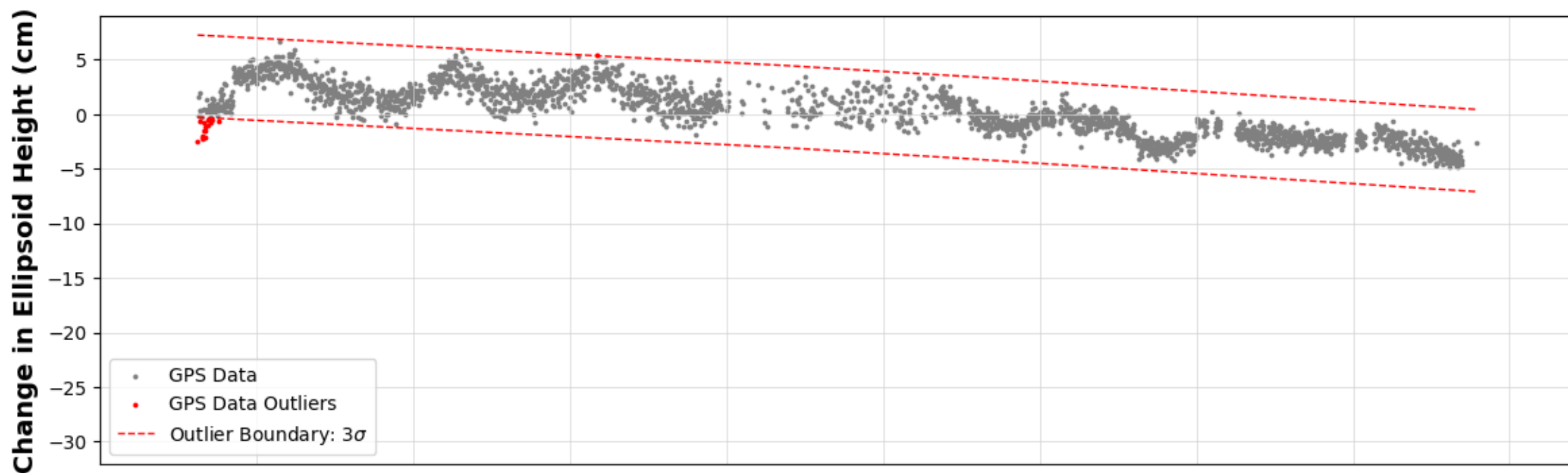
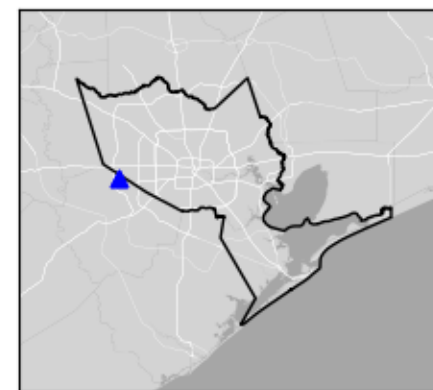
Waller County, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P096

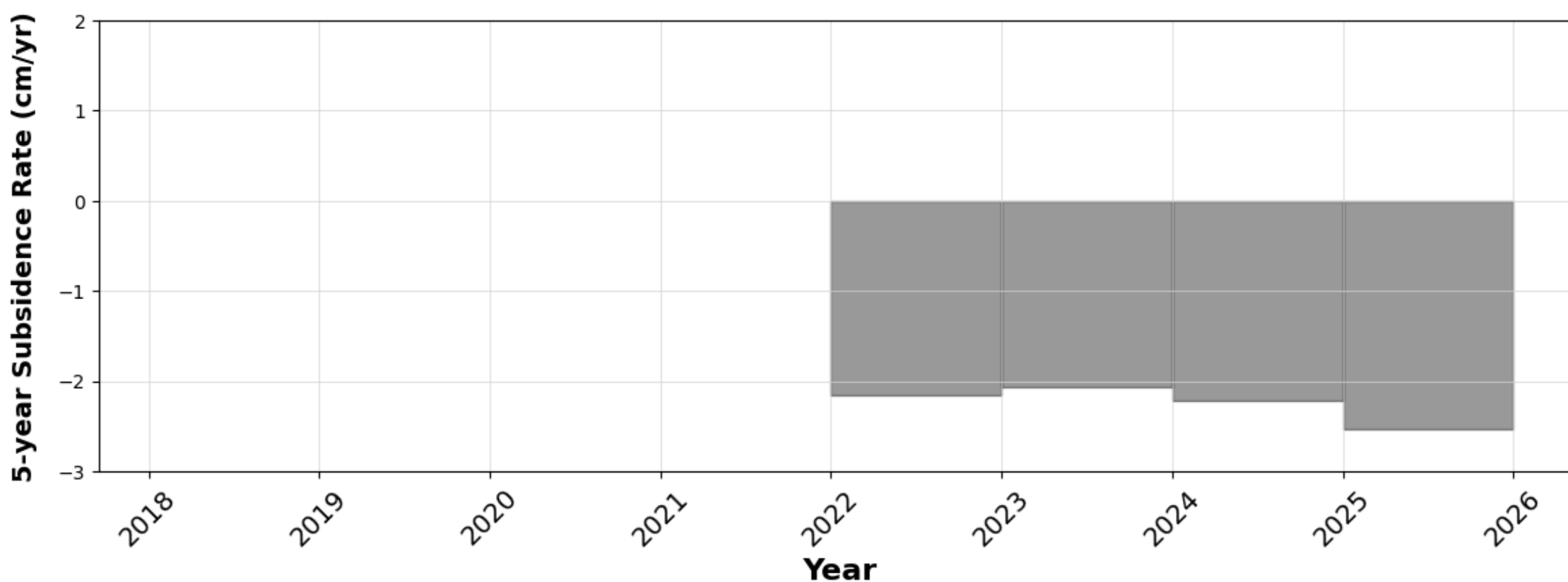
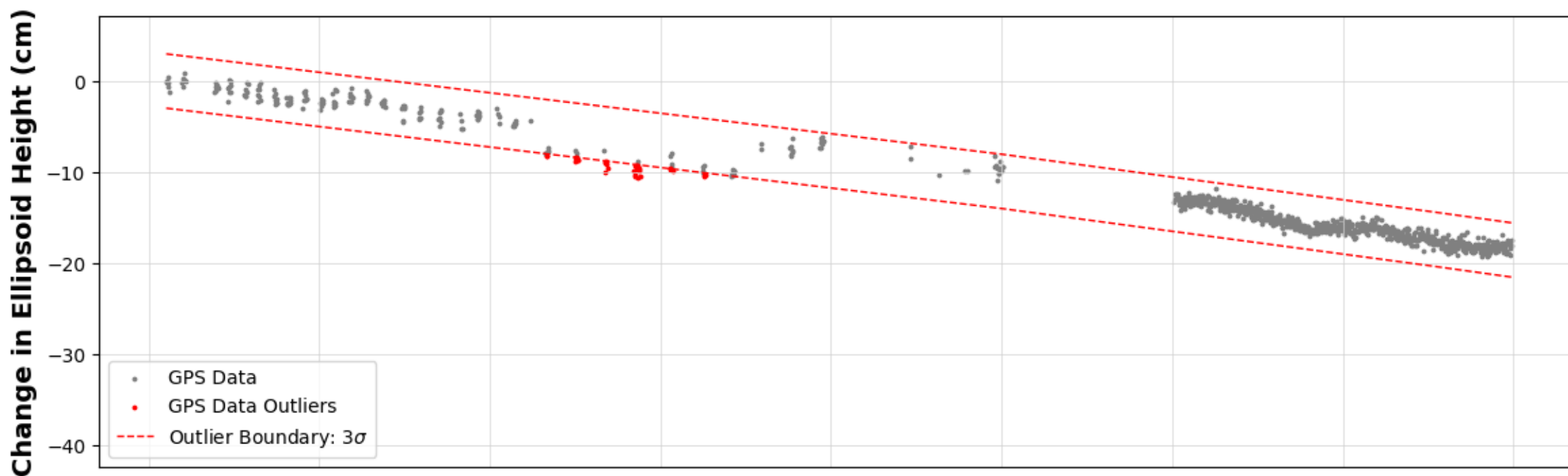
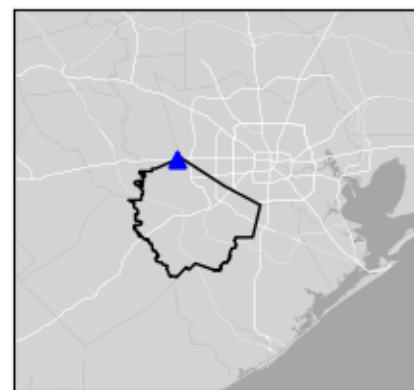
Katy, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P097

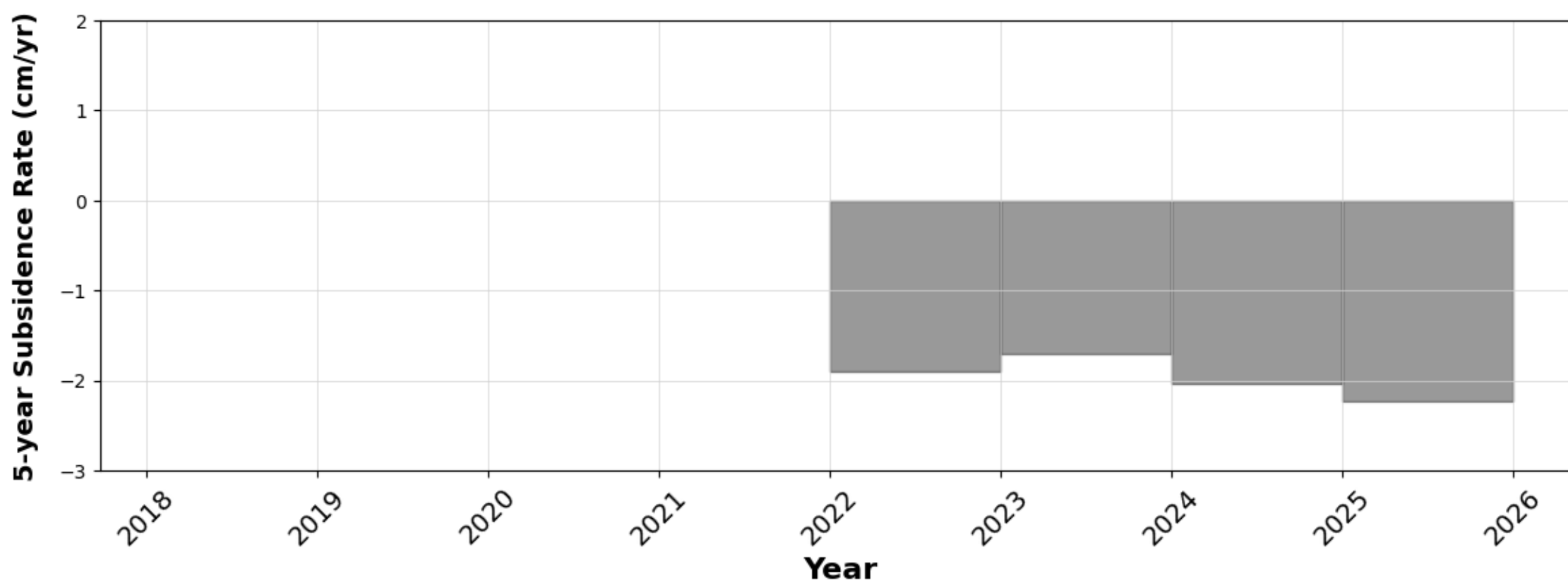
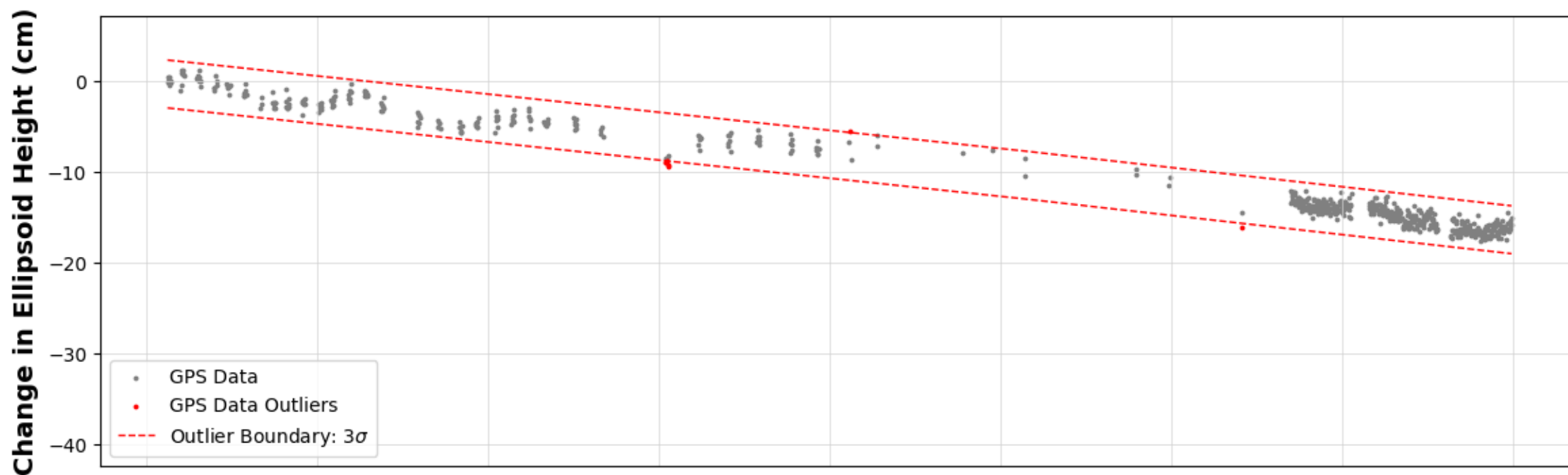
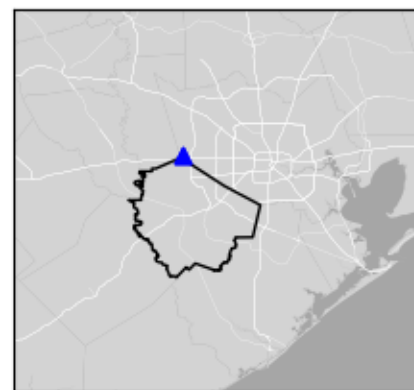
Katy, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P098

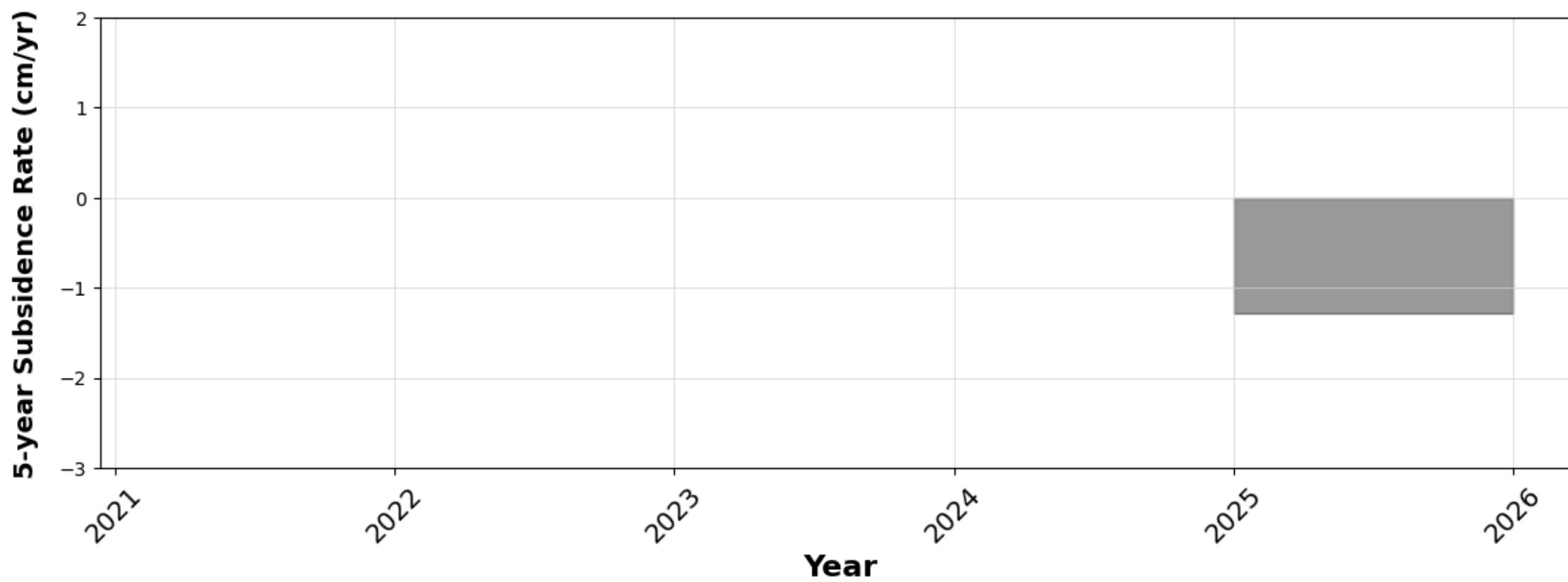
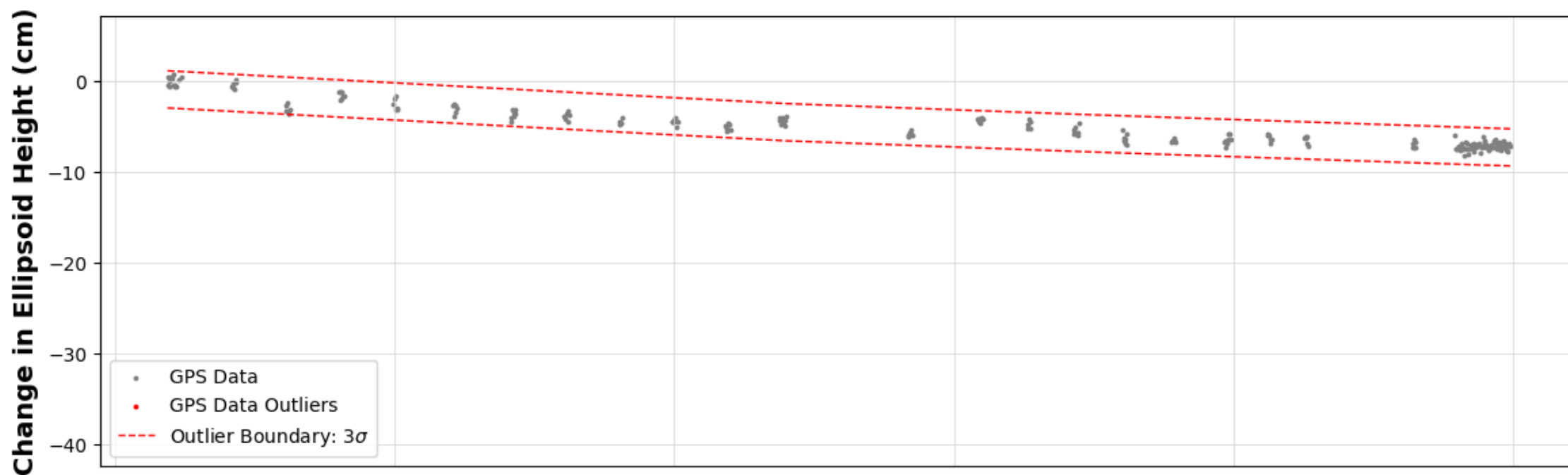
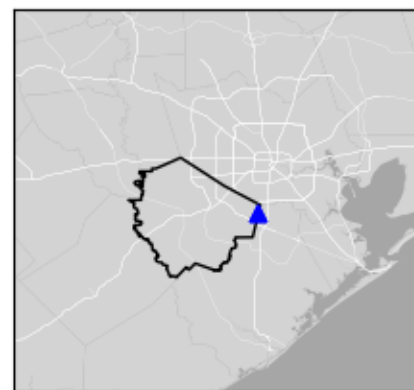
Katy, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P110

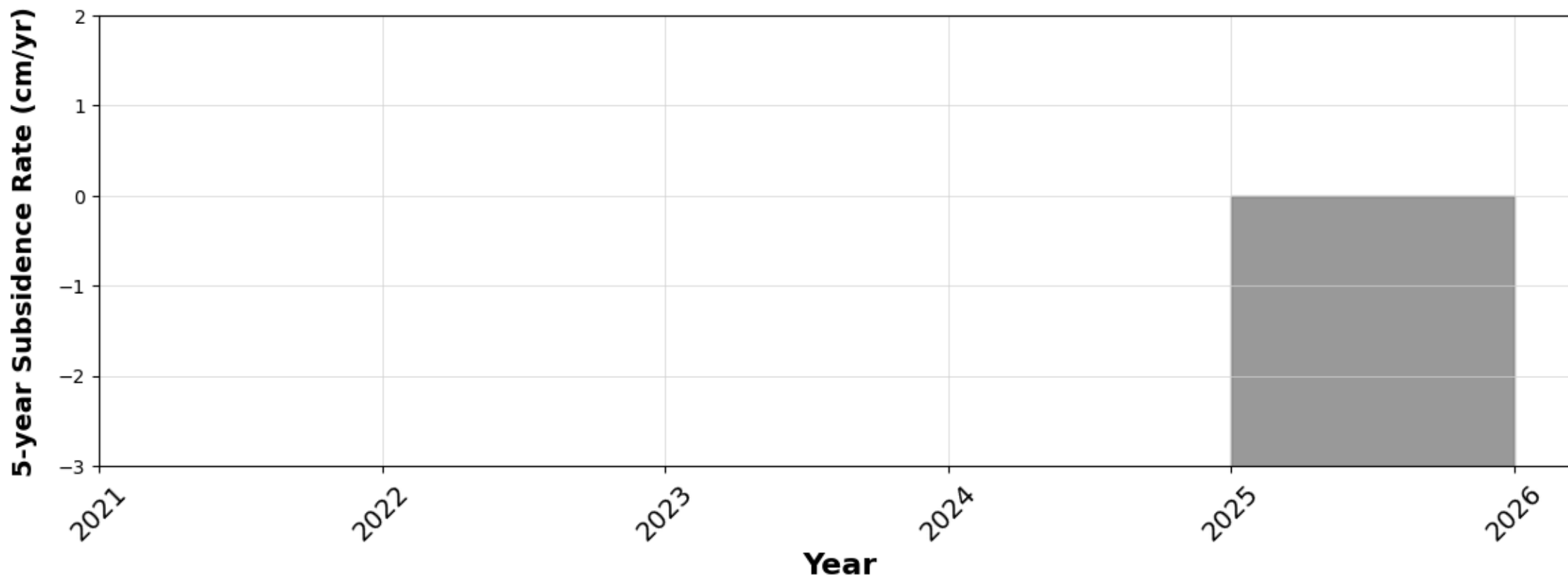
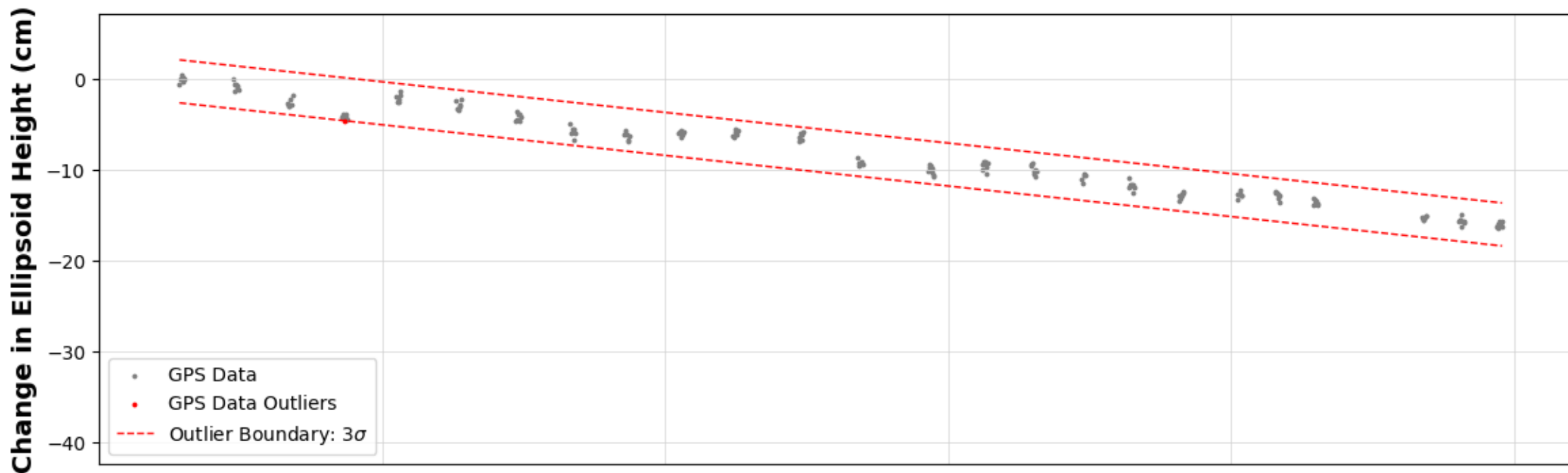
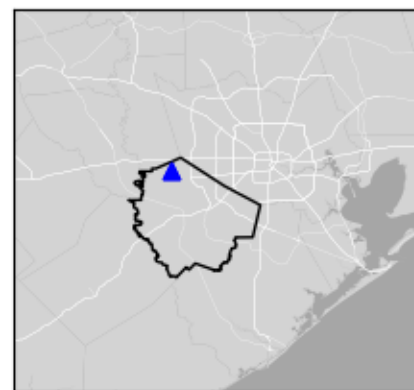
Fresno, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P111

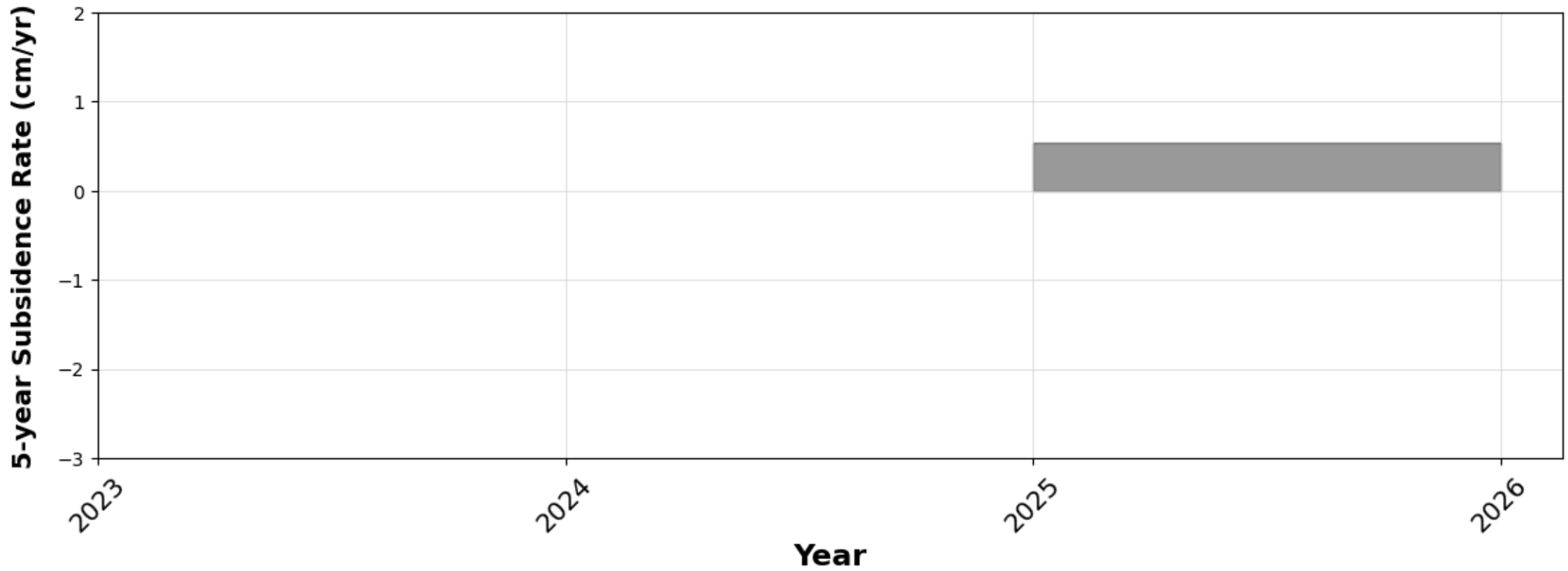
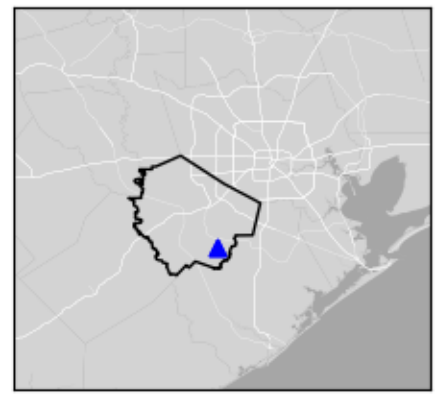
Katy, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P113

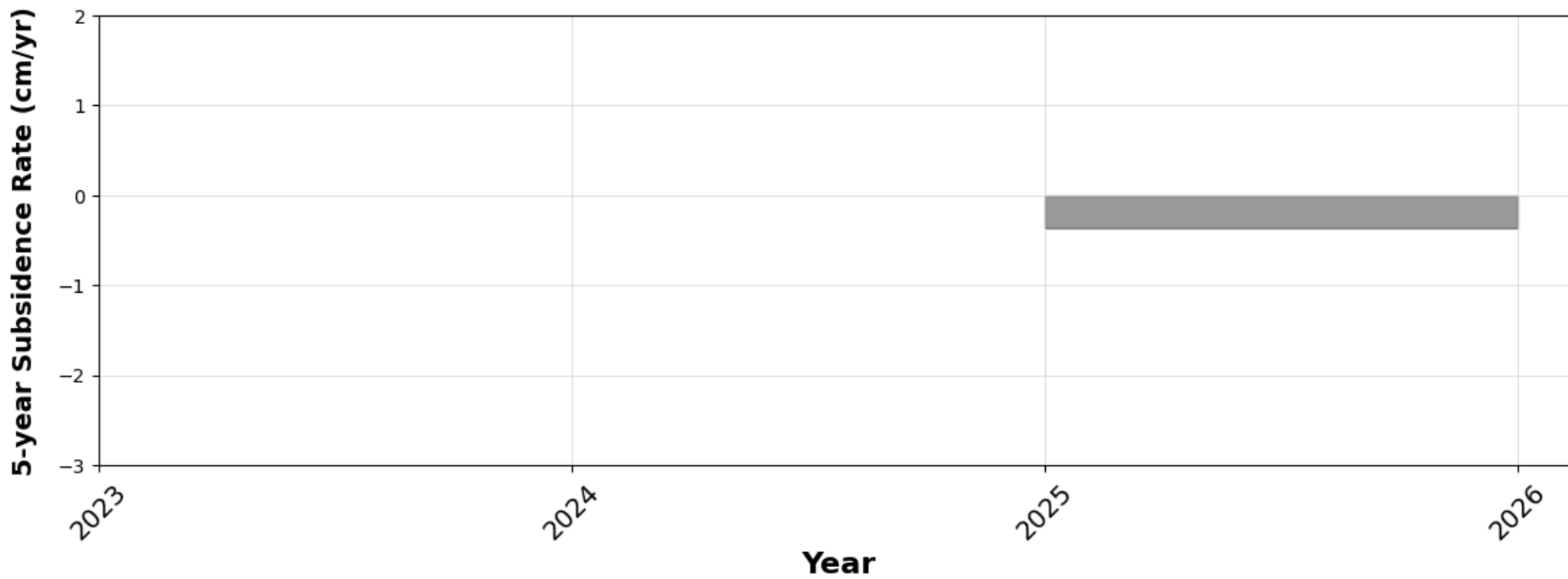
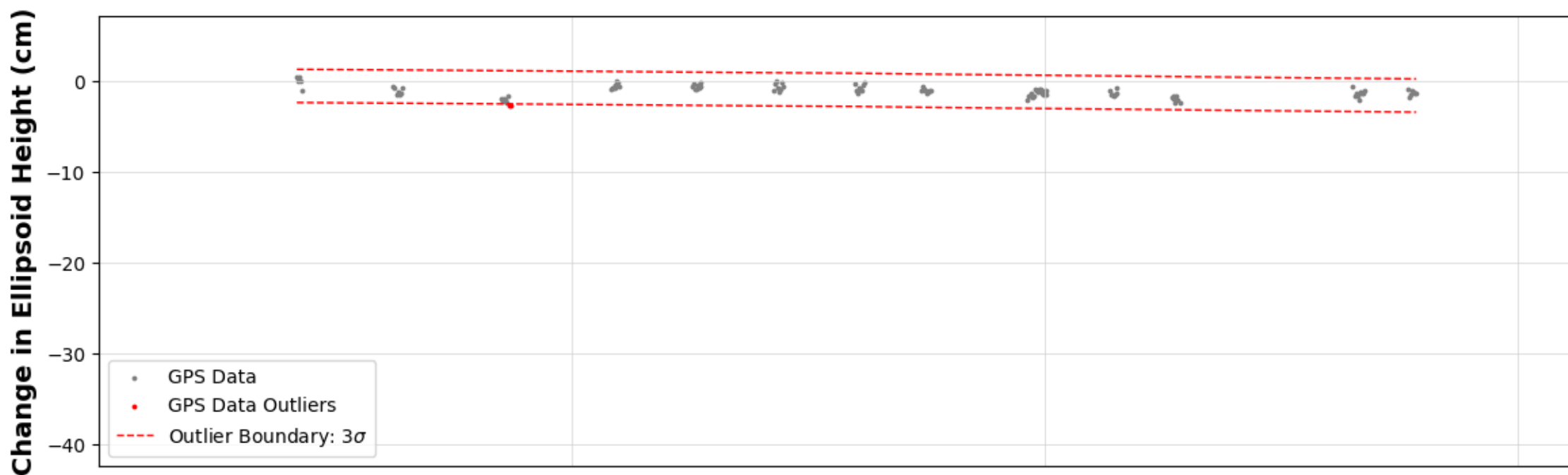
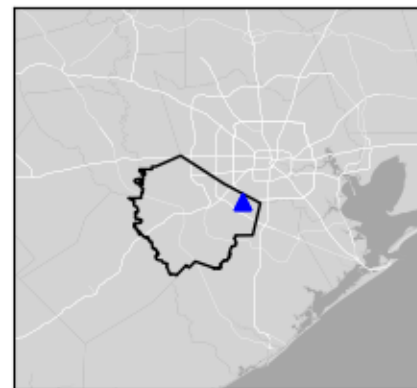
Needville, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P114

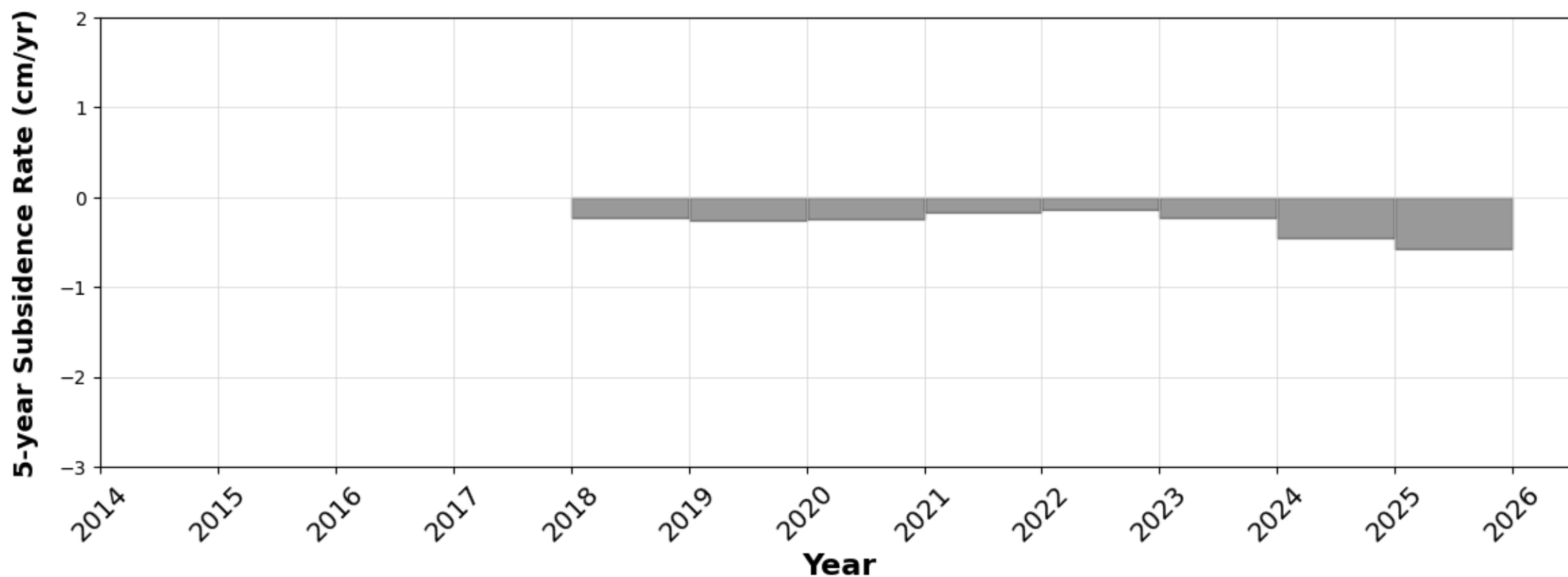
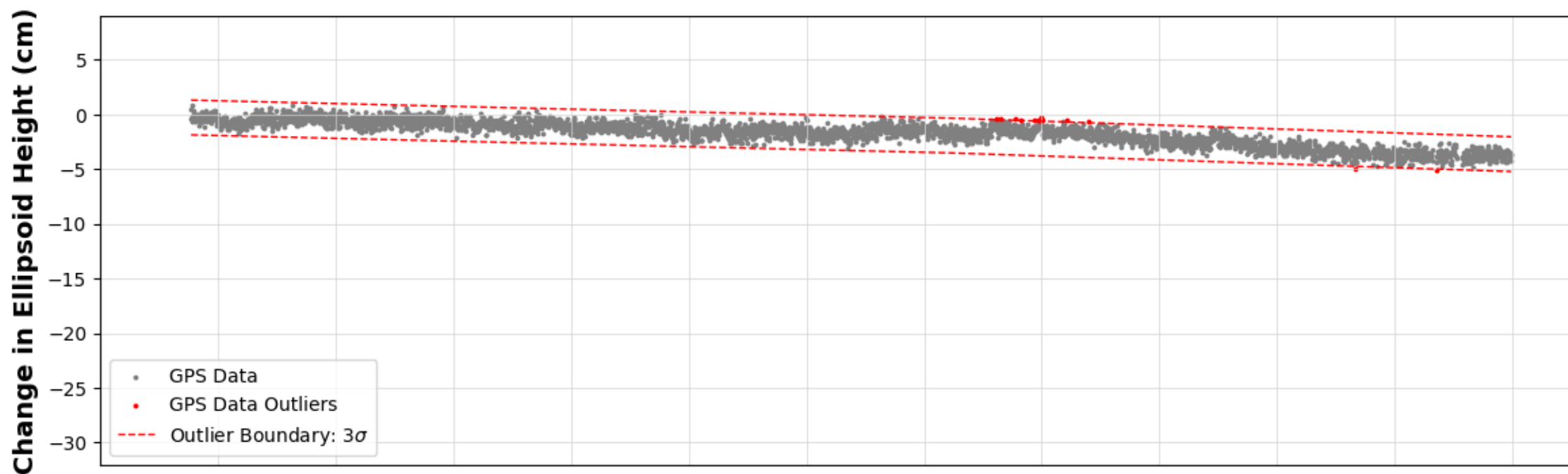
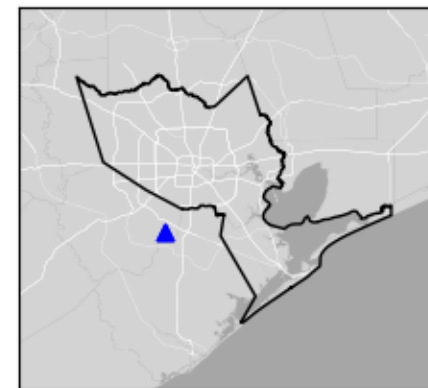
Missouri City, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

RPFB

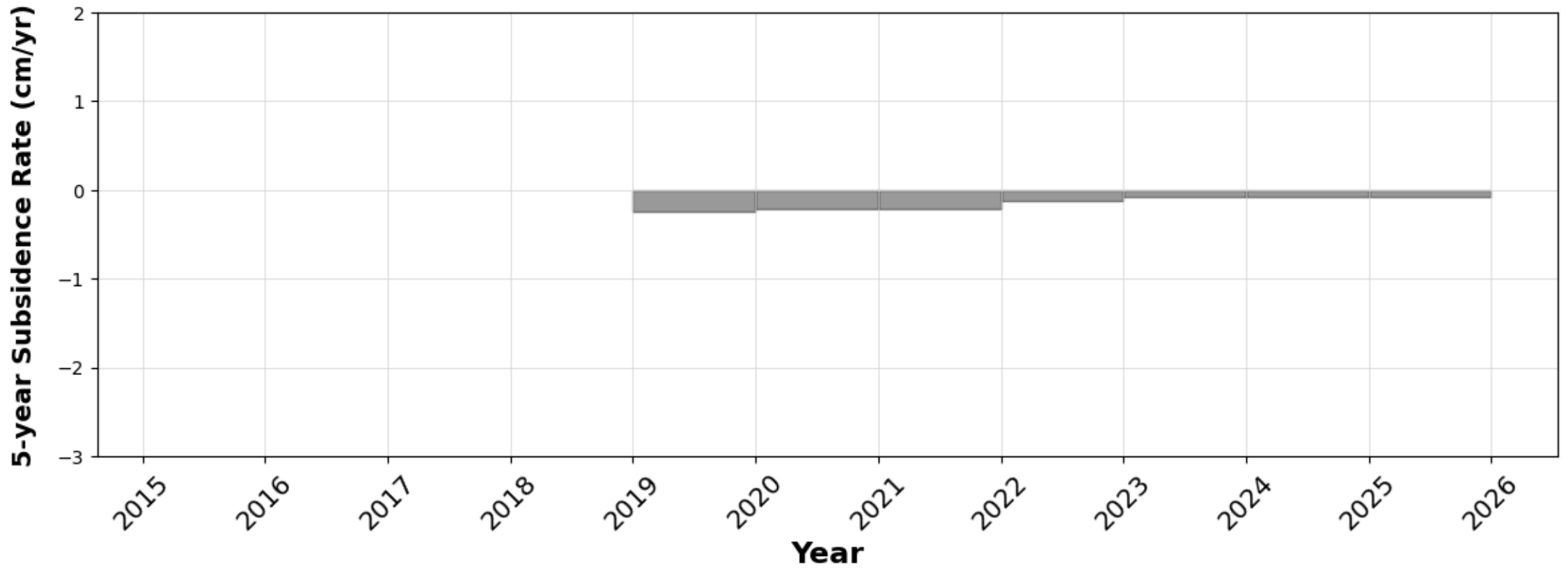
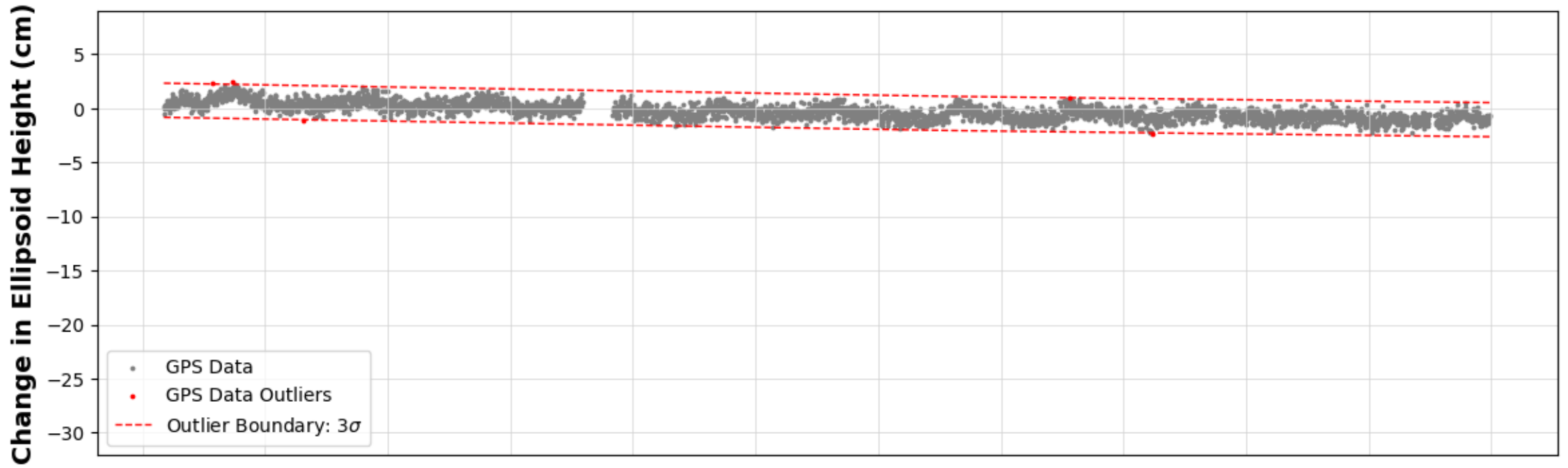
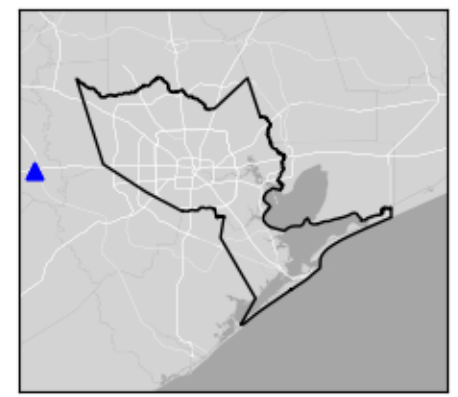
Sienna, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

SISD

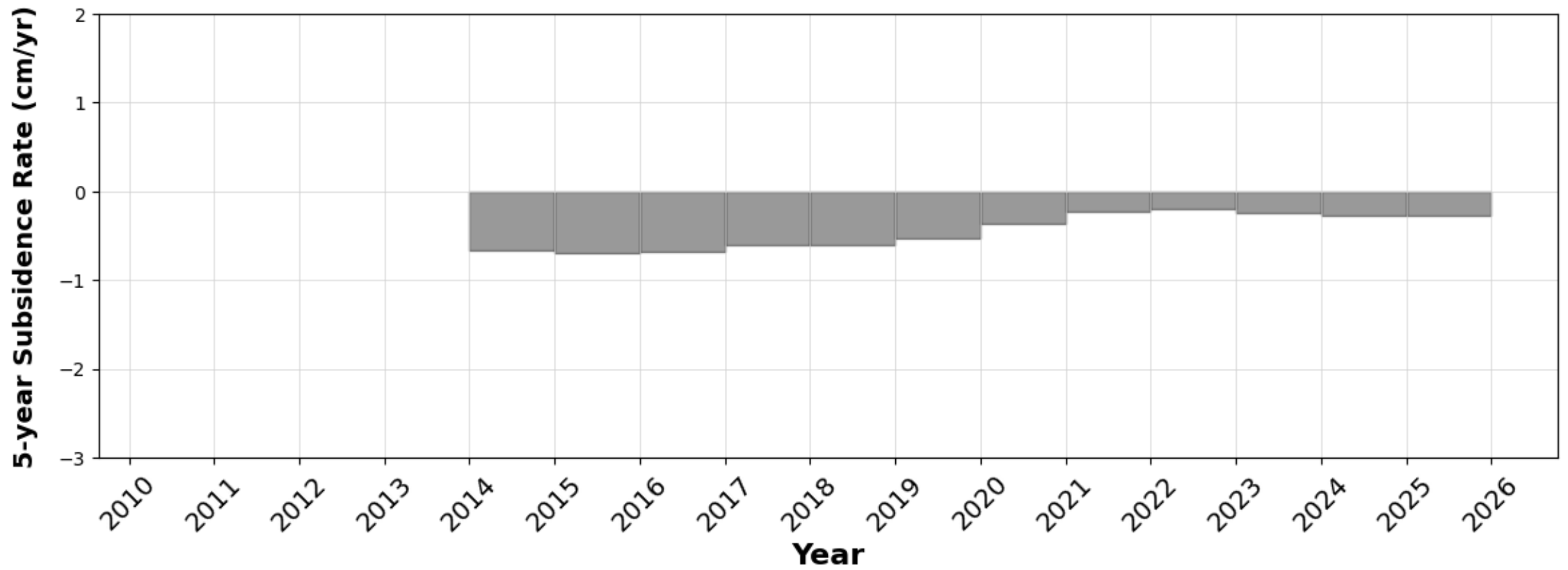
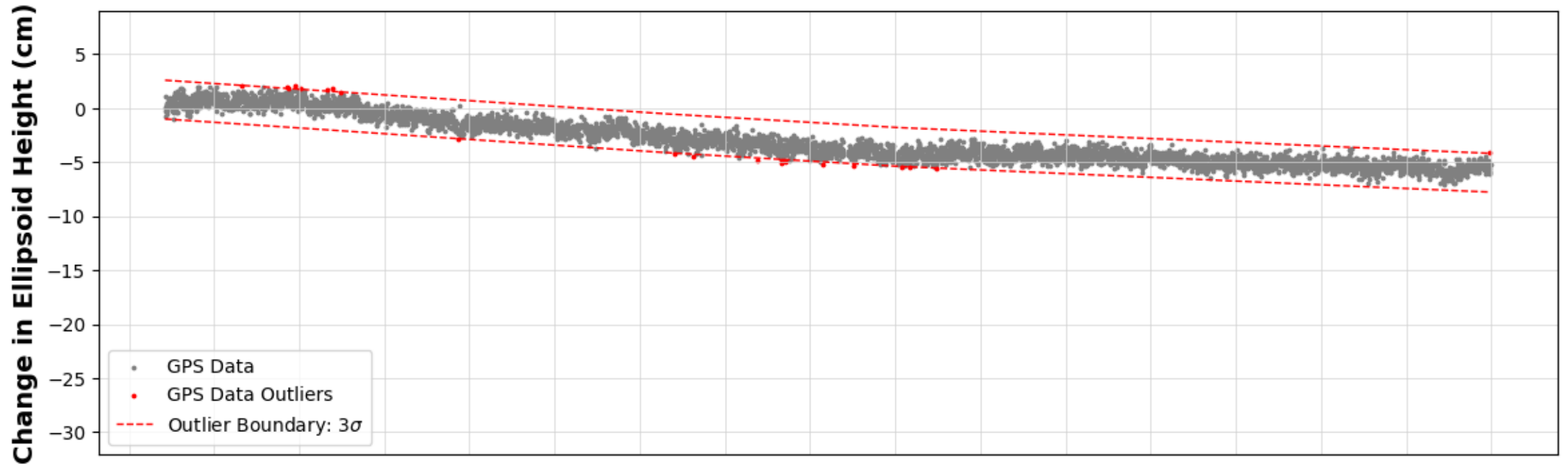
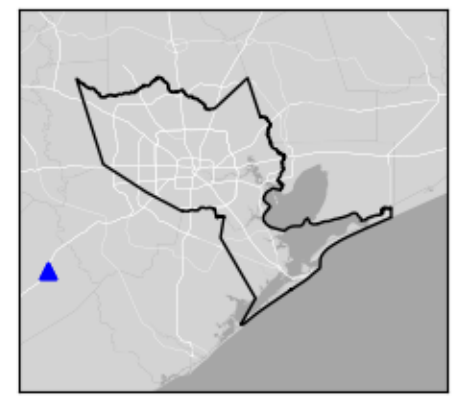
Sealy, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

TXWH

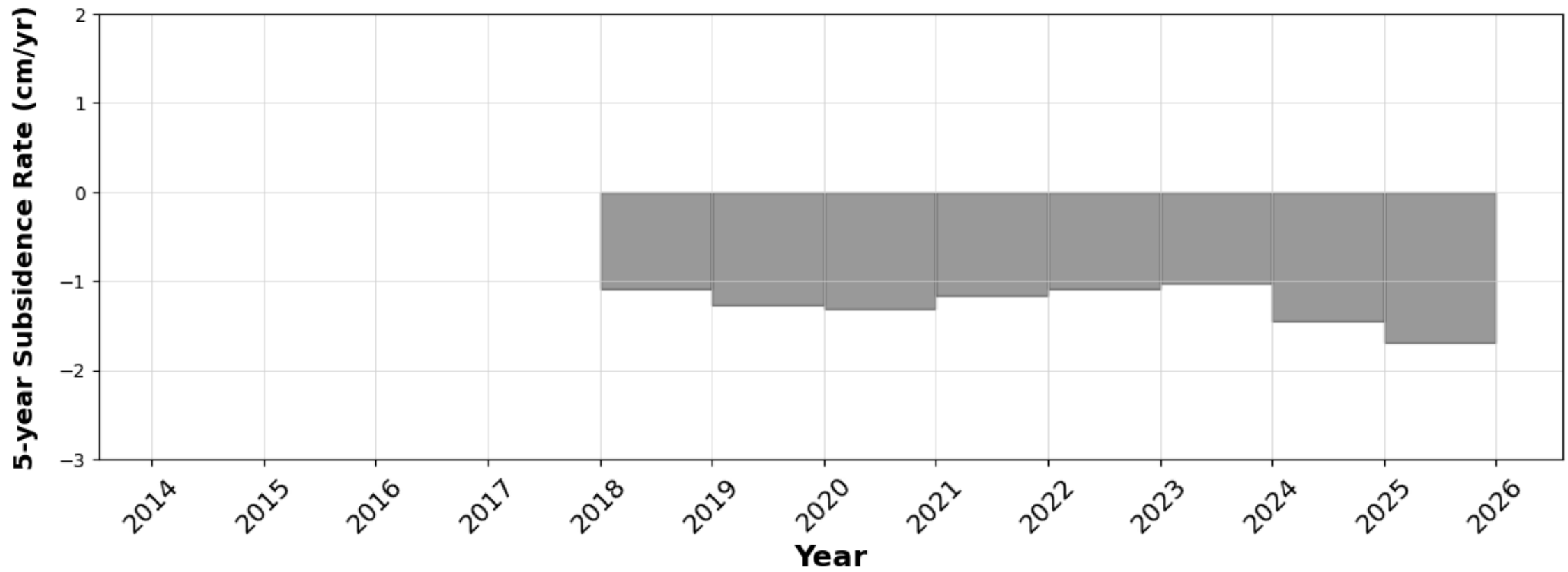
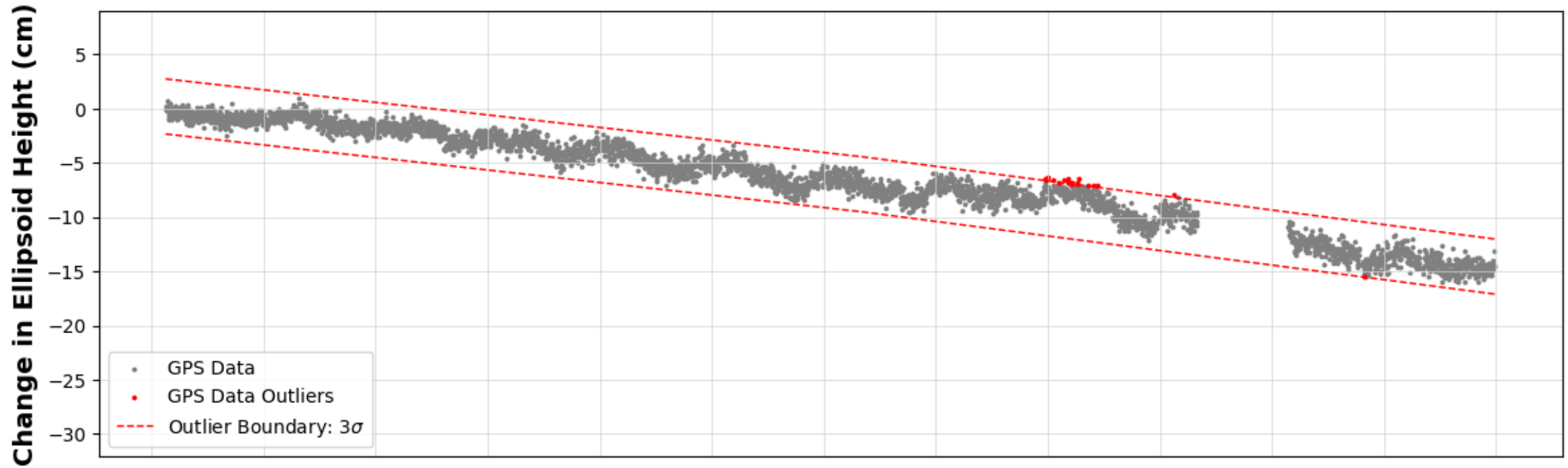
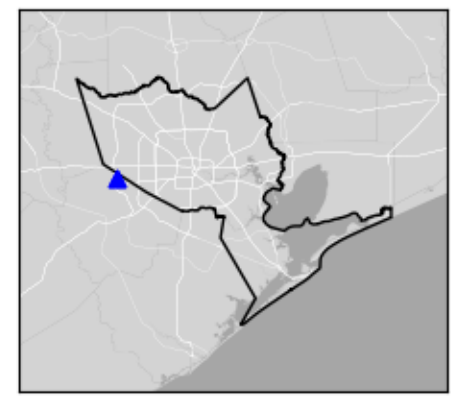
Wharton, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

UHCR

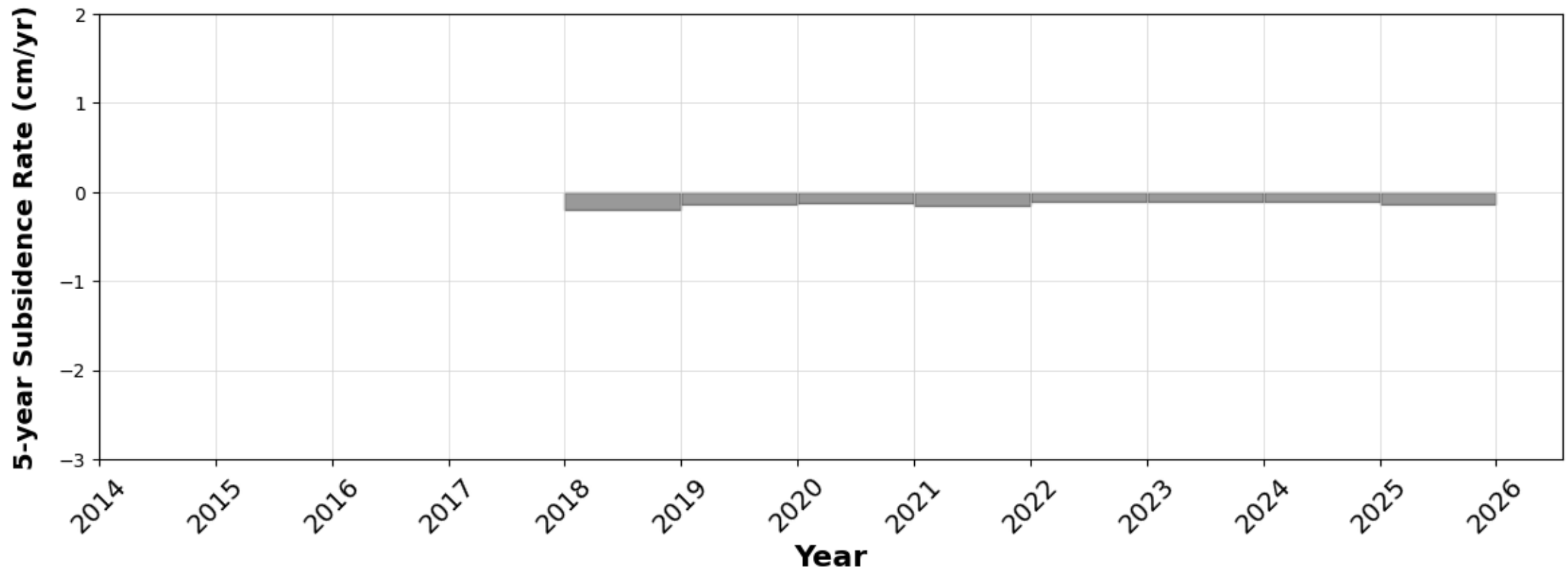
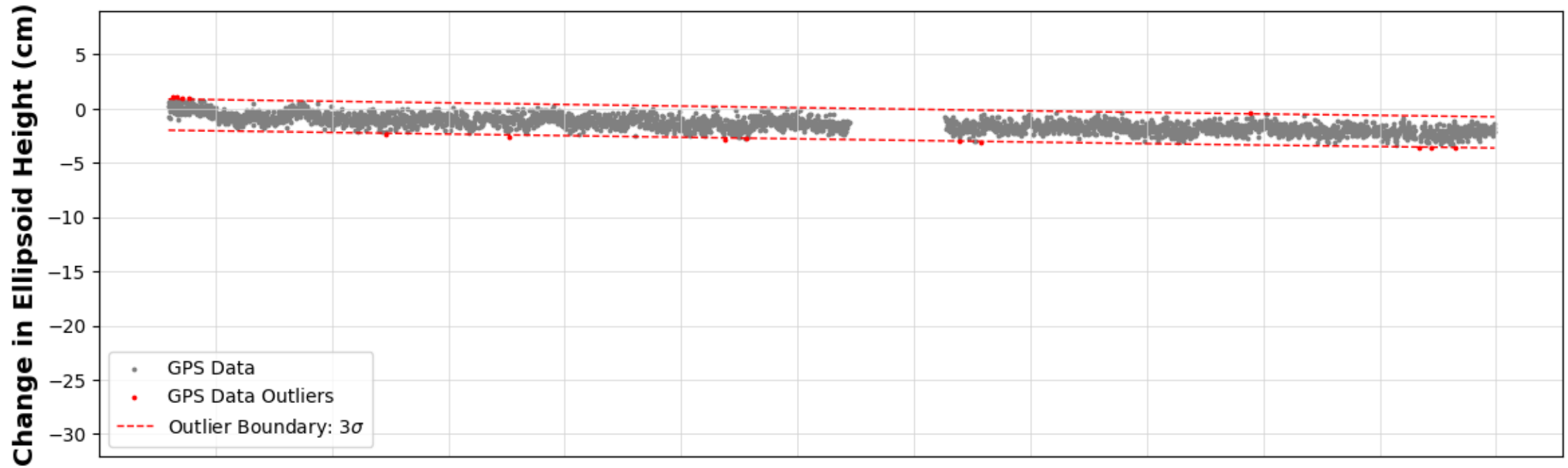
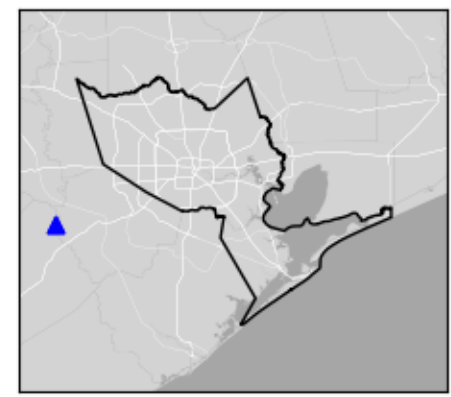
Katy, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

UHEB

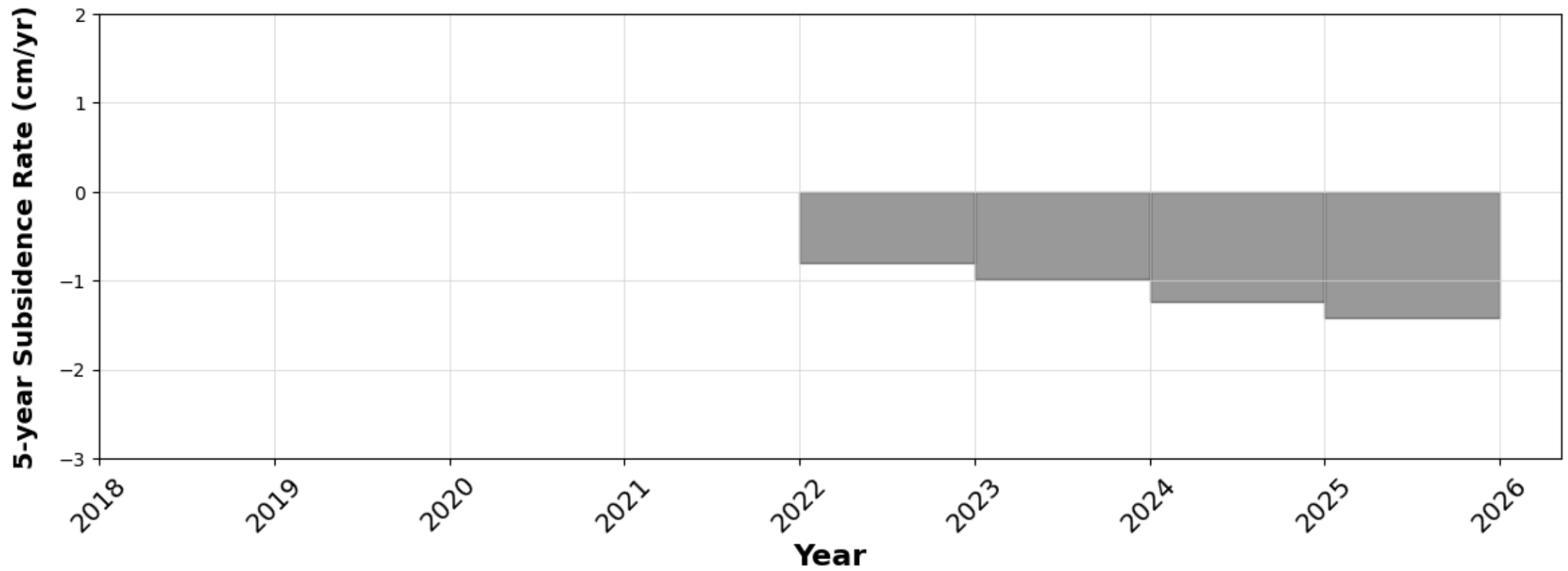
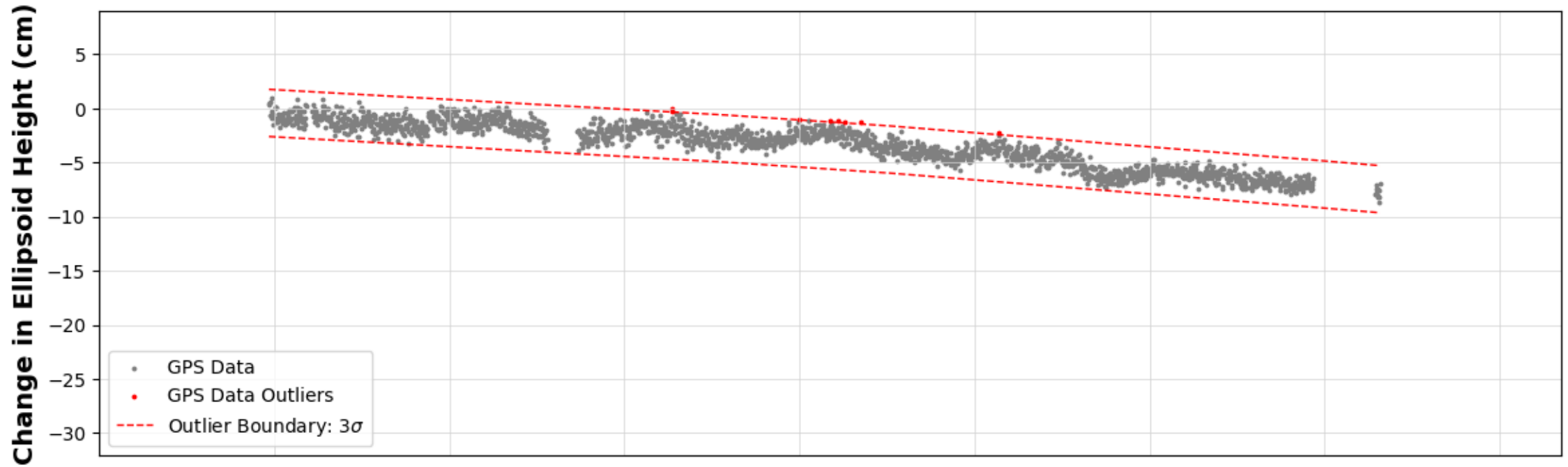
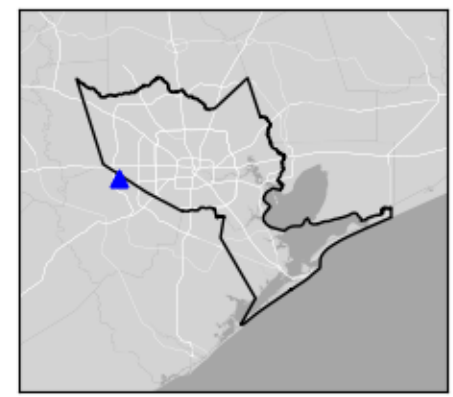
East Bernard, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

UHKD

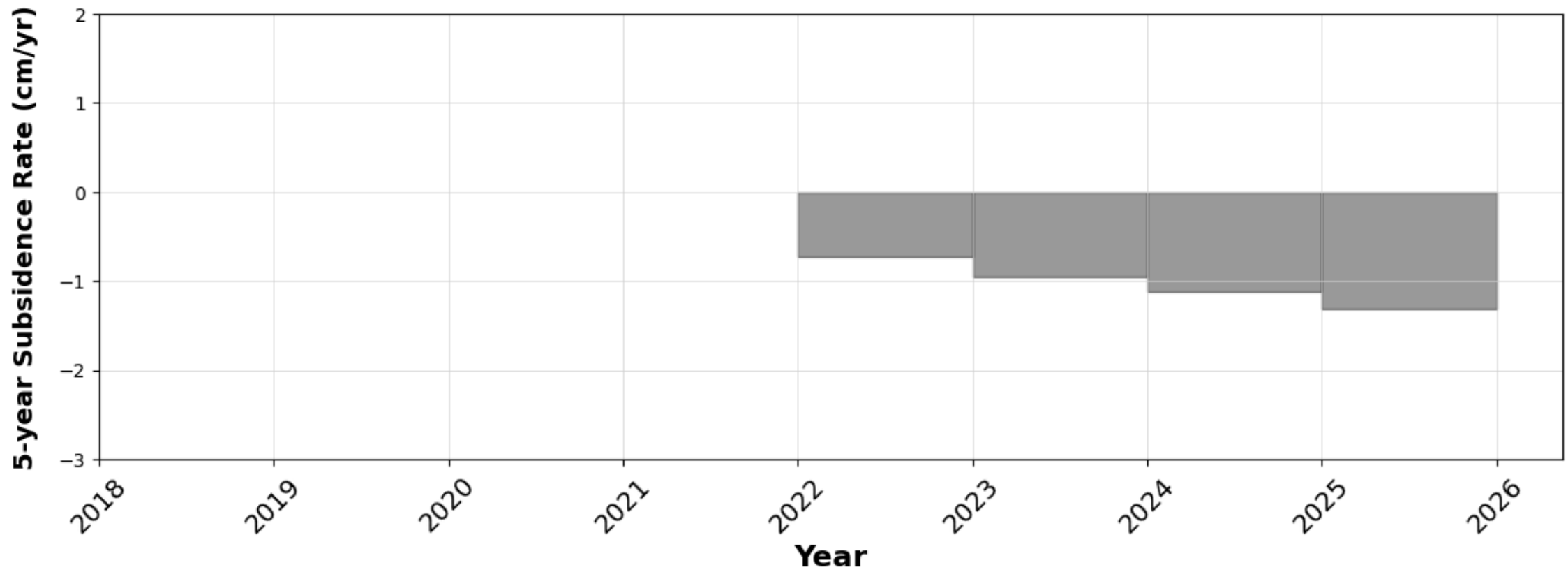
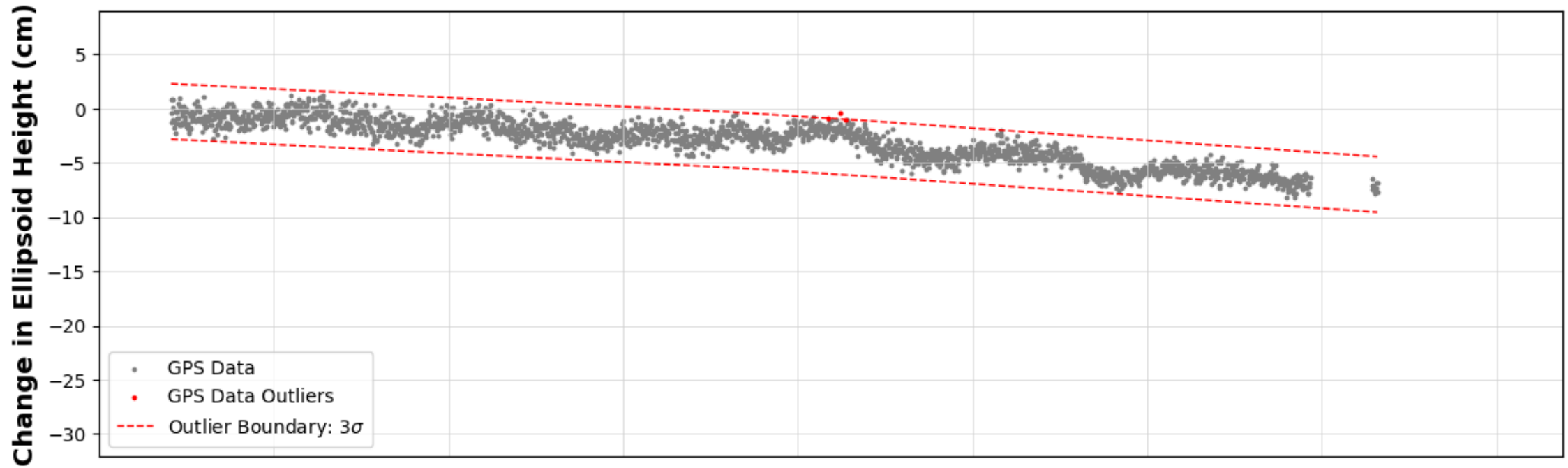
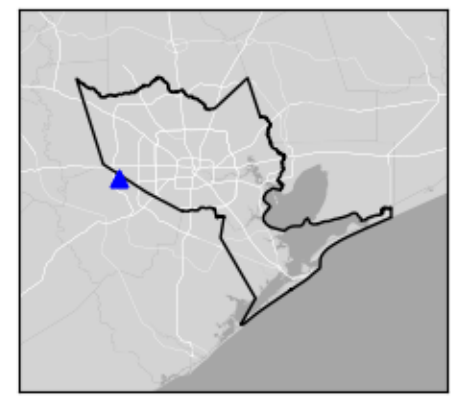
Katy, TX



Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

UHKS

Katy, TX



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Appendix C – Public Testimony and Comment

The public hearing for the 2025 Annual Groundwater Report was held on April 30, 2026, and the record remained open for public testimony and comment until May 8, 2026. Five questions were received and answered at the public hearing and are summarized below.

Question 1: Ms. Mechea Burrell asked, “Does the subsidence and aquifer condition data apply to those of use still on wells or is it only for public construction?”

Response: Ms. Ashley Greuter (Director, FBSD) answered that climate data is used for understand water use trends as below average conditions could lead to increased water use. FBSD works with the USGS to see the impact of groundwater pumpage on the aquifer system and ultimately subsidence.

Question 2: Ms. Mechea Burrell asked, “Due to the massive buildings in Fort Bend County towards the Simonton, Orchard, Wallis area, would it have a direct effect on if we were put on a main water line for subdivisions being built around Cross Creek area, are there any plans to put Orchard, Wallis, Simonton on public water system? It concerns us when they are building.”

Response: Mr. Michael Turco (General Manager, FBSD) responded that expanded water use in areas that haven't received stress on the aquifer in the past would expect to see that stress impact those around the area and was factored in the Joint Regulatory Plan Review and why FBSD added the regulation in Area B in the future to diversify the water sources so we don't have consequences that impact others on the aquifer and ultimately subsidence. We see the growth and expect it to continue. We focus on public supply and agricultural irrigation wells in our network.

Question 3: Ms. Mechea Burrell asked, “In your own estimation, do you foresee any plans putting those towns on public water supply?”

Response: Mr. Michael Turco (General Manager, FBSD) responded what you may see over the next ten years is all those towns looking to develop a plan for alternative water supplies whether it is new water or utilizing reuse or other water management strategies. It may be a slower process and we have put time in the Plan to allow that to happen. The change the Board made in Area B with 40% in 2035 only kicks in if you don't have a groundwater reduction plan. There is uncertainty regarding how much development will happen, so we revisit this every decade to make sure it's realistic to solve the problem.

Question 4: Mr. Barry Beard (City of Richmond) asked, “When you measure water levels do you do it out of piezometers or actual wells?”

Response: Mr. Jason Ramage (Hydrologist, USGS) responded that primarily out of production wells with other monitoring and irrigation wells.

Question 5: Mr. Barry Beard (City of Richmond) asked, “Wouldn't a piezometer be a more effective way of measuring that as groundwater comes to rest and stays at rest?”

Response: Mr. Jason Ramage (Hydrologist, USGS) responded that monitoring water levels in the piezometers would have to be screened in the same interval at the production wells and generally are screen in short sections and not representative of the pumping done by production wells.

Question 6: Mr. Barry Beard (City of Richmond) asked, “Is this presentation available on your website now?”

Response: *Ms. Ashley Greuter (Director, FBSD) answered that yes it was posted yesterday and available on the District's website.*

Question 7: Mr. Charles Kalkomey (City of Rosenberg) asked, "Can we look at the one-year water change slide? Near Cinco Ranch there's a red triangle pointed down and blue triangle pointed up right next to it. If you go to the five-year, those same two triangles are both red but the one on the right was redder than the one on the left. Was something going on in that area that made that one well higher?"

Response: *Mr. Jason Ramage (Hydrologist, USGS) responded that the magnitudes of those changes are highly dependent on the measurements collected during those two years. In the short term, certain areas may turn off, or redevelop a well, or construction-related so it may impact the water level rising and adjacent well may be making up for that loss of production. It's highly reliant on the measurements and is measured in early December through early March. We will note if a well was down.*

Question 8: Ms. D. Gordon Offord asked, "What impact, if any, does this monitoring with wells and so forth have on people that are rural or private wells?"

Response: *Mr. Michael Turco (General Manager, FBSD) responded monitoring is part of aquifer system typically used by public supply and irrigation. Most domestic wells are shallower in the aquifer, and they can be impacted by other domestic wells nearby. It's important to remember that if you're on private well inside Fort Bend serving a single-family dwelling, you're exempt from our permitting requirement. The information that we gather on water use comes from permitted with the District that are required to provide water use so we don't have visibility on domestic use. We expect domestic use to be about 5% of total water demand in the County.*