

Welcome



Onion Creek Watershed Hydraulic Study

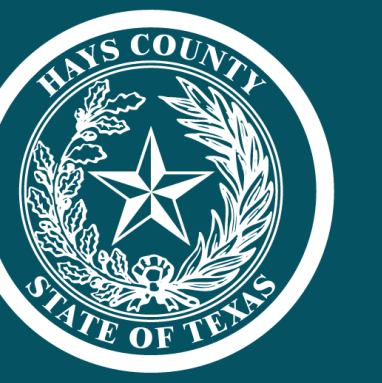
September 14, 2023 | 4:00 – 7:00 p.m.
Driftwood Community Center



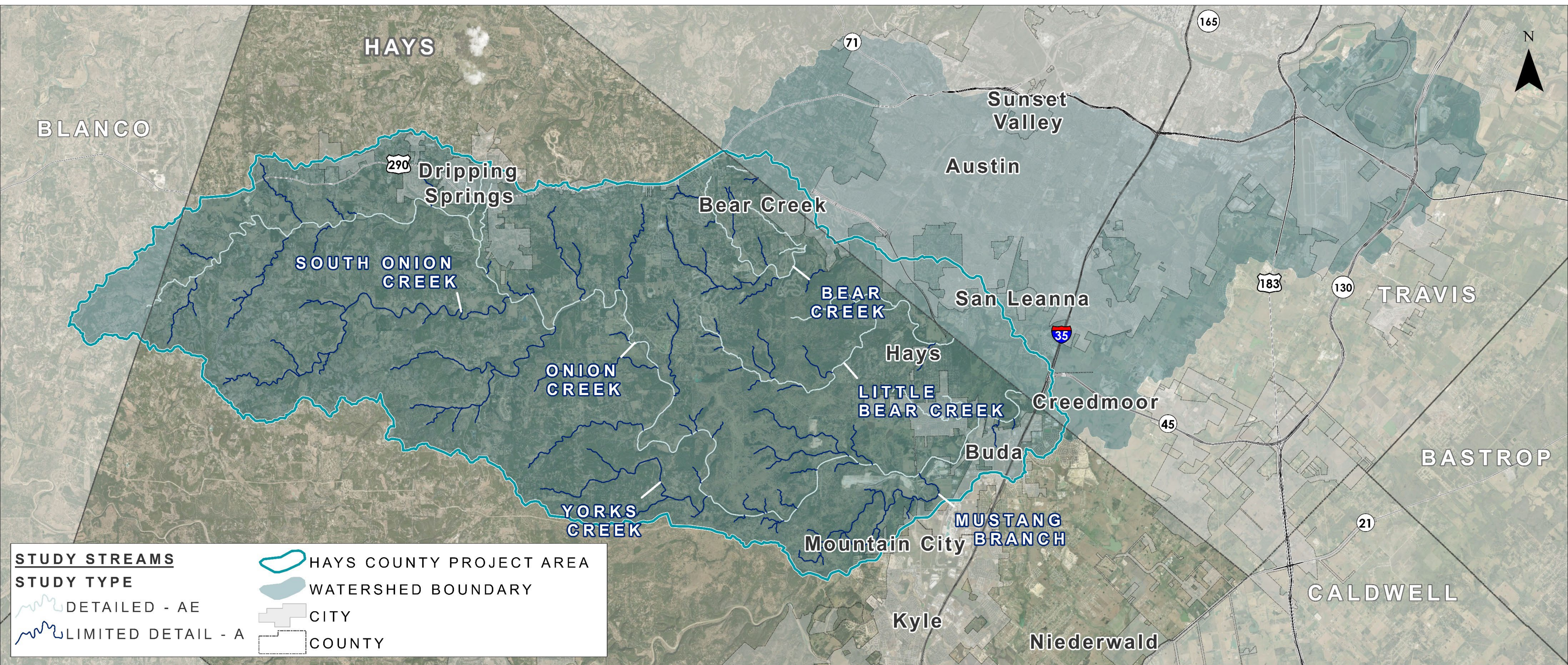
Comment Period: September 14 – 28, 2023

Submit comments at the meeting, on the website, by email to jmolina@cdandp.com, or by mail to PO Box 5459, Austin, TX 78763.

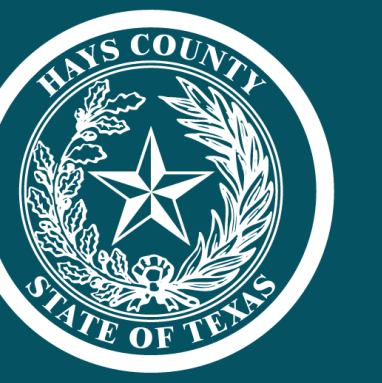
Study Overview



Hays County, in collaboration with the Texas Water Development Board (TWDB), is conducting a hydraulic study of Onion Creek Watershed to update existing floodplain maps based on updated Atlas 14 rainfall data provided by the National Oceanic and Atmospheric Administration (NOAA).

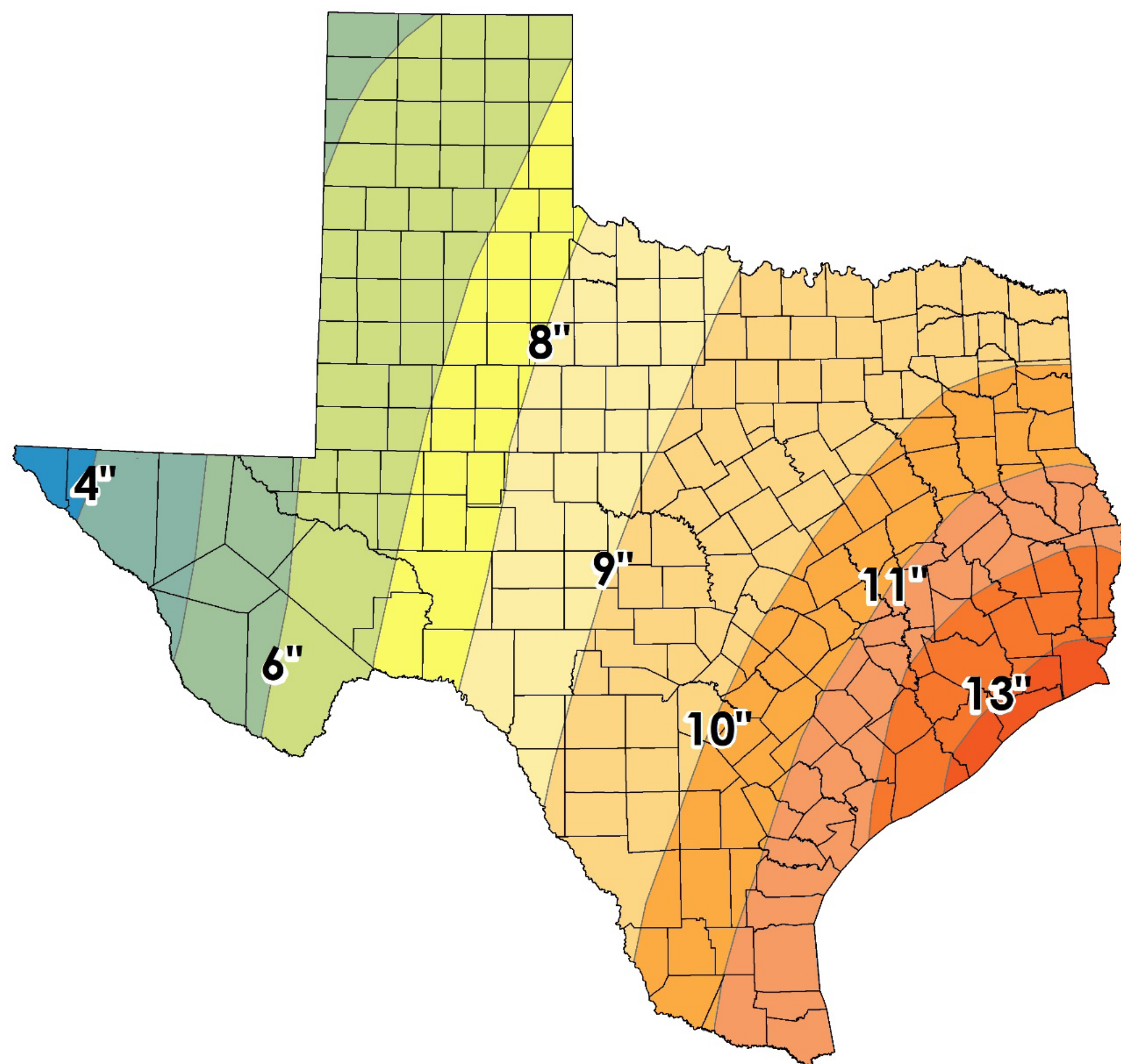


History of Rainfall Data Collection



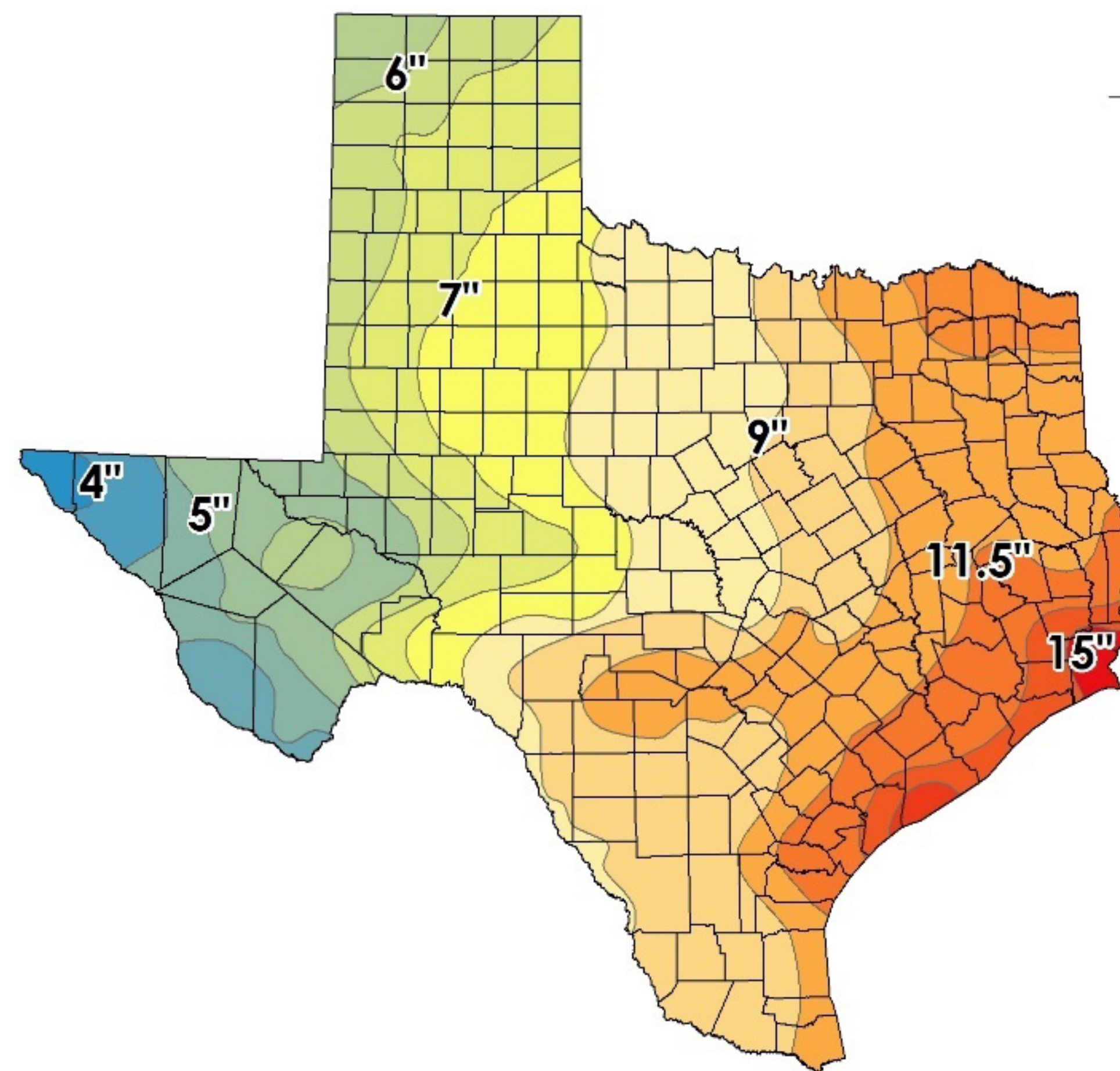
1961 TP-40

Weather Bureau Technical Paper 40
– Based on rainfall data up-to-1958



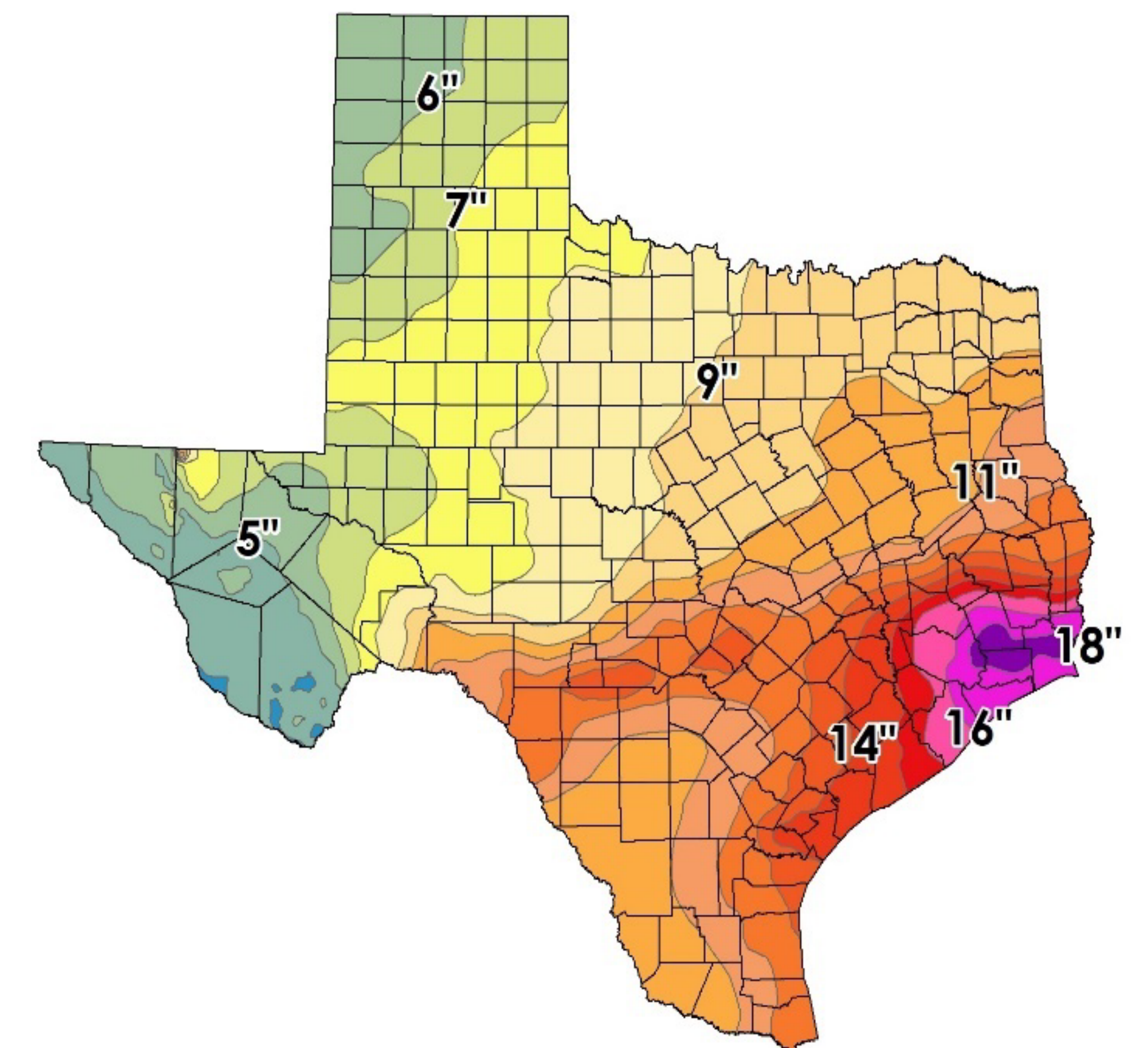
1998 USGS

Depth-Duration Frequency of
Precipitation for Texas
– Based on rainfall data up-to-1994

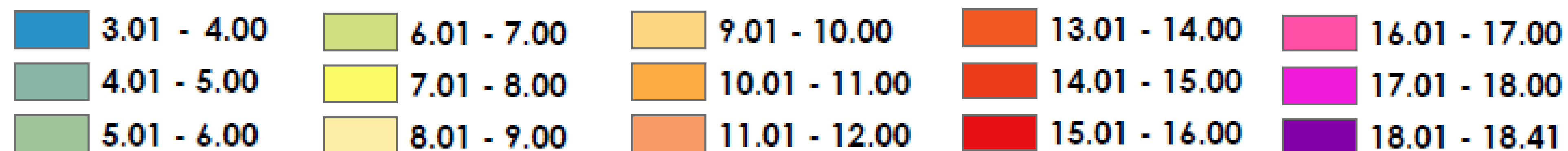


2018 ATLAS 14

NOAA Atlas 14, Volume 11 Precipitation
Frequency Atlas of the United States,
Texas
– Based on rainfall data up-to-2017

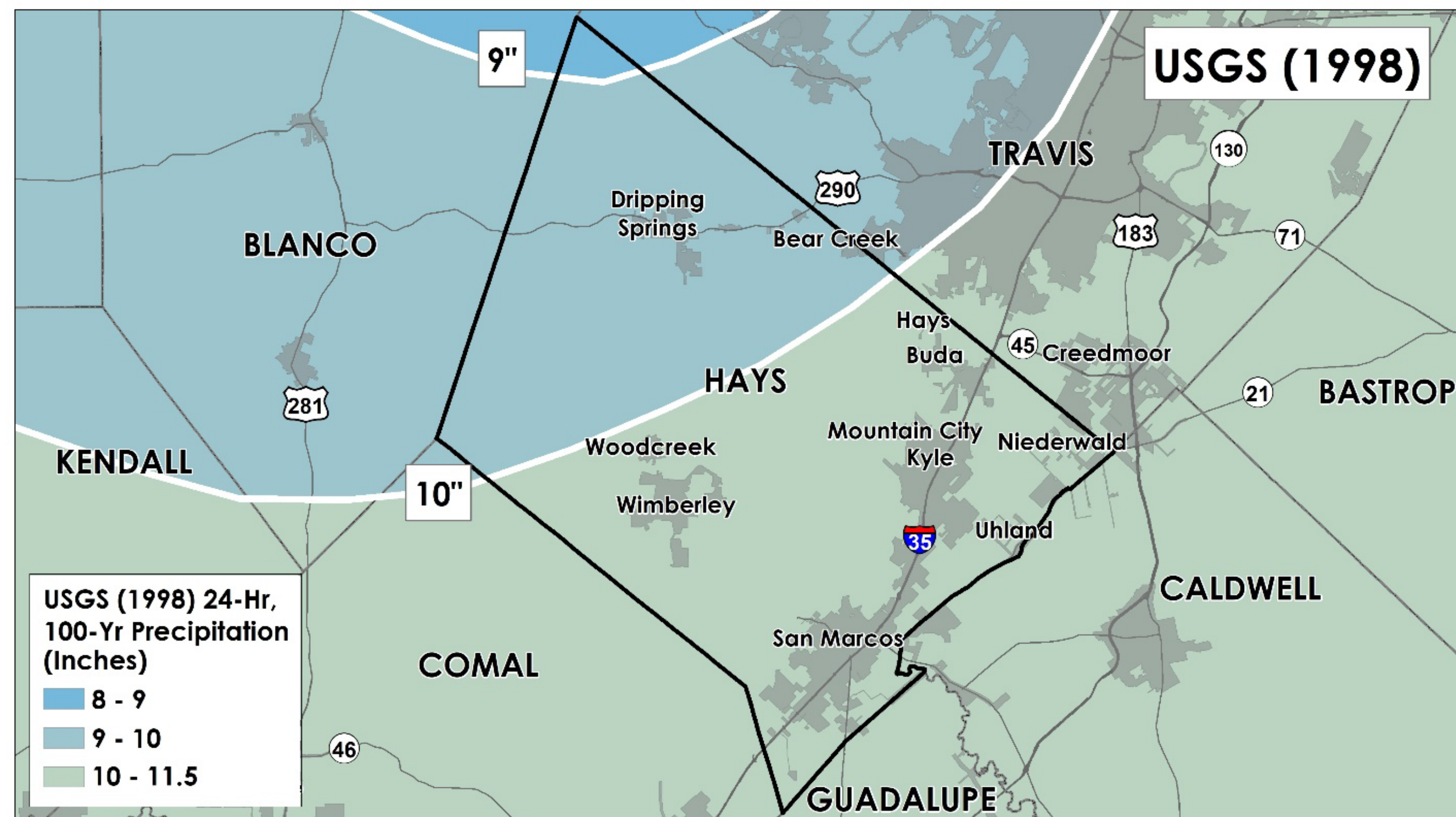
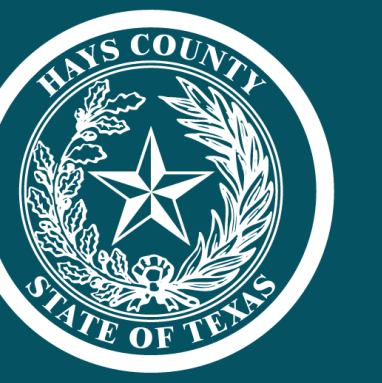


Legend – Rainfall depths in inches



Maps are based on 24-hour, 100-year Precipitation Totals

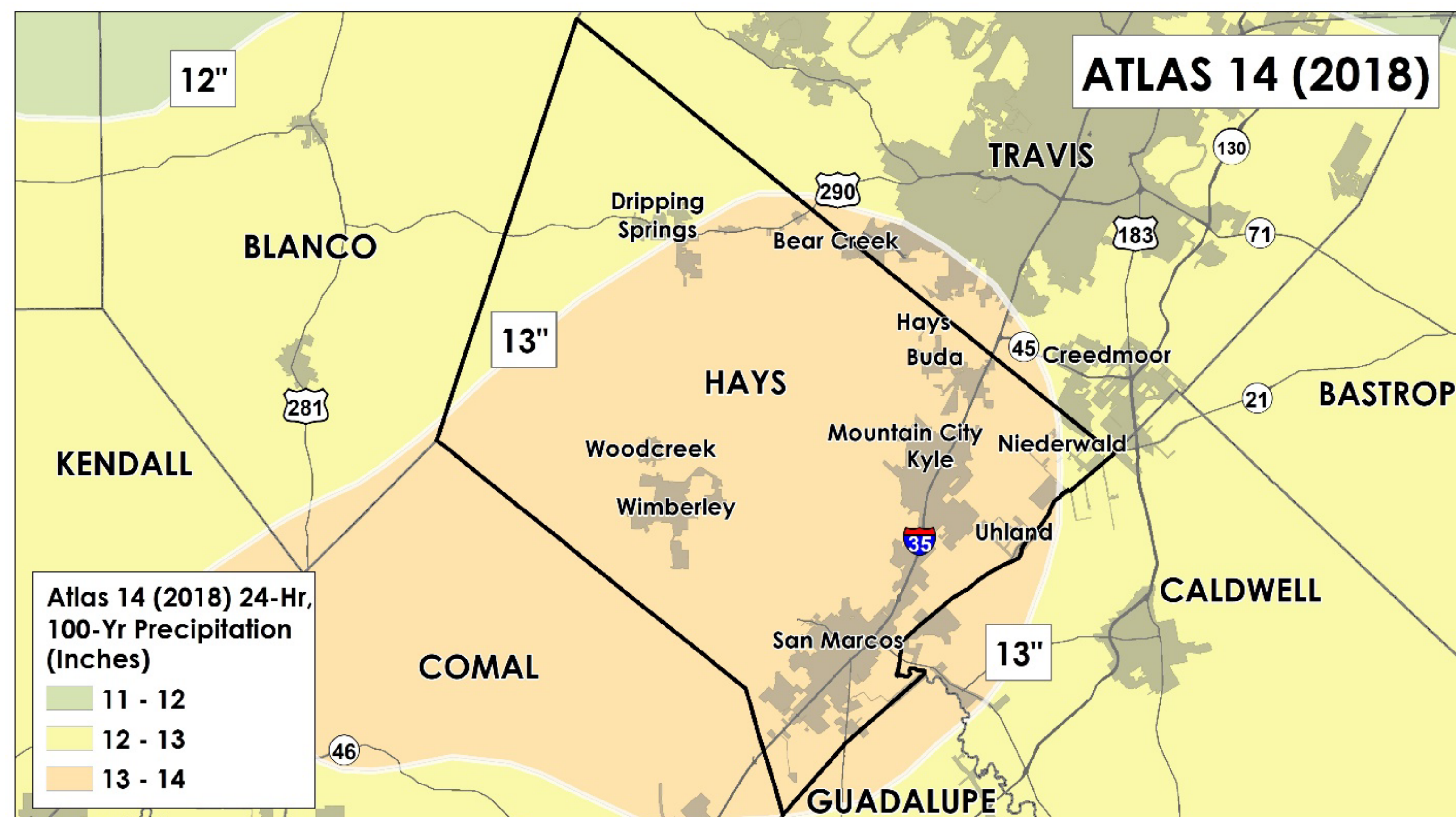
Increase In Historical Rainfall



RAINFALL CHANGES IN HAYS COUNTY

Many Central Texas communities currently utilize the 1998 United States Geological Survey (USGS) Depth-Duration Frequency of Precipitation for Texas report to define rainfall totals for floodplain and stormwater analysis. This publication utilized historical rainfall data up-to-1994.

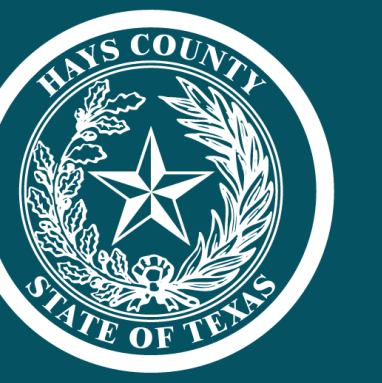
-USGS Water Resources Investigations Report 98-4044



On September 27, 2018, the National Oceanic and Atmospheric Administration (NOAA) published new precipitation-frequency values for Texas. This new publication, Atlas 14, is a reassessment of historical rainfall data up-to-2017, adding an additional twenty years of record to the analysis. Major events during this time period include Tropical Storm Hermine in 2010, Blanco River Memorial Day Flood in 2015, and Hurricane Harvey in 2017.

- NOAA Atlas 14, Volume 11 Precipitation-Frequency Atlas of the United States, Texas

Increase In Historical Rainfall



WHAT IS THE EFFECT?

Rainfall data is commonly used to define flood risk and to analyze and design stormwater infrastructure such as bridges, culverts, channels, storm drainage systems, and detention facilities. Atlas 14 indicates that the 1% (100-year) annual chance event may be greater than what we previously considered. The greatest rainfall changes occur in central Texas and along the Texas coast.

1 On average in Hays County, Atlas 14 indicates that the 1% (100-year) annual chance event is closer to the rainfall previously considered the 0.2% (500-year) annual chance event utilizing the 1998 USGS rainfall data.

2 It also indicates that the new 2% (50-year) annual chance event is closer to the previous 1% (100-year) annual chance event. These differences vary slightly across the county.

| Frequency Event | Annual Chance Exceedance | Countywide Average 24-hour Precipitation Depths (inches) | |
|-----------------|--------------------------|--|-----------------|
| | | USGS (1998) | ATLAS 14 (2018) |
| 500-year | 0.2% | 13.8 | 19.9 |
| 100-year | 1% | 10.5 | 13.3 |
| 50-year | 2% | 9.2 | 11.0 |
| 25-year | 4% | 7.9 | 9.1 |
| 10-year | 10% | 6.4 | 7.0 |
| 5-year | 20% | 5.3 | 5.6 |
| 2-year | 50% | 3.8 | 4.2 |
| 1-year | 100% | 1.4 | 3.1 |

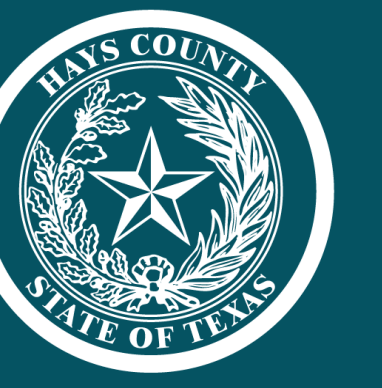
OBJECTIVES

- Update hydraulic models for the Onion Creek Watershed for both existing and fully-developed land-use conditions utilizing Atlas 14 flows.
- Update Onion Creek Watershed floodplain maps.
- Develop flood risk products to support the evaluation and communication of flood risk and floodplain management.
- Help the County and cities determine ideal areas and conceptual solutions for flood mitigation.

PURPOSE

The main purpose of this study is to update hydraulic models and floodplain maps in the Onion Creek Watershed to best reflect both current and future flood risk and to identify potential regional flood mitigation.

Why this Study Matters

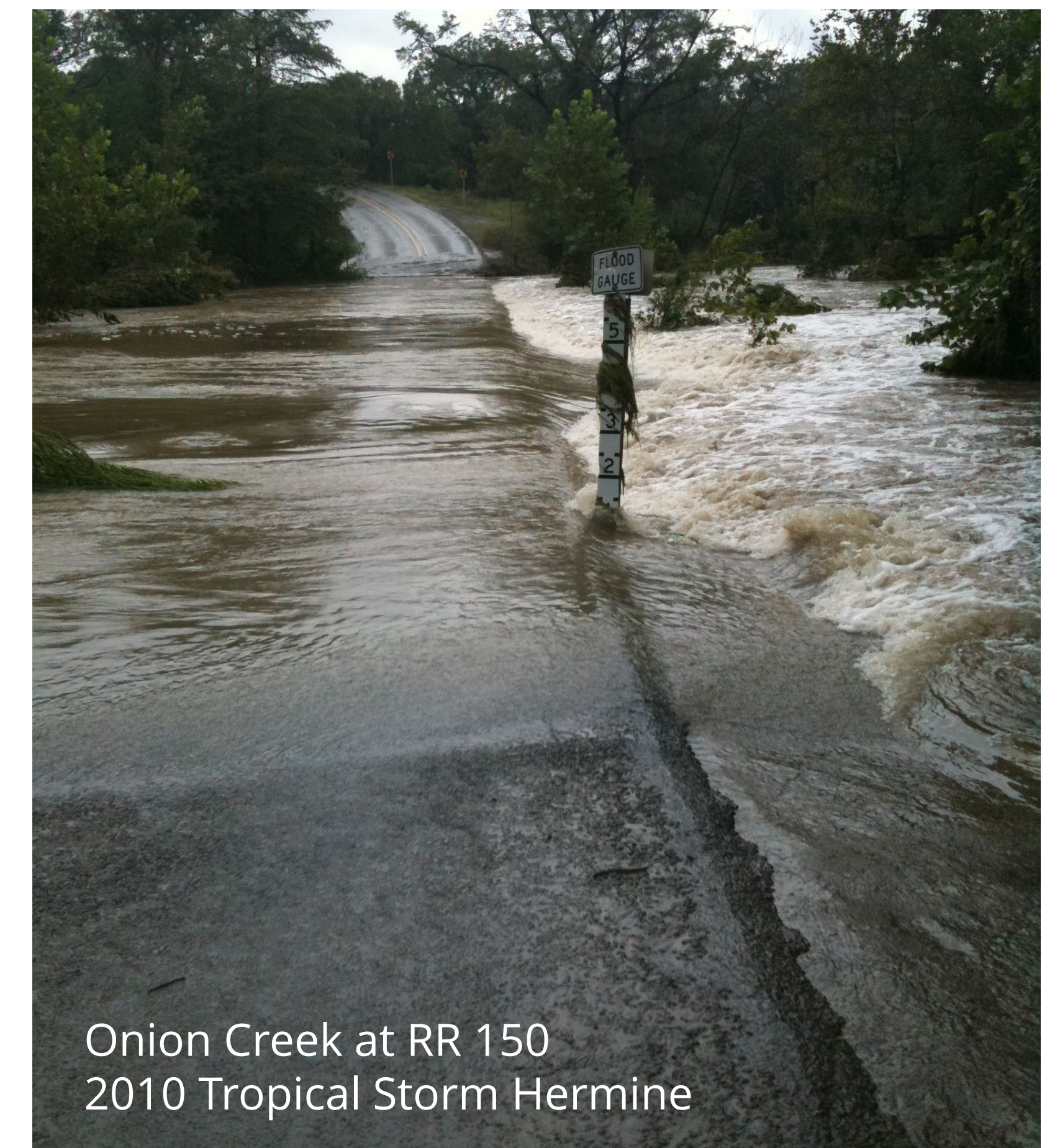


ANTICIPATED FLOOD RISK INCREASE

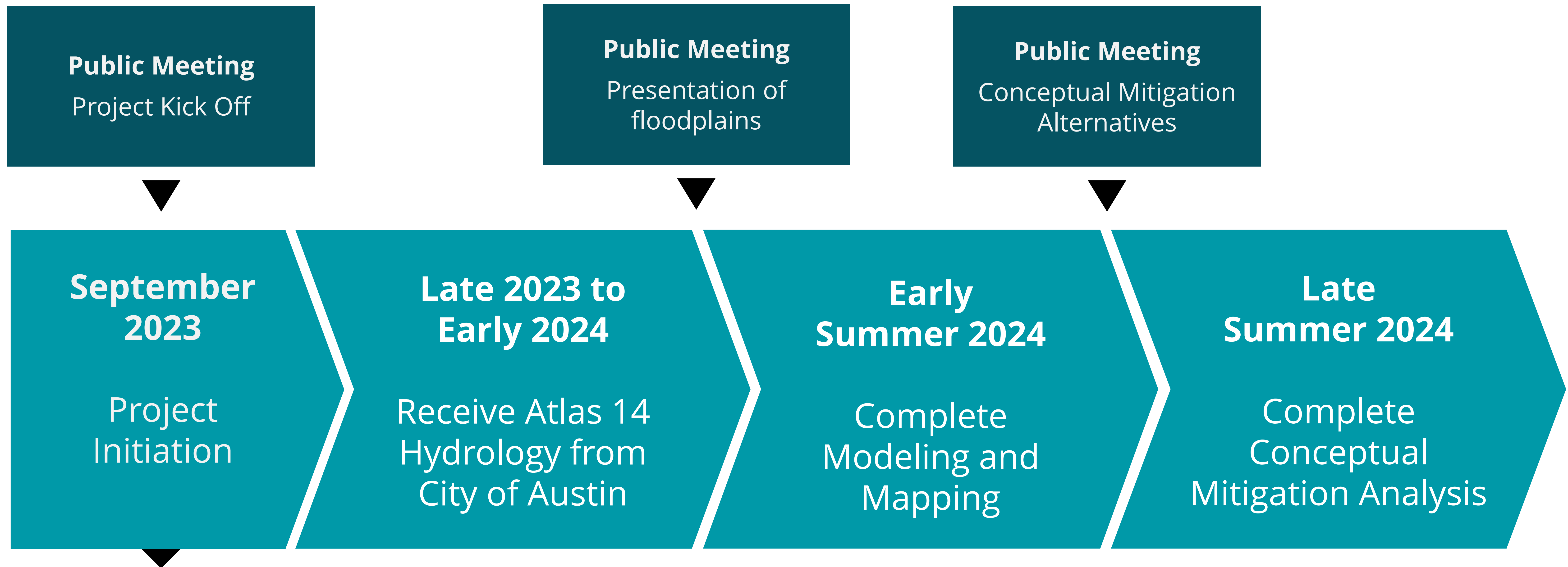
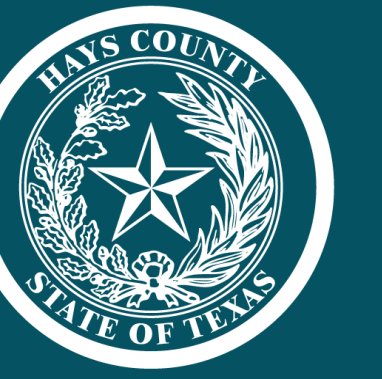
An increase in rainfall indicates that flood risk of existing infrastructure, such as buildings, roadways, channels, dams, storm drains, and ponds in the Onion Creek Watershed may increase.

ADDITIONAL IMPACTS

- Larger floodplains
 - Greater flood depths
 - Faster-moving water
- Increased cost to mitigate risk
 - Capital improvements
 - Future development

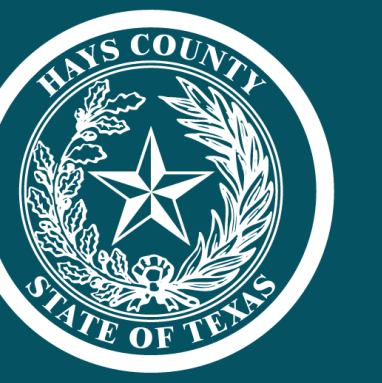


Anticipated Study Timeline



We are here

Help Us Validate Study Results



- Do you have locations, elevations, measurements, photos or videos of creek/river flooding?
 - Email to: jmolina@cdandp.com
 - Deadline: **Thursday, September 28, 2023**
 - Questionnaire available online at bit.ly/OnionCreekWatershed

- What to include:
 - Location information
 - Date (time, if possible)
 - Descriptions of flooding (where the water came from and how it impacted your property)



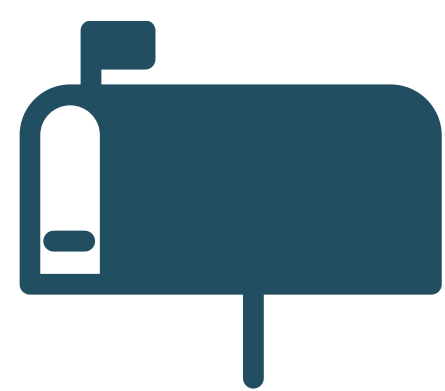
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Visit us online at
[Bit.ly/OnionCreekWatershed](https://bit.ly/OnionCreekWatershed)



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Onion Creek Study
c/o CD&P
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Austin, Tx 78763



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input online!