

MEMORANDUM

TO: Distribution DATE: November 30, 1994
FROM: Steve Fitzgerald *SF*
ENGINEERING DIVISION
RE: Summary Report #3 - Final Report
October 15-18, 1994 Storm and Flood Information
for Harris County

This is my third and final report for the flood event. Please discard Summary Report #1 and #2. A generalized rainfall and flood information map is attached. If you find out about subdivisions not listed in this report that experienced flooding, please let me know.

RAINFALL

Duration - From 6:00 a.m., Saturday, October 15, 1994 to
Midnight, Tuesday, October 18, 1994

Total Amounts

Numerical Range: 3.8" to 28.9"

Area Weighted Range: 9" to 15"

Highest Intensities

<u>Location</u>	<u>Duration</u>	<u>Amount (inches)</u>
Upper Cypress Creek near US 290 and Hockley	1 hour	3.5
	6 hour	6.5
	12 hour	9.1
	1 day	14.9
	2 days	15.0
	4 days	19.0
Cedar Bayou at US 290	1 hour	2.6
	6 hour	7.1
	12 hour	12.1
	1 day	21.0
	2 days	21.0
	4 days	28.9
Greens Bayou at Mount Houston Parkway	1 hour	1.7
	6 hour	6.9
	12 hour	8.3
	1 day	12.5
	2 days	13.1
	4 days	20.6

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Highest Intensities (Cont'd)

<u>Location</u>	<u>Duration</u>	<u>Amount (inches)</u>
Sims Bayou at Martin Luther King Blvd.	1 hour	2.4
	6 hour	3.5
	12 hour	6.5
	1 day	10.4
	2 days	10.7
	4 days	17.8

PROBLEM WATERSHEDS

- San Jacinto River
- Spring Creek
- Cypress Creek
- Little Cypress Creek
- Willow Creek
- Cedar Bayou
- Clear Creek
- Sims Bayou
- Brays Bayou
- Greens Bayou

GENERAL FLOODING STATEMENT

On Saturday morning, October 15, 1994, rains began in Harris County which did not stop until late Tuesday night, October 18, 1994. According to one meteorologist, the rain was a result of tropical moisture from a remnant of the Pacific Hurricane Rosa, combined with other meteorological phenomena.

Flooding began on Monday, October 17, 1994 on Upper Cypress Creek, Little Cypress Creek, Spring Creek, and Cedar Bayou. Late Monday night and early Tuesday morning, flooding began on San Jacinto River between U.S. 59 and Lake Houston, Sims Bayou, Brays Bayou, and Greens Bayou. By Tuesday afternoon and evening, flooding began on Willow Creek, the lower end of Cypress Creek, and the portion of San Jacinto River downstream of Lake Houston.

The channels began receding in this order; Brays Bayou, Sims Bayou, Greens Bayou, Willow Creek, Spring Creek, Little Cypress Creek, Lower Cypress Creek, Cedar Bayou, Upper Cypress Creek, San Jacinto River above Lake Houston, Clear Creek, and San Jacinto River below Lake Houston.

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Specific information regarding each affected watershed is presented below. The observations below are based on information obtained during the flood from the ALERT system and high water elevations obtained after the flood. Summaries of high water mark elevations for selected watershed are attached.

SAN JACINTO RIVER

10"-30" of rain fell in the San Jacinto River watershed which includes Cypress Creek, Willow Creek, and Spring Creek in Harris County. Flood levels at U.S. 59 were about 2 feet higher than the FEMA regulatory flood level, 5 feet higher than the pre-Lake Houston record level (May 1929), and 12 feet higher than the post-Lake Houston record level (May 1989).

The water level at the Lake Houston Dam Spillway was about 3.5 feet above the FEMA regulatory flood level (near the FEMA 500-year flood level) and exceeded the previous record level (May 1989) by 3.2 feet. Downstream of Lake Houston, the water level at new US 90 approximated the FEMA regulatory flood level and set a new record level. According to the National Weather Service, the estimated flow was 354,400 cfs.

Upstream of Lake Houston along the east fork of the San Jacinto River, water levels exceeded the FEMA regulatory flood level (approximated the FEMA 500-year levels).

As a side note, Lake Conroe reached a record level on Monday, October 17th and was discharging 33,340 cfs according to the National Weather Service.

SPRING CREEK

Spring Creek reached record levels and exceeded FEMA 500-year flood levels. Backwater from Spring Creek caused house flooding on Willow Creek and Spring Creek. The Northgate Crossing levee at I-45 was breached adjacent to the Hardy Toll Road (which was closed for about two days).

CYPRESS CREEK

Flooding on lower Cypress Creek downstream of Stuebner-Airline was similar to the June 1989 levels, except for the subdivisions downstream of Treaschwig Road, which were affected by the Spring Creek backwater. The Inverness Forest levee prevented house flooding. Flooding progressively upstream of Stuebner-Airline Road reached

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record or near record levels. At Grant Road, the flood level not only exceeded the "modern" record level in 1973, it also exceeded the 1949 level. This new record level was about 3.5 feet below the FEMA regulatory flood level (near the 10-year flood level). At US 290, Katy-Hockley Road, and Sharp Road, water levels approximated the FEMA 500-year flood levels. Water from Cypress Creek flowed over the drainage divide into the Bear Creek and South Mayde Creek watersheds.

LITTLE CYPRESS CREEK

Flood levels were high with most locations above the FEMA regulatory flood level (some locations near the FEMA 500-year level).

WILLOW CREEK

Flood levels were high with most locations near the FEMA 10-year to 50-year level range. Northampton Subdivision water levels exceeded the FEMA regulatory flood level due to Spring Creek backwater.

CEDAR BAYOU

The Cedar Bayou watershed received 30 inches of rain north of I-10 and 15" south of I-10 in Baytown. Upstream of I-10, record levels approximated the FEMA 500-year flood levels.

CLEAR CREEK

The Clear Creek watershed received 15"-25" of rain primarily upstream of I-45. From Dixie Farm Road upstream to SH 288, near record water levels were in the FEMA regulatory to 500-year flood level range and exceeded the 1979 flood levels. Downstream of Dixie Farm Road, water levels were in the FEMA 10-year to 50-year level range and were less than the 1979 flood levels.

SIMS BAYOU

The Sims Bayou watershed received 5"-18" of rainfall with larger amounts located in the mid to lower reaches. From Mykawa Road to SH 288, water levels approximated a FEMA 10-year flood profile, with the highest levels in the Martin Luther King Blvd. area. The channel conveyance improvements downstream of Broadway Blvd. significantly reduced water levels.

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BRAYS BAYOU

The rainfall varied in the Brays Bayou watershed from 9" in the upper end to 15" in the lower end. Water levels on Brays Bayou were between the FEMA 10-year and 50-year flood levels downstream of Beltway 8 and less than the FEMA 10-year upstream of Beltway 8.

GREENS BAYOU

Water levels on Greens Bayou were significantly less than those in the 1989 and 1992 floods.

RECORD FLOOD LEVELS EXCEEDED

San Jacinto River
Spring Creek

Upper Cypress Creek
Cedar Bayou

HOUSE FLOODING ESTIMATES

Current total for Harris County is 3,400 house/businesses in 90 subdivisions. A breakdown by watershed and subdivision is presented in the attached table.

The total includes an estimate for sporadic house flooding that were not physically counted.

SF:cr

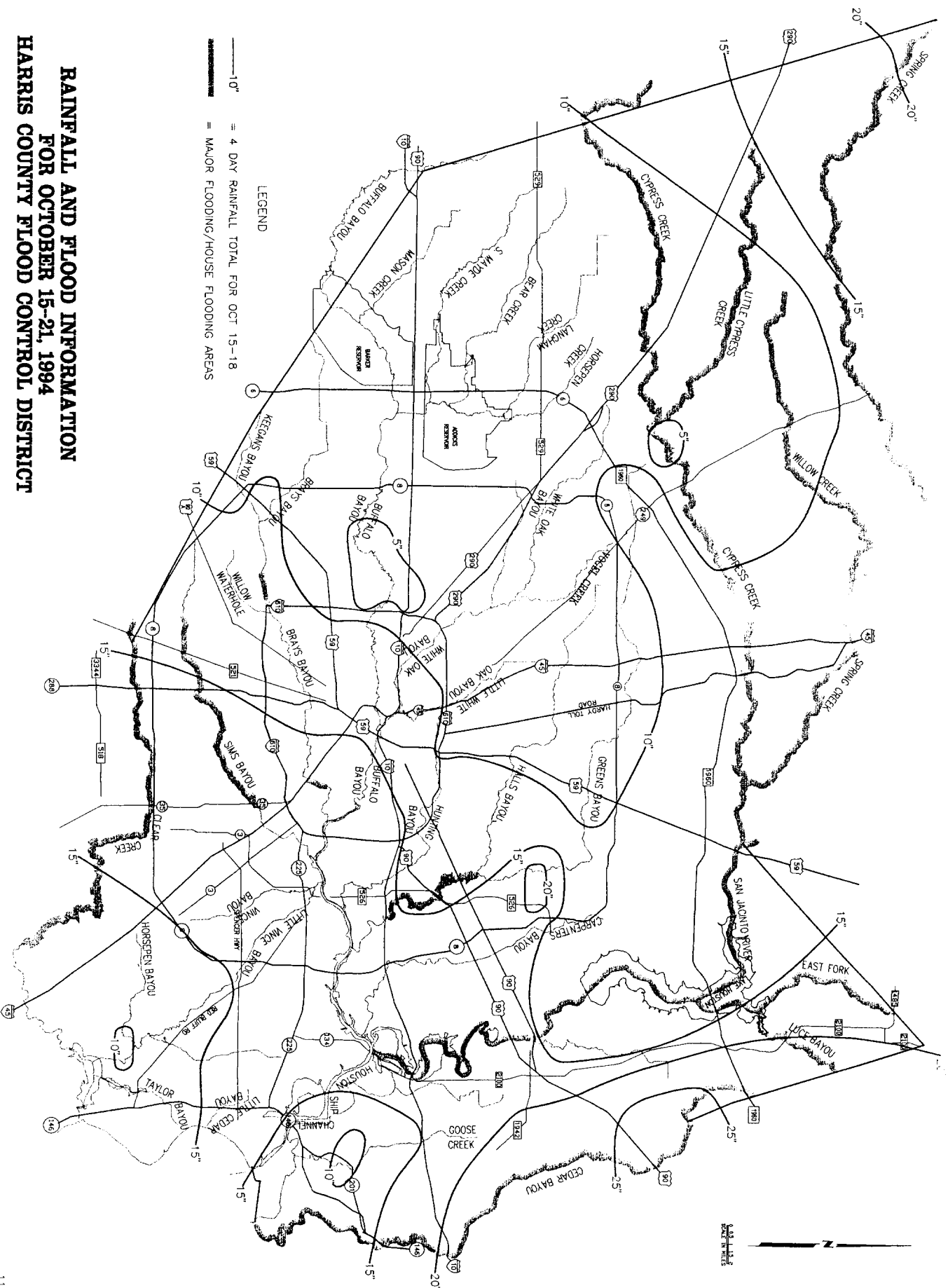
Attachments: Rainfall and Flood Information Map
HCFCD High Water Mark Summary Tables
House Flooding Estimates Table

Distribution:

Bak	Johnson	Stobb
Blackburn	Klimbal	Storey
Brusen	Kobs	Stotler
DiCioccio	Korolkova	Talbott
Elliott	Kraus	Therrell
Evans	Maas	Wahren
Garcia	Myers	Walters, M.
Goldberg	O'Brien	Weaver
Gutierrez	Parker	White
Haynes	Rushing	Woodfin
Herndon	Ryza	Yung
Jenkins	Sheblak	

cc: John Blount
Marvin Marek

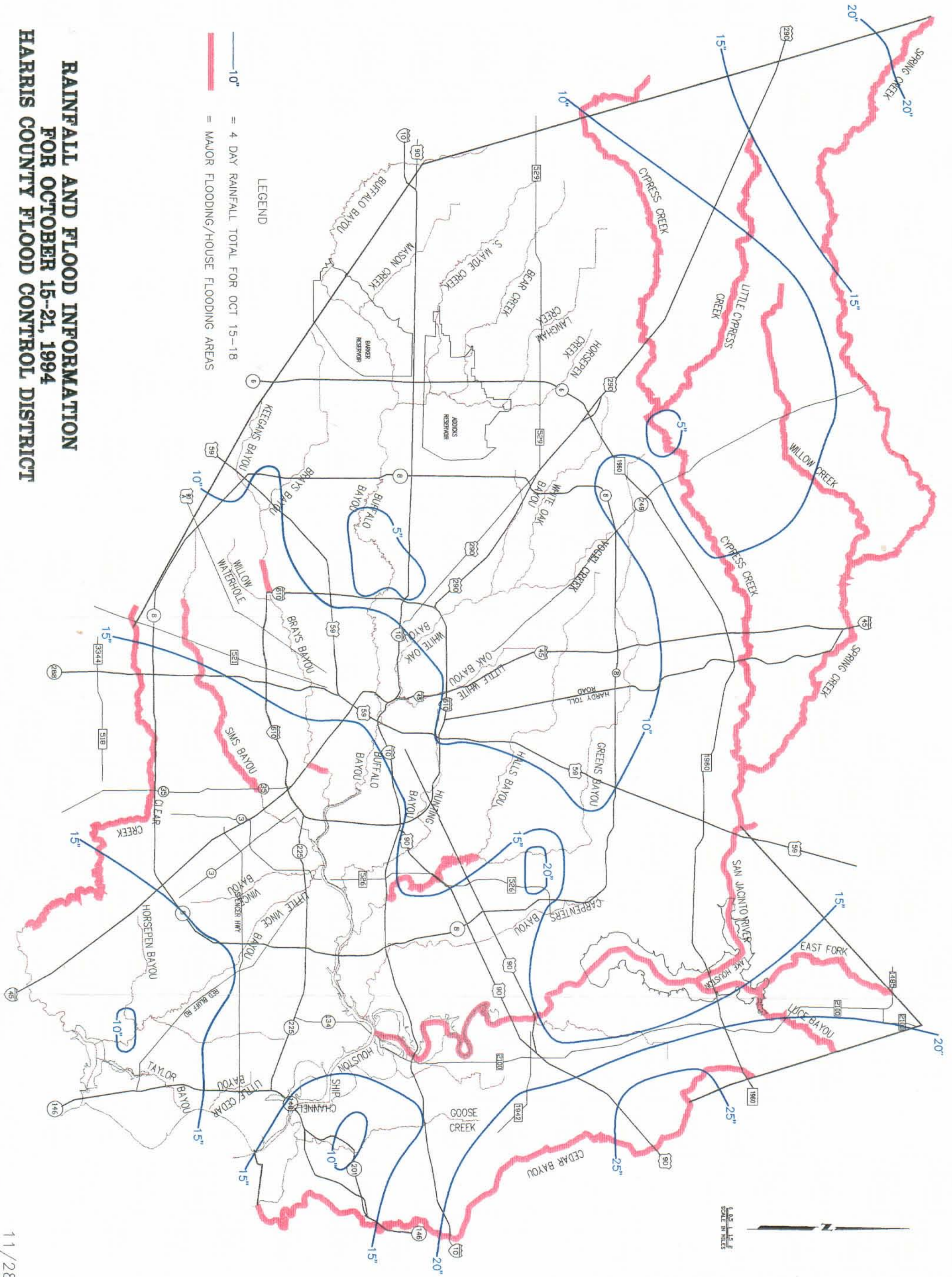
**RAINFALL AND FLOOD INFORMATION
FOR OCTOBER 15-21, 1994
HARRIS COUNTY FLOOD CONTROL DISTRICT**



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FOR OCTOBER 15-21, 1994
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— 10" = 4 DAY RAINFALL TOTAL FOR OCT 15-18
 = MAJOR FLOODING/HOUSE FLOODING AREAS

LEGEND



1:625 1:125 F
SCALE IN MILES