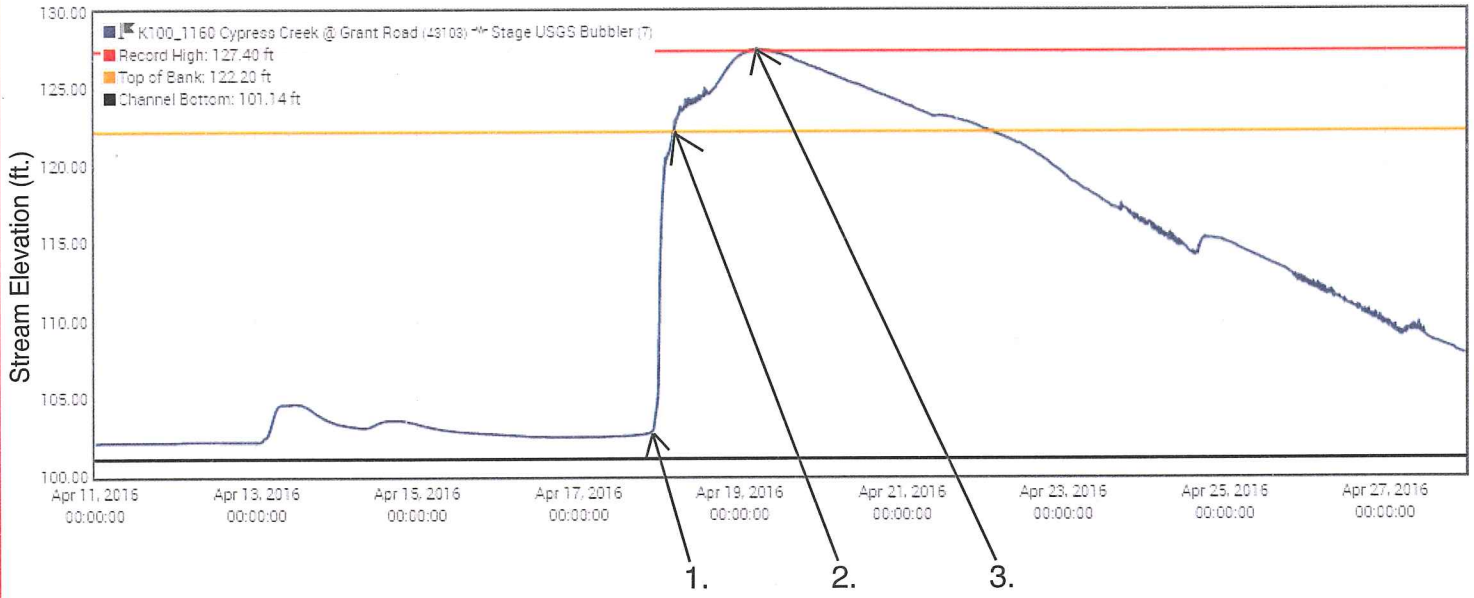
Tax Day Flood

Stream Elevation Rise (Rate and Peak)

Cypress Creek at Grant Road



	Description	*Time*	*Date*	
1.	Began rising rapidly	10:00 PM	April 17, 2016	
2.	Reached top of bank (iob)	4:37 AM	April 18, 2016	- - community out-of-bank flooding began
3.	Peak elevation reached	5:09 AM	April 19, 2016	

Cypress Creek Flood Control Coalition 2016 Annual Report

www. ccfcc.org

WHAT'S INSIDE...

President's Letter
Watershed Map
Mission Statement
Annual Report
Financial Summary
Board/Committee Info

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President's Letter

April 16, 2017

The Cypress Creek Flood Control Coalition is a grass roots alliance of Municipal Utility Districts (MUDs), Home Owner Association (HOA) / Property Owner Association (POA) / Civic Improvement Association (CIA), business firms and individual residents - - - - all functioning in the role of members working to accomplish 3 declared goals. It functions through a collaboration process to achieve its mission which is described in this report - - - - of which the greatest challenge and most difficult to achieve is reduction of flood danger and damage to inhabitants and property located in the Cypress Creek atershed. It is managed by an elected board of nine (9) voluntary, unpaid, hard working directors - - - all elected by the membership for 3-year terms.

The Board meets on the 3rd Wednesday monthly with all the meetings open to the public. Its work and accomplishments are mainly carried out during the intervening Board meetings. Board meetings are for the purpose of progress status reviews, evaluation of progress and instituting changes as deemed appropriate for achieving our goals.

Many of the directors are very active meeting with elected political representatives, government and private sector decision -makers and other non-profit organizations, Examples include environmental preservation / conservation organizations and the business community Chambers of Commerce. All require a never-ending series of both meetings and outside activity,

December 29, 2016 was the 17th anniversary of signing its charter. The year was a series of both "*Good News*" and "*Bad News*" events and activities. You are encouraged to read the "Highlights" section as a means to obtain a quick overview of significant events and activities, establish your opinion and I hope give us a feedback including the benefit of your thoughts on where we have been and where we are going.

In sharing my personal opinion with you, the events and progress during 2016 were especially challenging and very disappointing in terms of not achieving the progress needed for reversing the "rising waters" flood risks and events. . What needs to be done to successfully achieve the "No Adverse Impact" advocated by the Association of State Floodplain Managers? It is (1) land dedicated to drainage infrastructure, (2) a significant increase in funding and (3) political leadership. The Board temporarily suspended action to move forward with the goal to obtain political commitments for major funding and actions to reduce the ever-increasing rising floodwaters until completion of the computer modeling project which began after the Tax Day / Memorial Weekend floods. It feels knowing the results of this undertaking are critical to establishment of how to go forward. However the extended delay in this project being completed has necessitated a reevaluation - - - a reevaluation which the Board will be encouraged to immediately undertake during the next month.

Year 2016 Highlights

- Record home flooding in Cypress Creek Watershed. "Tax Day" storm (2,100+ homes flooded) followed 6 weeks later by Memorial Week-end storm (230 Cypress Creek and Willow Creek homes flooded). Harris County tells public this was due to 500-year storm. (Page 12-24 for storm details and Page 25-31 for Historical Stream Gage Information).

- Texas Supreme Court reverses opinion on local flood damaged 400+ home lawsuit, "Kerr vs. Harris County / Harris County Flood Control District". This ruling prevented what we believe was the good possibility of a trial by jury of damaged home-owner peers. Has far-reaching legal and political impact to hundreds of thousands of residents currently faced with risk from rising waters! (Page 39_ for details)

- Cypress Creek Flood Control Coalition's Board of Directors authorized technical review of 2016 Tax Day and Memorial Weekend rainfall and FEMA / HCFCD computer model results used to calculate 100-year flood plain / floodways in Cypress Creek Watershed. (Pg_33_for details).

- Harris County Flood Control District Executive Director retired. New appointee now at helm.

- Addicks Reservoir has a fixed limit to both (1) its stormwater storage capacity and (2) the maximum height of its pool which can be allowed before an overflow causing a downstream disaster. During the Tax Day storm it raised to a new all time level of over 5-feet above all previous records. These upper limits are increasingly threatened by increased drainage volume flowing from exploding new land development in Cypress Creek and Addicks Watersheds. A government long range solution compatible to continued upstream land development is not apparent. Cypress Creek downstream communities are becoming increasingly endangered if existing / increasing overflow is blocked in order to solve risk of Addicks flooding into down stream City of Houston. (Pg. 32 for details)

- History of Harris County Flood Control District failure to implement Cypress Creek Watershed drainage/flood mitigation master-plan continued. Cypress Creek Overflow Management Plan study conceptual plan report approved in 2015 by Texas Water Development Board stalls and doesn't make it to Harris County Commissioners Court for decision/approval to move forward with next step. (Pg.32__for details).

- Harris County and HCFCD senior management continue to rebuff CCFCC technical expert engineering research conclusions that the county's existing regulatory criteria limiting stormwater detention outflow are inadequate; thus contribute rather than thwart growing flood risk to downstream communities. Commissioners Court approved revisions to such criteria in March 2016 following CCFCC efforts to dissuade otherwise. (Pg. 32_for details).

. . . . continued next page . . . . .

- Harris County Flood Control District goes on record via their Capital Improvement Program (CIP) seeking Commissioners Court approval to increase annual capital improvement funding (currently at a $60 million per year cap) - - -to $200 million per year - - - - stating they need $12 billion to achieve flood risk reduction to a 25-year level of protection over a 60- year period. (Page _34-38 for details).

- Cypress Creek Greenway project continued to experience high level of support and action throughout the community. More nature trails and parks. (Pg.44-46 for details).

- Little Cypress Frontier development plan by HCFCE continued with more regional detention basin design plans and funding coming to fruition after "Major Tributaries" engineering recommendations were established in 2003.
(Page _7 for details).

- Elections resulted in major changes in the line-up of state representatives for those districts overlapping the Cypress Creek Watershed boundaries. CCFCC begins effort (before election) to seek their undertaking actions to assist in promoting / achieving progress in political support conducive to flood risk relief in our watershed.

Mission Goals / Mission Statement

Mission / Vision Statement

Protecting people, property, and the environment from increasing flood risks occurring in the Cypress Creek Watershed through mitigation, preservation and education.

Core Values

Advocate for public and property safety through - - -

- Engineering evaluation/analysis, identification and reporting of methodology to achieve flood damage risk reduction and seeking enforcement of the Harris County's Flood Plain Management Regulations *"No Adverse Impact"* requirements.
- Adequate g capital improvement funding levels and timing by government and private sector as required to achieve a "No Adverse Impact" across the watershed's landscape.

Analysis of government land development permit criteria and advocate responsible development through engineering research evaluation and sharing resulting information with responsible government authorities, and land development decision makers.

Be stewards of the Cypress Creek watershed by promoting environmental preservation of forest and wildlife habitat and quality of life trail, park and greenway floodplain enhancements.

Education by enhancing communication between government and the private sector on matters concerning the Coalition's mission and objectives.

HARRIS COUNTY FLOOD CONTROL DISTRICT

Cypress Creek Watershed

What is a watershed?
A watershed is a geographical region that drains to a common bayou, creek or other waterway.

Watershed Overview

The Cypress Creek watershed is located in northwest Harris County and extends into Waller County. Rainfall within the 267 square miles of the Cypress Creek watershed drains to the watershed's primary waterway, Cypress Creek (K100-00-00). There are 250 miles of open waterways in the Cypress Creek watershed, including Cypress Creek and its major tributaries, such as Little Cypress Creek (L100-00-00), Turkey Creek (K111-00-00), Dry Gully (K133-00-00) and Mound Creek (K166-00-00). Based on the 2010 U.S. Census, the estimated population of the Harris County portion of the Cypress Creek watershed is 347,334.The western portion of the watershed is historically rural farmland, while the eastern and central portions have developed rapidly in the past 20 to 30 years. The Cypress Creek watershed has a diverse environment with animal species ranging from the American alligator to the bald eagle. The watershed upstream of Highway 290 is part of the well-known Katy Prairie ecosystem.

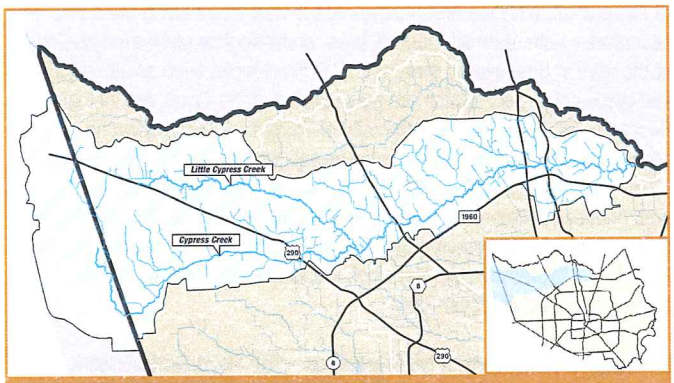
Active Studies

Cypress Creek Overflow Management Plan – The Addicks Reservoir watershed occasionally receives a significant amount of natural stormwater overflow from the Cypress Creek watershed during heavy rainfall events. To understand and manage this overflow, a study has been initiated that will result in policies, technical criteria and guidelines to reduce flood risks that are acceptable to area interests and reflect the unique hydrologic conditions in the area. The study area includes upper Cypress Creek (upstream of Highway 290) and the drainage areas upstream of Addicks and Barker reservoirs, including Langham Creek, Bear Creek and South Mayde Creek. Approximately 60 square miles of the upper Cypress Creek watershed originate in Waller County and drain into Harris County. The Flood Control District and Harris County have received a grant from the Texas Water Development Board to partially support this study effort. Two public meetings were held in August 2012 and November 2013, with a third scheduled in September 2014.
See **www.hcfcd.org/cypresscreekoverflow** for further information.

Active Capital Projects

In the past 20 years, the Harris County Flood Control District has spent nearly $37 million on capital projects in the Cypress Creek watershed. The completed capital projects include channel improvements along various tributaries, erosion repairs along Cypress Creek, home buyouts and floodplain preservation acquisitions, and improvements to existing stormwater detention basins.

Voluntary Home Buyouts – Through voluntary home buyouts, the Flood Control District can purchase properties that are hopelessly deep in the floodplain, move the owners to higher ground and prevent future flood damages by removing structures from these properties. The Flood Control District has placed a major focus on voluntary home buyouts within the Cypress Creek watershed. Since 1985, the Flood Control District, acting alone and in various partnerships with the Federal Emergency Management Agency (FEMA), the U.S. Army Corps of Engineers (Corps) and Harris County, has acquired more than 300 flood-prone properties in the Cypress Creek watershed.



Drainage Area	Watershed Population	Open Channels
267 square miles	347,334	250 miles

Recently Completed Capital Projects

Site Improvements and Wetlands Construction – This project (K700-01-00-E001) created and restored approximately 95 acres of wetland habitat on the Katy Prairie near the intersection of Katy-Hockley and House Hahl roads. The area provides required mitigation for other projects that will impact native wetlands, specifically the Greenhouse Stormwater Detention Basin on Langham Creek (U500-02-00), at Greenhouse and Longenbaugh roads, and the John Paul's Landing Stormwater Detention Basin on a Bear Creek tributary, near the intersection of Katy-Hockley Cutoff and Sharp roads. The wetlands project, which included planting bog rush, swamp smartweed, duck potato, powdered thalia and maidencane, was completed in February 2014 and cost approximately $203,000.

Cypress Park Basin Improvements – In 2013, the Flood Control completed excavation of a 50-acre stormwater detention basin at Cypress Park. This basin (K500-01-00) will store approximately 80 million gallons of stormwater to help reduce flooding risks and damages. It is located on the north bank of Cypress Creek near North Eldridge Parkway, adjacent to the Parc Lake subdivision. The total design and construction cost for the basin was approximately $1.8 million.

HARRIS COUNTY FLOOD CONTROL DISTRICT

Little Cypress Creek Watershed

Mission Statement
The Harris County Flood Control District provides flood damage reduction projects that work, with appropriate regard for community and natural values.

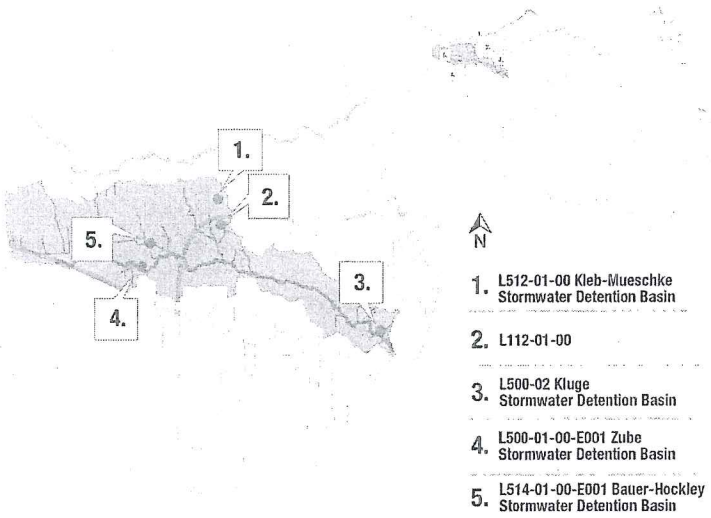
What is the Little Cypress Creek Frontier Program?

The *Little Cypress Creek Frontier Program* is one component of the Harris County Flood Control District's overall Frontier Program, which is an organized effort to plan for regional drainage infrastructure in advance of future land development.

The *Little Cypress Creek Frontier Program* focuses on the 52-square-mile Little Cypress Creek watershed in northwest Harris County. This area, which is experiencing rapid development with construction of the Grand Parkway, lacks sufficient natural drainage to accommodate expected growth. By collaborating with land owners and developers, the program is working to identify a large-scale, mutually beneficial plan for drainage that cost-effectively maximizes stormwater mitigation and water quality, as well as opportunities for public recreational amenities and open space.

This innovative approach is in contrast to typical efforts in which individual land owners and developers install drainage infrastructure that serves their site alone, resulting in smaller, isolated stormwater detention basins and minimum-width channels for stormwater management. By taking a regional approach, the Frontier Program protects existing developments and provides proper drainage access for newly developing properties.

Developers participate in the Frontier Program by paying a $4,000-per-acre fee to develop in the watershed service area. Developers also participate by excavating a portion of regional drainage facilities and by dedicating property for right-of-way. The Little Cypress Creek Frontier Program will use impact fees primarily to acquire right-of-way along the channel and for stormwater detention basins. The program calls for stricter stormwater detention requirements to mitigate runoff from new developments and will result in at least seven regional detention basins with a combined minimum storage of approximately 14,000 acre-feet.



Major components of the Little Cypress Creek Frontier Program plan include:

- L500-02 Kluge Stormwater Detention Basin
  This stormwater detention basin on a 146-acre site between Kluge Road and Longwood Trace Drive was completed in 2015. The basin holds more than 325 million gallons, or 1,000 acre-feet, of excess stormwater during periods of heavy rain.

- L500-01-00-E001 Zube Stormwater Detention Basin
  Phase I construction was completed in 2016. Phase II construction of this stormwater detention basin, which includes excavation and a weir connecting the basin to Little Cypress Creek, began in early 2017. The basin is located on Harris County Precinct 3's existing Zube Park and an 84-acre site east of the park owned by the Flood Control District.

- L112-01-00
  Conveyance improvements for this Little Cypress Creek tributary near Mueschke Road and the Grand Parkway are in design and are expected to go out for bid in the spring of 2018. Stormwater mitigation for this project will be provided by construction of HCFCD Unit L512-01-00.

- L512-01-00 Kleb-Mueschke Stormwater Detention Basin
  This stormwater detention basin on a 106-acre site south of Kleb Woods is in design. The basin provides mitigation for improvements to HCFCD Unit L112-01-00.

- L514-01-00-E001 Bauer-Hockley Stormwater Detention Basin
  This stormwater detention basin on a 101-acre site near Bauer-Hockley and Becker roads, west of the confluence of Little Cypress and Cypress creeks, has been previously excavated through excavation and removal contracts. A weir connecting the basin to a Little Cypress Creek tributary is in design.

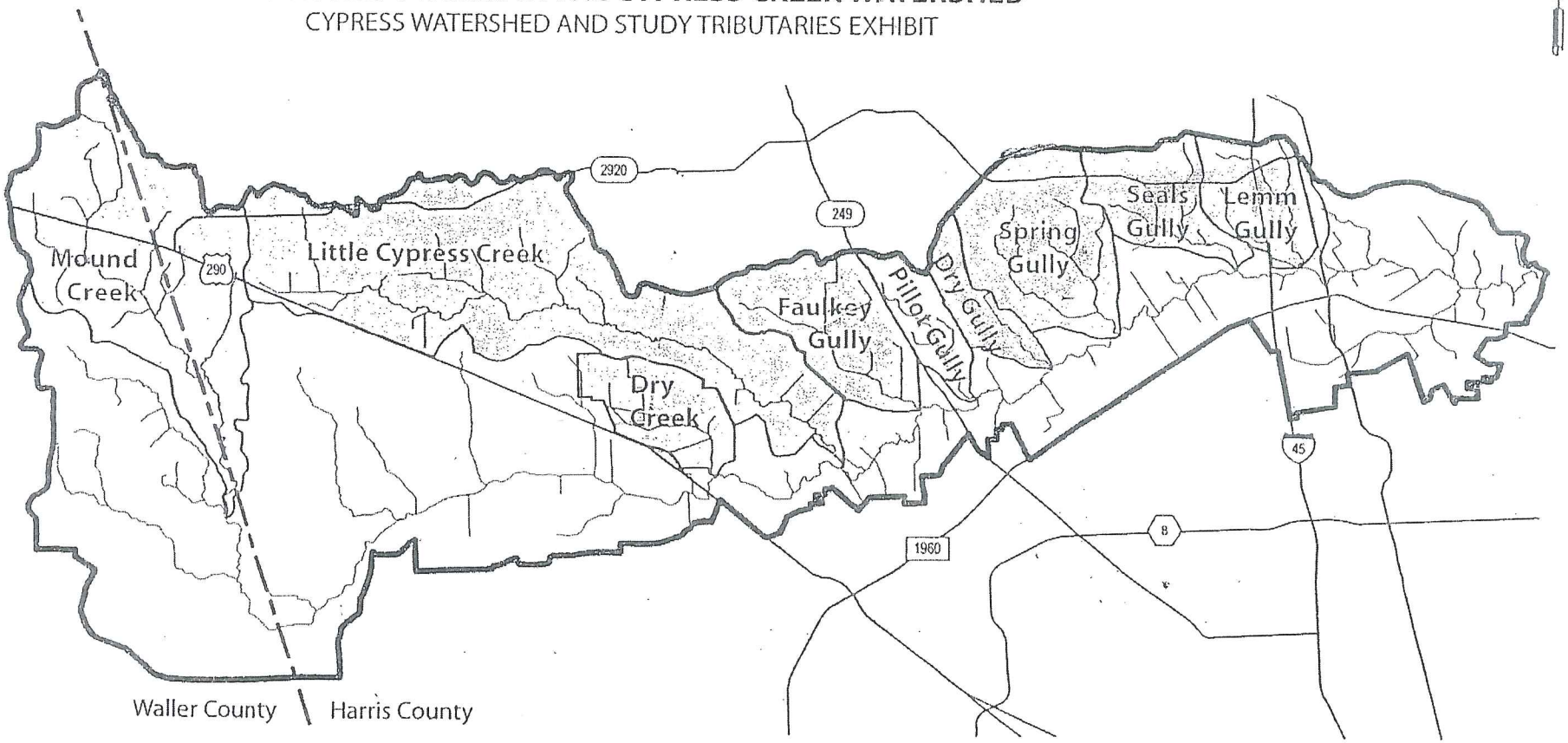
- Property acquisition is underway for several components of the Little Cypress Creek Frontier Program Master Plan, including additional stormwater detention basins and future channel projects to increase stormwater storage and carrying capacity within the Little Cypress Creek watershed.

The Cypress Creek watershed is located in northwest Harris County and extends into Waller County. Rainfall within the 267 square miles of the Cypress Creek watershed drains to the watershed's primary waterway, Cypress Creek (K100-00-00). There are 250 miles of open waterways in the Cypress Creek watershed, including Cypress Creek and its major tributaries, such as Little Cypress Creek (L100-00-00), Turkey Creek (K111-00-00), Dry Gully (K133-00-00) and Mound Creek (K166-00-00). Based on the 2010 U.S. Census, the estimated population of the Harris County portion of the Cypress Creek watershed is 347,334.The western portion of the watershed is historically rural farmland, while the eastern and central portions have developed rapidly in the past 20 to 30 years. The Cypress Creek watershed has a diverse environment with animal species ranging from the American alligator to the bald eagle. The watershed upstream of Highway 290 is part of the well-known Katy Prairie ecosystem.

What We Do The Harris County Flood Control District was initially created in 1937 to serve as a local partner to the U.S. Army Corps of Engineers to build projects that reduce flooding risks and damages from major bayous and creeks in Harris County. While the District still fulfills that role, its responsibilities and capabilities have expanded over the years. The mission of the Flood Control District is to provide flood damage reduction projects that work, with appropriate regard for community and natural values. The Flood Control District accomplishes its mission by devising flood damage reduction plans, implementing the plans and maintaining the infrastructure.

REGIONAL DRAINAGE PLAN AND ENVIRONMENTAL INVESTIGATION FOR MAJOR TRIBUTARIES IN THE CYPRESS CREEK WATERSHED

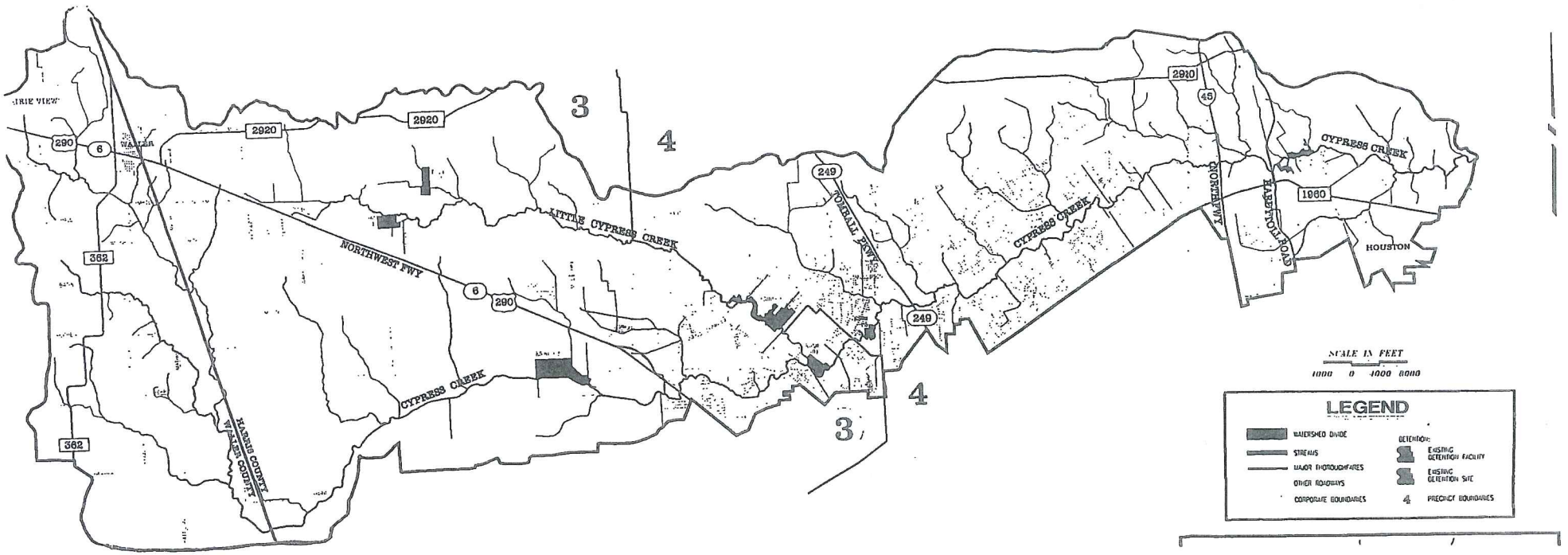
CYPRESS WATERSHED AND STUDY TRIBUTARIES EXHIBIT



ENGINEERING CONTRACTOR/CONSULTANTS:

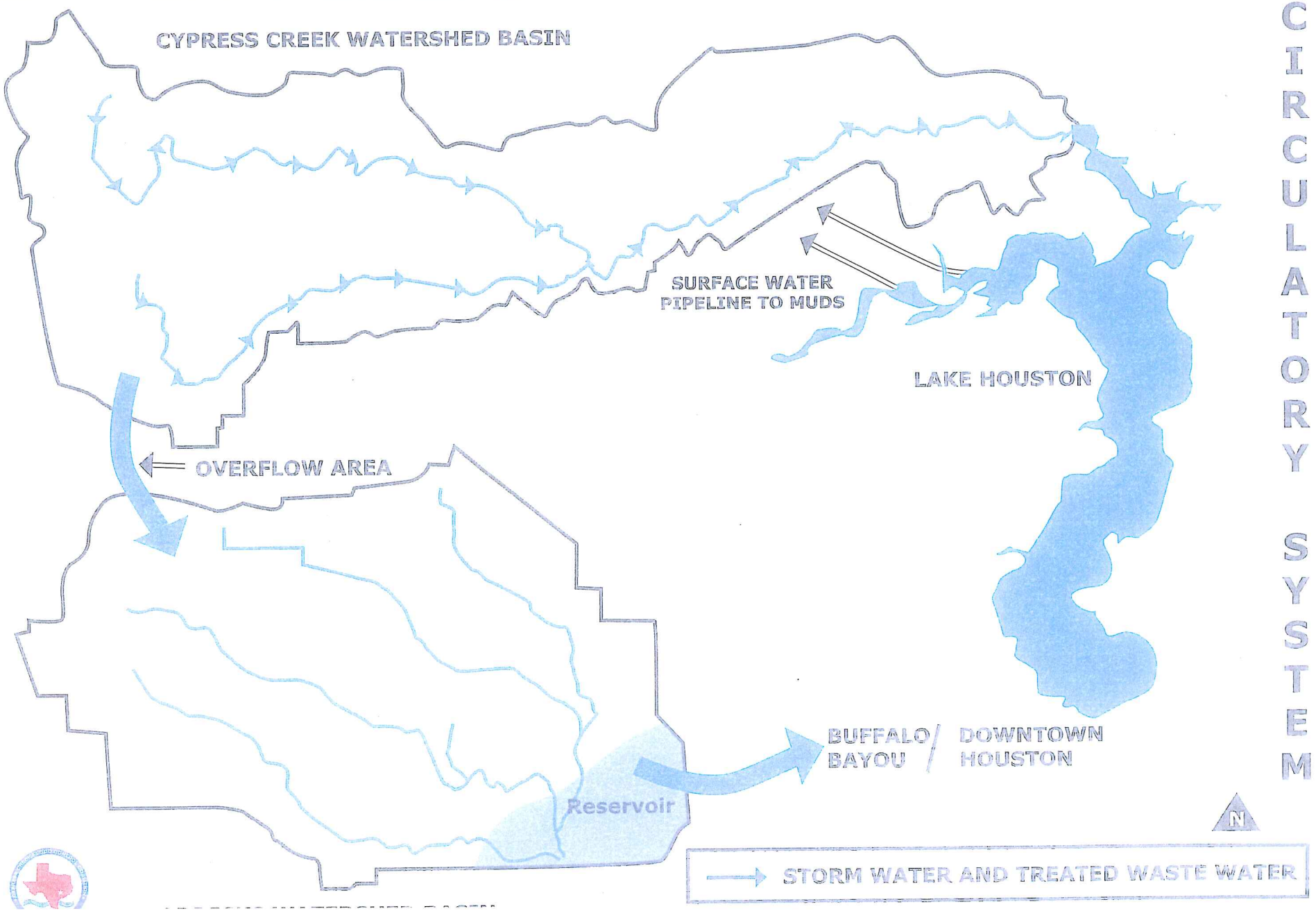
- BROWN & GAY: MOUND CREEK AND DRY CREEK
- DODSON ASSOCIATES: LITTLE CYPRESS, FAULKEY GULLY, PILLOT GULLY
- CIVILTECH ENGR: DRY GULLY, SPRING GULLY, SEALS GULLY, LEMM GULLY

8


ERIE VIEW
WALLER
290
6
362
2920
2920
3
4
LITTLE CYPRESS CREEK
NORTHWEST FWY
6
290
CYPRESS CREEK
HARRIS COUNTY
WALLER COUNTY
362
249
TOMBALL PKWY
249
4
3
CYPRESS CREEK
2920
45
NORTH FWY
HAEDSTOW ROAD
CYPRESS CREEK
1960
HOUSTON
SCALE IN FEET
1000 0 4000 8000
LEGEND
WATERSHED DIVIDE
STREAMS
MAJOR THOROUGHFARES
OTHER ROADWAYS
CORPORATE BOUNDARIES
DETENTION:
EXISTING DETENTION FACILITY
EXISTING DETENTION SITE
4 PRECINCT BOUNDARIES

9

CREEK & TRIBUTARY | Watershed's Veins & Arteries

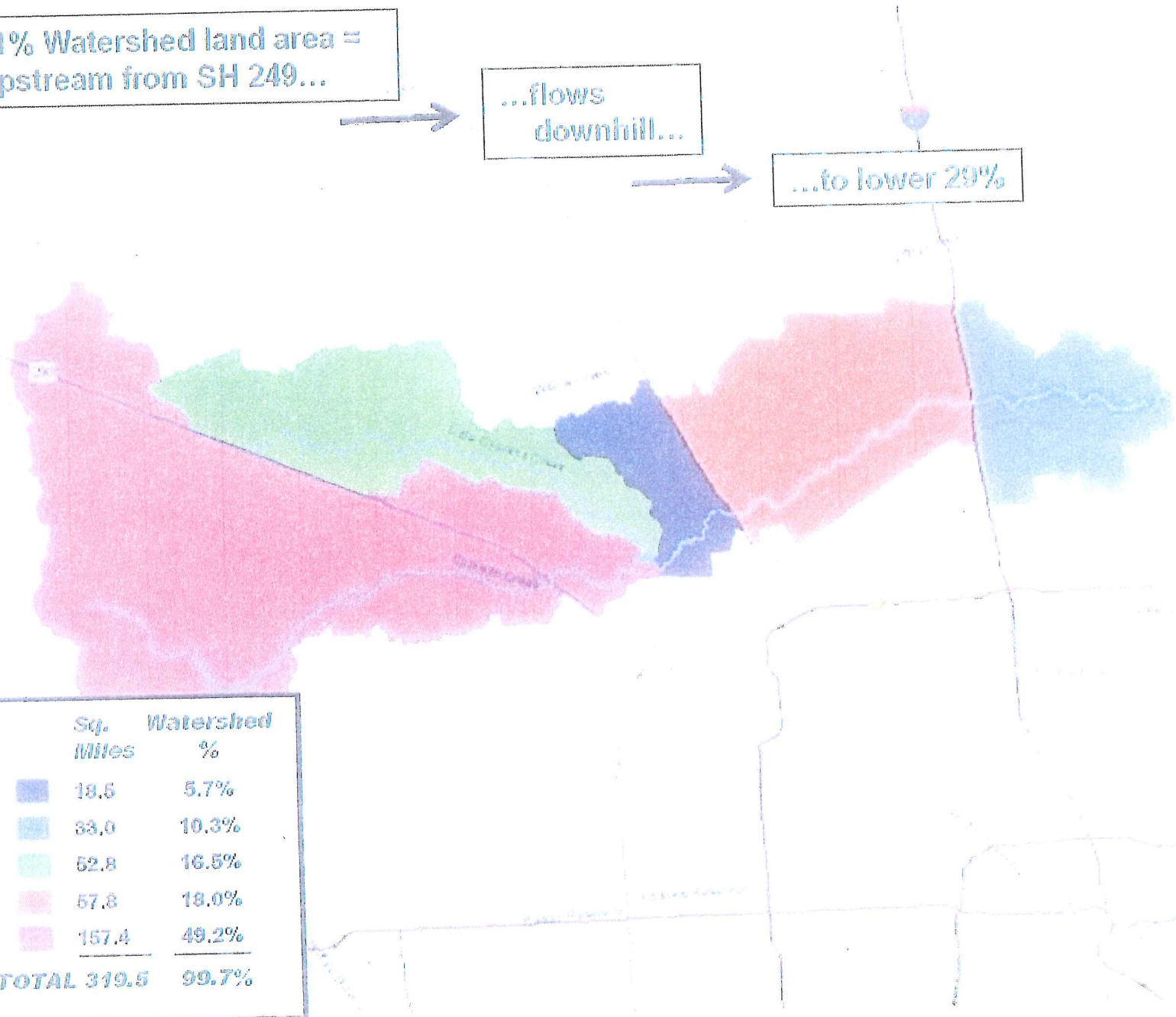


CIRCULATORY SYSTEM

71% Watershed land area = Upstream from SH 249...

...flows downhill...

...to lower 29%



	Sq. Miles	Watershed %
	18.5	5.7%
	33.0	10.3%
	52.8	16.5%
	57.8	18.0%
	157.4	49.2%
TOTAL	319.5	99.7%

Source: Houston-Galveston Area Council

Rising Waters – Record Flooding
2016 Tax Day / Memorial Weekend Flood Events

Summary: Record setting rain in what was named the "Tax Day" (April 17-18th)and Memorial Weekend (May 26-27th) storm events occurred in the Upper Cypress Watershed and quickly in a matter of hours moved downstream. Devastating floods cited by the experts as 500-year frequcy in the upper watershed and as high as a 1,00 years frequecy on the sourther and western area of Harris and principally Waller Counties. Both out-of-bank and overland sheet flow, resulted in a reported 9,840 homes being flooded reported in prelimiary damage assessments by authorities. Of these, the greatest number were in the Cypress Creek Watershed which suffered a total 2,110 flooded homes. Damage insurance claims filed under Natonal Flood Insurance Program (NFIP) according to information obtained by CCFCC were $)

The following are included in this section of this report:

1. Memorandum Report dated June 27, 2016 (Pages 1-11 – Final issued by Jeff Lindner, Meteorologist / Flood Watch Manager, Harris County Flood Control District (HCFCD).
2. Map "Tax Day Flood – 12-hour Peak Rainfall . . ." *shows areas with rainfall ranging up from 500-1,000 year event rainfall.*
3. Map illustrating peak water surfaceelevations throughout the watershed and throughout Harris County.
4. 2 maps showing peak rainfall
    a. For 1st 6 hour period
    b. For 24-hour period

MEMORANDUM

HARRIS COUNTY FLOOD CONTROL DISTRICT
9900 Northwest Freeway
Houston, TX 77092
713-684-4000

DATE: June 27, 2016

TO: HCFCD Flood Watch/Partners

FROM: Jeff Lindner
Meteorologist / Flood Watch Manager

Steve Fitzgerald
Flood Watch Leader

RE: Immediate Report – Final
April 17-18, 2016 (Tax Day) Storm and Flood Information

This is the third update and final report summarizing the historic and devastating flooding from rainfall that occurred across Harris County late on the evening of the 17th into the 18th of April 2016.

GENERAL EVENT STATEMENT

A slow moving and powerful upper level storm system over the southwest US combined with near record moisture levels for mid-April produced a devastating flood event over the northern and western portions of Harris County from the evening hours of April 17th into the day of April 18th. Rainfall began during the early evening hours in southeast to northwest bands across extreme southwest and western Harris County westward into Fort Bend and Waller Counties. Between 8:00 p.m. and 9:00 p.m. thunderstorms began to greatly intensify and slow their northward movement over Waller County and by late evening had stalled and began to shift eastward into western Harris County. Excessive rainfall spread across northwest Harris County during the late evening hours of the 17th into the early morning hours of the 18th. Significant cell training and slow movement of the thunderstorms resulted in a large portion of northwest Harris County receiving between 10-15 inches of rainfall during the morning hours of the 18th. Torrential rainfall slowly shifted into central and southwestern Harris County between 3:00 a.m. and 6:00 a.m.

A Flash Flood Emergency was issued at 1:45 a.m. for northwest Harris County and was later expanded to include portions of western and north-central Harris County.

The flooding resulted in seven fatalities in Harris County with an additional one in Waller County and one in Austin County all of which were vehicle related. Approximately 40,000 cars and trucks flooded with the majority at homes and apartments. Several public school districts in north and west Harris County were closed all week.

APRIL17-18 RAINFALL

Duration – The heaviest rainfall occurred in northwest Harris County along and northwest of a line from The Woodlands to Jersey Village to Katy. The majority of the rainfall occurred in a 12-hr period and averaged 12.0-16.0 inches from Tomball to Addicks westward to Waller County.

- **Cypress Creek:** above the 0.2% (500-yr) in the headwaters; at or above 1% (100-yr) entire channel
- **Little Cypress Creek:** above the .2% (500-yr) along entire channel
- **Langham Creek:** above the 0.2% (500-yr) along the entire channel
- **Horsepen Creek:** above the 0.2% (500-yr) along the entire channel
- **Bear Creek:** above the 1% (100-yr) along the entire channel
- **South Mayde Creek:** above the 1% (100-yr) along the entire channel
- **Mason Creek:** above the 1% (100-yr) along the entire channel
- **Cane Island:** above the 1% (100-yr) along the entire channel
- **Spring Creek:** between the 2% (50-yr) and 1% (100-yr) along the entire channel
- **Willow Creek:** at or above the 1% (100-yr) along the entire channel
- **Greens Bayou:** above the 1% (100-yr) west of I-45; between the 50% (2-yr) and 10% (10-yr) east of I-45
- **Halls Bayou:** between the 20% (5-yr) and 4% (25-yr) west of Airline; less than the 50% (2-yr) east of Airline
- **White Oak Bayou:** above the 1% (100-yr) west of Beltway 8; between the 20% (5-yr) and 4% (25-yr) east of Beltway 8
- **Brays Bayou:** 4% (25-yr) to 2% (50-yr) west of Gessner; less than 10% (10-yr) east of Gessner
- **Keegans Bayou:** 4% (25-yr) along the entire channel
- **Buffalo Bayou:** 4% (25-yr) west of Beltway 8; 10% (10-yr) east of Beltway 8
- **West Fork of San Jacinto River:** 10% (10-yr) along the entire channel

Rainfall totals over the headwaters of Cypress Creek in Waller County and extreme western Harris County far exceeded the 0.2% (500-yr) rainfall frequency for the 6-hr and 12-hr time periods. These rainfall amounts were simply "off the charts" and there is a good deal of extrapolation in attempting to place a return frequency on such large rainfall in such a short period of time. The following table provides the best estimates to quantify the incredible rainfall amounts.

Location	Rainfall	Duration	Extrapolated Return Frequency
Pattison (Waller County)	23.50 in	14.5-hr	~ 10,000 yr (0.01%)
Pattison (Waller County)	21.93 in	24-hr	~ 2,000 yr (0.05%)
Monaville (Waller County)	19.30 in	10-hr	~ 2,500 yr (0.04%)
Mound Creek at Mathis	16.70 in	12-hr	~ 1,000 yr (0.1%)
Langham Creek at W Little York	16.60 in	12-hr	~ 900-yr (0.11%)
Cypress Creek at Sharp Rd	16.10 in	12-hr	~ 900-yr (0.11%)
Langham Creek at Longenbaugh	15.70 in	12-hr	~ 700-yr (0.14%)
Cypress Creek at Katy Hockley	15.10 in	12-hr	~ 600-yr (0.17%)

For comparison, the maximum rainfall recorded during Tropical Storm (TS) Allison was 28.5 inches in 12-hrs on Greens Bayou and the maximum rainfall recorded during the 2016 Tax Day event was 16.70 inches or 60% of the TS Allison maximum recorded rainfall. Another way to examine the rainfall is to compare against the Probable Maximum Precipitation (PMP), or the theoretical maximum amount of rainfall that can fall in a specified time period, for this region. The PMP for this region for 12-hr: 38.7 inches and 24-hr: 47.1 inches. The 16.70 inches recorded in 12-hrs for this event was 43% of the 12-hr PMP. The 23.50 inches in just over 12-

- **Cypress Creek:** above the 0.2% (500-yr) in the headwaters; at or above 1% (100-yr) entire channel
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Pattison (Waller County)	21.93 in	24-hr	~ 2,000 yr (0.05%)
Monaville (Waller County)	19.30 in	10-hr	~ 2,500 yr (0.04%)
Mound Creek at Mathis	16.70 in	12-hr	~ 1,000 yr (0.1%)
Langham Creek at W Little York	16.60 in	12-hr	~ 900-yr (0.11%)
Cypress Creek at Sharp Rd	16.10 in	12-hr	~ 900-yr (0.11%)
Langham Creek at Longenbaugh	15.70 in	12-hr	~ 700-yr (0.14%)
Cypress Creek at Katy Hockley	15.10 in	12-hr	~ 600-yr (0.17%)

For comparison, the maximum rainfall recorded during Tropical Storm (TS) Allison was 28.5 inches in 12-hrs on Greens Bayou and the maximum rainfall recorded during the 2016 Tax Day event was 16.70 inches or 60% of the TS Allison maximum recorded rainfall. Another way to examine the rainfall is to compare against the Probable Maximum Precipitation (PMP), or the theoretical maximum amount of rainfall that can fall in a specified time period, for this region. The PMP for this region for 12-hr: 38.7 inches and 24-hr: 47.1 inches. The 16.70 inches recorded in 12-hrs for this event was 43% of the 12-hr PMP. The 23.50 inches in just over 12-

hrs in Waller County is 61% of the 12-hr PMP whereas the maximum 12-hr during TS Allison was 74% of the PMP.

RAINFALL COMPARISON TO OCTOBER 1994/1998 and APRIL 2009 FLOODS

Note: The records for many stream and rainfall gages are relatively recent, covering only the past 30 years. When a statement is made regarding a "record" rainfall or flood level, it is in reference to the period of record only – other more extreme events may exist.

Until April 17-18, 2016, the storms of record for much of the Cypress and Little Cypress Creek watersheds was the October 1994 and October 1998 events, while for Addicks it was the April 2009 event. The 2016 Tax Day event exceeded all the previous rainfall events for this portion of the county by several inches. For example the 16.7 inches in 12 hours at Mound Creek and Mathis Rd surpassed the October 1994 rainfall by 7.4 inches. The April 17-18 event is by far one of the most significant rainfall events over the northwest and western portion of Harris County in modern times.

The following rainfall comparison is for the maximum amount during a 12-hr time period in inches.

Location	April 2016	April 2009	October 1998	October 1994
Mound Creek at Mathis	16.7	3.1	8.6	9.3
Langham Creek at W Little York	16.6	7.5	3.2	3.4
Cypress Creek at Katy Hockley	15.1	7.0	7.9	3.0
Spring Creek at Hegar	10.8	3.2	3.9	N/A
Willow Creek at SH 249	12.2	N/A	7.6	3.8
Bear Creek at FM 529	14.4	10.4	4.3	N/A
South Mayde Creek at Greenhouse	12.4	7.6	3.1	2.5

CHANNEL FLOODING

Note: Channel (or "riverine") flood frequency is often different than the rainfall frequency determination due to variations in the rainfall pattern, areal extent of the rainfall, antecedent moisture levels and other variables. The records for many high water marks are relatively recent, covering the past 40 years. When a statement is made regarding a "record" flood level, it is in reference to the period of record only – other more extreme events may have occurred. Also, as flood damage reduction projects are constructed, the channel system response is improved and comparisons to flood levels pre- and post-project are affected. In a few cases noted below, the official FEMA Flood Insurance Study and Flood Insurance Rate Maps information does not yet reflect the benefits of recently completed projects. The "percentage" number (e.g. 1% or 0.2%) refers to the chance that that event will be equaled or exceeded in any given year.

Major overbank and structural flooding occurred along the following channels (the attached map shows the general reaches of primary channels affected):

- Cypress Creek and major tributaries
- Little Cypress Creek
- Willow Creek

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- Spring Creek
- Addicks Reservoir (Bear Creek, South Mayde Creek, Langham Creek, Horsepen Creek)
- Barker Reservoir (Upper Buffalo Bayou/Cane Island Branch)
- Greens Bayou (upstream of US 59)
- Halls Bayou
- White Oak Bayou (upstream of 610 N Loop)
- Brays Bayou (US 59 to 610 W Loop)
- Keegans Bayou
- Willow Waterhole
- San Jacinto River (West Fork, East Fork, Mainstem)

The following selected locations recorded new record flood levels based on historical high water marks compared to best available data from the April 2016 flood. All elevations are in feet and reflect 1988 NAVD, 2001 subsidence adjustment.

Flood frequencies referenced in the table and discussions below refer to current effective FEMA Flood Insurance Study and Flood Insurance Rate Maps, unless otherwise noted.

Watershed	Bridge	April 2016 Elevation	Flood Frequency	Previous Record	Previous Record Date
Cypress Creek	Huffmeister	132.90	~0.2%(500-yr)	131.63	Oct. 1998
Cypress Creek	Eldridge	128.71	~0.2%(500-yr)	126.10	Oct. 1994
Cypress Creek	Grant	127.40	~0.2%(500-yr)	125.40	Oct. 1994
Cypress Creek	SH 249	120.51	~1%(100-yr)	120.50	June 2001
Cypress Creek	Stuebner-Airline	110.30	~1%(100-yr)	109.70	June 2001
Cypress Creek	Kuykendahl	101.35	~2%(50-yr)	101.30	May 1989
Lt. Cypress Creek	Becker	197.80	~1%(100-yr)	197.20	July 2012
Lt. Cypress Creek	Cypress Rosehill	162.10	~0.2%(500-yr)	160.40	July 2012
Lt. Cypress Creek	Kluge	136.40	~0.2%(500-yr)	136.30	Oct. 1994
Langham Creek	W. Little York	112.84	~0.2%(500-yr)	110.70	April 2009
Bear Creek	Clay	114.86	~0.2%(500-yr)	114.40	April 2009
Horsepen Creek	Trailside	118.90	~1%(100-yr)	112.80	Oct. 2009
Cane Island	Hwy 90	137.88	~1%(100-yr)	134.30	April 2009
Mason Creek	Prince Creek	106.30	~1%(100-yr)	106.10	April 2009

A county-wide channel flood frequency map is attached.

Cypress Creek

Water levels along Cypress Creek were at or above the 1% (100-yr) elevation from Kuykendahl upstream to near Katy Hockley Rd. Water levels between Grant Rd and Barker Cypress exceeded the previous flood of record in October 1994 by 1.0-2.0 ft. East of I-45 water levels averaged between the 10% (10-yr) and 2% (50-yr) elevations and compared closest with the May 1989 flood. On the middle and lower portion of Cypress Creek, TS Allison water levels were generally met or exceeded at most locations. In the reach from US 290 downstream to Kuykendahl Rd, the April 2016 flood was one of the most significant flood events since records

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have been kept. Record levels occurred at the 14 bridges between I-45 and US 290 and only 3 were passable for several days. Natural overflow occurred from upper Cypress Creek to the Addicks and Barker reservoirs watersheds and is discussed later.

Little Cypress Creek

Record flooding occurred along nearly the entire length of the watershed with water levels at or above the 0.2% (500-yr) elevation at most bridges. Previous high water records established in October 1994, October 1998, and July 2012 were exceeded at all locations east of Bauer-Hockley Rd. At Cypress Rosehill Rd, the previous record of 160.4 ft in July 2012 was exceeded by 1.7 ft. Water levels on the headwaters (L120-00-00) were generally equal to or lower than the October 1994 and October 1998 floods.

Willow Creek

Water levels averaged between the 2% (50-yr) and 1% (100-yr) from the confluence of Spring Creek west to SH 249 and between the 10% (10-yr) and 2% (50-yr) west of SH 249. Water levels were similar to Hurricane Ike (2008) and higher than October 1994, October 1998, and TS Allison.

Spring Creek

Water levels averaged between the 2% (50-yr) and 1% (100-yr) from the confluence with the West Fork of the San Jacinto River west to SH 249. West of SH 249 water levels were between the 1% (100-yr) and .2% (500-yr) and along the headwaters exceeded the 500-yr. Water levels exceeded the October 1998 flood, but were lower than the October 1994 flood. This was the most significant flood along Spring Creek since October 1994.

Langham Creek

Water levels along Langham Creek were at or above record levels from Addicks Reservoir upstream to Barker Cypress Rd and averaged between the 1% (100-yr) and .2% (500-yr). From upstream of Barker Cypress to Longenbaugh water levels averaged between the 10% (10-yr) and 2% (50-yr). Water levels were generally near or above the previous flood of record in April 2009 along the entire channel.

Horsepen Creek

Water levels along Horsepen Creek averaged between the 1% (100-yr) and .2% (500-yr) from the confluence with Langham Creek upstream to near Hwy 6. Water levels upstream of Hwy 6 averaged between the 2% (50-yr) and 1% (100-yr). The period of record for high water marks along Horsepen Creek only dates back to October 2009, but significant flooding did occur in April 2009 along portions of this channel.

South Mayde Creek

Water levels along South Mayde Creek averaged between the 1% (100-yr) and .2% (500-yr) from Barker Cypress upstream to Greenhouse and between the 10% (10-yr) to 2% (50-yr) from upstream of Greenhouse to Lakes of Bridgewater. West of Lake of Bridgewater the water surface elevation was at or above the 1% (100-yr) elevation. From the headwaters east to Fry Rd water levels were at or above previous records and higher than both the April 2009 and October 1998 floods. East of Fry Rd to Addicks Reservoir water levels were similar to the April 2009 flood.

Bear Creek

Water levels along Bear Creek averaged between a 1% (100-yr) and .2% (500-yr) elevation along the entire channel. The water surface was at or above previous records from Fry Rd eastward to Clay Rd and was generally 1.0-2.0 ft higher than the April 2009 flood. Water levels across the headwaters and upper portion of Bear Creek were some of the highest ever

(18)

Barker Reservoir

Barker Reservoir reached a peak pool elevation of 95.22 ft at 7:15 a.m. on April 23, 2016 impounding 86,080 acre-ft of water. The previous record pool elevation of 93.60 ft was surpassed by 1.62 ft. At its peak Barker Reservoir occupied 102.5% of its government owned land and 40.5% of its total storage capacity. Westhiemer Pkwy went under water around 8:00 p.m. on April 19. Barker Reservoir surpassed its historical pool level of 93.60 ft at 4:15 a.m. on April 20th and peaked just under its 100-yr pool elevation of 95.50 ft by .28 of a foot. Water levels were close to the top of some storm sewer inlets in a few adjacent subdivisions, but there were no flooded streets.

The Corps of Engineers estimate that $5,100,000,000 dollars of flood damages were prevented along Buffalo Bayou as a result of Addicks and Barker Reservoirs during the Tax Day Flood of 2016. In the last two years, Addicks and Barker Reservoirs have prevented around $7,659,078,000 dollars in damages along the Buffalo Bayou corridor and within the city of Houston.

HOUSE FLOODING ESTIMATES

House flooding occurred at many locations across north and western unincorporated Harris County as well as the City of Houston and several other cities from both creeks and bayous and overwhelmed internal drainage systems from the intense rainfall rates.

Based on preliminary damage assessment a total of 9,840 homes were flooded. An additional 2,700 apartment units and around 50 commercial properties were flooded. These numbers are based on damage assessment reports, FEMA flood insurance claims, HCFCD phone bank calls, and self-reports via readyharris.org, with duplicates being removed. Additionally, 430 homes and 27 commercial properties were flooded in Waller County, some of which fall in the upper portions of the Cypress Creek, Addicks, and Barker watersheds. The Waller County numbers are not listed in the counts by watershed below. Thanks are extended to the various damage assessment teams across Harris County for their hard work locating and completing assessment of the thousands of flooded structures.

Watershed	House Flooding	Watershed	House Flooding
White Oak Bayou	2,080	Willow Creek	240
Cypress Creek	1,680	S Mayde Creek	220
Brays Bayou	1,380	Bear Creek	130
Buffalo Bayou	950	Cane Island	120
Langham Creek	810	Barker Reservoir	90
Greens Bayou	600	San Jacinto River	90
Horsepen Creek	510	Sims Bayou	50
Little Cypress Creek	430	Spring Creek	40
Halls Bayou	370	Other Watersheds	50
		Total	*9,840*

Jurisdiction	House Flooding Estimates
Unincorporated Harris County	5,690
Houston	3,490
Jersey Village	190
Tomball	180
Katy	120
Bellaire	50
Other Jurisdictions	120
Total	*9,840*

FEMA flood insurance claim data accounts for approximately 4,030 homes in the totals listed above. A county-wide map showing the locations of the estimated house flooding locations is attached.

There is no way to know how many other homes may have flooded that did not have flood insurance if the damages were not noticed by the jurisdictions and the owners did not report damage.

Based on historical house flooding information that was gathered by the various jurisdictions and FEMA flood insurance claims as noted in the table below, the Tax Day flooding resulted in the 2nd highest number of flooded homes.

Flood Event	Total House Flooding Estimates	FEMA Flood Insurance Claims
June 2001 (TS Allison)	73,000	Count from FEMA
April 17-18, 2016	9,840	Included
May 25, 2015	6,335	Included
June 19, 2006	3,370	Not included
October 1994	3,248	Not included
April 28, 2009	2,305	Not included

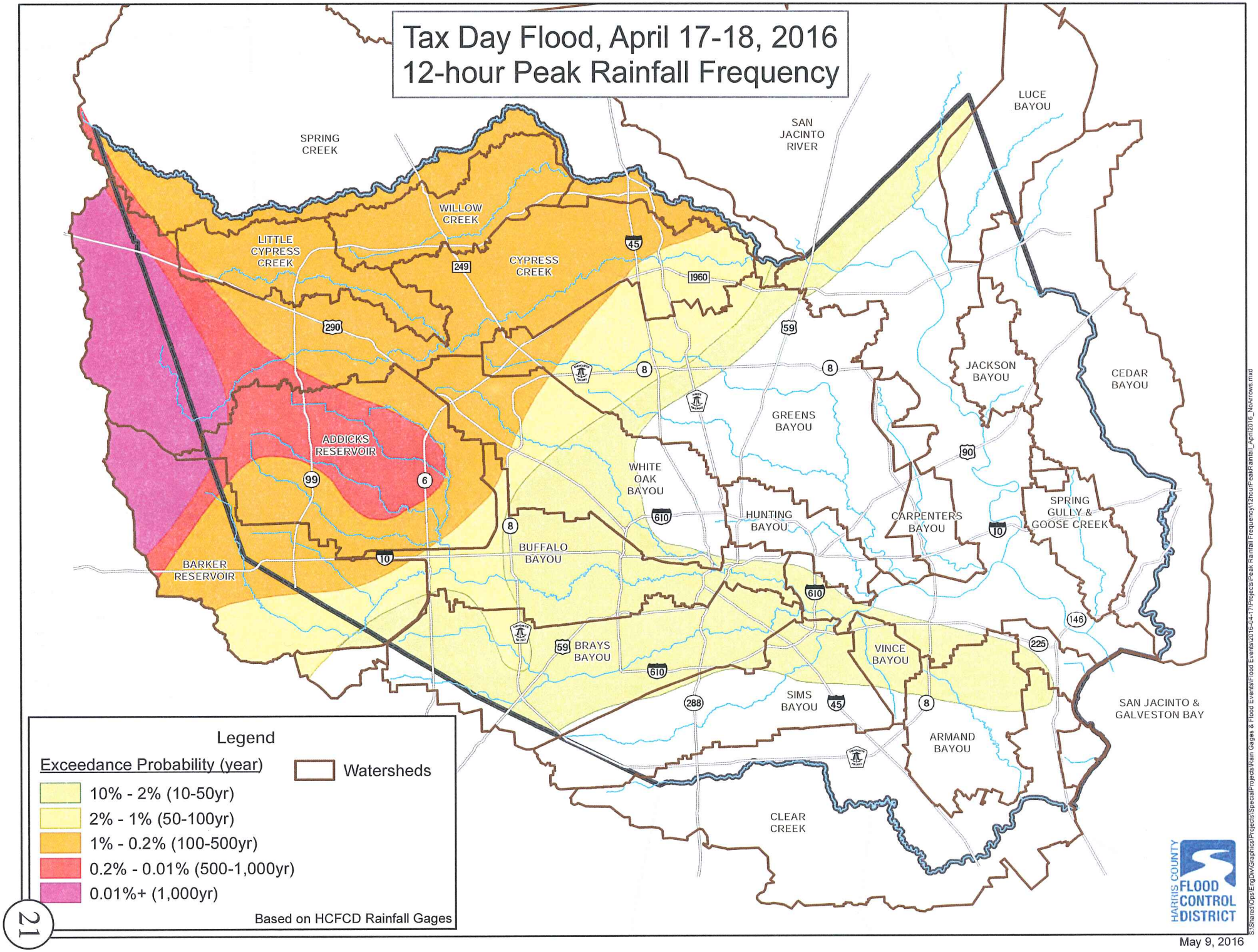
HIGH WATER MARKS

HCFCD collected high water marks along the following channels: Cypress Creek and tributaries, Little Cypress Creek, Willow Creek, Spring Creek, Bear Creek, Langham Creek, Horsepen Creek, South Mayde Creek, Mason Creek, Upper Buffalo Bayou/Cane Island Branch, Buffalo Bayou, Brays Bayou, Keegans Bayou, Willow Waterhole, Greens Bayou, Halls Bayou, White Oak Bayou and tributaries, and the San Jacinto River.

High water marks were also collected at detention basins along the following six watersheds: Brays Bayou, White Oak Bayou, Greens Bayou, Cypress Creek, Little Cypress Creek, and the Addicks Tributaries

(20)

Tax Day Flood, April 17-18, 2016
12-hour Peak Rainfall Frequency



Legend

Exceedance Probability (year)

- 10% - 2% (10-50yr)
- 2% - 1% (50-100yr)
- 1% - 0.2% (100-500yr)
- 0.2% - 0.01% (500-1,000yr)
- 0.01%+ (1,000yr)

Watersheds

Based on HCFCD Rainfall Gages

HARRIS COUNTY FLOOD CONTROL DISTRICT

May 9, 2016

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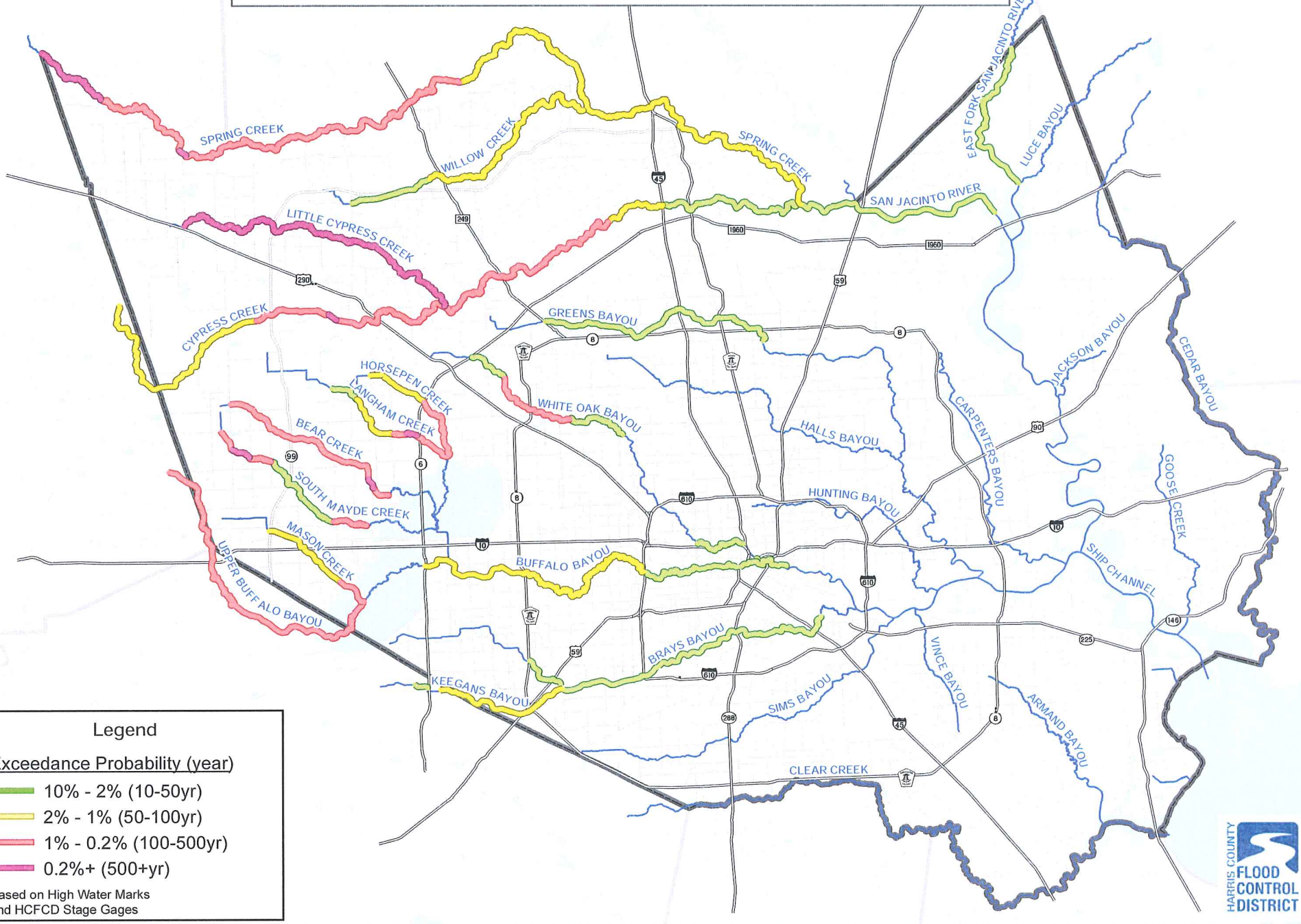
Tax Day Flood, April 17-18, 2016
Peak Channel Water Surface Elevation Frequencies



Legend

Exceedance Probability (year)

- 10% - 2% (10-50yr)
- 2% - 1% (50-100yr)
- 1% - 0.2% (100-500yr)
- 0.2%+ (500+yr)

Based on High Water Marks and HCFCD Stage Gages

HARRIS COUNTY FLOOD CONTROL DISTRICT

June 21, 2016

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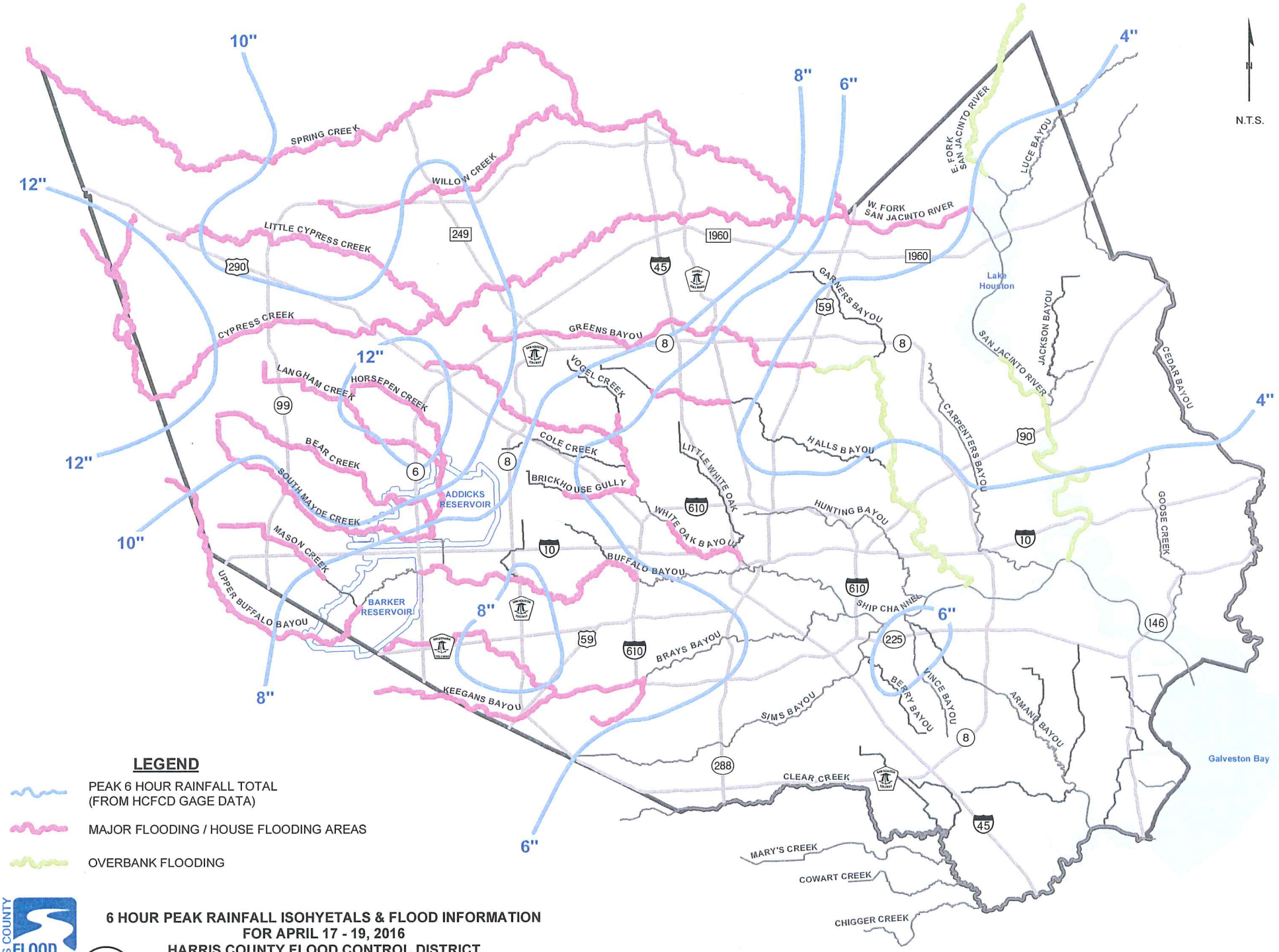

LEGEND

PEAK 6 HOUR RAINFALL TOTAL
(FROM HCFCD GAGE DATA)

MAJOR FLOODING / HOUSE FLOODING AREAS

OVERBANK FLOODING

HARRIS COUNTY FLOOD CONTROL DISTRICT

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6 HOUR PEAK RAINFALL ISOHYETALS & FLOOD INFORMATION
FOR APRIL 17 - 19, 2016
HARRIS COUNTY FLOOD CONTROL DISTRICT
April 24, 2016

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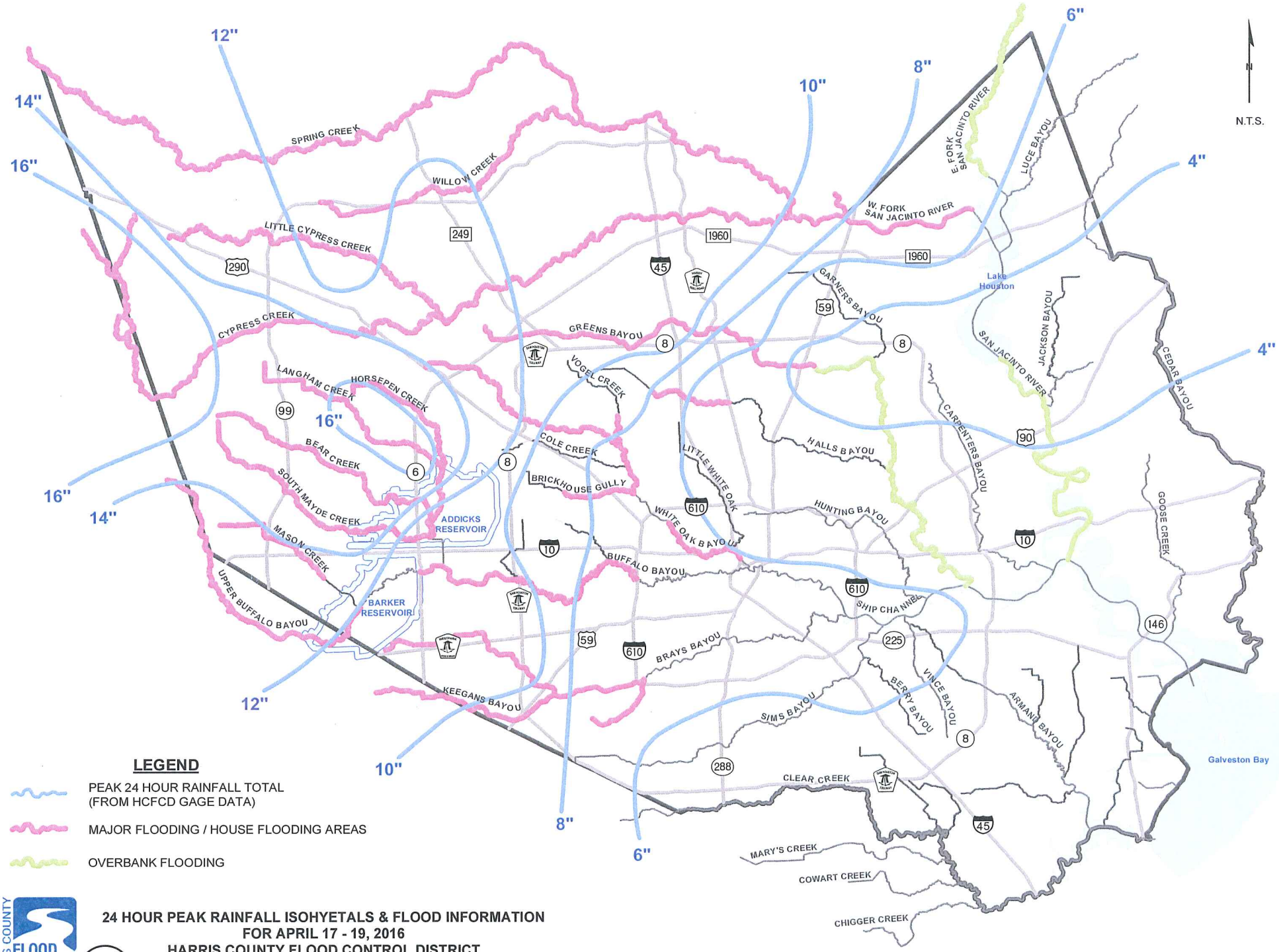

LEGEND

PEAK 24 HOUR RAINFALL TOTAL
(FROM HCFCD GAGE DATA)

MAJOR FLOODING / HOUSE FLOODING AREAS

OVERBANK FLOODING

HARRIS COUNTY FLOOD CONTROL DISTRICT

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24 HOUR PEAK RAINFALL ISOHYETALS & FLOOD INFORMATION
FOR APRIL 17 - 19, 2016
HARRIS COUNTY FLOOD CONTROL DISTRICT
April 24, 2016

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Cypress Creek Watershed Tax Day Storm

Information at 13 Stream Gage Stations

This section contains the following information at 13 locations throughout the Big Cypress and Little Cypress Watersheds:

1. Hydrograph plotted by stream gage at the Grant Road crossing. This shows how rapidly the stream water rose m - - - - increasing flowing from a normal level of approximately 103 feet elevation by over 20 feet during a short 6 hours in the middle of the night on April 17-18th.
This phenomenon was typical throughout the watershed as the storm moved westward from the Upper Cypress Creek Watershed.

Note: This is the same illustration as on the cover of this report -- - - enlarged to improve its readability.

1. How high did the water reach when it peaked in your area of the watershed? This historical data [1] shows the following:
    a. Peak elevation at this location during the April 17-18th "Tax Day" storm
    b. " " " ' " ' ' May 27th Memorial Weekend storm
    c. The previous record high elevation on historically before these 2 2016 floods

`2. Monthly rainfall during 2016 at 4 locations in the Cypress Creek Watershed:
    - Little Mound Creek at Mathis Road
    - Cypress Creek at Katy-Hockley Road
    - Cypress Creek at Huffmeister
    - Cypress Creek at SH 249

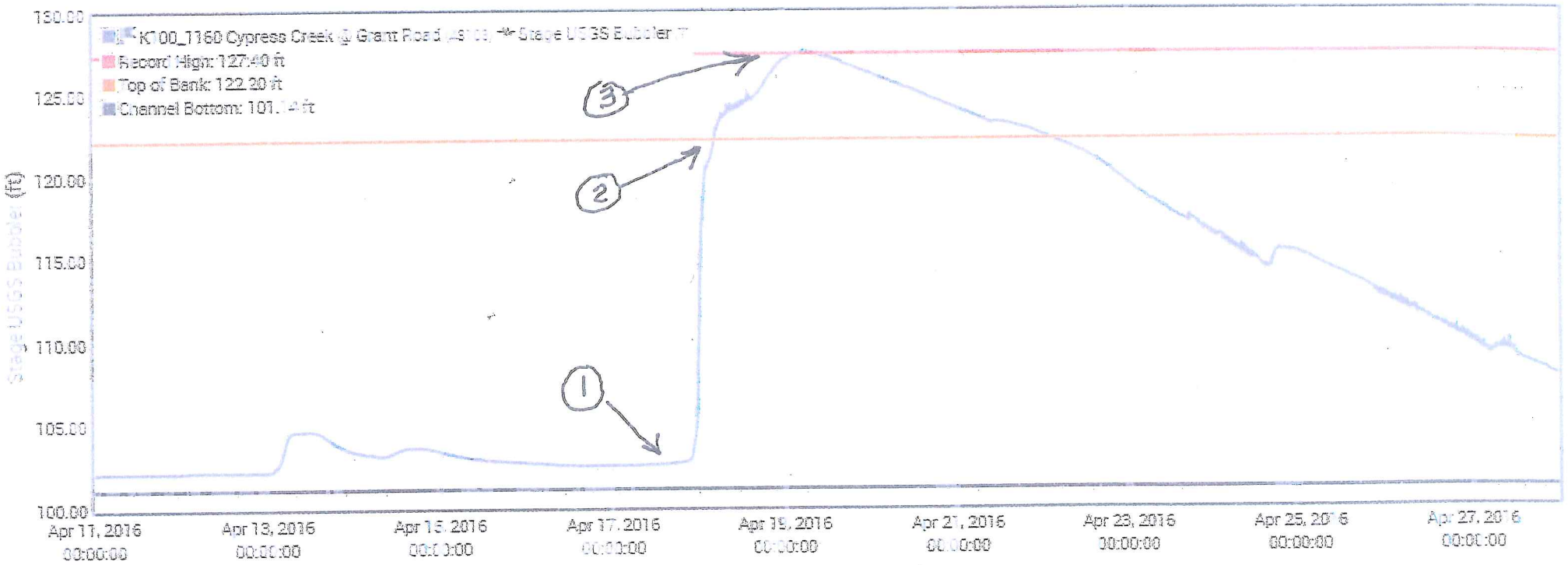
Annual Report 2016 Cypress Creek Tax Day Historical data

[1] These elevation data are shown in feet measurements. It was determined from HCFCD stream gages and was furnished to us in response to CCFCC request to HCFCD.

Tax Day Flood

Stream Elevation Rise (Rate and Peak)

Cypress Creek at Grant Road



	Description	*Time*	*Date*	
1.	Began rising rapidly	10:00 PM	April 17, 2016	
2.	Reached top of bank (iob)	4:37 AM	April 18, 2016	→ community out-of-bank flooding began
3.	Peak elevation reached	5:09 AM	April 19, 2016	

Historical Out-of-Bank Flood Elevation Information
Cypress Creek Watershed [1]

Site	Description	Event Date	Elevation
1110	Cypress Creek @ Cypresswood	4/18/2016	71.40
		5/27/2016	73.00
		10/18/1994	79.16
1120	Cypress Creek @ I-45	4/18/2016	90.10
		5/27/2016	85.60
		10/1/1949	95.50
1130	Cypress Creek @ Kuykendahl Road	4/18/2016	101.40
		5/27/2016	96.50
		10/1/1949	103.60
1140	Cypress Creek @ Stuebner-Airline Road	4/18/2016	110.30
		5/27/2016	104.20
		10/1/1949	110.74
1150	Cypress Creek @ SH 249	4/18/2016	120.30
		5/27/2016	116.80
		10/1/1949	123.70
1160	Cypress Creek @ Grant Road	4/18/2016	127.40
		5/27/2016	124.20
		10/18/1994	125.40
1165	Cypress Creek @ Eldridge Parkway N.	4/18/2016	128.60
		5/27/2016	125.40
		10/18/1994	126.10
1170	Cypress Creek @ Huffmeister Road	4/18/2016	132.90
		5/27/2016	129.80
		10/19/1998	131.63

[1] Information provided by HCFCD Stream Gauge Office in March 2017

CONTINUED NEXT PAGE

Big Cypress (continued from previous page)

Site	Description		
1180	Cypress Creek @ Katy-Hockley Road	4/18/2016	162.30
		5/27/2016	160.50
		10/18/1994	163.04
1185	Cypress Creek @ Sharp Road	5/27/2016	168.00
		10/18/1994	168.90

Little Cypress:

1210	Little Cypress Creek @ Kluge Road	4/18/2016	136.40
		5/27/2016	135.50
		10/18/1994	136.30
1220	Little Cypress Creek @ Cypress Rosehill Road	4/18/2016	162.10
		5/27/2016	161.30
		7/12/2012	160.40
1230	Little Cypress Creek @ Becker Road	4/18/2016	197.80
		5/27/2016	197.30
		7/12/2012	197.20

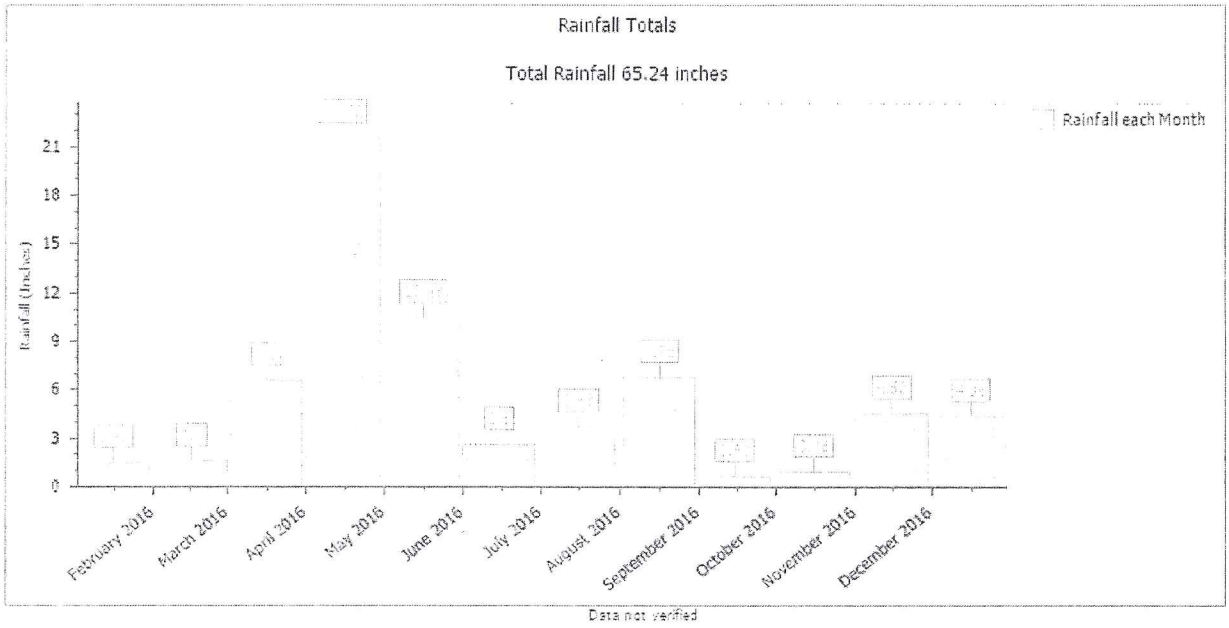
Monthly Rainfall – 2016
(Measured at 4 bridge crossings in Cypress Creek Watershed[1]

- Little Mound @ Mathis: Headwaters area of Cypress Creek Watershed
- Katy Hockley is vincinity of area in which overflow from Cypress Creek into Addicks Watershed occurs.
- Huffmeister crossing: Last guage station upstream approximately 300 yards before Confluence of Little Cypress fand Big Cypress join and flow onward to Grant Road crossing.and then Highway SH 249.
- SH 249

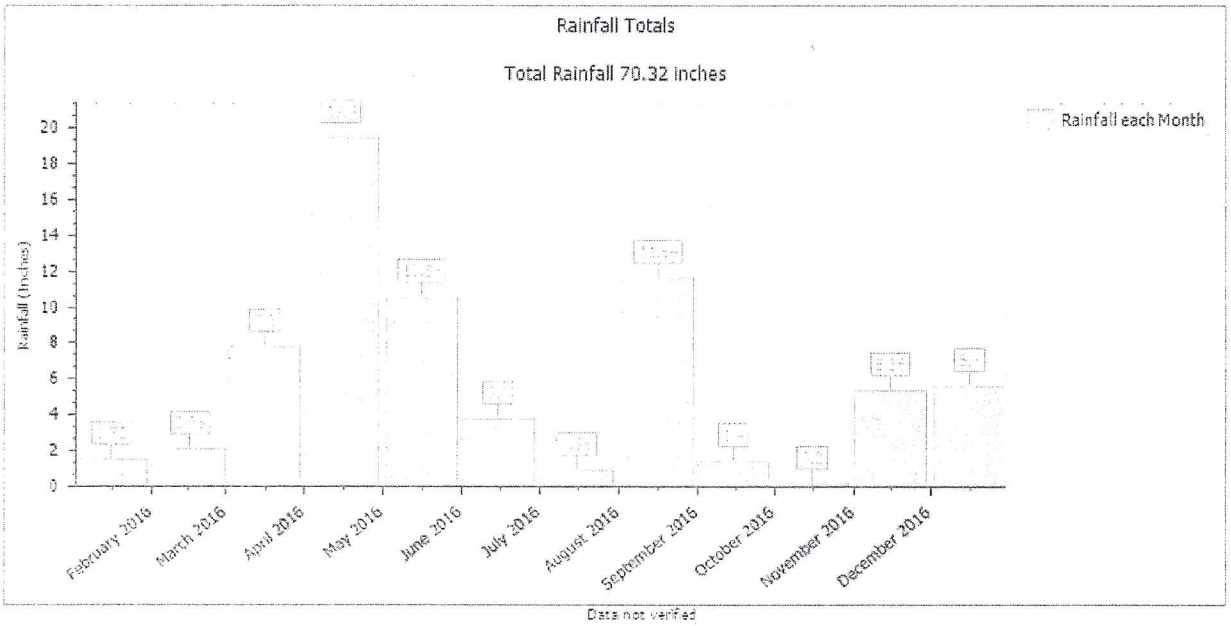
	1190 Little Mound @ Mathis	1180 Cypress Creek @ Katy-Hockley	1170 Cypress Creek @ Huffmeister	1150 Cypress Creek @ SH 249
December	4.36	5.60	4.16	3.96
November	4.52	5.36	4.32	2.72
October	0.96	0.20	0.28	0.68
September	0.68	1.40	3.84	1.76
August	6.76	11.64	13.96	12.60
July	3.68	0.96	3.20	2.48
June	2.60	3.80	10.04	12.72
May	10.48	10.56	9.12	9.36
April	21.52	19.40	19.12	16.00
March	6.60	7.80	7.16	5.28
February	1.60	2.08	1.96	2.00
January	1.48	1.52	2.68	2.84

[1] Data supplied to CCFCC by Harris County Flood Control District, March 8, 2017

1190 Little Mound @ Mathis

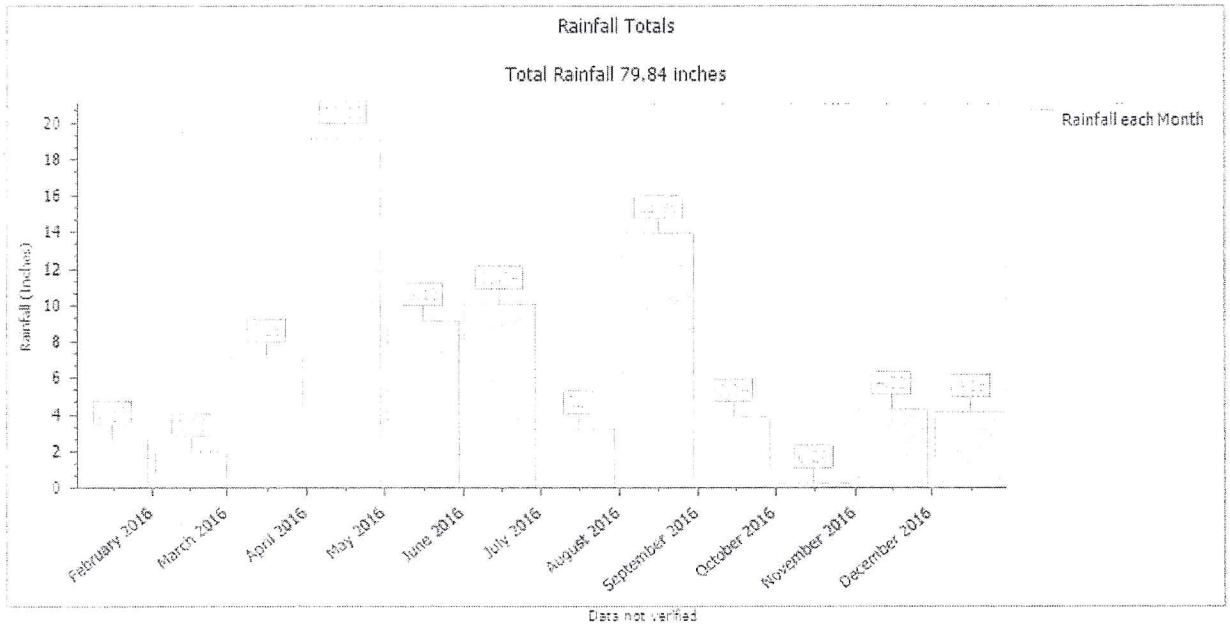


1180 Cypress Creek @ Katy-Hockley

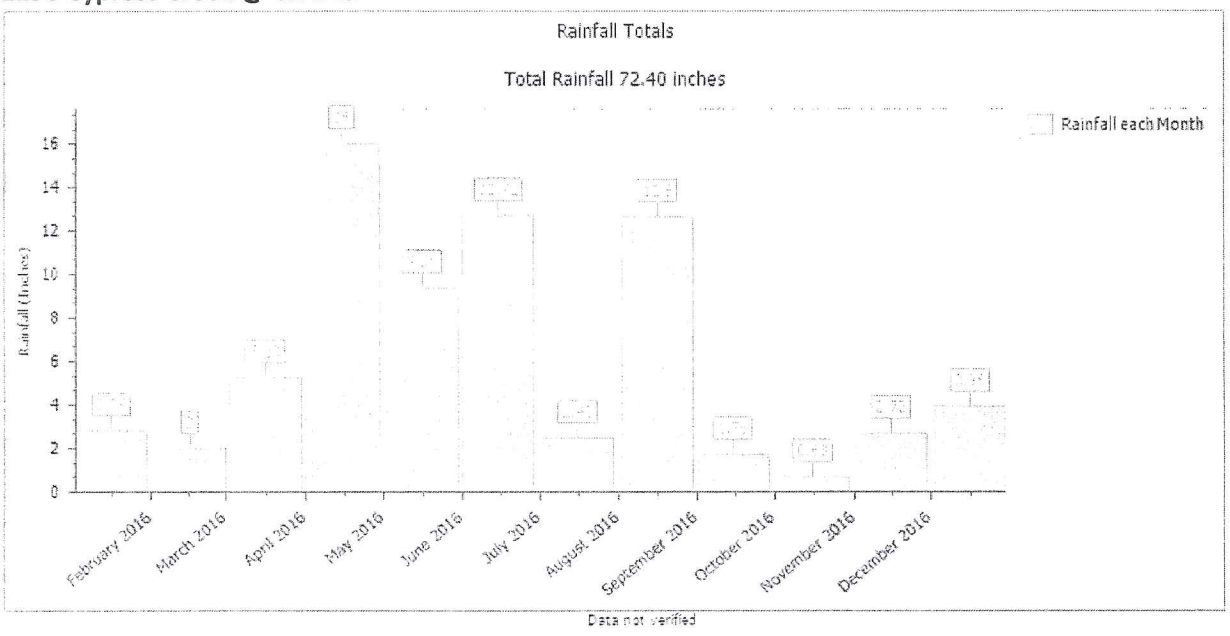


Ref: Mark Moore email 4/17/17
QA1

1170 Cypress Creek @ Huffmeister



1150 Cypress Creek @ SH 249



Technical Management Committee Report

2016 Annual Report

HARRIS COUNTY FLOOD CONTROL DISTRICT

1. In early 2012 the HCFCD undertook the beginnings of a master plan intended to create conceptual plans for urban development in the Upper Cypress Creek and Addicks Watershed. A primary goal of this undertaking is to address / solve the increasing overflow from the upper Cypress Creek Watershed into the Addicks Watershed and the Addicks Reservoir. Named the "*Cypress Creek Overflow Management Plan*" it was partially funded by the Texas Water Development Board, (TWDB) which approved the final report in 2015.

The CCFCC Technical Management Committee undertook a series of actions to obtain, review and comment on the recommended changes to existing development criteria which HCFCD would be submitting to Harris County Commissioners Court for approval to implement for regulatory purposes.

The results were disappointing for several reasons. The first because the proposed conceptual plan was not endorsed by the developer community representatives who had participated in the preceding steering committee study. As a result the recommended conceptual plans were ever submitted to Commissioners Court and as of the date of this report the project appears stalled for unknown reasons. The second reason is an "Open Records" request by CCFCC was disputed and sent by Harris County to the Texas Attorney General for a determination as to the requirement to comply in furnishing the requested information. The 3rd issue was refusal to provide and provide CCFCC an advance copy and time to review and comment on the adequacy of the proposed changes to the detention requirements and other development criteria which would apply to all new development throughout the project's planned area.

On March 29, 2016 Commissioners Court approves the following Agenda item contained shown on Pg. 9:

8. Recommendation for adoption of the supplemental guidelines and criteria for developing in the Addicks Reservoir, Barker Reservoir, and Cypress Creek watersheds upstream of US-290 in Precincts 3 and 4 in the district's Policy Criteria and Procedures Manual.

. . . . continued on next page . . . . . .

STATUS OF ANALYSIS OF 2016 FLOODS IN CYPRESS CREEK WATERSHED (April 2017)

1. Dr. Bedient and his staff have been investigating and analyzing the flooding that occurred last year during the April (Tax Day) and May (Memorial Day) flood events. This work has involved gathering rainfall data (including radar rainfall data) for both events and analyzing this data to understand the intensity and extent of the heavy rains that produced widespread flooding along both Cypress Creek and Little Cypress Creek, in comparison to frequency storm events, such as the 10-year and 100-year storm events.

2. In addition, the hydrologic and hydraulic computer models provided by the Harris County Flood Control District (HCFCD) have been used to analyze these two 2016 flood events. The results from these models are used to compare to observed streamflow data from the U.S. Geological Survey (USGS) at their selected stream gaging stations, as well as high water marks obtained at various locations along Cypress Creek and Little Cypress Creek.
3. Also, another hydrologic computer model is being used to analyze these two 2016 flood events, using a distributive model that is more physical-based than the one used by the HCFCD. Results from this model are also being compared to observed streamflow data, as well as comparing the results to those obtained from the HCFCD model.
4. Finally, the HCFCD is conducting an on-going study of Little Cypress Creek, in order to develop a master plan to help provide for the future development of that watershed. Dr. Bedient and his staff will be evaluating that study when it is completed next month and comparing its results to those being produced in his study.

HARRIS COUNTY FLOOD CONTROL DISTRICT

CAPITAL IMPROVEMENT PROGRAM, FY 2017

ANNUAL REVIEW - JUNE 2016

Projects for FY 2018 - FY 2021, Proposed Funding by Stage

Stage	Authorized Funding	Percent of Total Authorized Funds
Planning and Preliminary Engineering	$7,800,000	3%
Project Preparation	$83,950,000	35%
Design	$16,370,000	7%
Construction	$115,940,000	48%
Contingency	$15,940,000	7%
Total	$240,000,000	

3.8 Proposed Projects for a Fully Funded Five-Year CIP

A community's approach to flood damage reduction is a function of the level of risk and overall cost the community is willing to accept. The investment in excess of $12 billion is necessary to raise our flood damage reduction system to an overall 4 percent (25-year) level of protection, and $25 billion is necessary for a 1 percent (100-year) level of protection.

The Flood Control District recommends an annual funding stream of at least $200 million, which would allow the District to accomplish its mission of flood risk reduction over the next 60 years (4 percent (25-year) level of protection). This recommendation is based on the following considerations:

- An aggressive CIP is appropriate for the next several decades to manage and mitigate the natural threat of flooding.
- Benefits to the community from implementation of flood risk reduction projects extend beyond avoided flooding damages to economic development and increased property values, and to the opportunity for parklands and recreation areas as the green space serves multiple purposes.
- Regardless of the federal ability to financially participate, projects identified through partnerships with the federal government still afford some of the best benefits to flood risk reduction.
- When federal reimbursement or participation does occur, these projects bring at least 50 percent – and as much as 75-90 percent – financial participation.
- The recommended level of funding will allow the Flood Control District to capitalize on partnerships with local and state governments.

- The recommended level of funding will allow the Flood Control District to make appropriate investments in right of way to ensure the ability to implement projects in the future.
- At the recommended funding level, measured progress can be made for all project categories.
- Even at this funding level, "capital rationing" will occur because there are more projects (and the capability to produce them) than funding allows.
- There is an increased public awareness of the flooding threat and an expressed willingness to fund effective projects to reduce the threat.
- There is support for popular multi-use and quality-of-life initiatives on Flood Control District property (by appropriate sponsors), which the CIP helps enable.
- There is support from watershed and neighborhood organizations, the Greater Houston Partnership, environmental organizations and quality-of-life interests.

Appendix D contains a list of the proposed additional projects for a fully funded five-year CIP. These projects are in addition to those listed in Appendix A, B and C, and represent the difference between annual funding of $60 million vs $200 million. This list of proposed projects does not reflect anticipated reimbursements from the Corps of Engineers, FEMA, or other potential partners.

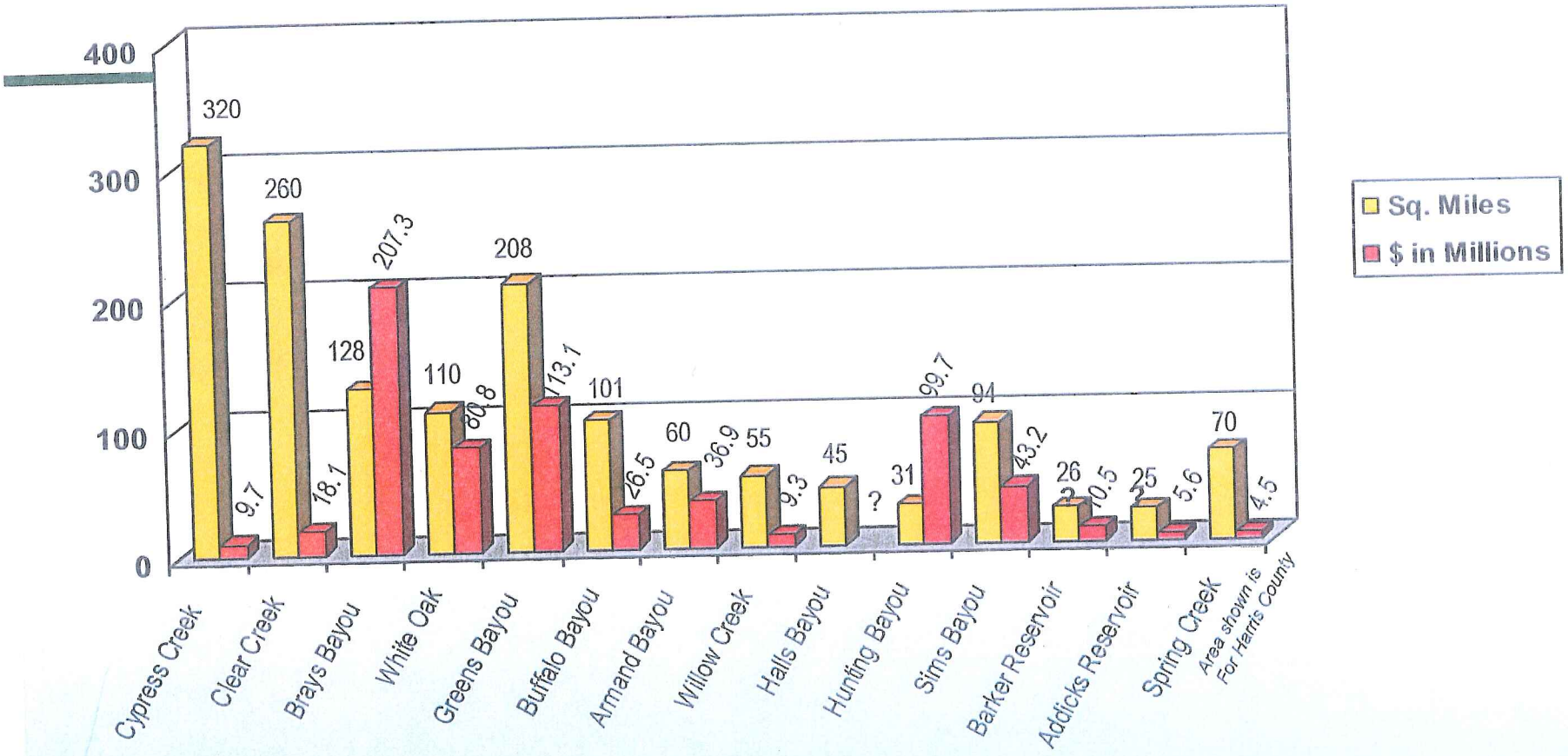
LEVEL OF PROTECTION	ANNUAL $	TOTAL	YRS TO ACHIEVE
25-YEAR	$200 MILLION	$12,000,000,000	60
100-YEAR	?	$25,000,000,000	

CIP 5-Year Funding by Watershed
FY 20170FY 2021
Harris County Flood Control District [1]

Watershed ID	Name	Total Funded
A	Clear Creek	$ 10,242,138
B	Armand Bayou	$ 20,000
C	Sims Bayou	$ 10,181,708
D	Brays Bayou	$ 38,686,705
E	White OakBayou	$ 10,317,983
F	Galveston Bay	$ 17,859
G	San Jacinto River	$ 235,126
H	Hunting Bayou	$ 8,123,520
I	Vince Bayou	$ -
J	Spring Creek	$ 1,218,799
K	Cypress Creek	$ 1,923,053
L	Little Cypress Creek	$ 7,024,191
M	Willow Creek	$ 1,894,169
N	Carpenter's Bayou	$ -
O	Goose Creek & Spring Gully	$ -
P	Greens Bayou	$ 78,353,595
Q	Cedar Bayou	$ 262,256
R	Jackson Bayou	$ -
S	Luce Bayou	$ -
T	Barker Reservoir	$ 635,179
U	Addicks Reservoir	$ 6,998,311
W	Buffalo Bayou	$ 17,810,613
Z	County Wide Projects	$ 28,518,964
	Total	$ 222,464,169

[1] Summarized by CCFCC from Appendix A "Currently Funded Projects, June 2016 (pages 43-47)

Area to Capital Comparison



Watershed
(5 year period)

Data for the Capital Improvement Plan submitted by Harris County Flood Control District for a five-year period beginning 03/01/03 and accepted by Harris County Commissioners Court on 02/04/03 meeting.

The total 5-year Capital Improvement Plan of $795.5m includes $113.0M for home-buyout, $9.1M (San Jacinto River) and $18.5M for 7small buyouts which are not shown in graph.

Litigation – Flooded Home Damages
2016 Annual Report

Case: Harris County Flood Control District et al. v. Kerr et al., case number 13-0303, in the Supreme Court of the State of Texas.

2008

"It is unfortunate that government regulations are inadequate to protect our property from becoming flood-prone due to upstream development . . ." . "More independent oversight and accountability must occur. Moreover, it is virtually impossible for government entities such as the Harris County Flood Control District to provide adequate flood prevention and protection to the community as long as it is governed by a Commissioner's Court that is responsible to its constituents (contributors) for an ever increasing tax base. Additionally, as long as it is easier for developers to claim a regulatory taking due to stronger regulations than for homeowners to claim property damages due to a lack thereof, the scales of justice will remain unbalanced. But times, they are a-changing. In the last few seasons, costs continue to increase and economic losses continue to soar. We have seen with Ike that the Feds are not as loose with the cash flow as they were after past storms. When communities fail to be subsidized for reckless planning, they will start to pay attention. And, just maybe, a jury will render judgment." [1]

2015

Texas High Court Keeps Afloat Flood Suit Against County [2]

By **Joe Van Acker**

Law360, Dallas (June 12, 2015, 2:40 PM ET) -- In a split decision handed down on Friday, the Texas Supreme Court allowed more than 400 Harris County residents and homeowners to proceed with their claims accusing the county of causing flooding by approving housing developments without planning for runoff, affirming an appellate decision.

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[1] Houston Lawyer, "*Houston's High Water Problems*" Jim Blackburn and Larry Dunbar, ,November-December 2008

[2] Source: Article received in E-mail from Larry A. Larson, P.E. CFM, Director Emeritus-Senior olicy Advisor, Association of State Floodplain Managers, 6/15/15.

The 5-4 majority opinion stated that a trial is necessary to determine whether Harris County officials knew that deviating from a mitigation plan for 100-year floods and adopting a plan for 10-year floods while giving the go-ahead to upstream real estate projects was certain to result in damage to the residents' homes, and whether the resulting damage amounted to a "taking" of their land.

One of two dissenting opinions warned that the majority's decision encourages governments to do nothing to prevent flooding, concluding that the homeowners wouldn't have any basis for their claims if Harris County hadn't worked to create flood plans in the first place, and needlessly expands takings liability.

"I fear today's decision will make the government an insurer for all manner of natural disasters and inevitable man-made accidents," the dissenting justices said. "It endangers the ability of governments to finance and carry out their necessary functions, the basis for sovereign immunity."

But the court held that there is "at least some evidence" that the county was acting for a public use in approving the new developments and adopting allegedly inadequate drainage plans that resulted in flood damage to the homeowners' property following three powerful storms from 1998 to 2002.

"To the extent the government entities were substantially certain the homeowners' homes would flood because of unmitigated development, but sacrificed their homes for the sake of new development, this was for a public use," the court said.

In reaching its majority opinion, the court examined not only whether the damage to the residents' homes could be considered a taking for public use, but also Harris County's intent.

The homeowners, led by Edward and Norma Kerr, said that the government approved private development in the White Oak Bayou watershed and didn't do enough to prevent the flooding that it knew would accompany the new homes.

Harris County countered that it didn't intend for the flooding to occur and said that its flood control district exists for the sole purpose of planning for stormwater runoff to avoid flood damage.

But evidence shows that the county has known "for several decades" that development in one part of the watershed leads to flooding in other areas, as well as that it stopped requiring on-site detention ponds and adopted plans that only protected against 10-year floods, according to the court.

The majority opinion also said that this case differed from other similar lawsuits because of the evidence that the county was "substantially certain" that its decisions would lead to the flooding.

Representatives for the parties didn't immediately respond to requests for comment on Friday.

The Supreme Court agreed to hear the case in June 2014, after a state appeals court **ruled against the county** the previous year, rejecting that a trial court had improperly denied its motion for summary judgment.

The county is represented by Kevin Dubose and Amy Warr of Alexander Dubose Jefferson & Townsend LLP.

The homeowners are represented by James B. Blackburn Jr. and Mary Conner of Blackburn Carter PC, Brett Wagner of Doherty Wagner LLP, and Daryl L. Moore.

The case is Harris County Flood Control District et al. v. Kerr et al., case number 13-0303, in the Supreme Court of the State of Texas.

2016

Jume 17. 2016 [3]

In a case that many Texas landowners have been following closely through the courts, the Texas Supreme Court published a decision concerning whether a county can be held liable for an impermissible taking of property when the county allows for land development that the county knows will cause substantial flooding to nearby properties and fails to take steps to mitigate or control that flooding.

The Texas Supreme Court Opinion

Harris County Flood District and Harris County v. Kerr et al. involved nearly four hundred homes in the upper White Oak Bayou watershed in Harris County, Texas that were flooded when severe storms passed through the area. The homeowners sued the county and the Harris County Flood Control District based on an inverse condemnation claim. The homeowners asserted that the county and the district did not take steps to control flooding as new developments were created in the White Oak Bayou. A flood control plan was actually developed in the 1980's, but was never fully implemented by the county, and this plan acknowledged that the unmitigated development of the land in the Bayou would produce serious flooding problems in the area. As a result of a

[3] Texas Attorney Blog published bh Law Office of Aimee Ness PC, June 17, 2016

boom in development in the White Oak Bayou, and because of the the county's failure to adequately control flooding, many homes were flooded. The Plaintiff homeowners claimed that the flooding was a unconstitutional taking of their property that is prohibited by Article I, Section 17 of the Texas Constitution. The evidence showed that the county never intended to cause flood damage to the homeowner's properties, but that the county knoew that flooding could result.

The Texas Supreme Court noted that the flooding was never the county's intention, that the county knew generally that flooding would occur, but not that these particular homeowners would be flooded, and that the homeowners' land was not used by the county for any sort of public use, such as for flood detention or drainage as part of a flood control plan. Rather, in the Court's view, the county merely took no action and the Court held that inaction cannot give rise to a constitutional taking of property.

The relevant section of the Texas Constitution provides that "No person's property shall be taken, damaged or destroyed for or applied to public use without adequate compensation being made, unless by the consent of such person." The Texas Supreme Court noted that even if there were a "taking" as described in this section of the Constitution, there was no public use component.

Dissenting Opinion Makes Some Good Points

The dissent in this case made a several good points. The dissent acknowledged that a government, such as Harris County, does not have a duty to protect all properties from flooding. But in this particular case, the homeowners presented to the court evidence that the county ***knew*** that unmitigated developments in and around White Oak Bayou would cause substantial flooding, and yet the county approved those development plans anyway. The dissent argued that since the county went forward with development plans anyway, a fact issue was created that should have been heard by the trial court.

Texas metropolitan areas have experienced substantial growth in the past and will continue to grow in the future as our population increases. It is logical to require Texas counties and flood control districts to protect existing property owners from flooding caused by urban development. This unfortunate result of this opinion is that a Texas County can approve development without taking the consequences into account. While the legal reasoning of the Texas Supreme Court in this case is certainly correct, it puts homeowners at a disadvantage since they have no control over flood producing development near their homes. This is a problem that cries out for a legislative solution.

By Aimee Hess
Posted in: Real Estate Law

Summary:

On a motion for rehearing in the case of Harris County Flood Control District vs. Norma and Ed Kerr (the Kerr case), the Texas Supreme Court ruled against the flooded citizens and found that dollar

damages could not be collected against Harris County or the Flood Control District because there the necessary "intent" was lacking, even though Harris County knew that flooding would result. This case now makes it almost impossible for flooded residents to recover dollar damages against Harris County, the Flood Control District or any other governmental entity involved in making certain flooding situations worse, which does happen. Instead, the property rights of flooded citizens were set aside. In an earlier Supreme Court case decided in favor of the Kerr plaintiffs, the Supreme Court found that the property right had been violated by the County and damages, if and when proven, could be awarded. This was a major property rights setback for citizens.

There is a very real practical message from the Kerr case. If you are a flood victim, you cannot sue the government for damages. Instead, if you want dollar damages, you must find private sector wrong-doers such as developers or engineering firms. However, the better cause of action will be against the government to fix the problem (as opposed to seeking damages). I would pursue such "fix" litigation in federal court rather than state court for violation of U.S. Constitutional rights under the 4th, 5th and 14th amendments. Such a lawsuit is currently being pursued by Residents Against Flooding who are suing TIRZ 17 and the City of Houston, seeking remediation of flooding problems rather than damages in federal court. This is perhaps the better pathway to force action to solve problems. [4]

2016 Annual Report Litigation –

[4] Jim Blackburn discussion with RD Smith, CCFCC. 4/05/16

Cypress Creek Greenway Project – CCFCC Annual Report for 2016

During 2016 the Cypress Creek Greenway Project (CCGP) continued its efforts toward the creation of a linear greenway along Cypress Creek from west of US 290 to the east where Cypress Creek joins Spring Creek. The greenway will connect existing and future anchor parks along Cypress Creek with a multi-use trail. In addition to our efforts many partners in the Greenway are doing things to make the vision for the Greenway a reality. Below are some highlights from 2016.

- **Cypress Creek/SH 249 Area Trail Master Plan** - Lake Forest UD working with the Cypress Creek Greenway Project and several partners provided funding for the development of a trail master plan for the Cypress Creek/SH 249 area. The approximately 14 square mile area is bisected by Cypress Creek and contains three anchor parks, a preserved natural corridor along the creek, several parks and unconnected trail segments, and a large residential area with a central core including offices, retail, educational facilities, and mixed use development (The Vintage; the HP/Lone Star College-University Park/Noble Energy/Chasewood Technology Park campus; the Kickerillo-Mischer Preserve). EHRA, the firm selected by the coordinating board to develop the master plan, completed the plan in January 2015. Through 2016 we have continued to contact and meet with potential partners regarding implementation of various portions of the plan. The master plan document can be viewed online at http://www.ccfcc.org/CCreekTMP/index.html .

- **Trash Bash at Collins Park on Cypress Creek** – Trash Bash was held at Collins Park on Saturday, 4/2/16. This was the seventh year for the Bayou Preservation Association, the Cypress Creek Greenway Project, and Precinct 4 Parks Department to hold the event at Collins Park. A total of 803 volunteers participated in the event. Approximately 20 cubic yards of trash were gathered up from several locations along Cypress Creek and its tributaries between Kuykendahl and SH 249.

- **Cypress Creek Paddling Trail** – The Bayou Preservation Association in partnership with the Cypress Creek Greenway Project continued the work to develop the Cypress Creek Paddling Trail. TPWD personnel paddled down Cypress Creek from Collins Park to Jesse Jones Park and gave approval to the Bayou Preservation Association to proceed with development of the paddle trail as an official TPWD Paddle Trail. The Harris County Precinct 4 Trails as Parks (TAP) program utilized Cypress Creek, particularly the Collins Park to TC Jester and Collins Park to Kuykendahl Road sections, for its sponsored canoe trips on Cypress Creek.

- **Timber Lane Utility District** – On Saturday, 10/22/16,Timber Lane Utility District hosted an event to celebrate the dedication of its "Bridge to the Future", a bridge across Cypress Creek connecting Mercer Arboretum to Timber Lane UD's 325 acres of parks and 14 miles of trails along Cypress Creek. The bridge can accommodate pedestrian and bicycle traffic as well as maintenance and emergency vehicles. The project also included an additional paved trail and a bridge over a Cypress Creek tributary on the south side of the creek. The event included a kids/adults run/walk, 5K run, GHORBA mountain bike races, and lunch.

- **Malcomson Road Utility District** – The utility district completed the construction of an approximately 1 mile sidewalk along the north side of Louetta Road from the Faulkey Gully trail to Compaq Center Drive. This will provide connectivity and access for their residents to the HP/Lone Star College-University Park/Noble Energy campus, and connectivity to the developing trail network within the Cypress Creek/SH 249 Trail Master Plan area. This is one of multiple planned phases of trail connections within the District, and trails connecting to adjacent Districts and Greenway trails.

- **Trail across the 100 Acre Wood** – The Precinct 4 Parks Department completed the construction of a 4,200' asphalt trail across the 100 Acre Wood Preserve adjacent to Cypress Creek west of SH 249. The trail connects to an existing paved trail at Jones Road and provides trail connectivity for thousands of area residents to the Cypress Creek YMCA to the east. Harris County owns, and the Bayou Land Conservancy holds a conservation easement on, the 100 Acre Wood Preserve. The Preserve also has about 2 miles of natural surface hiking and biking trails. The Precinct 4 Parks Department constructed a parking area at the north end of West Cypress Forest Drive to provide parking for the 100 Acre Wood Preserve and the Cypress Creek Greenway.

- **Development of the Kickerillo-Mischer Preserve (KMP)** – Harris County Precinct 4 Parks Department began development of the Kickerillo-MIscher Preserve which is adjacent to Cypress Creek immediately east of SH 249. The $3.7 million project will include utilities, entry road and parking, and a 1.7 mile asphalt trail around the 40 acre lake on the 82 acre property. Development of this park should serve as a catalyst for further trail development and connectivity to occur in this area. The acreage was donated to Harris County by V&W partners following discussions among several partners/participants including HP, V&W Partners (Kickerillo and Mischer), Harris County, Harris County Precinct 4, HCFCD, and Friends of the Kickerillo-Mischer Preserve (HP Park Alliance), a local, grass roots community group. Also, construction began on a pedestrian bridge across Cypress Creek connecting to a former fire station which will serve as the headquarters and maintenance facility for the KMP. The Prestonwood Utility District is leasing the former fire station to Precinct 4 and is participating with Precinct 4 in the cost of the construction of the bridge across Cypress Creek..

- **Cypress Creek Regatta** – The third annual Cypress Creek Regatta planned by the Bayou Preservation Association for Saturday, 9/17/16, was cancelled because of the forecasted heavy thunderstorms for the area. The 7.5 mile regatta course extends from Mercer Arboretum to Jesse Jones Park. Cypress Creek can rise very rapidly when heavy rains occur and there was concern for paddlers' safety on the creek should a rapid rise in water level occur.

- **Trail Connection from Matzke Park to Cypresswood Drive Trail**- Precinct 4 began construction of a paved pedestrian trail connection from Matzke Park to the existing paved trail at Cypresswood Drive. This trail will connect Precinct 4's maintenance facility at Matzke Park to the expanding trail system in the Cypresswood/SH 249 area. The trail is along K143-00-00 commonly known as Anderson Ditch. This project follows the completion of a HCFCD funded project which repaired erosion and re-established clear maintenance access along the channel. The trail construction project is funded by Precinct 4, NWHC MUD 9, and a TPWD grant.

- **Cypress Creek Flooding in April 16 Tax Day Flood Event** – The April Tax Day Flood event included unprecedented rainfall within the upper Cypress Creek and Little Cypress Creek watersheds. Rainfall amounts of up to 16.7 inches in 12 hours were recorded in Harris County with higher amounts recorded upstream in Waller County. Major flooding along Cypress and Little Cypress Creeks resulted with the .2% (500-yr) event exceeded in the upper reaches of Cypress and Little Cypress Creeks. At least 2,110 homes were flooded in the Cypress and Little Cypress Creek watersheds. Significant overflow from the Cypress watershed into the Addicks watershed occurred with flowing water depths exceeding 3' in some areas. The contribution of this overflow to the record high water levels in Addicks reservoir demonstrates the significance of the rainfall and drainage issues in northwestern Harris County. Essentially all parks and trails along the Cypress Creek Greenway were inundated. Some damage and washouts of trail sections occurred. The Greenway and Cypress Creek corridor clearly performed their designated tasks of holding and conveying runoff from the unprecedented rainfall. Severe, but less extensive, flooding followed with the Memorial Day flood event.

- **Debris Removal Program in Cypress and Little Cypress Creek Channels** – Following the two spring flood events HCFCD initiated a program to remove flood debris and numerous blockages from channels in both Cypress Creek and Little Cypress Creeks. The blockages can impede flow and exacerbate out of bank flooding. Contractors completed the work on a schedule which cleared the channels prior to the onset of hurricane season.

- **Harris County Flood Control District Construction of Zube Park Stormwater Detention Basin** – HCFCD continued construction of a new stormwater detention basin adjacent to Little Cypress Creek. It is part of a regional drainage infrastructure plan for this area. The basin is located on a tract to the east of Precinct 3's existing 141-acre Zube Park which is bisected by Little Cypress Creek. This area could eventually become part of the Cypress Creek Greenway along the upper reaches of Little Cypress Creek.

- **General** – The Cypress Creek Greenway Project continues to coordinate, advocate, and promote the vision for the development of the Greenway. Discussions with existing and potential partners and participants, identification of additional Greenway acreage, coordination with other preservation groups, seeking sources of funding, and other related tasks occur on an ongoing basis. Harris County Precinct 4 has increasingly shifted staffing and resources to the Cypress Creek Greenway from the long continuing efforts on the development of the now largely completed Spring Creek Greenway. This emphasis on the Cypress Creek Greenway has significantly increased the progress of the development of the Cypress Creek Greenway.

Jim Robertson, Cypress Creek Greenway Project

Cypress Creek Watershed

Home Buy-out / Land Acquisition By Harris County Flood Control District

	Master Plan Requirement[1]	Actual [2]
• Land acquisition		
o Channelization	5,229 acres	3,052 acres[3]
o Detention	11,112 acres	597 acres[4]
o Flood plain Preservation	3,663 acres	1,986 acres
o Other (Home buyouts)	Not in report	213 acres
– Total	20,004 acres	2,168 acres
• Home Buy-outs	442	294 [5]
• Flooding Easements	N/A	2,970 acres [6]

[1] Data shown under the "Requirement" column is per the Turner, Collie & Braden Cypress Creek Master Stormwater Management Plan adopted by Harris Country Commissioners Court in 1986.

[2] Information shown is as of March 25, 2014. Source: Harris County Flood Control District. The reader should note this does not include detention acreage provided by the private sector / developers

[3] 961 acquisitions (3,052 acres;-includes fee and easement)
[4] 29 acquisitions (597 acres; includes fee and easement)
[5] The historical record of home buy-out according to CCFCC past annual reports is:

	Homes Purchased To Date
2004	210
2005	216
2009	258
2010	262
2013	241
2014	Not reported
2015	Not reported
2016	294 (includes 213 acres – all fee)

[6] These 2,658 acres are property for which HCFCD has acquired a right to flood easement with an underlying fee owner. These are mostly on the Katy Prairie .

Home Buyouts in the Cypress Creek Watershed have e been a major focus of the Harris County Flood Control District in their program beginning in l989 acting alone and in various partnerships with FEMA and the US Army Corps of Engineers.

Information obtained for the 2016 Annual Report is of special signifcance due to the significant flooding events during this and recent preceding years. This includes:

Q. What is the existing amount of home buyout funding for each watershed?
A. There are 65 areas where Buyout has been approved. The funding amount is significantly effected throught the process that Harris County must compete with the rest of the U.S. for FEMA funds.

Q. Is there an overall goal and what is the $ amount?
A. Overall is $600 million f9r 3,300 homes + 2,000 undeveloped properties.

Q. What is the number of Cypress Creek Watershed properties located in the floodplain? [7]
A. Based on information generated by GIS (considered best available data) there are:

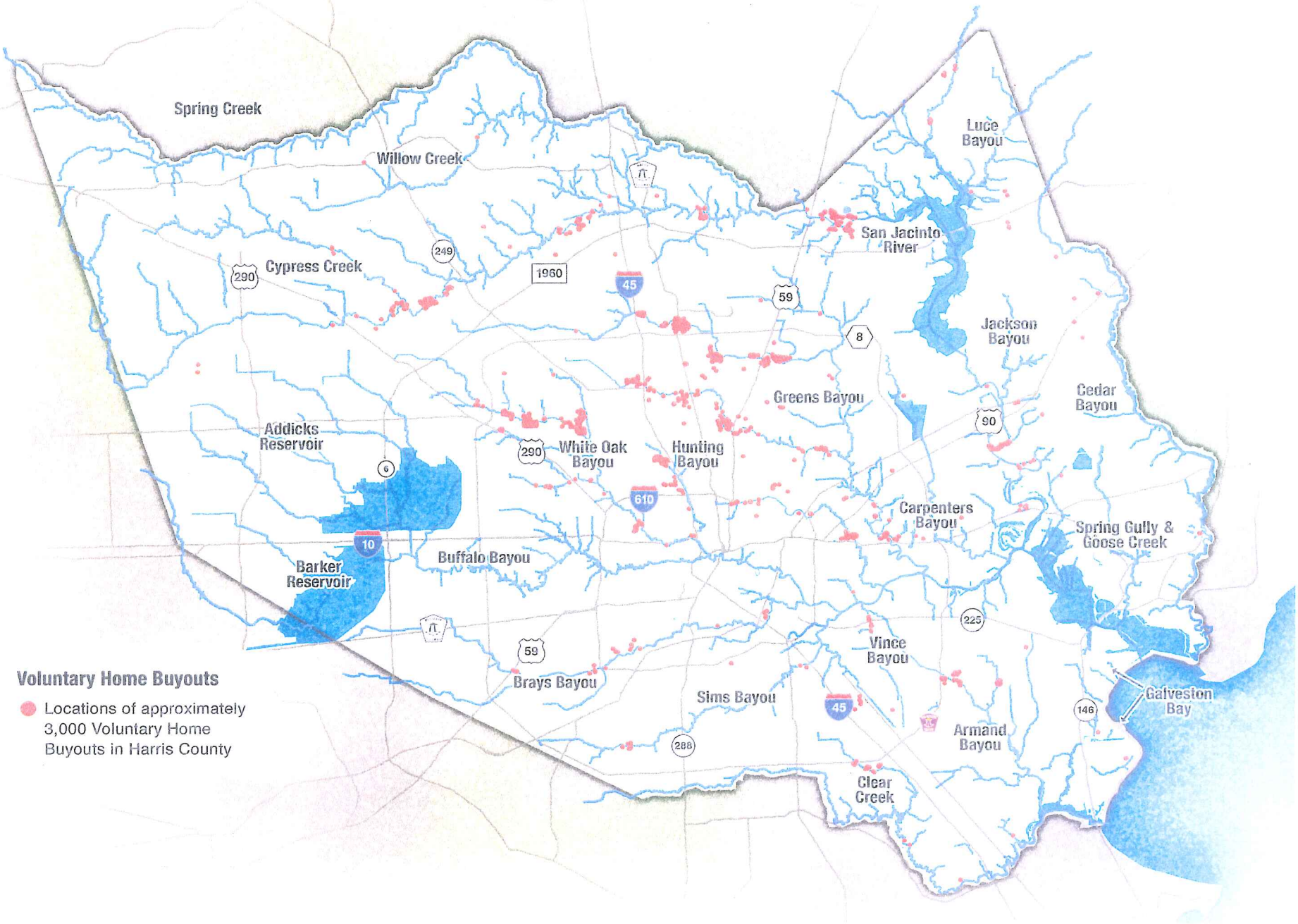
- Little Cypress residential:
  - 100 Year floodplain 948
  - 10 Year floodplain 316
- Cypress Creek residential:
  - 100 Year floodplain 3,176
  - 10 Year floodplain 495

Q. Sourc of funding:
A. See the 2 attached pie diagrams "Voluntary Home Buouts Purchased" showing the source of funding and the percentage (%) for each watershed (with 9 % in the Cypress Creek and none in the Little Cypress watersheds.

c

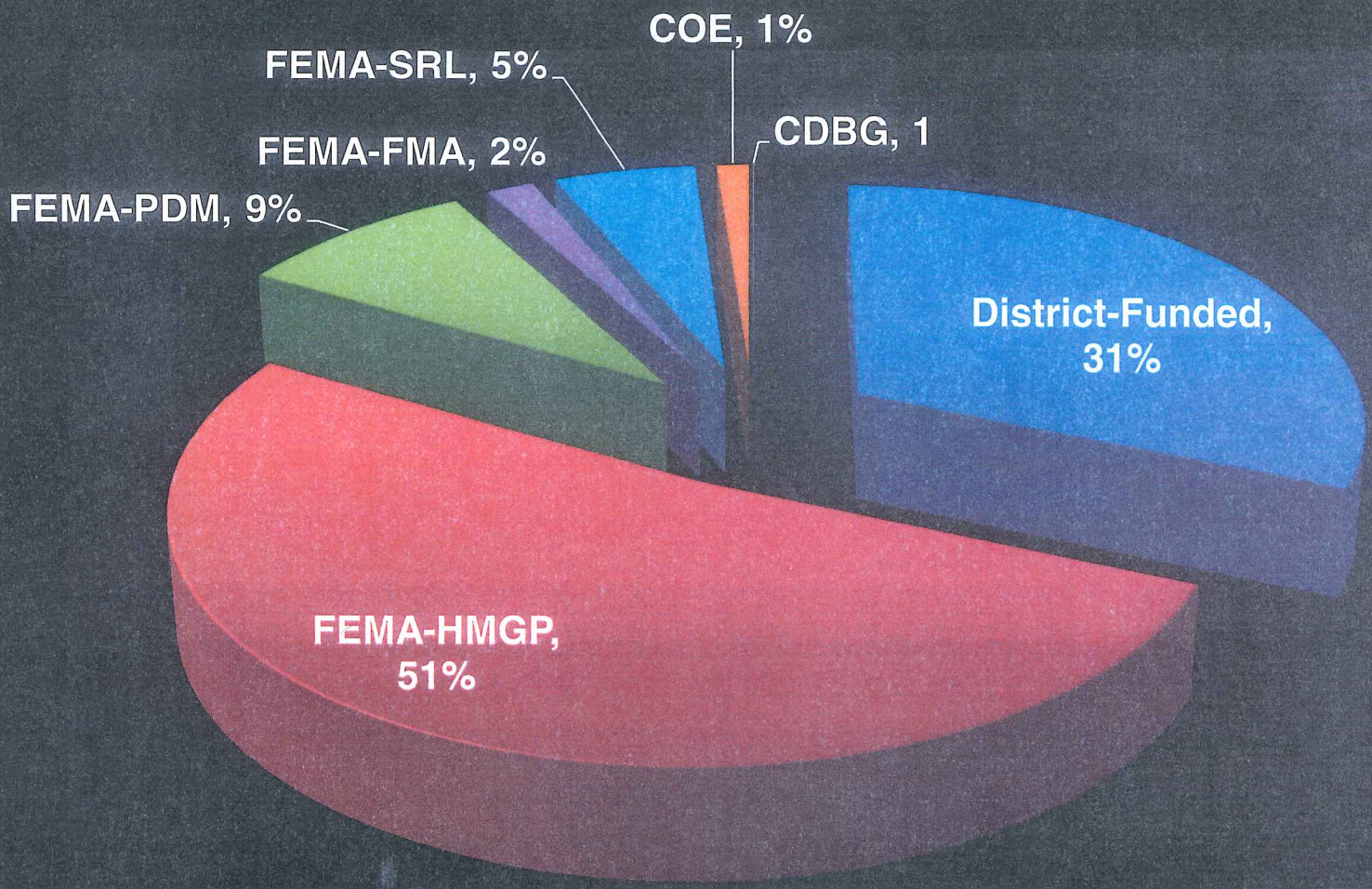
2016 Annual Annual Report 2013 Home Buyouts

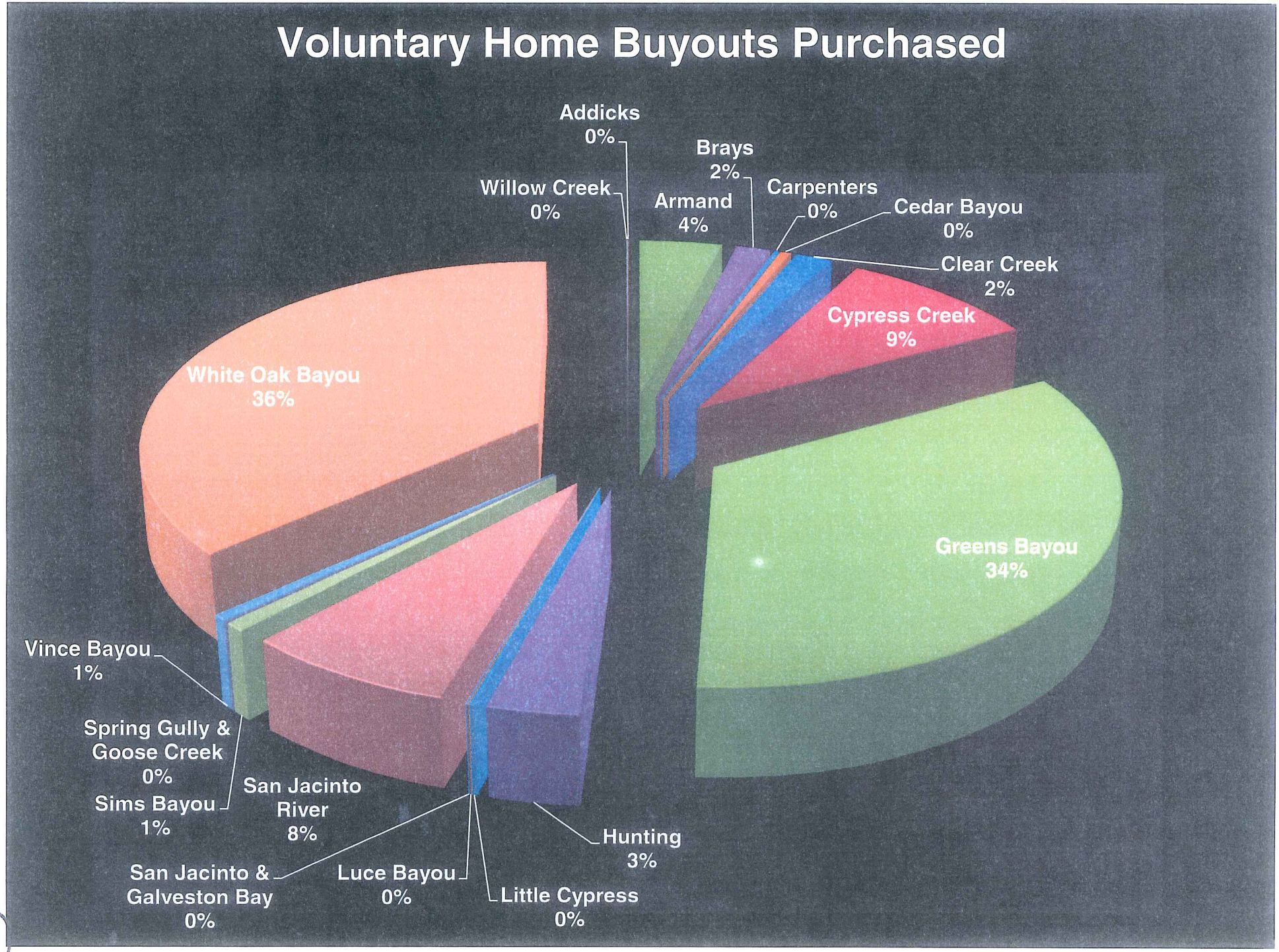
[7] The June 2016 Capital Improvement Program Annual Review states, "Unfortunately, more than 100,000 homes still remian within the regulated floddplains". Reference: Page 15


Spring Creek
Willow Creek
Cypress Creek
290
249
1960
45
59
8
Luce Bayou
San Jacinto River
Jackson Bayou
Cedar Bayou
Greens Bayou
90
Addicks Reservoir
6
290
White Oak Bayou
Hunting Bayou
610
Carpenters Bayou
Spring Gully & Goose Creek
10
Barker Reservoir
Buffalo Bayou
225
59
Brays Bayou
Vince Bayou
Sims Bayou
45
146
Galveston Bay
Armand Bayou
288
Clear Creek
Voluntary Home Buyouts
Locations of approximately 3,000 Voluntary Home Buyouts in Harris County

64

Voluntary Home Buyouts Purchased




Voluntary Home Buyouts Purchased
Addicks 0%
Brays 2%
Willow Creek 0%
Armand 4%
Carpenters 0%
Cedar Bayou 0%
Clear Creek 2%
Cypress Creek 9%
White Oak Bayou 36%
Greens Bayou 34%
Vince Bayou 1%
Spring Gully & Goose Creek 0%
Sims Bayou 1%
San Jacinto River 8%
San Jacinto & Galveston Bay 0%
Luce Bayou 0%
Little Cypress 0%
Hunting 3%

03/08/17

Cypress Creek Flood Control Coalition
Profit and Loss Standard
January through December 2016

	Jan - Dec '...
Ordinary Income/Expense	
Income	
I - 2 — Resident Voluntary Contribu...	21,470.81
I - 4 — Interest Earnings	6.33
Total Income	21,477.14
Expense	
10 — Office Supplies, Print, Postage	1,021.62
13 — Contributions & Membership ...	1,540.00
23 — Cypress Creek Greenway Pr...	2,626.85
7 — Administration Expense	1,671.76
11 — Computor ops and maintenan...	1,235.15
12 — D&O L Liability Insurance	940.00
9 — Earthlink, SBC,DSL,Symantec	1,366.32
Total Expense	10,401.70
Net Ordinary Income	11,075.44
Net Income	11,075.44

03/08/17

Cypress Creek Flood Control Coalition
Balance Sheet Standard
As of December 31, 2016

	Dec 31, '16
ASSETS	
Current Assets	
Checking/Savings	
1.1110 — Checking - Amegy Bank 365...	51,527.54
1.1130 — Investments - Amegy	16,095.72
Total Checking/Savings	67,623.26
Total Current Assets	67,623.26
Fixed Assets	
1.1300 — Computer & Office Equipment	2,334.30
Total Fixed Assets	2,334.30
TOTAL ASSETS	69,957.56
LIABILITIES & EQUITY	
Equity	
3000 — Opening Bal Equity	24,870.64
3900 — Retained Earnings	34,011.48
Net Income	11,075.44
Total Equity	69,957.56
TOTAL LIABILITIES & EQUITY	69,957.56

CCFCC

2017 BUDGET

Funds/Expense		2016 Budget	Total 2016	2017 Budget
Funds				
	Bank balance			
1-1	MUD/HOA Contributions			
1-2	Resident Vountary Contribution	$21,000	$21,471	$21,000
1-3	Grant Applications			
	3a.- Houston Endowment			
	3b. - Other Sources (See Treasurer's Report)			
Total	1-3 Grant Applications			
	Misc			
1-4	Interest Earnings (Includes cking & savings)	$6	$6	$6
Total		$21,006	$21,477	$21,500
Expense				
1	Membership Bus. & Community Outreach			
2	Annual Meeting			
3	Preservation Committee			
4	IT Mgt-Evaluation Comm.			
5	AWBD Committee			
6	Legal & Accounting Fees & Banking fees			
7	Administration Expense	$1,500	$967	$1,000
8	Fed Income Tax Preparation			
9	Earthlink, SBC,DSL,Symantec	$1,500	$1,366	$1,500
10	Office Supplies,Print Postage	$1,400	$1,661	$1,500
11	Computer ops & maint.	$1,500		
12	D&O Liability Insurance	$1,000	$940	$1,000
13	Contributions & membership Dues	$1,000	$1,540	$1,500
14	Houston-Galveston Area Council			
15	Publications			
16	Environmental Affairs Committee			
17	Seminar/Conference Expense	$100	$65	$100
		$8,000	$6,540	$6,600
18	Engr / Tech Consultation			
	18-1 PY Work to be Paid in '2017			
	Rice Univ. NAI Project			
	LG Dunbar-Engineering Consulting			$12,000
	Total 18-1 PY Work to be Paid in '17	$12,000		$12,000
	18-ii CY 2010 Work			
	Rice Univ-stream gage study			$20,000
	Future Conditions-begin 4/1/10 (L Dunbar)			
	Houston Endowment for Future Conditions)(Encumbered Grant)			
	Aerial Photo's			
	Total 18-ii-CY 2017 Work			
Total 18	Engr / Tech Consultation	$10,000		$32,000
19	Reserve for Future Requirements			
20	Grant Proposal Expense			
21	Operator Fee - Customer Billing			
22	Bookkeeping			
23	Cypress Creek Greenway Project-J Robertson	$2,000	$2,627	$3,000
	23a Meyer Park / REI (Encumbered Grant)			
	23b Memorial Lady Bug (Encumbered Grant)			
	23d Cypress Creek Greenway Project-other			
Total 23	Cypress Creek Greenway project	$2,000	$2,827	$3,000
24	Detention Pond Committee			
25	Contingencies			
26	Misc. office Equipment	$250		
	Total 18>26			
		$250		
Total expense		$20,250	$9,167	$41,600
Total Income		$21,006	$21,477	$21,500

Cypress Creek Flood Control Coalition

Board and Committee Members

January 01, 2017

Board of Directors

	3-year term ending
John Porea, Treasurer	2018
James H. Robertson	2017
John J. Sakoloski, Secretary	2018
Autumn L. Selman	2017
John E. Sherman	2019
Richard D. Smith, President	2019
Peter R. Smullen, Vice President	2019
Joe Velasco	2017
Carl Zeitler	2018

Committees

- Communications and Public Outreach Committee
  Dick Smith, Acting Chair

- Civic Associaition / MUD Membership Committee
  (A voluntee is required to fill vacancy)

- Technical Management Committee
  Pete Smullen, Chair
  Autumn Selman
  Jack Sakolosky

- Insurance and Corporate "*Fact Sheet*"
  Carl Zeitler

- Preservation Committee
  Patsy Gillham, Chair

- IT Management
  Joe Velasco, Chair

- Cypress Creek Greenway Project
  Jim Robertson, Chair