

Update to Lake Houston Area Grassroots Flood Prevention Initiative

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April 17, 2018



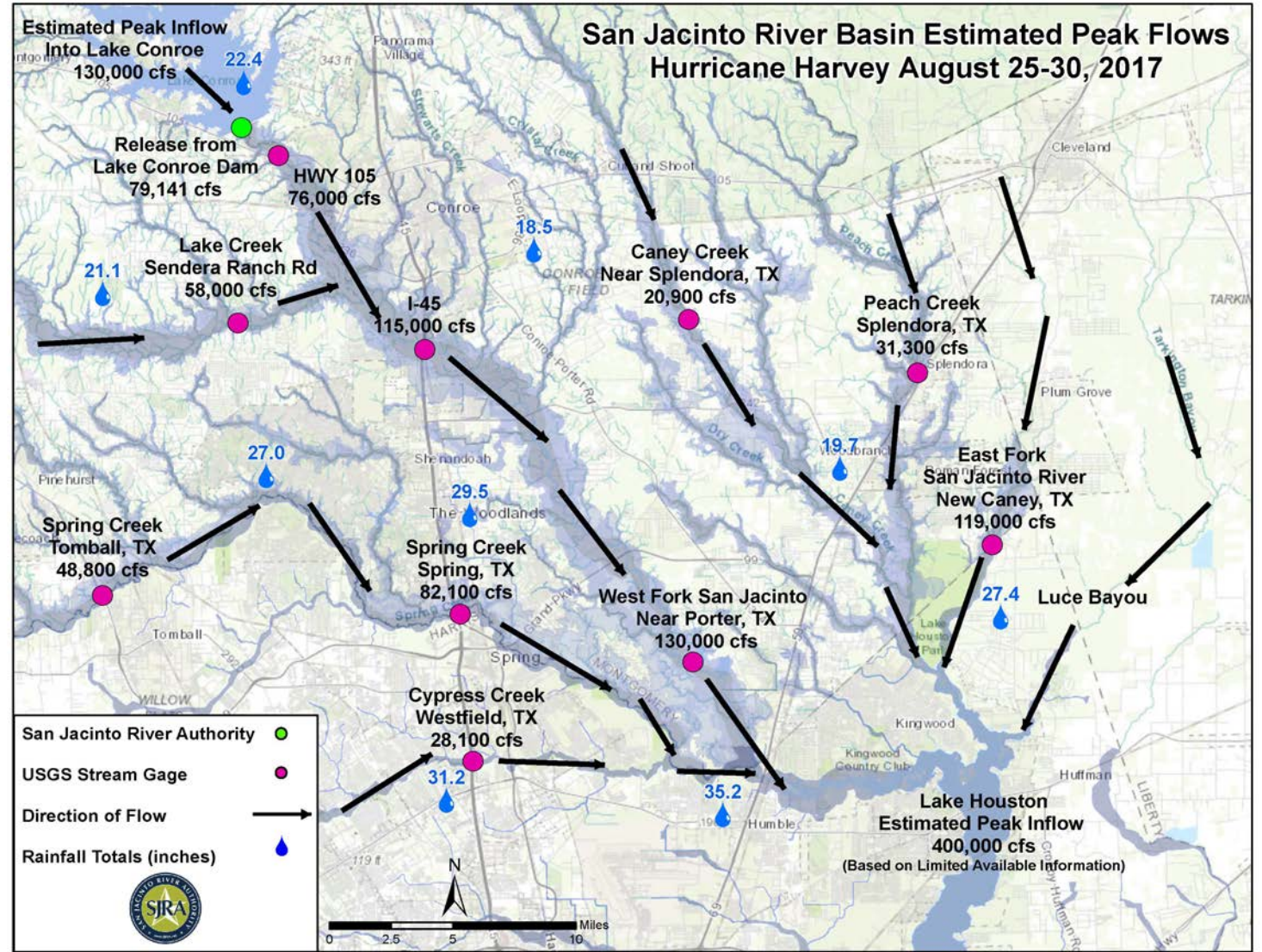
Where were you when Harvey came?



Harvey

- Average of 33" of rain in 4 days across Harris County.
- 120,000 structures damaged in Harris County alone.

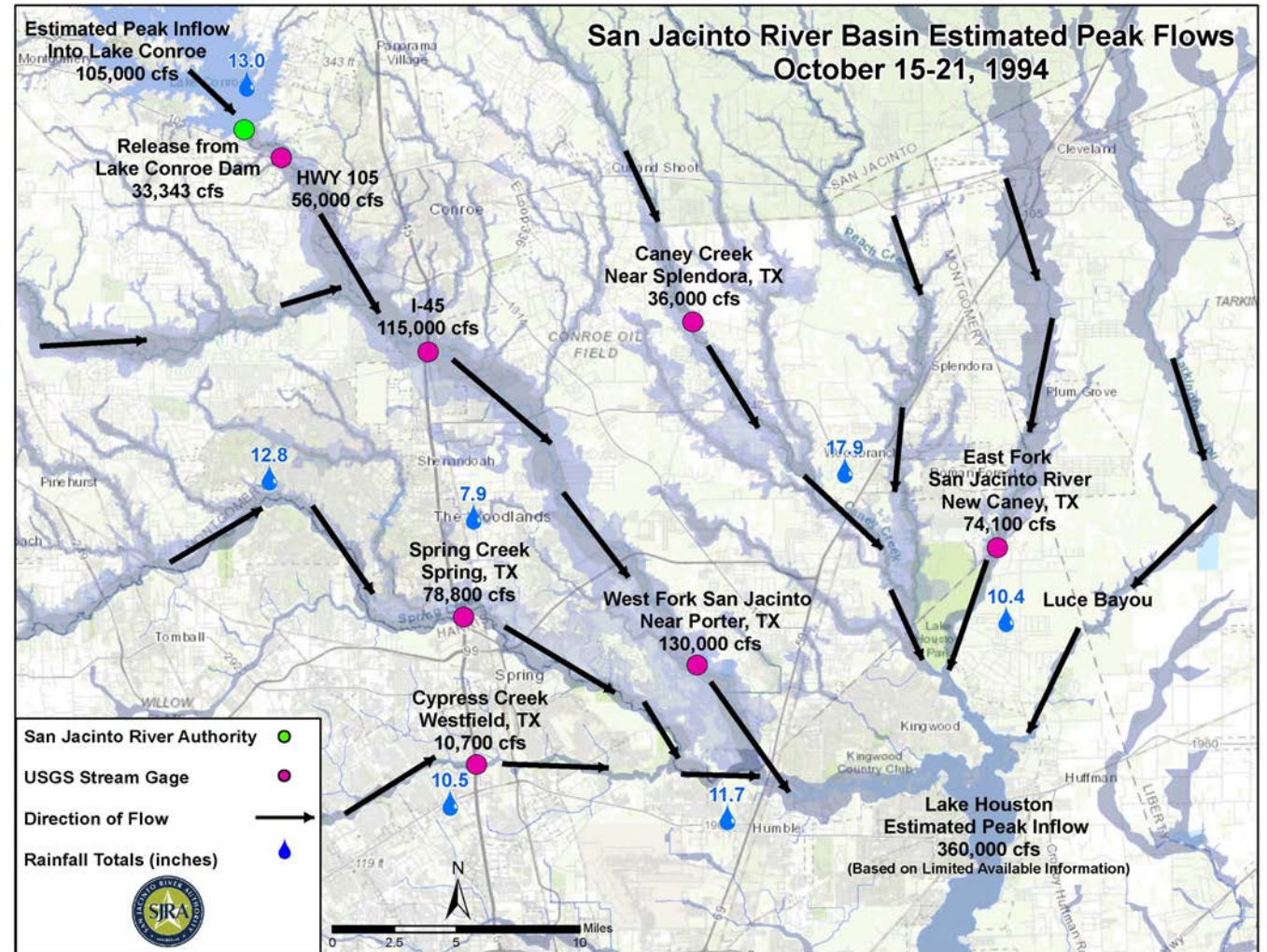
Source: HCFC
Website



October 1994:

- 3096 Homes damaged in Harris County

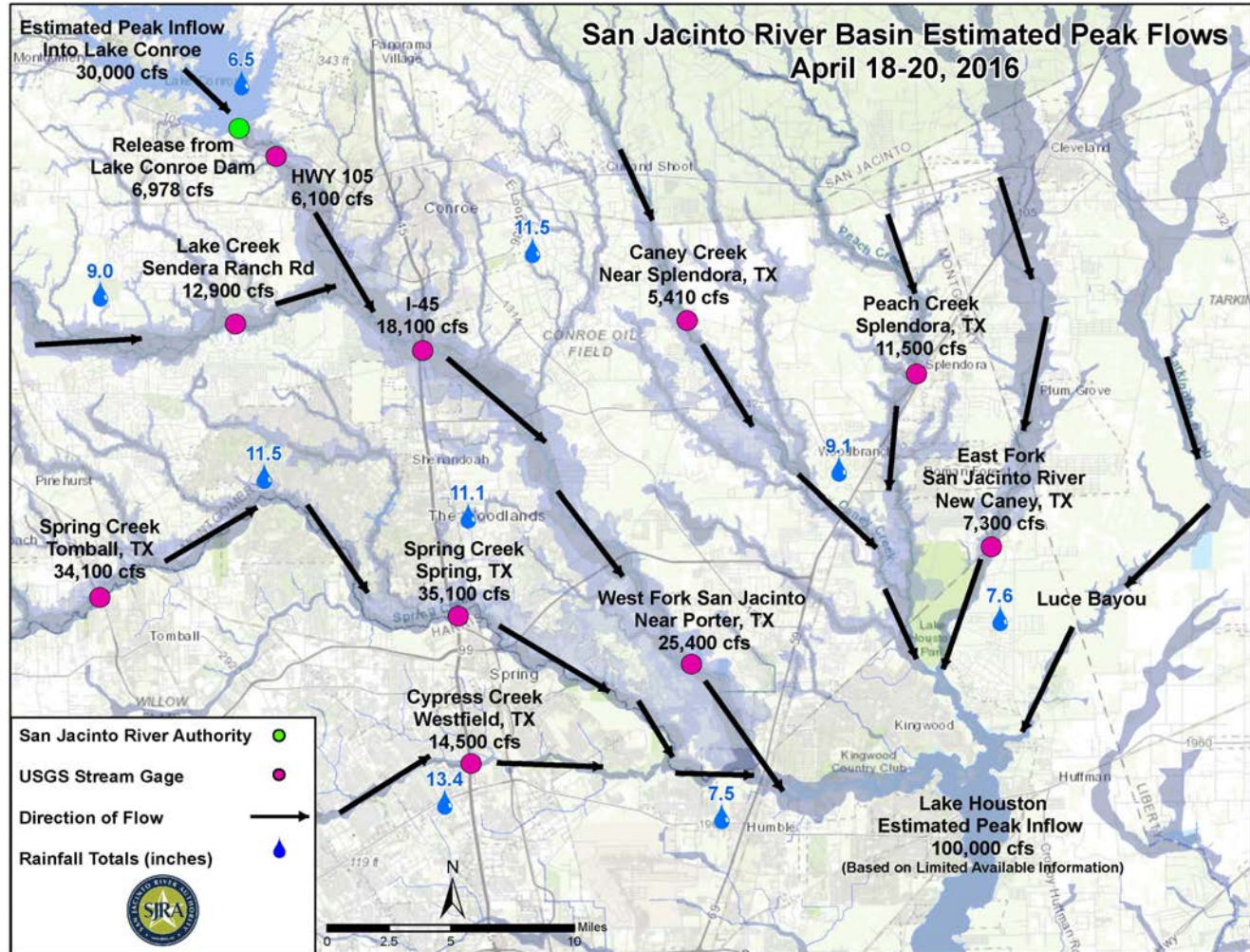
Source: American Red Cross



April 18-20, 2016

As of 3 p.m. local time, Houston Intercontinental Airport had received 11.75 inches of rain since midnight. If confirmed, this would make today the wettest day on record there, which was 10.34 inches on June 26, 1989.

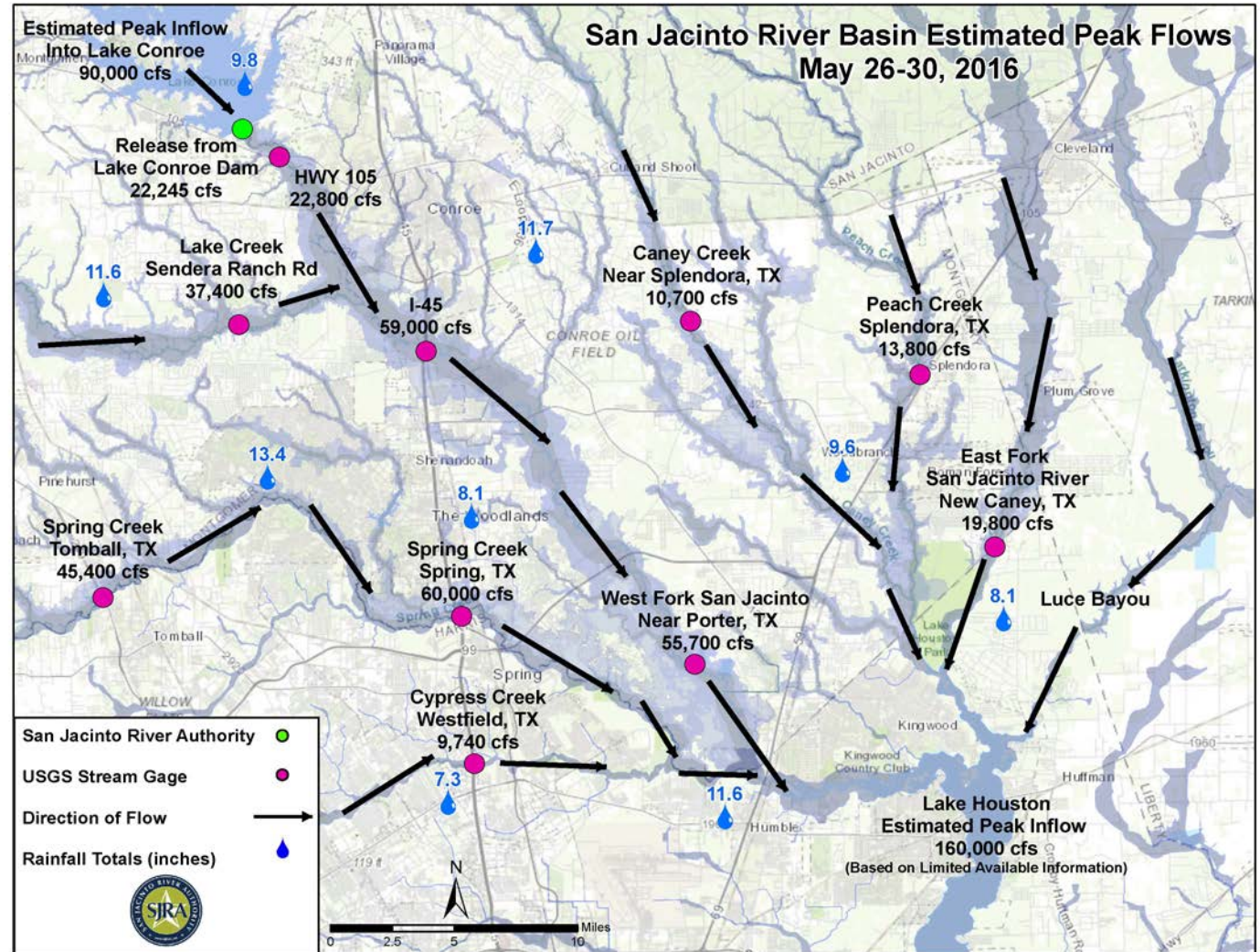
Source: Mashable.com



May 26- 30, 2016

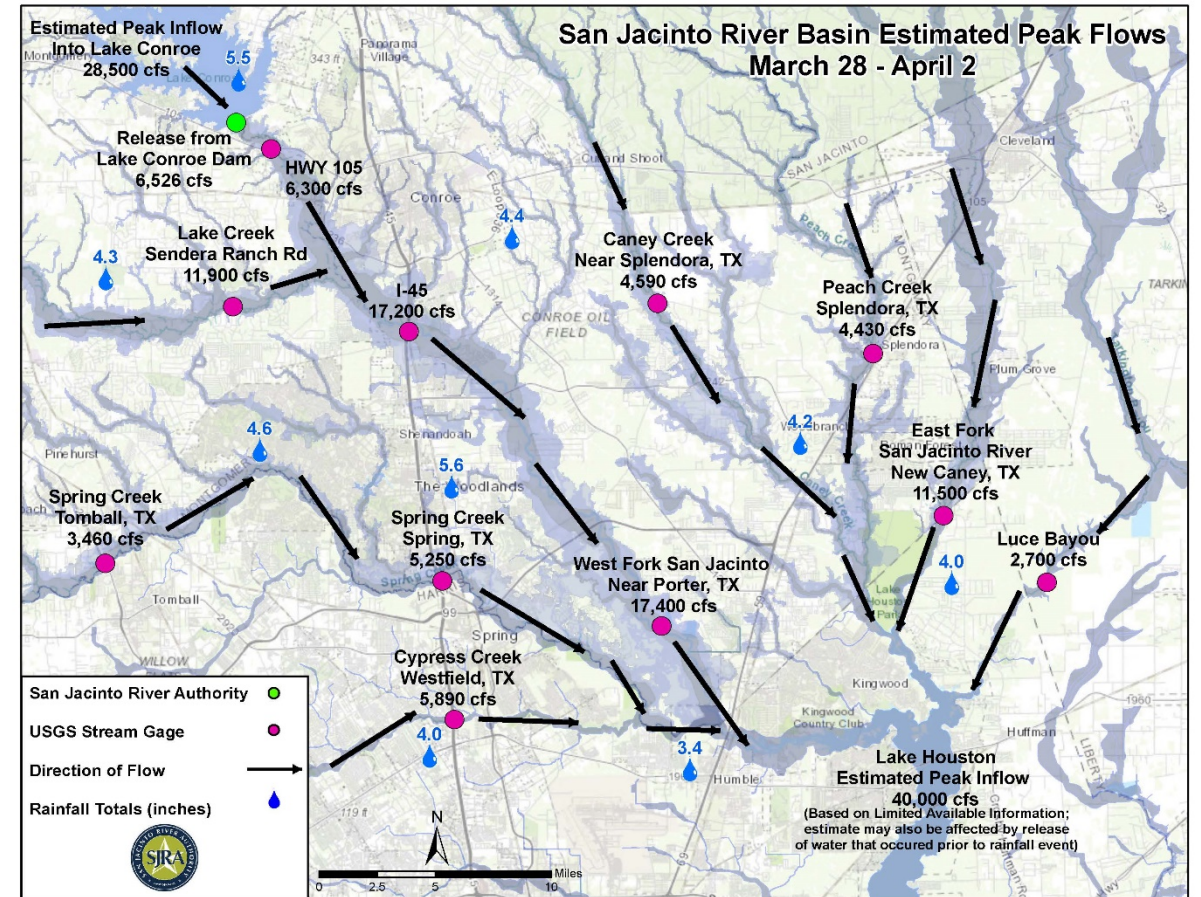
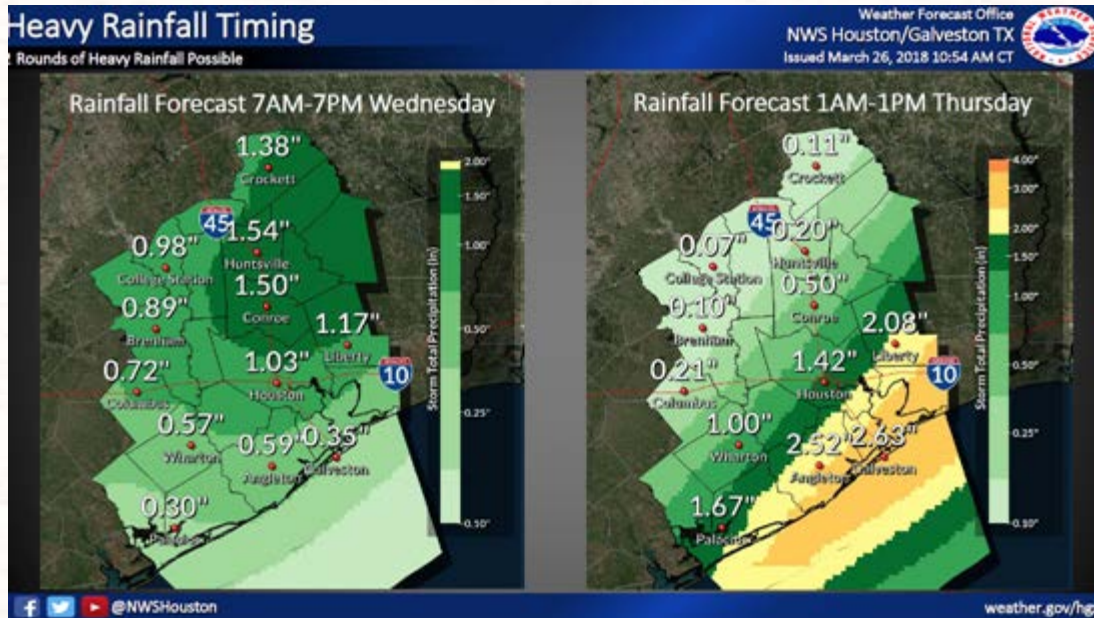
At one point on Thursday, flash flood watches covered more than 183,000 square miles of Texas, an area about the size of Germany and England combined. *More than 15 inches* of rain fell just northeast of Houston in a span of 12 hours on Thursday, just a few days after *more than 20 inches* fell in two days northwest of the city—the region's second 100-year rainstorm in less than a week.

Source: Slates.com



Good Friday 2018

- 5" of rain can cause the river to crest.
- Dave Martin pre-released Lake Houston



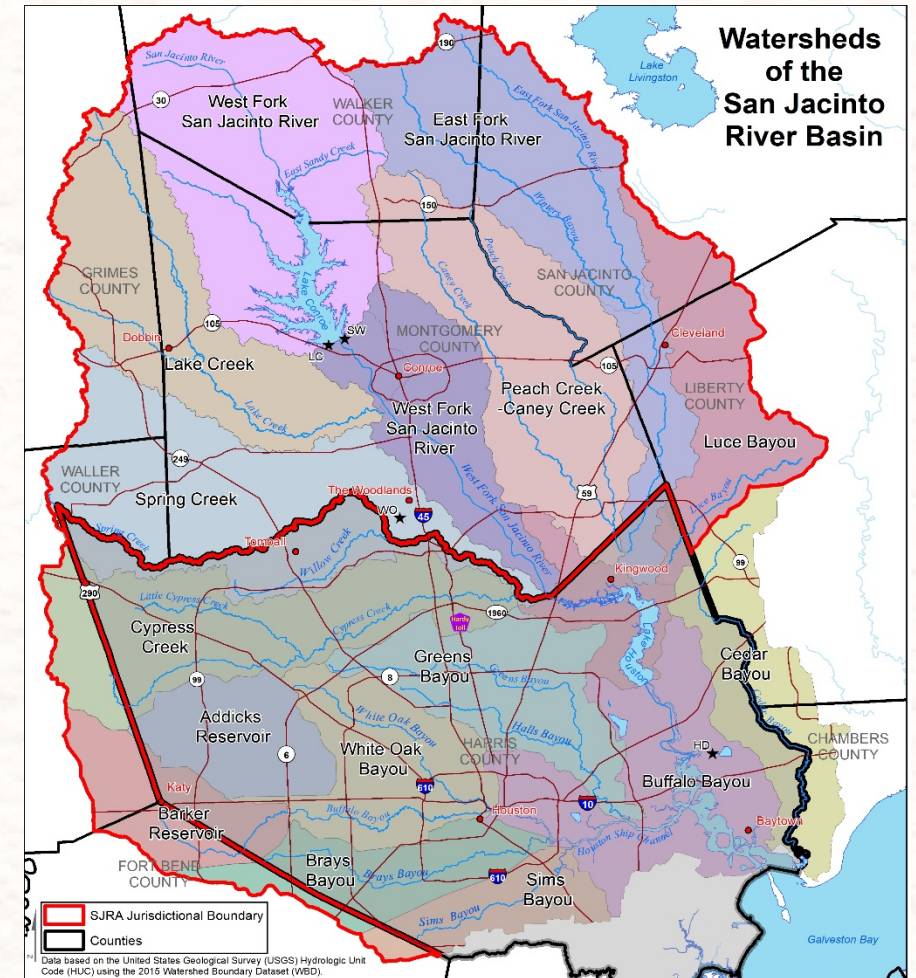
Source: ReadyHarris.org

Bottom Line:

- No TWO storms are Alike
- There are MANY uncontrollable water sources in the San Jacinto Watershed
- There are MULTIPLE agencies involved.

San Jacinto River Basin Watershed

- *Montgomery County
- * Harris County
- * City of Houston
- * Walker County
- * Liberty County
- * Waller County
- * Chambers County
- * Fort Bend County
- * Coastal Water Authority
- * 100's of Mud Districts
- * Lake Houston Chamber of Commerce




Governor Abbott visits Kingwood on March 15, 2018:

During the meeting the Governor announced a number of important and specific steps Texas will be taking to help prevent future flooding. These actions include:

- Using [Hazard Mitigation Funds](#), the Texas Department of Emergency Management (TDEM) has authorized \$3 million to jumpstart the engineering and permitting process to determine where dredging should on the San Jacinto River.
- Using Hazard Mitigation Funds, TDEM has authorized \$2 million for a regional study focused on the San Jacinto River watershed to prevent future flooding.
- Using Hazard Mitigation Funds, FEMA has approved over 900 voluntary buyouts in Harris County.
- Instructing the Texas Commission on Environmental Quality to investigate and take action against sand mining operations violating regulations.
- Directing the San Jacinto River Authority (SJRA) to immediately identify what can be done to prevent flood events along the West Fork of the river.
- Directing the SJRA to implement immediate and long-term solutions to protect lives and property of Texans living in the watershed.
- Directing the SJRA to identify funding to implement a long-term plan that better protects areas downstream of Lake Conroe

Source: Governor Abbott Press Release



SJRA Responds

- SJRA Announces an New Flood Management Initiative

In response to the Governor's charge, the Board of Directors and leadership team of the SJRA have decided to create a new flood management division and begin implementing flood mitigation activities, a role that is outside the norm for river authorities in Texas

- SJRA Hires Chuck Gilman, P.E. as Director of Flood Management

Chuck comes to the Authority from the City of College Station where he served as the Deputy City Manager and was recently elevated to the role of Interim City Manager. During his time at the City, he also served as the Assistant Director of Water Services, Director of Capital Projects, and Director of Public Works. Over the last ten-plus years, Chuck has held positions of responsibility covering every aspect of municipal administration, including utilities, transportation, drainage, emergency planning and response, planning and zoning, and legislative and governmental affairs. Prior to his time at the City of College Station, Chuck served in the private sector as an engineering consultant, overseeing the design and construction of a variety of civil engineering projects.

Chuck is a licensed Professional Engineer in the State of Texas and holds a Project Management Professional Certification from the Project Management Institute. He earned a Bachelor of Science in Civil Engineering from Texas A&M University.



Source: SJRA Press Releases

SJRA works on a watershed-wide Flood Study

HCFC/D/SJRA/Montgomery County/COH are working on a regional study for the upper San Jacinto basin.

- Leveraging \$2 million in FEMA funds through Texas Division of Emergency Management.
- Looking at enhanced flood warning tools, sedimentation, and flood mitigation strategies.

Table 1. Streams that will be Included in the San Jacinto Regional Watershed Study

Stream Name	Stream Length (Miles)
West Fork San Jacinto River	61.4
East Fork San Jacinto River	73.2
San Jacinto River	16.3
Lake Creek	58.9
Cypress Creek	60.5
Little Cypress Creek	20.8
Spring Creek	69
Willow Creek	19.8
Caney Creek	49.3
Peach Creek	53.5
Luce Bayou	31.2
Tarkington Bayou	17.1
Jackson Bayou	4.6
Total	535.6

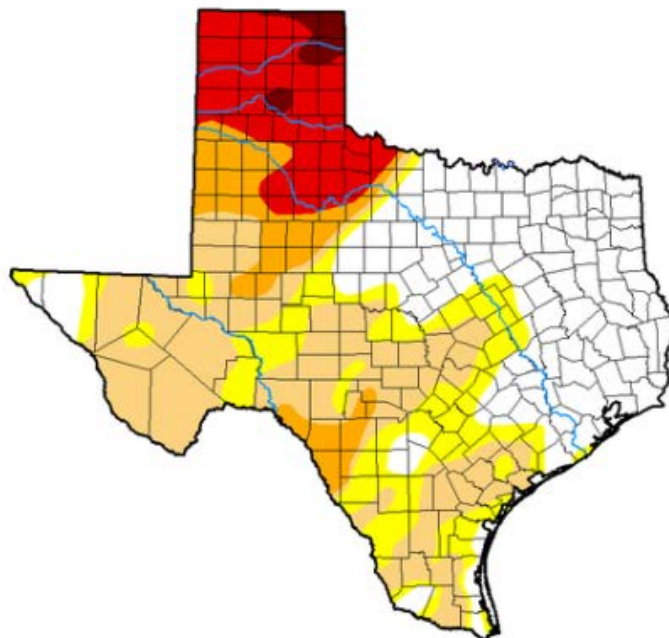
Talks to increase temporary Reservoir capacity:

- Why is lowering Lake Houston and Lake Conroe such a complex issue?
 - Lake Houston can only release 10,000 cfs
 - Lake Conroe is permitted for 1/3 SJRA and 2/3 City of Houston
 - This is areas drinking water
 - The rest of the State is experiencing a drought
 - The temporary lowering of Lake Houston was met with negative feedback
- Current discussions between TCEQ, TWDB, COH and SJRA

U.S. Drought Monitor - Texas

As of April 3, 2018

Author: David Miskus, NOAA/NWS/NCEP/CPC



Drought Conditions (Percent Area)

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current 4/03/2018	33.29%	66.71%	49.43%	21.57%	13.21%	1.47%
Last Week 3/27/2018	26.19%	73.81%	64.23%	28.30%	15.08%	1.21%
Three Months Ago 1/02/2018	33.37%	66.63%	33.56%	5.94%	0.11%	0.00%
Start of Calendar Year 1/02/2018	33.37%	66.63%	33.56%	5.94%	0.11%	0.00%
One Year Ago 4/04/2017	82.49%	17.51%	2.91%	0.01%	0.00%	0.00%

Drought Intensities

None: No Drought
D0: Abnormally Dry

D1: Moderate Drought
D2: Severe Drought

D3: Extreme Drought
D4: Exceptional Drought



<http://droughtmonitor.unl.edu/>

Other agencies have also responded:

- Federal Government (FEMA, USACE)
- State of Texas (GLO)
- State Agencies (TCEQ)
- State Legislature
- Montgomery County
- Harris County
- City of Houston
- Lake Houston Area Chamber of Commerce

Post- Harvey Federal Assistance

- HUD
 - CBDG Disaster Recovery Dollars: \$5.024 billion block grant – current open comment from texasrebuilds.org. Half of this money should go to Harris County.
- FEMA
- USACE
 - Just completed 1D Study of SJR and should have preliminary plan at the end of the week. (Dredge SJR)

Post- Harvey State Assistance

- Respond to GLO Notice of Public Comment by mail/fax/email or online form.
 - <http://www.glo.texas.gov/the-glo/public-information/notices/notices/notice-of-public-comment-for-hurricane-harvey-state-action-plan-round-1.html>
 - Here is a master site for GLO-CDR Action Plans and Amendments
<http://www.glo.texas.gov/recovery/reports/action-plans/index.html>
 - Deadline is 5:00 p.m. April 26th
- TCEQ
- TWDB
- Governor Greg Abbott
- Senator Brandon Creighton
- Congressman Dan Huberty

Montgomery County:

- Partner in SJRA study
- Looking at putting detention ponds along Spring Creek, Caney Creek and Peach Creek (all flow in to Lake Houston through the East Fork
- No designated flood funding like HCFCD



Harris County:

- Managed initial debris pick up.
- Passed ordinance that required residents in homes and business located within the 100-year floodplain to be built two feet above the 500-year floodplain to mitigate flooding to structures (December 5, 2017)
- Drainage network assessment and repairs
- Partner with SJRA in watershed-wide flood study
- * HCFCD spearheading effort to regionalize and expand their flood warning system.
 - Cell phone driven warning system planned
 - Would include more gages and more predictive tools to increase notice time.
 - Readyharris.com
 - Add to Facebook and Twittter
- Talks about a Harris County Bond for Flood Projects (Date and Amount and designation TBD)
- Manages FEMA Home buyout program
- Harris County Appraisal District (HISD form September and new valuation from January 1)

City of Houston:

- Studying Lake Houston Dam to increase release capacity.
<http://www.houstontx.gov/council/e/kingwood/lake-houston-interim-findings.pdf>
- Chapter 19 passes City Council.
- Discussions with SJRA about seasonal lowering of Lake Houston and Lake Conroe.
- COH conducting targeted studies
 - Steve Costello, Flood Czar
- Councilman Dave Martin, Kingwood



Lake Houston Area Chamber of Commerce

- * **Federal disaster tax credits**

- HR3823

- * **Small business loans**

- 0% Interest
- \$25,000 with 4 month deferment
- Goldman Sachs, Susan and Michael Dell Foundation, etc.

- * **Small business grants**

- Lift Fund
- \$225,000
- Grants up to \$5,000 each

Summary of projects under Consideration

- Dredge the San Jacinto River (one time and maintenance)
 - Ensure aggregate processors are not continuing to add to the siltation problem in the SJR
 - Increase seasonal capacity in Lake Houston and Lake Conroe until long-term projects take effect
 - Increase the capacity of Lake Houston Dam
 - Creation of additional reservoirs
 - Additional building restrictions in adjacent counties
 - Area-wide flood prevention program
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