

Flooding in Harris County

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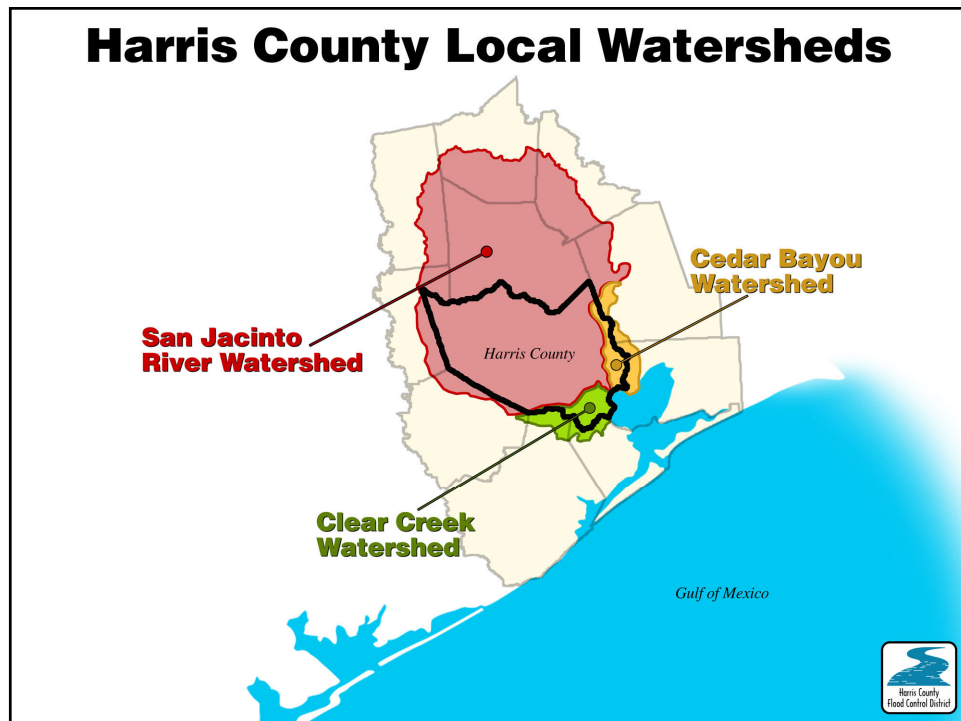
4 “Great” Rainfalls in 38 Years

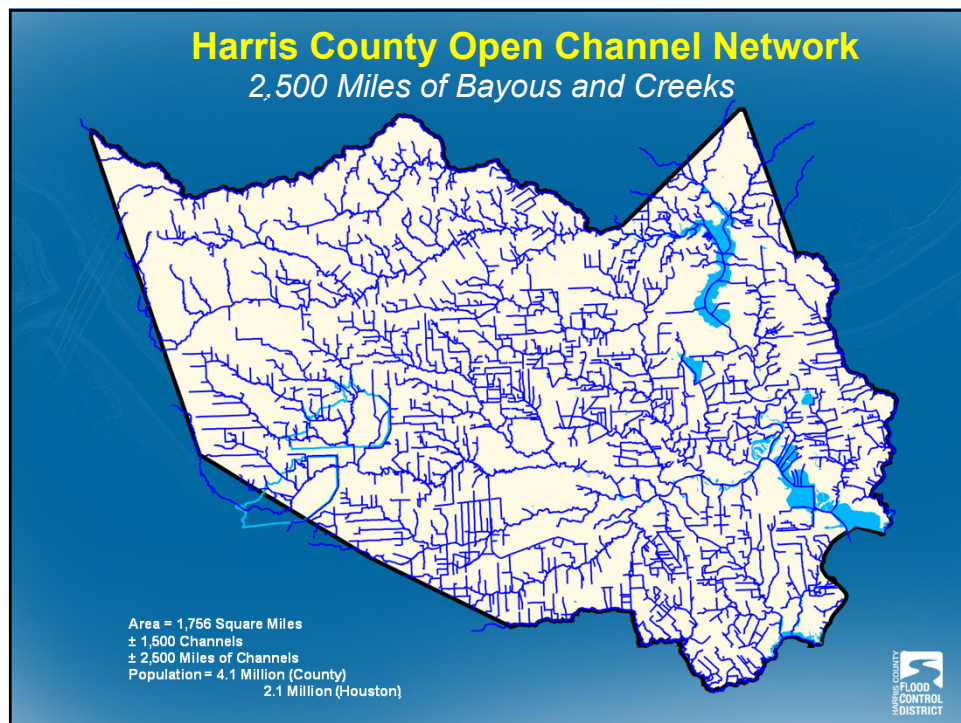
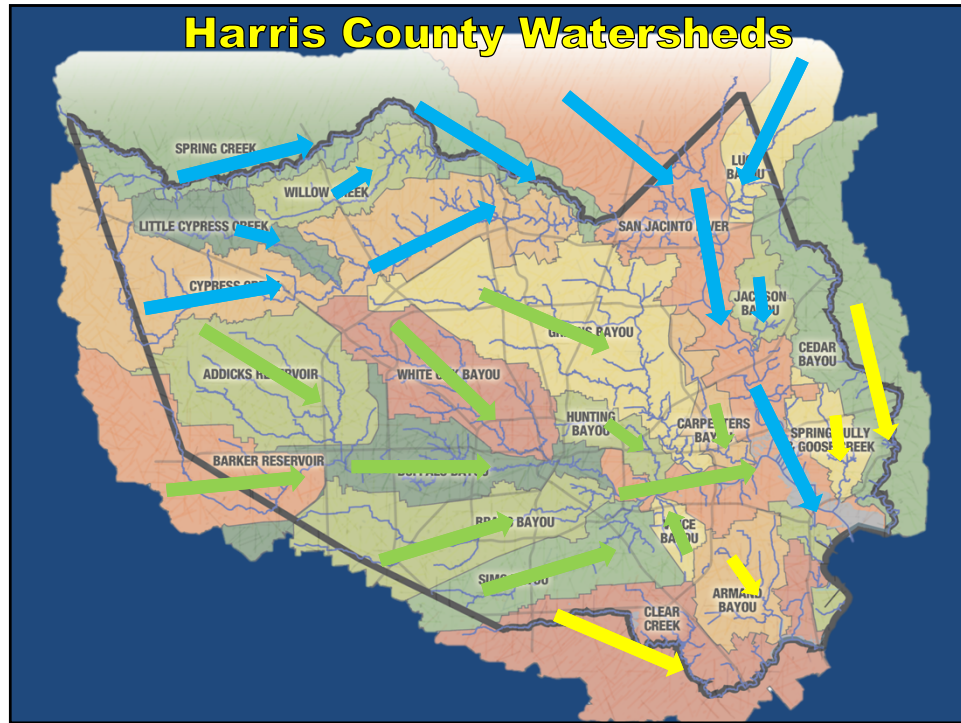
July 1979 (TS Claudette): 43.0 inches (24-hrs)
US 24-hr rainfall record
Alvin (Brazoria County)

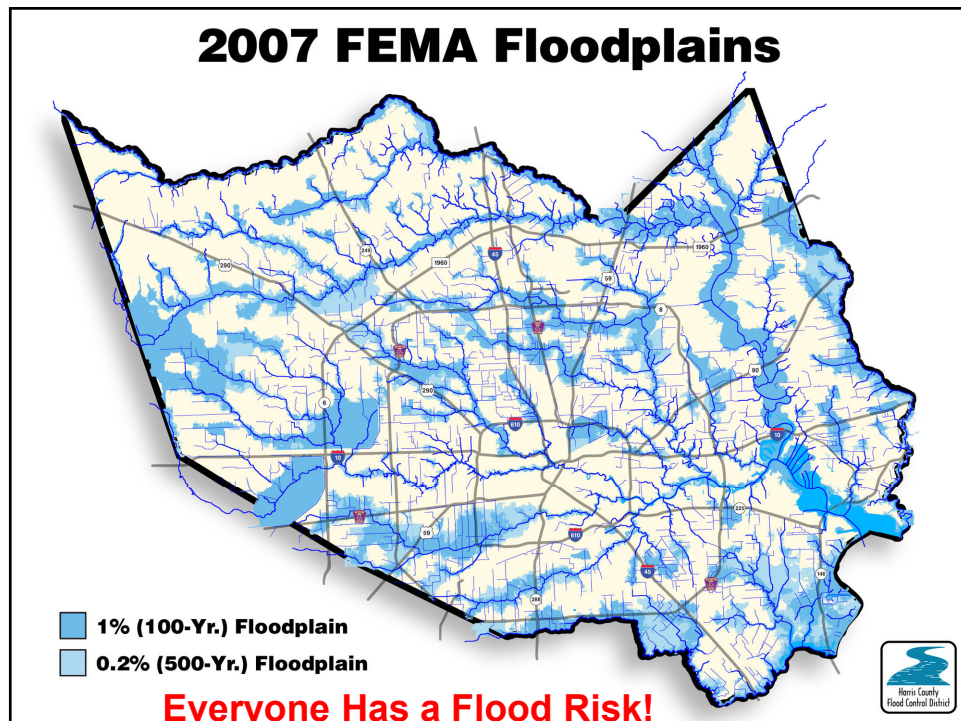
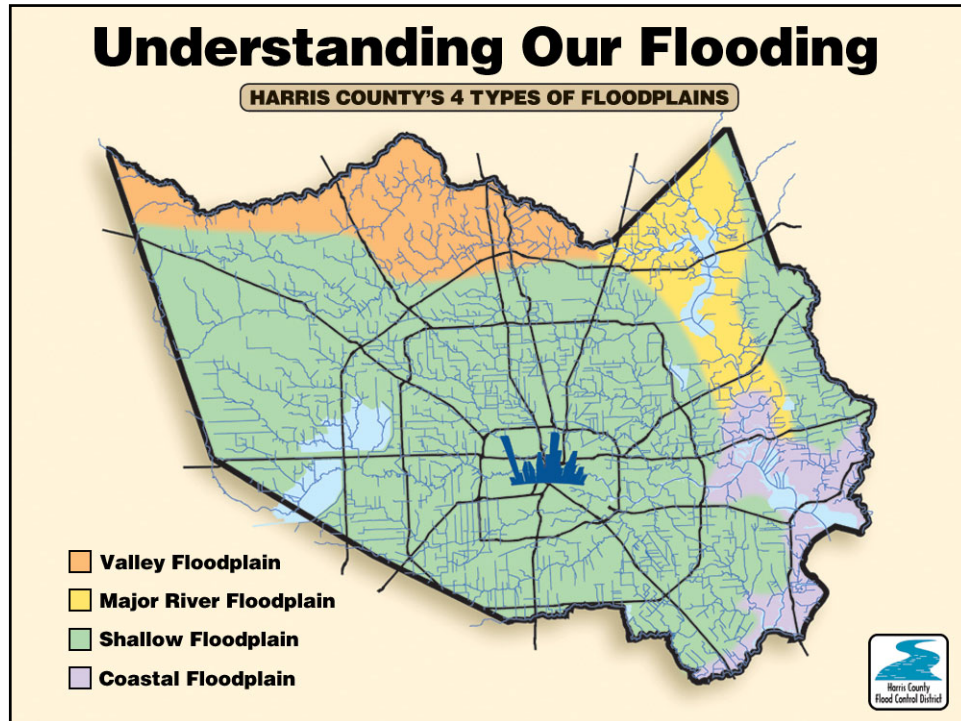
June 2001 (TS Allison): 28.5 inches (12-hrs)
Greens Bayou (NE Harris County)

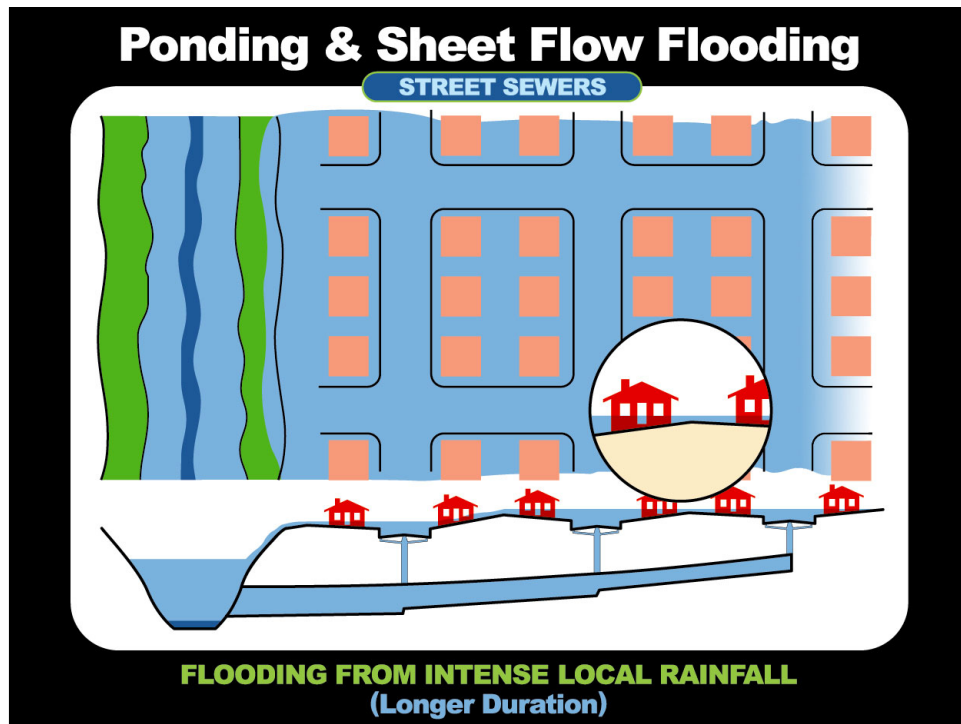
Tax Day 2016: 23.5 inches (12-hrs)
S Waller County

Harvey 2017: 25.6 inches (24-hrs)
47.4 inches (4 days)
S Harris County (Clear Creek at I-45)

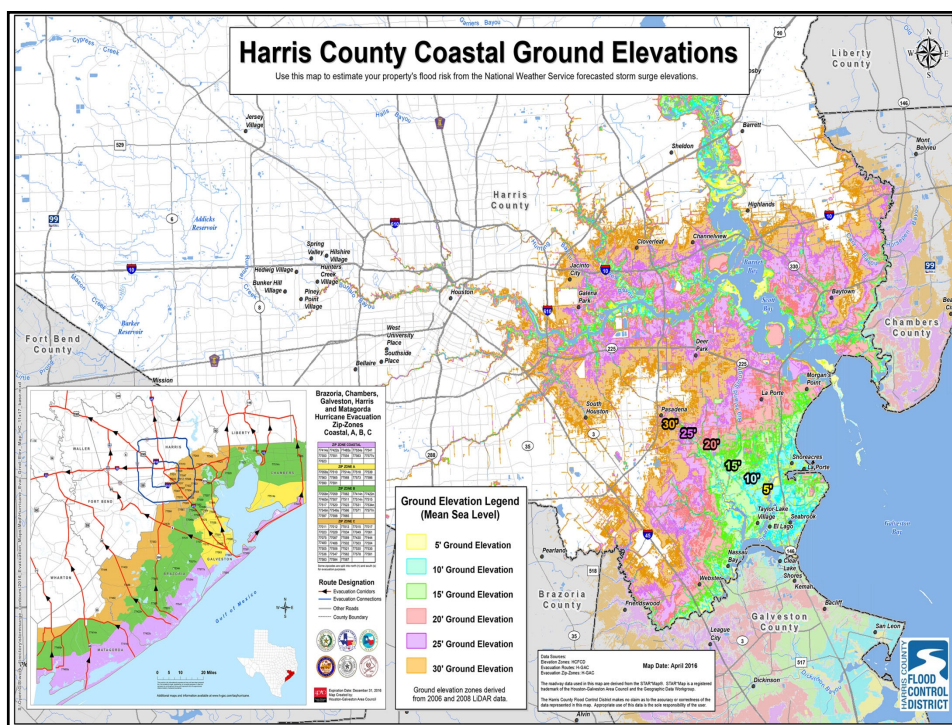


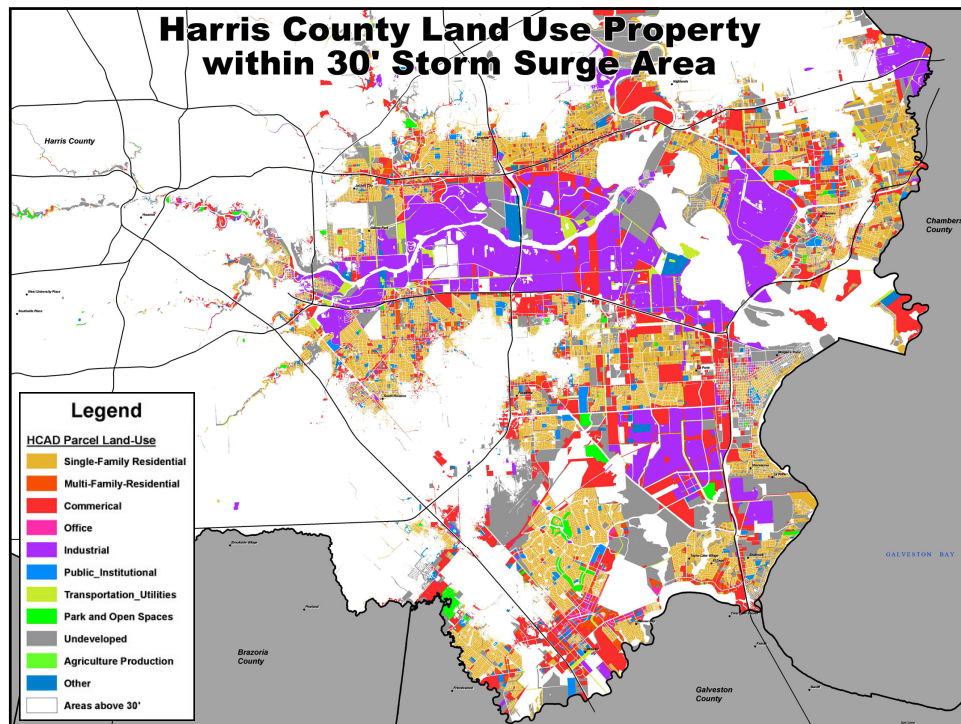






Storm Surge





Hurricane Harvey - Rainfall

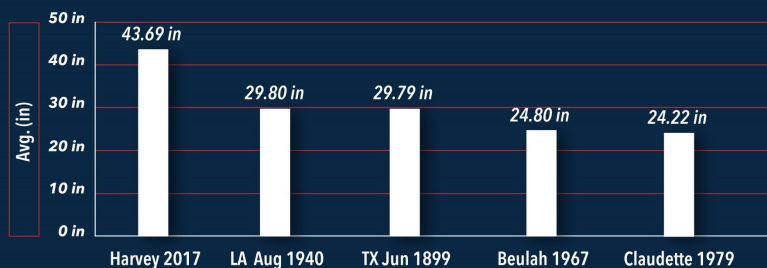
Duration	Max Rainfall	Duration	Max Rainfall
15-min	2.0	6-hr	18.9
30-min	3.6	12-hr	20.9
1-hr	6.8	24-hr	25.6
2-hr	11.9	2 day	34.6
3-hr	14.8	4 day	47.4

Location	Rainfall	Duration
Nederland (Jefferson Co)	60.58	5-day
N Groves (Jefferson Co)	60.54	5-day
Friendswood	56.00	5-day
Santa Fe	54.77	5-day
League City	52.87	5-day
Webster	52.30	5-day

Harvey Smashes US Rainfall Records

2,000
square miles

Duration: 120 h



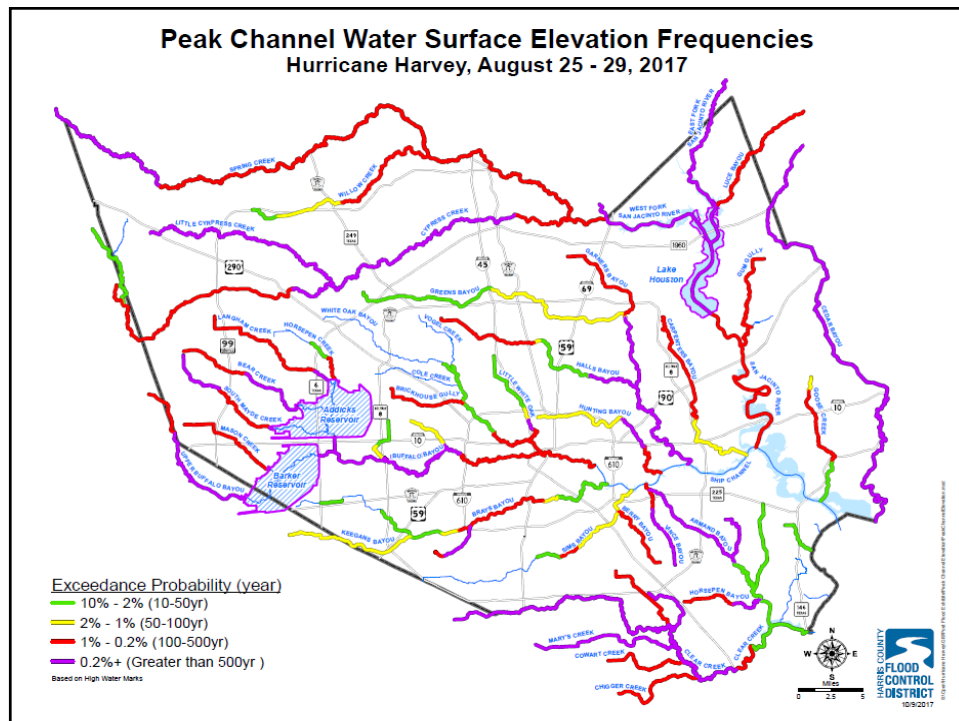
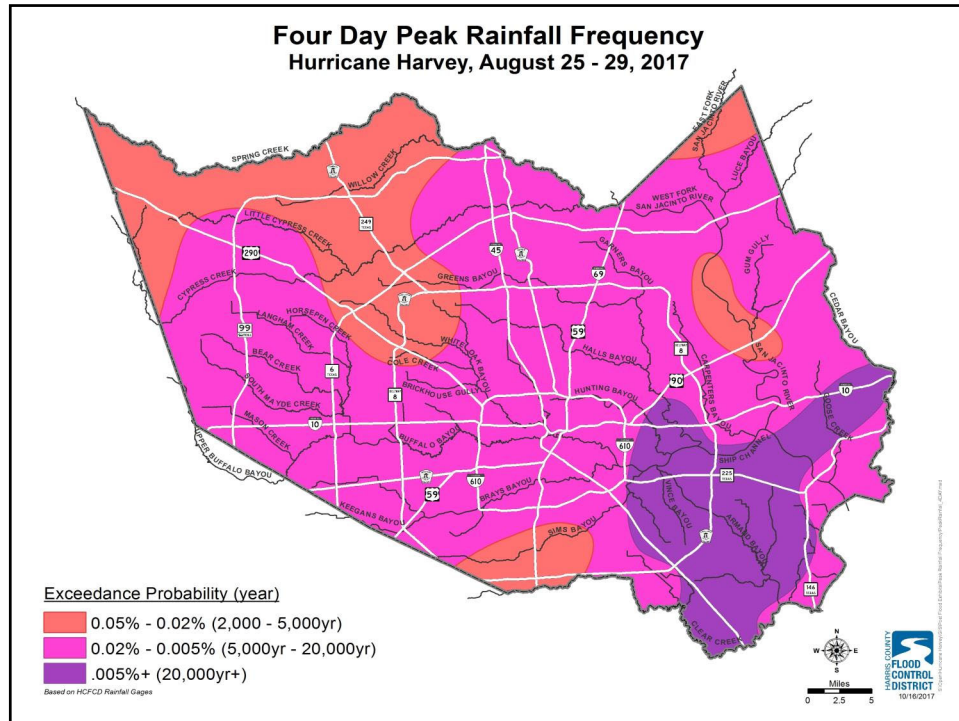
47% over previous record

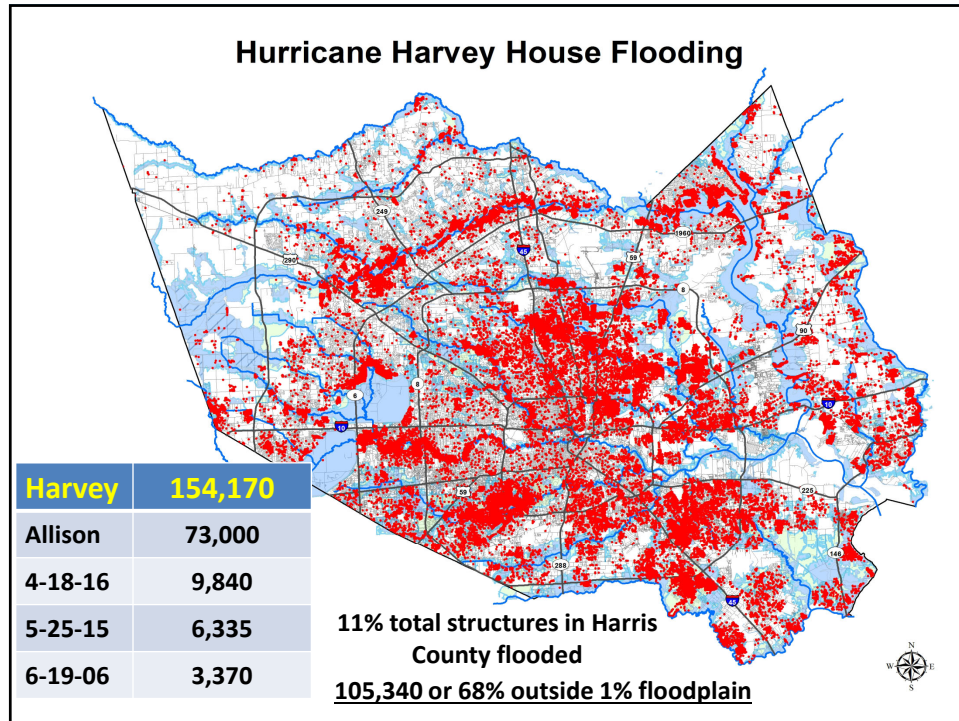
TX State Climatologist

- 1530 Billion gallons
- Fill Astrodome 4790 times
- Supply US water usage for 26 days

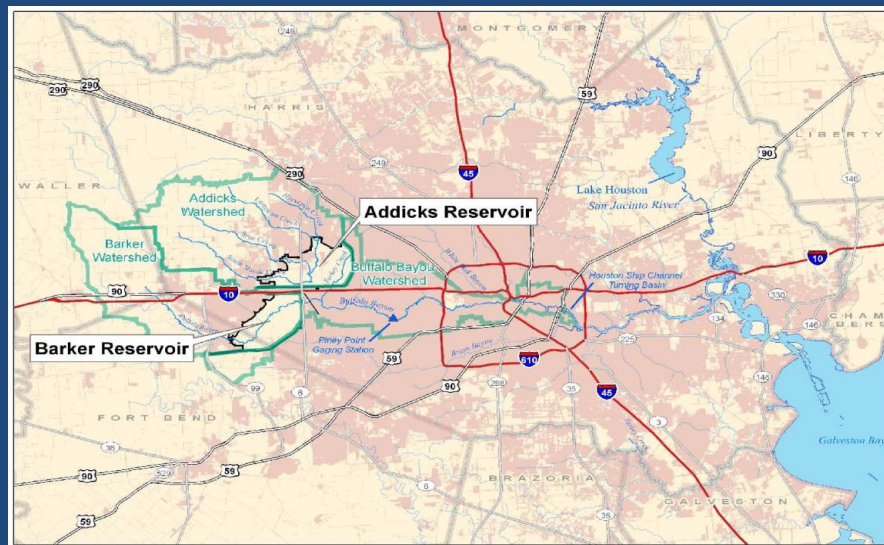
Harvey Versus Other Major Floods

Duration	Harvey August 2017	Allison June 2001	Tax Day April 2016	October 1994
1-hr	6.8	5.7	4.7	3.7
2-hr	11.9	9.9	7.3	4.7
3-hr	14.8	13.5	8.3	5.3
6-hr	18.9	21.2	13.9	7.2
12-hr	20.9	28.3	16.7	12.0
24-hr	25.6	28.4	17.4	20.9
2 days	35.2	28.5	17.5	23.1
4 days	47.7	38.5	N/A	28.9

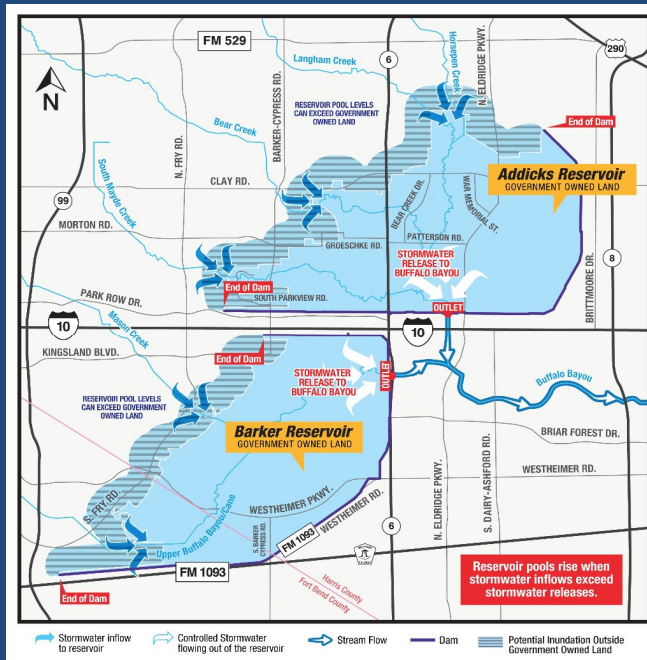




Addicks and Barker Watersheds

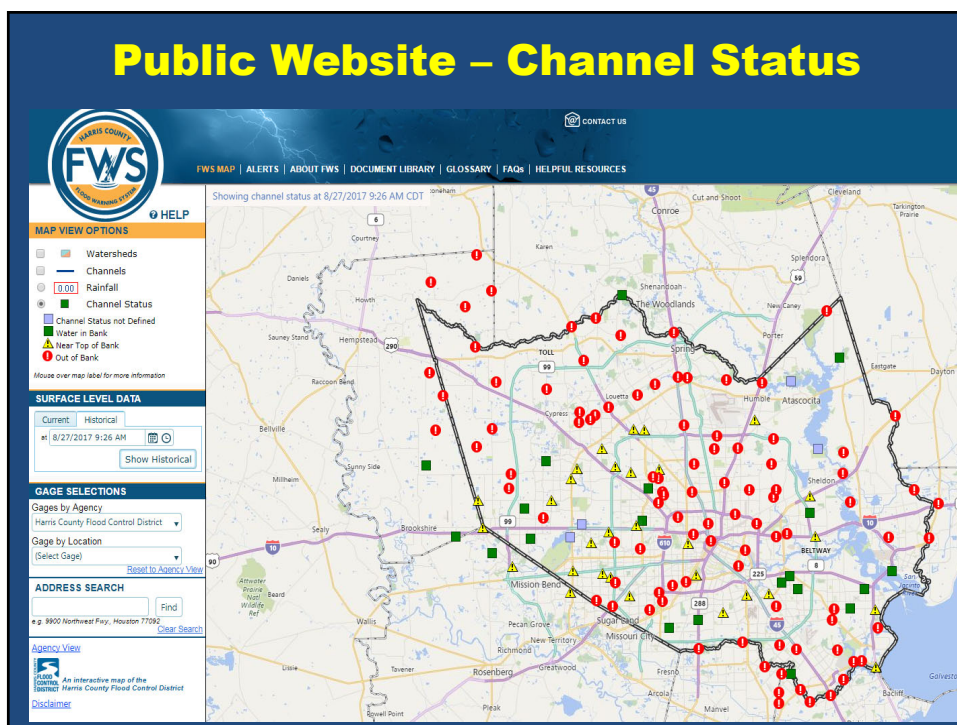
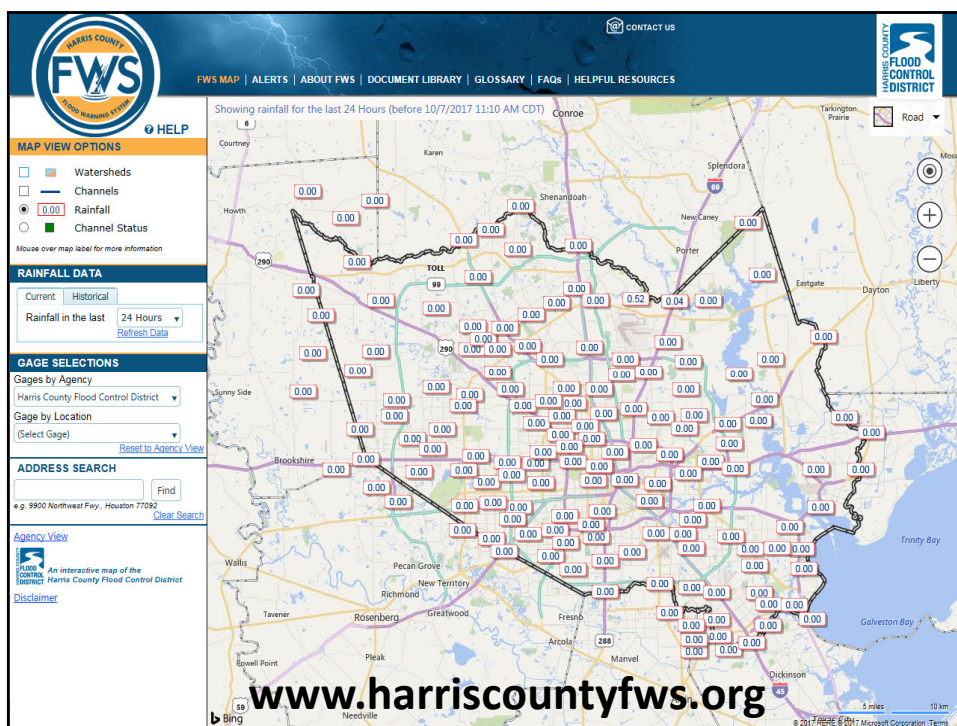


Addicks and Barker Reservoirs

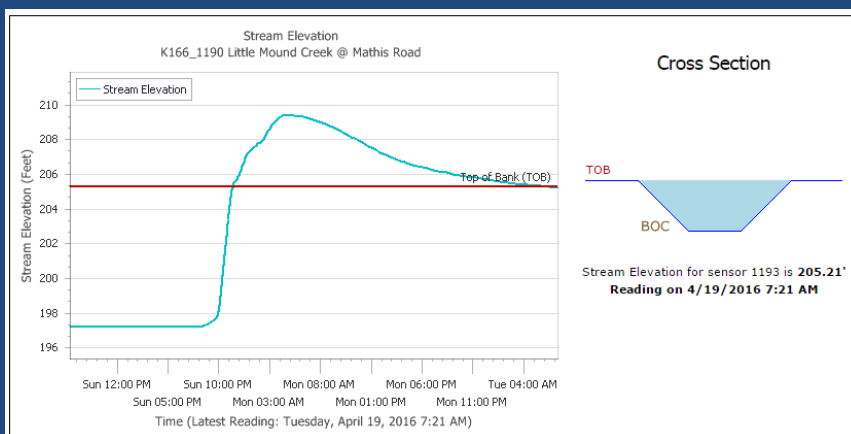


Flood Warning System





Public Website – Water Level

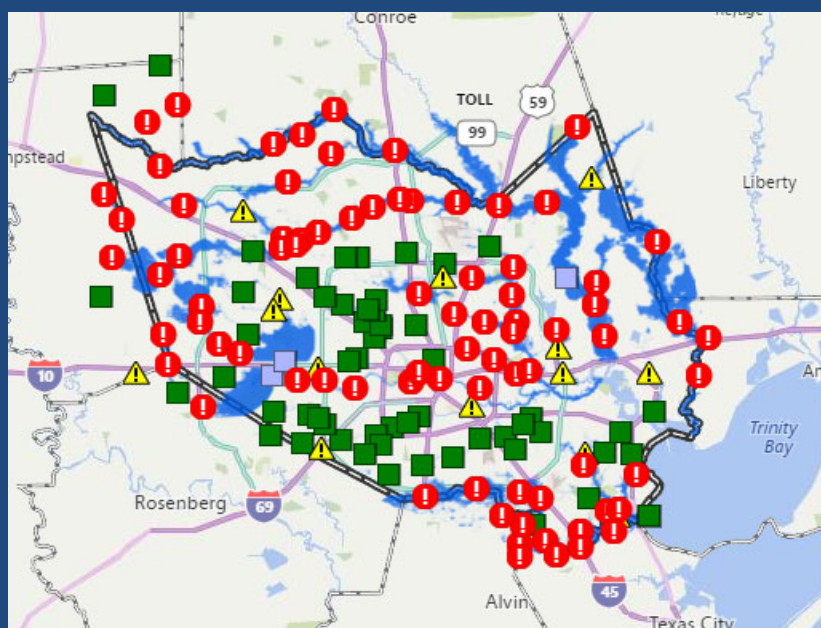


Flood Frequency	Elevation
10% (10-year)	208.80'
2% (50-year)	209.70'
1% (100-year)	210.10'
.2% (500-year)	211.10'

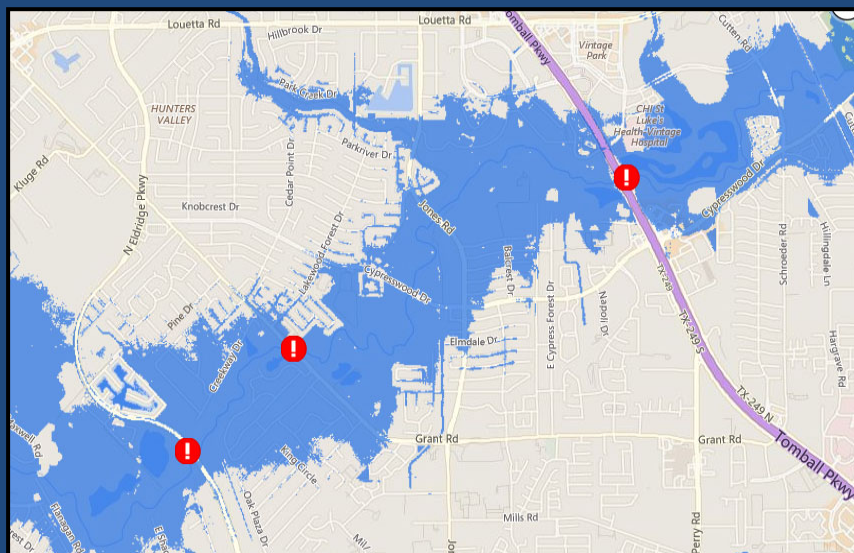
Date	Event	Elevation
7/12/2012		207.90'
4/18/2016		209.30'
5/27/2016		208.05'
8/27/2017	Harvey	208.90'

High water mark elevations are approximate.

Near Real-Time Inundation Mapping



Inundation Mapping



Rainfall and Water Level Alerts

Standard Alarms

- 1 inch of rainfall in 15 minutes
- 4 inches of rainfall in 1 hour
- Water level is (XX) Flooding possible (3 ft below bankfull)
- Water level is (XX) Flooding likely (Bankfull)

Custom Alarms

- Rainfall (TBD)
- Water Level (Bottom of Channel + 2 ft to when sites flood)
- Ability to send messages by custom threshold
- Soft launch/Internal Testing (ongoing)
- Public launch (June/July)

Other Topics of Interest

- **NOAA ATLAS 14**
Floodplain remapping
- **HCFCB Bond**
- **3rd Reservoir**
- **Dredging**
San Jacinto River
Addicks/Barker
- **Federal Projects**

Questions

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