



SHOAL CREEK FLOOD FORUM

Forum Hosted By:



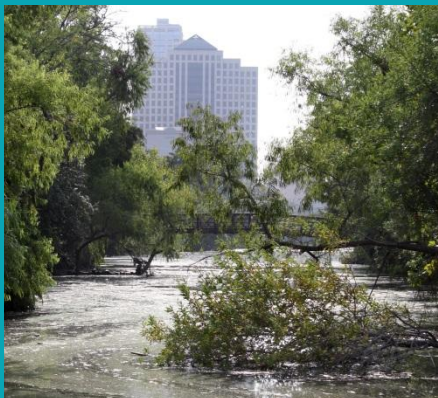
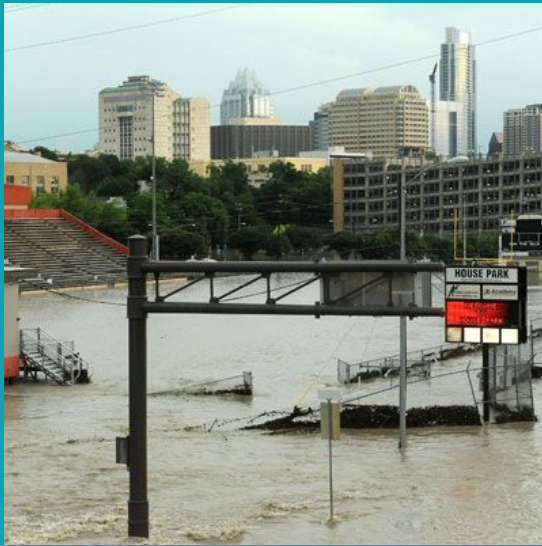
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Flooding in the Shoal Creek Watershed



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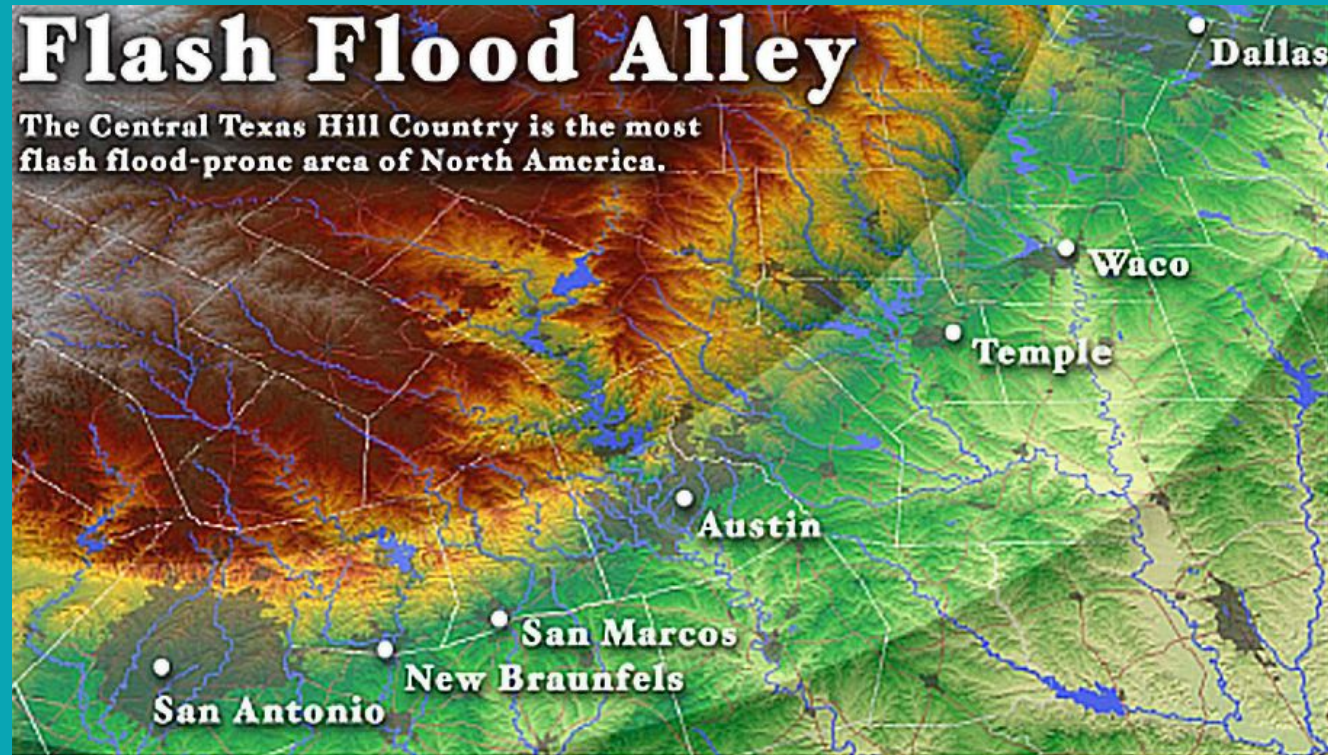


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Flash Flood Alley – Global and Local Factors

- El Nino
- Tropical Systems in the Gulf of Mexico and the Pacific Ocean
- The Convergence of Cold Fronts with Gulf Air Mass
- Hilly terrain
- First substantial increase in elevation from Gulf of Mexico
- Thin topsoil



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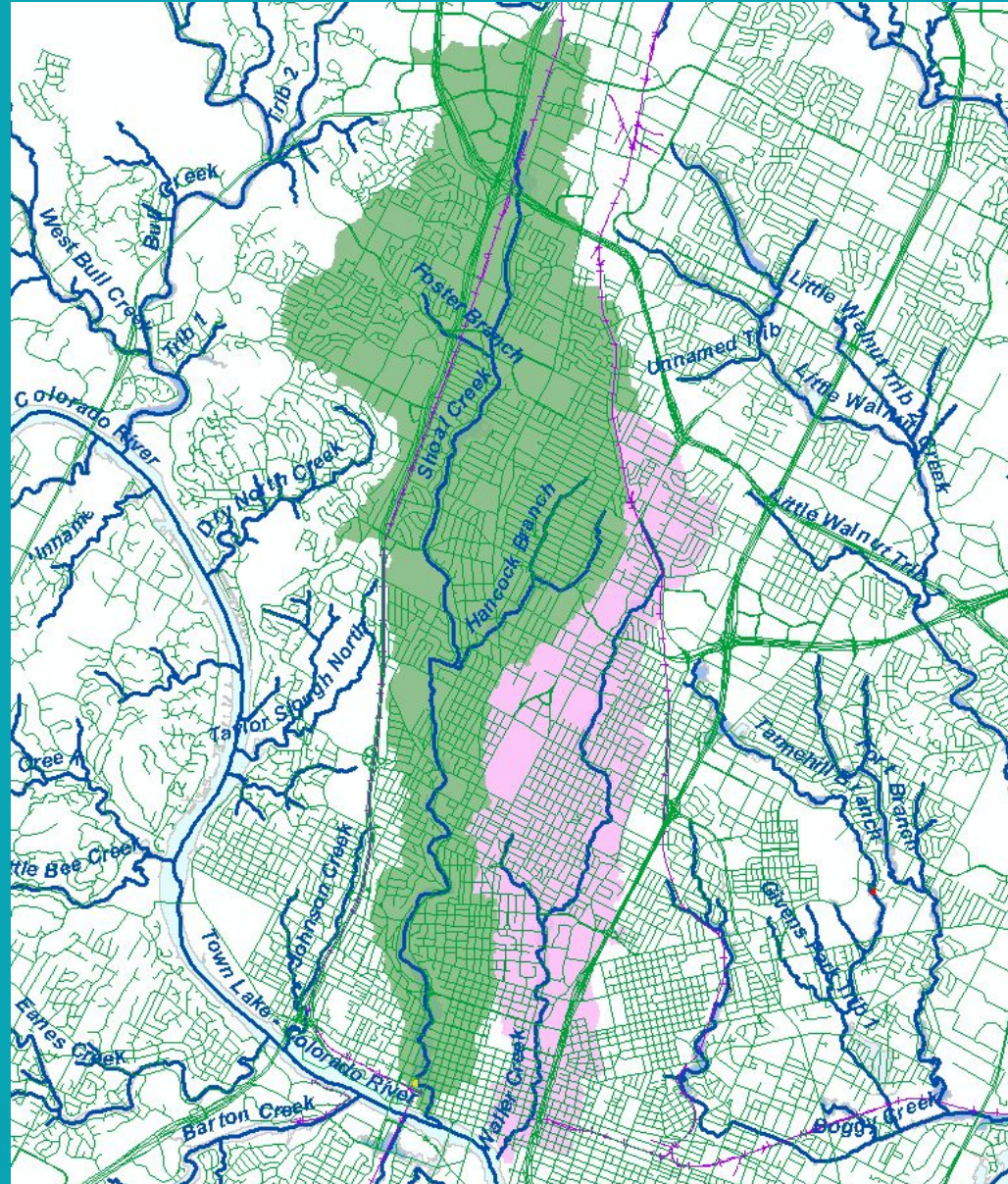
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The Shoal Creek Watershed

The Watershed is the area of land that drains to a particular creek

- 13.3 square miles of drainage area
- 14.3 miles of studied streams (Shoal Creek, Hancock Tributary, Grover Tributary)
- Fully developed watershed
- 100-year peak flow over 17,500 cubic feet per second at Cesar Chavez St.
- FEMA map dated 2021



Flash Flood Alley – Human Factors



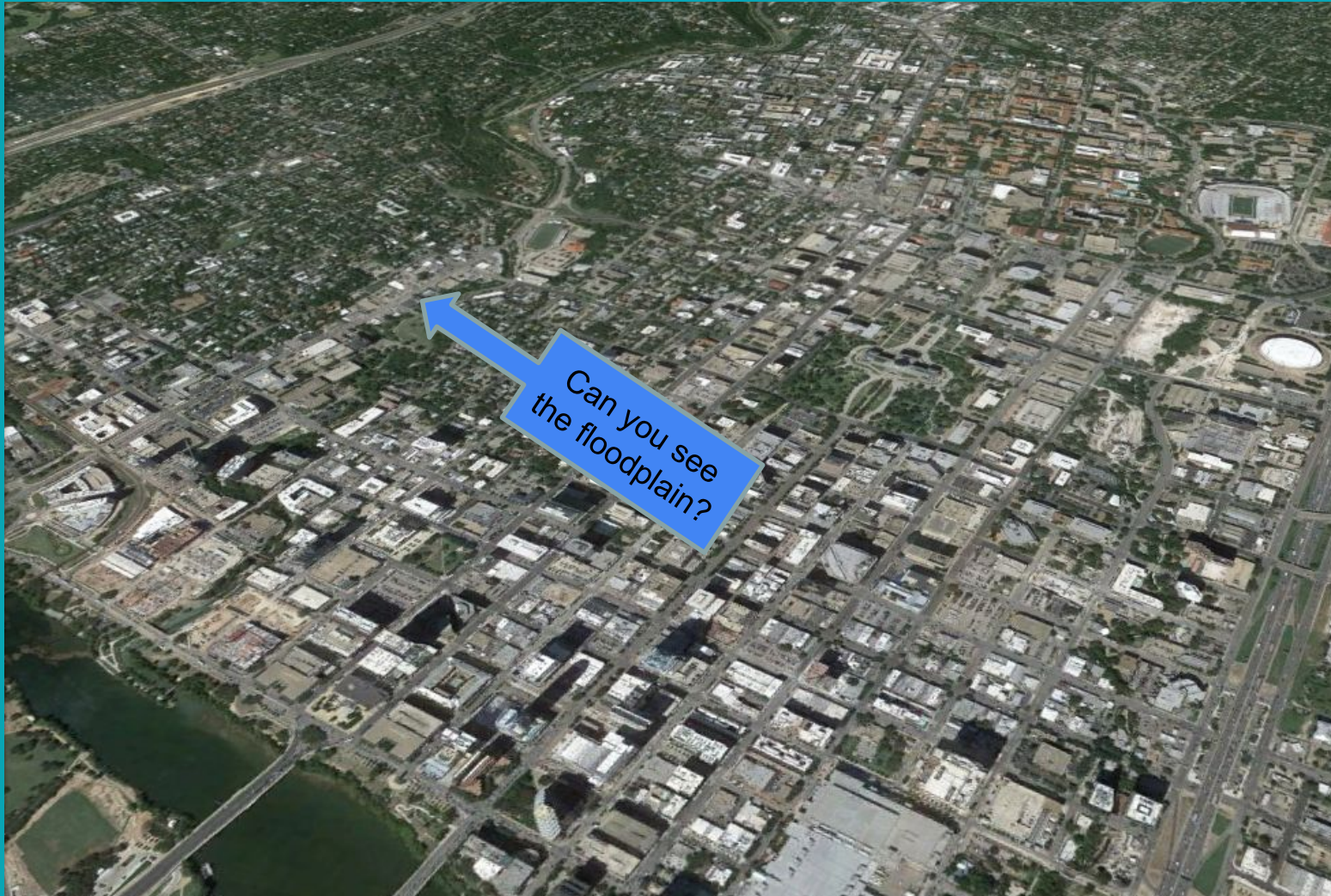
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Flash Flood Alley – Human Factors



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Historic Rain Events on Shoal Creek

July 6, 1869

Flood of record for the Colorado River; Newspaper reports complete change to mouth of Shoal Creek after water recedes

April 23, 1915

“There is not a section of the city traversed by the treacherous little stream, docile most months of the year, which has not felt the finger of death” *Austin American*

October 28, 1960

7”-10” of rain fell, 2.5 Million Dollars in Damages



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Historic Rain Events on Shoal Creek

May 27, 1981

The original Memorial Day Flood. Made the threat of flooding a topic of conversation in Austin once again. Prompted many of our floodplain regulations.

October 31, 2013

The original Halloween Flood. While much of the focus was directed to Onion Creek, Lower Shoal Creek saw significant flooding as well.

May 25, 2015

Memorial Day Flood



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Historic Rain Events on Shoal Creek

100+ years of Shoal Creek
flooding 1915-2025



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Historic Rain Events on Shoal Creek



April 1915



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Historic Rain Events on Shoal Creek



May 1981



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Historic Rain Events on Shoal Creek



May 1981



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Historic Rain Events on Shoal Creek



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Historic Rain Events on Shoal Creek



November 2001



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Historic Rain Events on Shoal Creek



November 2001



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Historic Rain Events on Shoal Creek



October 2015



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Shoal Creek Flood Mitigation History

- Home Buyouts
- Channel Improvements
- Bridge Improvements
- Detention Ponds
- Storm Drain Improvements
- > \$65M spent on mitigation since 1981



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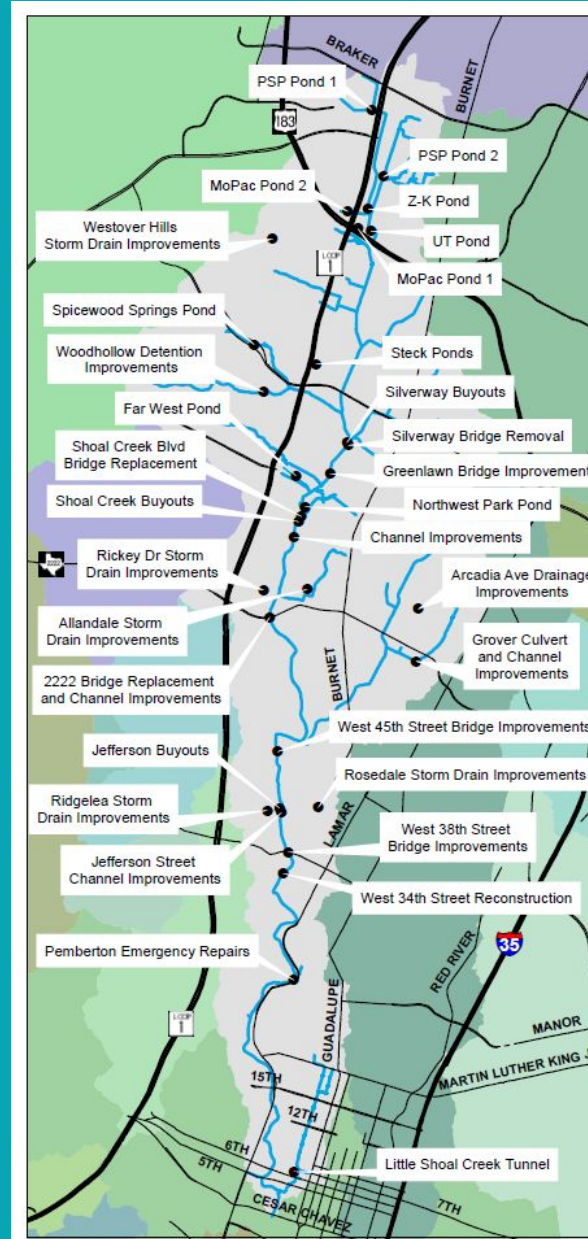


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Shoal Creek Flood Mitigation History

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Major Flood Mitigation Projects in Shoal Creek Post 1981



• Shoal Flood Mitigation Projects

— Shoal Creeks

Roads

— Major Roads

— Highways

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This product has been produced by the Watershed Protection Department for the sole purpose of geographic reference. No warranty is made by the City of Austin regarding specific accuracy or completeness.

5/27/2015



Lower Shoal Creek Community Resiliency Initiative

Community Resilience



- Community Outreach
- Flood Warning Signage
- Encourage Elevation

- Development Regulations
 - New Development
 - Redevelopment
 - Height Restrictions



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Flood Safety Resources

Road closures due to flooding...and cameras

[ATXfloods.com](https://www.atxfloods.com)

Floodplain maps and information

[ATXFloodPro.com](https://www.atxfloodpro.com)

Sign up for notification of flood warnings

[warncentraltexas.org](https://www.warncentraltexas.org)

View City of Austin rain gauge data

hydromet.lcra.org/coa/

Learn more about the National Flood Insurance Program and flood insurance

[floodsmart.gov](https://www.floodsmart.gov)



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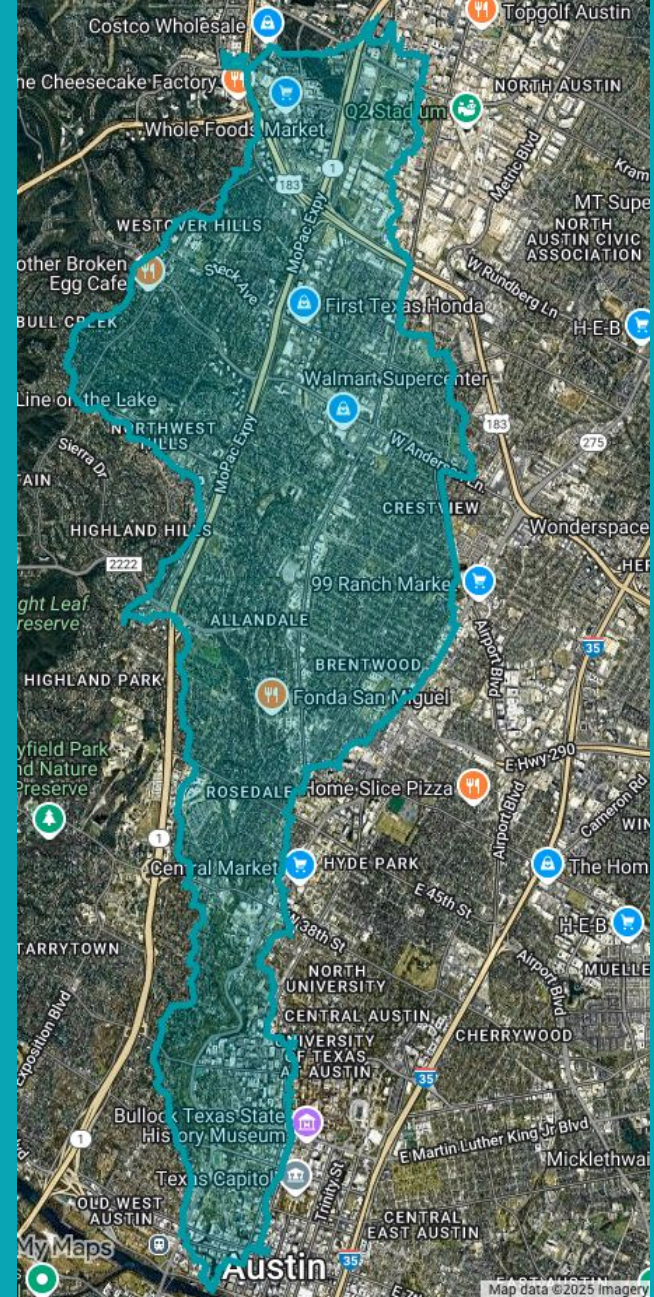
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Holland's Tips for Evaluating Rain Events

Conditions to consider

- Storm speed and direction
- Intensity and duration of the storm
- Soil saturation/recent rain activity
- Leaf load



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USGS Stations

Data & Alerts

- Shoal Creek and 12th St
- Shoal Creek and Silverway
- Desktop and mobile site
- Alerts -
 - Primary sensor: 5 ft, on the hour
 - Secondary sensor: 5-min update: 5 ft, on the hour
 - Primary sensor: 10 ft, on the hour
 - Secondary sensor: 5-min update, 10 ft, on the hour



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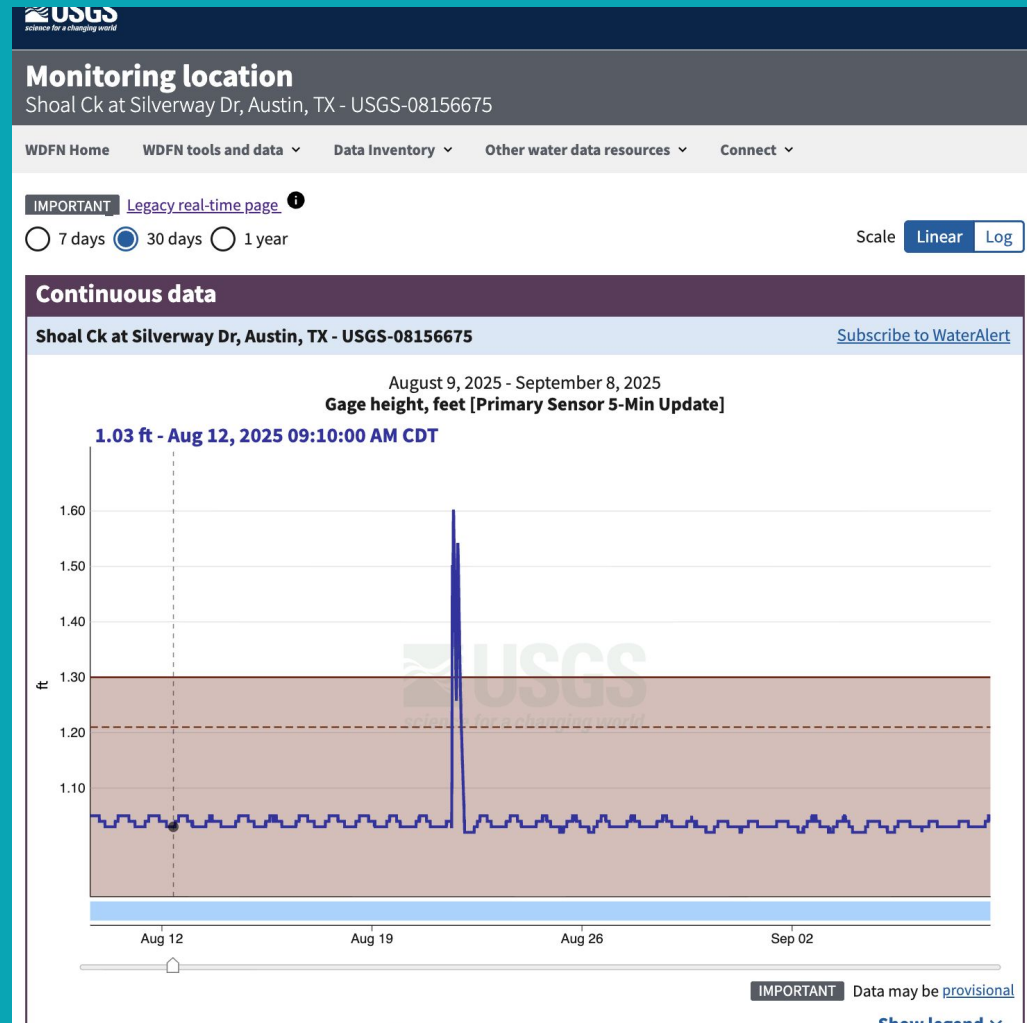
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USGS Stations

Levels

- **5 ft**
If it gets here and you weren't already watching, get moving
- **7 ft**
The National Weather Service Flood Stage level
- **10 ft**
Critical level; the creek is at or over its banks, margin of error is gone



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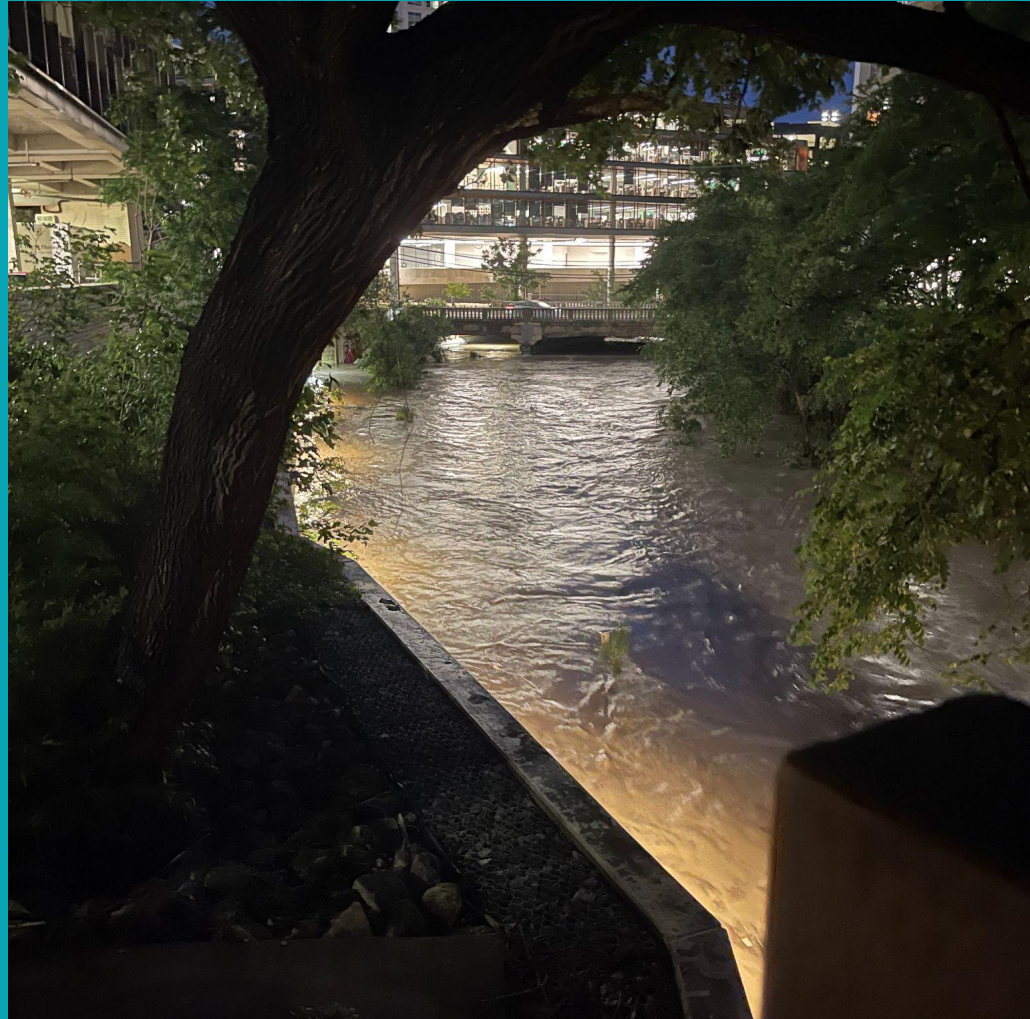
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Flood Levels

NOAA Atlas 14 Point Precipitation frequency estimates in 24 hours

- *25 year storm 8.59"*
- *100 year storm - 12.23"*
- *500 year storm - 18.05"*



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Historic Flood Levels

Height	CFS	Date	Notes
12.05	3,200	July, 2025	
12.30	3,310	March, 2006	back patio of Shoal Creek Saloon
14.22	4,280	May, 2015	accumulating in 10th and lamar
15.00	4,770	March, 2006	Water rushing down Lamar
15.41		May, 2025	Top of Whole Earth driveway apron
16.74	6,060	Nov, 2004	Lamar closed at 9th, water in Cheapos & Wildflower
16.95	6,250	Sept, 2010	water at lip of patio in front of Whole Earth
18.78	8,150	Sept, 2014	water in front half of Whole Earth
19.22	8,710	Nov, 2001	water 6" deep in Whole Earth, cars washed away
20.76	11,000	May, 2015	water 3' + deep in Whole Earth
23.25	16,000	May, 1981	worse flood on record.

Floods/month since '81	
January	2
February	2
March	5
April	4
May	28
June	3
July	9
August	5
September	8
October	10
November	4
December	4

