Flooding in the Shoal Creek Watershed

February 23, 2016

Austin American-Statesman

13 die as floods ravage city; losses estimated in millions

Shoal Creek Conservancy

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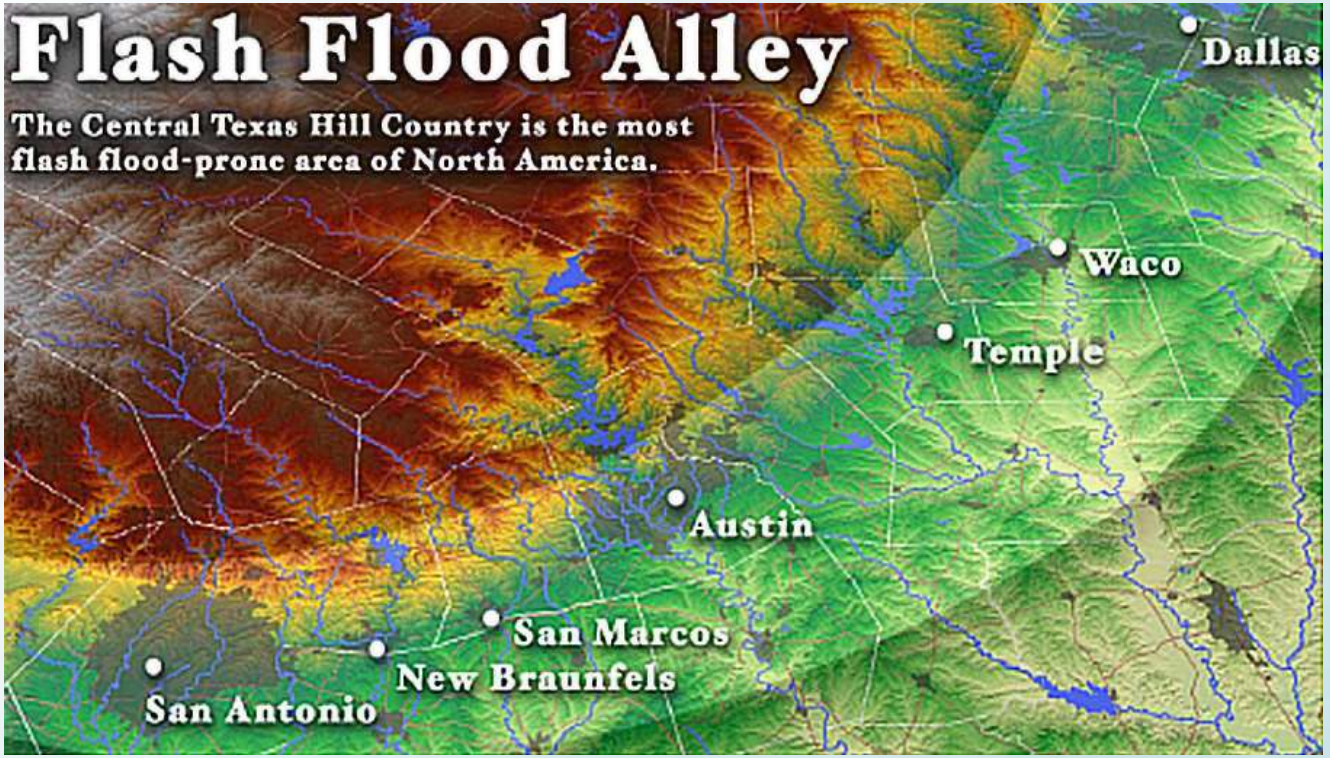
Flash Flood Alley – Global and Local Factors

- 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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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 2.

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Historic Rain Events on Shoal Creek

100 years of Shoal Creek flooding 1915-2015

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Historic Rain Events on Shoal Creek

May 1981

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Historic Rain Events on Shoal Creek

April 1915

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Historic Rain Events on Shoal Creek

October 2015

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Historic Rain Events on Shoal Creek

May 1981

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Historic Rain Events on Shoal Creek

November 2001

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Historic Rain Events on Shoal Creek

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Historic Rain Events on Shoal Creek

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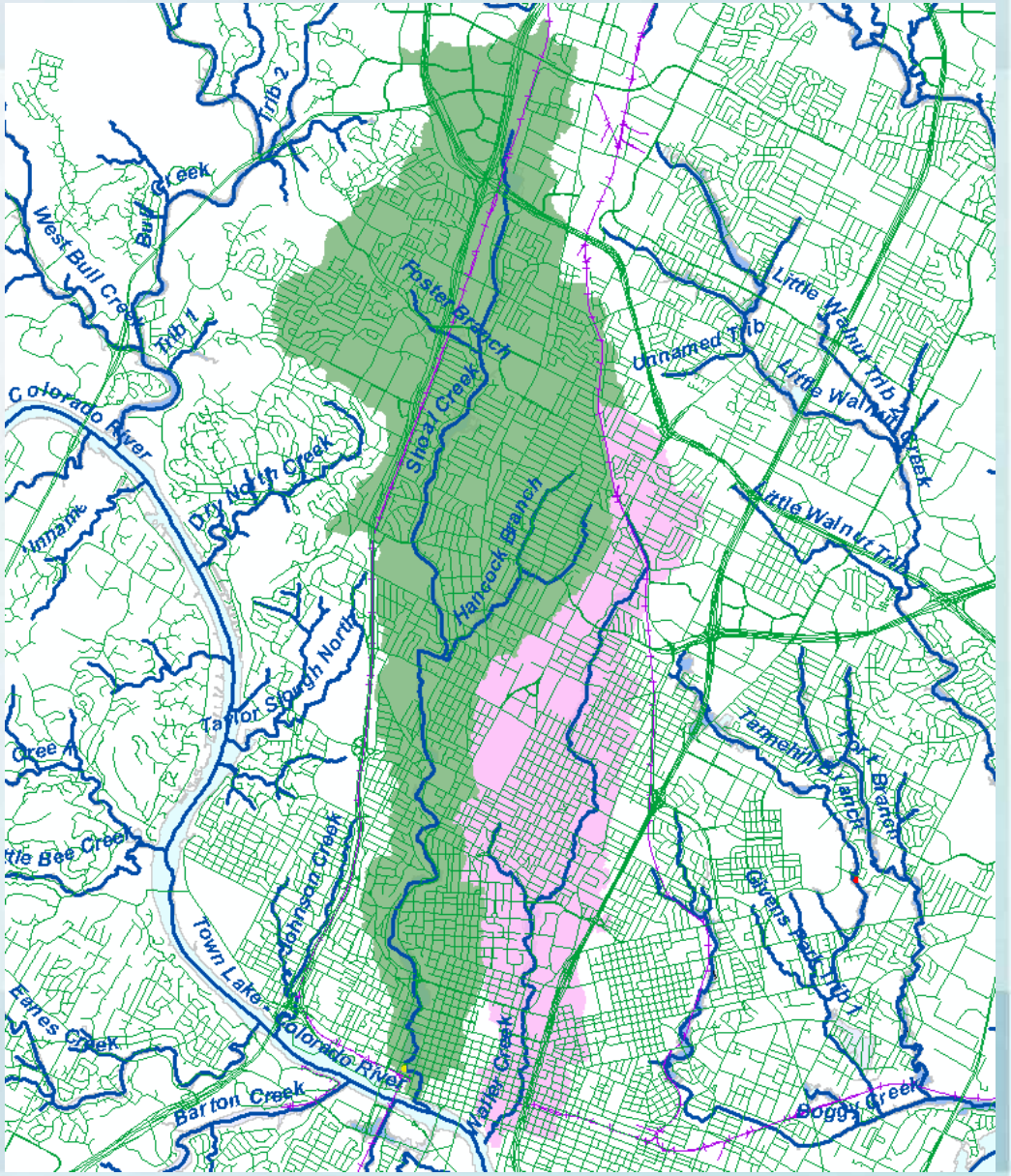
The Shoal Creek Watershed

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.
- Most recent study from 2014 (FEMA map dated January 6, 2016)



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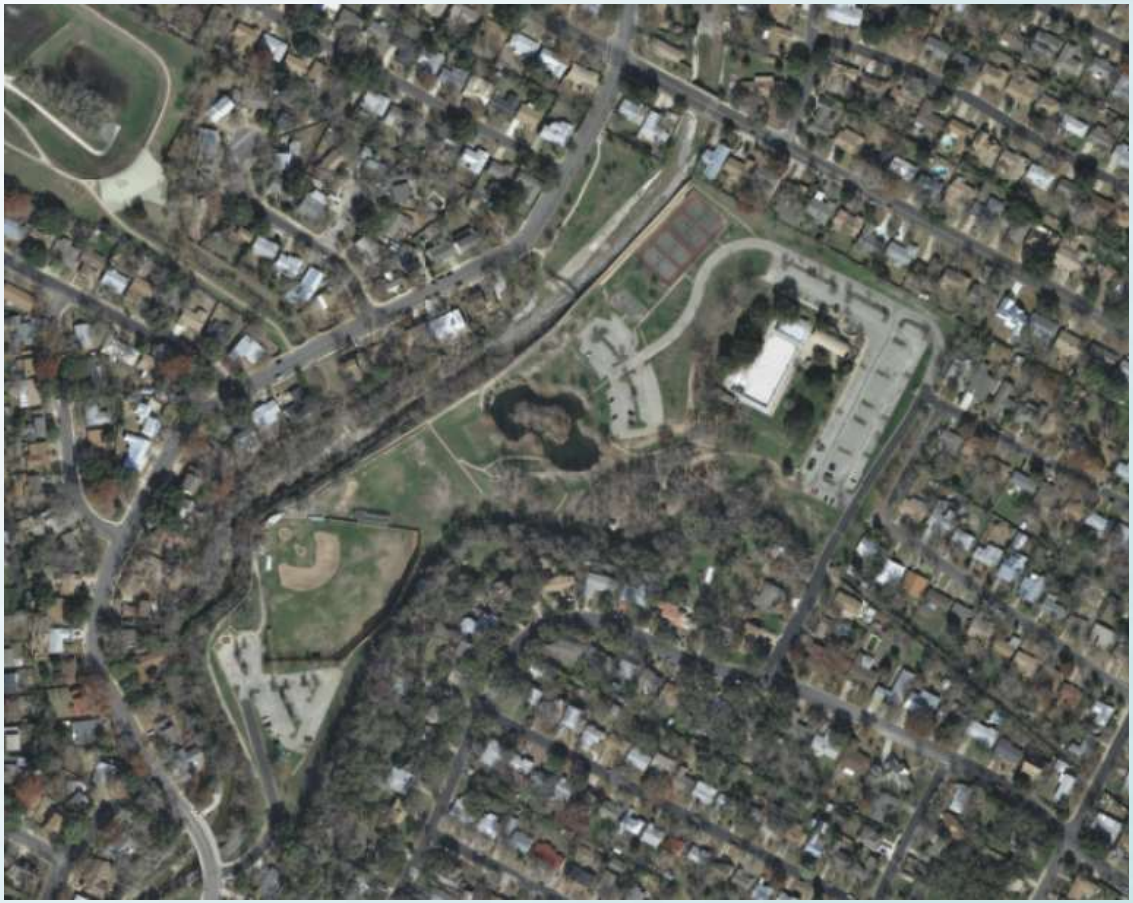
Shoal Creek Flood Risks

~ 40 roadways at risk of overtopping by more than 6 inches in a 100-year event

~ 275 buildings at risk of flooding in a 100-year event

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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Shoal Creek Flood Mitigation History

Main Creek Channel

Overflow Detention Storage

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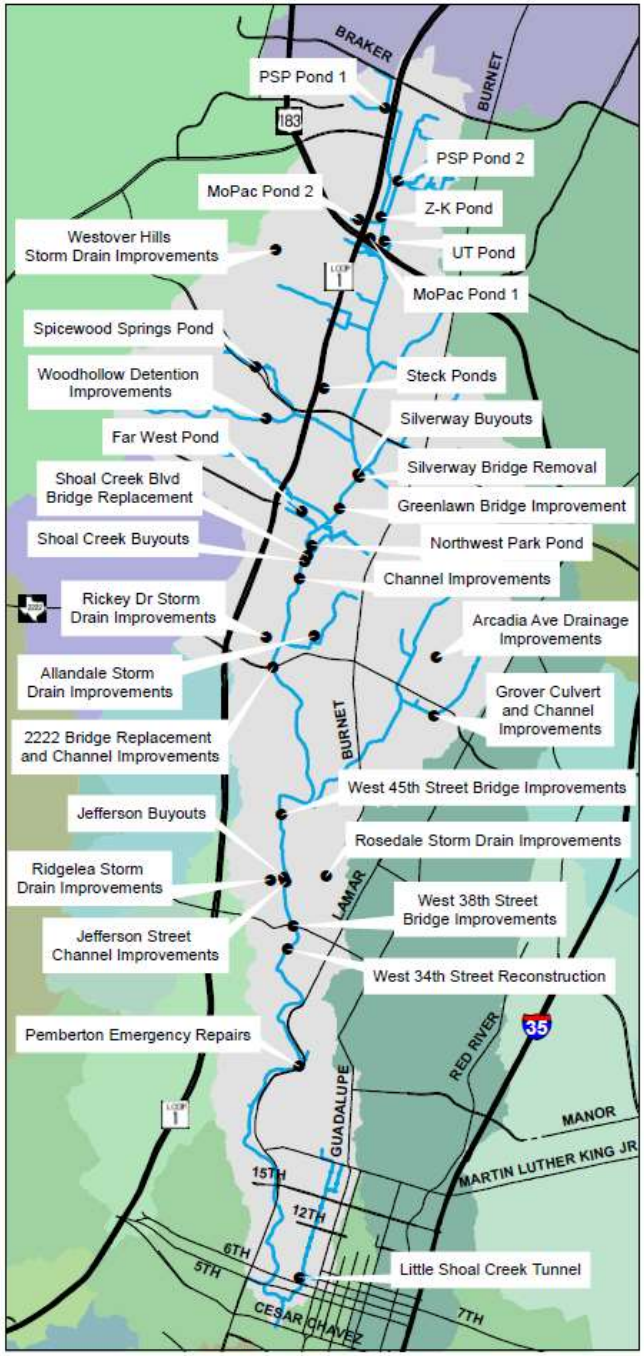

Major Flood Mitigation Projects in Shoal Creek Post 1981

Shoal Flood Mitigation Projects
Shoal Creeks

Roads

Major Roads
Highways

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

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

Shoal Creek Flood Mitigation Future

- Study underway to evaluate flood mitigation and erosion alternatives along Grover and Hancock Tributaries
- Lower Shoal alternatives to be re-evaluated beginning in 2017

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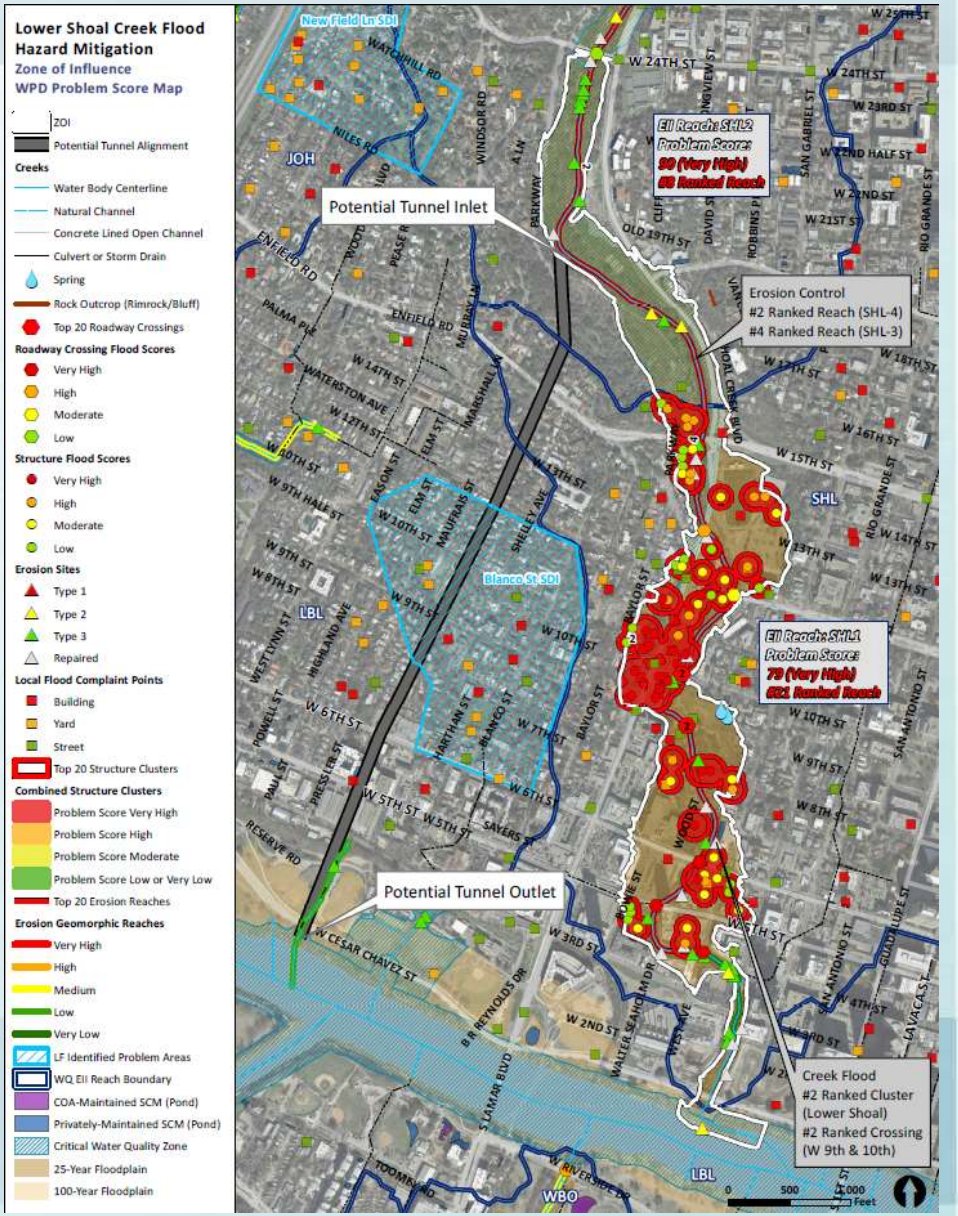

Flood Safety Resources

Road closures due to flooding…and cameras

ATXfloods.com

Floodplain maps and information

ATXFloodPro.com

Sign up for notification of flood warnings

ATXfloods.com/Alerts

View City of Austin rain gauge data

ATXHydromet.com

Register your cellphone for CapCog's regional notification system

wireless.capcog.org

Learn more about the National Flood Insurance Program and flood insurance

floodsmart.gov

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Questions

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