

Report P2C: Exercises for FAST Flood Map Services

Project 0-7095-01: Flood Assessment System for TxDOT (FAST)

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Task 2 of the Flood Assessment System for TxDOT (FAST) comprises four Subtasks: Subtask 2.1 Flood Map Development, Subtask 2.2 Flood Map Delivery, Subtask 2.3 Field Mapping, Subtask 2.4 Flood Emergency Response Exercises. This report focuses on Subtask 2.4 Flood Emergency Response Exercises. Earlier reports in this annual series have focused on other subtasks

Training Exercise Overview

Based on discussions with TxDOT and the UT/USGS team, the exercises will be primarily training-focused and designed to help TxDOT users better understand, access, and effectively utilize the FAST applications and associated tools. The sessions will provide participants with practical guidance on application functionality, available datasets, system capabilities, and operational workflows to support day-to-day decision-making and situational awareness activities.

The training exercises are intended to familiarize users with the FAST platform through demonstrations, guided instruction, and hands-on interaction with the applications. Training topics will include navigation of the system interface, interpretation of forecast and flood-related information, understanding data sources and limitations, and best practices for integrating FAST into existing operational procedures and response activities.

In addition to training TxDOT staff on the use of FAST, the effort will also include the collection of user feedback. Incorporating input from end users is an important component of the continued development and refinement of the FAST application. Feedback from users can provide valuable insight into real-world functionality, usability challenges, and operational needs, enabling TxDOT to make ongoing improvements and better align the application with user expectations and workflows. Emphasizing intuitive functionality, ease of access, and streamlined design will help support user adoption, improve efficiency, and enhance the overall effectiveness of the FAST application across all intended user groups.

The training exercises will be presented across three primary regions — Austin, Houston, and Dallas/Fort Worth — with participation from multiple TxDOT Districts in each area. These regional sessions are intended to encourage collaboration, provide localized engagement opportunities, and ensure that District personnel can ask questions and gain practical experience with the applications in a training environment.

Below are the scheduled and pending training locations and sessions:

Interactive Training

AUS – June 2, 2026 @ Stassney Campus 9-12pm

HOU – June 10, 2026 @ Houston District office afternoon

FAST Interface

The Flood Assessment System for TxDOT can be found at <https://bridges.txdot.kisters.cloud>. There has been discussion with TxDOT as to whether the system should be password protected or not, and TxDOT guidance has been that the system should be kept open so that TxDOT staff can readily access it. On accessing this web link, the screen display shown in Figure 1 appears. There is a **Production** system, which is intended for use by TxDOT, a **Development** system for use by the research team to prototype new capabilities, and a **Training** system, to be used in the Training exercises.

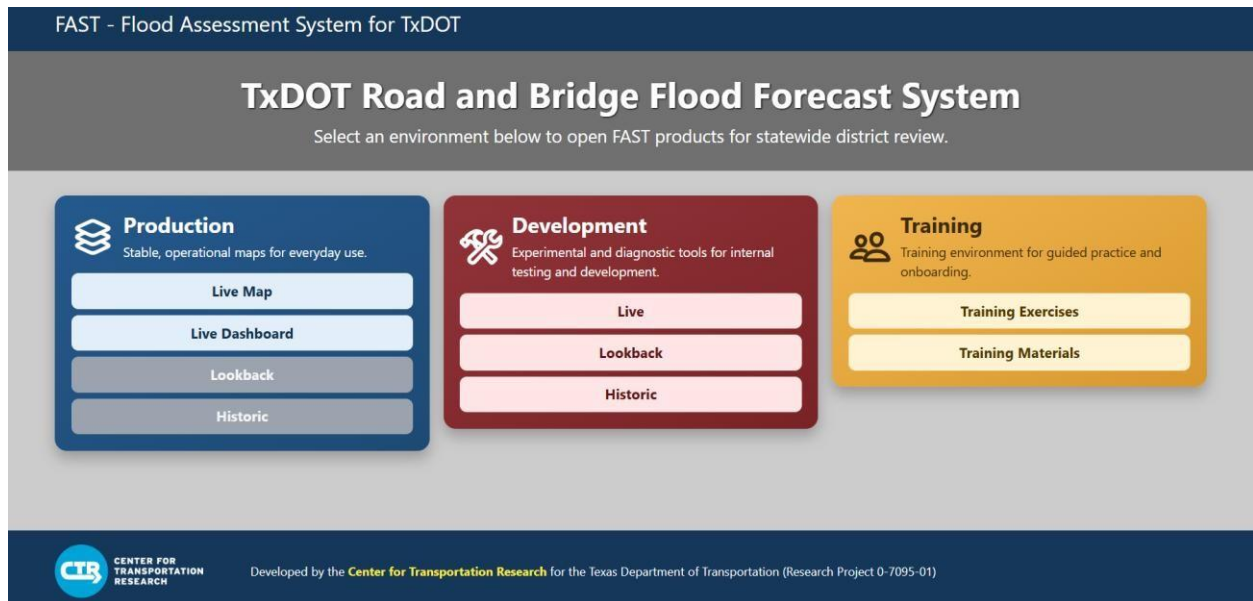


Figure 1. Opening Screen of the Flood Assessment System for TxDOT (FAST)

The Training Exercises section has links for three exercise focus areas, each comprising multiple TxDOT Districts, as shown in Figure 2. The first exercise is for the Austin-San Antonio-Brownwood-San Angelo Districts and uses an historical flood event that occurred on 26 May 2025 (2025.05.26). Note that this is a large flood impacting all of these Districts but not the catastrophic flood of 4-5 July 2025 that resulted in more than one hundred flood deaths.

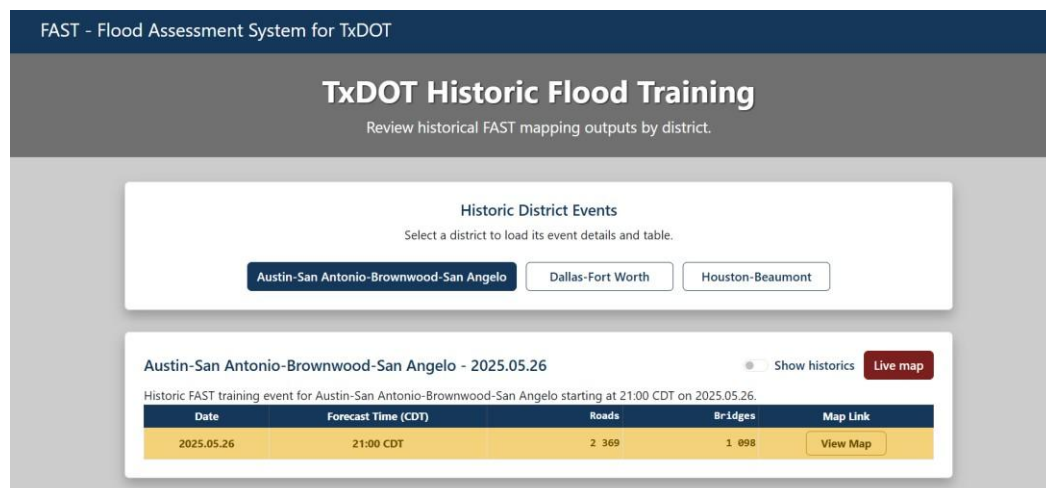


Figure 2. Training Exercise page

The core of FAST is a flood impact display page as shown in Figure 3. This contains three map layers: Flood Inundation extent, Bridge Warnings and Flooded Roads. The extent of the road network is all the public road system of the state, including residential streets and connected roads as defined by the road classification used in OpenStreetMap. TxDOT decided that FAST should use OpenStreetMap roads which cover about 470,000 miles of roads and streets in Texas, instead of the TxDOT Roadway Inventory, which does not have a complete state-wide coverage of the public road system.

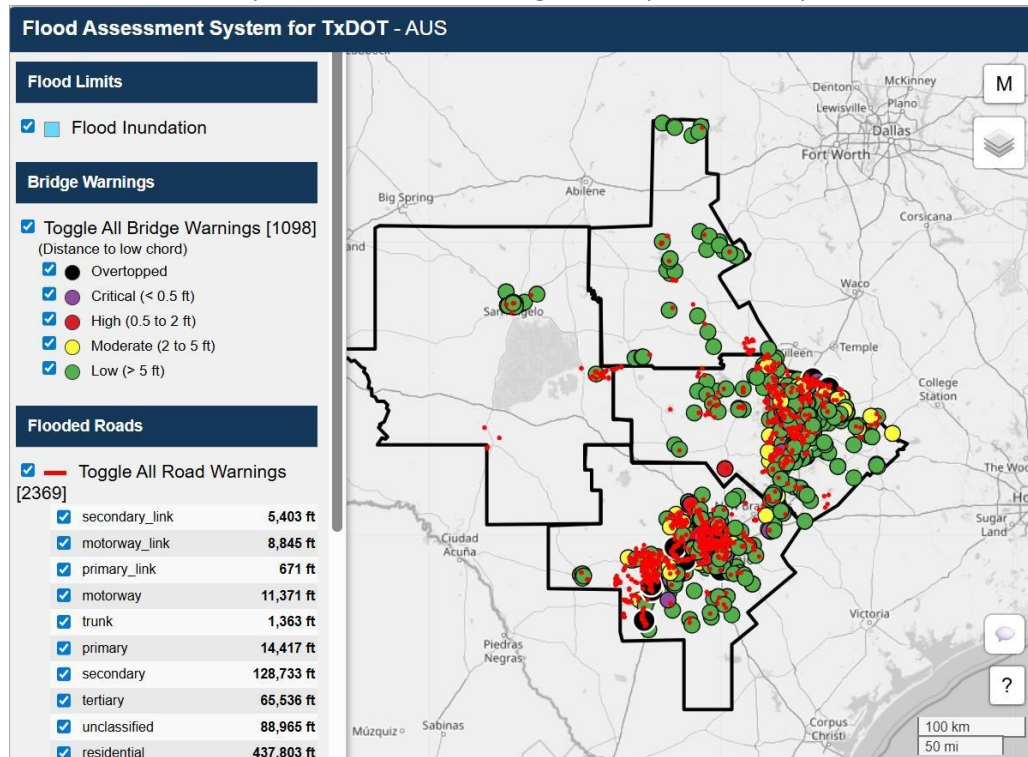
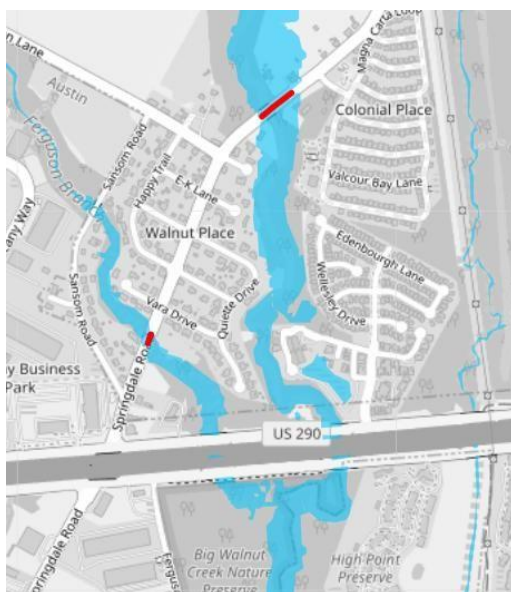
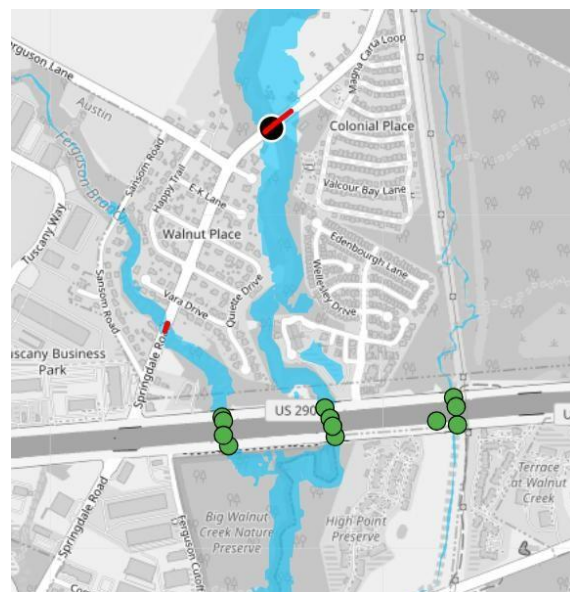


Figure 3. Flood Impact Display page



(a) Flood inundation and flooded roads



(b) Bridge warnings

Figure 4. Road and Bridge Flooding on Springdale Rd on Walnut Creek

A zoomed in view of road and bridge flooding is shown in Figure 4 for roads over Walnut Creek in Northeast Austin. In this forecast, Springdale road is expected to be flooded during the next 18 hours, and its bridge could be overtopped (shown by the black dot). In contrast Highway 290 is not expected to be flooded and its bridges have green dots on them which show that the water level is not expected to be within 5 feet of the low chord of the bridge. Clicking on the black bridge warning dot brings up a bridge warning forecast as shown in Figure 5.

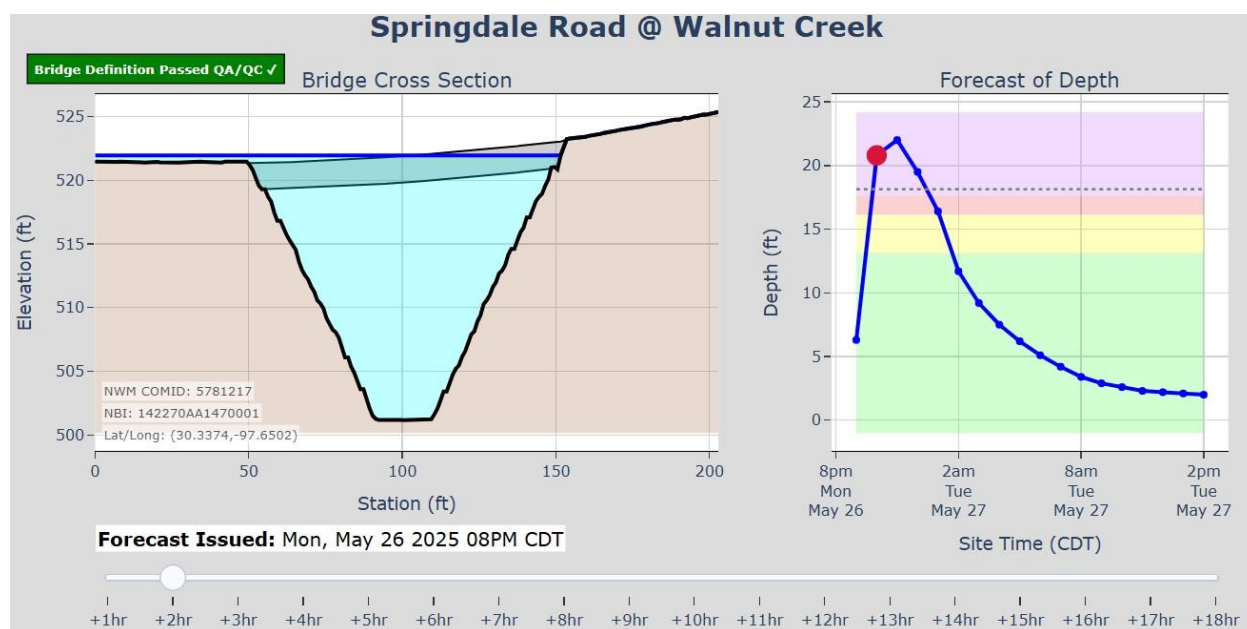


Figure 5. Expected bridge overflow on Springdale Road at Walnut Creek.

Training Exercise Components

Training Exercise Structure

The training sessions will focus on app functionality, forecasts, FAST capabilities, FAST limitations, and hands-on exercises

There will be a main session, smaller breakout sessions for app training, and then return to larger group for questions & feedback.

Training Exercise Guidelines

This exercise will be held in an open, no-fault environment. Varying viewpoints, even disagreements, are expected. Input and feedback are strongly encouraged and will be used to compile an Improvement Plan (IP) for the bridge warning and flooded roads maps.

Training Exercise Feedback

After the training has been completed, the UT Team will develop a comprehensive document of feedback. We will work closely with KISTERS and TxDOT to ensure all ideas are shared and understood. The training exercise schedule is shown in Figure 6.

30 mins prior	<i>Sign-in</i>
10 mins	Welcome and Introductions
35 mins	Main Session – App Overview
10 mins	<i>Break</i>
60 mins	Breakout Sessions
10 mins	<i>Break</i>
40 mins	Feedback and Questions
10 mins	Closing Comments

Figure 6. Training Exercise Schedule

Exercise Details

The details of the exercises are presented in Figure 7.

Exercise Objectives	
1.	To train TxDOT on the use of FAST.
2.	Obtain user feedback for improvements.

Exercise Name	FAST / Flood Assessment System for TxDOT Training Exercises
Exercise Dates	June 2, 2026 (Austin) Stassney Campus – 9am to 12pm June 10, 2026 (Houston) Headquarters – 1pm to 4pm TBA – (Dallas/Ft. Worth)
Scope	This is a facilitated training exercise, 3 hours in duration, with both large group sessions and smaller breakout sessions.
Participants	20-50 TxDOT employees (<i>Technical Project Management Team, Maintenance, and others identified by TxDOT</i>)
Focus Area(s)	How to use the FAST application (Bridge Warnings & Flooded Roads)

Objectives	1. To provide TxDOT employees with an overview of the FAST application (how to use, forecast explanation, etc.) 2. To provide TxDOT employees with hand-on experience with FAST 3. Identify feedback and suggestions from TxDOT employees on the FAST application
Sponsor	TxDOT and University of Texas at Austin (RTI Project 0-7095-01)
Participating Organizations	TxDOT, University of Texas at Austin, USGS, KISTERS

Figure 7. Training Exercise Details

Conclusions

It was originally intended that these exercises would occur earlier in the project but it took some time for TxDOT to coordinate this activity with the Maintenance Staff in TxDOT Districts. At the end of FY26 in August 2026, the FAST project will submit research update report 3 and this will contain results and assessment of the exercises conducted prior to that time, including the two exercises presently scheduled for June 2 and June 10, 2026.