National Flood Interoperability Experiment (NFIE)

Weather model and forecasts

Probabilistic flood forecasts

Catchment-level forecasts

Weather   Precipitation

Streamflow

Land-Atmosphere Model

Runoff
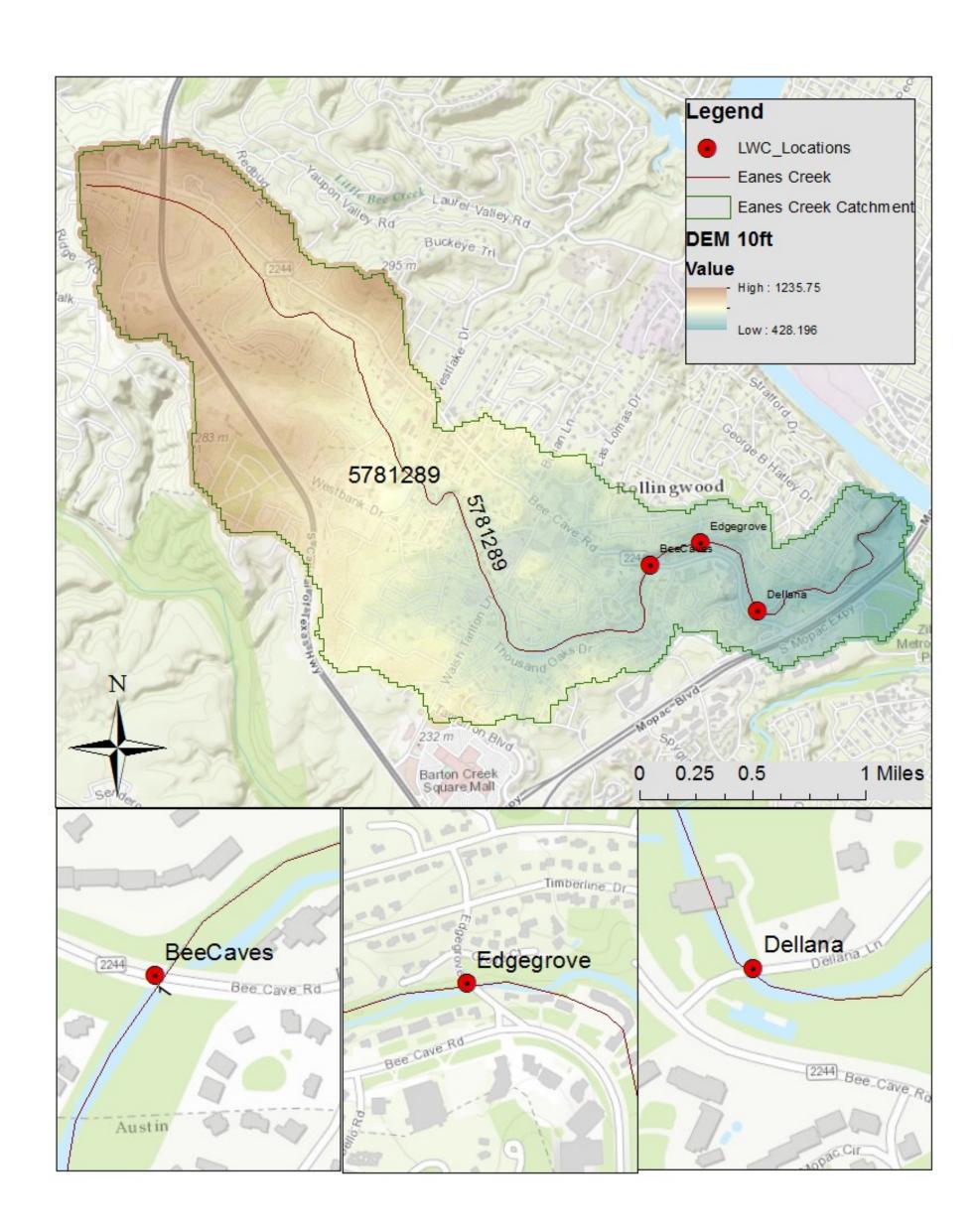
Channel flow routing (for continental US)

Diagram courtesy of Dr. David Maidment

- High spatial resolution hydrologic modeling at the continental scale

- Producing streamflow forecasts up to 15 hours in advance at 2.67 million locations in the United States

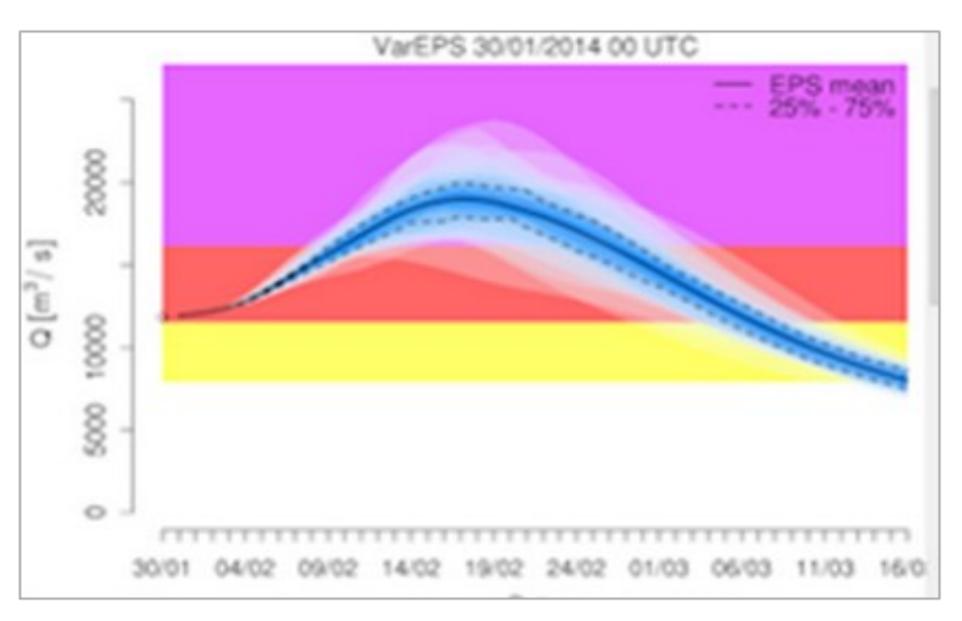- Current system produces streamflow forecasts at 3600 locations in the United States

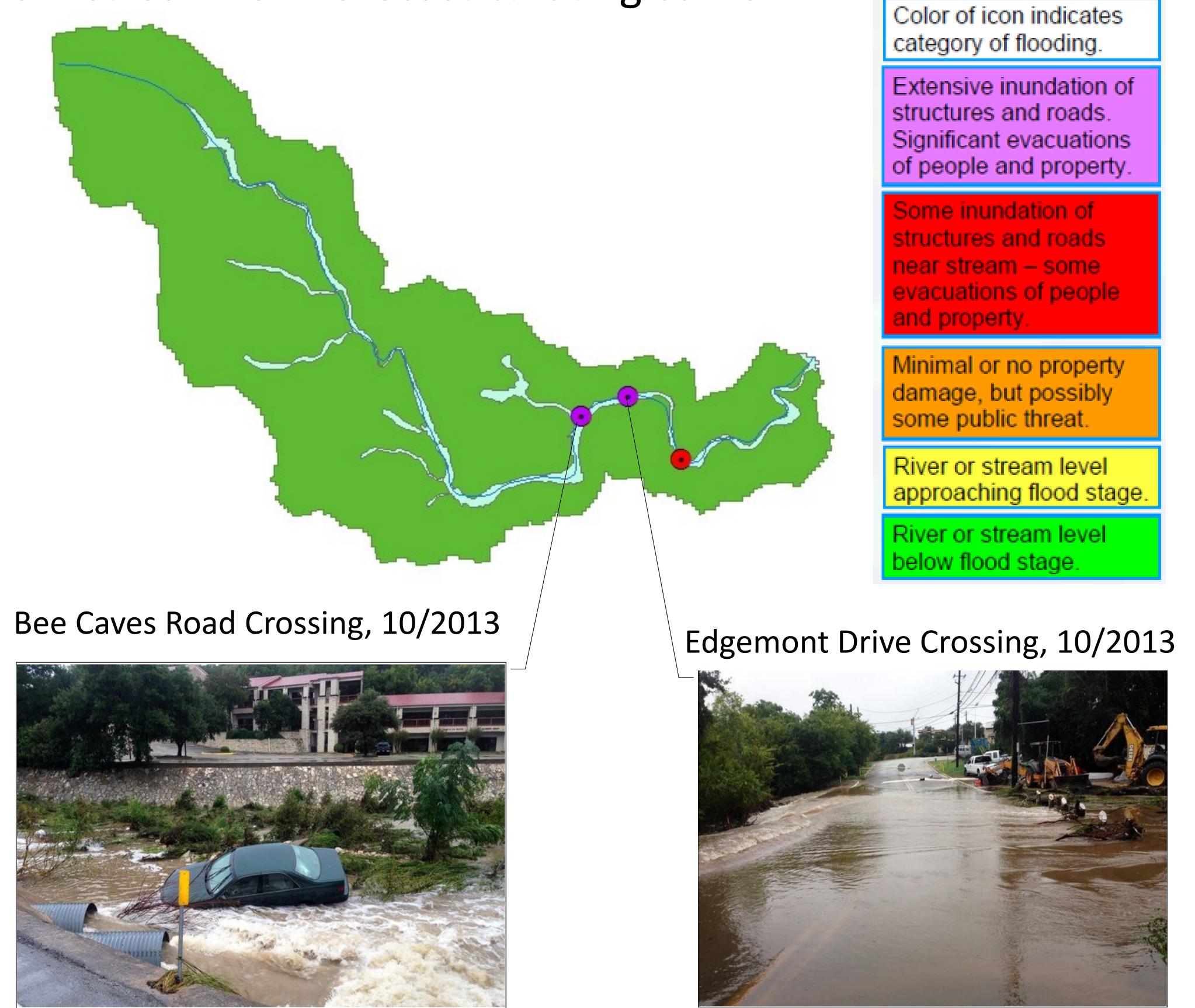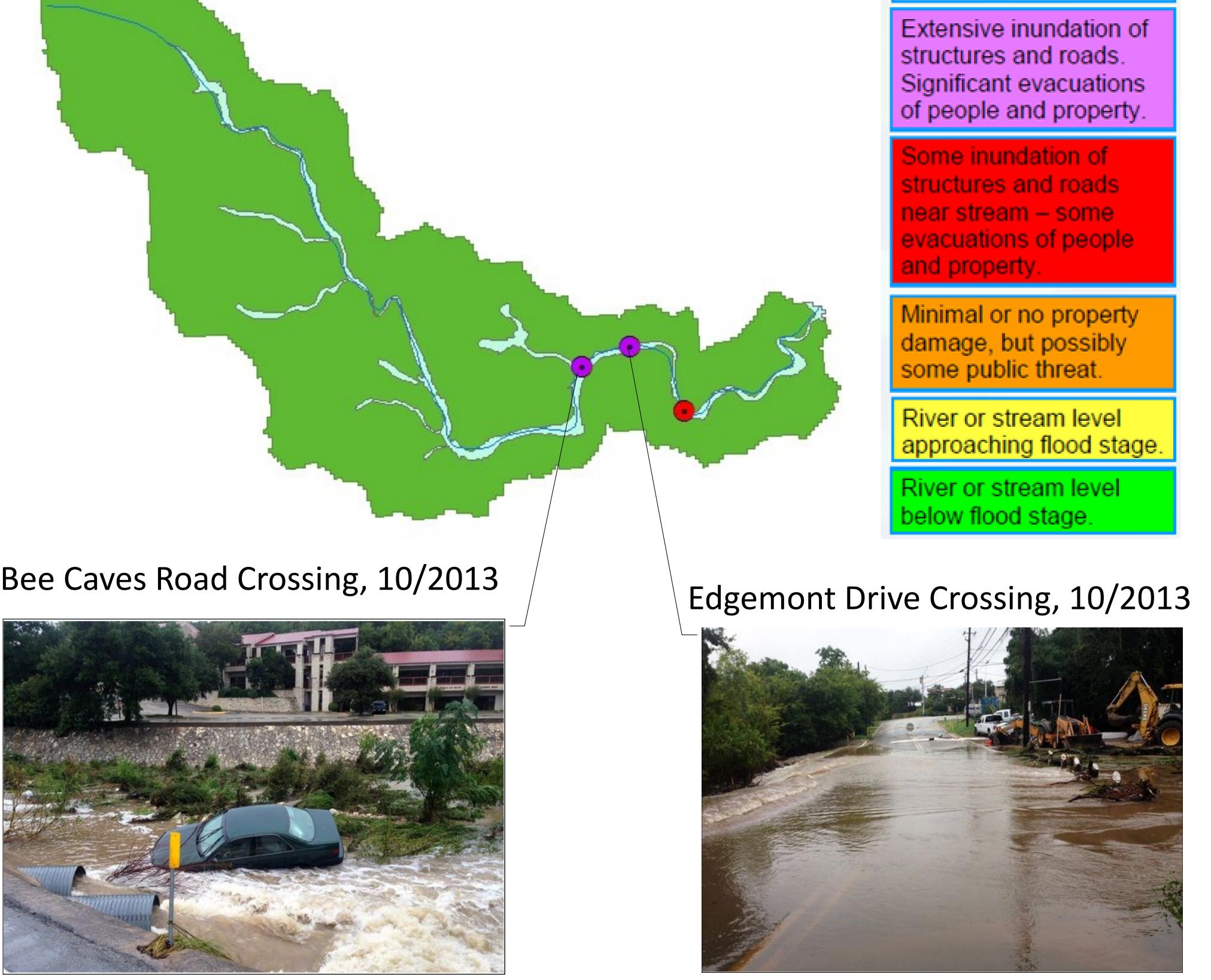## Low Water Crossing along Eanes Creek in Rollingwoood, TX
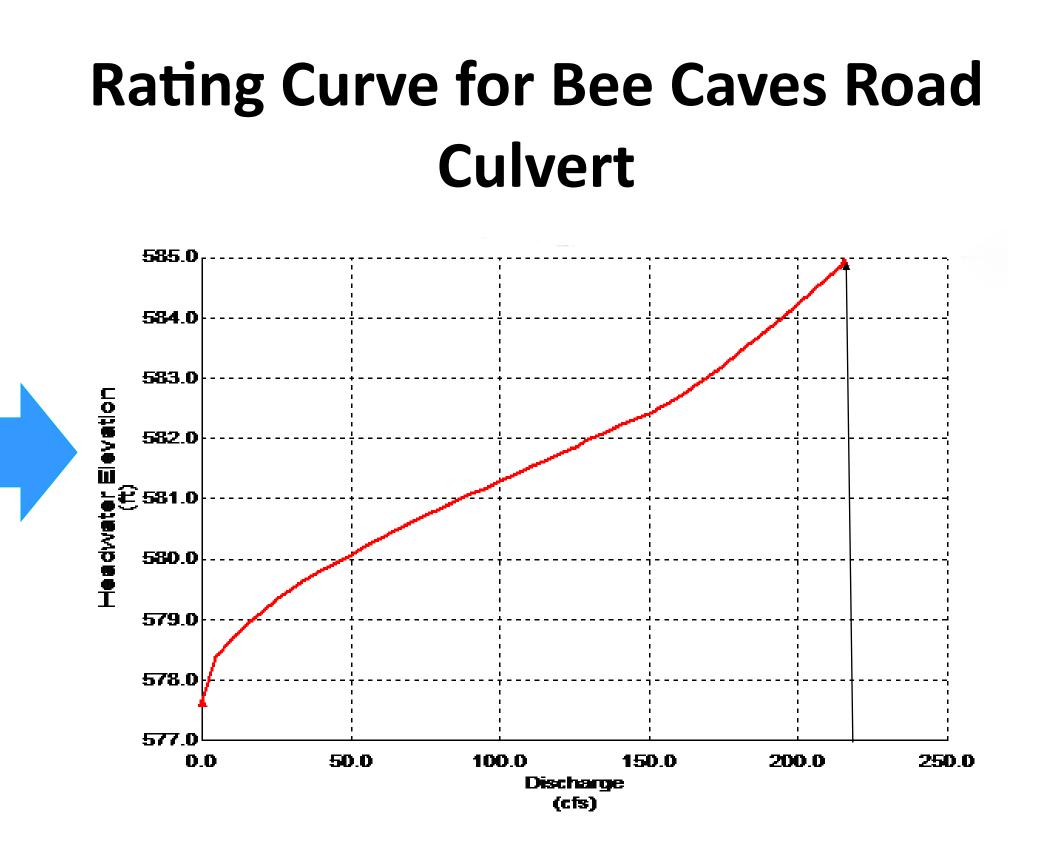

BeeCaves   Edgegrove   Dellana

- Channel slope extracted from LiDAR Data

- Physical parameters measured during survey

- Design flow of culverts and rating curve calculated using Bentley FlowMaster Program

Probabilistic flood forecasts

Rating Curve for Bee Caves Road Culvert

Connecting forecasted streamflow and culvert rating curves to predict flooding at these locations up to 15 hours in advance!

NFIE-Response: Connecting forecasts to emergency response

- Color assigned to culvert locations according to risk provided from streamflow forecast & rating curve

Color of icon indicates category of flooding.

Extensive inundation of structures and roads. Significant evacuations of people and property.

Some inundation of structures and roads near stream – some evacuations of people and property.

Minimal or no property damage, but possibly some public threat.

River or stream level approaching flood stage.

River or stream level below flood stage.

Bee Caves Road Crossing, 10/2013

Edgemont Drive Crossing, 10/2013

Photos Courtesy of Rollingwood Police Department

Provides emergency responders with **more time for planning evacuations, road closings and could save lives**