Brief Overview of Hurricane Harvey Emergency Response and the emerging Texas Flood Response System

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Hurricane Harvey arrived the night of August 25
72-hour precipitation forecast, Aug 25, 9:40am CT

https://arcg.is/1O1SW0
NOAA National Water Model:
Peak streamflow predicted to occur on August 31
10 day anomaly forecast on August 25…

The only USGS gage flooded on Aug 25
Day 2, August 27...
72-hour precipitation forecast, 5pm
Day 2: TX DPS Harvey Dashboard online
Day 2: Maps of shelters, road closures, critical infrastructure
Day 3: Inundation Areas
Guadalupe River
Colorado River
Brazos River
Harris County
Trinity River
Neches River

Flood Modeling Credits: Interagency Flood Risk Management (InFRM) Group
With permission of TDEM
Day 3: Inundation Impacts

- Guadalupe River: 834
- Colorado River: 18,577
- Brazos River: 57,986
- Harris County: 40,349
- Trinity River: 3,354
- Neches River: 863

Address Data Credits: UT Austin Center for Water and the Environment
Flood Modeling Credits: Interagency Flood Risk Management (InFRM) Group

With permission of TDEM
Day 4: National Water Model 10-day forecast

National Water Center provided experimental inundation areas during the first week of Harvey, based on NWM streamflow forecasts, synthetic rating curves, and HAND.
Day 4: Inundation, Harris County

Flood Modeling Credits: Interagency Flood Risk Management (InFRM) Group
Day 4: Inundation demographics

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Flood Modeling Credits: Interagency Flood Risk Management (InFRM) Group
Day 7: Flood depth grids, Neches & Sabine Rivers

Flood Modeling Credits: Interagency Flood Risk Management (InFRM) Group

With permission of TDEM
Day 14: Post-event imagery, status of shelters, stores, insurance claims

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Day 23: Final flooding impacts

Early, rough estimates for 56 state and federal disaster-declared counties:
~ 9,000 sq mi flooded
~ 40,000 river-miles
~ 966,000 addresses

Flood Modeling Credits: Interagency Flood Risk Management (InFRM) Group and UT Austin Center for Water and the Environment.

Address Data Credits: US Dept of Homeland Security and UT Austin Center for Water and the Environment

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Unprecedented rainfall and flooding. TFRS project helped get valuable resources in place.

Major test for National Water Model. Need to improve coastal flood modeling, include ponding, and have library of inundation polygons ready in advance.

Interagency barriers to cooperation and communications must be overcome.

**Harvey: Before ... and After**

Imagine if these maps could’ve been presented 3 days prior to the storm arrival, instead of 3 weeks later!