Flooding In Texas
Moving Toward a Safer Future

OKLAHOMA GOVERNOR’S WATER CONFERENCE
Sam Marie Hermitte
Assistant Deputy Executive Administrator
Water Science & Conservation
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Texas Water Development Board

Science: Collecting water data
- Current amount of water
- Quality of water
- Texas population
- Location of water

Planning: Assessing the state's future needs
- Collaboration with local communities
- Communities at risk
- Water management costs
- Potential water shortages

Population forecast

GOAL: Securing the water future of Texas
- Finance water, flood, and wastewater projects
- Inform and educate the public about Texas water
- Provide data and maps for public health and safety
- Enable decision makers to manage and conserve existing supplies
- Facilitate communities' abilities to create new water supplies

Current water supply

www.twdb.texas.gov
State Water Planning
focused on drought of record


“top down”

“bottom up”

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TWDB Flood Responsibilities

• Prior to 2015:
  – Funded state grants for flood protection planning to conduct feasibility studies for an entire watershed to evaluate both structural and nonstructural solutions
  – Administered federal Flood Mitigation Assistance Grant Program
  – Served as state coordinator for:
    • National Flood Insurance Program
    • Cooperating Technical Partner Program
Blanco River
Wimberley, Texas
(2015)
## TWDB Flood Responsibilities

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# New and Expanded Responsibilities

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[www.twdb.texas.gov](http://www.twdb.texas.gov)

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*Texas Water Development Board*
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Creation of a Flood Gage Network
Creation of TexMesonet
statewide earth observation network

- Collects: precipitation, wind direction/speed, air temp., relative humidity, soil moisture/temp.
- Supports flood & drought monitoring and forecasting
Hurricane Harvey (2017)
An extraordinary event

Flows to the Coast
- Coastal inflow averages 41 million acre-feet per year.
- Total flows to the coast for 2017 were 57.8 million acre-feet.
- Hurricane Harvey delivered 29 million acre-feet, equating to 51% of the annual inflow for 2017.
1. Assess risk and roles
2. Estimate flood mitigation costs
3. Envision the future of flood planning in Texas
Flood-related Roles and Responsibilities
Three Pillars of Flood Risk Management

Mapping → Planning → Mitigation
86th Legislative Session (2019)
Senate Bills 7 & 8

- Watershed-based flood mitigation planning
- Data/science-driven
- Water supply planning model (bottom up)
- 5-year cycle
- Implement mitigation projects $
Attendees represented...

- City or county
- Engineering/consulting
- Water-related district or political subdivision
- Environment natural resources
- State government
- Federal government
- Educational academic
- Professional association
- Concerned citizen
- Council of...
- Other
- R...

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The Path Forward

Mapping
The Path Forward

Mapping → Planning

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Proposed Regional Flood Planning Boundaries
Flood Plan Highlights

1. Use best available science
2. Evaluate floodplain management approaches
3. Identify specific and achievable goals
4. Include flood management strategies and projects
5. Evaluate development in the FEMA 100-year floodplain
The Path Forward

Mapping  Planning  Mitigation
Flood Financing

Prior to adoption of state flood plan in 2024, the Flood Infrastructure Fund can fund projects that have been developed through cooperative planning efforts:

- Drainage
- Flood mitigation
- Flood control

After adoption of state flood plan in 2024, the Flood Infrastructure Fund:

- Can fund projects in state flood plan
Flood Financing

• Low interest loans
• Grants:
  – Lack of ability to repay a loan
  – Outside of metropolitan statistical area
• Can fund both structural and non-structural mitigation activities
Flood Mitigation Activities

**Structural**
- Local drainage
- Regional detention / retention
- Local detention / retention
- Bridges, culverts, pipes
- Channel conveyance
- Infrastructure

**Non-structural**
- NFIP
- Development ordinances
- Training & education
- Elevation, flood-proofing
- Warning system
- Buyouts or relocation
Implementation Process Timeline

August 2019:
- Informal, pre-rulemaking request for feedback

Fall 2019/Early 2020:
- Formal rulemaking activities, including public comment

Early 2020:
- Flood funding applications solicited

Mid 2020:
- Regional flood planning groups formed
Sam Marie Hermitte
(512) 463-5617
sam.hermitte@twdb.texas.gov
www.twdb.texas.gov
## New Directions - Future Flood Science at TWDB

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