Advancing Compound Flood Resiliency in Texas

Coastal flooding can wreak havoc on our Texas communities, causing billions in damage to the state's coastal infrastructure and the environment. When multiple flood drivers occur at once or close together, it results in a particularly destructive phenomenon known as compound flooding. In Texas, this often means a combination of storm surge and riverine flooding that amplify each other and lead to greater impacts than when they occur independently.

Traditional flood analysis and forecasting rely on hydrological models and data, drainage assessments, and scenario-based evaluations of future climate and water management conditions. However, the complex nature of compound flooding, the dynamic coastal environment, and data availability present significant challenges to these methods.



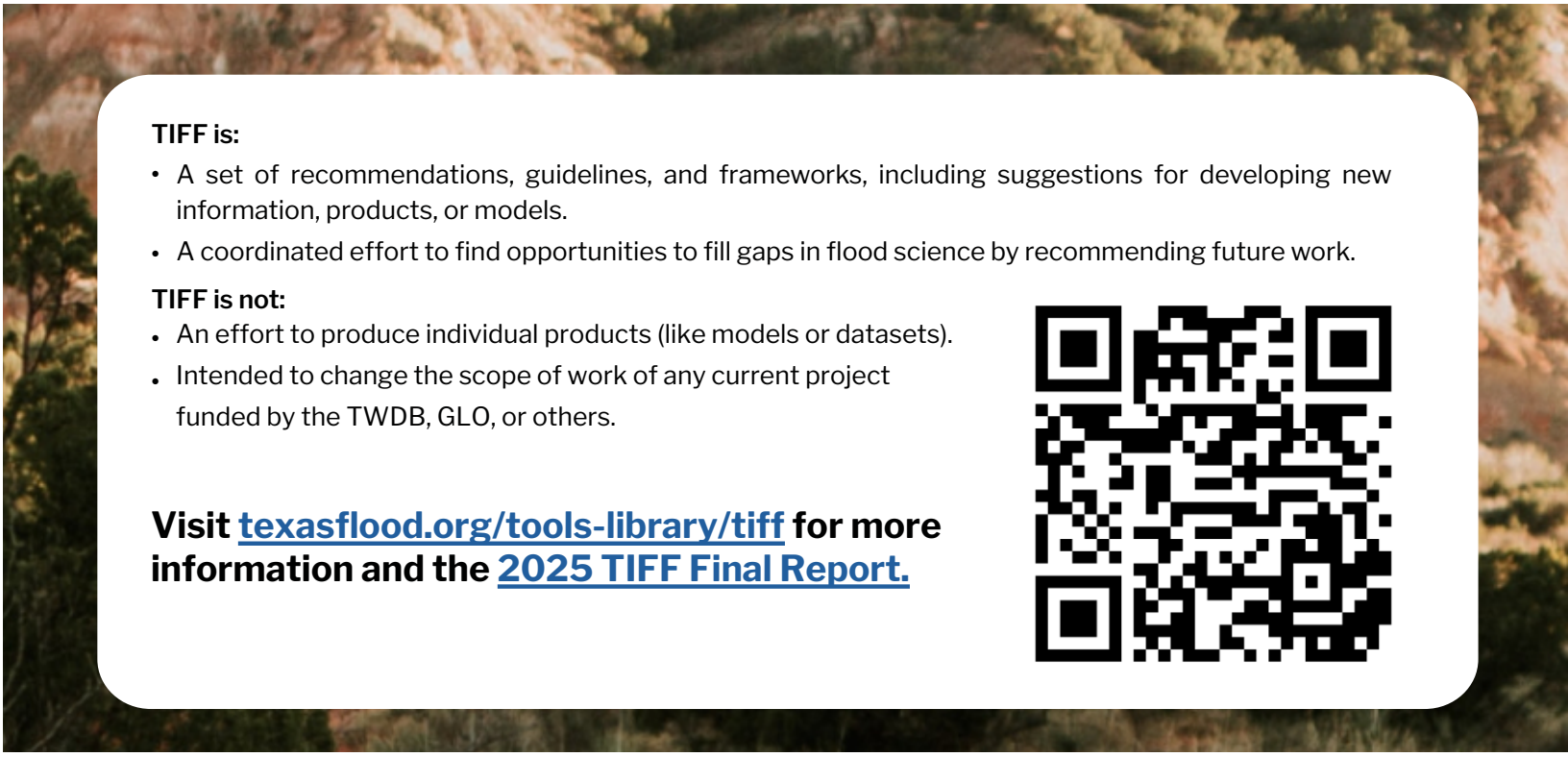
Empowering Texas' Decisionmakers

For Texas to effectively plan for state and regional flooding, it is essential that our decisionmakers understand the complexities of coastal flood risks and have the right tools for planning and mitigation. To make this happen, the Texas General Land Office (GLO) has provided funding to the Texas Water Development Board (TWDB) to lead a comprehensive flood risk reduction planning project (TIFF) in collaboration with the U.S. Geological Survey and the U.S. Army Corps of Engineers – Galveston District.

Texas Integrated Flooding Framework

The Texas Integrated Flooding Framework (TIFF) project was started in 2020 to create a system that provides local, regional, and state entities with important flood risk information and planning tools. This helps support comprehensive flood planning and mitigation in coastal areas. The main goals of TIFF were:

- Develop guidelines and processes for a framework to model, visualize, and plan for flood risks in counties affected by Hurricane Harvey.
- Build relationships among agencies to improve coordination and collaboration.
- Complement ongoing efforts like CHARM, TDIS, and RBFS to enhance flood science, mapping, modeling, warning, response, and planning in Texas.



TIFF is:

- A set of recommendations, guidelines, and frameworks, including suggestions for developing new information, products, or models.
- A coordinated effort to find opportunities to fill gaps in flood science by recommending future work.

TIFF is not:

- An effort to produce individual products (like models or datasets).
- Intended to change the scope of work of any current project funded by the TWDB, GLO, or others.

Visit texasflood.org/tools-library/tiff for more information and the 2025 TIFF Final Report.

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