

Texas' first-ever statewide flood plan estimates 5 million live in flood-prone areas

The state's flood plan shows which Texans are most at risk of flooding and suggests billions of dollars more are needed for flood mitigation projects.

BY **ALEJANDRA MARTINEZ** MAY 28, 2024 4 HOURS AGO

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More than 5 million Texans, or one in six people in the state, live or work in an area susceptible to flooding, according to [a draft of the state's first-ever flood plan](#).

The plan by the Texas Water Development Board is an effort to reduce the risk for those people by recommending solutions to harden Texas against floods and rising sea levels. The board was required to create the plan in [a 2019 state law passed](#) in response to Hurricane Harvey.

The public can make comments on the plan during a May 30 meeting in Austin and have until June 17 to [submit comments online](#).

The plan, released in early May, estimates that close to 1.3 million Texas homes are in flood-prone areas.

Sarah Kinkle, the director of policy and legislative affairs for the Texas Water Conservation Association, which represents water professionals including water districts, water authorities and groundwater conservation districts, said the plan is significant because it gives the most complete picture yet of which areas of the state are most at risk for flooding.

The plan used existing flood data to create the maps that served as a baseline, but many state regions either didn't have flood maps, or used outdated maps.

Local water managers filled the gaps with their knowledge and the TWDB contracted flood risk modeling data company Fathom to help.

“When the plan is approved, it's going to be a historic moment for Texas,” Kirkle said. “This will be a really critical piece in understanding the topography and where you have higher and lower elevations in order to properly plan for which parts of the state are going to be subject to the risk.”

Climate change is increasing flood risks in Texas, bringing warmer temperatures that cause more water to evaporate from the land and oceans, leading to heavier rainfall. Climate change also intensifies hurricanes and sea level rise — all of which may cause river floods to become larger and more frequent.

Texas has a long history of flooding, and Harvey, a Category 4 hurricane that dumped more than 50 inches of rain in parts of the Houston area over four days, was the wettest tropical cyclone in U.S. history and caused nearly \$125 billion in damages. More recently, back-to-back, heavy spring rains caused [widespread flooding](#) and evacuations across Southeast Texas.

More than 2.4 million people live or work in a 100-year floodplain — areas that have a 1% chance of flooding each year — according to the draft state flood plan. Another 2.8 million people are in a 500-year floodplain, which have a 0.2% chance of flooding each year.

One-fourth of the state's land — roughly 67,000 square miles — either falls within the 100-year floodplain or the 500-year floodplain, according to the plan. And each of the state's 254 counties has experienced at least one federally-declared flood disaster since 1953, according to the TWDB.

The plan includes a set of legislative recommendations from the TWDB and another set by 15 regional groups, anchored by one of the state's major watersheds, that helped create the plan.

The state flood plan estimates that recommended flood mitigation projects to reduce the risk of flooding across Texas could cost more than \$49 billion, but more than half of the money would be allocated to the “Ike Dike” project, a coastal barrier intended to protect the Houston region from storm surge during hurricanes. TWDB is recommending that state lawmakers allocate additional funding for flood mitigation and prevention projects.

The state's [Flood Infrastructure Fund](#), which was created in 2019, has dedicated nearly \$644 million through loans and grants to local governments to finance drainage and flood mitigation projects. Lawmakers have voted to allocate about \$1.4 billion for the fund since it was created.

Kirkle said the state doesn't have a reliable source of revenue for flood projects unless state lawmakers approve additional funding each legislative session.

“It makes flood mitigation strategies really difficult to fund,” Kirkle said.

TWDB is also asking lawmakers to implement a flood early warning system across the state, which they believe will help alert residents when to evacuate using social media, radio, and reverse 911 calls.

Other recommendations by TWDB include asking lawmakers to establish a technical assistance program to help small, remote, rural and disadvantaged communities who are strained for resources to apply for grants or loans. That can include state staff walking communities through flood project options or even motivating them to consider applying for a grant.

According to the plan, more than 70% of all flood fatalities in Texas occur when people try to cross flooded low water crossings. The TWDB recommends additional funding for the removal of low water crossings, additional signage and bridge improvements.

Because money is limited for flood projects, the regional groups recommended that the state give counties the authority to collect drainage fees in unincorporated areas — currently only cities can charge such fees. The regional groups argue this would help counties self-finance flood mitigation and drainage projects outside of city limits.

According to a 2023 Nationwide Stormwater Utility Survey by Western Kentucky University, of the 1,450 cities and counties in Texas, only about 150 communities have a dedicated drainage fee.

Cyrus Reed, conservation director for the Lone Star Chapter of the Sierra Club, said the plan is an impressive effort, but does have some limitations.

He said the modeling used for the plan to predict how often floods can occur is outdated and looks at historic climate variability as opposed to future climate variables.

“What we thought was a one in 100 chance of flood, or one in 500, they may be much more frequent than we were thinking because the climate is changing,” he said.

TWDB will finalize the plan this summer and deliver it to the Legislature by Sept. 1.

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