U.S.

# In Releasing Water from Houston Dams, Army Corps Picks Least Bad Option

Controlled releases seen as prudent choice in face of risk that reservoirs could overrun the barriers


Rescue boats fill a flooded Houston street to evacuate victims as floodwaters from Tropical Storm Harvey rose on Monday.
PHOTO: DAVID J. PHILLIP/ASSOCIATED PRESS

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With Tropical Storm Harvey dumping record rainfall on Houston, the U.S. Army Corps of Engineers faced a dilemma as water volumes rose to perilous levels in its two reservoirs west of the city center.

The options: ordering controlled releases of water from the two dams, adding to flooding in already swamped neighborhoods; or holding tight and risk having water pour around or over the earthen dams, potentially rupturing them and causing far greater damage.

The Army Corps chose to let water out deliberately—at a rate of about 8,000 cubic feet per second, depending on how much rain continues to fall—through Buffalo Bayou, a river that cuts through downtown Houston. Even with the controlled release, Army Corps officials expect reservoir levels at the dams to rise throughout the week.

Harris County Judge Ed Emmett, the county's chief executive, said the Army Corps was striking "a delicate balance" between protecting area homes and preserving the integrity of the dams. County officials have asked residents living near the reservoirs to evacuate voluntarily as a precaution.

The volume of water hitting the Addicks and Barker dams, both built in the 1940s, is "unprecedented in the dams' histories," said Edmond J. Russo Jr., deputy district engineer for the Army Corps. The Corps started its controlled release about 1 a.m. Monday, he said.

The city could receive a total of as much as 50 inches of rain—about equal to its annual average total.

Engineers often use controlled releases to try to protect dams from breaking. In 2011, Army Corps engineers opened a floodgate at a spillway in Louisiana to divert Mississippi River floodwaters to a less populous area and away from Baton Rouge and New Orleans. After heavy rains earlier this year, officials tried to drain California's second-largest reservoir, Lake Oroville, but erosion on the spillway prompted the evacuation of nearly 200,000 people downstream.

Engineers don't want water to top earthen dams because it will quickly erode the soil and ruin the dams, said Timothy Stark, a professor of civil and environmental engineering at the University of Illinois at Urbana-Champaign.

"They're releasing some of the water to make sure there is adequate storage space" for more water pouring in from upstream rivers and creeks, he said.

The Addicks and Barker reservoirs in western Harris County were created by the Corps to protect downtown Houston and the shipping lanes from floodwaters. The Addicks dam is 121 feet high. The Barker dam is 112.5 feet high.

Even with the controlled releases, Army Corps officials are forecasting that the reservoir levels will keep rising for the rest of the week, according to a statement published early Monday on the Harris County website.

"These elevated pool levels could impact surrounding areas behind the dams for several weeks to months," the statement said.

On Monday morning, a few residents living near the Addicks Reservoir said they had decided to stay in their homes, even as water was lapping at driveways and front yards.

Sonia D. Alcantara surveyed the water from her driveway, with pink flip-flops on her feet and hands folded loosely at her waist.

"Never, never have I seen it like this," she said in Spanish, concern lining her forehead.

But Ms. Alcantara had no immediate plans to leave her brick home with bright blue trim, where she was caring for her 15-year-old autistic daughter, Shirley.

“I don’t know what’s going to happen. Only God knows,” she said. “I will wait.”

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