Mansfield Dam Floodgate Rehabilitation Project

Mansfield Dam

- Purpose: Flood management, water storage, hydroelectric power
- Dimensions: 278 feet high, 7,089 feet long
- Top of dam: 750 feet msl
- Spillway elevation: 714 feet msl
- Miles of tunnels inside: 3
- Parts in each paradox floodgate: More than 5,500
- Weight of each floodgate assembly: 50,000 pounds
- Floodgates: 24
- Total discharge capacity: More than 131,000 cfs:
  - o 23 floodgates at more than 5,250 cfs each
  - o 1 variable discharge gate at 2,290 cfs
  - o 2 turbines at 2,530 cfs each
  - o 1 turbine at 2,520 cfs

May 2026

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At 278 feet tall, Mansfield Dam – which creates Lake Travis – is the tallest dam in Texas.

Mansfield Dam during flood operations in October 2018.

LCRA and the Bureau of Reclamation built the dam from 1937 to 1942, after repeated floods along the lower Colorado River devastated Austin and other downstream communities. In 2014, LCRA began a project to rehab the dam's floodgates. The $14.8 million project will help LCRA continue operating Mansfield Dam safely and reliably for generations to come.

The project marks the first time the floodgates have been removed since their original installation. The project will restore parts to their original condition and protect the dam against future corrosion and deterioration.

During the project, LCRA will take one or two gates offline at a time while keeping the remaining gates operational, allowing LCRA to maintain the ability to manage floods at all times. Lake Travis and the other Highland Lakes are in Flash Flood Alley, where flooding can occur quickly and without much warning.

The project is expected to be completed in 2028.

Working in Tight Quarters

Removing the floodgates is no easy task. When the dam was under construction, crews used large cranes to install the floodgates because the top half of the dam was not yet in place. Workers today are constrained by the dam's existing structure and must use heavy-duty hoists and rail carts to remove floodgates. In some cases, crews have less than an inch of leeway as they disassemble and remove large pieces of the floodgate.

After removing the floodgate assembly, crews refurbish each gate piece by piece. The floodgate motor is sent off to be refurbished by a contractor, while LCRA crews clean and replace other components. Various gate parts are sandblasted, coated and/or machined as needed.

Mansfield Dam rehabilitation project, April 2019.

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Each gate is fully tested before being returned to service.

Construction of Mansfield Dam

Mansfield Dam was built across a deep canyon at Marshall's Ford, a long-time river crossing and settlement.

Mansfield Dam construction, 1938. (LCRA Archives W00170)

The dam is one of six dams LCRA constructed along the Highland Lakes from the 1930s to the 1950s. It remains the only dam in the system specifically designed to hold back floodwaters.

During construction of the dam in 1938, Central Texas saw yet another historic rainfall. In July, rains flooded the Colorado River near Austin, causing it to reach flood stage and flow at a rate of 260,000 cfs, or 7 billion gallons an hour. In response to the flood, the height of Mansfield Dam was raised 78 feet, to 278 feet, where it remains today.

Water has never flowed over the spillway of Mansfield Dam, but it has come close. Floodwaters came within 4 feet of the spillway during the historic Christmas flood of 1991.

Mansfield Dam Today

Mansfield Dam and Lake Travis.

LCRA maintains and operates Mansfield Dam with safety as its highest priority.

Mansfield Dam maintenance includes frequent dam inspections by LCRA staff, regular testing of every floodgate to ensure they are ready to operate at any time, annual inspections by engineers and regular inspections by outside consultants. Mansfield Dam meets or exceeds all state regulations.

LCRA releases water through Mansfield Dam almost daily to meet the needs of Austin and other downstream customers.

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Even when Lake Travis is full for water supply purposes at 681 feet msl, the lake can store an additional 776,062 acre-feet – or about 253 billion gallons – of water, to help manage downstream flooding and protect Austin and other communities. When the elevation of the lake exceeds 681 feet msl, LCRA makes floodgate releases under protocol in the U.S. Army Corps of Engineers Water Control Manual for Mansfield Dam and Lake Travis. The amount and duration of the releases vary, depending upon the weather and flood conditions above and below the dam.

Though Mansfield Dam has 24 floodgates, the most floodgates opened at any one time has been six, during a 1957 flood.

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