

Management of Lake Buchanan

Buchanan Dam

- In Burnet and Llano counties.
- Completed in 1938.
- 145.5 feet high.
- 2 miles long.
- Primary purpose: water supply and hydroelectric power.
- 37 floodgates.
- Discharge capacity: 347,000 cubic feet per second.
- Original name: Hamilton Dam.

Lake Buchanan

- 22,017 acres.
- Historic high: 1,021.4 feet msl on Dec. 20, 1991.
- Historic low: 983.7 feet msl on Sept. 9, 1952.
- 30.65 miles long.
- 4.92 miles at widest point.

Lake Buchanan is the uppermost lake of the Highland Lakes chain in the Texas Hill Country. It is one of two water supply reservoirs in the Highland Lakes that supply water for more than 1 million people, businesses and industries, the environment and agriculture.

When Lake Buchanan is full for water supply purposes, it has no room to store floodwaters.

When the lake is full at

1,020 feet above mean sea level (feet msl), there are only a few inches of room until water flows over the spillway in an uncontrolled fashion. LCRA aims to pass floodwaters as safely as possible down the Highland Lakes chain to Lake Travis – which has substantial room to store floodwaters in its flood pool.



Lake Buchanan

Managing Lake Buchanan

- Under a 1990 agreement with the Federal Emergency Management Agency (FEMA), Lake Buchanan is considered full for flood control purposes at 1,018 feet msl during the flood-prone months of May through October every year, and at 1,020 feet msl the rest of the year.
 - The FEMA agreement came about because of FEMA's concerns that floodgates at the dam may not be able to be opened fast enough to safely manage floodwaters if the lake were at 1,020 feet msl when flash flooding occurred.
 - Keeping the lake at or below a maximum level of 1,018 feet msl during the flood-prone months offers better flood protection to the area around Lake Buchanan.
- In 2009, LCRA began a multiyear, multimillion dollar project to upgrade and strengthen the floodgates, hoists and other facilities at Buchanan Dam.
 - LCRA is maintaining Lake Buchanan at or below 1,018 feet msl year-round during the construction project.
- Both the FEMA agreement and the current operational constraints are reflected in LCRA's state-approved Water Management Plan, which the Texas Commission on Environmental Quality approved in November 2015.
- LCRA is currently studying the feasibility of managing the lake to a maximum 1,020 feet msl level year-round after the upgrade project is complete. If the engineering study shows it is feasible to use 1,020 feet msl as a maximum level year-round, LCRA will work with FEMA to change the current agreement.
- Historically, Lake Buchanan has only rarely reached 1,020 feet msl. The lake has been at 1,020 feet msl only 2 to 3 percent of the time, even before the FEMA agreement that keeps the lake at or below 1,018 feet msl for part of every year.

Buchanan Dam upgrade project

The \$50 million project to upgrade Buchanan Dam is designed to bring the dam to current design standards and provide safe and efficient operation of the dam and its 37 floodgates.



Buchanan Dam

The project includes:

- Refurbishing and adding remote operating capability to six existing hoists and adding 26 new automated hoists to provide for quicker response during flood operations.
- Strengthening all 37 floodgates and providing a 1-foot vertical extension on all gates to reduce the potential for overtopping and allow more reaction time in the event of a flood.
- Removing and inspecting all gate trunnions (hinges) and replacing them, if needed.
- Upgrading the electrical system.
- Adding remote control capabilities on all hoists at the dam.
- Providing stop log systems at all three gated sections of the dam. The stop logs can be placed in front of floodgates to hold back lake water and allow work on the floodgates to continue in a dry work environment.
- Upgrading security and safety features throughout the dam.

During the project, construction is underway on only a few gates at a time to ensure the dam remains capable of responding to flooding at all times.

Through 2016, LCRA did much of the work with in-house staff to minimize and better control costs. Lower lake levels caused by the historic drought allowed some of the work to be completed more quickly when lake levels were down.

The project is scheduled to be completed in 2019-2020.