Amistad Dam

National Recreation Area
National Park Service
U.S. Department of the Interior

Location

Follow Highway 90 west approximately 8 miles from Del Rio, Texas and turn left onto Spur 349. Proceed 2.4 miles until you reach the top of the dam. Be aware that the dam is an official Port of Entry and visitors wishing to see the dam are required to have a valid pass port with them. The Dam is open most days from 10 am to 6 pm. There is parking available on the top of the dam on both the American and Mexican side.

Amistad Dam, located on the Rio Grande, is 12 river miles (19km) northwest of Del Rio, Texas and Cuidad Acuna, Coahuila, 574 miles (924 km) upriver from the Gulf of Mexico, and 1 mile (1.6 km) below the confluence with the Devils River.

Purpose

The concrete gravity dam with flanking earth embankments was built for flood control, water conservation, hydroelectric power and recreation.

History

Amistad (meaning “friendship” in Spanish) Dam was constructed by the United States and Mexico in accordance to the Water Treaty Act of 1944. It was built in response to frequent droughts and a number of floods, the worst of which occurred in 1954, killing over 300 Del Rio residents.

While several sites were considered for the dam the ultimate site selection along the Rio Grande was chosen due to its strategic location below the confluences of the Pecos and Devils Rivers.

Prior to building the dam, 56,570 acres of land was acquired by the U.S. Government to accommodate the reservoir. In addition, 14.3 miles of Southern Pacific Railroad track and 16.3 miles of U.S. Highway 90 and 2.7 miles of U.S. Highway 277 were rerouted to make way for the reservoir.

Dam construction began in August of 1963 and was completed in 1968 by a joint venture of four U.S. contractors (Perini Corporation, Leavall & Co. J.A. Jones Construction Co. and Vinnell Corporation) along with one Mexican firm (La Victoria y Asociados).

The overall cost of the dam amounted to $125,000,000. The U.S. portion totaled $72.3 million dollars while the Mexican portion totaled $52.7 million dollars. The cost of the dam was shared between the U.S. and Mexican Governments according to a ratio that reflects the amount of water allocated to each country. The conservation capacity of the reservoir is 56.2% to the U.S. and 43.8% to Mexico.

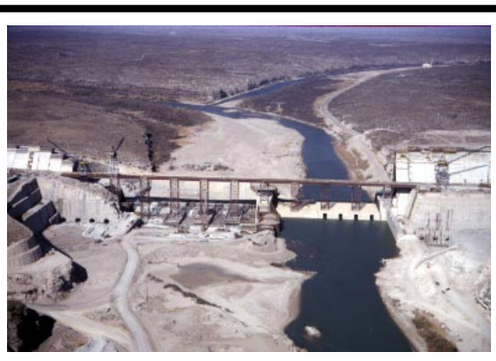
Amistad Dam was dedicated by President Richard Nixon of the United States and President Diaz Ordaz of Mexico on September 8, 1969.

Each country separately installed hydroelectric generating plants. The U.S. Power Plant was constructed 1980-1983. Mexico’s Power Plant was constructed 1981-1987.

Today Amistad Dam is operated and maintained jointly by the United States and Mexico Sections of the International Boundary and Water Commission (IBWC), a branch of the U.S. State Department.

The National Park Service (NPS) began providing for and managing recreation at Amistad Reservoir on November 11, 1965. The IBWC transferred ownership of the lands on the United States side of Amistad Reservoir to the NPS on November 28, 1990.

Construction Photos



Construction Features

Length of Dam

U.S.	1.81 miles	(2.9 km)
Mexico	4.25 miles	(6.8km)
Total	6.06miles	(9.75 km)

Height of Dam
Roadway is 254 feet (77.4 m) above the riverbed and 1,152.3 feet (351.2 m) above mean sea level.

Gates
16 gates in total
50 feet wide
54 feet high

Rock excavation	3,100,000 cubic yards (2,370,000 cubic meters)
Embankment	13,500,000 cubic yards (10,320,000 cubic meters)
Riprap	1,755,000 cubic yards (1,340,000 cubic meters)
Concrete	1,800,000 cubic yards (1,375,000 cubic meters)
Reinforcing Steel	6,000 tons (5,400 metric tons)
Structural Steel	6,500 tons (5,900 metric tons)

Reservoir Capacity

At Conservation Level
(1,117 feet above mean sea level)

Length of Rio Grande River Arm	85 miles (138 km)
Length of Pecos River Arm	14 miles (28 km)
Length of Devils River Arm	25 miles (40 km)
Storage Volume	5,535,000 acre feet
Water Depth at Dam	217 feet (66 m)

16 spillway gates capable of releasing 1,500,000 cubic feet per second (42,670 cubic meters)

Shoreline	
U.S.	547 miles (880 km)
Mexico	304 miles (489 km)
Total	851 miles (1,370 km)

Surface Area	
U.S.	43,250 acres
Mexico	21,750 acres
Total	65,000 acres

Hydro-electric Generation

The average annual U.S. generation = 161,000,000 kilowatt hours

Normal flow through each turbine at rated load = 2,300 cubic feet per second

Turbine generator speed = 200 rotations per minute

Generator voltage = 13,800 volts

Two units: Generators 33,000 kilowatts each
Turbines 42,300 horsepower each

Mexico's power plant is similar to the U.S. with equal generating capabilities.

Historical Floods

1954 – Hurricane Alice formed as a tropical depression in the Bay of Campeche during the morning of June 24th, became more intense and developed into a hurricane during the daytime of the 24th. She made landfall 20 miles south of Brownsville, Texas during the late morning hours of the 25th. The system moved directly up the Rio Grande Valley and did not lose depression status until it arrived in Val Verde County on the afternoon of June 25th.

Heavy rain was wide spread throughout the Lower Pecos/Devils River region. As a result, the Pecos River crested first, 5.5 miles above the Rio Grande confluence, at 1:30 am on June 28th at 96.24 ft, at a rate of 948,000 cubic feet per second (cfs). The Devils River crested next at 5:00 pm on June 28th at 34.76 ft, at a rate of 585,000 cfs at Pafford Crossing, which is 24.5 miles above the Rio Grande confluence. Amistad Dam was built in response to this massive flooding. Three hundred Del Rio residents lost their lives and the Highway 90 bridge over the Pecos River was destroyed.

1998 – Tropical Storm Charlie made landfall on the Gulf Coast near Port Aransas, Texas late on the night of August 20th. The storm arrived over Del Rio on the evening of the 22nd. Approximately 11.5 inches of rain fell within fourteen hours in Del Rio throughout the day of the 23rd. The Devils River at Pafford Crossing crested at 12.3 ft, 105,300 cfs, during the early morning hours of the 24th. The Rio Grande at Del Rio crested at 15.7 ft. and the flow could not be measured because the San Felipe Creek, which runs through downtown Del Rio, caused a backflow into the Rio Grande.

Late on the evening of the 23rd a strong surge of water came down the San Felipe Creek. Many residents did not have time to evacuate and many were stranded on rooftops until officials could rescue them. Unfortunately, there were nine drownings associated with Tropical Storm Charlie in Del Rio. Property damage was extensive and several blocks of homes were obliterated. As a result, Lake Amistad rose just over 14 feet in less than a week.