

SHOSHONE PROJECT BENEFITS

IRRIGATION - Water stored behind the original Buffalo Bill Dam supplies four irrigation districts encompassing over 93,000 acres of farmland in the Bighorn Basin. The principal crops are beans, alfalfa, oats, barley and sugar beets. Since crop production started in 1908, lands served by Reclamation water have produced over \$700 million worth of products.



The additional reservoir storage provided by raising the dam will be put to beneficial use by the State of Wyoming. The water will be available for cities and towns, industry, agriculture, and other uses as markets develop.



Buffalo Bill Powerplant in the canyon downstream from the dam

POWER - The project provides about 100 million kilowatt hours of power per year. It is marketed regionally by the Western Area Power Administration.

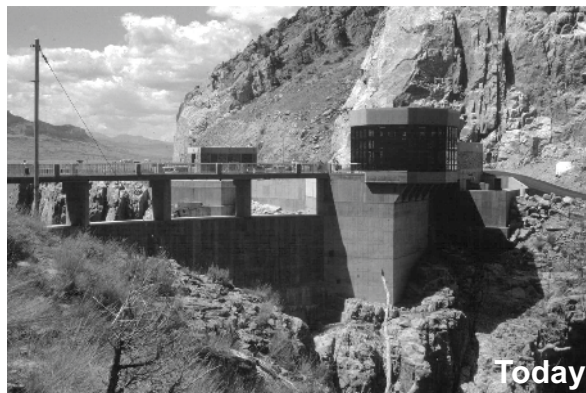
FISH AND WILDLIFE - The reservoir and its environs provide habitat for a variety of fish and wildlife species. A minimum flow is provided to maintain the fishery in the Shoshone River below the dam.

MUNICIPAL WATER - Six towns and several rural areas in Park and Bighorn counties are served from a central water treatment plant. This new treatment plant is supplied raw water under pressure from the Spirit Mountain Energy Dissipation Structure.

FLOOD CONTROL - Although the dam was not built primarily for flood control, it does offer incidental flood protection for areas downstream.

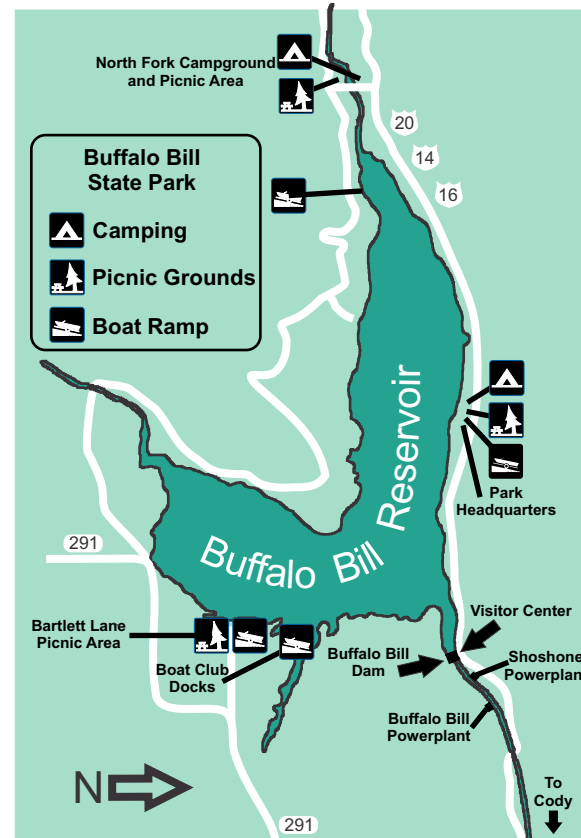


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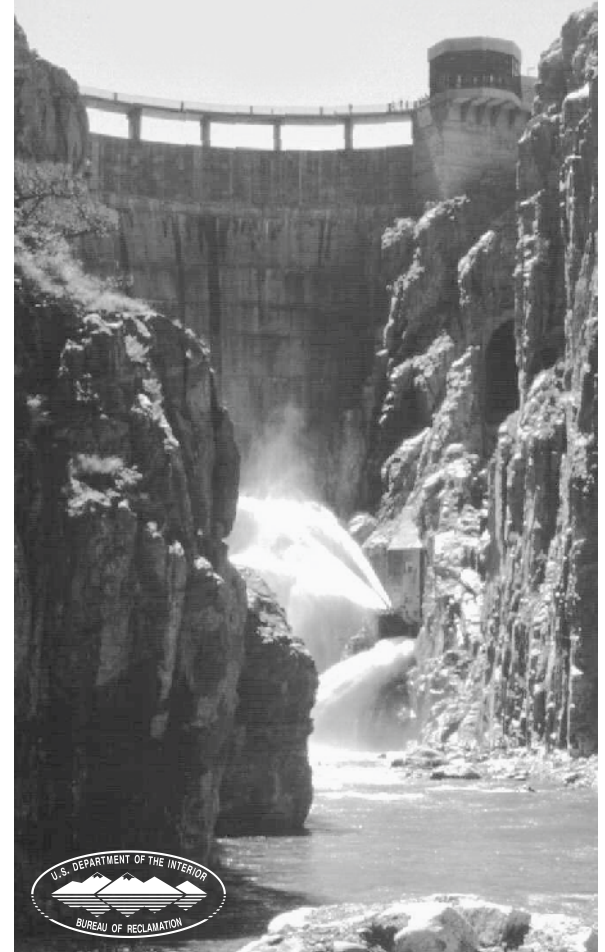
RECREATION - Buffalo Bill Dam and Reservoir are located adjacent to one of the main routes leading into Yellowstone National Park. The reservoir provides opportunities for camping, fishing, picnicking, swimming and boating. Sailboarding and wildlife viewing are also popular at the reservoir. Recreation facilities around the reservoir are managed by Wyoming State Parks and Historic Sites as part of Buffalo Bill State Park.



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RECLAMATION
Managing Water in the West

Buffalo Bill Dam and the Shoshone Project



BUFFALO BILL DAM HISTORY



As the Union Pacific Railroad stretched across the Great Plains in the late 1860's, hundreds of pioneers sought their fortune in the unsettled territories of the West. As more and more settlers moved West to develop their homesteads, it became apparent that a dependable supply of water was needed.

In 1897 and 1899 Colonel William F. (Buffalo Bill) Cody and his associates acquired from the State of Wyoming the right to take water from the Shoshone River to irrigate about 169,000 acres of land in the Bighorn Basin. They began developing a canal to carry water diverted from the river, but their plans did not include a water storage reservoir. Colonel Cody and his associates were unable to raise sufficient capital to complete their plan. Early in 1903 they joined with the Wyoming Board of Land Commissioners in urging the federal government to step in and help with irrigation development in the valley.

The Shoshone Project became one of the first federal water development projects undertaken by the newly formed Reclamation Service, later to become known as the Bureau of Reclamation. After Reclamation took over the project in 1903, investigating engineers recommended constructing a dam on the Shoshone River in the canyon west of Cody.

Construction on the Shoshone Dam (later to be called Buffalo Bill Dam) started in 1905, a year after the Shoshone Project was authorized. Engineers were faced with seemingly insurmountable physical challenges, among them the deep granite canyon which made work difficult and the remote location which made it hard to secure and keep construction workers. Another constant challenge was the Shoshone River which did not always schedule its flows to coincide with work on the dam. One year half the annual runoff occurred during a 30 day period, making work almost impossible. At one point the river cascaded over the top of the unfinished dam at a depth of 17 feet.

Because there were no natural deposits of sand and gravel at the site, both had to be manufactured from granite. Clean pieces of granite weighing from 25 to 200 pounds were hand placed in the concrete. The boulders make up about 25 percent of the masonry of the dam.



Buffalo Bill Dam was Reclamation's first high concrete arch dam. When completed in 1910 it was the highest dam in the world at 325 feet. Because of its historical significance, Buffalo Bill Dam was added to the National Register of Historic Places in 1973. It is also a National Civil Engineering Landmark.

RAISING THE DAM - An 8-year project to modify the dam and associated facilities was completed in 1993. The State of Wyoming provided about 40 percent of the funding for the modification, making this one of the first state/federal cost-sharing agreements for water project construction in the nation.

The project involved raising the crest of the dam nearly 25 feet to create an additional 260,000 acre-feet of reservoir storage capacity. Atop the new crest are aeration piers which support a walkway across the dam. The piers are designed to help the crest function as an emergency spillway in the event the dam is overtopped during extremely heavy runoff.

ENLARGING AND GATING THE SPILLWAY
The dam's spillway, which runs through the mountain under the visitor center, was enlarged, and radial arm gates were installed to allow for controlled spilling. The gatehouse structure located across the parking lot from the visitor center, although mostly below ground level, is equivalent to a 10-story building, making it among the tallest structures in Wyoming.

BUILDING DUST DIKES - Two dust-abatement dikes and one protective dike were constructed at locations around the reservoir. The North Fork and the South Fork dikes keep water on areas of the lake bottom which produce dust when the reservoir level drops. The Diamond Creek Dike prevents the reservoir from inundating Irma Flat.

BUILDING A VISITOR CENTER - The visitor center at the dam was completed in 1993. Half the cost of construction was borne by local interests. A non-profit corporation was formed to raise the local share of construction costs and to operate and maintain the visitor center.

NEW POWER GENERATING CAPACITY - An additional 25.5 megawatts of power generating capacity was added to the project. This included construction of the new 18-Megawatt Buffalo Bill Power Plant in the river canyon below the dam and refurbishing the Shoshone Power Plant, which is visible in the canyon below the dam. A 4.5 Megawatt generator was also added in the Spirit Mountain Energy Dissipation Structure on the hillside above the Buffalo Bill Power Plant.

The Shoshone Canyon Conduit is a tunnel which carries water under pressure from the reservoir down the canyon. Some of the water in the conduit flows into the Buffalo Bill Power Plant. Before the remaining water continues through the conduit to the Heart Mountain Power Plant and Heart Mountain Canal, it must pass through the Spirit Mountain Energy Dissipation Structure which reduces water pressure.

