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Mid-Pacific Region, Friant Dam Division

Background

Friant Dam is located on the San Joaquin River, 16 miles northeast of downtown Fresno, California. Completed in 1942, the dam is a concrete gravity structure, 319 feet high with a crest length of 3,488 feet. The dam controls San Joaquin River flows and provides for: downstream releases to meet water delivery requirements above Mendota Pool; flood control, conservation storage and water diversions into Madera and Friant-Kern canals; and, water deliveries to a million acres of agricultural land in Fresno, Kern, Madera, and Tulare counties in the San Joaquin Valley.

An additional function of Friant Dam began in October 2009 as the first experimental water releases were made for the San Joaquin River Restoration Program, a long-term effort to restore salmon populations in the San Joaquin River.

Millerton Lake, the reservoir behind Friant Dam, first stored water Feb. 21, 1944. It has a total capacity of 520,500 acre-feet, a surface area of 4,900 acres, and is approximately 15 miles long. The lake's 45 miles of shoreline varies from gentle slopes near the dam to steep canyon walls farther upstream. It also allows for boating, fishing, picnicking and swimming.

Reclamation designed Friant's spillway to pass flood water from Millerton Lake downstream into the San Joaquin River. Flow through the spillway is controlled by three 100-foot-wide by 18-foot-high drum gates operated by buoyancy.

The capacity of the spillway is 83,020 cubic feet per second (cfs) at elevation 578.0 feet. The gates float open or close based on level in the Reservoir. The watertight gates are located in the recess of the spillway section forming a portion of the crest when lowered. Due to frequent drought cycles in central California over the past 50 years, water seldom spills at Friant.



The Friant Dam and Friant-Kern Canal

Friant-Kern Canal

The Friant-Kern Canal carries water about 152 miles in a southerly direction from Millerton Lake to the Kern River, near Bakersfield. The water is used for supplemental and new irrigation supplies in Fresno, Tulare and Kern counties.

Construction of the canal began in 1945 and was completed in 1951. The canal had an initial capacity of 5,000 cfs that gradually decreases to 2,000 cfs at its terminus in the Kern River. In the 1970s the initial capacity of the canal was increased to 5,300 cfs; however, the canal has lost its ability to fully meet these capacities due to initial design limitations, subsidence, increased canal

roughness and changes in water delivery patterns. As directed in the San Joaquin River Restoration Settlement Act, Public Law 111-11, a feasibility study is authorized to evaluate the restoration of the capacity of the canal as previously designed and constructed by Reclamation.

Madera Canal

The 35.9-mile-long Madera Canal carries water northerly from Millerton Lake to furnish lands in Madera County with a supplemental and a new irrigation supply. The canal, completed in 1945, has an initial capacity of 1,000 cfs, decreasing to 625 cfs at its terminus in the Chowchilla River. In 1965, the canal lining from the headworks to milepost 2.09 was raised so that 1,250 cfs could be diverted from Friant Dam. Like the Friant-Kern Canal, the SJRRS Act authorizes a feasibility study to evaluate the restoration of the capacity of the canal as previously designed and constructed by Reclamation.