

Loup Power District Canal System

The Loup hydroelectric system begins west of Genoa at the Headworks Dam where the water from the Loup River is diverted into the manmade canal and used for hydro generation and irrigation.

The first two miles of the canal was established as a settling basin to permit silt and sand to settle to the bottom. This deposit is removed by an electrically driven floating dredge, The Pawnee.



The canal, which carries the water from the settling basin to the Monroe Powerhouse, is eleven-and-a-half miles long.

Above, The Pawnee and below The Monroe Powerhouse.



The Monroe plant, which is a run-of-the-river plant, has three hydraulic turbo-generators. It generates about 20 percent of the District's total generation and is equipped for complete remote control from the computers of the Columbus Powerhouse.

A thirteen-mile-long canal carries the water from the Monroe plant to the two regulating reservoirs north of Columbus, Lake Babcock and Lake North. These lakes have enough storage for forty-eight hours of emergency hydro generation.

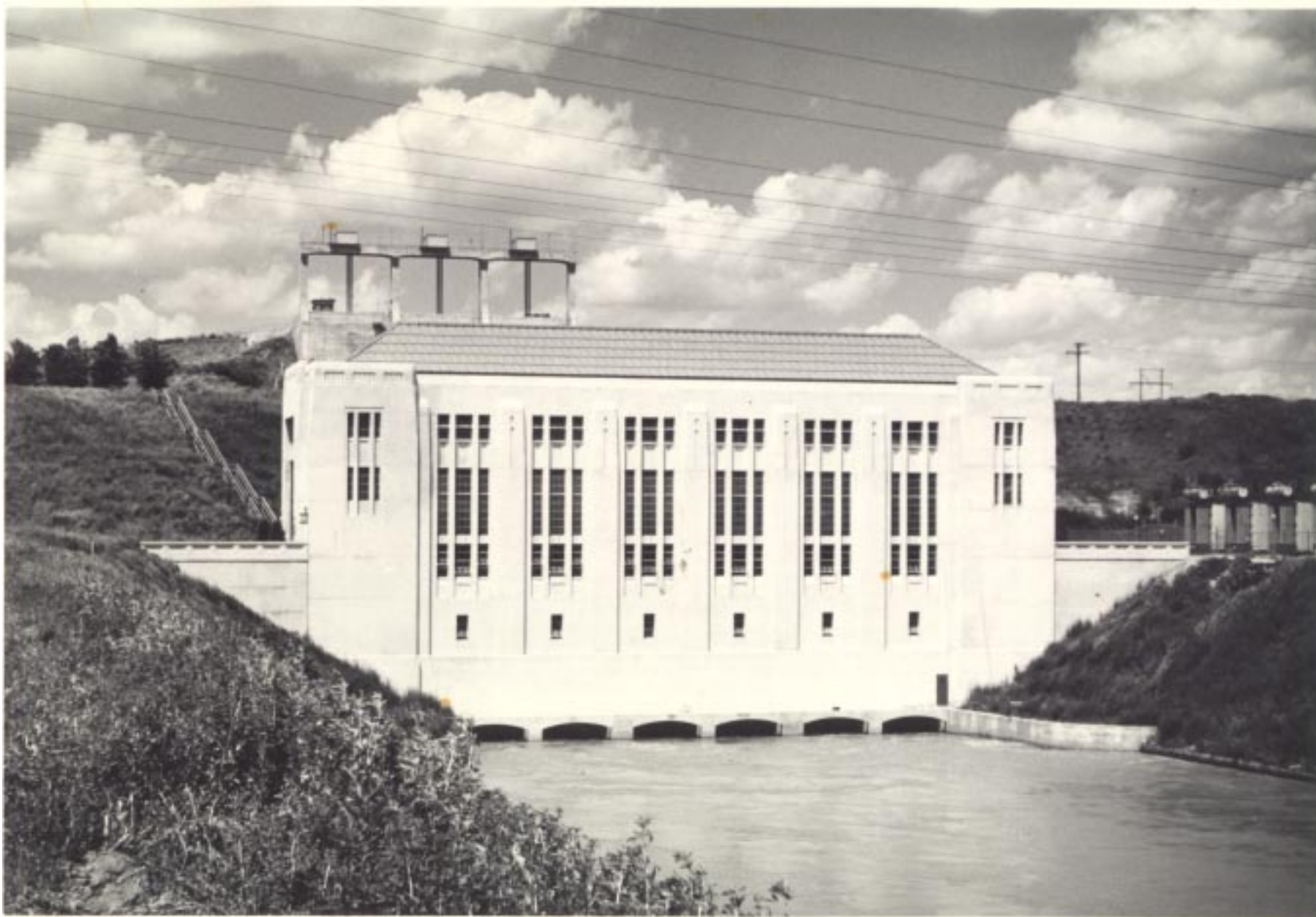
Loup's service area covers approximately 2,028 square miles. The District maintains 780 miles of transmission and distribution lines and has been generating electric power since March 5, 1937. Total population within Loup's service area numbers about 50,000.

The intake canal between the lakes and the Columbus Powerhouse is one-and-a-half miles long.

The five-and-a-half mile long tailrace canal south of the Columbus Powerhouse carries the water to the Platte River. The entire canal system is 33 miles long and drops approximately 165 feet from river elevation at the Genoa Headworks to the point of return to the river.

Loup Power District's Columbus Powerhouse is one of the largest hydroelectric generating plants in the state of Nebraska.

This is the pulse of the hydro system. Operators are on duty around the clock – seven days a week, 365 days a year. They keep in contact with the NPPD Central Dispatch office to determine when and how much electricity is needed. If there is a power failure on any one of the lines, they are alerted by the alarm signal and an indicator signaling the troubled spot.



The Columbus Powerhouse.

Three penstocks, each 20 feet in diameter and approximately 300 feet long – direct the water from the intake canal. It is the force of the water created by falling 112 feet from the intake canal that causes the turbine gates to move which makes the turbines spin and drive the generator.

The course of the canal was charted to take maximum advantage of the natural fall of the river valley. The success of this engineering feat is attested to by the fact that after 71 years of constant use, the canal still carries its designated capacity of water.