

BARNES COUNTY BALDHILL DAM 5' POOL RAISE

SPONSORS:

Sheyenne River Joint Water Resource District
Red River Joint Water Resource District

LOCATION:

Sheyenne River
Section 18, Getchell Township
Barnes County, ND

KEY DATES:

Completed Construction: 1951
Rehabilitated: 1997
Modified: 2004

FEATURES:

Drainage Area: 3,812 sq. mi
Side slopes: 3:1 upstream &
downstream

TOTAL COST:

\$9,730,000

Challenge

The Sheyenne River in Valley City, Barnes County, Richland County, and Cass County experiences frequent overbank flooding along the mainstem. The goal is to provide flood risk reduction to the Sheyenne River mainstem downstream of Baldhill Dam.

Solution

Construct additional storage on the existing Baldhill Dam to reduce peak flows downstream of the project.

The original purpose of the dam was multipurpose and included recreation water supply and temporary flood water storage. It was modified with this project by raising the height of the dam to increase temporary flood storage. The existing spillway gates were replaced with three Tainter Gates to add an additional 5 feet of water storage in the reservoir for flood events. This modification provides significant reduction in flood crests for downstream communities.

The existing dam includes a compacted earth fill structure and broad crested concrete spillway. After the improvement the dam is approximately 61 feet tall with 5 feet of freeboard and 1,650 feet long. Following the modification, the top of the earth embankment is at an elevation of 1283.5 feet and the emergency spillway has a dam crest elevation of 1,271.0 feet. The max pool area and volume are 9,500 acres and 200,000 acre-feet respectively. The emergency spillway area and volume is 6,750 acres and 101,300 acre-feet respectively.

Project Outcome

Baldhill Dam creates a reservoir (Lake Ashtabula) which attenuates flows on the Sheyenne River. It supplies water to downstream communities during lower flow periods, provides a place for recreation and habitat to wildlife, controls the water released downstream and reduces flooding along the Sheyenne and Red Rivers. This project adds additional temporary flood storage to the existing dam, providing significant downstream flood risk reduction.