

Kirby Irrigation District Conservation Program, Level II Study

Client/ Mr. Ron Vore
Reference: Wyoming Water Development Commission
6920 Yellowtail Road
Cheyenne, WY 82002
(307) 777-7626

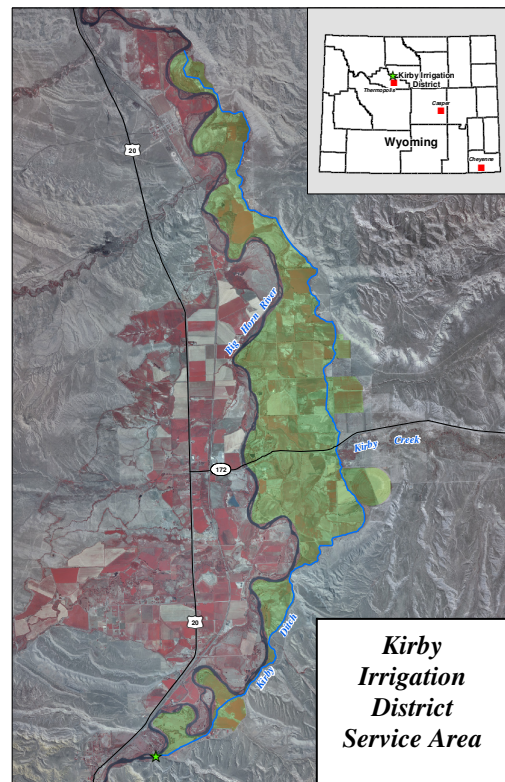
Project Manager: Brad Anderson
Jay Schug

The Kirby Irrigation Ditch is managed by the Kirby Irrigation District (KID) and diverts irrigation water from the Big Horn River about one mile north of Thermopolis, WY. It was originally built in 1904 and services approximately 3,200 irrigated acres. In recent years, the KID has been subjected to increased restrictions by the Bureau of Reclamation on its diversions in response to current drought conditions. Consequently, the KID sought funding through the Wyoming Water Development Commission to fund a study to investigate ways the district can improve efficiency and make better use of its water. Anderson Consulting Engineers, Inc. was contracted by the WWDC to complete this investigation.

The objective of the project is to prepare a plan that identifies practical and economic improvements including installation of pressurized pipe systems, construction of regulation storage reservoirs, canal/lateral lining, rehabilitation of existing structures, automation of structures and measurement devices, and implementation of on-farm improvements. Included in the plan will be conceptual level costs estimates to support a legislative request for Level III construction funding.

With this project, ACE will:

- Conduct an assessment of all irrigation infrastructure associated within the District and document their condition, functionality, and longevity.
- Conduct a seepage analysis of the system in an attempt to quantify seepage losses which could be recovered through ditch improvement and operations management.
- Develop a comprehensive GIS/database mapping product that facilitates the planning process, documents the inventory of structures, and provides valuable data to the district to promote operation and management of water deliveries, as well as implementation of planned improvements.
- Develop a prioritized list of rehabilitation recommendations for the District based upon structure condition and function to facilitate district improvement efforts.
- Evaluate options available to the District for automation and monitoring water level via telemetry.
- Evaluate opportunities for storage available to the District which would provide supplemental water during periods of limited water supply or provide water to support irrigation of additional lands within the District boundaries.
- Prepare conceptual level designs and cost estimates that support a legislative request for Level III construction funding.



All of the information collected during this study is being incorporated into a comprehensive GIS developed using ArcView software. In addition to traditional coverage generated using the spatial data, ACE has developed innovative customized tools to facilitate data queries, data review and editing, and map generation. In addition, our Digital Library enables the user to incorporate information from virtually any other electronic media into a comprehensive 'clearinghouse' of information.