

Martinsdale Supply Canal Headworks Rehabilitation Project (RRGL/ Rank 66)

The Upper Musselshell Water Project (UMWP) is owned by the Department of Natural Resources and Conservation and is operated by the Upper Musselshell Water Users Association. This Project comprises three dams creating two reservoirs, which capture a maximum storage of 30,134 acre-feet. There are also five canals associated with the project that total 52 miles in length. The original project was completed on September 20, 1939, and was first operated in 1940.

- Original Construction – 1939. Public Works Administration and State Water Conservation Board effort.
- 21,718 Shares (acre-feet) marketed annually
- 57 Water Users hold 96 contracts
- Approx 35,000 acres irrigated (29,000 supplemental, 6000 full per 1950 Water Resource Survey)
- Two Reservoirs, Martinsdale (23,080 acre-feet) and Bair (7,029 acre-feet)
- Martinsdale Supply Canal Capacity – 408 cfs (Diverted from South Fork of the Musselshell)

Originally constructed for agricultural purposes, the Project provides multiple benefits. Agriculture, fish and wildlife, and recreation uses all benefit from this and all of our state-owned water storage projects. The town of Harlowton, MT also uses water from the UMWP for municipal uses.

Due to deterioration over time and design deficiencies, the Martinsdale Supply Canal Diversion Structure and Canal requires substantial rehabilitation. The head works (headgate and trash rack) have outlived their design life and are seriously compromised. Leaky gates, porous canal materials, and a poorly designed trash rack system all contribute to wasted water and create dangerous working conditions. The trash rack ensnares trees, root balls, and other large pieces of debris, which require dangerous heroics to remove, posing a threat to the ditch rider. The situation constitutes a liability to the Upper Musselshell Water Users Association (UMWUA) and to the State of Montana.

The Upper Musselshell Water Users cannot effectively and reliably manage flows into the Martinsdale Reservoir. They are also working toward improving site conditions to ensure a safe working environment.

In order to address these concerns, DNRC-State Water Projects Bureau (SWPB) and UMWUA wish to rehabilitate the headworks. The SWPB is requesting a grant of \$100,000 to modify the entrance conditions to the diversion, eliminate hazardous working conditions, and improve the operational efficiency of the entire project to reliably store water for delivery at the times it is most needed. This project is first step in a three-phase process that will continue rehabilitation efforts for the Upper Musselshell Water Project in the future.

| Proposed Project Budget | | |
|--|-------------------|------------------------------|
| Funding Source (grant/loan or cash reserves) | Amount | Committed/Uncommitted |
| RRGL Grant | \$ 98,688 | Uncommitted |
| Upper Musselshell Water Users Association In-kind services | \$17,729 | Committed |
| DNRC-WRD-SWPB In-kind services | \$ 23,625 | Committed |
| | \$ | |
| | \$ | |
| TOTAL | \$ 140,042 | |

Estimated Total Project Cost \$ 140,042



Existing Headworks



Martinsdale Reservoir @ full pool - looking Northeast