



**May 2011
Middle Creek Dam
Handrail Improvement Project
Information Report**



Middle Creek Dam

Middle Creek Dam and Reservoir (Hyalite Lake) are located approximately 15 miles South of Bozeman at 6,700 feet elevation in the Gallatin Mountain Range (T4S, R6E, portions of sections 15, 22 and 23). The reservoir encompasses approximately 212 surface acres. The project provides water to irrigators in the Gallatin Valley and serves as a Bozeman municipal water storage site. The reservoir and surrounding U.S. Forest Service (USFS) lands experience moderate to heavy recreational use. The dam is owned by the Montana Department of Natural Resources and Conservation (DNRC), with daily operations and maintenance performed by the Middle Creek Water Users Association. The dam is operated and maintained under a USFS Special Use Permit. Middle Creek Dam is classified as “high hazard”, which means that a loss of life could occur should the dam fail. The classification is not an indication of the structural condition of the dam. A major rehabilitation of the dam was completed in 1992.

This project involves making repairs to the existing 1 ½” diameter aluminum hand railing crossing the dam on each side of the concrete jersey barriers and the walkway over the dam and spillway. The railing was installed as part of the 1992 rehabilitation. The railing posts are embedded into 2” diameter, 6 inch-deep holes. The posts and railing are connected together with manufactured joint connections and fastened with rivets.

Moisture has seeped into the post holes and freeze-thaw action has “jacked” some of the posts out of place, deforming the top rail. The railing has also come apart in several locations. Vandalism has damaged several other sections.

This project will reuse about 80% of the existing hand rail. The rail will be taken apart and the posts pulled out or cut flush with the concrete surface. The remaining hole will be filled with non-shrink cement grout. New 3”x5” aluminum post base plates will be mounted on the concrete surface over the holes and anchored with an epoxy. The salvaged posts will be cut to appropriate length (existing height from concrete surface to the top of rail will not change) and mounted to the new base plates. The rest of the hand rail will then be reassembled with any damaged and missing pieces replaced and/or reconnected.

The project is tentatively scheduled to begin in early June, 2011 (weather permitting) and should be completed prior to the 4th of July Holiday. Since the area receives heavy recreational use, the contractor will be required to:

- Always keep one lane of traffic open across the dam road and maintain traffic control around the work zone, limiting the work zone to the immediate work area.
- Install a temporary railing if work area is left unattended after railing removal.
- Place work zone signs and barricades as needed to maintain public and worker safety.

One lane of the access road traversing the dam will always remain open during the repairs. Appropriate flagging and caution sights will be placed to provide adequate warning of the construction.

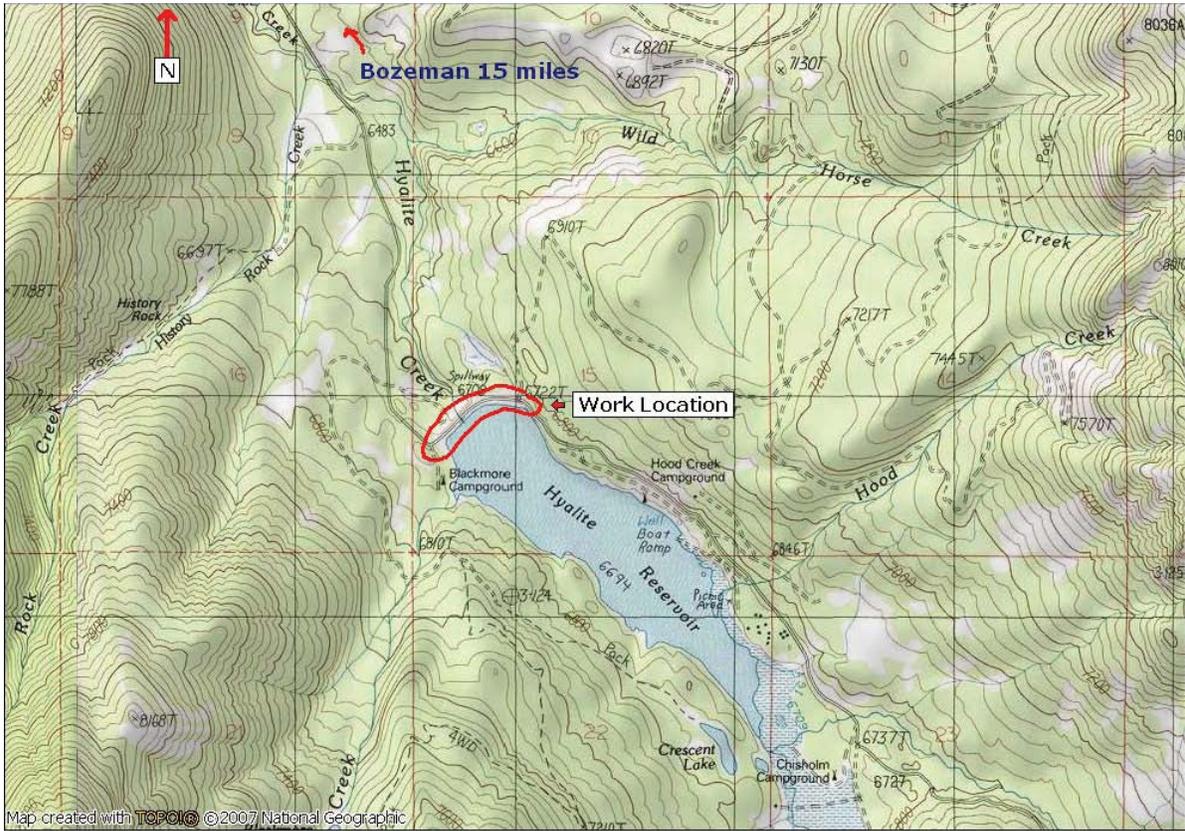
The U.S. Forest Service, Bozeman Ranger District has been contacted concerning potential impacts recreational use and access. This project is classified as routine maintenance and repairs; therefore the project is categorically excluded under the Montana Environmental Policy Act. An environmental analysis is not required. The project is funded entirely by the DNRC with an estimated cost of \$26,844.

Please contact David C. Larson (Project Manager) at (406) 444-6653 or James P. Domino (Environmental Science Specialist) at (406) 444-6622 if you have any questions or would like additional information.

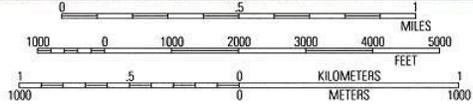
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Thank you for your interest.



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Project Location

