

The Oxbow

FROM THE NORTH DAKOTA STATE WATER COMMISSION

Crown Butte Dam Undergoing Repairs

The North Dakota State Water Commission is cooperating with other local and state agencies to complete several needed repairs and modifications to Crown Butte Dam, where Interstate 94 serves as the embankment of the dam, ten miles west of Mandan.

In December 2004, State Water Commission and Department of Transportation staff inspected Crown Butte Dam and determined that a number of repairs were necessary. Specifically, it was found that the spillway pipe had settled unevenly, which caused fill material to seep through joints where the spillway pipe sections had been connected. In addition, several sinkholes were identified on both sides of the embankment. And, it was determined that there were problems with the low-level drawdown valve, as well as the toe drains.

The low-level drawdown valve can be used to lower the reservoir for various reasons, including to provide increased flows downstream. The toe drain simply collects seepage coming through the dam and disperses it downstream in a more controlled manner.

It was agreed that the best method to make the repairs was to include the work into the reconstruction of Interstate 94 in that area, which was already scheduled for completion this summer.

With Northern Improvement of Bismarck already reconstructing

the west bound lanes of Interstate 94, they will also be installing a new concrete drop inlet, 28 feet of spillway pipe, a vent pipe, and a portion of a new low-level drawdown system. The Water Commission's construction crew will complete the

installation of the low-level draw-down, seal off the old low-level drawdown, install a new sand collar near the downstream end of the spillway pipe, and repair the toe drain.

The Morton County Park Board is the owner of Crown Butte Dam, so they will supply the materials for the vent pipe, the low-level drawdown, and the downstream work.

In addition to providing a financial contribution to the repairs on the dam structure, the Game and Fish Department is also completing modifications to the reservoir to improve habitat and provide better opportunities for shore fishing.



Pouring concrete for the new drop inlet at Crown Butte Dam.

North Dakota Supreme Court Rules in Favor of Devils Lake Outlet Project

By Michael Noone

On June 2, 2005, the North Dakota State Supreme Court ruled in favor of the state-sponsored Devils Lake outlet project when they determined that the North Dakota Department of Health's granting of a Section 402 North Dakota Pollutant Discharge Elimination System (NDPDES) permit to the State Water Commission was not "arbitrary, capricious, or unreasonable."

The Province of Manitoba, the State of Minnesota, and the Peterson Coulee Outlet Association and People to Save the Sheyenne River (two grassroots organizations that formed to formally oppose the outlet), had unsuccessfully appealed a ruling made by a North Dakota district court in the fall of 2004, that the Health Department had appropriately followed regulations in granting the Water Commission a permit to operate the outlet.

The litigants had made several arguments, including that the Health Department: failed to adequately consider increased phosphorus loading in downstream waters; failed to consider how the outlet would contribute to existing water quality violations in the Sheyenne River; failed to recognize that the outlet would result in significant degradation of the receiving waters; did not affirmatively demonstrate that degradation of receiving waters was necessary to accommodate important social or economic development; did not adequately assess whether any reasonable non-degrading or less degrading alternatives were available; granted the permit even though the discharge would contribute additional compliance problems involving phosphorous; and failed to incorporate required measures to minimize the risks of biota transfer.

Fortunately for the flood-stricken residents of the Devils Lake basin, the court found that there was evidence in the record that supported the Health Department's decision to issue the Water Commission a permit for the state outlet.

The court found that the Health Department adequately addressed the phosphorous issue, adequately considered other non-degrading or less degrading alternatives, adequately considered anti-degradation issues, and that studies completed show that the risk of biota transfer is very low.

Project Progress

Despite a wet summer, the vast majority of construction on the outlet has been completed. And, as of early June, when this article was written, the only remaining work to be completed included: connection of the pipelines to the pump stations, and pressure-testing those sections of pipeline; painting of the interior and exterior of the pump stations; approximately 3.5 miles of canal; seeding of all the canals; and completion of the power delivery structures.

Lake Sakakawea Management Plan Public Meetings Scheduled

If you have ideas about how the U.S. Army Corps should manage future land use or development around Lake Sakakawea, including new boat ramps, marinas, or conservation areas, as a few examples, then this is your chance to be heard.

The U.S. Army Corps of Engineers has begun work to revise and update the Lake Sakakawea Resource Management Plan. The current master plan, which was published in 1978, should not be confused with the Missouri River Master Manual. Rather, this plan guides the development and management of natural, cultural and manmade resources in, and around the reservoir. Since the plan was originally developed, ten supplements have been added. And, other widespread changes have also taken place over the years, resulting in a need to update the current document.

“A steering committee, made up of stakeholders and tribal, state and federal agencies, has been formed to help guide the two-year process,” says Corps Project Manager Steven Rowe. “We’re hopeful that the public will help us by sharing their thoughts about the future management of the Garrison Project’s land base.”

Four ‘open house style’ meetings will be held to encourage public involvement and to gather public input.

- Aug. 8 Beulah Civic Center, Beulah, N.D. (4:30 – 7:30 MST)
- Aug. 9 Garrison City Auditorium, Garrison, N.D. (4:30 – 7:30 CST)
- Aug. 10 New Town Civic Center, New Town, N.D. (4:30 – 7:30 CST)
- Aug. 11 Williston’s El Rancho Motel, Williston, N.D. (4:30 – 7:30 CST)

Interested individuals can also submit their ideas, questions, and concerns to the steering committee through the project website at www.nwo.usace.army.mil/html/Lake_Proj/garrison/welcome.html or by contacting the Corps at: U.S. Army Corps of Engineers, ATTN: Steven Rowe, 106 South 15th Street, Omaha, NE 68102, (402)-221-7673, (888)-835-5971 toll free.



Outlet construction work continues near Josephine pump station.

Construction begins on new Water Commission maintenance shop

A groundbreaking ceremony was held June 7, 2005 to mark the beginning of construction on the new State Water Commission maintenance shop.

The 4.3 acre site of the new facility is located north of the State Penitentiary and east of the North Dakota Department of Health and Consolidated Labs in southeast Bismarck - with direct access to Main Avenue. The 9,000 square foot building will feature a wash bay, a shop bay, two cold storage bays, two floors of heated storage, a testing room, an office, and a meeting room. In addition, a 1.25-acre secured graveled storage lot will be constructed on the west side of the shop.

AWBW Architects was hired to design the shop, and bids for construction were opened on October 28, 2004. Bids were then awarded on November 17, 2004 to Professional

Contractors, Inc. for the general construction; Advanced Mechanical for the combined mechanical; and Electric Systems for the electrical work. The total amount of these three contracts is \$752,553.

In attendance of the groundbreaking were representatives from

AWBW Architects; State Engineer, Dale Frink; and several members of the State Water Commission staff.

The five staff members who will be located at the new maintenance shop should be able to make the move in September 2005, when the contract is scheduled for completion.



Gary Calheim (NDSWC), Don Barsness (AWBW), Dale Frink and Todd Sando (NDSWC).

Corps implementing cold water habitat saving measures

The United States Army Corps of Engineers, in cooperation with other federal and state agencies, including the Water Commission, have reviewed several alternatives in an effort to preserve cold water habitat in Lake Sakakawea. The alternative that the Corps ultimately selected involves the installation of plywood over the top of the trash racks that cover Garrison Dam's intakes. With the plywood in place, warmer water, which is closer to the surface of the reservoir, will be forced through the

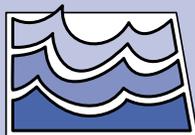
powerhouse, minimizing the amount of colder water leaving the lake.

Because this is an experimental solution, the plywood will only be installed on two of the five intakes. The other reason only two intakes will be modified is to avoid potential problems at the federal fish hatchery on the downstream side of the dam, which requires cold water—supplied from one of the Garrison Dam intakes. Thus, the intake that supplies water to the hatchery will not be modified.

The modifications to the trash racks are expected to be in place by the end of July, and will be removed in the fall following the lake turn-over.

The initial cost estimate for the trash rack modifications is about \$146,000, which is based on material costs and an estimated project duration. However, in consideration of the fact that the trash racks have not been removed since the dam was constructed over half a century ago, it is possible that the estimated installation time could vary substantially.

In addition to the trash rack modifications, the Corps will also implement variable daily flow releases from the dam to help conserve Sakakawea's cold water habitat.



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