

The Oxbow

FROM THE NORTH DAKOTA STATE WATER COMMISSION

Cedar Lake Dam is repaired by SWC

by Brad Benson

Cedar Creek was closed in 1935 with an earth-rolled dam to create Cedar Lake. The dam was con-

structed by the Civilian Conservation Corps (CCC) as a federal economic development project. Cedar Lake Dam is located on Cedar Creek in southwestern North Dakota (Slope

County). Starting in 1949, the State Water Commission started its involvement with the Cedar Lake Dam by repairing a washout from heavy spring runoff. The State Water Commission has been back to the dam several time since for various repairs and improvements. Most recently, the State Water Commission's construction crew worked on Cedar Lake Dam in September 1999.

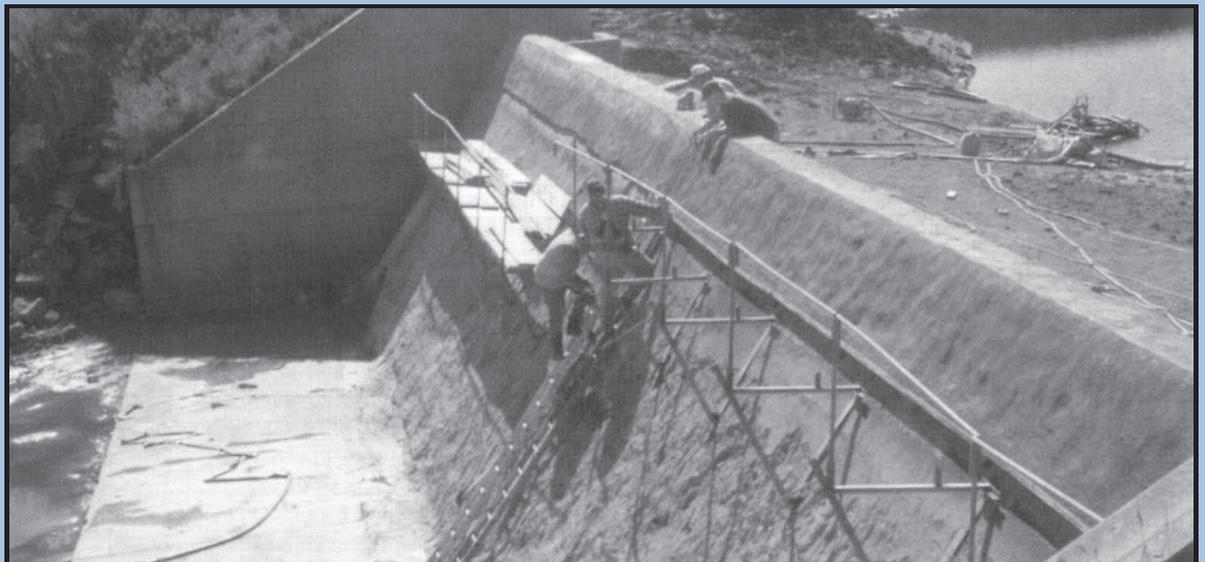
The work entailed repairing the upstream and downstream face of the existing concrete dam, modification of the low level drawdown system, and plugging an existing riparian outlet. The work took approximately six weeks and cost approximately \$45,000. The Slope County Water Resource District, the North Dakota Game and Fish Department, and the State Water Commission funded the project.

The concrete of the existing weir had deteriorated badly over the years and required replacement. The work consisted of placing a new layer of concrete, or shotcrete, on the upstream and downstream face of the structure.

The concrete was placed using a process referred to a guniting. Sand and cement are fed into a gunite



Workers sprayed concrete through a process called guniting on the upstream and downstream face of the Cedar Lake Dam structure. The dam is in Slope County in southwestern North Dakota.



machine, which mixes the two components. The dry mixture is then forced under pressure through a flexible hose, with water added to the sand/cement mixture at the nozzle of the hose, immediately prior to exiting the hose. The gunite is then shot onto the structure, hence the term shotcrete. Prior to guniting, the loose and deteriorated concrete was removed from the structure by hydraulic chipping and the surface was prepared by sand blasting. The new layer of shotcrete is approximately three inches thick.

The remainder of the work entailed modifying the existing low-level drawdown system and plugging an old pipe through the embankment, which was used to supply water to downstream users. The modification to the drawdown system included a two-foot increase in the height of the concrete dry well, which houses the drawdown valve, and extending the intake approximately 300 feet into the reservoir. The riparian outlet was plugged by filling the pipe with gunite. ■

Executive director employed by RRBB

The Red River Basin Board recently hired James Moench as the Board's new Executive Director. Moench comes to the Board from a similar position with North Dakota's Commission On the Future of Agriculture (COFA).

"My experience with COFA and 22 years working for a major farm organization and its associated groups and issues, has taught me the complexities of resolving diverse issues associated with natural resources management," Moench said. Moench began work on December 1, 1999, with the support of the Board's other four staff members.

Morrie Lanning, Chairman of the Red River Basin Board, said "Jim's skills and experience in consensus building and organizational development will be a real asset in achieving our mission."

Lanning continues, "Jim's considerable legislative and communica-

tions experience will be particularly helpful to the Red River Basin Board as we seek to elevate the Red River Basin Board's visibility and influence relative to water management issues."

The Red River Basin Board is a basin-wide organization that includes Manitoba, South Dakota, North Dakota and Minnesota. Basin policy makers established the Red River Basin Board in 1997 in order to develop a comprehensive water management plan and to have a means to help resolve water management conflicts.

Information about the Red River Basin Board and its efforts in addressing the water management needs of the people of the region can be obtained by calling 218-291-0422 or by visiting www.intcoalition.org/RRBB.htm on the internet. The Red River Basin Board office is located at 119 South 5th Street in Moorhead, Minnesota. ■



COMMISSION MEETING MINUTES

by Pat Fridgen

The North Dakota State Water Commission held a telephone conference call meeting in the Governor's Conference Room at the State Capitol, October 27, 1999 in Bismarck.

On October 19, 1999 the State Water Commission opened bids for the Southwest Pipeline Project contract 5-6, for the Burt water storage tank. Two tank construction alternatives were bid: one for a welded and coated steel reservoir, the other for a glass fused bolted steel

reservoir. Engineering America placed the only bid for the glass fused bolted steel alternative, while no bids were received for the welded and coated steel alternative. The Commission gave their approval for Engineering America to be awarded the contract for the Burt Tank project.

Also related to the Southwest Pipeline Project, projected capital repayment rates for year 2000 were approved by the Commission. The rates are \$0.80 for contract users per thousand gallons, and \$24.50 per

month for rural monthly rates. In addition, a monthly debt service credit of \$7,805 was approved for the City of Dickinson, provided the City makes a debt service payment to the Bureau of Reclamation. If payment is not made, the credit will be deposited in an escrow pending the outcome of the federal legislation.

Commission member Larry Hanson was recommended to replace Mike Ames on the Northwest Area Water Supply Project advisory committee to represent the State Water Commission. ■



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THE WATER PRIMER

Is your hometown dam safe?

by Patrick Fridgen

There are currently over 75,000 dams distributed throughout the United States that form a critical part of our national infrastructure. Dams provide water for irrigation and drinking, create reservoirs for recreational opportunities, provide flood control, and contribute to the nation's power supply through hydroelectric facilities. Though the benefits of dams make an important contribution to society, dams can also pose a potential threat to the public if they are not maintained and monitored properly.

In the early 1970's, the importance of dam safety came into the spotlight following a series of dam failures, including the breach of a privately-owned dam in Georgia, which caused the loss of several human lives.

In response, the National Dam Inspection Act of 1972 provided for a national inventory and inspection program through the Army Corps of Engineers. Since that time, dam inspection programs and guidelines have evolved significantly, as the federal government, along with each of the fifty states, have all made great strides in promoting and improving dam safety programs within their respective jurisdictions.

In North Dakota, all inspections of non-federally owned dams are conducted by State Water Commission (SWC) dam safety engineers. Leslie Horgan, a dam safety engineer for the SWC, says there are currently

over 100 dams in North Dakota that are monitored through a rotational process that includes comprehensive inspections. Some of the higher priority dams are inspected annually, however, most dams are inspected on a three to six year rotation. The frequency of inspections depends on the dam's structural health and potential for causing damage in the event of a failure. The rotational schedule for dam inspections in North Dakota is decided by the administrator of the dam safety program.

If upon inspection, a dam is found to have a minor structural problem, it may be moved within the rotational inspection schedule so it will be inspected more frequently to avoid any potential future problems. If the problem is serious enough, a request for repairs of the structure will be submitted immediately.

In an effort to make dam inspections more methodical and less prone to errors by those who are unfamiliar with the process, Horgan has been developing a dam inspection checklist for field inspectors. Horgan feels that by following a checklist, dam inspectors will be less likely to overlook potentially crucial conditions, and anyone new to the process will have a template to guide them. It should be noted that the rotational inspections of dams are quite comprehensive, and that every dam in the state is given a brief inspection each spring to confirm that they are all functioning properly, and that no obvious problems exist with the structures.

In order to keep administrators of state dam safety programs well informed and well trained, the Federal Emergency Management Agency (FEMA) now offers grants to states for this purpose. The funding comes from the State Assistance Grant provision of the National Dam Safety Program, established under the Water Resources Development Act of 1996. All fifty states are eligible for the National Dam Safety Program Assistance for dam safety programs, as long as proper application procedures are followed.

The primary goal of the National Dam Safety Program is "to assist states in developing and implementing programs to ensure safe operation and regular maintenance of dams."

In 1999, the State of North Dakota received approximately \$28,000 for their dam safety programs and training through these federal grants.

In recent history, the importance of dam safety has undoubtedly gained recognition. The federal government, along with each of the fifty states, have all taken important steps toward improving the quality of their dam safety programs. By continually making improvements to these programs, our governing agencies are doing their part to reduce the risk to our nation's communities by ensuring dam facilities are safe. ■