

State Water Commission Construction Crew Busy With 2009 Flood Repairs

The 2009 construction season began rather abruptly for the Water Commission's construction crew, when they were sent to Lake La-Moure in April to try to save Cottonwood Creek Dam. During that time, the construction crew worked in cooperation with several other state and federal agencies to stabilize the dam's emergency spillway, which was in danger of failing due to excessive flows.

The effort to save Cottonwood Creek Dam was successful, and since then, the federal government, through the Natural Resources Conservation Service, developed repair plans to return the dam to pre-flood conditions. A private contractor was hired to make the repairs, and the project is scheduled for completion before the end of the year.

After the Cottonwood Creek Dam incident, the Water Commission's construction crew spent much of the 2009 construction season conducting repairs at other sites that were damaged from spring flooding. However, wet conditions in the spring and early summer months delayed the start of repair projects, and swollen rivers prevented some inspections until mid-summer.

The following is a summary of other major projects that the Water Commission's construction crew worked on during the 2009 construction season.

Cedar Lake Dam, Slope County

On April 4, the Water Commission was notified of a breach at the North Dakota Game and Fish Department's (NDGFD) Cedar Lake Dam. Jeff Hendrickson of the NDGFD confirmed that the breach was in the south dike, and was not in the main embankment. It was expected that the breach would cause the lake level to drop a couple of feet below its normal level. But, the dam is in a location where the discharge was able to flow to Cedar Creek in a drainage channel without causing damages downstream.



The Water Commission's construction crew uses a track hoe to slow erosion of the spillway at Cottonwood Creek Dam by placing rock rip-rap.



The breach of the south dike at Cedar Lake Dam.



The south dike of Cedar Lake Dam after repairs.

The NDGFD and the Slope County Water Resource Board (WRB) submitted a cooperative request to the Water Commission to assist with the needed repairs. As part of that process, the Commission's construction crew repaired the eroded areas with borrow from the adjacent landowner, who allowed access for the project. In addition, rock protection was also added on the upstream side of the south dike.

Project costs for labor and equipment were \$30,000, and were split between the NDGFD and the Water Commission.

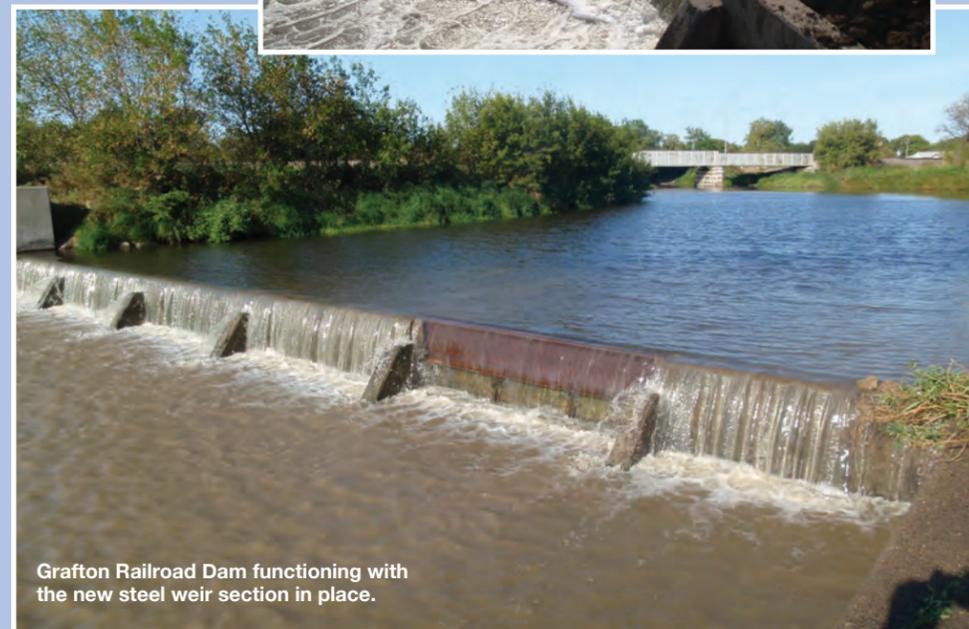
Material costs were paid by the Slope County WRB, which included borrow and rock used for the repair.

Grafton Railroad Dam, Walsh County

The city of Grafton notified the Water Commission that the steel weir section of the Grafton Railroad Dam was damaged by ice and other debris during the 2009 spring runoff. Fortunately, the concrete portion of the low head dam was not damaged. As owner of the dam, the city of Grafton made a request to the Water Commission to have the construction crew assist with repairs to the steel section of the dam that was damaged.



Water flows over Grafton Railroad Dam with the old, damaged steel weir section removed.



Grafton Railroad Dam functioning with the new steel weir section in place.

Once debris was removed, the extent of the damage became more clear, revealing that a section of the dam was bent out, allowing several inches of water to flow over the top. This would then cause the reservoir to draw down during times of low flows. The primary concern was that if the damaged section failed, Grafton would not be able to use the reservoir for their secondary water supply, if needed.

The Water Commission proposed a repair that involved the construction of a clay work platform, removal of the damaged steel portion of the dam, and then replacement of the steel section.

An agreement was formed between the Water Commission and the city of Grafton to split the repair costs, which were about \$30,000.

Wildwood Golf Course Dam, Ward County

Wildwood Golf Course Dam is located along the Wildwood Golf Course north of Burlington, North Dakota, just upstream of the confluence of the Des Lacs and Mouse (Souris) Rivers. The dam is an old WPA project and is used for irrigation.

During 2009 spring runoff events, the reservoir behind the dam filled with a large amount of debris, raising the water level upstream of the structure. The golf course normally handles debris removal, but in this year's case, the Ward County WRB asked for the Water Commission's construction crew to help because larger equipment was needed.

The project was completed in late fall, and the total cost was about \$5,000, which was split between the Water Commission and the Ward County WRB.

Nelson-Landers Perch Pond, Ward County

The Ward County WRB notified the Water Commission that Nelson-Landers Perch Pond had also sustained damages during 2009 spring flood events. Fred Ryckman of the NDGFD initially reported the damage to Ward County officials, after noticing the erosion damages.

The Ward County WRB and NDGFD requested the Water Commission's assistance with an inspection of the damage, and repair options - including a three-party cooperative agreement for repair costs. The dam is privately owned, however, an access easement is in place with the Ward County WRB to make the pond available to the public for recreational purposes.

The Water Commission's construction crew will attempt to repair the erosion around the concrete inlet structure before the end of the year. Water Commission staff will also do a more complete inspection of the inner-workings of the dam with a remote-controlled rover and camera to detect any additional problems.

Estimated project costs for the work are about \$12,000, and the project is expected to take about one week. Project costs will be split equally between the Water Commission, the Ward County WRB, and the NDGFD.

USGS Gauging Stations, Statewide

The Water Commission's construction crew also constructed, modified, and repaired several U.S. Geological Survey gauging stations/data collection sites throughout the state. The work involved installation of orifice lines and staff gauges, removal and installation of gauge houses, and repairs to sheet pile control sections.

Erosion around the concrete inlet structure at Nelson-Landers Perch Pond.



ATTENTION Water Project Sponsors:

Are you a city manager or water board member who is working to move a water project forward? If so, then this announcement pertains to you.

In the coming months, the Water Commission will begin to develop a 2011-2013 Water Development Report to serve as an update and supplement to the 2009 North Dakota Water Plan. As part of that process, water resource boards, communities, and rural/regional water systems will be mailed a letter, inviting them to submit information forms for any water projects that may require Water Commission cost-share assistance during future bienniums.

Project information collected will be used in the State Water Commission's budgeting process. And, a full report will be presented during the 2011 Legislative Assembly to document statewide water development funding needs.

If your organization has a water project that is ready to move forward, please fill out and submit a project information form. We want to be certain that the water development needs in your jurisdiction will not be overlooked.

A single project information form will be mailed out with the request letter in early 2010. Copies of the form can be made as necessary. An electronic version of the form will also be available for download from the Water Commission's website at www.swc.nd.gov. If you have any questions about the form, or about the process in general, contact the Planning and Education Division at (701) 328-4989, or e-mail ndswwp@nd.gov.



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