

The Oxbow

FROM THE NORTH DAKOTA STATE WATER COMMISSION

Missouri River Sedimentation Causes Problems for R.M. Heskett Power Station

Sedimentation is becoming an increasingly difficult problem at the upper end of Lake Oahe, including the Missouri River within the Bismarck-Mandan community. As sediment continues to collect, and settle out in the river channel, there are a number of resulting impacts, including: a reduction in the river's ability to convey water, increasing base flood elevations, increased risk for ice jams, and impacts to water supply intakes (as a few examples).

Earlier this fall, the Montana-Dakota Utilities Company's (MDU) R.M. Heskett Station, which is a 100-megawatt electrical power generation facility located just north of Mandan on the Missouri River, ran into problems with their water supply intake because of sedimentation.

The concern was that once releases from Garrison Dam were reduced to 12,500 cubic feet per second in late fall, there wouldn't be enough water flowing past the power facility to sustain operations without impacts. As a result, MDU made a request to get the necessary permits, including a sovereign land permit from the North Dakota Office of the State Engineer.

After gaining permission and the necessary permits, MDU moved forward with the project, which was to include the dredging of approximately 1,600 lineal feet, with a bottom width of about 40 feet. The depth of the cut was estimated at about two

to four feet, and they expected to remove about 9,000 cubic yards of material.

A hydraulic dredge machine was used for the project (pictured),

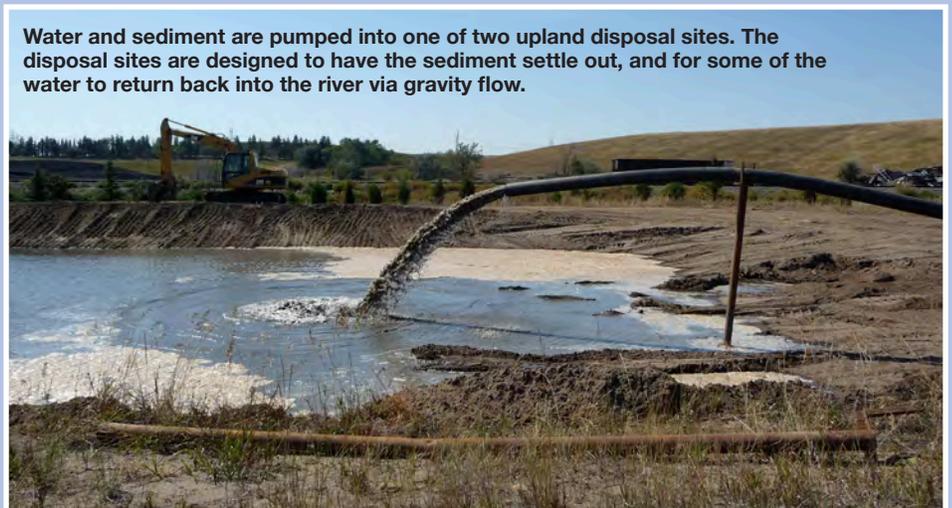
but because of weather delays and equipment problems, the project was temporarily delayed at the time this article was being developed.

As required by law, material was pumped up the riverbank by the hydraulic dredge to upland disposal sites (pictured). And, because of the amount of material that was removed, two disposal sites were prepared – totaling about 2.5 acres in size.

The same area was dredged back in 2003, and at that time, the dredging was required to protect the water supply intakes for not only the R.M. Heskett Station, but also for the Tesoro Mandan Refinery, and the City of Mandan.



The hydraulic dredge machine removing sediment in front of the R.M. Heskett power station.



Water and sediment are pumped into one of two upland disposal sites. The disposal sites are designed to have the sediment settle out, and for some of the water to return back into the river via gravity flow.

SWC and NRCS Ring Dike Coop Program Popular

Following the record floods of 2009 earlier this spring, a program was funded through the USDA Natural Resources Conservation Service's (NRCS) Environmental Quality Incentives Program (EQIP) for the development or enhancement of ring dikes around farmsteads.

The benefits of the projects funded under this program are two-fold, as they not only provide flood protection, but also reduce the potential for chemicals and agricultural wastes from entering flood waters and impairing water quality. Initially, the program was funded at \$1 million for North Dakota, but because of its

popularity, an additional \$1.4 million was added, for a total of \$2.4 million.

Through this program, the NRCS will generally cover about 75 percent of construction costs. However, in order to make the program even more attractive, and to get additional ring dikes built around North Dakota farmsteads in flood prone areas, the North Dakota State Water Commission agreed to pay half of the individuals' share, or another 12.5 percent of the total construction costs.

The sign-up period for the program ran from mid June to mid July, and 173 applications were received by local NRCS field offices. By the middle of October, 53 projects had been approved, and many were in design. The NRCS expects

that construction might commence on some of the projects in late 2009, but most were likely to proceed during the 2010 construction season.

Individual producers are required to hire their own contractors to construct the ring dike projects, and only agricultural producers are eligible for the NRCS program.

On a related note, the Water Commission also has its own ring dike cost-share program that has been in place for years. And, there was a bit of an influx in the number of projects requesting cost-share assistance through the Commission this year in comparison to last year. In June, the Commission approved \$400,000 for the state's Red River basin ring dike program, and as of October, 17 projects had been approved for cost-share totaling \$399,910.

It should be noted that under the Commission's ring dike cost-share program, individuals who request assistance do not need to be agricultural producers.



Recently completed ring dike in Traill County.

SWC Funds Red River Basin Flood Solutions Study

The 2009 Minnesota and North Dakota state legislatures each appropriated \$500,000 for the Red River Basin Commission (RRBC) to develop a comprehensive strategy to address flood solutions in the Red River basin. That effort is now referred to as the Long Term Flood Solutions (LTFS) Project. On the North Dakota side of the border, funding for this project was channeled through the State Water Commission.

Generally speaking, the idea behind this effort is to develop flood damage reduction strategies, and long-term flood solutions in the Red River basin. To accomplish this task,

the project has been broken down into three phases.

Under Phase I, the RRBC hired a coordinator to help manage the project. In addition, Barr Engineering was retained to help with an inventory of damages and planned projects. As part of the Phase I process, a survey was sent out to solicit input from basin residents and government officials, and a number of public meetings are scheduled throughout the basin to get additional ideas for potential flood solutions.

As part of Phase II, information received from local governments,

watershed and water resource districts, and the public will be used to identify project or program needs, and to provide a basis for recommendations on comprehensive basin-wide flood solutions.

Phase III will involve the submission of a report to the state legislatures in Minnesota and North Dakota, and efforts aimed at implementing priority projects and programs.

For additional information on the LTFS Project, contact the RRBC at 218-291-0422, or email brenda@redriverbasincommission.org.

Corps to Review Missouri River Authorized Purposes

Changes to the way the U.S. Army Corps of Engineers operates the Missouri River system may be coming in the not so distant future. The Corps of Engineers has been directed by Congress to conduct a review of the original project purposes established by the 1944 Flood Control Act. The goal is to determine if changes in the purposes and existing federal water resource infrastructure managed by the Corps and Bureau of Reclamation may be warranted.

The study is being called the Missouri River Authorized Purposes Study, or MRAPS, and it is a five-year study co-led by the Omaha and Kansas City Districts of the Corps.

Currently, the eight authorized purposes for the main stem projects are flood control, hydropower, water supply, irrigation, navigation, recreation, water quality, and fish and wildlife. Numerous tributary projects operated by both agencies also have multi-purposes, but individual projects may not include all eight.

According to the Corps, the study will examine the authorized purposes and current river infrastructure to identify options that may provide more multi-purpose benefits in terms of economic, ecosystem, socio-economic, and societal outputs. The study will also analyze trade-offs and efficiencies, as well as evaluate river management options in light of current basin values and priorities.

This multi-year, \$25 million



study will produce a report to the Congress by the Chief of Engineers. Any changes to the 1944 law will be the result of congressional action.

In the coming months, there will be a series of facilitated focus group sessions held across the basin to ensure that all interested parties are heard prior to developing the final scope of the study next spring. That phase will have its own series of meetings, and all meetings will be open to the public.

Earlier in October, two regional listening sessions were held by the Corps in Fort Pierre, S.D. and Kansas City, Kan. The purpose of the sessions was to introduce the

study to the public, and the many diverse stakeholders, and to begin the process of collecting input from those groups.

Though a bit confusing, it is important to note that the MRAPS effort is not part of other ongoing habitat recovery and restoration efforts being conducted by the Corps and U.S. Fish and Wildlife service – such as the Missouri River Recovery Implementation Committee (MR-RIC), and the Missouri River Ecosystem Restoration Plan (MRERP).

For additional information on the MRAPS study, visit the Missouri River Authorized Purposes Study website at: www.mraps.org.



North Dakota State Water Commission
Dale L. Frink, State Engineer
900 East Boulevard Ave. • Bismarck, ND 58505
(701) 328-2750 • <http://swc.nd.gov>

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