

# The Oxbow

FROM THE NORTH DAKOTA STATE WATER COMMISSION

## Putting RRVWSP Water Use Into Perspective

By Patrick Fridgen

As our state pursues the Red River Valley Water Supply Project (RRVWSP), a number of concerned citizens throughout North Dakota and in downstream states are saying: wait a minute, how is that type of project going to impact Missouri River system water levels that are already at record-breaking lows?

The RRVWSP preferred alternative will bring Missouri River water to the eastern part of the state. In fact, following the recent release of a supplemental draft Environmental Impact Statement (EIS) that considered various options to address the Red River Valley's water supply problems, the state and Bureau of Reclamation endorsed a project that would transfer Missouri River system water via the McClusky canal, a pipeline, and the Sheyenne River, to the Red River Valley. The purpose will be to supplement existing water supplies for municipal, rural, and industrial water use in times of supply shortages, such as when a 1930s-type drought, or worse, afflicts that region in the future.

In the midst of the current drought, people across North Dakota have taken notice that 2006 was the seventh consecutive year of below normal runoff in the Missouri River basin. They've watched as the water has receded, in some cases

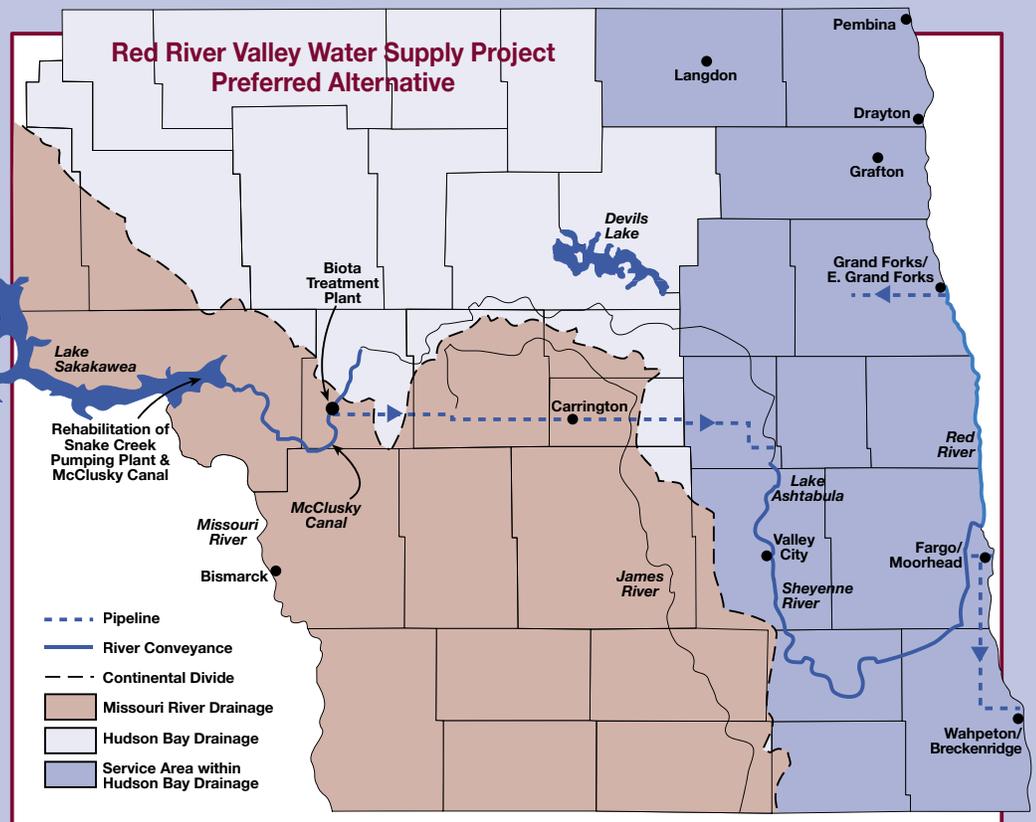
miles from their favorite boat ramps and fishing spots. And in a number of instances, people have experienced, or are living with the fear of losing their drinking water supplies as a result of decreasing reservoir levels. For these reasons alone, it is understandable why people might be concerned about a project that would take additional water out of the Missouri River system.

To calm their concerns, people have been told that the amount of water needed for the RRVWSP is just a drop in the bucket. But until we actually take a look at the num-

bers, it is difficult to really put that "drop" into perspective.

According to the supplemental draft EIS for the RRVWSP, the preferred alternative is designed for shortages in the worst year of a 1930s magnitude drought. During the worst year of a 1930s-type drought, storage in the Missouri River system mainstem reservoirs would be approximately 30 million acre-feet. The volume of Missouri River water that would be withdrawn by the preferred alternative would average about 80,000 acre-feet per year, which is 0.26 percent of the storage of the Missouri River system mainstem reservoirs. That would leave 99.74 percent of the water in the reservoirs for other uses.

As another comparison, average Missouri River flow at Bismarck is about 23,000 cfs, while the RRVWSP preferred alternative would have a maximum flow of 122 cfs. That amount of water removed would only account for about one half of one



percent of the average daily flow at Bismarck.

But some might ask, what about North Dakota's Southwest Pipeline and the Northwest Area Water Supply (NAWS) projects, which are also designed to use Missouri River system water? In all of 2006, the Southwest Pipeline delivered a record-breaking 1.4 billion gallons, averaging 5.5 cfs, or about 4,300 acre-feet of Missouri River water. During that time, the Southwest Pipeline served over 34,000 North Dakotans. The Southwest Pipeline's maximum allowable annual water use, based on their water permit, could be as high as 6,800 acre-feet, or an average annual flow of about nine cfs.

When completed, the NAWS

project is permitted to use as much as 15,000 acre-feet per year, which could be compared to an average annual flow of about 21 cfs. If we were to add the maximum Southwest Pipeline and NAWS water withdrawals to what would be used for the RRVWSP during a 1930s-type drought, the annual amount would total as much as 101,800 acre-feet of water. Again, if storage in the Missouri River mainstem reservoirs totaled only 30 million acre-feet during a 1930s-type drought, 101,800 acre-feet would only account for 0.33 percent of the storage – leaving 99.67 percent for other uses.

Another interesting comparison comes from *The Kansas City Star* in a June 29, 2003, article. It was reported that in Kansas City, Mis-

souri, unaccounted-for-losses in their water distribution system totaled 30 percent, or approximately 12 billion gallons (37,000 acre-feet) annually. Of the 12 billion gallons, approximately 10 billion gallons (30,000 ac-ft) were directly related to water distribution leaks.

Without question, the 0.33 percent of storage in the Missouri River mainstem reservoirs during a 1930s-type drought that could be used to operate all three of the aforementioned North Dakota water supply projects is indeed only a drop in the bucket – a very large bucket. That proverbial drop seems like a small price to pay to provide a safe, high-quality source of drinking water to hundreds of thousands of North Dakotans across the state.

## Poster Commemorates 10th Anniversary of 1997 Red River Flood

A new poster designed to commemorate the 10th anniversary of the devastating 1997 Red River flood is available from the North Dakota State Water Commission. The 24 by 36-inch color poster was produced by the U.S. Geological Survey, in cooperation with the State Water Commission and the National Weather Service. It would be a great addition to any classroom; courthouse; local, state and federal office; or any other public places in the Red River basin.

The poster includes a variety of information including:

- Factors that contributed to the 1997 flood;
- Satellite imagery of the Red River in April 1997;
- A map of snowfall estimates for the winter of 1996-1997;
- Charts of selected gage heights and flood stages;
- A timeline of historic flood events in the Red River Valley; and
- Multiple photos that provide a look at that terrible time.

The cooperating agencies that developed this 10-year anniversary

poster hope that those who view it will pause and think about how that terrible flood changed the way we view the Red River today. In addition, it is hoped that the poster will trigger interest in learning more about the Red River, as knowledge

is a critical component of disaster preparedness.

Those who lived through the terrible spring of 1997 remember well the impacts it had on thousands of lives. And although the flood took place only 10 years ago, young people who were just infants, or were not even born, may not realize the significance of the 1997 flood. This poster can increase awareness of what the Red River has done in the past, as well as remind us of what may be possible in the future.

Though a tremendous amount of progress has been made to provide improved flood protection across the Red River Valley, this poster will also provide a reminder that residents and public officials need to be ever watchful, and continue their efforts to be prepared for future flood events.

The 10th Anniversary of the 1997 Red River Flood posters are available by contacting the State Water Commission at 701-328-4989, or send an e-mail request to [dschock@nd.gov](mailto:dschock@nd.gov).



Flooding in Grand Forks, April 1997.

## Restoration of Sheyenne Dam in the Design Stage



Sheyenne Dam, Eddy County

By Michael Noone

In the 1930s and 1940s, a number of smaller dams and reservoirs were constructed by the Civilian Conservation Corps and the Works Progress Administration to provide work for people impacted by the Great Depression. In North Dakota's Upper Sheyenne River basin, there are 80 dams, many of which were built during that era, and many of which are starting to show their age.

Sheyenne Dam, just north of the town of Sheyenne in Eddy County,

is a dam that has been in disrepair for years. Water impounded behind the dam is used by Sheyenne Sand and Gravel Company for gravel washing, and the dam also provides some recreational fishing opportunities.

In 2004, the Upper Sheyenne Basin Joint Water Resources Board began looking at the condition of the dams in its watershed. Knowing that many of these structures were in need

of repair, members began the task of assessing those that the counties felt would be the best candidates for some sort of restoration. The board looked at the condition of the structures; the potential hazard to downstream communities if they were to wash out; whether they were still serving a useful function; the likely cost of restoration; and the availability of cost-share.

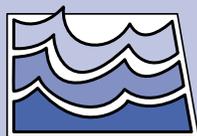
Eddy County, a member of the Upper Sheyenne Joint Board, indicated its interest in restoring Sheyenne Dam due to its economic

importance to the county. The board began the process of looking at the potential for doing something about the project. Through a fair bit of hard work, the board was able to gain funding commitments from a diverse group of local, state, and federal entities, including: Eddy County, the Upper Sheyenne Joint Board, the Devils Lake Joint Board, Southeast Cass Water District, Sheyenne Sand and Gravel, the Water Commission, the U.S. Fish and Wildlife Service, and the North Dakota Game and Fish Department.

This cooperative project, being handled by both Eddy County, and the Upper Sheyenne Joint Board, will also include a fish passage. Fish passages, in the case of Sheyenne Dam, involve the addition of rock to form a gently sloping hill to the downstream side of the dam to allow fish to move both upstream and downstream. This restores the biological integrity of the river, while also maintaining the original function of the structure.

The Water Commission, which will be paying 33 percent of eligible costs of the project, will also be involved in design and construction of the project. The project is currently in the design stage at the Water Commission, with initial survey work to be completed this spring. It is hoped that the project will be completed sometime in 2008.

The Upper Sheyenne Board is also considering two additional dam restoration and fish passage projects at Warwick and Bouret Dams in Eddy and Benson counties.



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