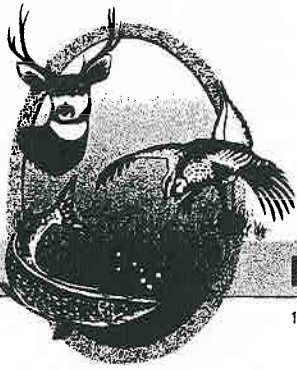


# **Responses to North Dakota Game and Fish Department**

## **Comments on the Draft Report on the Red River Valley Water Supply Project Needs and Options**



"VARIETY IN HUNTING AND FISHING"

## NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6052

September 28, 2005

Dennis Brietzman  
Bureau of Reclamation  
PO Box 1017  
Bismarck, ND 58502-1017

Dear Mr. Brietzman:

Re: Red River Valley Water Needs and Options Comments

The Dakota Water Resource Act (DWRA) of 2000 states under Section 8(a) that the feature or features shall be designed and constructed to meet only the following water supply requirements as identified in the report prepared pursuant to subsection (b) of this section; Municipal, rural and industrial water supply needs: ground water recharge; and stream flow augmentation. The DWRA continues in Section 8(b) stating that the Secretary of the Interior shall conduct a comprehensive study of the water quality and quantity needs of the Red River Valley in North Dakota and possible options for meeting those needs. The needs addressed in the report shall include such needs as:

1. municipal, rural, and industrial water supplies
2. water quality
3. aquatic environment
4. recreation
5. water conservation measures

The document entitled "Report on Red River Valley Water Supply Project Needs and Options, Aquatic Needs Assessment, Instream Flows for Aquatic Life and Riparian Maintenance, Final Report" (BOR, 2003a) was designed to identify hydrologic and geomorphologic conditions on the Red River and Sheyenne River that would maintain ecological function for both the short- (the present) and long-term (within the next 50 years), given the existing anthropogenic influences (e.g., Baldhill Dam). The recommended aquatic needs and bankfull flows are intended to provide a means to protect the basic needs of aquatic life in the Sheyenne and Red Rivers and maintain the existing floodplain forest community in its present status. This information will be useful for comparing the effects of various flow alternatives on aquatic resources. The report concludes by stating that the seasonal instream flow regime is recommended for consideration by decision makers and resource managers as a means to protect the basic needs of aquatic life in the Sheyenne and Red Rivers. Maintaining the hydrologic and geomorphologic needs of aquatic resources requires the protection of natural flow regimes.

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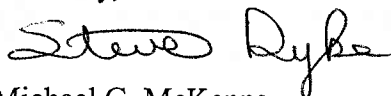
However, the Draft Report on Red River Valley Water Needs and Options failed to consider or incorporate the recommended regimes which closely mimic the natural hydrograph into the design of the options. Instead, the BOR incorporated aquatic needs into the options by including a minimum fish and wildlife conservation pool of 28,000 acre-feet in Lake Ashtabula and by maintaining a minimum release of 13 cfs from Baldhill. There was no minimum instream flow identified in the modeling for the Red River which is biologically short sighted. In correspondence dated February 2, 2005, the Department's preference regarding flow augmentation was to mimic the natural hydrograph to minimize project impacts. The Department has also stated that minimum in-stream flows for the Red River and its tributaries should be established and maintained. Our recommendation provided seasonal recommendations for both the Red River and the Sheyenne River as follows:

1. A minimum release of 23 cfs from Bald Hill Dam year round.
2. A minimum spring flush of 215 cfs for a period of 48-72 hours from the 6-10<sup>th</sup> of April. (Note: This value was not derived by the Tennant method but rather was developed by taking the median unregulated April flow during the 1931-1940 time frame.)
3. April flows shall average a minimum of 69 cfs below Baldhill Dam.
4. Year round instream flows of 68 cfs at Fargo on the Red River.
5. Year round instream flows of 23 cfs below the Fargo intake on the Sheyenne River.

It is important to recognize that the minimum flows are necessary for aquatic needs within the river itself, and for maintaining the riparian forest communities. Dr. Richard Schultz from Iowa State University references the importance of the vadose zone where the majority of riparian vegetation roots occur in maintaining the health and function of the riparian zone. By definition, vadose is "of, relating to, or being water that is located in the zone of aeration in the earth's crust above the ground water level". The vadose zone acts like a sponge in capturing water from storm events and releasing this water for many years after major storms. Therefore, mimicking the natural hydrograph for spring time releases is beneficial by recharging the vadose zone which provides natural storage for later release. Additionally, without maintaining instream flows, especially during drought conditions, the riparian vegetation will be negatively impacted.

Another concern with the Needs and Options report is that it does not address the issue of securing a water permit guaranteeing the minimum instream flows identified above. The recommended flows of 23 cfs year round throughout the entire Sheyenne River, 68 cfs at Fargo on the Red River, a minimum spring rise of 215 cfs and an average April flow of 69 cfs must be perfected and afforded protection from future users if it is to have any standing.

Sincerely,



(101) Michael G. McKenna  
Chief

Conservation & Communication Division

# Responses to North Dakota Game and Fish Department

## Response to Comment 1

Reclamation conducted additional analysis based on the minimum instream flow recommendations from the North Dakota Game and Fish Department (NDGF). This analysis is described in the Final Needs and Options Report, chapter four, pages 4-41 through 4-43 and Appendix C, Attachment 10. The only two options that could meet both Reclamation's basic aquatic need and NDGF recommended flows at an additional cost are the GDU Import to Sheyenne River Alternative and the Missouri River Import to Red River Valley Alternative. Both of these options would support a minimum level in Lake Ashtabula of 28,000 ac-ft in a 1930s drought.

The GDU Water Supply Replacement Pipeline Alternative would not have an additional cost to meet the recommended flows, but storage in Lake Ashtabula would drop below the conservation pool to meet the NDGF flows. The Lake of the Woods and GDU Import Pipeline Alternatives can also meet the NDGF recommended flows at a significantly higher cost, but the options have to use Lake Ashtabula's conservation pool to meet the NDGF flows. The No Action, North Dakota In-Basin and Red River Basin Alternatives as designed would not meet the NDGF recommended flows.

No changes to the alternatives were made based on this analysis, because Reclamation is concerned about the reasonableness of the additional costs required to meet the NDGF flows. The least expensive option would cost an additional \$108 million to meet the recommended flows. Neither the community-based flow regime developed by Reclamation nor the flow regime recommended by the NDGF were included in any of the options. Both would require expensive infrastructure to implement, and do not appear to be viable, because a project sponsor willing to cost-share the expense has not been identified.

## Response to Comment 2

A seasonal habitat-based flow regime that would maintain aquatic life in the Sheyenne and Red Rivers is explained in the *Final report, Aquatic Needs Assessment, Instream Flows for Aquatic Life and Riparian Maintenance* (Reclamation 2003a). The study focused on hydrologic and geomorphologic aspects of aquatic needs in the Sheyenne River from Harvey, North Dakota, to the confluence with the Red River just downstream of Fargo, North Dakota. It also covered the Red River from upstream of Fargo, North Dakota, near Wahpeton, North Dakota, and downstream to the international gaging station at Emerson, Manitoba, Canada. This analysis was used in the DEIS (draft environmental impact statement). Basic aquatic needs were incorporated into the options by including certain minimum reservoir levels and releases, such as a minimum fish and wildlife conservation pool of 28,000 ac-ft in Lake Ashtabula and a minimum release of 13 cfs from Baldhill Dam.

## Response to Comment 3

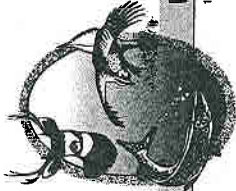
See response to Comment 1.

## Response to Comment 4

Reclamation recognizes the values of minimum flows, as explained in the *Final Report, Aquatic Needs Assessment, Instream Flows for Aquatic Life and Riparian Maintenance* (Reclamation 2003a) and in the DEIS.

## Response to Comment 5

The Needs and Options Report is not the place to discuss permitting issues; however, we do understand the need to protect any minimum stream flows with a water permit. The issue of securing a permit for minimum instream flows on the Sheyenne River is possible, based upon discussions with the State Water Commission, but is more challenging on the Red River. Because the Red River is shared with the state of Minnesota, a compact between the two states would be needed. We will continue working with the state of North Dakota to explore the possibility of including your recommended minimum instream flows for this Project.



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