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



Matt Blunt, Governor • Doyle Childers, Director

## MENT OF NATURAL RESOURCES

www.dnr.mo.gov

September 30, 2005

Dennis Breitzman, Area Manager Red River Valley Water Supply Project Bureau of Reclamation Dakotas Area Office P. O. Box 1017 Bismarck, ND 58502

Dear Mr. Breitzman:

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The U. S. Bureau of Reclamation's Needs and Options Study (Study) will need to be significantly revised before it can serve as the basis for an Environmental Impact Statement (EIS). A failure to address the concerns expressed in this letter and to make the proper changes will cause the subsequent Environmental Impact Statement to violate the National Environmental Policy Act (NEPA).

The study fails significantly in major areas. First, the population estimates are so inflated as to render them unsuitable to serve as the basis for an analysis of options. The industrial needs do not match in any way the population studies nor are the results justifiable using any reasonable criteria. The options are inadequately and unevenly assessed rendering a bias to the consideration of options. Finally, a consistent biasing of analyses results in a study that does not address the requirements of the U. S Congress as expressed in the Dakota Water Resources Act nor does it provide a basis for a critical examination of the impacts as required by NEPA.

### **Population Estimates**

The U. S. Bureau of Reclamation (Bureau) has not created reasonable population projection scenarios. The population of the area in 2000, according to the Bureau, was 446,235. The U. S. Census Bureau predicted a population of roughly 502,792 in 2050 while the Bureau's contractor (Northwest Economics Associates), following guidance from the Bureau, estimated a population of 569,867 in 2050. The Bureau's own demographers also ran two projections. In one, a cohort model, the population was predicted to be 546,211 by 2050 while the other predicted a population of 613,136 at that time by including extra in-migration into the area beyond that predicted using standard demographic models. The first three of the projections were completed using standard demographic techniques. The latter three were completed under conditions set by the Bureau itself. Yet the Bureau rejected all of these projections, essentially without explanation.

### **Response to Comment 1**

The purpose of the Needs and Options Report was to assess current and future water needs of the Red River Valley in North Dakota and three cities in Minnesota. The needs were identified by the Dakota Water Resources Act as municipal, rural and industrial water; water quality; aquatic environment; recreation; and water conservation measures. The needs were then used as a basis for formulating options. The options that were developed in the Needs and Options Report became the alternatives that were evaluated in the DEIS (draft environment impact statement) that was released last December. Some alternatives may be revised based upon comments on the DEIS, but we believe that the Final Needs and Options Report is a strong base for our DEIS.

### **Response to Comment 2**

Reclamation revised the *Report on Red River Valley Water Supply Project Needs and Options, Current and Future Population of the Red River Valley Region 2000 through 2050, Final Report to provide additional clarification on population projections.* Reclamation used the "optimistic" population projection of 417,600 in the 13 eastern counties in North Dakota, but this was only 15,100 more than the results with migration shown in table 8, or a 3.8 percent increase. The difference was 27,079 or 6.9% higher than the projections provided by Northwest Economics Associates. In either case, the difference in population would have minimal effect on the option cost estimates, so no changes were made to the Final Needs and Options Report.

At this stage in a project it is important not to underestimate. We do not want to provide our decision makers with unreasonably low cost estimates.

Reclamation acknowledges the importance of projecting future populations in estimating future water demands. However, we also recognize that it is difficult to accurately project population changes. We used three sources of population data, including an independent contractor to compare with our own estimates. With all of these issues in mind, Reclamation developed two water demand scenarios to use as a range in hydrologic modeling and in developing alternatives.

### **Response to Comment 3**

There is no correlation between the industrial needs and population projections, because the industrial needs are largely related to agricultural value added processing. Projecting future industrial water demands is difficult, but the intermediate water demand estimates in the North Dakota State University study follow historic trends, which is reasonable.

### **Response to Comment 4**

A multi-step process was used to identify options (alternatives) for further study in the DEIS. Alternatives were formulated through a systematic process using public involvement, technical information, interdisciplinary and interagency discussions, and professional judgment. NEPA and Council on Environmental Quality regulations require agencies to evaluate a range of reasonable alternatives. To be considered reasonable, an alternative must: 1) meet the identified purpose and need for action, to a large degree and 2) be practical and feasible from a technical and economic standpoint. Reclamation has met the appropriate standards.

### **Response to Comment 5**

Reclamation has solicited input from Missouri and other potentially affected states throughout the preparation of this report. The process has been open and public. All of the plans of study that guided preparation of the report were developed with input from stakeholders, including Missouri. These plans of study and results of analyses were discussed in detail at Technical Team meetings convened by Reclamation. Staff of Missouri Department of Natural Resources have actively participated in Technical Team meetings.

Two teams of stakeholders (Technical Team and Study Review Team) were formed to incorporate public involvement in study planning. Gubernatorial designees from states that could be affected by the Project and other representatives of federal, state, local agencies, tribes, and environmental groups were invited to serve on the teams. In 2003, the Study Review Team was combined with the Technical Team. Technical Team members reviewed and commented on plans of study and draft reports. Organizations and agencies whose representatives attended Technical Team meetings are listed in table 1.3.1. of the Final Needs and Options Report. The Draft Needs and Options Report was distributed to the Technical Team, the public, federal agencies, and potentially affected States for a 120-day review. Comments received from reviewers were given serious consideration and were used in preparing the Final Needs and Options Report.

Public involvement extended beyond the Technical and Study Review Teams. Reclamation, with the assistance of the North Dakota State Water Commission, conducted water users meetings in eight communities in the Red River Valley during October 2002. The purpose of these meetings was to present information about the studies being conducted for the Needs and Options Report and solicit the assistance of local communities in these efforts. This also gave the water users an opportunity to learn

### **Response to Comment 5 (continued)**

about previous Reclamation Red River Valley studies and to provide comments. Comments received during these meetings and during public scoping of the DEIS (draft environmental impact statement) were taken into consideration and assisted Reclamation in developing the options described in the Final Needs and Options Report.

### **Response to Comment 6**

The Draft Needs and Options Report does not address environmental impacts; it is an assessment of needs and an engineering study to identify potential options for the Project. The DEIS evaluates and documents environmental impacts.

### Response to Comments 7 – 15

The population projections conducted by Reclamation and Northwest Economic Associates were based on the cohort component method, which is generally regarded as the most comprehensive and reliable method to estimate population change over time. Thus, Reclamation maintains that these population projections are the most realistic estimates available.

Reclamation revised the *Report on Red River Valley Water Supply Project Needs and Options, Current and Future Population of the Red River Valley Region 2000 through 2050, Final Report to provide additional clarification on population projections and identified where populations would reside in the future. Reclamation used the "optimistic" population projection of 417,600 (Final Needs and Options Report, table 9) in the 13 eastern counties in North Dakota, but this was only 15,100 more than the results with migration, as shown in table 8, or a 3.8% increase. The difference was 27,079 or 6.9% higher than the projections provided by Northwest Economics Associates.* 

It should also be noted that the Minnesota Department of Natural Resource comment letter included comments from the Minnesota State Demographic Center. Their concluding comment is as follows: "Despite my various criticisms. I should note that the "best estimate" projection is only about 26,000 more than the more conventional "trend migration" projection after 50 years, a difference of less than 5 percent. This is not a huge difference in the word of population projections."

The two water demand scenarios used in the report provide adequate data to understand the relationship between option costs and water demands. Additional water demand sensitivity analyses may be done for the FEIS (Final Environmental Impact Statement).

Instead, the Bureau has chosen two population projections that do not use standard demographic techniques. In their projection called "Scenario 1" (which projects a population of 638,000), the Bureau added population to the projection with the highest population in response to some cities' complaints that the cities' populations were still underestimated by the models. There is no documentation of the process used to add to the population in the records that the Bureau has made available. "Scenario 2" (which has a projected population of 707,704) was created by adding even more population at the request of the cities. This is documented in the letter from the cities to the Bureau that is contained in the Study. The two scenarios chosen by the Bureau project growth rates between 3 and 4 times greater than those predicted by the U. S. Bureau of the Census for the next fifty years.

The two scenarios that the Bureau proposes to use abandon the use of demographically accepted practices and result in grossly inflated population projections. The selection of these two scenarios would introduce a bias into all analyses that use them as a basis for assessing the needs of the service area. The two scenarios selected by the Bureau must be rejected because they are themselves arbitrary and capricious. We suggest an independent assessment of the Bureau's work in projecting the future population of the service area to investigate how their estimates could vary by a factor of more than three from those produced by the U. S. Bureau of the Census. A failure to use projections that are based on sound analysis will likely cause the rejection of the Environmental Impact Statement (EIS) expected to be produced using this Study as a basis. This discussion is summarized on the attached chart.

### **Industrial Use**

The two studies that form the basis for the estimates of the future industrial needs of the service area are similarly flawed. These assessments show no relationship to the inflated population estimates, but rely on methods that produce significant inconsistencies between the population and industrial studies. For example, the Bureau predicts all water systems will have industrial needs for water grow by at least 1.75% per year. This rate greatly exceeds the population growth in the Bureau's two population scenarios in every single part of the North Dakota service area.

Part of the industrial need projection is based on using Provo and Salt Lake City, Utah and Sioux-Falls, South Dakota as the bases for comparison. This ignored fundamental differences in demographics (e. g. average age), industrial trends over the last forty years and changes in business practices that reduce water use. The use of Salt Lake City is particularly inappropriate given the Olympics-related economic activity that the city experienced late in the analysis period.

The agricultural industry part of the study that was accepted by the Bureau, without critical review, was completed under the auspices of the Garrison Conservancy District (District). Given the District's stated goal of bringing Missouri River water to the Red River of the North, the Bureau should have taken special care in accepting work sponsored by a party with such a well-documented bias. The documentation provided in this assessment is sorely lacking and falls far short of that to be expected in a document that is part of the NEPA process.

### Response to Comments 7 – 15

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The two water demand scenarios used in the report provide adequate data to understand the relationship between option costs and water demands. Additional water demand sensitivity analyses may be done for the FEIS (Final Environmental Impact Statement).

### Response to Comments 16 and 17

The *Industrial Water Needs Assessment for the Red River Valley Water Supply Project* (Bangsund and Leistritz 2004) report shows that historically value-added food processing has taken place in the Red River Valley, and this trend and the need for water would continue. The Scenario One water demand used the intermediate industrial water demand. This water demand is consistent with historic trends. Although the high industrial water demand is more optimistic, but both scenarios are evaluated in the Needs and Options Report. This allows reviewers to understand the sensitivity of industrial demand in comparison to shortages and costs. The results of Reclamation's estimates of future industrial demand were used in the low industrial water demand, which was not used in the option analysis, because it was lower than historic trends.

### **Response to Comment 18**

Provo, Utah; Salt Lake City, Nevada; and Sioux Falls, South Dakota were selected because of similarities between the socioeconomic variables of those cities in 1970 with Fargo and Grand Forks in 2000. This is explained in *Industrial Needs Assessment, Projections of Future Industrial Activity in the Red River Valley* pages 13 – 15.

### **Response to Comment 19**

The Industrial Water Needs Assessment for the Red River Valley Water Supply Project (Bangsund and Leistritz 2004) was prepared by the Department of Agribusiness and Applied Economics, North Dakota State University and not by Garrison Diversion Conservancy District. The other report, Industrial Needs Assessment, Projections of Future Industrial Activity in the Red River Valley, was prepared by the Bureau of Reclamation. Reclamation reviewed the Bangsund and Leistritz report before using the results.

### **Response to Comment 20**

The Department of Agribusiness and Applied Economics, North Dakota State University, has the expertise to investigate the development of agribusiness in the Red River Valley. This was the best available information on the topic.

### **Conservation Measures**

The Bureau did not include drought conservation measures in their Study. The Bureau claims that such measures would not make a significant difference in water use during a drought. However, the City of Denver recently noted a nearly 28% drop in water use as a result of drought measures put in place in 2004. While water savings in the Red River Valley may be less, they are likely to be significant and should be included in the analysis of future needs.

During the drought in Missouri during the summer of 2005, many communities invoked either voluntary or mandatory water restrictions to lower demand. At our request, the Bureau asked communities in the Red River Valley about their drought conservation plans. Only Fargo actually had such a plan for reducing demand during periods of short supply. It is particularly glaring that the communities of the Red River Valley are demanding rights to Missouri River water while not imposing conservation measures at least as strict as imposed on those who actually live in the Missouri River Basin.

### No True Benefits Estimate

In spite of requests from members of the Technical Team, the Bureau has not determined the demand as a function of time, but uses only the maximum demand in their analysis. By focusing on maximum demand, the Bureau overstates the needs (as opposed to the desires) of those in the basin and thus increases the cost of the project.

It is evident that the Bureau has not followed "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies" (Principles) while formulating the alternatives.

No cost-benefit can be derived for this project because the Bureau has focused on meeting the maximum desired quantity of water based on unrealistic expectations instead of determining the actual likely need. The Bureau is risking a large federal cost with little benefit. It is completely unclear that this project is justified based on the analysis to date. Furthermore, the benefits determined by the Bureau are likely to be greatly distorted by the unrealistic population and industrial use projections.

The Bureau should also include a more complete cost analysis. Many of the in-basin solutions could be built as needed. These options should be considered and their implications explained. Such an approach would greatly reduce risk of over-building, guarantee that local supplies match local needs and provide for continued analysis of needs, options and likely environmental impacts. Given current fiscal constraints at the federal level, incremental, in-basin approaches need to be carefully considered and given due consideration.

### **Missouri River Assessment**

Any analysis of impacts on the Missouri River basin must be conducted in a similar manner to that in the Red River Valley. Growth rates and needs must be projected using the techniques and methodologies used in the Red River Valley to assure the consistency in approach that is required by NEPA. The growing demands for water use in the basin and likely future diversions needs to be included in the impacts.

### **Response to Comment 21**

Drought contingency analysis was added to the Final Needs and Options Report on pages 4-36 - 4-41. The analysis concluded that drought water demand reductions lower than 7.5% would result in economic impacts higher than the cost of the options to alleviate the predicted water shortage.

### **Response to Comment 22**

Reclamation did not determine the water demand as a function of time because analysis of existing 2005 water demands indicated significant water shortages would occur during a 1930s-type drought. Reclamation investigated the relative phase-ability of options in the final Needs and Options Report on pages 4-36 through 4-36.

### **Response to Comment 23**

The two water demand scenarios represent a reasonable range for the consideration of project costs.

### **Response to Comment 24**

The GDU (Garrison Diversion Unit) Reformulation Act of 1986 authorized the implementation of recommendations of the GDU Commission Final Report dated December 20, 1984. The 1986 Reformulation Act amended the original 1965 GDU authorization. The Commission Final Report serves as a surrogate for a normal feasibility report, and all language referring to Reclamation's November 1962 report (Supplement to HD 325) was removed from the revised authorization. The official authorizing date for GDU remains August 1965.

The Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G) were not published until 1973 and subsequently replaced with new Guidelines in 1983. Reclamation projects authorized prior to the implementation of the P&G are exempt from P&G analyses. Hence, GDU is exempt from the requirement to use P&G analyses.

### **Response to Comment 25**

The social and economic issues section of the DEIS shows that there will be significant economic impact costs in the Red River Valley in a 1930s-type drought without a project. In fact, these costs exceed the costs of all of the proposed options.

### **Response to Comment 26**

The financial analysis of alternatives shown on pages 4-45 through 4-47 in the Final Needs and Options Report assumes that a majority of project costs will be reimbursable by the local project beneficiaries. Please see the financial analysis included in Appendix C, Attachment 11, of the Final Needs and Options Report for additional information.

### **Response to Comment 27**

The financial analysis of alternatives is on pages 4-45 through 4-47 in the Final Needs and Options Report. Additional financial analysis in Appendix C, Attachment 11, of the Final Needs and Options Report.

### **Response to Comment 28**

Discussion of phasing alternatives is included in the Final Needs and Options Report, chapter four, pages 4-35 through 4-36.

### **Response to Comment 29**

Analysis of impacts on Missouir River resources is described in the DEIS.

Your recommendation that "growth rates and needs must be projected using the techniques and methodologies used in the Red River Valley to assure the consistency in approach" contradicts your comments (2, 7, 8-11, and 14-19) that are highly critical of the methods used in estimating water needs in the Red River Valley.

### **Response to Comment 30**

This issue was addressed in the DEIS.

### **Options' Analysis**

The Bureau fails to adequately analyze all of the available options. For example, the Bureau dismisses a wide range of options as part of an in-basin solution because individually none can supply all the water needs of the basin. However, in tandem with other in-basin options, these can contribute significantly to an in-basin solution. Specifically, all of the features on pages 3-117 to 3-119 should be retained and viewed as partial solutions. The Bureau was tasked by Congress with examining means to meet the water needs of the Red River Basin. A failure to analyze all potential contributions clearly violates Congress' charge to the Bureau as well as the requirements of the NEPA. In completing the EIS, we encourage the Bureau to ensure that all options are analyzed completely and comparatively as required in Principles.

### **Other Considerations**

Through this project the Bureau appears to be considering the establishment of water rights for those not yet born in the Red River Valley that would be senior to the rights of those living in the Missouri River basin. This topic certainly deserves congressional consideration as it establishes a precedent for future water projects.

The Bureau's analysis offers no consideration of the net loss to evaporation and other processes in the various options. The Bureau, in its EIS must seek to minimize impacts, including impacts on the Missouri River and those who depend upon it. We remind the Bureau that their EIS must consider all likely actions, including additional diversions of water from the Missouri River during the life of the project.

We encourage the Bureau to read the U. S. Army Corps of Engineers EIS on the Devils Lake Outlet. In particular, we would draw their attention to the sections on mussels in the Sheyenne River and the likely impacts of changes in base flow caused by the operation of the proposed outlet. The impacts on these species of a diversion of Missouri River water through the Sheyenne River are similar to those cited by the Corps in its EIS. Many other environmental impacts noted in the Corps' Statement will also apply.

The Bureau should consider an additional cost factor not discussed in this Study. Most of the inbasin alternatives offer the possibility of a "build as needs arise" approach. Such an approach is not possible with out-of-basin options as the pumps and pipes would all be built early on, well before the demand arises. In-basin options could be built gradually thus greatly reducing the potential for significantly overbuilding the necessary infrastructure. Because those being supplied water pay only for that water which they use, any extra costs would be borne by the federal government, not by users.

### Summary

The Study contains a number of results that must be altered before this Study can be used as the basis of an EIS. A failure to make the changes likely will cause the EIS itself to be judged arbitrary and capricious. The needs projections are unclear and indefensible while departing from standard professional practices. The industrial assessments are either seriously flawed or questionable because of their source. The Bureau has ignored the Congressional mandate for a

### **Response to Comment 31**

Reclamation analyzed a full range of options. Numerous water supply features and alternatives were considered during previous Red River Valley studies by Reclamation (see *Red River Valley Water Needs Assessment, Phase II; Appraisal of Alternative to Meet Projected Shortages*). The 11 alternatives identified in this report were used in public scoping for the DEIS. A screening process was developed, which is described in the DEIS on pages 16 - 17. Alternatives considered but eliminated and the reasons for their elimination are discussed on pages 34 - 40 of the DEIS.

### **Response to Comment 32**

See the response to comment 24.

### **Response to Comment 33**

The Bureau of Reclamation already holds a conditionally approved permit for 1,212,348 acre-feet of Missouri River water (Permit Number 01416), which far exceeds the water demands quantified for this Project.

### **Response to Comment 34**

This issue was addressed in the DEIS.

### **Response to Comment 35**

This issue was addressed in the DEIS.

### **Response to Comment 36**

This issue was addressed in the DEIS. See the response to comment 29. Cumulative depletions were incorporated into the Missouri River depletion study.

### **Response to Comment 37**

Reclamation has reviewed the Corps of Engineer's EIS on the Devils Lake outlet and the studies on which their EIS was based. Information about outlet flows and mussels are discussed in our DEIS.

### **Response to Comment 38**

Reclamation has reviewed the Corps of Engineer's EIS on the Devils Lake outlet and the studies on which the EIS was based. The use of this data is discussed in our DEIS.

### **Response to Comment 39**

Discussion of phasing alternatives is included in the Final Needs and Options Report, chapter four, pages 4-35 through 4-36.

needs assessment and has instead delivered a "desires" assessment. The likely result of a project based upon this study is an unnecessary expenditure of federal funds that can not be justified. We encourage the Bureau to approach the EIS in a professional manner. An honest and complete assessment of the project would in all likelihood conclude that in-basin sources are quite likely to be able to meet the water needs of the Red River basin for the next fifty years. These options greatly reduce the environmental impacts of the project and thus warrant preference in the Environmental Impact Statement to be completed.

If you have any questions concerning the issues raised in this letter, please contact Joe Engeln at (573) 751-9813.

Sincerely,

DEPARTMENT OF NATURAL RESOURCES

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Doyle Childers Director

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Enclosure

 c. Senator Christopher Bond Senator Jim Talent Congressman William Lacy Clay Congressman W. Todd Akin Congressman Russ Carnahan Congressman Ike Skelton Congressman Emanuel Cleaver Congressman Sam Graves Congressman Roy Blunt Congresswoman Jo Ann Emerson Congressman Kenny Hulshof

# Bureau of Reclamation Population Study - Red River Valley

	Actual 2000	2050 estin	nates	
		Census	NEA mig	Cohort
Population	446235	502792	569867	546211
Annual Growth Rate (%)		0.239	0.490	0.405
Total Growth (population)		56557	123632	92666
Rate compared to Census Bureau		1.000	2.052	1.695
NOTES				

707704

638600

613136

ohort Migration Scen. 1 Scen. 2

261469

192365

166901

3.877

3.010

2.667

0.927

0.719

0.638

Census - U. S. Census Bureau estimate of population

NEA mig - Population estimate from Northwest Economics Associates analysis. NEA is a Bureau consultant.

Migration - This is the Bureau's 2004 cohort model with historical migration trends Chort - Bureau's 2004 cohort model estimate without local migration variations

Scenario 1 - This is the Bureau's 2004 claimed best estimate of population.

Scenario 2 - Adds population to Scenario 1 at the request of governments and water suppliers in the RRV.

Annual Growth Rate - The calculated rate of population growth for 2000-2050. Expressed as a percentage. Population - The current and the estimated populations for 2050

Total Growth - Increase in population 2000-2050. Expressed as population.

Rate compared to Census Bureau - compares the projected 2000-2050 rates to the Census Bureau rates

Information from Table on page A-37 and from page 2-44 for Scenario 2

