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# RECLAMATION

*Managing Water in the West*

U.S. Department of the Interior  
Bureau of Reclamation  
Great Plains Region

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CLASSIFICATION PROJECT

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FOLDER I.D.

**Regional Director's Office**

**Fax: (406) 247-7604**

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From: GP-1000

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Message: FYI



Our comments on the SDEIS are as follows:

- *Impacts from potential introduction of invasive species.* The optimal method for fully overcoming the potential for transfer of invasive species with this project is to select one of the two In-Basin water supply alternatives. Since the SDEIS identifies the preferred alternative as the Garrison Diversion Unit Import to the Sheyenne River, which transports water from the Missouri River Basin to the Hudson Bay Basin, we have focused our review of the SDEIS on that alternative.

The SDEIS references the risk analysis report and two supplemental reports prepared by the U.S. Geological Survey (USGS) which are included in the SDEIS supporting documents. EPA notes there are several approaches that can be used to assess the possibility of invasive species becoming established in the Red River Basin. This includes the approach used by the USGS as described in the SDEIS that combines both the likelihood of invasion (based on biological characteristics) and treatment (reduction of organisms with water treatment) into a model of instantaneous risk reduction. EPA invasive species experts held follow-up discussions with the USGS principal authors during the DEIS open comment period, and noted that we found the USGS approach difficult to incorporate into our risk assessment and management analyses for the proposed life of the project. The USGS principal authors agreed it was appropriate to factor the model of instantaneous risk reduction with the proposed water volumes. Then, EPA initially attempted to further assess invasive species risks by employing a simple engineering approach that calculates the number of organisms that might be transferred when considering different source water concentrations, treatment alternatives, and various volumes of water. However, we were unable to complete this risk analysis due to a lack of data for a potential range of concentrations of disinfectant-resistant spore-forming pathogens in a column of water (e.g., *Myxobolus cerebralis* (whirling disease), or unidentified fish pathogens), and their predicted invasiveness.

Of the techniques available to predict invasiveness, propagule pressure (the number of spores that can be transported to a new area) appears to be the most ecologically appropriate. Thus, a water treatment method that reduces propagule pressure will reduce the potential for the species to become established in the new area. Due to the lack of data noted above, it is difficult to accurately assess overall biota risk reduction effectiveness. However, a state-of-the-art multiple barrier biota treatment process that achieves four orders (or greater, depending on operational effectiveness) magnitude of propagule reduction using a combination of removal (filtration) and inactivation (chlorine and ultra-violet (UV) disinfection) methods is a level of treatment that can be implemented with current technology for large continuous volumes of raw water. Given that whirling disease has not yet been detected in Lake Sakakawea, and the low expected concentration of *Cryptosporidium* (as a biota transfer indicator and subject to ongoing analysis), EPA believes that a multiple barrier biota treatment process would be appropriate when used in conjunction with a monitoring plan and an adaptive management program. While it is not possible to fully quantify the reduction in the potential transfer of invasive species from these processes, EPA believes that these multiple processes will effectively minimize the risk of transfer.

Despite the difficulties referenced above, we are encouraged by your commitment in the SDEIS to address the potential introduction of invasive species through the proposed use of a state-of-the-art multiple barrier biota treatment process that uses a combination of removal (filtration) and inactivation (chlorine and UV disinfection) as an integral component of the water delivery system. As you know, this approach was initially suggested by the Manitoba Water Stewardship in their letter to Reclamation on June 30, 2006. While we recognize that additional work is required before you will be able to provide more specifics on the exact method of treatment, we believe this commitment to a multiple barrier process will lead to an appropriate level of treatment and minimize the risks associated with the proposed water transfer. We also appreciate the work you have done to share your treatment proposals with representatives of the Canadian governments and your efforts to respond to their concerns.

EPA recommends that as you develop final plans for the biota treatment process, the following components be addressed and more fully described in the Final Environmental Impact Statement (FEIS):

- pre-treatment of the raw water;
- conventional filtration treatment as defined under 40 CFR 141.2, or an equivalent;
- chlorination and UV treatment;
- engineering controls and fail-safe systems to identify and prevent delivery of inadequately treated water;
- facility inspection, operations, maintenance, and capital replacement plans to minimize potential for facility degradation and future breakdowns;
- contingency plans, emergency response procedures, and periodic exercises to address response to accidental releases of untreated water;
- controls to contain and prevent the site release of any accidental spills of recycled backwash or softening clarification supernatant;
- management of sludge resulting from the filter backwash and softening clarification processes (e.g., either treated to inactivate disinfectant-resistant pathogen spores, or transported for disposal at an appropriate disposal facility within the Missouri River Basin); and
- development and implementation of an adaptive management program to ensure that risk of biota transfer is minimized.

- *Potential Impacts of Missouri River Basin depletion.* EPA appreciates the additional analyses that were undertaken to evaluate potential effects of the RRVWSP on the Missouri River. In these analyses, Reclamation used an increased basin depletion value of 557,500 acre foot/year over current depletions.

As reported in the U.S. Army Corps of Engineers' (Corps) September 2006 Red River Valley Water Supply Project Analysis of Missouri River Effects the RRVWSP would have potential adverse effects to the habitat of the endangered piping plover and interior least tern. The SDEIS explains these potential adverse effects may be offset by the Corps' habitat restoration efforts that are currently underway. We understand that Reclamation is also currently engaged in consultations with the U.S. Fish and Wildlife Services regarding these

potential effects pursuant to the Endangered Species Act requirements. We recommend the results of these consultations be summarized in the FEIS.

The SDEIS reports the Missouri River reservoir system storage is 73.4 million acre-feet (MAF) (p. 3-12). This value represents the Missouri River system storage capacity at the top of the Exclusive Flood Control Zone at the time that the project was completed. In average hydrologic conditions (non-drought), the Corps strives to evacuate the system down to 57.1 MAF in early spring to provide for Annual Flood Control and Multiple Use plus the Exclusive Flood Control Zone. The actual storage value in any of the storage zones has been diminished by sedimentation. Current storage capacity is estimated by the Corps to be diminished by 10% due to sedimentation. Without sediment removal or bypass through the system, sedimentation will continue and further diminish available storage, and magnify environmental consequences in drought conditions. We recommend that the FEIS include information as to how the Corps' Daily Routing Model accounted for system storage loss due to sedimentation, and how the model forecasted water storage effects if sedimentation rates continue without corrective measures that could address further storage capacity loss.

We recommend that the discussion on potential water quality impacts to the Missouri River be expanded to better describe how it was determined that water quality impacts to the Missouri River would be minimal.

The SDEIS also reports that water quality in Lake Sakakawea is degraded when lake levels are low. At times, there are algal blooms, reduced dissolved oxygen levels in deeper portions of the lake, and arsenic concentrations that exceed water quality standards (p. 3-30).

We are concerned the proposed project could further lower the lake levels, exacerbating conditions within Lake Sakakawea and resulting in transfers of degraded water. To address this issue, we recommend that the FEIS compare water quality parameters currently existing at both the Lake Sakakawea source water intake (i.e., the Snake Creek Pumping Plant), and the receiving water bodies. This analysis may provide information for consideration of the need for limiting the withdrawals from Lake Sakakawea or for additional pre-transfer water treatment. We also recommend the differences in water quality between the source waters and receiving waters be summarized (possibly in a table) in the FEIS.

- *Ecological impacts from an invasion of biota of concern.* The SDEIS uses a habitat equivalency analysis and a regional economic analysis to examine the economic impacts of a successful invasion of biota of concern. In addition, Appendix F.2 presents general information on the life histories of a selected number of invasive species and the status of invasions in other watersheds by these selected species. Once the species become established in a new area, complete eradication is not biologically practicable, and this is especially true for aquatic systems. While we agree that the proposed biota treatment approach provides a low probability of a biota transfer, a successful invasion may have irreparable and irreversible ecological consequences beyond those analyzed in the habitat equivalency analysis. We recommend the FEIS provide more specific information on the

potential ecological consequences of a successful invasion of the Hudson Bay basin, e.g., how a decrease in native species populations due to transmission of diseases or parasites could affect the ecological structure and functioning of the affected aquatic habitats.

- *Impacts to water quality.* EPA recommends expanding this discussion in the FEIS to include a summary of those analytes that are associated with current water quality impairments, i.e., all analytes from river segments on the states' Clean Water Act 303(d) list requiring Total Maximum Daily Loads (TMDLs). These analytes were identified in the supporting technical documentation but the analysis of this expanded list was not included in the SDEIS, nor is it apparent how the information in the report was factored into the water quality analysis of the alternatives. EPA believes it would be helpful to include a discussion of the more reactive analytes, such as nitrogen, temperature and dissolved oxygen that would likely have a higher sensitivity to drought and low flows conditions. In addition, we recommend that additional summary information regarding the USGS unsteady model be included in the FEIS (information on the model development, calibration, validation, and data for analysis of the alternatives).

We recommend the FEIS clarify how the total nitrogen and phosphorus loads in the Red River and Lake Winnipeg were determined. Also, it would be helpful to further discuss total phosphorus modeling, with consideration of sediment modeling, since phosphorus is highly adsorbed to sediment.

We recommend an expanded discussion of the cumulative impact analysis regarding water quality for Red River of the North and the Missouri River be provided in the FEIS. For example, by 2050, water quality could further degrade due to the increases in point and non-point discharges associated with population increases, industrial development, and agriculture in the basin.

Expansion of these discussions in the FEIS will provide for a more complete and readily available understanding of water quality impacts in a single document. EPA is available to assist incorporating these recommendations in the FEIS.

- *Adaptive Management.* We commend your commitment to develop and implement an adaptive management approach for this project. We recommend that the adaptive management process be designed to address all water quality objectives (i.e., not only biota water treatment). EPA believes a comprehensive adaptive management process will provide the ability to proactively manage water quality for the proposed project area in the long term, and may help address uncertainties associated with the long-term planning horizon.

- *Drought Contingency Measures.* The SDEIS states that in formulating the project alternatives, drought contingency measures were not considered to reduce water demands. Moreover, the SDEIS states that drought contingency measures are not included in the project alternatives because of "uncertainties involved in estimating future water demands and future water supplies" (p. A.1-4) and because Reclamation's approach to project planning is to avoid emergency water supply interruptions (p. ES-41). At the same time, we are aware that the Lake Agassiz Water Authority considers "drought contingency plans" as one of the essential components of a "Three Pronged Solution" in dealing with water supply issues in the Red River Valley (Lake Agassiz Water Authority Bulletin, November/December 2006). We recommend the FEIS clarify the role of the Lake Agassiz Water Authority, and the relationship between its and any other appropriate drought contingency plans and the overall design of the Red River Valley Water Supply Project.

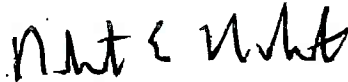
- *Clean Water Act Section 404 Compliance.* As noted in the SDEIS, discharges of dredged or fill material associated with project features, such as the intake, outfall, pipeline crossings, pumping stations, storage facilities, etc. impacting wetlands or streams may be subject to regulation under Section 404 of the Clean Water Act. As such, authorization from the Corps, either through nationwide or individual permit process, may be required, depending upon the activity or specifics of the impacts. Should an individual permit be required, additional information may be required in order to demonstrate compliance with Clean Water Act Section 404(b)(1) (40 CFR Section 230). We recommend that the FEIS either provide specific information on the location and extent of potential impacts to aquatic resources associated with the discharge of dredged or fill activities for each alternative in order to help inform the Section 404 permitting process, or clarify that this information will be developed in any subsequent NEPA documents as appropriate for the Section 404 permitting process. We also recommend that you continue to coordinate efforts with the Corps and EPA as you proceed in obtaining appropriate Section 404 authorizations.

For the reasons discussed above, EPA has rated the SDEIS as "Environmental Concerns - Adequate Information" (EC-1) in accordance with EPA's national rating system, a description of which is attached to this letter. While we have some remaining concerns regarding the potential environmental impacts of the preferred alternative, we are confident that additional refinements of the project design and application of mitigation measures can further reduce the potential impacts of the preferred alternative. In addition, we believe the SDEIS adequately sets forth the environmental impacts of the project alternatives.

However, EPA recognizes the importance of the long-term effectiveness of the biota water treatment process for the preferred option, and its associated risk reduction regarding successful establishment of invasive species. As such, EPA is prepared to work with Reclamation, and the State of North Dakota in developing the FEIS, and during the subsequent engineering phase. As part of this continuing cooperation, EPA also looks forward to assisting with addressing specific RRVWSP issues as they relate to the 1909 Boundary Waters Treaty.

In closing, I would like to acknowledge the complexity of developing a project of this scope and magnitude and fulfilling all regulatory requirements. Please feel free to contact me at 303-312-6308 or Carol Rushin at 303-312-6598 should you desire a meeting to discuss these comments.

Sincerely,



Robert E. Roberts  
Regional Administrator

Enclosure

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# U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

## Definitions and Follow-Up Action\*

### Environmental Impact of the Action

**LO -- Lack of Objections:** The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

**EC -- Environmental Concerns:** The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

**EO -- Environmental Objections:** The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

**EU -- Environmentally Unsatisfactory:** The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

### Adequacy of the Impact Statement

**Category 1 -- Adequate:** EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

**Category 2 -- Insufficient Information:** The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

**Category 3 -- Inadequate:** EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.