UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

OCT 12 2010

Ref: EPR-N

Mr. Dennis E. Breitzman
Area Manager
Dakotas Area Office
Bureau of Reclamation
P.O. Box 1017
Bismarck, ND 58502

Re: Cooperating Agency Status for the Preparation of a Supplemental EIS for the Northwest Area Water Supply Project

Dear Mr. Breitzman:

The U.S. Environmental Protection Agency Region 8 (EPA) received your invitation, dated August 27, 2010, to be a cooperating agency for preparation of a Supplemental Environmental Impact Statement (EIS) for the Northwest Area Water Supply Project (NAWS). EPA will review this project in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and our authority under Section 309 of the Clean Air Act. EPA welcomes the opportunity to be a Cooperating Agency for this project as defined by 40 CFR 1501.6 and as outlined in the Bureau of Reclamation's (Reclamation) invitation.

EPA participated as a cooperating agency in development of the NAWS Final EIS on Water Treatment and Record of Decision (ROD) which were completed in December 2008 and January 2009, respectively. Subsequently, the U.S. District Court for the District of Columbia remanded the case to Reclamation to further analyze the 1) potential cumulative impacts to the Missouri River and Lake Sakakawea and 2) consequences associated with the transfer of invasive species into the Hudson Bay Basin. Based upon conversation with you and your staff, we understand that Reclamation is interested in guidance and feedback from EPA on the analysis of cumulative impacts and climate change. Consequently, we have focused our comments on these issues but recognize that other issues beyond those described here may warrant consideration within the Supplemental EIS.

NAWS will address drinking water quality and quantity issues for residents of northwest North Dakota. The project involves an annual interbasin transfer of 15,000 acre-feet of water per year from Lake Sakakawea on the Missouri River through a buried pipeline to Minot, North Dakota. Minot will serve as the distribution point for treated water to its city residents and nine other surrounding counties which include rural water systems. The 45-mile pipeline to transfer water from Lake Sakakawea to Minot, a two million gallon storage reservoir, a high-volume

pumping station, and most segments of the distribution system are already constructed. Design for upgrades to the water treatment plant (WTP) in Minot has commenced but construction has not. The upgrades will expand capacity of the Minot WTP from 14 to 26 million gallons per day (MGD). At its normal operating pool, Lake Sakakawea covers about 368,000 acres and contains approximately 23 million acre-feet of water.[1]

To assess cumulative impacts, the EIS should characterize the pre- and post-project condition, including reasonably foreseeable future actions (RFFAs), and identify a baseline. EPA recommends the EIS analyze effects on the demand for water, in-lake/in-stream water quantity, water quality, wetlands, the aquatic community, groundwater, and recreational usage with quantitative measures when possible and qualitative ones when not.

With regard to climate change analysis, EPA recommends the EIS 1) qualitatively discuss the link among greenhouse gases (GHGs), climate change, and impacts on water resources, 2) include a summary discussion of ongoing and projected regional climate change impacts relevant to the action area based on U.S. Global Change Research Program assessments[2], and 3) identify any potential need to adapt the proposed action to these effects as well as any potential impacts from the proposed action that may be exacerbated by climate change. The EIS should also discuss GHG emissions that may be generated by the proposed action.

EPA appreciates the opportunity to provide detailed scoping comments at this early stage of the Supplemental EIS process. Our review and participation in NAWS will be coordinated by Maggie Pierce of my staff. If we may provide further explanation of our comments during this phase of your planning process, please contact Ms. Pierce at 303-312-6550, or me at 303-312-6004.

Sincerely,

for

Larry Svoboda
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosure

cc: Alicia Waters, Bureau of Reclamation

[1] Amy Corps of Engineers. Garrison Dam and Powerplant website. Accessed 24 September 2010. https://www.nwo.usace.army.mil/html/Lake_Proj/garrison/dam.html

[2] http://www.globalchange.gov/publications/reports/scientific-assessments

EPA Region 8 Detailed Scoping Comments
Northwest Area Water Supply Supplemental EIS
Bureau of Reclamation, Dakotas Area Office

Climate Change

The observed and predicted effects of climate change are wide ranging. They include increased frequency and intensity of heat waves, increased severity of wildfire, air quality degradation, the exacerbation of ground-level ozone, heavier downpours and increased flooding, increased drought, and more intense storms. Some of these phenomena are regularly observed within the Northern Great Plains region. EPA recommends the Environmental Impact Statement (EIS) 1) qualitatively discuss the link among greenhouse gases (GHGs), climate change, and impacts to water resources; 2) include a summary discussion of ongoing and projected regional climate change impacts relevant to the action area based on U.S. Global Change Research Program assessments[1] or other relevant information; and 3) identify any potential need to adapt the proposed action to these effects, as well as any potential impacts from the proposed action that may be exacerbated by climate change. The EIS should also discuss GHG emissions that may be generated by the proposed action.

Section III of the 2010 CEQ Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions includes discussion on the "Consideration of Current or Projected Effects of Climate Change on Proposals for Agency Action."[2] EPA's website on Climate Change – Health and Environmental Effects – Adaptation provides useful information and references to recent publications regarding climate change and adaptation.[3] The Council on Environmental Quality Climate Change Adaptation Task Force may also provide helpful information.[4] If the Bureau of Reclamation (Reclamation) chooses to model current or projected impacts of climate change related to the action area, EPA recommends recognition and description of the model(s) and its limitations.

These recent publications may provide a recent overview of climate change and considerations for water resource management:

Karl, T.R., J.M. Melillo, and T.C. Peterson (eds.). 2009. Global Climate Change Impacts in the United States. U.S. Global Change Research Program. Cambridge University Press.

Brekke, L.D., Kiang, J.E., Olsen, J.R., Pulwarty, R.S., Raff, D.A., Turnipseed,

[1] http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/regional-climate-change-impacts/great-plains
[2] http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf
[3] http://epa.gov/climatechange/effects/adaptation.html
[4] http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation

D.P., Webb, R.S., and White, K.D. 2009. Climate Change and Water Resources Management: A Federal Perspective. U.S. Geological Survey Circular 1331. [5]

This recent publication, developed for the Bureau of Land Management, contains information specific to the effects of climate change in North Dakota:

URS. 2010. Climate Change Supplementary Information Report for Montana, North Dakota, and South Dakota Bureau of Land Management. Prepared by URS, Denver, CO for Bureau of Land Management Montana State Office.[6]

EPA recommends Reclamation address whether its study of climate change impacts on the project warrants revision to the project alternatives described in the NAWS Final EIS for Water Treatment and its selection of a preferred alternative. Climate change influences on the project may translate into modified design and operational assumptions for determining resource supplies, system demands, system performance requirements, and operational constraints.

The EIS should also disclose any GHG emissions that may be generated by the proposed action. For example, construction activities associated with the project and operation of the water treatment plant will likely produce GHGs. The EIS should quantify and disclose project-related GHG emissions both in the short-term and over the life of the project in CO2-equivalent terms, translate the emissions into equivalencies that are easily understood from a public standpoint, and discuss any relevant Regional, Tribal, or State climate change plans or goals. As discussed in the 2010 CEQ Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions, the estimated level of GHG emissions from the project and its alternatives can also serve as a reasonable proxy for assessing potential climate change impacts and provide decision makers and the public with useful information. The EIS should include analysis of reasonable alternatives and/or potential means to mitigate project-related GHG emissions.

Cumulative Impacts

In order to assess cumulative impacts, the EIS should characterize the pre- and post-project conditions, including reasonably foreseeable future actions (RFFAs), and identify a baseline. EPA recommends the EIS analyze effects on the demand for water, in-lake/in-stream water quantity, water quality, wetlands, the aquatic community, and recreational usage with quantitative measures when possible and qualitative measures otherwise. The spatial extent of the analysis will depend on the information available to characterize impacts. The Final EISs for the Missouri River Master Water Control Manual and the Garrison Dam/Lake Sakakawea Master Plan developed by the Army Corps of Engineers may contain information helpful to extend the analysis.

---

[5] http://pubs.usgs.gov/circ/1331/

[6] http://www.blm.gov/pgdata/etc/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/eas.Par.61972.File.dat/SIR.pdf

Characterization of Pre-Project Condition

The EIS should characterize the pre-project condition (existing prior to construction) of the affected environmental resources relative to their natural condition or points in time when all uses were being met. This characterization will disclose the net cumulative effect of historic actions and may act as a baseline for all alternatives including the no-action alternative. It is not necessary to link impacts to individual historical actions; however, a summary of those actions would be beneficial to understanding the system.

When possible, EPA encourages inclusion of quantitative measures and consistent use of those measures, whether observed or predicted, across the pre-project, baseline, and post-project conditions. EPA also encourages discussion and consideration of phenomena already observed within the region that may be attributable to climate change.

Baseline Condition

The Draft EIS should identify a baseline condition for mitigation for any impacts from the project. Because climate change is likely to exacerbate extreme drought and flooding which the project area already experiences, it may be considered in development of the baseline condition for this project. The 2010 Draft Climate Change guidance notes:

> *Where climate change effects are likely to be important but there is significant uncertainty about such effects, it may also be useful to consider the effects of any proposed action or its alternatives against a baseline of reasonably foreseeable future conditions that is drawn as distinctly as the science of climate change effects will support.*

If impacts from RFFAs such as climate change are expected, the pre-project condition may not be the baseline condition best suited to capture the incremental effect of the project. A no-action alternative may be more appropriate. If so, please describe RFFAs and characterize the baseline condition accordingly with resource-specific characterizations. RFFAs other than climate change may include, but are not limited to, future water projects, oil and gas development, and growth.

Characterization of Project Impacts

The EIS should characterize cumulative impacts to affected environmental resources in the post-project, reasonably foreseeable future condition including impacts from RFFAs such as climate change, water projects, oil and gas development, and growth. If a pre-project condition is not used as a baseline, identification of the incremental impacts associated with the project should be well-supported and quantified when possible.

The NAWS Final EIS on Water Treatment discloses that a number of Missouri River Basin tribes are in the process of quantifying their water rights (Chapter 3) and Table 4.1, which summarizes the findings of the 2001 Finding of No Significant Impact for the NAWS project, states "...should Tribes with an interest in the Missouri River water pursue a settlement of their Winters Doctrine rights, the water available for the Project could be affected." EPA recommends that the Final EIS provide an update to the status of the tribes' efforts to quantify their water rights and consider those rights in the cumulative effects analysis.

EPA offers the following resource-specific considerations for characterization of project impacts. The EIS should also describe a baseline condition for these resources.

Water Demand

The EIS should describe RFFAs that will result in increased depletions from Lake Sakakawea and the Missouri River, describing and quantifying how the demand for water will change in each sector (e.g., municipal water supply or power generation) within the study area. The following reference from the Water Utility Climate Alliance (WUCA) may be helpful when accounting for changes in municipal demand due to climate change if using a model:

Water Utility Climate Alliance. 2009. Options for Improving Climate Modeling to Assist Water Utility Planning for Climate Change. [7]

The EIS should also identify any impacts to drinking water supply and suppliers. Water level fluctuations impact the availability, water quality, treatment techniques, and infrastructure requirements for water suppliers.

Water Quantity

The EIS should characterize cumulative impacts to in-stream flows in the Missouri River and water levels in reservoirs. EPA recommends analysis of water levels within Lake Sakakawea and flow in the Missouri River at key points along the system that illustrate the impacts of the project and RFFAs. Flow or water level data should be used to compare the pre-project or baseline condition to project impacts and cumulative impacts. The frequency, duration, and magnitude with which the system experiences a variety of conditions (extreme low-flows/water levels, normal operating pool water levels/flows, and wet-weather flows/water levels) at the pre-project, baseline, and post-project conditions would be a helpful basis for comparison.

Water Quality

The EIS should address potential impacts to water quality. Project depletions in combination with future withdrawals and climactic variability attributable to climate change may lead to reductions in flow and changes in hydrologic cycling. Such

[7] http://www.wucaonline.org/assets/pdf/actions_whitepaper_120909.pdf

modifications have the potential to impact water quality by reducing the flow available for dilution, affecting the biogeochemical cycle, lengthening or shortening reservoir residence times, and altering the timing or magnitude of flushing flows and watershed connectivity. The EIS should discuss any impacts to discharge permit requirements or total maximum daily loads (TMDLs), designated and/or existing uses, water quality standards, and the Source Water Protection Program.

Lake Sakakawea is currently identified as impaired by methylmercury for fish consumption on North Dakota's 2010 Integrated Report[8]; accordingly, it also has a site-specific fish consumption advisory. While the ultimate sources of mercury to waterbodies are commonly anthropogenic air emissions or natural, water-level fluctuations in Lake Sakakawea have been linked with increased methylation rates and concentrations of methyl mercury in fish (Pearson and Ell, 1997). In combination, the effects of climate change, through increased climactic extremes of drought and precipitation, increased water withdrawals, and reservoir management could exacerbate these water-level fluctuations in Lake Sakakawea. EPA recommends that the BOR consider the cumulative effects of climate change, increased withdrawals, and reservoir management as they may affect water-level fluctuations and mercury concentrations in fish in Lake Sakakawea.

North Dakota's 2010 Integrated Report prepared pursuant to Clean Water Action Section 303(d) indicates that Lake Sakakawea was previously impaired for dissolved oxygen and temperature. Because reductions in water quantity have the potential to lead to increased water temperature and nutrient concentrations, EPA encourages Reclamation to examine and disclose whether this project has the potential to cumulatively contribute to impairment for dissolved oxygen or temperature in Lake Sakakawea.

Wetlands

The EIS should address cumulative impacts to wetlands. EPA encourages that evaluation of cumulative impacts go beyond an assessment of acreage impacted but also evaluate impacts to ecosystem functionality on a watershed or landscape scale. Prairie potholes provide important habitat for waterbirds, absorb excess water to protect against flooding, and recharge groundwater systems. Wetlands adjacent to the river or reservoir also provide important habitat for waterfowl, and buffer fluctuations in water level.

The site of the biota Water Treatment Plant (WTP) includes a seven-acre palustrine, emergent, seasonally flooded wetland along the northeast boundary; several small (less than one acre) palustrine, emergent, temporarily flooded wetlands; and a small seasonal wetland.[9] In 1991, wetlands comprised 53% of the Lake Sakakawea delta and 9% of the floodplain along the reach of the Missouri between

[8] http://www.ndhealth.gov/WQ/SW/Z7_Publications/IntegratedReports/2010_Final_Approved_IntegratedReport_20100423.pdf

[9] Northwest Area Water Supply Project: Final EIS on Water Treatment. 2009.

Garrison Dam and Lake Oahe.[10] Executive Order (EO) 11990 directs Federal Agencies to "take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities." There may be direct impacts due to construction of the biota WTP and pipeline and indirect impacts due to growth or changes to the surface water-groundwater hydrology. Changes in surface water or groundwater connectivity with wetlands may result from climate change or depletions to Lake Sakakawea or the Missouri River.

Climate change, through its impact on hydrology, is likely to significantly affect wetlands in this region. The U.S. Climate Change Science Program report entitled *Thresholds of Climate Change in Ecosystems*[11] addresses the potential for impacts to wetlands in the prairie pothole region (pp 46-52), noting their particular susceptibility:

> *Wetlands in the Prairie Pothole Region are likely to be strongly affected by gradual changes in climate (Poiani and Johnson, 1991; Covichet et al. 1997). Climate drives surface processes, such as the hydrologic cycle, and hydrology is the most important factor that controls key wetland processes and services (Winter and Woo, 1990)* (page 48).

The EIS should address the project's potential to contribute to direct, indirect, and cumulative impacts to wetlands. EPA encourages Reclamation to consider impacts to ecosystem functionality that may be reduced or lost with wetland impacts. Mitigation should address both acreage and ecosystem functionality on a watershed and, if appropriate, landscape scale.

Aquatic Community

Cumulative impacts to water levels and flows may impact the aquatic community by reducing habitat quality, connectivity, or availability. Change to the water level of Lake Sakakawea may result in dramatic reductions in shoreline and littoral zone habitat availability. Impacts to water quantity may also affect habitat, flow, lake storage capability, and channel morphology through effects on sediment loading, transport, and deposition.

Threatened and endangered species are known to occur within the project area. EPA recommends engaging the U.S. Fish and Wildlife Service to assure that the proposed alternatives responsibly account for and are in compliance with the following:

- Protection for threatened and endangered species;

---

[10] Army Corps of Engineers. 1994. Missouri River Master Water Control Manual Review and Update Final EIS.

[11] http://downloads.climatescience.gov/sap/sap4-2/sap4-2-final-report-all.pdf

- River restoration, flow and channel modifications, wetlands, and habitat requirements;
- Migratory Bird Treaty Act; and
- Protection from invasive species.

Groundwater

Groundwater is an important resource for the Northern Great Plains region. Potential impacts to its quantity or quality through hydrogeologic alterations should be considered within the EIS.

Recreation

The EIS should identify any impacts to recreation. Hydrologic changes may directly impact boating, fishing, bird-watching, or the hunting of waterfowl.

Mitigation & Monitoring

Because a record of decision (ROD) has already been developed, the EIS should identify whether any revisions to mitigation and monitoring are necessary as a result of these supplemental analyses. The EIS should explicitly include identification of appropriate mitigation where impacts are expected. The description should include designation of the entity responsible for implementing the mitigation, the funding source, and specific temporal milestones to meet rehabilitation standards.

Sustainable water management practices could be used to mitigate impacts from reduced flow. Sustainability should be defined as the maintenance and balance of both human and ecological needs.

The EIS should identify the features of an effective adaptive management plan, including

- A decision tree with clear objectives to guide future decisions;
- Specific decision thresholds with identified indicators for each impacted resource;
- Targets that specify a desired future condition
- Trends specifiying a desired change relative to the baseline condition;
- A monitoring plan with protocols to assess whether thresholds are being met; and
- Firm commitment to use monitoring results to modify management actions if necessary.

Citations

Pearson, E. and M. Ell. 1997. Effects of Rising Reservoir Water Levels Resulting from the1993 Flood on the Methyl- Mercury Concentrations in Fish Tissues in Lake Sakakawea, ND. North Dakota Department of Health.

U.S. Climate Change Science Program. 2009. Thresholds of Climate Change in Ecosystems. A report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. U.S. Geological Survey, Reston, VA.