BUREAU OF RECLAMATION

Record of Decision

Eastern North Dakota Alternate Water Supply Project

Estimated lead agency costs for preparing this EIS and Record of Decision: $2,159,000

U.S. Department of the Interior

January 2021

Mission Statements

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Record of Decision

Eastern North Dakota Alternate Water Supply Project

Approved:

Brent Esplin

Date: January 15, 2021

Brent Esplin, Regional Director
Bureau of Reclamation
Interior Region 5 - Missouri Basin Region
Department of the Interior

Cover photograph: McClusky Canal, Garrison Diversion Unit, North Dakota

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Acronyms and Abbreviations

BMPs	best management practices
CEQ	Council on Environmental Quality
CNDWSP	Central North Dakota Water Supply Project
Corps	U.S. Army Corps of Engineers
DWRA	Dakota Water Resources Act of 2000
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
GDU	Garrison Diversion Unit
HBB	Hudson Bay Basin
MRB	Missouri River Basin
MR&I	municipal, rural and industrial
NEPA	National Environmental Policy Act
OM&R	operation, maintenance and replacement
Project	Eastern North Dakota Alternate Water Supply Project
ROD	Record of Decision
ROW	Right-of-Way
SDWA	Safe Drinking Water Act
UV	ultraviolet
WTP	water treatment plant

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Introduction

This Record of Decision (ROD) documents the Department of the Interior, Bureau of Reclamation's (Reclamation) selection of the McClusky Canal and Missouri River North Alternative for the Eastern North Dakota Alternate Water Supply (Project). The Regional Director of Reclamation's Missouri Basin Region is the responsible official for the decision made in this ROD. The Federal decision being made is the selection of an alternative that meets the purpose and need of the proposed action. As the lead agency for the purposes of compliance with the National Environmental Policy Act (NEPA) of 1969, Reclamation prepared the Environmental Impact Statement (EIS) for the proposed action. Six alternatives, including no action and five action alternatives were evaluated. Reclamation's preferred alternative, developed from the alternatives analyzed in detail, was identified in the Final EIS.

As a means of providing transparency throughout this NEPA process, Reclamation used a variety of documents and meeting styles to share information as well as gather input from the public. Displays, website, presentations were used to provide information to the public and a public meeting was held to gather comments on the Draft EIS. The full text of the EIS and the associated appendices contain the technical information, graphics, maps, etc. to fully disclose the alternatives evaluated and the potential resource effects.

Specific agencies were invited to participate as cooperating agencies in the preparation of the EIS in accordance with the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1501.6). Reclamation invited agencies with jurisdiction by law and those with special expertise to join the Cooperating Agency Team. The federal, state, and local agencies that accepted the invitation to participate as a cooperating agency included: U.S. Army Corps of Engineers (Corps), U.S. Environmental Protection Agency (EPA), North Dakota State Water Commission, Garrison Diversion Conservancy District (Project Sponsor), and the North Dakota Game and Fish Department. The Cooperating Agency Team included experts from each agency who worked collaboratively in data sharing and impact analyses.

Summary of Action

The Project Sponsor requests Reclamation consider issuing a contract for up to 165 cubic feet per second (cfs) of water from Garrison Diversion Unit (GDU) facilities, as an alternate water supply for the State Red River Valley Water Supply Project (RRVWSP). Reclamation proposes to provide federal cost share for the construction of the Project and the federal actions associated with this could include:

- Provide federal cost share for the construction of Project features, which may include an intake and pump station located along the McClusky Canal, a Biota water treatment plant (Biota WTP), and a bulk transmission pipeline to deliver water to the main transmission pipeline of the State RRVWSP.
- Issuance of a water repayment contract for GDU facilities, and
- Issuance of permits to construct and maintain Project facilities on Reclamation rights-of-way.

This request for an additional 145 cfs of water is in addition to a previous request by the Project Sponsor for 20 cfs of water from the McClusky Canal that is to be delivered to the State RRVWSP for use in the Missouri River basin (MRB). The previous request is referred to as the Central North Dakota Water Supply Project (CNDWSP) and was analyzed by Reclamation in an Environmental Assessment. A Finding of No Significant Impacts was signed in 2018. The Project Sponsor estimates that using the proposed alternate water source could save millions of dollars in costs for construction and annual operations and maintenance; including decreased energy costs for pumping.

The purpose of the Project is to respond to the Project Sponsor's request for a contract for up to 165 cfs of water from Reclamation's GDU facilities to provide an alternate bulk water supply to the State RRVWSP. The need for Reclamation's proposed action is established by Reclamation's responsibility under the Dakota Water Resources Act of 2000 (DWRA) (Section 7), which authorizes Reclamation to jointly, with the State of North Dakota, construct municipal, rural and industrial (MR&I) water resource development projects to serve areas throughout the State of North Dakota.

The request necessitated that Reclamation analyze its actions and potential impacts of these actions to comply with NEPA and other applicable laws. Reclamation initiated the NEPA process by publishing a Notice of Intent to prepare this EIS in the *Federal Register* on November 13, 2019. Reclamation sought public comment and involvement during the planning and preparation of this EIS by (1) hosting public scoping meetings, (2) communication and consultation with a variety of Federal, state, and local agencies, Native American tribes and interest groups, and (3) establishing an Project website to share information with the pubic. A cooperating agency team of Federal and state agencies, with jurisdiction or special expertise, was also established to assist Reclamation in the preparation of the EIS.

The Final EIS and this ROD have been prepared in accordance with the NEPA, the CEQ Implementing Regulations for NEPA (40 CFR 1500-1508), and Department of the Interior policies. The decision made here is based on the Final EIS filed with the EPA (EIS No. 20200243) on

December 4, 2020 and noticed by Reclamation and EPA in the *Federal Register* on December 4, 2020 (85 FR 78323).

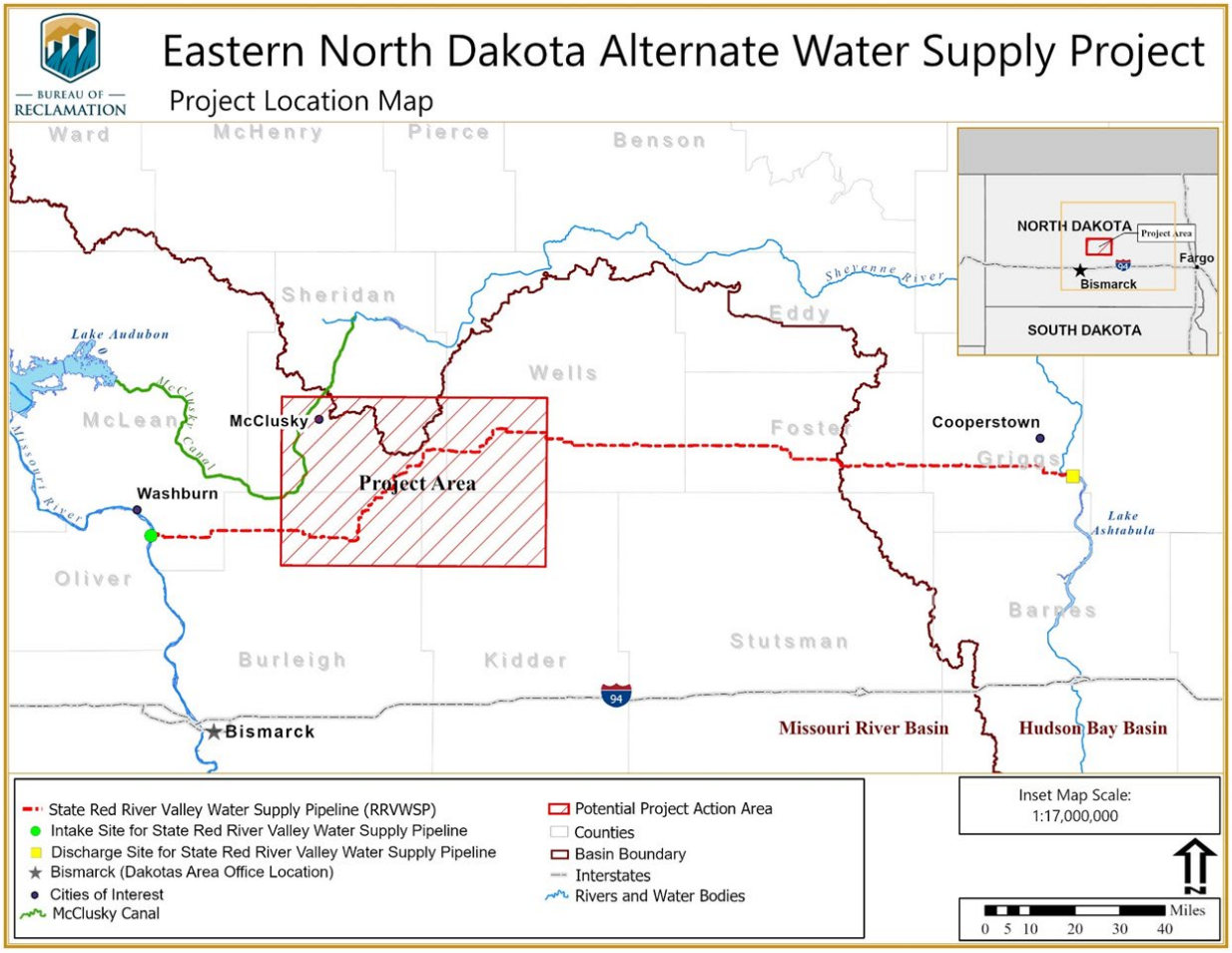

Figure 1: Eastern North Dakota Alternate Water Supply Project Action Alternatives Study Area.

Alternatives Considered in the Final EIS

The Final EIS examined the range of reasonable alternatives developed to meet the Project's purpose and need as well as a No Action alternative. A no action alternative is required to be considered under NEPA (40 CFR 1502.14[d]) as a basis for comparison of the alternatives. These alternatives have been evaluated in detail, considering potential environmental effects, as well as technical and economic considerations such as reliability and cost.

The action alternatives were developed to provide an alternate source of water to the State RRVWSP for MR&I uses. The action alternatives are identified by the water source utilized, either the McClusky Canal, or the Missouri River, or a combination thereof.

Action alternatives that utilize the McClusky Canal to deliver Missouri River water into the Hudson Bay Basin (HBB) include a Biota WTP. The purpose of the Biota WTP is to treat the water from the MRB prior to it being delivered into the HBB as a means of complying with the Boundary Waters Treaty of 1909 between the United States and Canada. Compliance with this treaty is required as stated in Section 1(h) of DWRA.

Opponents to the development of the GDU have voiced a long-standing concern over projects transferring water from the MRB to the HBB. Although the U.S. government has not developed water treatment standards, rules, or regulations specifically for use in reducing the risk of an introduction of an invasive species (biota) through interbasin water transfers, for MR&I projects involving an interbasin transfer of water, Reclamation has responded to these concerns by treating the water prior to it entering the HBB. Reclamation evaluated Biota WTP options to analyze different levels of treatment and their ability to reduce the Project-related risk of transferring aquatic invasive species (AIS). Chapter 2 of the EIS describes the alternatives and the Biota WTP options in detail and concludes with a description of the preferred alternative.

Alternatives evaluated in detail in the Final EIS:

- **No Action Alternative** – The No Action Alternative is based on the environmental analyses and conclusions of the previously completed NEPA compliance documents for the CNDWSP, and the proposed action selected in the Finding Of No Significant Impact (Reclamation 2018). As stated in the CEQ Regulations [Section 1502.14(d)], a no action alternative is to be considered as part of the NEPA process. Additional guidance from the CEQ is provided in the document, NEPA's Forty Most-Asked Questions. This guidance states that the no action alternative can be defined as a continuing action of the current management direction. Therefore, Reclamation has defined the No Action Alternative as the CNDWSP, which would provide 20 cfs of water from the McClusky Canal to the State RRVWSP. This alternative includes construction of an intake into the McClusky Canal and a six-mile pipeline connection between the McClusky Canal and the State RRVWSP. The 20 cfs of water withdrawn from the McClusky Canal would be supplied to water users within the MRB.

- **State Red River Valley Water Supply Project** – This alternative would be constructed by the State of North Dakota utilizing the Missouri River as the sole source of water to provide 165 cfs for the State RRVWSP. Under this alternative, Reclamation would not construct the

CNDWSP or issue a contract for water use out of the McClusky Canal. Under this alternative the State of North Dakota would continue with their plans to construct the State RRVWSP without any involvement by Reclamation.

- **McClusky Canal Only North** - This alternative would include the construction of features to provide 165 cfs from the McClusky Canal through a buried pipeline along a northern route where it terminates at the connection with the main transmission pipeline of the State RRVWSP. Features would include an intake on the McClusky Canal, pump station, Biota WTP, and buried pipelines. Reclamation would issue a repayment contract for water use out of the McClusky Canal and other permits to construct and maintain facilities on Reclamation's right-of-way (ROW).

- **McClusky Canal Only South** – This alternative would include the construction of features to provide 165 cfs from the McClusky Canal through a buried pipeline along a southern route where it terminates at the connection with the main transmission pipeline of the State RRVWSP. Features would include an intake on the McClusky Canal, pump station, Biota WTP, and buried pipelines. Reclamation would issue a repayment contract for water use out of the McClusky Canal and other permits to construct and maintain facilities on Reclamation's ROW.

- **McClusky Canal and Missouri River North** - This alternative would include the construction of features to provide up to 165 cfs from the McClusky Canal through a buried pipeline along a northern route where it terminates at the connection with the main transmission pipeline of the State RRVWSP. Features would include an intake on the McClusky Canal, pump station, Biota WTP, and buried pipelines as Phase 1. Phase 2 would include features required to provide up to 165 cfs from the Missouri River for a maximum total combination of 165 cfs. Reclamation would issue a repayment contract for water use out of the McClusky Canal and other permits to construct and maintain facilities on Reclamation's ROW.

- **McClusky Canal and Missouri River South** - This alternative would include the construction of features to provide up to 165 cfs from the McClusky Canal through a buried pipeline along a southern route where it terminates at the connection with the main transmission pipeline of the State RRVWSP. Features would include an intake on the McClusky Canal, pump station, Biota WTP, and buried pipelines as Phase 1. Phase 2 would include features required to provide up to 165 cfs from the Missouri River for a maximum total combination of 165 cfs. Reclamation would issue a repayment contract for water use out of the McClusky Canal and other permits to construct and maintain facilities on Reclamation's ROW.

Four Biota WTP options were evaluated for the Project to reduce the risk of a Project-related transfer of AIS into the HBB. The options were designed to provide a range of treatment methods, starting with disinfection and incrementally adding water treatment technologies to target different types of pathogens and biota, and increasing the level of protection with each option. The Biota WTP would be constructed within the MRB near the McClusky Canal. Design information and cost estimates, for construction and operation, maintenance and replacement (OM&R) of the Biota WTP are described in Chapter 2 of the Final EIS (additional details provided in Appendix B).

The Biota WTP options include:

- **Disinfection (Option 1)** - Includes sand/grit removal and chlorine disinfection and chloramine formation which would provide 3-log (99.9%) inactivation of *Giardia* and 4-log (99.99%) inactivation of viruses. Does not provide protection against organisms that are resistant to chlorine disinfectants, such as *Cryptosporidium*.

- **Enhanced Disinfection (Option 2)** - Includes sand/grit removal, ultraviolet (UV) light irradiation, followed by chlorine disinfection and chloramine formation. This option would provide 3-log inactivation of *Giardia* and 4-log inactivation of viruses along with UV which is used to inactivate chlorine-resistant biota such as *Cryptosporidium* and *Myxobolus cerebralis*.

- **Conventional Treatment (Option 3)** - Includes coagulation/flocculation, sedimentation, media filtration, UV irradiation, chlorination disinfection and chloramine formation. This option would provide 3-log inactivation of *Giardia* and 4-log inactivation of viruses along with UV which is used to inactivate chlorine-resistant biota such as *Cryptosporidium* and *Myxobolus cerebralis* and includes media filtration which reduces turbidity increasing the effectiveness of the disinfection and UV processes.

- **Advanced Treatment (Option 4)** - Includes sand/grit removal, coagulation/flocculation, membrane filtration, UV irradiation, and chlorine disinfection and chloramine formation. This option would provide 3-log inactivation of *Giardia* and 4-log inactivation of viruses along with UV which is used to inactivate chlorine-resistant biota such as *Cryptosporidium* and *Myxobolus cerebralis* and includes membrane filtration process which removes even smaller particles, removing turbidity which then improves the effectiveness of the disinfection and UV processes.

Capital costs associated with this facility will be negotiated with the Project Sponsor to determine the appropriate level of federal cost share, if any. Reclamation expects that OM&R costs will be the responsibility of the Project Sponsor. Any federal funding will be subject to annual appropriations.

Environmentally Preferable Alternative

CEQ defines the environmentally preferable alternative as "…the alternative that will promote the national environmental policy as expressed in NEPAS's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (CEQ's Forty Most Asked Questions Concerning CEQ's NEPA Regulations [40CFR18026-18038]).

All temporary impacts were evaluated and determined to be minimal, so the potential permanent impacts were considered in the process to identify the environmentally preferred alternative. The alternatives evaluated in the Final EIS, including the No Action Alternative, have similar components such as intakes, treatment plants, pump station(s), pipelines, etc. These similar components resulted in similar and insignificant impacts associated with each of the alternatives as discussed in the Final EIS. Potential permanent impacts associated with construction activities for the McClusky Canal Only South Alternative would be minimal and less when compared to the No Action and other action alternatives. Although the overall impacts of the proposed construction activities are not significant; the potential impacts to land resources and wetlands is where the differences in impacts between alternatives is most noticeable. Construction of a Biota WTP and pipeline construction are the most likely components to have impacts on these types of resources as evaluated in the Final EIS. Because the McClusky Canal Only South Alternative has the fewest miles of pipeline in comparison to the other alternatives evaluated, it has been identified as the environmentally preferable alternative.

The Enhanced Disinfection option selected for the Biota WTP provides 3-log inactivation of *Giardia* and 4-log inactivation of viruses along with UV which is used to inactivate chlorine-resistant biota such as *Cryptosporidium* and *Myxobolus cerebralis*. This treatment further reduces an already low risk of a Project-related transfer of AIS into the HBB. Given the much higher risk posed by competing non-Project pathways, the overall risk of an AIS transfer and subsequent establishment would be similar under all the alternatives, including No Action. Under the selected McClusky Canal and Missouri River North Alternative, the potential impacts from transfer and establishment of AIS would be comparable to the No Action Alternative and the action alternatives because numerous high risk transfer pathways already exist and impacts are dependent on the species transferred; not the source of introduction.

Although this alternative may be environmentally preferable; a key factor in selecting the McClusky Canal and Missouri River North Alternative in this decision document is the water availability factor, which is not considered as a factor in identifying the environmentally preferred alternative. As stated in the Final EIS, Chapter 2, section 2.2, during a long-term drought; Lake Audubon would need to be drawn down to maintain less than 43-feet of differential between Lake Audubon and Lake Sakakawea. This affects the GDU's ability to deliver water down the McClusky Canal to meet all Project needs if Lake Sakakawea's pool elevation falls below 1804.0 feet mean sea level. This makes the environmentally preferable alternative more unreliable as a bulk water supply than other alternatives evaluated in the Final EIS.

Decision

Reclamation's Missouri Basin Regional Director, as delegated by the Secretary of the Department of the Interior, is providing approval to proceed with the Project as defined in the preferred alternative. The decision includes the following which are described in detail in the Final EIS:

- Eligible for providing a federal cost share, if any for the capital costs of the McClusky Canal and Missouri River North Alternative (Figure 2) including the Enhanced Disinfection Biota WTP option, for implementation and construction of Project features,

- Issuance of a water repayment contract for GDU facilities, and

- Issuance of permits to construct and maintain Project facilities on Reclamation rights-of-way.

Reclamation chose a matrix evaluation method that has been established to evaluate several factors and compare the alternatives to determine the best recommendation for the Project. Reclamation compared all alternatives in terms of reliability, environmental impacts and non-environmental issues identified during the EIS process, along with the estimated construction and annual OM&R costs.

This alternative will be implemented in two phases with an estimated total construction cost of $1,260,419,000 and an annual OM&R cost of approximately $8,240,000. Construction costs will be negotiated with the Project Sponsor to determine the appropriate level of federal cost share, if any. Any federal funding will be subject to annual appropriations. Reclamation expects the Project Sponsor to be responsible for the OM&R costs of the Project including the Biota WTP which is estimated at approximately $4,100,000 annually.

Reclamation will enter into a cooperative agreement with the Project Sponsor to define the Roles and Responsibilities of the parties and to provide Reclamation's continued oversight of the Biota WTP to ensure biota water treatment compliance. Reclamation will enter into good faith negotiations for a water repayment contract with the Project Sponsor to withdraw water from the McClusky Canal for up to 165 cfs of continual supply.

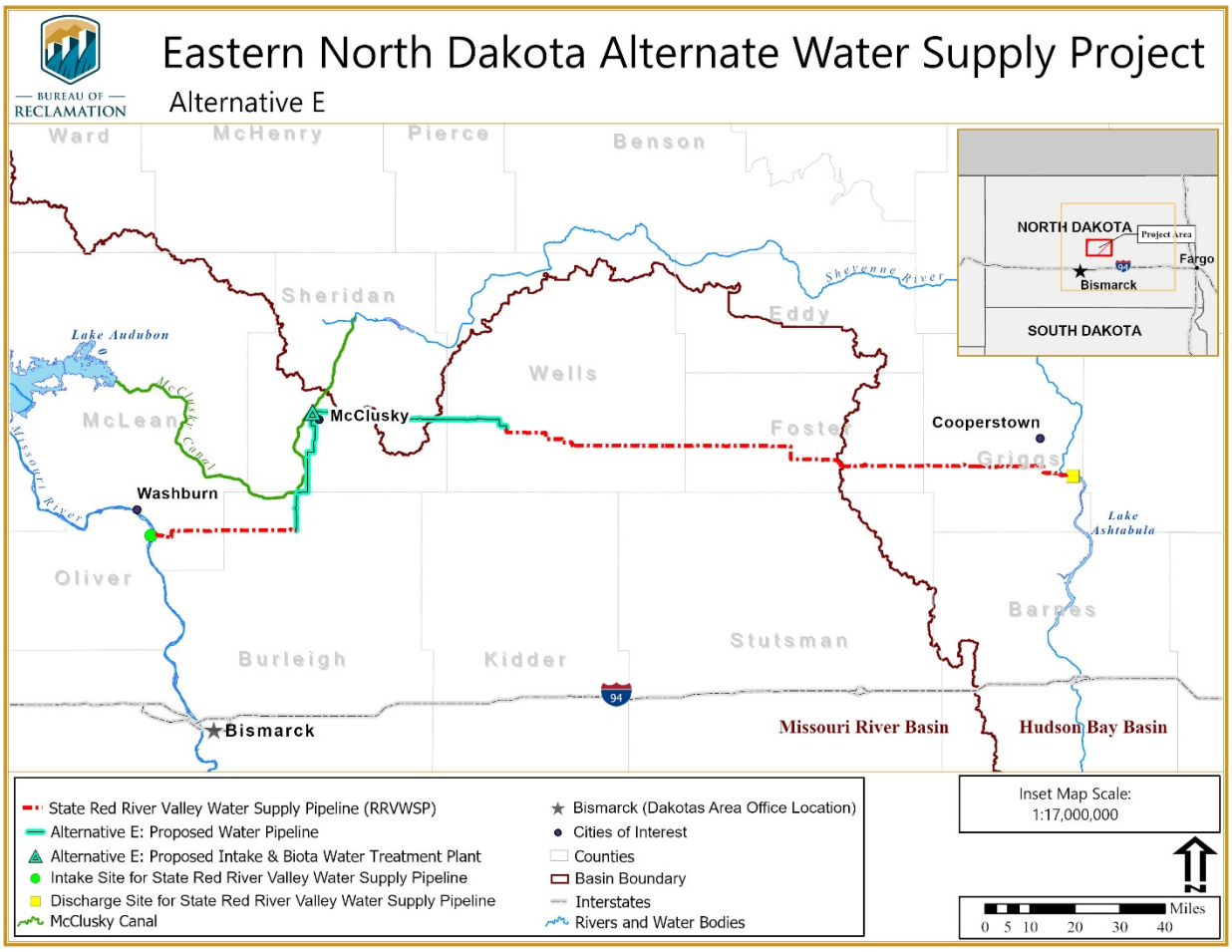

Figure 2: McClusky Canal and Missouri River North Alternative

Considerations Relevant to the Decision

The decision to select this alternative was made after carefully weighing economic, social, and technical considerations, as well as the potential environmental effects analyzed in the Final EIS. Reclamation also considered the comments from members of the public, community leaders, state and federal agencies, private organizations and the representatives of the cooperating agencies. With this in mind, Reclamation has selected the McClusky Canal and Missouri River North Alternative for implementation.

Two resource areas were the focus of public scoping comments and have been raised as concerns in other evaluations Reclamation has conducted on interbasin water transfer projects in the past. These issues are the potential transfer and consequences of AIS and the potential impacts of withdrawals from the Missouri River Mainstem Reservoir System (System). Potential impacts to many other resource areas are evaluated in this EIS, including but not limited to Land Resources, Historic Properties, Wetlands, Threatened and Endangered Species, etc.

- **Aquatic invasive species** - The EIS evaluated the potential Project-related risks and consequences of AIS transfer associated with an interbasin transfer of water from the MRB to the HBB, as well as the risks and consequences associated with numerous non-Project pathways.

- **Cumulative depletions of water from the Missouri River** - Reclamation worked collaboratively with the Corps to analyze the effects of continuing reservoir sedimentation within the Missouri River System, and how Project depletions and other reasonably foreseeable future depletions would affect the different Missouri River uses and associated resources. These uses and resources include System storage, System runoff, System operations, and Dam releases.

Analysis and consideration of these issues and resources, along with the associated environmental impacts as documented in the Final EIS, are the supporting rationale for selecting the McClusky Canal and Missouri River North Alternative. The decision to select this alternative provides the most effective means to minimize or avoid environmental harm and meet the request of GDCD to supply an alternate bulk delivery to the State RRVWSP through the year 2075.

Important considerations in making the decision include Reclamation's mission of managing, developing, and protecting water and related resources in an environmentally and economically sound manner in the interest of the American public. The decision gives due consideration to several factors including: source water reliability, impacts to water resources, environmental impacts, and risk of Project-related transfer of AIS.

No significant adverse environmental effects were identified for construction and operation actions associated with this alternative. As illustrated in Table 1, construction of this alternative will result in temporary impacts to some natural resources and minimal permanent impacts to some land resources where permanent Project facilities are constructed. A temporary impact is defined as short-term; with the resource returning to its previous condition within 1 to 3 years. Reclamation will implement best management practices in an effort to avoid impacts where practicable or minimize the impacts that cannot be avoided. These best management practices will be included in

all construction contracts. In addition, no effects are anticipated for historic properties documented within the Project area.

The implementation of best management practices will allow construction activities to avoid them where practicable. Reclamation has also determined the Project will not adversely impact Indian Trust Assets based on consultation with potentially affected tribes and analysis in the Final EIS. Reclamation will continue consultations with these tribes as required as the Project moves forward into the final design and implementation phases.

In compliance with Section 7 of the Endangered Species Act, Reclamation prepared a biological assessment which determined the McClusky Canal and Missouri River North Alternative "may affect, is not likely to adversely affect" the threatened piping plover, the endangered whooping crane, the threatened Dakota Skipper. A determination of "no effect" was made for the threatened rufa red knot, the endangered pallid sturgeon, the endangered interior least tern, and the threatened northern long-eared bat. The concurrence letter from the U.S. Fish and Wildlife Service is included in Appendix A.

Selection of Enhanced Disinfection Treatment as the Biota WTP option was based on scientific studies regarding the effectiveness of the treatment processes included in this option to adequately reduce the Project-related risk of transferring AIS into the HBB. It has been determined that this level (or higher) of treatment adequately reduces the Project-related risk of AIS transfer in compliance with the Boundary Waters Treaty of 1909. The consequences of a transfer of AIS is the same for this alternative as it is for the No Action and other action alternatives as explained in the Final EIS.

Table 1: Summary of impacts to human and natural resources

Summary of Action Alternative Impacts Compared to No Action						
= No Change from the No Action						
↑ More impacts than the No Action						
↓ Less impacts or Beneficial impacts than the No Action						
Resource Issue	**No Action**	**State RRVWSP**	**McClusky Canal only North**	**McClusky Canal only South**	**McClusky Canal and Missouri River North**	**McClusky Canal and Missouri River South**
Aquatic Invasive Species						
Risk of Transfer to Hudson Bay Basin	The risk of AIS transfers to and establishment in the HBB through existing pathways would continue. In comparison to existing pathways, the No Action Alternative interbasin transfer risk would be low and is reduced further with the inclusion of the State-proposed water treatment plant.	=	↓ (Biota water treatment)			
Impacts to Hudson Bay Basin	Adverse environmental and economic impacts of AIS could increase due to transfer through existing pathways, potential future invasions through new pathways, and expanded distribution and abundance of AIS already in the HBB.	=	=	=	=	=

Summary of Action Alternative Impacts Compared to No Action						
= No Change from the No Action						
↑ More impacts than the No Action						
↓ Less impacts or Beneficial impacts than the No Action						
Resource Issue	**No Action**	**State RRVWSP**	**McClusky Canal only North**	**McClusky Canal only South**	**McClusky Canal and Missouri River North**	**McClusky Canal and Missouri River South**
Climate Change						
Future water availability	Climate change assessments within the Missouri River Mainstem System indicate runoff in the basin will increase in the future, providing a reliable source of water.	=	=	=	=	=
Cultural Resources						
Historic Properties	No adverse effects to historic properties are anticipated.	NA	=	=	=	=
Native American Traditional Cultural Properties	Access to Native American traditional cultural property sites by traditional practitioners would not be restricted, nor would the pipeline route open new areas for access	NA	=	=	=	=
Land Resources						
Protected Lands	Five parcels affected including easements, PLOTS, and ND State Trust Lands. (Parcels)	NA	↓ (1)^	↑ (9)^	↑ (8)^	↑ (14)^
Prime and Unique Farmland	No prime farmlands acres would be affected. (Acres)	NA	↑ (130)^	↑ (<1)^	↑ (135)^	↑ (<1)^

Summary of Action Alternative Impacts Compared to No Action						
= No Change from the No Action						
↑ More impacts than the No Action						
↓ Less impacts or Beneficial impacts than the No Action						
Resource Issue	**No Action**	**State RRVWSP**	**McClusky Canal only North**	**McClusky Canal only South**	**McClusky Canal and Missouri River North**	**McClusky Canal and Missouri River South**
Water Resources						
System Storage	Missouri River Mainstem Systems decreased by 0.1195 MAF compared to no Project.	=	=	=	=	=
Navigation Service	Service level changes by 1,000 cfs or less for 98 percent of the period. 2 percent the service level is either increased or decreased between 1,000 and 5,000 cfs. Service length changes of 1 day or less for 90 percent of the period and 3 years have greater than 2 days.	=	=	=	=	=
System Reservoir Levels	Reservoir water surface elevations are lower. During extended drought scenarios, a greater than 1-foot change is anticipated 5 percent of the time (Garrison) and 12 percent of the time (Oahe). (Feet)	=	Garrison ↑ (0.1) Oahe ↓ (0.2) Others =			
Dam Releases and River Flow	Changes in releases greater than 1,000 cfs less than 2 percent of the time for four major reservoirs.	=	=	=	=	=

Summary of Action Alternative Impacts Compared to No Action						
= No Change from the No Action						
↑ More impacts than the No Action						
↓ Less impacts or Beneficial impacts than the No Action						
Resource Issue	**No Action**	**State RRVWSP**	**McClusky Canal only North**	**McClusky Canal only South**	**McClusky Canal and Missouri River North**	**McClusky Canal and Missouri River South**
Water availability from GDU	Between 1934 and 1942 drought scenario, water could not be supplied from GDU for 1,376 days during that time period. (Days)	NA	↑ (-12)			
Threatened and Endangered Species						
Impacts to Species	No impacts to any threatened or endangered species.	NA	=	↑ (Dakota skipper^)	=	↑ (Dakota skipper^)
Wetlands and Riparian Areas						
Temporary Impacts	Temporary impacts to 3 acres of wetlands. (Acres)	NA	↑ (41^)	↑ (12^)	↑ (65^)	↑ (31^)
Permanent Impacts	No permanent wetland acreage impacts. (Acres)	NA	↑ (3^)	↑ (<1^)	↑ (3^)	↑ (<1^)

Summary of Action Alternative Impacts Compared to No Action						
= No Change from the No Action						
↑ More impacts than the No Action						
↓ Less impacts or Beneficial impacts than the No Action						
Resource Issue	**No Action**	**State RRVWSP**	**McClusky Canal only North**	**McClusky Canal only South**	**McClusky Canal and Missouri River North**	**McClusky Canal and Missouri River South**
Socioeconomics						
Regional Economic Effects	Minor, short term beneficial regional economic effects due to construction of the CNDWSP. These minor beneficial impacts are short-term, occurring only during the construction period and amount to about of 2% of North Dakota gross state output for a single year to about 4% of the gross regional product for one year in the 9-county region.	=	=	=	↓ (+0.5% to +1.0% of the gross regional product)	

^ Chapter 2 BMP's and Environmental Commitments will minimize effects to these resources to the extent practicable

Comments on the Final EIS

Reclamation received four comment letters on the Final EIS from various agencies. In accordance with Reclamation's NEPA Handbook (Reclamation 2012), Reclamation prepared responses to the comments received. All comments were carefully considered and responses to these comments are included in Appendix B.

Environmental Commitments and Monitoring

Project planning, as described in the Final EIS, included all practicable means of avoiding and/or minimizing adverse environmental impacts. Reclamation has committed to implement several best management practices (BMPs) and environmental commitments (Table 2 and Table 3) involving avoidance, minimization, reduction, compensation, and/or review of construction activities and operations. The following mitigation, monitoring, and enforcement commitments will be implemented as integral parts of the decision to avoid or minimize adverse effects.

BMPs and environmental commitments have been incorporated into the McClusky Canal and Missouri River North Alternative. The following definitions apply to best management practices and environmental commitments found in the following tables.

Best Management Practices - Methods intended to avoid or reduce effects while an action is being implemented. These methods are commonly implemented in projects of this nature.

Environmental Commitment - Methods or plans to reduce, offset, or eliminate adverse Project effects. Action taken to avoid, reduce the severity of, or eliminate an adverse effect. Environmental commitments could include one or more of the following:

- Avoiding effects.
- Minimizing effects by limiting the degree or magnitude of an action.
- Rectifying effects by restoration, rehabilitation, or repair of the affected environment.
- Reducing or eliminating effects over time.

Table 2: Best Management Practices

Resource	Best Management Practices
General	Construction activities would comply with all appropriate federal, state, and local laws and regulations. This list may include but is not limited to stormwater discharge permits, National Pollution Discharge Elimination System permits, Clean Water Act, and the Migratory Bird Treaty Act.
	Erosion control measures would be employed as appropriate and at stream crossings at all times: (a) Care would be exercised to preserve existing trees along the streambank. (b) Stabilization, erosion controls, restoration, and revegetation of all streambeds and embankments would be performed as soon as a stream crossing is completed and maintained until stable. (c) Riparian woody shrubs and trees would be replanted as necessary to preserve the shading characteristics of the watercourse and the aesthetic nature of the streambank. (d) At locations where soil conditions or slopes are such that erosion may occur along the pipeline trench, construction contractors would be required to construct earth berms perpendicular to the trench line at intervals sufficient to divert water from the trench. (e) In pasture and hayland, straw wattles shall be furnished and installed within 14 days of pipeline installation, at approximately the following intervals: Slope (%) — Interval (feet) 7-10 — 120 10+ — 50 (f) Straw wattles shall be a minimum of 6" diameter, and shall be installed across the entire width, plus 3' either side, of the disturbed area.
	Dump grounds, trash piles, and potentially hazardous waste sites would be avoided.
	All construction waste materials and excess or unneeded fill associated with construction would be disposed of on uplands; non-wetland areas.
	Standard construction, industry measures would be taken to minimize fugitive dust emissions during construction activities. Any complaints that may arise would be dealt with by the Project Sponsor and contractor in a timely and effective manner.
	New pipeline, to the extent possible, would be placed just outside and parallel to the road right of way.
	To the extent possible, construction would avoid wetlands; federal, state, and local wildlife areas and refuges; designated critical habitats; migratory bird habitat during the critical nesting season; known cultural resources and historic sites; hazardous material sites; and other resource sensitive areas noted below.

Resource	Best Management Practices
	During the final engineering design phase, Project components would be sited to minimize impacts on or avoid permanent structures and limit, to the extent practicable, impacts on existing land use.
	Construction limits would be clearly marked with stakes or fencing prior to beginning ground disturbing activities. No disturbance would occur beyond these limits other than non-destructive protection measures for erosion/sediment control.
	Material and equipment storage would be only within well-defined, designated staging areas placed outside of wetlands and other sensitive areas.
	Structures affected by pipeline construction, including utilities, roads, highways, rivers, canals, railroads, agricultural irrigation facilities, fences, and other structures, would be replaced, repaired, or restored to their current condition or better after construction.
	Construction debris would be hauled from the work site to a disposal location approved by the Contracting Officer or his/her representative.
	If established survey benchmarks must be removed or should any monuments be dislodged or damaged during construction, the National Geodetic Survey (Attn: N/CG 162, Rockville, Maryland 20852) would be contacted.
	No above ground structures that would interfere with the above ground movement of floodwaters would be placed in the flood plain or would be protected with flood protection.
	Water treatment plant design and operations most often include provisions for continuous monitoring of inlet and outlet turbidities in addition to key process units inside the water treatment plant. For the Biota WTP facility, operational plans will be developed and implemented prior to facility startup, including procedures by which chemical dosages for disinfection and other uses are varied based on inlet water quality and/or other variables.
Surface Water	Contractors would be required to make at least two boring attempts before using an alternate wetland, stream or river crossing method.
	Intermittent streams would be crossed only during low-flow periods and preferably when the streambeds are dry.
	Identified river or stream crossings would be performed by horizontal directional drilling operations whenever practicable, which would not disturb the stream channel or the adjacent wetlands.
Groundwater	Established ground water monitoring wells would be avoided. However, if any monitoring wells are inadvertently damaged or impacted during Project construction, the Water Appropriation Division of the North Dakota Office of the State Engineer would be contacted.
Water Quality	As part of the National Pollution Discharge Elimination System permitting requirement, a Stormwater Pollution Prevention Plan would be developed and submitted to the North Dakota Department Environmental Quality prior to commencing construction activities.
	The Stormwater Pollution Prevention Plan would include erosion control measures to prevent or reduce erosion, soil loss, and nonpoint source pollution. These practices may include, but are not limited to, silt fencing, filter fabric, sediment logs, hay bales, temporary sediment ponds, check dams, and/or immediate mulching of exposed areas to minimize sedimentation and turbidity effects as a result of construction activities. The placement and specific measures used would be dictated by site specific conditions.

Resource	Best Management Practices
	In-stream flows would be maintained during stream crossing construction. Spoil, debris piling, construction materials, and any other obstructions would be removed from stream crossings to preserve normal water flow.
	Stream crossings would be routed, as practicable, to minimize disturbance. Intermittent streams would be crossed only during low-flow periods and preferably when streambeds are dry.
	Disturbed portions of the stream banks and beds of rivers, streams, and other waterways would be protected by rock riprap of adequate size and type to minimize erosion and scour. Any slopes greater than 3:1 would be protected with erosion-control blankets after seeding.
Aquatics	In-stream flows would be maintained during stream crossing construction. Water would be allowed to flow around or past stream crossings to preserve normal water flow downstream from construction.
	To minimize impacts to fisheries resources any stream identified as a fishery (confer with North Dakota Game and Fish Department) that cannot be directionally bored would be avoided from April 15 to June 1 and crossed later in the summer or fall when flows are low or the stream is dry.
	Avoid work in Class II or higher waters (fisheries – confirm with North Dakota Game and Fish Department) April 15 – June 1, or directionally bore. (North Dakota Century Code: CHAPTER 33-16-02.1 STANDARDS OF QUALITY FOR WATERS OF THE STATE)
	In consultation with the Service, the following screen and velocity recommendations would be incorporated into the design of intake structure(s) of the Project: 1) Intakes shall be screened and maintained with 1/4-inch or smaller mesh size opening. 2) Johnson intake screens shall have wire spacing 1/8 inch or smaller. 3) Intake velocities shall not exceed 1/2 foot per second with 20 feet of overhead water. 4) Intake velocities shall not exceed 1/4 foot per second where 20 feet of overhead water cannot be achieved. 5) Intakes shall be marked so they are observable during day and night hours, as appropriate.
Wetlands/Riparian Areas	Long- and short-term effects on wetlands and riparian areas would be avoided to the extent practicable and in compliance with Section 404 of the Clean Water Act
	Erosion control measures would be employed as appropriate and at stream crossings prior to construction activities. In addition: Preserve, if feasible, existing trees along the stream bank. Stabilize, control erosion, restore, and revegetate streambeds and embankments as soon as a stream crossing is completed, following vegetation best management practices, and maintain until stable. Replant riparian, as necessary, woody shrubs and trees appropriate to ecological characteristics of the site to preserve shading characteristics of the watercourse and the aesthetic nature of the stream bank.

Resource	Best Management Practices
	Any equipment used previously in a water body that is jurisdictional under the Clean Water Act or a water body designated as infested by the North Dakota Game and Fish Department would be disinfected prior to entering Reclamation lands or facilities to prevent the spread of AIS. Disinfection will occur as stated in the Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species. The manual may be accessed at: http://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2012.pdf
	All temporarily disturbed wetlands would be reestablished following construction by doing the following: Restore contours to previous elevations Compact trenches sufficiently to prevent drainage along the trench or via bottom seepage Salvage and replace topsoil Backfill in such a manner as to not drain wetland or stream Reestablish wetlands to similar type of wetland and wetland function
Vegetation and Land Use	To the extent practicable, construction would avoid: Wetlands Federal, state, and local wildlife areas and refuges Native prairie However, if these areas are disturbed during pipeline construction, topsoil would be replaced, and revegetation plans would be specifically designed for these areas to ensure reestablishment of a similar type and quality of native vegetation recommended by local National Resources Conservation Service (NRCS) office and approved by the landowner. Impacts to federal or state wildlife areas may require additional agency review.
	Vegetated areas temporarily disturbed by construction (except cropland) would be revegetated with species appropriate to ecological conditions of the surrounding area, and in a manner that prevents erosion and noxious weed invasion. Reclamations Integrated Pest Management Plan would be utilized as a guide in preventing the spread of noxious weeds. Revegetation would occur as soon as practicable after construction and would follow all pertinent local and state regulations. Temporary seeding may be required when areas remain disturbed for more than 30 days.
	All equipment and recreational vehicles should be free of invasive species prior to entering Reclamation lands or facilities as stated in the Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species. The manual may be accessed at: http://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2012.pdf
	Woody species including those bordering wetlands, shelterbelts, riparian woodlands, woody draws, or woodland vegetation would be avoided to the extent practicable. For unavoidable impacts to woody habitats, credit for equal value or environmental equivalent: (a) would be applied toward the impact and deducted from Reclamation's Mitigation Enhancement Ledger **or** (b) the Project Sponsor may develop separate acceptable mitigation.

Resource	Best Management Practices
	Prior to beginning construction through PLOTS, Conservation Reserve Program lands, program or private wetlands, the Project Sponsor would consult with: (a) respective landowners, NRCS, and U.S. Department of Agriculture Farm Services Agency to ensure that landowner eligibility in farm subsidy programs (if applicable) would not be jeopardized by Project actions and (b) ensure that Swampbuster requirements would not be violated by construction activities
	Topsoil would be removed and stockpiled separately from surface soils for reapplication following construction. In-stream flows would be maintained during stream crossing construction. Water would be allowed to flow around or past stream crossings to preserve normal water flow downstream from construction.
	If Project construction cannot avoid North Dakota Sate Trust Lands, then easements would need to be obtained prior to construction.
	Topsoil, soil amendments, fertilizers, and mulches would be reapplied selectively as appropriate, prior to revegetation during favorable plant establishment climate conditions to match site conditions and revegetation goals.
Wildlife	Identified potential habitat for federal or state threatened, endangered, critical habitat and sensitive species would be avoided if feasible.
	Construction would be prohibited within 1/2 mile of designated piping plover or interior least tern breeding areas during the breeding season (April 15 through August 31) when these species are present.
	If threatened or endangered species are identified and encountered during construction, all ground-disturbing activities in the immediate area would be stopped to consult with the U.S. Fish and Wildlife Service (Service) and determine appropriate steps to avoid affecting the species.
	Project Sponsor is responsible for compliance with the Migratory Bird Treaty Act. Sites for Project features would be selected to minimize potential for environmental impacts to nesting migratory birds. Construction would be timed to avoid migratory bird nesting. Avoid work around wetlands April 1 through July 15.
	Project Sponsor is responsible for identifying bald eagle and raptor nests to ensure construction within 660 feet of visible nesting bald eagles or other raptors would be avoided from February through August.
	Project Sponsor would coordinate with the Service's appropriate Refuges and Wetland Management Districts and provide the latest map version of Project features to avoid impacts to Service lands, including wetland and grassland easements, national wildlife refuges, and waterfowl production areas (WPAs), allowing for identification of an avoidance route for the contractor. Any impacts to national wildlife refuges or WPAs would have to go through a refuge compatibility determination.
	The Project Sponsor's utility company is responsible for providing an Avian Protection Plan that follows the guidelines below. Project power lines would be: (a) Buried (Service 2010a) to minimize electrocution hazards to raptors and minimize impacts to all birds, bats, and particularly benefit whooping cranes. Use *Suggested Practices for Avian Protection on Power Lines - The State of the Art in 2006*, Avian Power Line Interaction Committee, Edison Electric Institute, Raptor Research Foundation, Washington, D.C., or similar standards would be

Resource	Best Management Practices
	used. Available online at https://www.aplic.org/uploads/files/2634/APPguidelines_final-draft_Aprl2005.pdf ***or*** (b) Any new, aboveground power lines and an additional equal length of existing power lines in the same vicinity must be marked with visibility enhancement devices to benefit migrating whooping cranes as well as all migratory birds and bats. Use Reducing Avian Collisions with Power Lines – The State of the Art 2012, Avian Power Line Interaction Committee, Edison Electric Institute, Raptor Research Foundation, Washington, D.C., or similar standards. Available online: https://www.aplic.org/uploads/files/15518/Reducing_Avian_Collisions_2012watermarkLR.pdf.
	If forested habitat is identified prior to construction activities, Reclamation would determine if bat surveys are required. If any tree (with a diameter of greater than 3 inches) removal activities cannot be avoided between April and September, then northern long-eared bat surveys would be conducted to confirm absence of the species. If any suitable roost sites, possible hibernacula, or the species are observed during the onsite meeting, then any steps taken to avoid and minimize disturbance of this habitat would be documented.
Noise and Vibration	Night construction would be avoided near residential and populated areas.
Visual Resources	As noted for vegetation, short-term disturbances associated with constructing facilities would be revegetated and/or landscaped.
	Existing topographic grades would be restored following pipeline excavation.
	Constructed facilities would be designed to blend with the architectural characteristics of surrounding structures.
	Valve boxes would be left above grade in a cultivated field if agreeable to the landowner or moved to the nearest fence or ROW. Valves would not be located adjacent to or in close proximity to a paved or graveled road and would be painted a neutral color that blends with the background, reduces visibility, and maintains the viewshed.
Historic Properties	Direct disturbance to historical properties would be avoided to the extent feasible.
	All known burials or cemeteries would be avoided to the extent possible. All such burials or cemeteries would be avoided to the extent possible. If a burial or cemetery cannot be avoided or is encountered during construction, Reclamation would comply with the Native American Graves Protection and Repatriation Act if graves are discovered on federal or trust lands or within reservation boundaries. Reclamation would comply with North Dakota Century Code 23-06-27: "Protection of Human Burial Sites, Human Remains, and Burial Goods" for graves on private or state-owned lands.
	If unrecorded cultural resources or traditional cultural properties are encountered during construction, all ground disturbance activity within the area would be stopped, Reclamation and appropriate authorities would be notified, and all applicable stipulations of the Section 106 programmatic agreement would be followed. Activities in the area would resume only when compliance has been completed.
	All previously recorded paleontological resources and paleontologically sensitive zones within the path of the alternative selected in the Record of Decision would be inspected

Resource	Best Management Practices
Paleontological Resources	in the field by a qualified paleontologist. Avoidance measures would be developed to avoid significant resources.
	Reclamation would consult with North Dakota Geological Survey to identify areas for paleontological survey where significant fossils are likely. Paleontological surveys would be completed prior to construction. Based upon survey data, Reclamation would consult with a qualified paleontologist about revising routes to avoid damaging significant fossil locations.
Hazardous Materials	A Hazardous Spill Plan or Spill Prevention, Control and Countermeasures Plan, whichever is appropriate, would be in place, stating what actions would be taken in the event of a spill, notification measures, and preventive measures to be implemented, such as the placement of refueling facilities, storage, and handling of hazardous materials.
	All equipment would be maintained in a clean and well-functioning operating condition to avoid or minimize contamination from automotive fluids.
	Before construction, a more detailed hazardous materials assessment in conformance with the scope and limitations of American Society for Testing Materials (ASTM) 1527-05: "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" would be conducted to identify sites with soil and/or groundwater contamination not documented in readily ascertainable agency files (ASTM 2005).
	Any known solid waste disposal areas identified in the construction sites would be avoided or removed and properly disposed at a permitted solid waste disposal facility
	Equipment or vehicles would not be refueled within 100 feet of rivers, streams, or identified wetlands. If onsite fuel tanks are used, approved containment devices would be required.
	Identified evidence of hazardous materials, petroleum product spills, or other contamination would be avoided or excavated and properly disposed at a permitted waste disposal facility.
	If soil and/or groundwater contamination is encountered during construction, mitigation procedures would be implemented to minimize the risk to construction workers and to future operations.
Unique and Prime Farmland/ Agricultural Lands	To the extent feasible, construction activities on irrigated lands would be avoided during the growing season.
	Cropland disturbed by construction would be restored with topsoil to the depth, quality, grade, and relative density as the original surface as described for soils below. Pipelines crossing agricultural fields would be backfilled and compacted to prevent settling when the field is irrigated.
	Long-term effects on prime and unique farmland would be avoided to the extent feasible. If avoidance is not possible, Reclamation would complete and submit a Farmland Conversion Form (AD-1006) to the NRCS in compliance with the Farmland Protection Policy Act for any long-term change in land use.

Table 3: Environmental Commitments

Resource	Environmental Commitments
Surface Water	When pipeline construction through a stream or wetland basin is unavoidable, existing basin contours would be restored and trenches would be sufficiently compacted to prevent any drainage along the trench or through bottom seepage.
	Where open trench crossing of stream is required, the stream channel would be reestablished following pipe installation.
Biota Water Treatment	Any implemented treatment process that does not include filtration will monitor turbidity of incoming water and the Biota WTP will not be operated when the turbidity exceeds 10 Nephelometric Turbidity Units (NTU) downstream of the sand/grit removal process. Water will be evacuated from the Biota WTP and returned to the source until turbidity levels return to less than 10 NTU.
	A study will be conducted by Garrison Diversion with Reclamation oversight to inform the operational plan and determine how to adjust dosage based on varying turbidity.
Vegetation and Wetlands	Where construction cannot avoid: Wetlands Federal, state, and local wildlife areas and refuges, and Native prairie. If these areas are disturbed during pipeline construction, topsoil would be replaced, and revegetation plans would be specifically designed for these areas to ensure reestablishment of a similar type and quality of native vegetation recommended by local NRCS office and approved by the landowner.
	Effects on jurisdictional wetlands and waters of the United States would require authorization from the Corps. A compensatory mitigation plan may be required for the loss of any wetlands and would include methods to replace specific functions of affected wetlands.
	Lost wetlands would be replaced acre for acre with ecological equivalency or 1/2 acre for acre with ecological equivalency (adversely affected wetlands) as required by the Project's authorizing legislation: (a) by crediting previously completed wetland restoration for the GDU and deducting those credits from Reclamation's Mitigation and Enhancement Ledger (MEL)[1] **or**

[1] Reclamation has credits for created and restored wetlands in the MEL that can be used to mitigate impacts to wetlands. The GDU MEL was developed according to the 1985 memorandum of understanding between Reclamation, the U.S. Fish and Wildlife Service (Service), and the North Dakota Game and Fish Department regarding the establishment of mitigation and enhancement debits and credits for wildlife purposes. The MEL documents GDU project impacts, mitigation requirements, and concurrence for planning purposes and for review by other agencies and the public. Projected impacts listed were first presented in the GDU Commission Report. The GDU Reformulation Act of 1986 resulted in the adjustment of the projected impacts to reflect modifications to the Project. Impacts to date reflect modifications to the Project.

Resource	Environmental Commitments
	(b) the Project Sponsor may develop separate acceptable mitigation.
	Lost woodlands would be mitigated 2:1 (acres) in accordance with MEL[1]
	Lost grasslands would be mitigated 1:1 in accordance with MEL[1]
Wildlife	Pipelines, water treatment plants, and pump station facilities would be realigned, where feasible, to avoid sensitive wildlife habitat. If sensitive wildlife habitat cannot be avoided, then mitigation would be determined in coordination and agreement with Reclamation and the Project Sponsor, including pertinent regulatory agencies.
	Preconstruction surveys may occur with the Project Sponsor and Reclamation to identify sensitive habitats and wildlife use before construction to allow implementing best management practices and mitigation measures.
Historic Properties	Reclamation will continue complying with stipulations in *Programmatic Agreement Between the Bureau of Reclamation, The Advisory Council on Historic Preservation, and the North Dakota State Historic Preservation Officer for the Implementation of Reclamation Undertakings in North Dakota* for the life of the Project and in consultation with tribes.
	Avoidance will be the preferred method for treating historic properties. However, should that not be possible, the programmatic agreement identifies the standards to be used in developing mitigation plans.
	Reclamation will consult under Section 106 of the National Historic Preservation Act with appropriate Indian Tribes regarding the locations of and potential impacts to properties of traditional religious and cultural importance. If any such properties cannot be avoided and must be mitigated, Reclamation will invite the appropriate Tribes to participate in development of an appropriate treatment plan.
	All gravel, fill, and rock materials will be obtained from a source approved by Reclamation to ensure compliance with Section 106 of the National Historic Preservation Act.

Compliance with the Boundary Waters Treaty of 1909

DWRA (Section 1(h)) states:

> *Delivery of Water into the Hudson Bay Basin - Prior to construction of any water systems authorized under this Act to deliver Missouri River water into the Hudson Bay basin, the Secretary, in consultation with the Secretary of State and the Administrator of the Environmental Protection Agency, must determine that adequate treatment can be provided to meet the requirements of the Treaty between the United States and Great Britain relating to Boundary Waters Between the United States and Canada, signed at Washington, January 11, 1909 (26 Stat. 2448; TS 548) (commonly known as the Boundary Waters Treaty of 1909).*

The relevant provision of the Boundary Waters Treaty of 1909 (Article IV) provides:

> *It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other.*

This ROD approves delivery of Missouri River water into the HBB, subject to the provisions of DWRA. The EIS analysis evaluated options for treating the source water within the MRB to reduce the risk of a Project-related transfer of AIS into the HBB. Based on the EIS analysis, Reclamation reached the following conclusions which informed the decision to include the Enhanced Disinfection Biota WTP in the selected alternative.

Reclamation conclusions are:

1. The proposed Project utilizing Garrison Diversion Unit features will include a minimum of 3-log (99.9 percent) *Giardia* and 4-log (99.99 percent) virus inactivation and ultraviolet irradiation constituting a multi-barrier approach.

2. The Project alternatives, including at a minimum the biota treatment measures as described in (1), comply with the provisions of the Boundary Waters Treaty of 1909 as required by and set forth in DWRA of 2000 as the water exits the treatment facility and enters the main transmission pipeline.

3. The most cost-effective treatment measures that incorporate a multi-barrier process as described in (1) will be used prior to any water crossing the basin boundary.

4. The requirements for the Project are unique and specific to the Project. The agency will consider other projects on a case by case basis considering the unique qualities of other projects to ensure compliance with the Boundary Waters Treaty of 1909.

In considering the acceptability of the recommended Project design, Reclamation has identified the following guiding principles:

1. Raw water from the McClusky Canal or the Missouri River will be treated prior to crossing the basin divide using the described multiple barrier approach.

2. Appropriate engineering controls and fail-safe systems will be incorporated in the biota

water treatment plant to minimize the risk of releasing untreated water into the Hudson Bay Basin.

3. Standard procedures for facility inspection, operation, routine maintenance and capital replacement will be implemented to minimize the potential for facility degradation and breakdowns.

4. Contingency plans, emergency response procedures, and periodic exercises to address system operations and treatment effectiveness will be developed.

Implementing the Decision

The Project will move forward into the feasibility and final design phases. Reclamation will work with the State of North Dakota and other stakeholders as appropriate to begin implementing the actions and complete the tasks necessary to comply with the best management practices, environmental commitments and guiding principles described herein during the implementation of the selected alternative.

References

Bureau of Reclamation (Reclamation). 2012. Reclamation's NEPA Handbook. February. Website (http://www.usbr.gov/nepa/docs/NEPA_Handbook2012.pdf).

Appendix A U.S. Fish and Wildlife Concurrence of Biological Assessment

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mountain-Prairie Region

IN REPLY REFER TO:
06E15000-2020-I-ENDAWS

North Dakota Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

October 13, 2020

Mr. Joseph E. Hall
Area Manager
Bureau of Reclamation
Dakotas Area Office
304 East Broadway Avenue
Bismarck, North Dakota 58501

Dear Mr. Hall:

Thank you for your letter of September 9, 2020, requesting informal consultation on the proposed Eastern North Dakota Alternate Water Supply Project in Burleigh, Sheridan and Wells County, North Dakota. The U.S. Fish and Wildlife Service (FWS) has the following comments.

You requested Service concurrence with your "may affect, not likely to adversely affect" determination for the endangered whooping crane (*Grus americana*), threatened piping plover (*Charadrius melodus*) and Dakota skipper (*Hesperia dacotae*). In accordance with Section 7 of the Endangered Species Act of 1973, as amended (ESA) (16 U.S.C. 1531 *et seq.*), we concur with your determination.

The letter also includes "no effect" determinations for the pallid sturgeon *(Scaphirhynchus albus)*, northern long-eared bat (*Myotis septentrionalis*), endangered interior least tern (*Sternula antillarum*), piping plover (*Charadrius melodus*) critical habitat and rufa red knot (*Calidris canutus rufa*). There is no requirement under the implementing regulations of the ESA (50 CFR Part 402) for action agencies to receive Service concurrence with "no effect" determinations, therefore the responsibility for "no effect" determinations remains with the federal action agency. Accordingly, we recommend the federal action agency retain the documentation for these listed resources in the decisional record for this federal action.

Thank you for the opportunity to comment on this project proposal. The FWS's concurrence is based on the information provided. Pursuant to the implementing regulations of the ESA (50 CFR 402.13), this letter concludes informal consultation on the project. If changes are made in the project plans or operating criteria, or if additional information, including new species listings, becomes available, the FWS should be informed so that the above determinations can be reconsidered. If you have any additional questions or comments, please contact Jessica Johnson of my staff at (701) 355-8507 or via email at Jessica_N_Johnson@fws.gov, or contact me at (701) 355-8512 or Drew_Becker@fws.gov.

Sincerely,

Drew Becker
ND Ecological Services Supervisor

Appendix B Reclamation Responses to Comments on the Final Environmental Impact Statement

The Final Environmental Impact Statement (EIS) was distributed to the public on November 4, 2020. Notice of the public release was announced in the local media and published in the *Federal Register*, and a letter was provided to all entities and individuals on the EIS mailing list informing them where they could access electronic or hard copies of the Final EIS.

Comments were received by the EPA, the State of Missouri Department of Natural Resources, the Province of Manitoba, Canada's Agricultural and Resource Development agency, and Global Affairs Canada. Concerns raised in these comments were very similar to those identified during the Draft EIS public review period and responded to by Reclamation in the Final EIS.

In accordance with Reclamation's NEPA Handbook (2012), Reclamation provides the following responses to the comments received on the Final EIS. All comments were carefully considered, and the substantive comments were grouped together by topic and responses are provided on the following pages.

Authority

Summary Comment:

A commenter questioned Reclamation's authority to construct the Project under Section 7 of the DWRA; instead the commenter believes Section 8 of DWRA should be the authority that directs this proposed action.

Summary Response:

Reclamation did consider the commenter's perspective on Reclamation's authority provided during the development of the EIS. Upon further consideration, Reclamation reaffirmed its initial decision on its authority for the proposed Project.

Reclamation respectfully disagrees with the commenter's interpretation of the authorities provided by the DWRA. The State RRVWSP is not the Federal RRVWSP noted in Section 8 of DWRA or in previous versions of the act. The commenter's interpretation that the Project is a feature of a Federal RRVWSP is incorrect. The proposed federal actions for the Project do not fall within the purview of Section 8(a)(3)(B), because the Project is not an alternate being selected by the Secretary pursuant to Section 8. Furthermore, Section 7 of the GDU Reformulation Act of 1986 is the authorization to provide an alternate bulk water supply to the State RRVWSP. Reclamation's proposed Project can be characterized as part of the "multi-purpose water resource development project" authorized under Section 7 of the DWRA and constructed jointly between Reclamation and North Dakota.

Purpose and Need

Summary Comment:

A commenter stated that the purpose and need identified in the EIS fails to meet the minimum requirements of NEPA. The purpose and need as described in the EIS does not establish a legitimate purpose or need for the Project.

Summary Response:

The 2005 CEQ NEPA implementing regulations, at Section 1502.13, and 2008 Department of the Interior NEPA implementing regulation at 43 CFR 46.420, concern purpose and need, requiring that the EIS briefly describe the underlying purpose and need to which the agency is responding. In Section 46.420(a)(2), the Department of the Interior NEPA implementing regulations go on to state, "The needs and goals of the parties involved in the application or permit may be described as background information. However, this description must not be confused with the bureau's purpose and need for action. It is the bureau's purpose and need for action that will determine the range of alternatives and provide a basis for the selection of an alternative in a decision." Consistent with this, Reclamation has defined the purpose and need as stated in the EIS, Chapter 1, Section 1.4. Background information describing the methodology used to determine the Project proponents need for 165 cfs to serve central and eastern North Dakota can be found in Appendix A Section 3.0 Major Design Assumptions.

In addition, as stated in Chapter 1 of the EIS, Reclamation is responding to a request by the Project Sponsor, on behalf of the State of North Dakota, who developed the volume of water needed for their project. The Project is being evaluated as an alternate source for bulk delivery to their project. Reclamation was not part of the effort to develop or assess the future water needs or water sources of the State-led RRVWSP. This is outside the scope of the EIS; however, benefits of the project are noted in letters of support sent to Reclamation during the comment period for the Draft EIS.

Geographic Scope of the EIS

Summary Comment:

A commenter asserts Reclamation has broken a single project into segments with the intent to avoid the appearance of the significance of the total action which is a violation of NEPA. The commenter contends Reclamation limited the geographic scope of the EIS analyses to a six-mile pipeline to nowhere.

Summary Response:

The geographic scope of the analysis is described in the EIS (Chapter 1, section 1.5.1) and as noted in this section, the geographic scope for some resources, such as AIS, is broader, and discussed further, in Chapter 3. The commenter is incorrect in stating that the EIS does not evaluate the impacts of an interbasin transfer project or that the analysis broke one project into three projects. Reclamation would direct the reader to the discussion of alternatives in Chapter 2 and the evaluation of the potential environmental and economic impacts of the alternatives as described in Chapter 3.

Water Quality

Summary Comment:

A commenter questioned the adequacy of Reclamation's assessment of water quality within the source water for the Project. They contend the information in the Final EIS on source water quality is of poor quality and that potential impacts of future climate change on water quality were not considered.

Summary Response:

As previously stated in the response to comments submitted during the public comment period for the Draft EIS, the design of each of the Biota WTP options was based on the best source water data available. Reclamation's reliance on this existing water quality data is appropriate under NEPA and consistent with direction provided within Executive Order 13807. CEQ regulations demand information of "high quality" and professional and scientific integrity (40 CFR 1500.1, 1502.24). Reclamation believes that meaningful evaluation must be carried out based on whatever data is available so long as it meets the intent of 40 CFR 1500.1 and 1502.24. Analyses used for the EIS meet the intent for which they were developed and are in compliance with NEPA.

The appraisal-level design of the disinfection system assumes a relatively poor source water quality (i.e., turbidities of 20-50 NTU and an associated 70-percent UV transmittance level). The Biota WTP appraisal-level design is based on best available water quality information from Lake Audubon and Lake Sakakawea and conservative design assumptions for key parameters such as turbidity and UV transmittance (UVt). Variations in source water turbidity and UVt will affect UV system performance and the required UV dosage to achieve target inactivation levels. The Enhanced Disinfection treatment option assumes an applied UV dosage of 40 mJ/cm2 and a 70 percent UVt. The 40 mJ/cm2 dose was established based on previous projects of a similar nature. The 70 percent UVt is a very conservative assumption as typical raw water transmittance ranges between 80 to 90 percent. These key UV system design values are associated with a poorer source water quality with turbidities likely in the 20 to 50 NTU range or similarly total suspended solids in the 9 to 23 mg/L range. Based upon a review of historical water quality information, actual UVt values of 80 percent plus are expected with water withdrawn from the McClusky Canal and the Missouri River. Because of these factors, Reclamation is confident the disinfection system appraisal-level design will achieve the desired disinfection inactivation levels of target AIS.

The Enhanced Disinfection treatment option presented in the Final EIS provides inactivation of AIS in excess of target log-removal goals. For example, a greater than 3-log inactivation of *Giardia* will be delivered by the UV system plus a greater than 3-log inactivation of *Giardia* will be provided through chlorine disinfection. Therefore, the disinfection system is fully redundant as it relates to *Giardia* inactivation as a 3-log inactivation is the target for *Giardia*. Similar levels of inactivation are provided for viruses and *Myxobolus cerebralis* (whirling disease). A 3-log inactivation of *Cryptosporidium* is delivered by the UV treatment system; information obtained from literature indicates that chlorine does not readily inactivate *Cryptosporidium*.

Source water quality data for an intake on the Missouri River Mandan, ND was reviewed as part of the State RRVWSP. Turbidity measurements at Mandan over the 6-year period of 2011 to 2018 were consistently below 10 NTU, with an average of 9.7 NTU, a median of 6.8 NTU, a maximum of 320 NTU, and a minimum value of 0.76 NTU.

Reclamation has included an environmental commitment to limit the operations of the Biota WTP during higher than expected turbidity events which includes the monitoring of incoming turbidity (see Table 2.20, Environmental Commitments).

As stated in the Biota Water Treatment Plant Appraisal-Level Design Engineering Report (Appendix B), the biota water treatment options were designed at the appraisal level using the best available information at the time of the analysis. The appraisal level design process uses the best available information for comparison purposes. Appendix B also informs the reader that additional data gathering, and analysis would be part of a future feasibility level engineering and design effort. Reclamation has committed to undertake a study of the biota treatment processes to ensure the efficacy of the treatment components in relation to the source water quality during the future feasibility level engineering and design effort.

Reclamation evaluated the potential impacts of future climate change as discussed in Chapter 3, section 3.3. As stated in the EIS, the focus of this analysis was to evaluate the potential impacts of future climate change on streamflow in the Upper MRB and determined this is a reliable water source for the Project. The results indicate that runoff in the basin will likely increase which would generally be reflected in higher reservoir levels, higher reservoir releases, and higher streamflow in

the lower basin and downstream of the mainstem reservoir system. Reclamation also discussed its initial evaluation of water quality in Appendix E – Other Minor Issues. In this discussion Reclamation notes that increased flows through Lake Audubon and the McClusky Canal above current levels, would enhance water quality by freshening the water bodies. This would be so whether the increased flows were a result of Project flows or increased runoff due to future climate change.

Summary Comment:

A commenter recommended Reclamation provide a disclosure statement to water users withdrawing water directly from the transmission pipeline that the water is not safe for consumption or inhalation due to the potential for DBPs to be over the MCL.

Response:

As the commenter has noted, the Final EIS explains that the end user of the water withdrawn from the pipeline is for industrial purposes and the end user is responsible for compliance with the National Primary Drinking Water Regulations. Reclamation is a bulk water provider and should the water user choose to use the water for purposes beyond industrial use the responsibility for the safe and responsible use of the water rests with that entity; not Reclamation. Reclamation will however communicate this concern to the Project Sponsor so they can in turn communicate it to industrial water users.

Alternatives Evaluated in the EIS

Summary Comment:

A commenter stated the No Action Alternative was inappropriately defined and the range of alternatives evaluated do not constitute a full range of alternatives as required by NEPA.

Response:

In accordance with the Regulations for the Implementation of NEPA (40 CFR 1500), Reclamation defined the No Action Alternative as the continuation of existing management direction as allowed in NEPA (40 CFR 1502.14(d)). Reclamation then assessed the impacts of each proposed alternative in comparison to the No Action Alternative as required under NEPA (40-CRFR 1500-1508, Forty Most Asked Questions Concerning CEQ's NEPA Regulations).

Reclamation defined the No Action Alternative at the onset of the EIS process based on NEPA implementing regulations and the best information Reclamation had available at that time. Reclamation continues to work in good faith with the Project Sponsor of the CNDWSP to move that project forward. Although a legal challenge regarding the sufficiency of the NEPA analysis completed the CNDWSP was filed after the initiation of the Project EIS process; it is speculative as to how that challenge may or may not change the CNDWSP. NEPA does not require agencies to speculate in the NEPA process, but to use the best information available at the time to conduct the necessary analysis.

Aquatic Invasive Species

Summary Comment:

A commenter states that the conclusions of the Final EIS regarding the risk associated with AIS and believes the Final EIS downplays the potential risk of an increase in biota transfer between the MRB and the HBB. The Project represents an unacceptably high risk to Canadian waters and ecosystems.

Response:

Reclamation respectfully disagrees with the commenter's opinion regarding the conclusions of the Risk and Consequence Analysis which supports the EIS. The Risk and Consequence Analysis (Appendix F) is an analysis of the Project alternatives (not the RRVWSP as the commenter states) which builds off the robust and independently peer reviewed analysis of interbasin transfer risks & consequences of AIS (Reclamation 2013) as identified by agencies/stakeholders within the MRB and HBB. The methodology, data and conclusions of Reclamation's 2013 analysis resulted in an overall conclusion of the independent reviewers that the study was based on the best available science, and the results and conclusions were supported by that science, given the uncertainties inherent in the available data and topic knowledge.

As stated in the EIS (section 3.2) the Risk & Consequence Analysis for the EIS use the same methodologies as the 2013 study and researched new data/information available from 2012 through the present to update species distribution information, transfer pathways, assess the risk of transfer, and the consequences of a transfer (Project and non-Project related). The commenter has not provided alternate methodologies or data for Reclamation's consideration during this NEPA process.

Reclamation understands and recognizes the environmental and economic consequences caused by invasive species. The robust analysis conducted by Reclamation to evaluate water treatment technologies relative to AIS and the exhaustive research conducted as part of the Transbasin Effects Analysis (Reclamation 2013) and the Risk and Consequence Analysis (Reclamation 2019), demonstrate the precautionary approach Reclamation has taken in its efforts to meet the future water needs of North Dakota while reducing the risk of transboundary consequences.

Biota Water Treatment

Summary Comment:

A commenter acknowledges the environmental commitments included in the Final EIS to not operate the Biota WTP when the turbidity exceeds 10 NTUs and to prepare an operational plan for the Biota WTP, but points out that the 10 NTU threshold exceeds the threshold recommended for drinking water treatment which ranges from 0.3 to 5 NTU, and would like additional details regarding the development of the operational plan for this facility.

Response:

As stated in the EIS, the Project is a bulk water supply project. Potable drinking water is not being delivered by the Project to users, so treatment provided by the Biota WTP is not intended to meet Safe Drinking Water Act (SDWA) standards. The United States government has not established rules or regulations regarding the transfer of Aquatic Species as discussed in Chapter 2 of the EIS. The Project is treating the bulk water supply within the MRB to reduce the risk of a project-related transfer of AIS. This applies to both direct pipeline users or to users supplied via surface water transport in the Sheyenne River and Red River. Project users who take water directly from the pipeline or indirectly from the Sheyenne River or Red River will still have their own SDWA compliant water plants for treatment prior to delivery to end users.

Reclamation is confident the preferred Biota WTP option will reduce the Project-related risk of transferring AIS; properly mitigating the risk of a Project-related transfer. Reclamation provided additional details for the development of the operational plan in response to a comment from the EPA on the Draft EIS (Response 7-8). This response stated it is customary practice in water plant design and operation to include provisions for continuous monitoring of inlet and outlet turbidities in addition to key process units inside the plant. For this facility operational plans will be developed and implemented prior to facility startup, including procedures by which chemical dosages for disinfection and other uses are varied to adjust to inlet water quality. Online UVt probes commonly used in UV disinfection equipment systems will provide real-time measurement of UVt so the applied UV dose can be adapted to actual water quality measurements. UVt probes are quite common in the industry, and they are deployed in UV systems by all major UV system manufacturers.

In addition to the UV system operational monitoring, the operational plan for the Biota WTP will include procedures to continuously measure applied and residual chlorine concentrations to ensure chlorine levels are being maintained to meet the target contact time (cT). Chlorine system operations will also employ continuous monitoring of temperature, pH, and flow rate so cT can be computed by the plant control system to verify correct system operation.

Summary Comment:

A commenter states that the Enhanced Disinfection treatment identified as the preferred Biota WTP option does not meet biota removal goals.

Response:

Reclamation is aware of the water treatment goals previously shared by the Province of Manitoba, Canada; however, the United States has not developed water treatment standards/rules or regulations for water treatment to avoid ecological impacts of invasive species related to interbasin water transfers. Reclamation used the best scientific information available to evaluate the potential risks associated with the transfer of invasive species and the most current information regarding water treatment technologies to develop alternatives evaluated in the EIS. As stated in the EIS (Section 2.5), drinking water standards provide an appropriate framework for evaluating the efficacy of the proposed control systems for removal or inactivation of potentially invasive species. There are no accepted or regulatory standards in the United States for control of AIS introduction through interbasin water transfers, but technical analyses like those completed for the EIS can help inform decision makers.

Summary Comment:

A commenter states there is a need to include filtration as part of the biota water treatment process as a means of providing a multibarrier approach as recommended by the commenter for this Project and other projects in the past. The recommended level of treatment in the EIS does not adequately address the risk.

Response:

Reclamation believes the Biota WTP options evaluated in the EIS provide a multibarrier approach against the AIS transfer. While the term 'multibarrier' is used to describe these options in section 5.7.3 and 5.7.4 of Appendix F, this does not infer, nor does it negate other statements throughout Appendix F that describe each of the Biota WTP options as combinations of treatment processes designed to further reduce the Project-related risk of AIS transfer. Figure 5-1 clearly show a combination of treatment processes, or a 'multibarrier' approach, of the four Biota WTP options evaluated. The text above this figure states, "As the biota treatment options progress, additional levels of treatment capabilities are added". Then section 5.2 through 5.5 go into detail, describing each treatment process included in the different options and how each process targets different taxonomic groups and/or specific species of concern. Each option is a multibarrier approach. The EIS (Section 2.3.7) describes the Biota WTP options as 'incrementally adding water treatment technologies to target different types of pathogens and biota and increasing the level of protection with each option."

Summary Comment:

A commenter recommended the establishment of a long-term coordination and information sharing group including federal and state agencies with interests in the MRB, along with other stakeholders and provinces with interests relative to AIS.

Response:

Reclamation recognizes that there are state and several federal agencies whose mission it is to monitor and report on AIS movement. These agencies have established means of communicating the data and results of their efforts to others, like Reclamation for their use. Reclamation is committed to communicating with these entities to stay informed about changes in the distribution

of AIS as a means of determining if adjustment to the operations of the Biota WTP are needed. The monitoring and reporting of AIS reaches beyond Reclamation's mission and Reclamation does not see a benefit for duplicating the successful efforts of these other entities.

Summary Comment:

A commenter recommended Reclamation include a commitment in the ROD to conduct a study of the proposed chorine and UV dosage levels to determine pathogen survival rates.

Response:

Reclamation has expanded the explanation of its commitment to prepare an operational plan for the Biota WTP to include the process of conducting a study of the proposed chlorine and UV dosage levels. Completion of studies for water treatment facilities is a routine step Reclamation has utilized in the development of other water treatment facilities, and agrees it is applicable for this Biota WTP as well. Reclamation appreciates the EPA's willingness to assist in this study and will retain this invitation for future reference.

Wetland Mitigation

Summary Comment:

A commenter recommended coordination with the Corps and the EPA to determine adequate mitigation for wetland impacts using the GDU Mitigation and Enhancement Ledger.

Response:

Reclamation has included the following commitment in the Final EIS which provides two means by which mitigation for lost wetlands can be achieved.

> **Lost wetlands would be replaced acre for acre with ecological equivalency or 1/2 acre for acre with ecological equivalency (adversely affected wetlands) as required by the Project's authorizing legislation:**
>
> **(a) by crediting previously completed wetland restoration for the GDU and deducting those credits from Reclamation's Mitigation and Enhancement Ledger (MEL)1**
>
> **or**
>
> **(b) the Project Sponsor may develop separate acceptable mitigation."**

Reclamation's Mitigation and Enhancement Ledger documents the mitigation acres completed for realized and anticipated impacts to natural resources (including wetlands) as part of the development of the overarching GDU. During the development of the GDU, Reclamation over-mitigated for the anticipated impacts of the GDU; given the original scope of the GDU has been scaled down through subsequent reformulation and reauthorization acts of Congress.

Project sponsors who develop a project under the umbrella of the GDU, can use these 'banked' mitigation acres recorded in the Mitigation Enhancement Ledger to offset the impacts of their specific project. Or the project sponsor may develop separate acceptable mitigation measures. There are financial obligations associated with using mitigation from the Mitigation Enhancement Ledger and it is not always economically feasible for the project sponsor to choose this option.

Cumulative Effects

Summary Comment:

The commenter contends Reclamation failed to consider cumulative impacts; failing to consider all past, present, and reasonably foreseeable future actions relative to Missouri River flows, operations, etc.

Response:

As stated in Chapter 3.6.4 Methods, Reclamation contracted with the Corps to simulate changes in operations of the Missouri River Mainstem System based on the 2018 Master Manual. Reclamation provided the Corps with estimates of historic, existing, reasonably foreseeable depletions and potential Project withdrawals from the Missouri River System for input into the ResSim Model. Reclamation updated its MRB Depletions Database with historic and existing depletions from 1922 through 2017 for the entire MRB. This is 95 years of data which is more than 4 times more than what the commenter suggests. Output values of the depletions database was provided to the Corps for this EIS modeling. This Depletions Database is the most comprehensive analysis available at this time.