

NEBRASKA NATURAL RESOURCES COMMISSION

Water Sustainability Fund

Application for Funding

Section A.

ADMINISTRATIVE

PROJECT NAME: Santee Sioux Nation Water System Capacity & Infrastructure Improvements

SPONSOR’S PRIMARY CONTACT INFORMATION (Not Consultant’s)

Sponsor Business Name: Santee Sioux Nation Tribal Council

Sponsor Contact’s Name: Kameron Runnels

Sponsor Contact’s Address: 425 Frazier Avenue Suite 2, Niobrara, Nebraska, 68760

Sponsor Contact’s Phone: Office: (402) 857-2772 Cell: (402) 992-2359

Sponsor Contact’s Email: Kameron.runnels@ssndakota.com

1. **Funding** amount requested from the Water Sustainability Fund:

Grant amount requested. \$ 9,129,000.00

The Water Sustainability Grant request of \$9,129,000 will provide relief on loans, bond debt, and debt service. This reduces the need for future water rate increases.

Activity	Cost Estimate	EPA	USDA RD	HIS	WSF Funds Request	Local Share
					60%	40%
Environmental, Engineering Design, Letting	\$6,274,583	\$1,750,000	\$1,549,316	\$1,147,188	\$1,096,848	\$731,232
Admin/Legal	\$2,029,515		\$826,352	\$611,871	\$354,776	\$236,517
Acquisition and Easements	\$358,548		\$145,989	\$108,097	\$62,677	\$41,785
Archeological	\$179,274		\$72,994	\$54,049	\$31,338	\$20,892

Construction and Contingency	\$38,899,235		\$15,838,489	\$11,727,581	\$6,799,899	\$4,533,266
Construction Administration	\$4,481,845		\$1,824,860	\$1,351,214	\$783,463	\$522,308
Totals	\$52,223,000	\$1,750,000	\$20,258,000	\$15,000,000	\$9,129,000	\$6,086,000

- If requesting less than 60% cost share, what %? NA

If a loan is requested amount requested. No loan requested at this time

- How many years repayment period? NA
- Supply a complete year-by-year repayment schedule. NA

2. **Neb. Rev. Stat. § 2-1507 (2)**

Are you applying for a **combined sewer overflow project**? YES NO

If yes:

- Do you have a Long-Term Control Plan that is currently approved by the Nebraska Department of Environmental Quality? YES NO
- Attach a copy to your application.
- What is the population served by your project?
- Provide a demonstration of need.
- **Do not complete the remainder of the application.**

3. **Permits Required/Obtained** Attach a copy of each that has been obtained. For those needed, but not yet obtained (box “NO” checked), 1.) State when you will apply for the permit, 2.) When you anticipate receiving the permit, and 3.) Your estimated cost to obtain the permit.

(N/A = Not applicable/not asking for cost share to obtain)

(Yes = See attached)

(No = Might need, don't have & are asking for 60% cost share to obtain)

G&P - T&E consultation (required)

N/A Obtained: YES NO

DNR Surface Water Right	N/A <input checked="" type="checkbox"/> Obtained: YES <input type="checkbox"/> NO <input type="checkbox"/>
USACE (e.g., 404/other Permit)	N/A <input type="checkbox"/> Obtained: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
FEMA (CLOMR)	N/A <input checked="" type="checkbox"/> Obtained: YES <input type="checkbox"/> NO <input type="checkbox"/>
Local Zoning/Construction	N/A <input type="checkbox"/> Obtained: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Cultural Resources Evaluation	N/A <input type="checkbox"/> Obtained: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Other (provide explanation below)	N/A <input type="checkbox"/> Obtained: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

The required permits for the project shall include a Game and Parks Threatened and Endangered Species consultation and cultural resources evaluation; a construction permit from the Nebraska Department of Environment and Energy (NDEE); Cedar and Knox County right of way occupancy permits; Nebraska Department of Transportation (DOT) right of way occupancy permits; building and electrical permits; and Knox County floodplain and/or zoning approvals. Permits will be obtained during the design phase of the project in 2024. The Water Sustainability Fund (WSF) will cost share the necessary permits. It is anticipated the cost for necessary permits will not exceed \$150,000.

4. **Partnerships**

List each Partner / Co-sponsor, attach documentation of agreement:

There are (4) four primary Partners / Co-sponsors responsible for carrying out the project; Indian Health Services (IHS), Santee Sioux Tribe of Nebraska, Randall Community Water District (RCWD), and United States Department of Agriculture Rural Development (USDA RD). Commitment letters for Santee Sioux Tribe of Nebraska (Attachment A), Randall Community Water District (RCWD) (Attachment B).

Identify the roles and responsibilities of each Partner / Co-sponsor involved in the proposed project regardless of whether each is an additional funding source.

Indian Health Services (IHS)

The Indian Health Services (IHS) is one of the Co-Sponsors. IHS is responsible for providing federal health services to American Indians. This includes financial assistance as well as the reassurance of safe drinking water. IHS has been working with the Santee Sioux Nation Tribal Council by providing regulatory guidance and Environmental Protection Agency (EPA) funding for Olsson and Associates needs study. (Attachment C)

Santee Sioux Tribe of Nebraska

The Santee Sioux Nation/Tribe of Nebraska is a Co-sponsor and fully supports the proposed project of acquiring treated surface water from Randall Community Water District (RCWD). The Santee Sioux Nation and surrounding communities are dealing with poor water quality, primarily with nitrate-nitrogen and total coliform bacteria exceeding the United States Environmental Protection Agency (EPA) Safe Drinking Water Act (SDWA) primary drinking water standards in a significant number of their wells. The Nation has also exceeded SDWA secondary limits as well, most notably regarding manganese. The Nation, through the recommendation of the EPA, issued a Not to Be Consumed Drinking Water Advisory due to potentially harmful levels of manganese present in the Nation's drinking water. The current drinking water advisory was issued in March of 2021 and will continue to be in effect indefinitely until a solution is found to provide the Nation with a consistently safe drinking source. Preliminary Engineering Report, Brosz Engineering, Inc, April 2023. (Attachment D)

United States Department of Agriculture Rural Development (USDA RD)

United States Department of Agriculture Rural Development (USDA RD) is a Co-Sponsor and has assisted the Village of Santee with a Search Grant of \$36,000. Brosz Engineering developed a Preliminary Engineering Report (PER) utilizing the Search Grant funds. This PER has been used in analyzing courses of actions to solve the poor water quality/quantity challenges within the Village of Santee and around the surrounding area. USDA RD supports regionalization and continues looking at financial assistance to support the Santee Nation. USDA RD has earmarked a Tribal Set-Aside Grant of approximately \$2,000,000 to assist the Santee Sioux Nation with their drinking water infrastructure challenges. **Tribal Set-Aside Grants** are federal grants that are set aside for federally recognized tribal governments. Tribes are eligible to apply for funding under the statutory set-aside, which designates a minimum of 20 percent of funding for low-income, rural, and tribal communities. The Tribal Set-Aside provides up to a \$2 million federal cost share for capability- and capacity-building activities per applicant. The Drinking Water Infrastructure Grants Tribal Set-Aside (DWIG-TSA) Program provides funding for community water systems and non-profit, non-community water systems that serve a tribal population.

5. **Other Sources of Funding**

Identify the costs of the entire project, what costs each other source of funding will be applied to, and whether each of these other sources of funding is confirmed. If not, please identify those entities and list the date when confirmation is expected. Explain how you will implement the project if these sources are not obtained.

Santee Sioux Nation is prepared to begin the design process for the three phases of the proposed project and is requesting financial support from the Water Sustainability Fund (WSF) to cost share the design, permitting, and construction of the project.

Other sources of funding include the following:

1. Santee Sioux Nation is responsible for all expenses not covered by other sources. If the request for WSF funding is awarded, the Nation will be responsible for \$6,086,000. If WSF funding is not awarded, The Nation will be responsible for the remaining \$15,215,000. The funds for the Nation are collected via customer fees. The table below represents a breakdown of project costs and funding sources.

Santee Sioux Nation is requesting \$9,129,000 from WSF which is 60% of the remaining \$15,215,000.

Activity	Cost Estimate	EPA	USDA RD	HIS	WSF Funds Request	Local Share
					60%	40%
Environmental, Engineering Design, Letting	\$6,274,583	\$1,750,000	\$1,549,316	\$1,147,188	\$1,096,848	\$731,232
Admin/Legal	\$2,029,515		\$826,352	\$611,871	\$354,776	\$236,517
Acquisition and Easements	\$358,548		\$145,989	\$108,097	\$62,677	\$41,785
Archeological	\$179,274		\$72,994	\$54,049	\$31,338	\$20,892
Construction and Contingency	\$38,899,235		\$15,838,489	\$11,727,581	\$6,799,899	\$4,533,266
Construction Administration	\$4,481,845		\$1,824,860	\$1,351,214	\$783,463	\$522,308
Totals	\$52,223,000	\$1,750,000	\$20,258,000	\$15,000,000	\$9,129,000	\$6,086,000

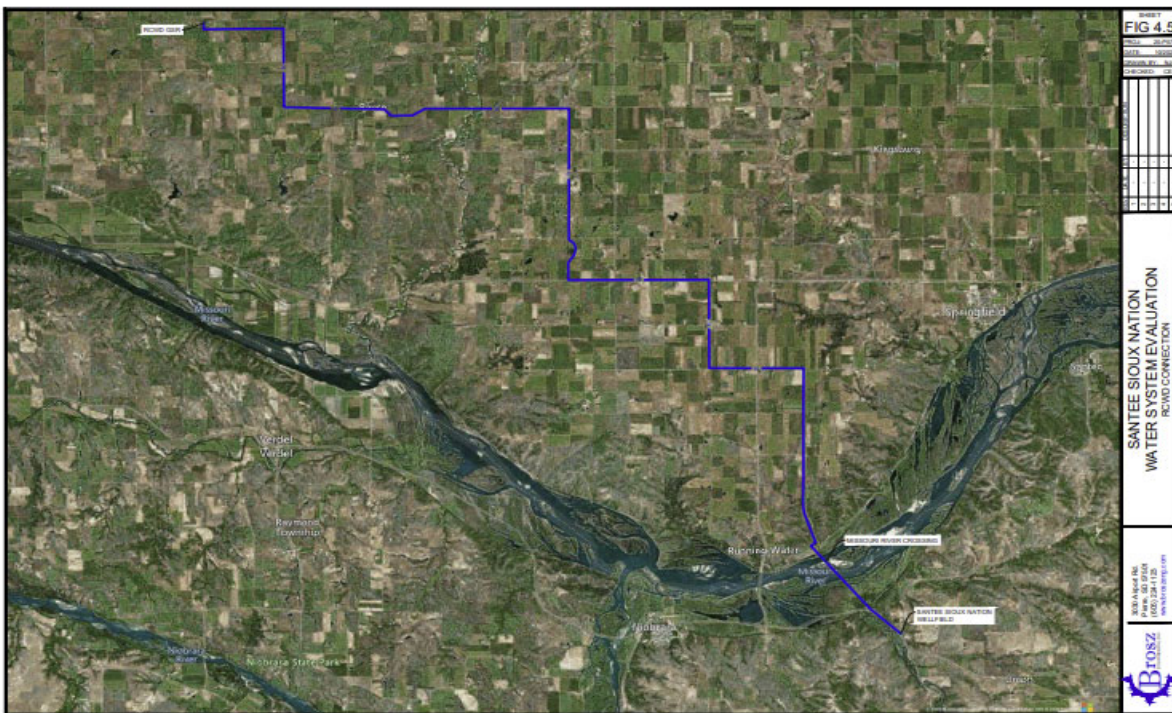
6. **Overview**

In 1,000 words or less, provide a brief description of your project including the nature/purpose of the project and its objectives.

This alternative connects the Nation to Randall Community Water District (RCWD) in Lake Andes, South Dakota. RCWD is a rural water system within South Dakota that treats Missouri River surface water upstream of the Fort Randall Dam. RCWD operates two (2) water treatment plants, one (1) located West of Platte, South Dakota, while the other plant is in Pickstown, South Dakota. To connect the Nation to RCWD, a new 10-inch diameter water main will begin at the Carda ground storage reservoir. From this reservoir, a dedicated water main will proceed to the Missouri River near Running Water. Due to elevation changes, a combination of booster stations and pressure reducing stations will be installed along the water main so that the pipeline will operate

with acceptable pressure ranges. Once at the Missouri River, a new 10-inch near Running Water, pipeline will be bored under the river to the Nation’s wellfield located near the intersection of NE HWY 12 and HWY 54D. From here, the water main will connect to the Nation’s existing infrastructure. Figure 4.5 illustrates the proposed route of this pipeline. Besides installing the pipe itself, gate valves, air release valves, flushing hydrants, etc. will also be installed. Due to steep terrain changes located along the proposed pipeline route, air release valves and blow off assemblies will be used to properly operate the pipelines. Combination air release valves are needed because air tends to be trapped along the high points of a pipeline. As air builds up within the pipeline, air binding occurs which reduces the carrying capacity of the pipeline. Combination air valves will also allow air into the pipe. This is beneficial during pressure loss situations, for example, water main breaks. Allowing air into the pipeline during pressure loss instances reduces the potential for water hammers to occur, potentially causing further damage to the pipeline. Blow off assemblies will be located at low points along the pipeline. These hydrants will remove any buildup of solids within the pipeline. Besides having combination air valves and blow off assemblies along the pipeline, there will also be gate valves spaced throughout the pipeline. These are beneficial when needing to isolate specific segments of the pipeline to complete repairs and additional connections. One of the many benefits of this alternative is that the Nation would not be responsible for water treatment or O&M costs associated with a complex water treatment facility. The Nation’s main responsibility would be distribution pipeline maintenance. The Nation would purchase bulk water from the rural water system. The cost estimate associated with this project is \$52,223,000.

The picture below depicts the approximate route for the 10” water main.



7. **Project Tasks and Timeline**

Santee Sioux Nation is requesting financial support from the WSF for the design, permitting, and construction of a long-term water supply system for the Village of Santee and the surrounding area. It is anticipated that the water supply system will be completed and fully functional by the middle of 2027. The project tasks and timeline is reported in Table below.

Activity	Cost Estimate	Year 1 2024	Year 2 2025	Year 3 2026	Year 4 2027
Environmental, Engineering Design, Letting	\$6,274,583	\$3,137,291	\$3,137,291	\$0	\$0
Admin/Legal	\$2,029,515	\$676,505	\$676,505	\$676,505	\$0
Acquisition and Easements	\$358,548	\$250,984	\$107,564	\$0	\$0
Archeological	\$179,274	\$89,637	\$89,637	\$0	\$0
Pipeline Construction and Contingency	\$32,258,779	\$0	\$12,903,512	\$12,903,512	\$6,451,756
Ground Storage Construction and Contingency	\$6,640,457	\$0	\$0	\$5,312,366	\$1,328,091
Construction Administration	\$4,481,845	\$0	\$1,486,701	\$2,098,775	\$896,368
Totals	\$52,223,000	\$4,154,417	\$18,401,210	\$20,991,158	\$8,676,215

8. **IMP**

Do you have an **Integrated Management Plan** in place, or have you initiated one? **YES** **NO** **Sponsor is not an NRD**

Section B.

DNR DIRECTOR'S FINDINGS

Prove Engineering & Technical Feasibility

(Applicant must demonstrate compliance with Title 261, CH 2 - 004)

- Does your project include physical construction (defined as moving dirt, directing water, physically constructing something, or installing equipment)? **YES** **NO**

If you answered “YES” you must answer all questions in section 1.A.
If you answer “NO” you must answer all questions in section 1.B.

If “YES”, it is considered mostly structural, so answer the following:

1.A.1 Insert a feasibility report to comply with Title 261, Chapter 2, including engineering and technical data

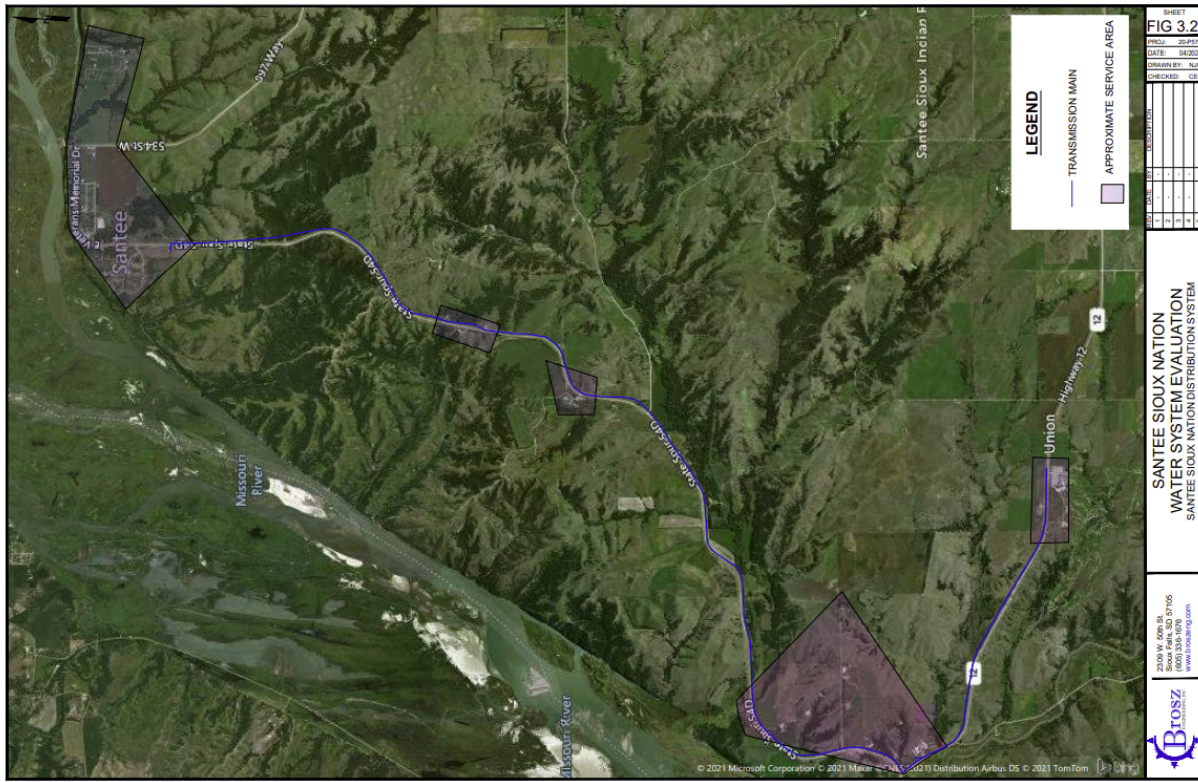
Santee Sioux Nation worked with Brosz Engineering, Inc. to investigate groundwater and surface water resources for consideration as an alternative water source for the Village of Santee and the surrounding area. The results of the investigation were provided to the Santee Sioux Nation Tribal Council. There were four alternatives that were analyzed, and the Tribal Council voted on alternative 4. Alternative four (4) addresses the Administrative Order (AO) issued by Environmental Protection Agency (EPA). Brosz Engineering’s April 2023 Preliminary Engineering Report (PER), included as (Attachment C), complies with Title 261, Chapter 2. The 2023 PER also includes an assessment of alternatives to increase system capacity and address the AO.

1.A.2 Describe the plan of development (004.01 A);

The recommended plan presented herein addresses the design, construction, and financing of alternatives to meet anticipated regulatory requirements, residential and commercial growth, and system reliability needs for the Nation. Implementation of the recommended improvements will provide adequate and dependable drinking water for existing and future customers. This report will serve as a tool for the Nation to make effective decisions.

The Nation’s current distribution system is largely unknown due to a lack of records and institutional knowledge. Additionally, the condition of pipe, valves, fire hydrants, pressure reducing valves, and all accompanying appurtenances are unknown. Based on reports completed by the BOR, there is a 6-inch diameter watermain located parallel to Nebraska Highway 54D that pushes water from the well field located near Bazile Creek to the Village of Santee. Based on the IHS Preliminary Engineering Report dated June 2022, the water distribution system is considered fair to good condition depending on the material present.

Figure 3.2 below illustrates the approximate areas served by the Santee Sioux Nation.



An onsite evaluation of the 110,000 gallon ground storage tank and the 60,000 gallon below ground storage tank were conducted on September 3rd, 2020. Due to a lack of records, it is unknown when these storage facilities were constructed. The exterior of the 110,000 gallon storage tank is in fair condition, as can be seen in Pictures 1 through 3 below. There is graffiti and rust present on the tank. The rust is located primarily around bolts. The sealant located on the bottom of the tank needs replacement. Additionally, there are deficiencies associated with the security fence located around the ground storage tank. It was not possible to evaluate the tank interior, therefore, to be conservative, repairs and maintenance will be recommended.



Picture 1: Village of Santee Water Storage Tank.



Picture 2: Graffiti on Water Storage Tank.

The exterior of the 60,000-gallon ground storage reservoir appears to be in good condition. During the onsite evaluation, Brosz was able to open the cover to the below ground storage tank. There was rust on the steps and around the frame. Additionally, there is black staining occurring along the interior walls of the tank. The black staining is likely from manganese present in the drinking water. Further evaluation of the tank could not occur as the tank was full. However, it appears that there have not been repairs or maintenance to this facility hence the black film and rusting occurring inside the water storage tank. Pictures 4 through 6 illustrate the condition of the below ground storage tank. Brosz was not able to evaluate the condition of the 20,000-gallon lead tank. However, the use of lead materials in a drinking water system is a major concern. The EPA has established a MCL goal for lead in drinking water at 0 mg/L. Impacts from consuming lead for infants and children may include delays in physical or mental development. For adults, consumption of lead may include kidney problems and high blood pressure. The use of lead materials in drinking water systems was banned by the Lead Contamination Control Act of 1988 (Public Law 100-572).



Picture 4: Exterior of 60,000 gallon below ground storage tank.



Picture 5: Rust and staining inside of the 60,000 gallon storage tank.



Picture 6: Rust and debris inside the 60,000 gallon tank.

The principal function of storage is to provide a reserve supply of water for: 1) operational equalization and 2) emergency needs. Operational storage is related to the quantity of water necessary to meet peak demands. The intent of operational storage is to provide the difference in quantity between the customer's peak demands and the system's reliable available supply. The volume of water allocated for emergency use is decided based on historical record of emergencies experienced, and on the amount of time which is expected to lapse before a hypothetical emergency can be corrected.

1.A.3 Include a description of all field investigations made to substantiate the feasibility report (004.01 B);

- A Preliminary Engineering Report (PER) was completed by Brosz Engineering Inc. in April 2023 to evaluate alternatives (Attachment C).
- Soil evaluations will also be completed as necessary in areas where significant modifications to the distribution system will be made, including locations where water lines and storage tanks will be upsized or replaced.
- Soil boring will be completed in areas where new construction is planned, storage tank added, and transmission lines buried. These soil borings will allow the soil conditions at these locations to be evaluated to determine structural design criteria for these facilities.

1.A.4 Provide maps, drawings, charts, tables, etc., used as a basis for the feasibility report (004.01 C);

This alternative connects the Nation to Randall Community Water District (RCWD) in Lake Andes, South Dakota. RCWD is a rural water system within South Dakota that treats Missouri River surface water upstream of the Fort Randall Dam. RCWD operates two (2) water treatment plants, one (1) located West of Platte, South Dakota, while the other plant is in Pickstown, South Dakota. To connect the Nation to RCWD, a new 10-inch diameter water main will begin at the Carda GSR. From this reservoir, a dedicated watermain will proceed to the Missouri River near Running Water. Due to elevation changes, a combination of booster stations and pressure reducing stations will be installed along the watermain so that the pipeline will operate with acceptable pressure ranges. Once at the Missouri River near Running Water, a pipeline will be bored under the river to the Nation's wellfield located near the intersection of NE HWY 12 and HWY 54D. From here, the water main will connect to the Nation's existing infrastructure. Figure 4.5 illustrates the proposed route of this pipeline. Besides installing the pipe itself, gate valves, air release valves, flushing hydrants, etc. will also be installed. Due to steep terrain changes located along the proposed pipeline route, air release valves and blow off assemblies will be used to properly operate the pipelines. Combination air release valves are needed because air tends to be trapped along the high points of a pipeline. As air builds up within the pipeline, air binding occurs which reduces the carrying capacity of the pipeline. Combination air valves will also allow air into the pipe. This is beneficial during pressure loss situations, for example, water main breaks. Allowing air into the pipeline during pressure loss instances reduces the potential for

water hammers to occur, potentially causing further damage to the pipeline. Blow off assemblies will be located at low points along the pipeline. These hydrants will remove any buildup of solids within the pipeline. Besides having combination air valves and blow off assemblies along the pipeline, there will also be gate valves spaced throughout the pipeline. These are beneficial when needing to isolate specific segments of the pipeline to complete repairs and additional connections. An analysis of RCWD’s existing water rates must be completed to illustrate what a similar RCWD user pays per month. RCWD charges a \$34.00 per month minimum and \$2.60 per 1,000 gallons (about 3785.41 L). Table 4.5 below illustrates RCWD rate structure. The water fee for 5,000 gallons is \$47.00

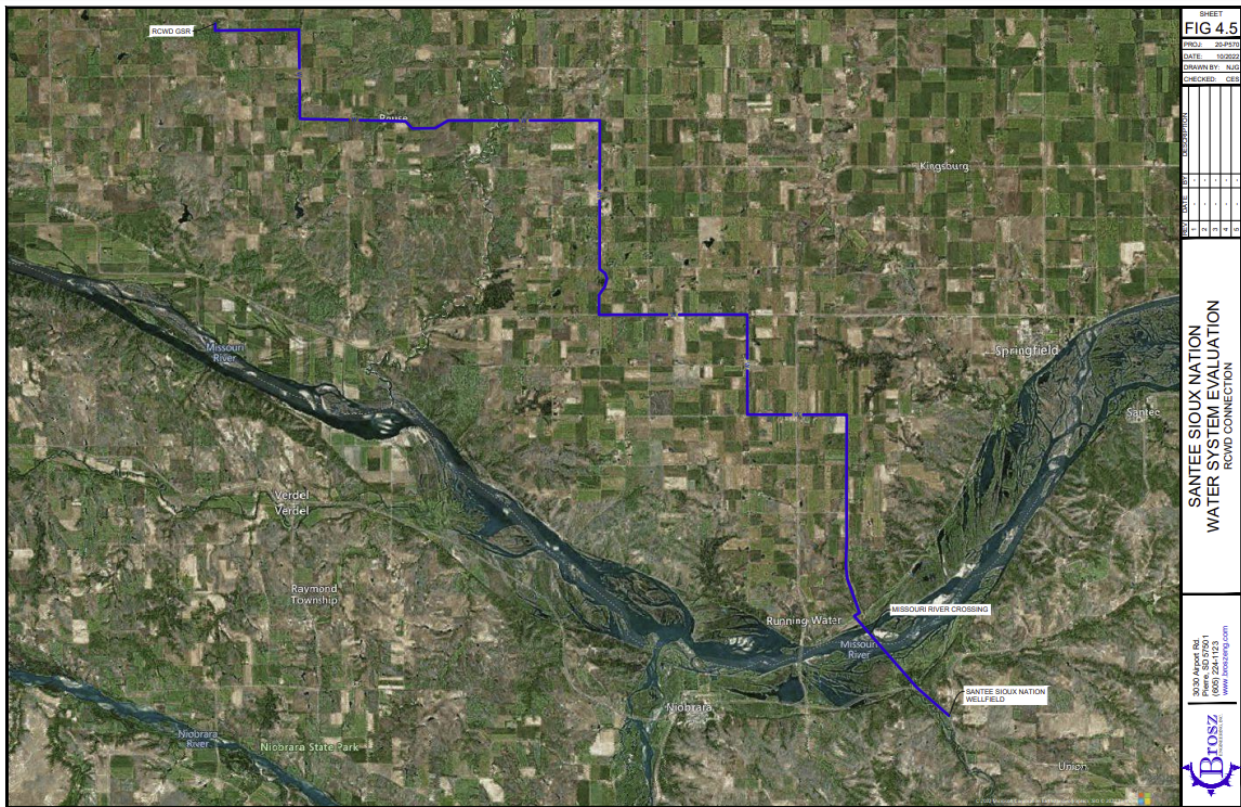
Table 4.5 – RCWD Current Water Rate Schedule

Water Used (gallons)	Minimum	\$/1,000 gallons	Total Bill
0	\$34.00	\$2.60	\$34.00
1,000	\$34.00	\$2.60	\$36.60
2,000	\$34.00	\$2.60	\$39.20
3,000	\$34.00	\$2.60	\$41.80
4,000	\$34.00	\$2.60	\$44.40
5,000	\$34.00	\$2.60	\$47.00
6,000	\$34.00	\$2.60	\$49.60
7,000	\$34.00	\$2.60	\$52.20
8,000	\$34.00	\$2.60	\$54.80
9,000	\$34.00	\$2.60	\$57.40
10,000	\$34.00	\$5.78	\$91.80

One of the many benefits of this alternative is that the Nation would not be responsible for water treatment, or O&M costs associated with a complex water treatment facility. The Nation’s main responsibility would be distribution pipeline maintenance. The Nation would purchase bulk water from the rural water system. Based on the funding plan provided, it is expected that users of the new pipeline would have water rates that are comparable to those of existing RCWD users.

This project would have minimal impact on the environment. Since this alternative is primarily water main installation, large excavations and tree removal may be necessary. Depending on pipeline alignment there may be wetland crossings. This water main will also cross the Missouri River, however environmental impacts will be limited as the pipelines will be installed below the river, through the horizontal directional drill (HDD) process. During the design phase every effort will be made to avoid wetlands. However, if these crossings are necessary, governing agencies will be notified, and mitigation measures will be taken to minimize impacts to these wetlands. Excavated and disturbed areas will be restored to preconstruction condition.

The picture below depicts the approximate route for the 10” water main.



- This project will require land to install the extensive water main(s). These requirements will be through easements between the rural water system and landowners, the Nation, and any landowners. Additionally, there may be structures protruding out of the ground located on these land areas, therefore agreements would be made before installing any of these structures.
- The project is very sustainable as the Nation will purchase safe and high-quality drinking water from an upstream rural water system. The Nation would also have an adequate water supply.

An additional project feature involves constructing a 3.0 MG GSR east of the Ohiya Casino along Nebraska Highway 12. Figure 4.6 below provides an illustration of the proposed storage location. Constructing this single large reservoir near the casino provides the additional water storage needed for the Nation. Due to the elevation difference between the proposed location and the Village of Santee, water from this ground storage reservoir will flow by gravity to the 110,000-gallon Aqua store tank located south of the Village. An altitude valve station will be placed near the 110,000-gallon storage tank so that the existing storage tank does not overflow. This alternative also includes improvements to the existing 110,000-gallon storage tank, which include: cleaning, coatings, resealing, telemetry, SCADA, and security fence repairs. Besides

serving the Casino and Village of Santee, this tank will also serve the remaining portions of the Nation. For example, the housing development just west of the casino would have adequate water to serve that area and potentially proceed with additional development. Rural farms, ranches, and tribal housing located within the Nation would have a reliable water supply after connection to the newly proposed system. It should be noted that this tank will be large enough to serve the entire Nation, however this tower may not be able to serve the entire nation through gravity flow. Therefore, as the Nation grows primarily to the east a booster pump station may be needed.

Figure 4.6 below depicts a 3.0 MG GSR east of the Ohiya Casino along Nebraska Highway 12.



S:\2020\proj\20-PS70\Documents\Santee Sioux Nation PERF\figures\OCTOBER 2022\Figure 4.6 - 3.0 MG GSR.dwg

This component of the project will provide the necessary water storage for the Nation. In the event of emergencies or fires, the Nation will have an adequate water supply. Additionally, this storage facility will always provide adequate supply and pressure. A final sustainable component to identify is the ability of the ground storage reservoir to serve as an interconnect with Cedar Knox Rural Water Project. This component would allow for a backup supply for the system to ensure resiliency throughout northern Nebraska.

1.A.5 Describe any necessary water and/or land rights including pertinent water supply and water quality information (004.01 D);

The Santee Sioux Nation does not anticipate significant resistance to the occupancy of public right of way along the proposed water line construction locations. Santee Sioux Nation will engage with private landowners on a case-by-case basis to save on overall project costs.

Randal Community Water District (RCWD) possesses all water rights for this project as they are a Certified Rural Water system. With this alternative, there are no concerns with connecting and providing safe drinking water to the Nation and surrounding area if they choose to connect to this regionalization opportunity.

1.A.6 Discuss each component of the final plan (004.01 E);

There are two major components to the final plan:

1. Connect the Nation to Randall Community Water District (RCWD) located in Lake Andes, South Dakota.
 - a. To connect the Nation to RCWD, a new 10-inch diameter watermain will begin at the Carda GSR. From this reservoir, a dedicated watermain will proceed to the Missouri River near Running Water. Due to elevation changes, a combination of booster stations and pressure reducing stations will be installed along the watermain so that the pipeline will operate with acceptable pressure ranges.
 - b. Once at the Missouri River near Running Water, a pipeline will be bored under the river to the Nation's wellfield located near the intersection of NE HWY 12 and HWY 54D. From here, the water main will either connect to the Nation's existing infrastructure or new facilities which will convey water to the Village of Santee.
 - c. Due to steep terrain changes located along the proposed pipeline route, air release valves and blow off assemblies will be used to properly operate the pipelines. Combination air release valves are needed because air tends to be trapped along the high points of a pipeline. As air builds up within the pipeline, air binding occurs which

reduces the carrying capacity of the pipeline. Combination air valves will also allow air into the pipe. This is beneficial during pressure loss situations, for example, water main breaks. Allowing air into the pipeline during pressure loss instances reduces the potential for water hammers to occur, potentially causing further damage to the pipeline.

- d. Blow off assemblies will be located at low points along the pipeline. These hydrants will remove any buildup of solids within the pipeline. Besides having combination air valves and blow off assemblies along the pipeline, there will also be gate valves spaced throughout the pipeline. These are beneficial when needing to isolate specific segments of the pipeline to complete repairs and additional connections.
 - e. One of the many benefits of this alternative is that the Nation would not be responsible for water treatment, or O&M costs associated with a complex water treatment facility. The Nation's main responsibility would be distribution pipeline maintenance. The Nation would purchase bulk water from the rural water system.
2. Construct a 3,000,000,000 storage tank East of the Ohiya Casino along Nebraska Highway 12. Water from the storage tank will flow by gravity to the 110,000-gallon Aqua store tank located south of the Village of Santee.
- a. An altitude valve station will be placed near the 110,000-gallon storage tank to prevent the existing tank from overflowing. This alternative also includes improvements to the existing 110,000-gallon storage tanks. Improvements include cleaning, coatings, resealing, telemetry, SCADA, and security fence repairs.
 - b. Besides serving the Casino and Village of Santee, this tank will also serve the remaining portions of the Nation. For example, the housing development just West of the casino would have adequate water and potentially proceed with additional development. Rural farms, ranches, and tribal housing located within the Nation would have a reliable water supply after connecting to the proposed tank. Since this tank is elevated, the need of a booster station to serve the area East of the tank is not needed. This is a major benefit.
 - c. This storage tank could also serve as a redundant resource for Cedar Knox Rural Water District if they choose to connect to this safe drinking water source.

1.A.7 When applicable include the geologic investigation required for the project (004.01 E 1);

Research and field investigations utilized to substantiate the project include the following:

- a. An aerial photograph file, a U.S. Geological Survey existing contour file, and the population tract information were combined and used as the basis for mapping and identifying pressure zones. These base maps can be used to create other feasibility study exhibits if needed. Pressure zones and boundaries are ideally determined around pressures (the HGL minus ground elevation minus pipe losses) however, pressure zone boundaries may also be determined considering elevations of existing tanks or other unique circumstances.
- b. An Environmental Report/Assessment is being conducted by Fishburn Consulting LLC. Santee Sioux Nation owns the land on the Nebraska side of the Missouri River where the 10' main will be located.

1.A.8 When applicable include the hydrologic data investigation required for the project (004.01 E 2);

Completed investigations

1. U.S. Department of the Interior Bureau of Reclamation. (2006). Feasibility Study for Water Supply System Economics and Water Demand Analyses Component.
 - a. Based on the future trends in population and the established per capita water consumption rate of 200 gpd, by the year 2065, it is anticipated that the Nation's average day and maximum daily requirements will approach 260,800 gpd and 652,000 gpd, respectively.
2. U.S. Department of the Interior Bureau of Reclamation. (2004). Needs Assessment – MR&I Water System, Santee Indian Reservation, Nebraska – March 2004. Retrieved from https://www.usbr.gov/gp/nkao/needs_assessment/index.html
 - a. Most water quality problems on the Reservation are attributable to elevated levels of SMCL constituents (e.g., iron, sulfate, manganese, and TDS). Although not considered to pose a direct health risk, poor water quality resulting from these constituents can have detrimental economic impacts. This is a pervasive, Reservation-wide problem.
3. U.S. Environmental Protection Agency. (2021). Action Plan to Address Elevated Levels of Manganese In Drinking Water.

- a. The next concern is manganese and hardness in the current water source. Hardness is a Safe Drinking Water Act (SDWA) secondary standard; however, it still impacts the quality of the water and requires treatment. Even though Manganese is currently a secondary standard, the Nation through the recommendation of the Environmental Protection Agency (EPA) issued a Not Be Consumed Drinking Water Advisory due to the elevated levels of manganese in the Nation's source water. Studies are linking manganese in drinking water to neurological issues, especially in infants and children. These issues include changes in behavior, speech and memory difficulties, and lack of coordination and movement control. Currently, there is significant research and discussion on the federal level to determine if manganese will eventually require a primary standard.
- b. Preliminary Engineering Report for Santee Sioux Nation, Santee, Nebraska, April 2023.

The principal elements of this report include the following:

- Analysis and inventory of the Nation's current drinking water supply, treatment, storage, and distribution systems. Deficiencies and satisfactory elements within the system were annotated in the report.
- Investigate alternatives for water system improvements.
- Issue formal recommendations based on alternative analysis to include funding options/availability.
- Identify the approximate monthly debt repayment for the recommended alternatives.

1.A.9 When applicable include the criteria for final design including, but not limited to, soil mechanics, hydraulic, hydrologic, structural, embankments and foundation criteria (004.01 E 3).

Design of the pipeline supply system, distribution system, and water storage system will meet the requirements and design criteria of the following design standards:

- Nebraska Department of Environment and Energy (NDEE) Regulations Governing Public Water Supply Systems – Title 179 NAC2.
- Great Lakes Upper Mississippi River Board of State Health and Environmental Managers Recommended Standards for Water Works (Ten State Standard).

If “NO”, it is considered mostly non-structural, so answer the following:

- 1.B.1 Insert data necessary to establish technical feasibility (004.02); [Click here to enter text.](#)
- 1.B.2 Discuss the plan of development (004.02 A); [Click here to enter text.](#)
- 1.B.3 Describe field or research investigations utilized to substantiate the project conception (004.02 B); [Click here to enter text.](#)
- 1.B.4 Describe any necessary water and/or land rights (004.02 C); [Click here to enter text.](#)
- 1.B.5 Discuss the anticipated effects, if any, of the project upon the development and/or operation of existing or envisioned structural measures including a brief description of any such measure (004.02 D). [Click here to enter text.](#)

Prove Economic Feasibility

(Applicant must demonstrate compliance with Title 261, CH 2 - 005)

2. Provide evidence that there are no known means of accomplishing the same purpose or purposes more economically, by describing the next best alternative.

Santee Sioux Nation Tribal Board of Directors contracted with Brosz Engineering Inc. to evaluate options available to address an EPA Administrative Order as well as identify a long-term drinking water solution to the ongoing quality/quantity water issues for the Nation.

Based on information documented in Brosz Engineering Inc. PER 2023, the best alternative considered by the Santee Sioux Nation Tribal Board of Directors is to secure a long-term water source from Randall Community Water District (RCWD).

The recommended plan addressed the design, construction, and financing of alternatives to meet anticipated regulatory requirements, residential and commercial growth, and system reliability needs for the Nation as well as a redundant water source for surrounding communities. Implementation of the recommended improvements will provide adequate and dependable drinking water for existing and future customers. Preliminary Engineering Report, Brosz Engineering, Inc., April 2023. (Attachment D)

RCWD Current Water Rate Schedule

Water Used (gallons)	Minimum	\$/1,000 gallons	Total Bill
0	\$34.00	\$2.60	\$34.00
1,000	\$34.00	\$2.60	\$36.60
2,000	\$34.00	\$2.60	\$39.20
3,000	\$34.00	\$2.60	\$41.80
4,000	\$34.00	\$2.60	\$44.40
5,000	\$34.00	\$2.60	\$47.00
6,000	\$34.00	\$2.60	\$49.60
7,000	\$34.00	\$2.60	\$52.20
8,000	\$34.00	\$2.60	\$54.80
9,000	\$34.00	\$2.60	\$57.40
10,000	\$34.00	\$5.78	\$91.80

- Document all sources and report all **costs** and **benefit data** using current data, (commodity prices, recreation benefit prices, and wildlife prices as prescribed by the Director) using both dollar values and other units of measurement when appropriate (environmental, social, cultural, data improvement, etc.). The period of analysis for economic feasibility studies is the project life. ([Title 261, CH 2 - 005](#)).

The Analysis Comparison provides a summary of the EUAC analysis for each category of improvement. The EUAC analysis is extremely beneficial when comparing multiple alternatives with different life cycles.

Improvement Category	Alternative	EUAC Cost
Water Supply	Alternative 2 - Well DH-7 Water Source	\$ 1,225,986
	Alternative 3 – CKRWP Connection	\$ 537,578
	Alternative 4 – RCWD Connection	\$ 1,333,518
Water Storage	Alternative 2 – 3.0 Million Gallon GSR	\$ 280,691
	Alternative 3 – 1.0 Million Gallon GSR	\$141,504
	Alternative 4 – 3.0 Million Gallon Elevated Tank	\$ 431,134
Water Transmission	Alternative 2 – Transmission Pipeline Improvements (Highway 12)	\$ 462,048
	Alternative 2 – Transmission Pipeline Improvements (Highway 54D)	\$ 203,774
Water Distribution System	Alternative 2 - Distribution System Replacement	\$ 509,630
	Alternative 3 – Water Meter Project	\$100,797

Economic feasibility was reviewed as described in Title 261 – Rules Governing the Administration of the Water Sustainability Fund. The period used for this economic feasibility analysis was 50 years pursuant to the guidelines of this application. The proposed design of a new long-term surface water supply, water storage tank, and distribution system upgrades will provide a secure source of drinking water for the 50-year design life. Without the Source Solution and System Upgrades project the Nation’s drinking water will continue to be unsafe and EPA will continue with the AO. The finished water from RWCD could also be a redundant source of drinking water for other water systems in the area. Ultimately the restricted water source potential would leave the nation unable to supply water to its users. In addition, the Nation would be required to identify an alternative solution to satisfy the AO issued due to production of the disinfection byproduct TTHM in excess of the SWDA MCL. Resolving the AO through methods other than a source water change would not solve the ultimate problem facing the Nation. O & M costs would be more than the community could fund if a new water source is not obtained. (AO Attachment E)

3.A Describe any relevant cost information including, but not limited to the engineering and inspection costs, capital construction costs, annual operation and maintenance costs, and replacement costs. Cost information shall also include the estimated construction period and project life (005.01).

A description of the project costs and timeline for each element is presented in the Table below. Annual O&M is estimated to be minimal since water is treated at RCWD. The table below reflects increases to O&M only to show benefit over current O&M costs over 50 years.

Activity	Cost Estimate	Year 1 2024	Year 2 2025	Year 3 2026	Year 4 2027
Environmental, Engineering Design, Letting	\$6,274,583	\$3,137,291	\$3,137,291	\$0	\$0
Admin/Legal	\$2,029,515	\$676,505	\$676,505	\$676,505	\$0
Acquisition and Easements	\$358,548	\$250,984	\$107,564	\$0	\$0
Archeological	\$179,274	\$89,637	\$89,637	\$0	\$0
Pipeline Construction and Contingency	\$32,258,779	\$0	\$12,903,512	\$12,903,512	\$6,451,756
Ground Storage Construction and Contingency	\$6,640,457	\$0	\$0	\$5,312,366	\$1,328,091
Construction Administration	\$4,481,845	\$0	\$1,486,701	\$2,098,775	\$896,368
Totals	\$52,223,000	\$4,154,417	\$18,401,210	\$20,991,158	\$8,676,215

Santee Sioux Nation is requesting financial support from the Water Sustainability Fund for the design, permitting, and construction of the long-term water supply system for the Nation’s Water Project to convert from the groundwater source to surface water from RCWD. The Nation will not be able to meet the Administrative Order (AO) requirements with the current drinking water infrastructure, storage, and groundwater source.

3.B Only primary tangible benefits may be counted in providing the monetary benefit information and shall be displayed by year for the project life. In a multi-purpose project, estimate benefits for each purpose, by year, for the life of the project. Describe intangible or secondary benefits (if any) separately. In a case where there is no generally accepted method for calculation of primary tangible benefits describe how the project will increase water sustainability, in a way that justifies economic feasibility of the project such that the finding can be approved by the Director and the Commission (005.02).

Tangible Benefits

Tangible benefits are provided in the table below (inference between RO plant and RCWD surface water).

50-Year Project Benefit Estimate

TASK	Total \$ Amount
Expansion of existing Wellfield at Bazile Creek – installation of additional wells and new reverse osmosis (RO) treatment facility (alternative has O&M costs that would not be sustainable by the Nation)	\$92,895,185
Purchase finish water from RCWD (best alternative) improve distribution system pipes, install meters, and add 3,000,000-gal storage tank	\$82,345,065
Totals 50-Year Project Benefit	\$10,550,120

A decision matrix was developed for the comparison of Water Supply Alternatives, Water Storage Alternatives, Transmission Pipeline Alternatives, and Water Distribution Alternatives. The alternatives presented in the Preliminary Engineering Report were further evaluated based on the following criteria:

- ✓ Need
- ✓ Risk
- ✓ Capital cost
- ✓ O&M cost
- ✓ Footprint
- ✓ Reliability
- ✓ Operations staff familiarity

✓ Maintenance needs

Since the alternatives presented in Chapter 4.0 are very substantial and will require large monetary funding packages, it is critical for the alternatives to be analyzed in a cost-effective manner that is also sensitive to the Nation’s needs. As a result, the philosophy for the analyses is to incorporate conservative provisions that effectively resolve the current issues while producing minimal debt. The selected alternatives must also be reliable and require minimal operation and maintenance. Table 5.1 provides a decision matrix regarding the water supply alternatives. Table 5.2 provides the decision matrix for the water storage alternatives while Table 5.3 provides the decision matrix for the transmission system alternatives. Finally, Table 5.4 provides the decision matrix for the distribution system alternatives. “Do Nothing” alternatives were not included in the decision matrix because these alternatives do not resolve the current issues and deficiencies within the Nation.

Table 5.1 – Water Supply Alternatives Decision Matrix

Decision Variables	Alternative #2	Alternative #3	Alternative #4
Need	ASAP	ASAP	ASAP
Risk	3	3	1
Capital Cost	3	1	3
O&M Costs	3	1	1
Footprint	3	1	1
Reliability	2	2	1
Operations Staff Familiarity	3	1	1
Maintenance Needs	3	1	1
Total	20	10	9
RATING LEGEND			
1 = Excellent			
2 = Good			
3= AVERAGE			

Table 5.2 – Water Storage Alternatives Decision Matrix

<i>Decision Variables</i>	<i>Alternative #2</i>	<i>Alternative #3</i>	<i>Alternative #4</i>
<i>Need</i>	ASAP	ASAP	ASAP
<i>Risk</i>	1	1	2
<i>Capital Cost</i>	2	2	3
<i>O&M Costs</i>	1	1	1
<i>Footprint</i>	2	1	1
<i>Reliability</i>	1	1	1
<i>Operations Staff Familiarity</i>	1	1	1
<i>Maintenance Needs</i>	1	1	2
<i>Total</i>	9	8	11
RATING LEGEND			
1 = Excellent			
2 = Good			
3 = AVERAGE			

Table 5.3 – Transmission Pipeline Improvement Decision Matrix

<i>Decision Variables</i>	<i>Alternative #2</i>
<i>Need</i>	ASAP
<i>Risk</i>	1
<i>Capital Cost</i>	3
<i>O&M Costs</i>	1
<i>Footprint</i>	1
<i>Reliability</i>	1
<i>Operations Staff Familiarity</i>	1
<i>Maintenance Needs</i>	1
<i>Total</i>	9
RATING LEGEND	
1 = Excellent	
2 = Good	
3 = Average	

Table 5.4 – Distribution System Improvement Decision Matrix

<i>Decision Variables</i>	<i>Alternative #2</i>	<i>Alternative #3</i>
<i>Need</i>	ASAP	ASAP
<i>Risk</i>	1	1
<i>Capital Cost</i>	3	1
<i>O&M Costs</i>	1	1
<i>Footprint</i>	1	1
<i>Reliability</i>	1	1
<i>Operations Staff Familiarity</i>	1	2
<i>Maintenance Needs</i>	1	1
<i>Total</i>	9	8
RATING LEGEND		
1 = Excellent		
2 = Good		
3 = AVERAGE		

While the Santee Sioux Nation is in dire need of many improvements, the most critical project is providing the Nation with a multigenerational water supply and adequate storage. When analyzing alternatives that result in connection to an existing water system, it is very prudent to factor in the current cost of water to customers within their systems. Cedar Knox Rural Water Project (CKRWP) charges \$81.90 for 5,000 gallons while Randall Community Water District (RCWD) only charges \$47.00 for 5,000 gallons.

Even though the alternative to connect to CKRWP is the least cost alternative in upfront capital costs, there is little to no possibility that this alternative would become a reality. CKRWP system improvements are being focused in the eastern part of the service area where the vast majority of accounts and demands reside. Additionally, Brosz Engineering has been in frequent contact with CKRWP regarding the possibility of supplying water to Santee. CKRWP continues to explore viable options. A number of those options carry significant long-term risk. Therefore, the most viable option for the Santee Sioux Nation is to purchase bulk water from Randall Community Water District.

Water Supply Alternative 4 – Connection to Randall Community Water District

This alternative recommends the connection of the Nation to the Randall Community Water District (RCWD), located in South Dakota. RCWD is a rural water system within the State of South Dakota that operates two (2) surface water treatment plants along the Missouri River. RCWD’s raw water intakes are both located upstream of the Fort Randall Dam. RCWD provides high quality water with minimal water treatment. Operating two (2) water treatment plants within their system is beneficial for the Nation, as it will have a redundant water supply within the same system. To connect the Nation to RCWD, a water pipeline needs to be constructed from RCWD’s facilities to the

Nation. An additional storage reservoir will also be constructed to provide pressurization and storage for the system. A cost estimate for this alternative was prepared and is approximately \$52,223,000.

3.C Present all cost and benefit data in a table to indicate the annual cash flow for the life of the project (005.03).

As part of the cost analysis for the recommended alternatives, the estimated monthly debt repayment has been calculated. It should be noted that subsidies in any form are not guaranteed. Therefore, the Nation should be prepared for the possibility of obtaining a 5-5 100% loan funding package to finance the recommended alternatives. This analysis projects the monthly impact on the Nation. This monthly cost would be evenly distributed amongst all customers. The current market interest rate is 3.5%, however it is likely that the Nation would qualify for a lower interest rate. Assuming the 3.5% interest rate and a 40-year funding package, the projected monthly debt payment based on different grant percentages are identified in Table 5.5. For example, if the Nation receives a 70% grant, the monthly payment is \$54,118. Comparatively, the monthly payments would be \$90,197 and \$126,275 per month if the Nation would receive 50% and 30% grant, respectively. If the Nation would receive a 100% loan funding package, the monthly payment would be \$180,393.

Table 5.5 – Potential Debt Repayment Analysis

Grant Percentage	70%	50%	30%	0%
Project Cost	\$46,702,000	\$46,702,000	\$46,702,000	\$46,702,000
Grant Amount	\$32,691,400	\$23,351,000	\$14,010,600	\$0
Loan Amount	\$14,010,600	\$23,351,000	\$32,691,400	\$46,702,000
Interest Rate	3.500%	3.500%	3.500%	3.500%
Loan Term	40	40	40	40
Monthly Debt Repayment	\$54,118	\$90,197	\$126,275	\$180,393

Dates in Table 5.6 are only an estimated time of implementation. Variables change as some of the funding applications have been delayed.

Table 5.6 - Implementation Schedule

	Task	Date
1	Submittal of Facility Plan	April-23
2	Approval of Facility Plan	May-23
3	Notice to Proceed with Design	June-23
4	Funding Application Submittal	July-23
5	Project Funding Package Appropriation	September-23
6	Submittal of Plans and Specifications	July-24
7	Approval of Plans and Specifications	September-24
8	Solicitation of Bids	October-24
9	Opening of Bids	November-24
10	Award of Bid	December-24
11	Start of Construction	March-25
12	End of Construction	October-26
13	Project Closeout	November-26

- 3.D In the case of projects for which there is no generally accepted method for calculation of primary tangible benefits and if the project will increase water sustainability, demonstrate the economic feasibility of such proposal by such method as the Director and the Commission deem appropriate (005.04). (For example, show costs of and describe the next best alternative.) [Click here to enter text.](#)

Prove Financial Feasibility

(Applicant must demonstrate compliance with Title 261, CH 2 - 006)

4. Provide evidence that sufficient funds are available to complete the proposal.
[Click here to enter text.](#)

Neb. Rev. Stat. §§ 2-3252 through 2-3257 allows for establishment of improvement projects by Public Water Systems (PWS) and identifies the authority of PWS to set customer rates, borrow money and/or issue bonds. The Santee Sioux Nation Tribal Council annually reviews customer rates to be charged and makes rate adjustments as needed to cover capital and operations and maintenance costs for the water system annually.

USDA RD is responsible for distributing loan/grant monies and will reimburse project expenses with receipt of eligible expenses. The amount not USDA RD and DWSRF is \$15,215,000. Santee Sioux Nation is requesting 60% of the remaining \$15,215,000 from WSF which is equal to \$9,129,000. Santee Sioux Nation will utilize USDA RD loan or bonds for all, or part of the funds not covered by other sources.

This table identifies cost share and estimates.

Activity	Cost Estimate	EPA	USDA RD	HIS	WSF Funds Request	Local Share
					60%	40%
Environmental, Engineering Design, Letting	\$6,274,583	\$1,750,000	\$1,549,316	\$1,147,188	\$1,096,848	\$731,232
Admin/Legal	\$2,029,515		\$826,352	\$611,871	\$354,776	\$236,517
Acquisition and Easements	\$358,548		\$145,989	\$108,097	\$62,677	\$41,785
Archeological	\$179,274		\$72,994	\$54,049	\$31,338	\$20,892
Construction and Contingency	\$38,899,235		\$15,838,489	\$11,727,581	\$6,799,899	\$4,533,266
Construction Administration	\$4,481,845		\$1,824,860	\$1,351,214	\$783,463	\$522,308
Totals	\$52,223,000	\$1,750,000	\$20,258,000	\$15,000,000	\$9,129,000	\$6,086,000

5. Provide evidence that sufficient annual revenue is available to repay the reimbursable costs and to cover OM&R (operate, maintain, and replace).

The Santee Sioux Nation has accepted the obligation to provide drinking water to approximately 1,000 residents in Knox County and with this surface water resource, can serve three times that amount. With the construction of a 3-million-gallon storage tank, the Nation could provide a redundant water source for Cedar Knox Rural Water. Santee Sioux Nation has the authority to establish water rates, to borrow money, and to bond, to cover the costs associated with providing safe, reliable, drinking water to customers of the system as stated in Neb. Rev. Stat. §§2-3252 through 2-3257. The Santee Sioux Nation has budgeted and will continue to budget sufficiently for system operation and maintenance. The Table below are the service area estimates for additional revenue over 40 years.

Table 22 – Service Area-Wide Average and Peak Daily Demands for the Years 2010, 2020, 2030, 2040, and 2050 (gallons per day)

User Type	2010	2020	2030	2040	2050
Santee Nation					
Residential ¹	148,797	165,846	179,797	189,102	198,401
Employment ²	27,755	32,164	42,711	44,595	46,511
Livestock	12,000	12,000	13,590	14,834	16,124
Sub-Total	188,551	210,009	236,098	248,532	261,036
Niobrara					
Residential	59,675	61,225	62,000	63,550	65,100
Employment	10,655	10,918	11,114	11,345	11,589
Sub-Total	70,330	72,143	73,114	74,895	76,689
Total Service Area Average Daily Demand	258,881	282,153	309,212	323,427	337,725
Total Service Area Peak Month Daily Demand	517,763	564,305	618,424	646,853	675,451

¹ Residential demands for the Santee Nation include all community and non-community residents.

² The years the commercial expansions listed in the Economic Conditions portion of this report occur are estimated. For example, between 2010 and 2020, the new Safety Center (54 employees) and Juvenile Detention Center (7 employees) are included in the demand forecast.

6. If a loan is involved, provide sufficient documentation to prove that the loan can be repaid during the repayment life of the proposal.

The total loan will be paid back over the life of the project through an increase to the per 1,000-gallon rate and/or to the minimum fee charged to each customer. This project will allow for new customers East and West of Nation Tribal ground as well. This quality water will be available for other communities to connect to. This additional income will be used to pay off loans.

7. Describe how the plan of development minimizes impacts on the natural environment (i.e. timing vs nesting/migration, etc.).

Connection to Randall Community Water District (RCWD) will have less impact on the natural environment than the current treated ground water source. Reverse osmosis systems require discharge of water by-products into the Missouri River. Connection to RCWD will not require any discharge into the Missouri River.

There will be minimal effect on the natural environment during pipeline construction. Some of the open trench pipeline installation will be completed within public ROW, or on crop ground which has previously been disturbed. The pipeline crossings of sensitive environmental features will be installed utilizing technologies to minimize environmental impacts whenever possible.

8. Explain how you are qualified, responsible and legally capable of carrying out the project for which you are seeking funds.

Santee Sioux Nation Tribal Council was established to serve safe drinking water to the service area of the Village of Santee and surrounding area/counties per Neb. Rev. Stat.

§§2-3252 through 2-3257 and §2-3238. The Nation is obligated to provide safe drinking water to about 1,000 residents receiving service in the project area in northeast Nebraska with potential of expanding East and West. The Nation can operate a water system as per the Nebraska Department of Environment and Energy (NDEE) Water System Number NE312001. The Village of Santee has the authority to borrow money, to bond, to establish water user rates to meet the costs associated with operating a water system also stated in Neb. Rev. Stat. §§2-3230 through 2-3242 and §§2-3252 through 2-3257.

9. Explain how your project considers plans and programs of the state and resources development plans of the political subdivisions of the state.

The Source Solution and System Upgrades project would be a collaborative investment of multiple entities leveraging funds to secure an alternative surface water source that will allow continued use of water while converting from the current ground water source. The design and construction phase of the engineering plan includes intensive testing to evaluate and protect existing domestic, stock, and irrigation uses when developing and designing the capacity necessary to support current and future customers. Having a highly optimized rural water system pumping from a unlimited water source, will help meet the needs of several thousand residents and to meet the demand of agricultural and recreational uses is an innovative strategy that minimizes the impact to smaller surrounding aquifer systems when compared to other potential land use developments.

The Nebraska Legislature and Governor showed clear legislative intention to support meeting the drinking water requirements of Tribal nations with the inclusion of language in LB 1413.

10. Are land rights necessary to complete your project? **Yes X NO**

If yes:

10.A Provide a complete listing of all lands involved in the project.

This alternative would require land in South Dakota to install the extensive pipeline(s). These requirements will be through easements between the rural water system and landowners and the Nation on the Nebraska side of the Missouri River. Additionally, there may be structures protruding out of the ground located on these land areas, therefore agreements between involved parties would be made before installing these structures. Communication through meetings has been very productive. Landowners learned that they will be afforded safe and reasonable drinking water and more capacity for communities for fire suppression. This will assist with risk mitigation and help with viable Vulnerability Assessments (VA) and Emergency Response Plans (ERP).

10.B Attach proof of ownership for each easement, rights-of-way and fee title currently held. **Click here to enter text.**

10.C Provide assurance that you can hold or can acquire title to all lands not currently held.

The project is confident in the ability to acquire the required right of way. A vast majority of the project has the ability to be built within existing public right of way or right of way that is already possessed by Randall Community Water District.

11. Identify how you possess all necessary authority to undertake or participate in the project.

Santee Sioux Nation Tribal Council was established to serve safe drinking water to the service area of the Village of Santee and surrounding area/counties per Neb. Rev. Stat. §§2-3252 through 2-3257 and §2-3238. The Nation is obligated to provide safe drinking water to about 1,000 residents receiving service in the project area in northeast Nebraska with potential of expanding East and West. The Nation can operate a water system as per the Nebraska Department of Environment and Energy (NDEE) Water System Number NE312001. The Village of Santee has the authority to borrow money, to bond, to establish water user rates to meet the costs associated with operating a water system also stated in Neb. Rev. Stat. §§2-3230 through 2-3242 and §§2-3252 through 2-3257.

12. Identify the probable consequences (environmental and ecological) that may result if the project is or is not completed.

A “Do Nothing” alternative would consist of keeping the same drinking water source and treatment. The Nation would continue to serve water that exceeds SDWA primary drinking water standards. These violations include nitrate-nitrogen and total coliform bacteria. In addition to the primary standard violations, there are also SDWA secondary drinking water standard violations that include sulfate, TDS, hardness, manganese, and iron. The Nation is under a Not Be Consumed Drinking Water Advisory regarding manganese and that will continue to be in effect until a solution is identified to provide the Nation with consistent high-quality drinking water.

The other concern with this alternative is the quantity of water currently available for the Nation. There are three (3) wells in the existing field used to serve the Nation. However, only two (2) of the three (3) wells are operational. The maximum combined pumping rate of the existing wellfield is approximately 200 gpm. Due to the poor water quality and inadequate water supply, this alternative will not be recommended.

Section C.

NRC SCORING

In the NRC’s scoring process, points will be given to each project in ranking the projects, with the total number of points determining the final project ranking list.

The following 15 criteria constitute the items for which points will be assigned. Point assignments will be 0, 2, 4, or 6 for items 1 through 8; and 0, 1, 2, or 3 for items 9 through 15. Two additional points will be awarded to projects that address issues determined by the NRC to be the result of a federal mandate.

Notes:

- The responses to one criterion will not be considered in the scoring of other criteria. Repeat references as needed to support documentation in each criterion as appropriate. The 15 categories are specified by statute and will be used to create scoring matrixes which will ultimately determine which projects receive funding.
- There is a total of 69 possible points, plus two bonus points. The potential number of points awarded for each criteria are noted above. Once points are assigned, they will be added to determine a final score. The scores will determine ranking.
- The Commission recommends providing the requested information and the requests are not intended to limit the information an applicant may provide. An applicant should include additional information that is believed will assist the Commission in understanding a proposal so that it can be awarded the points to which it is entitled.

Complete any of the following (15) criteria which apply to your project. Your response will be reviewed and scored by the NRC. Place an N/A (not applicable) in any that do not apply, an N/A will automatically be placed in any response fields left blank.

1. Remediates or mitigates threats to drinking water;

- Describe the specific threats to drinking water the project will address.

The Village of Santee is currently under an AO, issued by Environmental Protection Agency (EPA) to address TTHM production that exceeds the NSDWA identified maximum contaminant level (MCL) 0.080 mg/L for the four-quarter running average for drinking water.

- Identify whose drinking water, how many people are affected, how will project remediate or mitigate.

The Santee Sioux Nation (Nation) operates its own water infrastructure facilities and serves customers within the Nation. The Nation and surrounding communities are dealing with poor water quality, primarily with nitrate/nitrogen and total coliform bacteria exceeding United States Environmental Protection Agency (EPA) Safe Drinking Water

Act (SDWA) primary drinking water standards in a significant number of their wells. The Nation has also exceeded SDWA secondary standard limits as well, most notably regarding manganese, as the Nation through the recommendation of the EPA issued a Not Be Consumed Drinking Water Advisory due to potentially harmful levels of manganese present in the Nations drinking water. The current drinking water advisory was issued in March of 2021 and will continue to be in effect indefinitely until a solution is found to provide the Nation with safe drinking water. Based on the U.S. Census Bureau 2020 Census, the current Nation population is approximately 974 people. The Nation's median age is 28.7 years, while the State of Nebraska median age is 37.2 years, according to 2020 Census. Data also stated that the average household size is 2.86 people with a median household income is \$29,531. Comparatively, the State of Nebraska average household size is 2.44 people with a median income of \$66,817. The percentage of people within the Nation that fall below the poverty level is approximately 91%. Approximately 77% of the Nation is of Native American decent, 18% Caucasian, and the remainder is from other descents or multiple races.

- Provide a history of issues and tried solutions.

Nation water is currently supplied by Bazile Creek in a well field located near the western boundary of the Nation, identified in. There are major water quality concerns with this drinking water source as current nitrate-nitrogen and total coliform bacteria consistently exceed SDWA primary drinking water standards. Nitrates in drinking water is a major concern especially for infants that are 6 months old or younger. Nitrates can result in methemoglobinemia or "blue baby syndrome". Once consumed, the nitrates are reduced to nitrites within the saliva and stomach of infants. The nitrites then enter the blood stream and combine with hemoglobin to form methemoglobin, which reduces the capability to transport oxygen throughout the body. This condition results in the skin of a baby turning blue, which in some cases can be fatal. According to a BOR 2008 status report titled, "Municipal, Rural, and Industrial Water Supply System Feasibility Study Status Report" the main cause of nitrate-nitrogen entering the drinking water supply is from septic-system effluent or onsite confined-animal feeding operations. However, agricultural runoff has significantly contributed to the high nitrate levels as there has been a substantial increase in the number of irrigation wells located in the analysis area. It is also suspected that when these irrigation wells were drilled, the wells intersect multiple aquifers allowing for nitrate leaching. Finally, fertilizing (nitrogen) crops to increase yields is standard agricultural practice. It is likely that nitrogen fertilizer has entered ground water sources and contaminated drinking water. In April of 2020, the Nation was notified that their drinking water supply wells had elevated levels of manganese, levels greater than 1,000 micrograms per liter ($\mu\text{g/L}$). The Nation investigated the manganese levels from each well. One (1) well had levels above 1,000 $\mu\text{g/L}$ and the other operational well had levels below 1,000 $\mu\text{g/L}$ but above 300 $\mu\text{g/L}$. Current guidance is that no infant or adult should consume water with manganese levels above 1,000 $\mu\text{g/L}$ and that infants, 6 months of age or younger, should not consume water with manganese levels above 300 $\mu\text{g/L}$. Based on the manganese levels and current guidance, the Nation decided to turn off the well with manganese levels above 1,000 $\mu\text{g/L}$ and issue a public notice that infants under six (6) months of age should not consume the water. The Nation continued to monitor manganese levels

within the system and in March of 2021, manganese levels within the system were above 1,000 µg/L. Therefore, the Nation, through the recommendation of the EPA, issued the Not Be Consumed Drinking Water Advisory, which will remain in effect indefinitely until a solution is found to provide the Nation with a consistent high quality drinking water. The quantity of water currently available for the Nation is not a concern.

- Provide detail regarding long-range impacts if issues are not resolved.

The Nation's water system has major deficiencies regarding their current water source, water treatment, water storage, and water distribution system. The Nation's water source has been compromised with nitrates and the Nation is currently under a Not Be Consumed Drinking Water Advisory regarding manganese. If these issues are not resolved, the Village will continue drinking unsafe water and will be on an Administrative Order indefinitely.

2. Meets the goals and objectives of an approved integrated management plan or ground water management plan;

- Identify the specific plan that is being referenced including date, who issued it and whether it is an IMP or GW management plan.

The project meets the goals and objectives of an approved integrated management plan (IMP) and groundwater management plan (GWMP).

- Provide the history of work completed to achieve the goals of this plan.

The Nation has proactively evaluated an exhaustive list of engineered alternatives to providing safe and reliable water supply and treatment to the system and customers, including:

Water Supply Alternative – Connection to Randall Community Water District is the preferred method to solve the Nations drinking water issues. This alternative recommends the connection of the Nation to the Randall Community Water District (RCWD), located in South Dakota. RCWD is a rural water system within the State of South Dakota that operates two (2) surface water treatment plants along the Missouri River. RCWD's raw water intakes are both located upstream of the Fort Randall Dam. RCWD provides high quality water with minimal water treatment. Operating two (2) water treatment plants within their system is very beneficial for the Nation as the Nation will have a redundant water supply within the same system. To connect the Nation to RCWD, a water pipeline is needed to be constructed from RCWD's facilities to the Nation. A cost estimate for this alternative was prepared and is approximately \$52,223,000. This alternative would require constructing a 3.0 Million Gallon Storage Reservoir near the Ohiya Casino.

- List which goals and objectives of the management plan the project provides benefits for and how the project provides those benefits.

The purpose of the voluntary IMP is identified to attain and/or maintain a desired balance between water uses and water supplies of both surface water and groundwater sources. In this way, economic viability, social health, environmental health, public safety, and public welfare can be better achieved and maintained. The voluntary IMP focuses on water supplies of the entire Nation and incorporates many aspects that mutually benefit other actions.

The IMP goal and objectives this project supports are listed below:

IMP Goal 1: Protect existing water uses while allowing for future water development.

Objective 1.1: Collaborate with local, state, and federal entities to better manage hydrologically connected ground and surface water.

Objective 1.2: Improve water resource sustainability through innovative management strategies.

3. Contributes to water sustainability goals by increasing aquifer recharge, reducing aquifer depletion, or increasing streamflow.

List the following information that is applicable:

The water source is surface water so it will not impact aquifer.

- The location, area and amount of recharge;
 - The location, area and amount that aquifer depletion will be reduced;
 - The reach, amount and timing of increased streamflow. Describe how the project will meet these objectives and what the source of the water is;
 - Provide a detailed listing of cross basin benefits, if any.
4. Contributes to multiple water supply goals, including, but not limited to, flood control, agricultural use, municipal and industrial uses, recreational benefits, wildlife habitat, conservation of water resources, and preservation of water resources;
 - List the goals the project provides benefits: and describe how the project will provide these benefits

The goal of the Nation's drinking water project is to provide a sustainable supply of potable water to the Santee community and future rural connections. In meeting this goal, the Nation will also provide the following benefits: 1) Flood control by safeguarding water supply for rural, municipal, agricultural, and commercial/industrial uses. 2) Agricultural use by maintaining a reliable rural water source and distribution system that

serves both domestic and stock/pasture water needs. 3) Municipal and industrial use by maintaining a water source and distribution system to serve the current community of Santee and future communities in the surrounding area. Recreational benefits will be enhanced by providing drinking water to campgrounds, businesses, sanitary improvement districts (SIDs), and other connections along the Lake and River where recreation attracts residents and visitors to the area and supports the economy of the local residents and communities. 5) Conservation and preservation of water resources are realized through providing a reliable source of drinking water to the area, reducing individual demand on the limited aquifer system that exists across much of the Nations service area. The project also helps ensure the availability of high quality drinking water throughout the service area where water quality is highly variable.

- Provide a long range forecast of the expected benefits this project could have versus continuing on current path.

Nation's water is currently supplied by Bazile Creek in a well field located near the western boundary of the Nation. There are major water quality concerns with this drinking water source as current nitrate-nitrogen and total coliform bacteria consistently exceed SDWA primary drinking water standards. Nitrates in drinking water is a major concern especially for infants that are 6 months old or younger. Nitrates can result in methemoglobinemia or "blue baby syndrome". Once consumed, the nitrates are reduced to nitrites within the saliva and stomach of infants. The nitrites then enter the blood stream and combine with hemoglobin to form methemoglobin, which reduces the capability to transport oxygen throughout the body. This condition results in the skin of a baby turning blue, which in some cases can be fatal.

According to a BOR 2008 status report titled, "Municipal, Rural, and Industrial Water Supply System Feasibility Study Status Report" the main cause of nitrate-nitrogen entering the drinking water supply is from septic-system effluent or onsite confined-animal feeding operations. However, agricultural runoff has significantly contributed to the high nitrate levels as there has been a substantial increase in the number of irrigation wells located in the analysis area. It is also suspected that when these irrigation wells were drilled, the wells intersect multiple aquifers allowing for nitrate leaching. Finally, fertilizing (nitrogen) crops to increase yields is standard agricultural practice. It is likely that nitrogen fertilizer has entered ground water sources and contaminated drinking water.

If no action is taken by the Nation to improve drinking water quality, the Nation will continue to operate wells that have exceeded SDWA primary drinking water standards for nitrate nitrogen and total coliform bacteria. There are serious public health concerns regarding the quality of water that is currently being used to serve the Nation. Additionally, in March of 2021, the Nation through the recommendation of the EPA issued a Not Be Consumed Drinking Water Advisory. This advisory is a result of elevated levels of manganese within the Nation's water supply. This advisory will be in effect indefinitely unless a solution is found to provide the Nation with a consistent high quality drinking water.

Connecting the Nation to Randall Community Water District (RCWD) located in Lake Andes, South Dakota will resolve the Nation’s drinking water issues as well as provide the surrounding area a safe and reliable water resource at a reasonable cost.

5. Maximizes the beneficial use of Nebraska’s water resources for the benefit of the state’s residents;

- Describe how the project will maximize the increased beneficial use of Nebraska’s water resources.

The Nebraska State Legislature identifies in Neb. Rev. Stat. § 46-613 “Preference in the use of groundwater shall be given to those using the water for domestic purposes. They shall have preference over those claiming it for any other purpose. Those using the water for agricultural purposes shall have the preference over those using the same for manufacturing or industrial purposes.”

The proposed project minimizes the use of Nebraska’s water resources for the highest beneficial use of domestic supply for the customers of the Nations project. Converting from an at-risk groundwater source to a higher quality, more secure surface water source fulfills this purpose. Water will be conserved due to an anticipated reduction in wastewater produced and discharged as part of the water treatment process in South Dakota over the current treatment for a groundwater treatment plant.

- Describe the beneficial uses that will be reduced, if any.

There are no anticipated reductions in current beneficial uses. Meters being added to residential and commercial connections will promote water conservation.

- Describe how the project provides a beneficial impact to the state's residents.

The Nation will be provided with more than enough water to allow them the opportunity to serve other Nebraska communities with safe drinking water. During quality/quantity workshops, other communities have voiced their desire to look at this alternative for their residents as well.

6. Is cost-effective;

- List the estimated construction costs, O/M costs, land and water acquisition costs, alternative options, value of benefits gained.

Cost estimates for all proposed water system alternatives can be reviewed in Brosz PER and have been updated.

Activity	Cost Estimate	Year 1 2024	Year 2 2025	Year 3 2026	Year 4 2027

Environmental, Engineering Design, Letting	\$6,274,583	\$3,137,291	\$3,137,291	\$0	\$0
Admin/Legal	\$2,029,515	\$676,505	\$676,505	\$676,505	\$0
Acquisition and Easements	\$358,548	\$250,984	\$107,564	\$0	\$0
Archeological	\$179,274	\$89,637	\$89,637	\$0	\$0
Pipeline Construction and Contingency	\$32,258,779	\$0	\$12,903,512	\$12,903,512	\$6,451,756
Ground Storage Construction and Contingency	\$6,640,457	\$0	\$0	\$5,312,366	\$1,328,091
Construction Administration	\$4,481,845	\$0	\$1,486,701	\$2,098,775	\$896,368
Totals	\$52,223,000	\$4,154,417	\$18,401,210	\$20,991,158	\$8,676,215

Refer to table on next page for construction cost, O/M costs, land and water acquisition costs for Nations preferred alternative:

RCWD current rate scale shows significant cost savings compared to Cedar Knox Rural Water District pricing per \$1000 gallons.

RCWD Current Rate Schedule

Water Used (gallons)	Minimum	\$/1,000 gallons	Total Bill
0	\$34.00	\$2.60	\$34.00
1,000	\$34.00	\$2.60	\$36.60
2,000	\$34.00	\$2.60	\$39.20
3,000	\$34.00	\$2.60	\$41.80
4,000	\$34.00	\$2.60	\$44.40
5,000	\$34.00	\$2.60	\$47.00
6,000	\$34.00	\$2.60	\$49.60
7,000	\$34.00	\$2.60	\$52.20
8,000	\$34.00	\$2.60	\$54.80
9,000	\$34.00	\$2.60	\$57.40
10,000	\$34.00	\$5.78	\$91.80

Water Supply RCWD Connection EUAC

Initial Capital Costs				
Item	Capital Cost	Salvage Value	Salvage Present Worth	Net Present Worth
Mobilization, Bonds, & Insurance	\$ 2,078,000	\$ -	\$ -	\$ 2,078,000
Pothole Existing Water and Utility Lines	\$ 69,000	\$ -	\$ -	\$ 69,000
Crop/Pasture Damage	\$ 300,000	\$ -	\$ -	\$ 300,000
Clearing and Grubbing	\$ 75,000	\$ -	\$ -	\$ 75,000
Tree Removal	\$ 18,750	\$ -	\$ -	\$ 18,750
Tree Replacement	\$ 18,750	\$ -	\$ -	\$ 18,750
Furnish 10" Pipe	\$ 5,444,100	\$ 2,177,640	\$ 374,399	\$ 5,069,701

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Install 10" Pipe (Open-cut)	\$ 2,936,250	\$ -	\$ -	\$ 2,936,250
Install 10" Pipe (Bore)	\$ 112,500	\$ -	\$ -	\$ 112,500
Furnish 10" (Higher Class) Pipe	\$ 270,000	\$ 108,000	\$ 18,568	\$ 251,432
Install 10" Pipe (Open-cut)	\$ 115,625	\$ -	\$ -	\$ 115,625
Missouri River Bore	\$ 13,000,000	\$ 5,200,000	\$ 894,029	\$ 12,105,971
Furnish 16" Casing Pipe	\$ 75,000	\$ 30,000	\$ 5,158	\$ 69,842
Install 16" Casing Pipe	\$ 63,750	\$ -	\$ -	\$ 63,750
Furnish & Install 10" Fitting	\$ 35,000	\$ 14,000	\$ 2,407	\$ 32,593
Furnish & Install 10" Long Body Sleeve	\$ 294,000	\$ 117,600	\$ 20,219	\$ 273,781
Furnish & Install 10" Gate Valve	\$ 108,750	\$ 43,500	\$ 7,479	\$ 101,271
Furnish & Install Blowoff	\$ 226,800	\$ 90,720	\$ 15,597	\$ 211,203
AV/AR Valve and Vault	\$ 396,900	\$ 158,760	\$ 27,295	\$ 369,605
Furnish & Install 12 Gauge Tracer Wire	\$ 134,981	\$ 53,993	\$ 9,283	\$ 125,698
Pipe Foundation Bedding	\$ 31,500	\$ -	\$ -	\$ 31,500
Pipe Bedding Material	\$ 37,800	\$ -	\$ -	\$ 37,800
Gravel Surfacing Material	\$ 16,538	\$ -	\$ -	\$ 16,538
Flagging	\$ 18,900	\$ -	\$ -	\$ 18,900
Traffic Control	\$ 50,000	\$ -	\$ -	\$ 50,000
Erosion Control	\$ 245,000	\$ -	\$ -	\$ 245,000
Seed, Mulch, and Fertilizer	\$ 306,250	\$ -	\$ -	\$ 306,250
Ditchwork	\$ 120,488	\$ -	\$ -	\$ 120,488
Flushing	\$ 50,232	\$ -	\$ -	\$ 50,232
Hydrostatic Testing	\$ 125,580	\$ -	\$ -	\$ 125,580
Disinfection	\$ 125,580	\$ -	\$ -	\$ 125,580
Pressure Reducing Station	\$ 575,000	\$ 230,000	\$ 39,544	\$ 535,456
Booster Station	\$ 575,000	\$ 230,000	\$ 39,544	\$ 535,456
				\$ 26,597,501
Annual O&M Costs				
Item	Capital Cost	-	-	Net Present Worth
Energy	\$ 50,000			\$ 920,079
Maintenance	\$ 50,000			\$ 920,079
Labor	\$ 50,000			\$ 920,079
Miscellaneous	\$ 15,000			\$ 276,024
				\$ 3,036,261
				Total Net Present Worth \$ 29,633,763
				Equivalent Uniform Annual Cost (40 yrs @ 4.5%) \$ 1,333,518

- Compare these costs to other methods of achieving the same benefits.

RCWD source water solution and system upgrades project has an estimated capital cost of **\$52,223,000** with an O&M cost of \$50,000 per year (2025\$). The capital cost of continuing with a ground water treatment plant for a water source is \$32,000,000 (2026\$) with an annual O&M cost of \$850,000. Up-front costs appear to be more for surface water, but the annual O&M costs to treat ground water with a new treatment plant are much more over time.

List the costs of the project:

ITEM	BID ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
1	Mobilization, Bonds, & Insurance	1	LS	\$ 2,078,000	\$ 2,078,000
2	Pothole Existing Water and Utility Lines	1	LS	\$ 69,000	\$ 69,000
3	Crop/Pasture Damage	1	LS	\$ 300,000	\$ 300,000
4	Clearing and Grubbing	1	LS	\$ 75,000	\$ 75,000
5	Tree Removal	1	LS	\$ 18,750	\$ 18,750
6	Tree Replacement	1	LS	\$ 18,750	\$ 18,750
7	Furnish 10" Pipe	131,500	LF	\$ 41.40	\$ 5,444,100
8	Install 10" Pipe (Open-cut)	130,500	LF	\$ 22.50	\$ 2,936,250
9	Install 10" Pipe (Bore)	1,000	LF	\$ 113	\$ 112,500
10	Furnish 10" (Higher Class) Pipe	5,000	LF	\$ 54.00	\$ 270,000
11	Install 10" Pipe (Open-cut)	5,000	LF	\$ 23.13	\$ 115,625
12	Missouri River Bore	20,000	LF	\$ 650	\$ 13,000,000
13	Furnish 16" Casing Pipe	600	LF	\$ 125	\$ 75,000
14	Install 16" Casing Pipe	600	LF	\$ 106	\$ 63,750
15	Furnish & Install 10" Fitting	10	EACH	\$ 3,500	\$ 35,000
16	Furnish & Install 10" Long Body Sleeve	84	EACH	\$ 3,500	\$ 294,000
17	Furnish & Install 10" Gate Valve	29	EACH	\$ 3,750	\$ 108,750
18	Furnish & Install Blowoff	42	EACH	\$ 5,400	\$ 226,800
19	AV/AR Valve and Vault	42	EACH	\$ 9,450	\$ 396,900
20	Furnish & Install 12 Gauge Tracer Wire	156,500	LF	\$ 0.86	\$ 134,981
21	Pipe Foundation Bedding	560	TON	\$ 56.25	\$ 31,500
22	Pipe Bedding Material	1120	TON	\$ 33.75	\$ 37,800
23	Gravel Surfacing Material	490	TON	\$ 33.75	\$ 16,538
24	Flagging	140	HOURS	\$ 135	\$ 18,900
25	Traffic Control	1	LS	\$ 50,000	\$ 50,000
26	Erosion Control	1	LS	\$ 245,000	\$ 245,000
27	Seed, Mulch, and Fertilizer	1	LS	\$ 306,250	\$ 306,250
28	Ditchwork	59,500	LF	\$ 2.03	\$ 120,488
29	Flushing	1	LS	\$ 50,232	\$ 50,232
30	Hydrostatic Testing	1	LS	\$ 125,580	\$ 125,580
31	Disinfection	1	LS	\$ 125,580	\$ 125,580
32	Pressure Reducing Station	1	LS	\$ 575,000	\$ 575,000
33	Booster Station	1	LS	\$ 575,000	\$ 575,000
TOTAL CONSTRUCTION COST					\$ 28,052,000
Contingency / Admin & Legal Fees					
				10% Contingency	\$ 2,806,000
				6% Admin / Legal	\$ 1,684,000
SUBTOTAL					\$ 4,490,000

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Design and Construction Management Services		
Land Acquisition & Easements	\$ 297,000	
Archeological Study	\$ 149,000	
Design Engineering & Bid Letting	\$ 4,208,000	
Construction Inspection, Testing, & Management	\$ 2,806,000	
SUBTOTAL		\$ 7,460,000
TOTAL PROJECT COST		\$ 40,002,000

- Describe how it is a cost effective project or alternative.

This Nations water source solution and system upgrades project addresses the long-term issue of securing a source that will eliminate the EPA Administrative Order. Surface water will provide a reliable, high-quality source that will not require a treatment plant on Nation land. Water treatment will be the responsibility of RWCD which allows lower O&M cost for the Nation and provides security for the long-term needs of the Nation.

7. Helps the state meet its obligations under interstate compacts, decrees, or other state contracts or agreements or federal law;
 - Identify the interstate compact, decree, state contract or agreement or federal law.
 - Describe how the project will help the state meet its obligations under compacts, decrees, state contracts or agreements or federal law.
 - Describe current deficiencies and document how the project will reduce deficiencies.

The Niobrara Reservation was established on March 3, 1863 by Congress and officially recognized by Presidential Executive Order on February 27, 1966. Additional treaties and executive orders would follow adding and modifying until allocations were finalized in accordance with the Treaty with the Sioux Indians dated April 29, 1868 and the Agreement with the Sioux on March 2, 1889. Under the Winters Doctrine, the establishment of the Reservation also “reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation”. Additionally, “when degradation of water quality would undermine the water’s use for reservation purposes, courts have recognized water quality as another element of Indian reserved water rights (Brougher, 2011).

The Santee Sioux Nation, following April 2020 sampling, was requested by EPA Region 7 Water Division to issue a Public Notice to its system consumers warning that the water should not be consumed. Recognizing EPA’s trust responsibility of the Tribal Nations, the EPA Region 7 Water Division has authority to take informal and formal enforcement action authorized by the Safe Drinking Water Act.

To date EPA and IHS have not identified a water source that alleviates manganese contaminants and addresses taste and odor issues of the current non-potable source and protects against inundation by nitrates. The Tribe began the process of identifying an alternate water source in conjunction with the United States Bureau of Reclamation. In 2004, USBR issued a preliminary needs assessment. Additionally, USBR completed an appraisal report in 2011 and a feasibility study concluding report in 2016. Following this alternative evaluation, the Tribe engaged Brosz Engineering to complete a preliminary engineering report (PER) to further analyze alternatives. This PER was completed in 2023 and identifies water supplied by the Randall Community Water District as the most viable alternative for the Nations long-term water needs and meets the Treaty obligations of the United States.

8. Reduces threats to property damage or protects critical infrastructure that consists of the physical assets, systems, and networks vital to the state or the United States such that their incapacitation would have a debilitating effect on public security or public health and safety;

- Identify the property that the project is intended to reduce threats to.

The Santee Sioux Tribe provides drinking water to the service area of the Village of Santee and surrounding area/counties. The Nation is obligated to provide safe drinking water to about 1,000 residents receiving service in the project area in northeast Nebraska. Additionally the project would provide a vital redundancy link to Northern Nebraska by allowing for a high, quality water supply interconnect that would allow resiliency to the potable water in the region.

- Describe and quantify reductions in threats to critical infrastructure provided by the project and how the infrastructure is vital to Nebraska or the United States.

The economic and health risks to population without adequate potable water is catastrophic. Yet that is what the region has been faced with since the Do Not Drink Order was put into place. Analysis of alternatives have made it clear that during a 40 year study horizon, that groundwater sources carry significant risks related to additional contaminants and supply. This project will allow the region to mitigate those public health and safety risks through a generational project that has the ability to serve Tribal and non-Tribal members.

- Identify the potential value of cost savings resulting from completion of the project.

This project is unique in that a no action alternative is not viable. Therefore, cost savings versus a no action alternative are not quantifiable since the government is required to provide a safe, reliable water source based on Treaty obligations.

- Describe the benefits for public security, public health and safety.

The project will provide a high quality, safe drinking water source to the region. This benefits public security, public health, and safety. Additionally it achieves this by providing a surface water source that is resilient to sedimentation of Lake Lewis and Clark, provides significant source water flooding protection that can't be replicated downstream of Ft. Randall Dam, and provides protection from groundwater quality issues that have plagued the region. The residents of the region will benefit from this project for generations.

9. Improves water quality;

- Describe what quality issue(s) is/are to be improved.

There are major water quality concerns with the current drinking water source as current nitrate-nitrogen and total coliform bacteria consistently exceed SDWA primary drinking water standards. Nitrates in drinking water is a major concern especially for infants that are 6 months old or younger. Nitrates can result in methemoglobinemia or “blue baby syndrome”. Once consumed, the nitrates are reduced to nitrites within the saliva and stomach of infants. The nitrites then enter the blood stream and combine with hemoglobin to form methemoglobin, which reduces the capability to transport oxygen throughout the body. This condition results in the skin of a baby turning blue, which in some cases can be fatal. According to a BOR 2008 status report titled, “Municipal, Rural, and Industrial Water Supply System Feasibility Study Status Report” the main cause of nitrate-nitrogen entering the drinking water supply is from septic-system effluent or onsite confined-animal feeding operations. However, agricultural runoff has significantly contributed to the high nitrate levels as there has been a substantial increase in the number of irrigation wells located in the analysis area. It is also suspected that when these irrigation wells were drilled, the wells intersect multiple aquifers allowing for nitrate leaching. Finally, fertilizing (nitrogen) crops to increase yields is standard agricultural practice. It is likely that nitrogen fertilizer has entered ground water sources and contaminated drinking water. In April of 2020, the Nation was notified that their drinking water supply wells had elevated levels of manganese, levels greater than 1,000 micrograms per liter ($\mu\text{g}/\text{L}$). The Nation investigated the manganese levels from each well. One (1) well had levels above 1,000 $\mu\text{g}/\text{L}$ and the other operational well had levels below 1,000 $\mu\text{g}/\text{L}$ but above 300 $\mu\text{g}/\text{L}$. Current guidance is that no infant or adult should consume water with manganese levels above 1,000 $\mu\text{g}/\text{L}$ and that infants, 6 months of age or younger, should not consume water with manganese levels above 300 $\mu\text{g}/\text{L}$. Based on the manganese levels and current guidance, the Nation decided to turn off the well with manganese levels above 1,000 $\mu\text{g}/\text{L}$ and issue a public notice that infants under six (6) months of age should not consume the water. The Nation continued to monitor manganese levels within the system and in March of 2021, manganese levels within the system were above 1,000 $\mu\text{g}/\text{L}$. Therefore, the Nation, through the recommendation of the EPA, issued the Not Be Consumed Drinking Water Advisory, which will remain in effect indefinitely until a solution is found to provide the Nation with a consistent high quality drinking water. The quantity of water currently available for the Nation is not a concern.

- Describe and quantify how the project improves water quality, what is the target area, what is the population or acreage receiving benefits, what is the usage of the water: residential, industrial, agriculture or recreational.

This alternative connects the Nation to Randall Community Water District (RCWD) in Lake Andes, South Dakota. RCWD is a rural water system within South Dakota that treats Missouri River surface water upstream of the Fort Randall Dam. RCWD operates two (2) water treatment plants, one (1) located West of Platte, South Dakota, while the other plant is in Pickstown, South Dakota. To connect the Nation to RCWD, a new 10-inch diameter water main will begin at the Carda ground storage reservoir. From this reservoir, a dedicated water main will proceed to the Missouri River near Running

Water. Due to elevation changes, a combination of booster stations and pressure reducing stations will be installed along the water main so that the pipeline will operate with acceptable pressure ranges. Once at the Missouri River, a new 10-inch near Running Water, pipeline will be bored under the river to the Nation's wellfield located near the intersection of NE HWY 12 and HWY 54D. From here, the water main will connect to the Nation's existing infrastructure. Figure 4.5 illustrates the proposed route of this pipeline. Besides installing the pipe itself, gate valves, air release valves, flushing hydrants, etc. will also be installed. Due to steep terrain changes located along the proposed pipeline route, air release valves and blow off assemblies will be used to properly operate the pipelines. Combination air release valves are needed because air tends to be trapped along the high points of a pipeline. As air builds up within the pipeline, air binding occurs which reduces the carrying capacity of the pipeline. Combination air valves will also allow air into the pipe. This is beneficial during pressure loss situations, for example, water main breaks. Allowing air into the pipeline during pressure loss instances reduces the potential for water hammers to occur, potentially causing further damage to the pipeline. Blow off assemblies will be located at low points along the pipeline. These hydrants will remove any buildup of solids within the pipeline. Besides having combination air valves and blow off assemblies along the pipeline, there will also be gate valves spaced throughout the pipeline. These are beneficial when needing to isolate specific segments of the pipeline to complete repairs and additional connections. One of the many benefits of this alternative is that the Nation would not be responsible for water treatment or O&M costs associated with a complex water treatment facility. The Nation's main responsibility would be distribution pipeline maintenance. The Nation would purchase bulk water from the rural water system. The cost estimate associated with this project is \$52,223,000.

- Describe other possible solutions to remedy this issue.

An array of alternatives have been considered including a new water intake into the Missouri River, identification of a groundwater source under the influence of the Missouri River, identification of a new groundwater source, a new water treatment plant utilizing the current groundwater source, receiving water from CKRWP, and a no action alternative. Each of these alternatives have been addressed in a federal study or a preliminary engineering report.

- Describe the history of the water quality issue including previous attempts to remedy the problem and the results obtained.

This issue may be one of the most studied water quality issues in Nebraska. The federal government first became involved with studying the issues and evaluating solutions in April of 2004 with a Feasibility Study of Water Supply System for Santee Sioux Nation and the Village of Center as required by Public Law 108-204. Since that time the federal government has undertaken no less than four separate studies to determine the path forward. However, with the issuance of the Drinking Water Advisory, time no longer allows for study. Action is required to provide the region with a high quality water solution that can serve the region. This project meets those criteria.

10. Has utilized all available funding resources of the local jurisdiction to support the program, project, or activity;

- Identify the local jurisdiction that supports the project.

The Santee Sioux Tribe provides drinking water to the service area of the Village of Santee and surrounding area/counties. The Nation is obligated to provide safe drinking water to about 1,000 residents receiving service in the project area in northeast Nebraska.

- List current property tax levy, valuations, or other sources of revenue for the sponsoring entity.

Santee Sioux Nation Tribal Council was established to serve safe drinking water to the service area of the Village of Santee and surrounding area/counties per Neb. Rev. Stat. §§2-3252 through 2-3257 and §2-3238. The Nation is obligated to provide safe drinking water to about 1,000 residents receiving service in the project area in northeast Nebraska with potential of expanding East and West. The Nation can operate a water system as per the Nebraska Department of Environment and Energy (NDEE) Water System Number NE312001. The Village of Santee has the authority to borrow money, to bond, to establish water user rates to meet the costs associated with operating a water system also stated in Neb. Rev. Stat. §§2-3230 through 2-3242 and §§2-3252 through 2-3257.

- List other funding sources for the project.

Funding Source	Amount	Committed or Pending	Documentation
IHS Sanitation Facilities Construction	\$10,000,000	Committed	Project was funded on the Sanitation Facilities Construction workplan
IHS Sanitation Facilities Construction Request	\$5,000,000	Pending	IHS is currently updating their alternative plan to allow for an alternative comparison, anticipate an additional \$5 million based on RO treatment costs
Congressional Directed Spending	\$1,750,000	Committed	Funding was included in the 2024 federal minibus package

			that was passed on March 9, 2024
USDA 306A	\$2,000,000	PER Approved, Pending completion of environmental	PER approved
USDA 306C	\$18,258,000	PER Approved, Pending completion of environmental	PER approved
USDA 306C Loan	\$6,086,000	PER Approved, Pending completion of environmental	PER approved
WSF	\$9,129,000	Pending	

11. Has a local jurisdiction with plans in place that support sustainable water use;

- List the local jurisdiction and identify specific plans being referenced that are in place to support sustainable water use.
- Provide the history of work completed to achieve the goals of these plans.
- List which goals and objectives this project will provide benefits for and how this project supports or contributes to those plans.
- Describe and quantify how the project supports sustainable water use, what is the target area, what is the population or acreage receiving benefits, what is the usage of the water: residential, industrial, agriculture or recreational.
- List all stakeholders involved in project.
- Identify who benefits from this project.

The purpose of the voluntary IMP is identified to attain and/or maintain a desired balance between water uses and water supplies of both surface water and groundwater sources. In this way, economic viability, social health, environmental health, public safety, and public welfare can be better achieved and maintained. The voluntary IMP focuses on water supplies of the entire Nation and incorporates many aspects that mutually benefit other actions.

The IMP goal and objectives this project supports are listed below:

IMP Goal 1: Protect existing water uses while allowing for future water development.

Objective 1.1: Collaborate with local, state, and federal entities to better manage hydrologically connected ground and surface water.

Objective 1.2: Improve water resource sustainability through innovative management strategies.

NeDNR utilizes programmatic areas to plan and review. Analysis of those areas identified in the Annual Plan of Work will be addressed throughout the project.

Goal: Establish strong state leadership, involvement, and support for science-based decision making that is necessary to sustain state and local water management outcomes.

This project supports strong state leadership necessary to sustain the water management outcomes of the area. This project has shown through study after study to be an effective solution in providing a sustainable water source and has significant ability to also provide backup water supply for systems throughout the region. Additionally, the Legislature of Nebraska and the Governor of Nebraska reiterated their commitment to meeting the needs of Tribes with LB 1413, which requires the Commission to prioritize projects for drinking water improvements for any federally recognized Indian tribe whose drinking water is subject to a no-drink order.

Goal: Provide high quality products and services through the performance of our duties in the areas of floodplain management, flood mitigation planning, dam safety, and survey to promote the safety of all Nebraskans.

This project utilizes an existing federally authorized water source behind an existing federally authorized flood control structure to provide high quality drinking water.

Goal: Develop and implement customized and decentralized water management plans established through collaboration with local Natural Resource Districts and stakeholders that provide for long-term sustainability of the state's water resources.

The project supports long-term sustainability by providing potable water from a surface water source where the Tribe already holds a senior, unadjudicated water right. Therefore, no additional water is being allocated from the states water resources or the state's groundwater.

Goal: Encourage strong public engagement with multiple constituents and stakeholder groups in planning and implementation activities to ensure that local and state needs are addressed.

The Santee Sioux Nation has been a leader in collaborating with adjacent entities and stakeholders since they began looking for a long-term viable water source in the 1990s. Since that time the Tribe has engaged entities throughout the region including municipalities, individual landowners, Rural Water Projects, and state entities. These efforts culminated in the completion of our Preliminary Engineering Report in 2023.

Goal: Protect existing water uses through collaborative investments in water resource projects, planning, administration and permitting of surface water rights, and the registration of groundwater wells.

This project will be a combined effort with funding coming from sources such as USDA Rural Development, Indian Health Services, the Tribe, and directed Congressional appropriations. These entities will come together to provide a regionally sustainable project without requiring additional surface water rights.

Goal: Provide agency-wide services and support in the areas of information technology and transparent data sharing, business process improvement, public information, and administration of state-aid funds in conjunction with the NRC.

The Tribe, is prepared for the administration of state-aid funds in conjunction with the NRC. We pledge to provide transparency to the public. Additionally we pledge to utilize a web based dashboard to allow the public to track project performance.

12. Addresses a statewide problem or issue;

- List the issues or problems addressed by the project and why they should be considered statewide.

Source water concerns are not unique to the Santee Sioux Tribe. The entire state continues to grapple with how to provide a high quality water source that is resilient to contamination and quantity risks in a long term horizon. This project specifically takes a number of risk factors and mitigates for them by utilizing one of the upper-Midwest's greatest resources, the Missouri River. However, by ensuring that the source water is provided above Ft. Randall Dam, the project mitigates concerns related to sedimentation.

- Describe how the project will address each issue and/or problem.

The project addresses each issue and concern by providing a highly redundant source of water with capacity to serve the regions water needs.

- Describe the total number of people and/or total number of acres that would receive benefits.

The provide drinking water to the service area of the Village of Santee and surrounding area/counties. The Nation is obligated to provide safe drinking water to about 1,000 residents receiving service in the project area in northeast Nebraska. It is anticipated that the project could provide a redundant supply to other Rural Water Projects or a primary supply to other municipalities as well. Additionally, our project is well suited to meet the future needs of agricultural expansion and economic development.

- Identify the benefit, to the state, this project would provide.

This project allows the residents of the region to thrive in their communities without the constant fear of health impacts to themselves or their families. Additionally, safe drinking water is an item that is taken for granted when we think about future sustainable economic development. This project is ready to provide those benefits to the region.

13. Contributes to the state’s ability to leverage state dollars with local or federal government partners or other partners to maximize the use of its resources;

- List other funding sources or other partners, and the amount each will contribute, in a funding matrix.
- Describe how each source of funding is made available if the project is funded.
- Provide a copy or evidence of each commitment, for each separate source, of match dollars and funding partners.

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- Describe how you will proceed if other funding sources do not come through.

Other funding sources exist to ensure that the project proceeds in a timely manner. The project will continue to request funding sources including New Market Tax Credits and bonding.

14. Contributes to watershed health and function;

- Describe how the project will contribute to watershed health and function in detail and list all of the watersheds affected.

The project is committed to watershed health and function. In support of that goal, the proposed project returns water allocation to the Bazille Creek watershed and protects that watershed from continued drawdown and contribution to the nitrate plume being spread through drawdown. Additionally it does this in a way that does not impact the fifty-nine miles of the Missouri River that are designated as the Missouri National Recreational River.

The proposed water source from Randall Community Water District is an existing water treatment plant located in Lake Francis Case above the Ft. Randall Dam. No impacts to Missouri River degradation or groundwater degradation will be caused by the project.

15. Uses objectives described in the annual report and plan of work for the state water planning and review process issued by the department.

- Identify the date of the Annual Report utilized.
Annual Report to the Legislature Fiscal Year 2020-2021
- List any and all objectives of the Annual Report intended to be met by the project

NeDNR utilizes programmatic areas to plan and review. Analysis of those areas identified in the Annual Plan of Work will be addressed throughout the project.

Goal: Establish strong state leadership, involvement, and support for science-based decision making that is necessary to sustain state and local water management outcomes.

This project supports strong state leadership necessary to sustain the water management outcomes of the area. This project has shown through study after study to be an effective solution in providing a sustainable water source and has significant ability to also provide backup water supply for systems throughout the region. Additionally, the Legislature of Nebraska and the Governor of Nebraska reiterated their commitment to meeting the needs of Tribes with LB 1413, which requires the Commission to prioritize projects for drinking water improvements for any federally recognized Indian tribe whose drinking water is subject to a no-drink order.

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16. Federal Mandate Bonus. If you believe that your project is designed to meet the requirements of a federal mandate which furthers the goals of the WSF, then:

- Describe the federal mandate.
- Provide documentary evidence of the federal mandate.
- Describe how the project meets the requirements of the federal mandate.
- Describe the relationship between the federal mandate and how the project furthers the goals of water sustainability.

The Niobrara Reservation was established on March 3, 1863 by Congress and officially recognized by Presidential Executive Order on February 27, 1966. Additional treaties and executive orders would follow adding and modifying until allocations were finalized in accordance with the Treaty with the Sioux Indians dated April 29, 1868 and the Agreement with the Sioux on March 2, 1889. Under the Winters Doctrine, the establishment of the Reservation also “reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation”. Additionally, “when degradation of water quality would undermine the water’s use for reservation purposes, courts have recognized water quality as another element of Indian reserved water rights (Brougher, 2011).

The Santee Sioux Nation, following April 2020 sampling, was requested by EPA Region 7 Water Division to issue a Public Notice to its system consumers warning that the water should not be consumed. Recognizing EPA’s trust responsibility of the Tribal Nations, the EPA Region 7 Water Division has authority to take informal and formal enforcement action authorized by the SDWA.

To date EPA and IHS have not identified a water source that alleviates manganese contaminants and addresses taste and odor issues of the current non-potable source and protects against inundation by nitrates. The Tribe began the process of identifying an alternate water source in conjunction with the United States Bureau of Reclamation. In 2004, USBR issued a preliminary needs assessment. Additionally, USBR completed an appraisal report in 2011 and a feasibility study concluding report in 2016. Following this alternative evaluation, the Tribe engaged Brosz Engineering to complete a preliminary engineering report (PER) to further analyze alternatives. This PER was completed in 2023 and identifies water supplied by the Randall Community Water

District as the most viable alternative for the Nations long-term water needs and meets the Treaty obligations of the United States.