The Red Lake Band of Chippewa Indians

A Project to Upgrade the Red Lake Reservation's Wastewater Lagoons to Meet the Present and Future Needs of its People

Project One-Page Proposal Summary and Workplan Narrative

FY23 Community Development Block Grant Program for Indian Tribes and Alaska Native Villages

Project Name	**A Project to Upgrade the Red Lake Reservation's Wastewater Lagoons to Meet the Present and Future Needs of its People**
Project Type	**Public Facilities and Improvements Project**
Future Eligible Project Costs	**$1,919,040.00**
ICDBG Funds Requested	**$1,919,040.00**

Primary Contact:
Robert Smith, Public Works Director
Red Lake Band of Chippewa Indians Division of Public Works
Red Lake Tribal Engineering, P.O. Box 274
24200 Council Street, Red Lake, MN 56671
218.679.2416 (office) | 218.679.2761 (fax) | robert.smith@redlakenation.org

Supporting Information can be found at:
https://www.srfconsulting.com/redlake_icdbg/

Contents

List of Figures

I. One-Page Proposal Summary

Project Overview

Figure 1: The Red Lake Reservation is located in Beltrami County, MN.

The Red Lake Band of Chippewa Indians (hereafter referred to as "The Tribe") is applying for $1,919,040 in federal funding from the U.S. Department of Housing and Urban Development's (HUD) FY23 Community Development Block Grant Program for Indian Tribes and Alaska Native Villages in order to support a Public Facilities and Improvements Project on the Red Lake Reservation in northern Minnesota. If awarded, Indian Community Development Block Grant (ICDBG) funding will allow the Tribe to install aeration systems within the Reservation's preexisting facultative wastewater stabilization lagoon which will increase the efficiency of the lagoons and allow them to serve the needs of current and future Red Lake residents for years to come. While Red Lake's wastewater lagoons were originally designed with aeration in mind, the feature was cut from final construction due to cost concerns. Now, more than a decade later, the Reservation is facing the prospect of stalled residential and economic development due to the current wastewater lagoons being unable to meet increased demand / use. Due to the Tribe's limited financial capability and the pressing need for increased wastewater capacity, federal funding for this project is required.

II. Capacity of the Applicant

Managerial and Technical Staff

Project Director: Robert Smith, Red Lake Public Works Director

Roles and Responsibilities of Project Director: The Project Director will develop project guidelines and provide oversight for the project's budget, schedule, and implementation. He will provide general grant administration via ensuring compliance with HUD ICDBG guidelines; submitting quarterly, annual, and closeout reports; as well as overseeing the procurement process. He will secure any necessary permits and approvals for the project and will meet with project team members to discuss budget, timeline, progress, and issues. *Recent, Relevant, and Successful Experience*: Robert Smith has been the Tribal Public Works Director since February of 2022. Prior to his promotion to director, Smith was the Tribal Solid Waste Director for eight years. He has extensive experience working to plan and implement projects both big and small. Through the use of government grants like ICDBG, USDA Rural Development, EDA, and EPA etc., Smith has successfully constructed remote, solid waste collection sites equipped with hydraulic garbage compactors on the Red Lake Reservation. He has also been successful in obtaining new refuse trucks and other equipment and is currently working to implement a Recycling Program for the Solid Waste Department.

Project Manager: Jonathan Mountain, Red Lake Public Works Wastewater Treatment Facility Operator.

Roles and Responsibilities of the Project Manager: The Project Manager will assist the Project Director in developing the Request for Proposal for this project and will act as the liaison between the Tribe and the contractors hired. He will assist the Project Director in providing administrative and oversight services for the project and will meet frequently with the Project Director and other project team members to provide timely updates on the project's progress. He

will review the project daily and alert the Project Director of any issues that require immediate action or review. *Recent, Relevant, and Successful Experience*: Jonthan Mountain is a certified wastewater treatment facility operator who manages the Red Lake Reservation's facultative wastewater stabilization lagoon. To become certified, Mountain attended a series of seminars and workshops before passing a rigorous written exam. In order to maintain his qualification, he must complete a certain number of continuing education hours every three years. These continuing education hours can be obtained via attending Minnesota Pollution Control Agency workshops that cover topics ranging from lagoon design, operation, maintenance, and discharge to pump calibration, dissolved oxygen, and pH meter troubleshooting. In his role with Red Lake Public Works, Mountain has participated in the planning and implementation of multiple infrastructure projects and has been successful in operating the Reservation's aging water and sewer system with minimal interruptions in service.

Grant Compliance Manager: Misty Smith, Red Lake Tribal Grant Writing Department Director.

Roles and Responsibilities of the Project Finance Manager: The Grant Compliance Manager will assist the Project Director and Project Manager with oversight and administration of the ICDBG funded project. She will provide analysis of grant requirements and ensure monitoring compliance standards of the ICDBG program are met. She will serve as a resource for the project team and lead quarterly and annual reporting efforts as required by HUD. *Recent, Relevant, and Successful Experience*: As the Director of the Red Lake Tribal Grant Writing Department, Smith oversees all applications for future grants as well as reporting requirements for ongoing projects.

Project Finance Manager: Vernelle Lussier, Red Lake Tribal Treasurer.

Roles and Responsibilities of the Project Finance Manager: The Finance Manager will comply with all financial reporting requirements and financial grant policies for ICDBG funding. She will initiate grant drawdowns based on approved program expenditures and ensure timely audits are conducted. She will monitor the project's budget and alert the Project Director and Project Manager if corrective action is needed. *Recent, Relevant, and Successful Experience*: As the Red Lake Tribal Treasurer, Lussier leads the Red Lake Accounting Department as it oversees all compliance and reporting regulations for the Tribe's variety of federal and state grants. She was elected in May of 2022 and is in the second year of her first term. The Treasurer along with the accounting teams work hand and hand with all Tribal programs, Tribal Directors and their finances and projects. Before being elected, Vernelle worked in the Grant Writing Department alongside Misty Smith and her staff and also as a Grant Accountant and Co-Director of Finance under the previous Tribal Treasurer's Annette Johnson's administration.

Gaps in Capacity – Construction Manager

The Tribe does not have a designated construction manager for projects on the Red Lake Reservation. Although current tribal staff have experience and expertise in supporting various initiatives and major projects, there is a gap in capacity in the technical management of construction projects. In most cases when a construction project needs to take place on the reservation, the Tribe hires an outside consultant to provide general construction management services. For this project, the Tribe will utilize the formal written procurement process to contract with an outside firm to supervise and direct construction operations to ensure the project is completed in a safe and efficient manner. Requirements for the construction manager will include recent (within the last five years), relevant experience with wastewater aeration systems

and similar work with Native American Tribes. Outside firms will be chosen based on their ability to meet or exceed project benchmarks and timetables, as well as their ability to complete the project within budget. The selection of an outside construction management firm will be done according to Red Lake Band of Chippewa Indians Procurement Policies, including a preference for firms owned by enrolled tribal members and / or minority individuals.

Audit Submission

A single audit submission for the Red Lake Band of Chippewa was required for FY 2021 and was submitted after the required deadline. Red Lake's Chief Financial Officer alerted the U.S. Department of the Interior Bureau of Trust Funds Administration that due to challenges relating to COVID-19 Pandemic staffing and capacity limitations, the Tribe was unable to meet the deadline requirements for the submission. The Office of Strategic Oversight and Performance, Division of Trust Evaluation and Review (DTER) made a finding that the "untimely" submission of the FY 2021 single audit report could result in drawdown restrictions and in November of 2022, the Office of Self Governance (OSG) imposed sanctions on Red Lake during FY 2023 for "not meeting the statutory and regulatory requirements for the annual submission of the single audit report." The Tribe disputed these findings and assertions from OSG and DTER via correspondence outlining the grantee challenges, including staffing and capacity, that multiple Tribes have faced due to the COVID-19 Pandemic. Ultimately the final Tribal Trust Evaluation Report sent to the Tribe on July 12, 2023 rated Red Lake's overall performance as "satisfactory." A report from the Office of the Inspector General for HUD relating to assistance and grantee challenges with the Office of Native American Programs (ONAP) COVID-19 Recovery Programs was then released later that same month detailing similar staffing and capacity issues that multiple other Tribes faced.

Audit Findings

HUD will utilize its own records to verify.

Procurement and Contract Management

The Red Lake Band of Chippewa Indians has the administrative capacity and experience to successfully complete the proposed project without fraud, waste, or mismanagement. The Tribe's Procurement Policy was most recently updated in 2022 and requires open bidding on projects such as the one proposed with contracts being managed by the Red Lake Grants and Contracts Department. This procurement policy complies with all tribal, federal, state, local, and other applicable laws, including *2 CFR Parts 200.318-327* (including all recent amendments*), 24 CFR Part 1003.510*, and *24 CFR Part 1003.606*. Furthermore, the Tribe's systems of internal controls, procedures, and processes relating to procurement are actively practiced as the Tribe is the recipient of a multitude of federal and state grants which require grant administration and oversight. The procurement policies set forth the following:

- ***Contractors:*** Staff maintains oversight over all work done by contractors. Contracts for consultants or contracted services are monitored periodically during the contract period by the Project Director. The contractor / consultant is required to submit periodic reports to staff, as well as a final report.
- ***Conflicts of Interest:*** The Tribe's Procurement Policy's Code of Conduct section explicitly states that no employee of the procurement office or any individual who "participates in the selection, award, or administration of a procurement action shall engage in a conflict of interest, whether actual or apparent." The section goes on to define a conflict of interest as existing when there is a financial or other interest in the firm, to include Council members, employees or agents of the Tribe, and their immediate families, employers, etc. Disciplinary actions for violation of conflicts of interest include

suspension and the removal of that individual from participation in any action concerning procurement.

- ***Sources of Supply:*** Prior to obtaining cost estimates from commercial vendors the Tribe will consider Government sources for the purchase of supplies and equipment. The Program Director for a project will determine if established sources of supply for goods and services for the federal and state governments can supply the needed item.
- ***Contracting with Indian and Minority Firms:*** The Tribe must utilize existing lists of supplies which assure that Indian-owned, small and minority businesses are utilized as sources of supply for goods or sources which is consistent with *24 CFR 1003.510*. The Program Director must include language about Indian and Minority preference within written solicitations for goods and services.
- ***Maintenance of Detailed Records:*** The Tribe keeps detailed records, including electronic copies of purchase orders, shipping documentation, receipts, invoices, negotiations, and contracts. Records are maintained and stored for a period of three years after the submission of the final report for the program of which funds are used to acquire goods and services.
- ***Competition:*** The Tribe's Procurement Policy mandates that any purchases over $50,000 must be made via a competitive, sealed bidding process. The Program Director and Director of Finance then conduct technical evaluations of the proposals received and may choose to enter into competitive negotiations with any firms whose proposals are deemed to fall with the "competitive range." For purchases under $50,000 the Tribe is allowed to purchase from a single source but must use a preapproved list of suppliers. Staff ensures

that prequalified lists of firms and products are current and include enough qualified sources to maximize open and free competition.

Red Lake Band of Chippewa Indians Methods of Procurement

The Tribe has written procedures and processes for procurement transactions which incorporate a clear and accurate description of the technical requirements for the material, product, or service that is to be procured. These procedures and processes are the following:

- ***Small Purchase Procedure:*** This type of procedure is used for all purchases under $10,000. Program personnel must prepare a requisition describing the goods or services desired as well as justification for the need of those goods or services. Program personnel then make efforts to obtain at least one quote from a vendor before purchasing.
- ***Medium Purchase Procedure:*** This type of procedure is used for all purchases which are less than $50,000 but greater than $10,000. Program personnel must prepare a requisition describing the goods or services desired as well as justification for the need for those good or services. Program personnel then obtain at minimum three quotes from vendors before purchasing.
- ***Large Purchase Procedure:*** This type of procedure is used for all purchases which are greater than $50,000. Program personnel must prepare a requisition describing the goods or services desired as well as justification for the need of those goods or services. Program personnel then use a sealed bidding process to select the lowest bid which meets the program requirements. If the lowest bid is not selected, then the Program Director must provide written justification for the choice made.

In all cases of procurement, contracts for services are made in writing and clearly define the supplies, services, or construction that is being purchased. A synopsis of the procurement

action which is to take place is advertised in a newspaper with statewide circulation at least three to four weeks prior to the bid opening.

Disbursements

The Tribe is not a current ICDBG grantee.

Timely Reporting

HUD will utilize its own records to verify.

Close Outs

HUD will utilize its own records to verify.

Monitoring Findings

HUD will utilize its own records to verify.

III. Need / Extent of the Problem

Need and Viability

The Red Lake Reservation is facing the looming threat of not having wastewater capacity to meet the future wastewater treatment needs of the Tribe's people who reside on the reservation. Over the past decade there have been 90 new homes added to the Reservation's wastewater treatment system and over 185 homes tied specifically to the treatment site that the proposed project will upgrade. Beyond these additions, a new government center, tribal college, community center, store/laundromat, and radio station have also been tied into the Reservation's wastewater system. According to estimates completed by Northern Engineering & Consulting Inc. (NECI), there is an estimated daily flow of 161,054 gallons per day (GPD) as of May 2023 for the Red Lake Reservation's wastewater lagoon, meaning the lagoon has reached approximately 84 percent of its treatment capacity. It is expected that over the next 5-10 years an additional 125-150 existing homes will need to be tied into the wastewater system along with an estimated 10-15 new homes annually which will exceed the wastewater lagoon's capacity.

Furthermore, there are several facilities presently under construction or planned for construction within the next five years which will add additional strain to the Reservation's wastewater system. These include the following:

- Red Lake Family Services
- Red Lake Medication Assisted Recovery Services Facility
- Red Lake Immersion School
- Red Lake Chemical Dependency Treatment Facility (16 beds)
- Red Lake Supportive Housing Complex (24 beds)
- Red Lake Supportive Housing Project (4-5 homes)
- Red Lake Homes Subdivision #14 (13 homes)
- Red Lake Homes Subdivision #15 (13 homes)
- Red Lake Congregate Shelter (72 occupants)
- Red Lake Sober Village (27 units)
- Red Lake Detox Center (12 occupants)

All of the above planned projects are critical to the well-being of the residents of the Red Lake Reservation and will not be able to be built without the proposed aeration project for the wastewater lagoon (*please see Supporting Documents Section of linked project website for evidence of construction plans for some of the above listed projects*).

Project Benefit

Population and household trends and projections provide information important to forecasting the demand for public services such as wastewater treatment as well as estimating the benefits that upgrading the Tribe's current wastewater system could bring. Accurate population and household projections for the Red Lake Reservation are somewhat difficult to derive due to a

number of inconsistent sources. Data from the U.S. Census Bureau, for example, is generally believed to be inaccurate by Tribal officials due to a variety of issues, including new privacy methods implemented by the U.S. Census Bureau during the 2020 Census as well as impacts from the COVID-19 Pandemic. According to post-Census data collected by the U.S. Census Bureau and reported by the Associated Press, American Indian or Alaska Native people on reservations were among the most undercounted populations in the 2020 census, with "an estimated 5.6 percent of residents missed." While the Tribe is currently challenging the official census tally of the Red Lake Reservation's population, the Census is the only data source the Tribe has access to which is accepted for this ICDBG application. Therefore, according to Census data, there are approximately 5,777 people who reside on the Red Lake Reservation – 81 percent of whom are considered to be Low-and-Moderate Income (LMI).

Project Connection to Tribal Youth

Tribal youth employment programs are vital in creating pathways to good paying, reliable jobs for the people of the Red Lake Reservation. According to data taken from the 2021 American Community Survey (ACS) 5-Year Estimates, the employment rate for the Red Lake Reservation is 46 percent, a staggering 14.30 percent lower than the national employment rate. This data closely mirrors that data taken from the 2013-2017 ACS and organized by the Federal Reserve Bank of Minneapolis which shows the Reservation having an unemployment rate of 24.4 percent, or a rate 17.85 percent higher than the national unemployment rate and 11.8 percent higher than the average unemployment rate among all reservations.

For this particular project, tribal youth employment programs will be integral for providing on-the-job training in both the construction, administration, and maintenance of the wastewater lagoon upgrades. The Red Lake Water & Sewer Department already utilizes tribal youths during the summer months under an Oshkiimaajitahdah Summer Youth Employment

Program and plans to expand the program to include activities related to this project. This Reservation-wide program is part of the Tribe's 477 program which is in accordance with *Public Law 102-477*, otherwise known as *the Indian Employment, Training, and Related Services Demonstration Act of 1992*. This act allows Tribes to integrate employment training and related services into a single program with a single budget. The Red Lake Oshkiimaajitahdah Summer Youth Employment Program is available for youth ages 14-21 and provides job training at participating locations such as the Water & Sewer Department during the summer. On average, the Department usually has four participants from the program.

In addition to the Oshkiimaajitahdah Program, the Tribe also maintains a Supported Work Experience Program which is an opportunity for individuals to be employed on a contract basis which may lead to full-time employment. Aside from the beforementioned programs, the Red Lake Public Works Department is also in the process of developing a department-specific program to introduce tribal youths to various construction trades. Although the Department is still developing the program, Department staff hope to have the initiative up and running by the time construction on the wastewater lagoon upgrades begins.

Reportable output and outcome measures connected to tribal youth:

1a. **Output:** Greater coordination between the Red Lake Public Works Department and the Red Lake Oshkiimaajitahdah Summer Youth Employment Program for placement of youth with the Department to learn about wastewater lagoon management practices.

1b. **Outcome:** Increase in the number of youths working for the Public Works Department during the summer via the Red Lake Oshkiimaajitahdah Summer Youth Employment Program.

1c**. Measurement:** The Public Works Department will track program participation.

2a. **Output:** Greater coordination between the Red Lake Public Works Department and the Red Lake Supported Work Experience Program for placement of youth and other individuals with the Department to learn about wastewater lagoon management practices with the goal of creating pathways for permanent job placement.

2b. **Outcome:** Increase in the number of youths working for the Public Works Department as part of the program and an increase in the number of applicants for Public Works job opportunities.

2c. **Measurement:** The Public Works Department will track the number of program participants as well as the number of applications for job openings from former program participants.

3a. **Output:** The Public Works Department will create a program to introduce tribal youths to various construction trades and utilize the proposed project to teach youths about engineering and construction concepts vital to the operation of a wastewater stabilization lagoon.

3b. **Outcome:** There will be an increase in the number of youths working for the Public Works Department and learning about construction trades through the Department's new program.

3c. **Measurement:** The Public Works Department will track the number of program participants.

New and Unfunded Applicants

The Tribe has not received an ICDBG award in recent years.

IV. Soundness of Approach

Description of and Rationale for the Proposed Project

The installation of an aeration system for the existing facultative wastewater stabilization lagoon on the Red Lake Reservation is the best, most viable option for the Red Lake Band of Chippewa Indians to implement at this time given the Tribe's resources and needs. According to the U.S. Environmental Protection Agency, aeration technology such as the type proposed for

this project has been in use in the United States for at least 40 years and is a common upgrade to facultative wastewater stabilization lagoons. In order to understand the project in detail though, including how the project design and plans for aeration upgrades are feasible and cost-effective, one must first have a firm grasp on the function of rural, facultative wastewater stabilization lagoons and the role that aeration plays in the breakdown of solid waste.

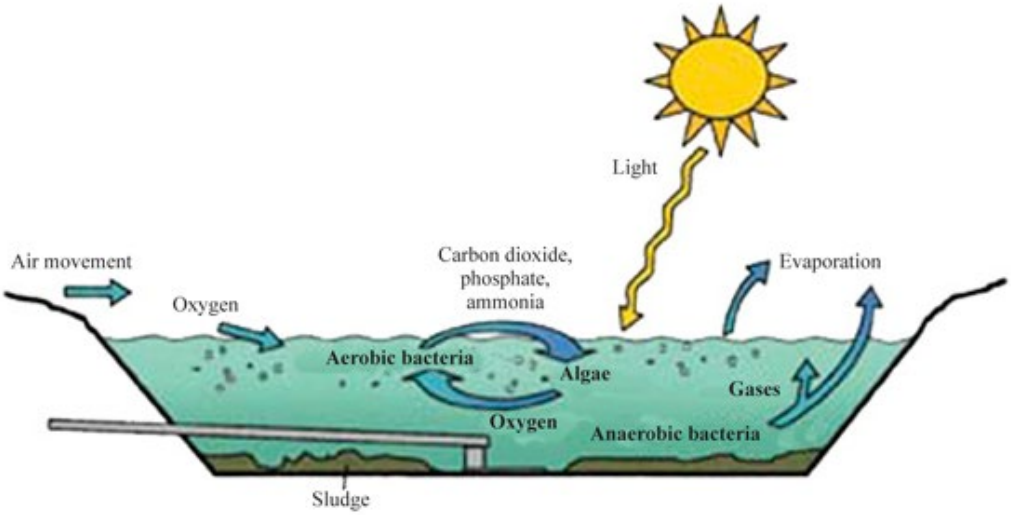
The Activated Sludge Method

Facultative wastewater stabilization lagoons are usually earthen pits four to eight feet in depth and up to an acre or more in size where waste products in the form of sewage are discharged and slowly broken down by microbes in a process known as the "activated-sludge method." When waste is deposited into a lagoon, a multitude of biological, chemical, and physical processes are then used to treat and dispose of the wastewater. Aerobic decomposition, or the breakdown of organic material in the presence of oxygen, occurs near the water's surface where air movement or wind introduces oxygen into the lagoon. Aerobic microorganisms which thrive in oxygen-rich environments then convert the waste into carbon dioxide, ammonia, and phosphates, which algae use as a food source. The algae present in the lagoon then go to work using the carbon dioxide to produce more oxygen which creates a circular process that leads to the eventual breakdown of the waste and the production of additional oxygen. Meanwhile, anerobic decomposition, or the breakdown of organic material in the presence of little to no oxygen, occurs near the bottom of the lagoon where microorganisms feed on the solid waste sludge and break the waste down into gases such as hydrogen, sulfide, ammonia, and methane.

Maintenance on facultative wastewater stabilization lagoons such as the ones described is a monthly affair with public works employees checking and repairing the lagoon structure, managing vegetation to maximize air flow and algae growth, and monitoring the water's pH and

dissolved oxygen levels. Occasionally water is stirred to hasten the breakdown of waste and on rare occasions the lagoon is drained, and the sludge removed to be used as fertilizer. Due to the low cost to build them, these types of wastewater lagoons are extremely common in small, rural, and Tribal communities, accounting for about 25 percent of the approximately 16,000 publicly owned wastewater treatment works in the U.S. Since the activated sludge method used in these lagoons takes advantage of natural chemical and biological processes and uses little to no man-made chemicals, these lagoons also present one of the most environmentally friendly sewage solutions for Rural America.

Figure 2: Wastewater Lagoon Decomposition Process (Photo Credit: University of Nebraska-Lincoln Extension)



The Importance of Aeration in Wastewater Treatment

While both aerobic and anaerobic decomposition happens simultaneously within facultative wastewater stabilization lagoons, aerobic decomposition near the surface of the wastewater is the fastest of the two processes as bacteria are able to metabolize more quickly in the presence of oxygen and heat. Due to this fact, most facultative wastewater stabilization lagoons are designed with some form of aeration in mind and are therefore considered to be

aerated or partial mixed lagoons. Aeration, in the context of wastewater treatment operations, is the process by which air is circulated through and mixed with the wastewater to support the aerobic decomposition process. This is usually done via the installation of either a diffused or mechanical wastewater system. Diffused aeration systems typically produce concentrations of bubbles from near the bottom of the lagoon which displace and mix with the water. Mechanical aeration systems work from the surface of the water, churning water and creating a sustained current. Aerated wastewater lagoons typically require less land than non-aerated or facultative wastewater lagoons and are able to discharge throughout the winter regardless of ice cover. Aeration upgrades can improve decomposition time and efficiency, save energy costs, and reduce odors as well as maintenance demands. Due to these facts, aeration upgrades have been chosen as the best, most cost-effective way to bolster the treatment efficiency of Red Lake's facultative wastewater stabilization lagoon.

Project Design and Details

Figure 3: Aerial Photo of Red Lake Wastewater Lagoon

For this project the Red Lake Public Works Department and associated engineering and design consultants will install a mechanical aeration system via the purchase of 22 2HP aspirating aerators which will be placed within the four sewage containment cells of the facultative wastewater stabilization lagoon located just to the southeast of the Red Lake community *(see figure 3)*. These aerators will float on the surface of the lagoon and draw oxygen from the surrounding air before injecting

the air back into the lagoon. While diffused aeration systems typically produce more complete oxygen mixing from bottom to top of a lagoon, they are also more complex and costly than mechanical aeration systems which is why Red Lake has made the decision to adapt the mechanical aeration system for its lagoon. In addition to their lower capital costs, aspirating aerators like the ones chosen for this project are also composed of corrosion-resistant metal making them ideal for harsh environments such as frigid Minnesota winters. It is estimated that with the addition of these aerators, the flow capacity for the lagoon will be increased 30 to 50 percent beyond what it is now depending on the makeup of future loading.

In addition to the aerators and associated electrical and mooring cable, a fence, gate, and riprap will also be installed. Fencing around the lagoon is necessary to keep out children and livestock who might wander into the wastewater. According to the World Health Organization, wastewater can be dangerous to both animals and humans as it can carry harmful and deadly pathogens, bacteria, and viruses such as E. Coli, Giardia, Hepatitis A, and Plasmodium. Meanwhile, approximately 3,520 cubic yards of riprap is necessary to provide erosion control to protect the integrity of the lagoon's cells. According to the EPA, liner from riprap is recommended to be extended three feet below the surface of the water to deter muskrats and protect against erosion from strong wave action. In order to comply with Minnesota Pollution Control Agency (MPCA) standards, riprap for the lagoon will need to be sampled and tested prior to being placed on a foundation that is thoroughly compacted.

Figure 4 & 5: Examples of an aspirating aeration device and riprap

Indian Preference Requirements

The Tribe follows Indian Preference requirements per §1003.510 via the utilization of lists of preselected Indian-owned, small and minority businesses as sources of supply for goods and services. Per Red Lake Band of Chippewa Indians Procurement Policy, a program director and / or designee assigned to the project will solicit bids from qualified Indian-owned businesses by advertising procurement needs in tribal channels and stating Indian preference within procurement documents. Contractors will need to certify use of Indian preference in subcontract bidding as well. Additionally, Red Lake's Tribal Employment Rights Ordinance (TERO) will be used as guidance by the program director for making acquisitions. Per the Tribe's procurement policy, priority for Indian preference will be as follows:

1. Red Lake members
2. Descendants of Red Lake members
3. A member/descendent enrolled in another tribe
4. Non-members

Budget

Please see the attached Cost Summary HUD-4123 form and attached Budget Narrative. Cost estimates are broken down by line item for each proposed activity. The Costs Estimate for

construction was submitted by Michael McFarlane with Northern Engineering & Consulting, Inc. (NECI), an Indian-owned, multidisciplinary civil engineering firm in Minnesota. McFarlane is a certified Professional Engineer who has more than 18 years of experience with municipal infrastructure projects and nearly 28 years of experience with grants and other funding sources. Within the past five years McFarlane has worked closely with the Tribe on both infrastructure and community development construction / engineering projects.

Quotes for materials were given to McFarlane by Stephen Roberts and Ben Albitz. Roberts is a certified Professional Engineer with Vessco, Inc., a company headquartered in Minnesota which offers project consultation, design services, installation assistance, and field service / parts delivery for municipal and industrial water treatment markets in Minnesota, North Dakota, South Dakota, Iowa, and Nebraska. In his role at Vessco, Roberts has worked with a multitude of municipalities and tribal governments on similar wastewater projects. Within the past five years Roberts has worked on all phases of the Sioux Falls, SD Water Reclamation plan; the wastewater plant in Otsego, MN; the large water reclamation plant operated by the Metropolitan Council Environmental Services in the Twin Cities Region; and water treatment plants in both Fargo and Grand Forks, ND. For this project, Roberts prepared recommendations and pricing for bar screens, grit removal, aeration basins, final clarifiers, BNR selector tanks, digester mixing, and sludge dewatering.

Albitz has a civil engineering degree from the University of Minnesota and has five years in the water treatment industry with Aeration Industries, a Newterra Company. He most recently assisted in the preparation of a large proposal for lake aeration at the Dallas Fort Worth Airport. For this project Albitz provided the cost estimates for aerators, cabling, and mooring which were developed from Aeration Industries' pricing sheets. All quotes and recommendations given to

McFarlane by Roberts and Albitz were based on inputs produced by NECI regarding flow information, organic loading information, future growth projections, and lagoon dimensions.

Project Implementation Schedule

Please see the attached HUD-4125 form for a breakdown of the tasks needed to complete the proposed project, as well as related timing. The project assumes a start date of February 6, 2024, and anticipates a close date of June 6, 2025. Once the grant funds are received, the project team will proceed according to the one and a half year (18 month) Implementation Schedule:

1. ***Final Design*** **–** The design plans for construction will be finalized and any adjustments requiring HUD notification will be submitted to HUD. *Start:* Month 2. *Completion:* Month 2. *Responsible Party:* Project Director and Construction Manager.
2. ***Bidding*** **–** Bids for the project are solicited via advertisements in Tribal and other channels. *Start:* Month 4. *Completion:* Month 5. *Responsible Party:* Project Director.
3. ***Award*** **–** The project is awarded to the most qualified bidders based on established polices. Construction manager for the project is chosen. *Start:* Month 5. *Completion Date:* Month 5. *Responsible Party:* Project Director.
4. ***Shop Drawings*** **–** Mechanical shop drawings including details for the aspirating aerators will be finalized. *Start:* Month 6. *Completion Date:* Month 7. *Responsible Party:* Contracted engineer / aerator supplier.
5. ***Aeration System Delivery*** **–** Aspirating aerators are delivered and installed. Maintenance training with Red Lake Public Works employees takes place. *Start:* Month 7. *Completion Date:* Month 11. *Responsible Party:* Aerator supplier.

6. ***Construction –*** Installation of the security fence and gate around the wastewater lagoon takes place. Riprap is delivered and installed per best practices for erosion control. *Start:* Month 6. *Completion Date:* Month 12. *Responsible Party:* Construction Manager.
7. ***Project Closeout –*** Closeout of the grant will begin in June of 2025. *Start:* Month 18. *Completion Date:* Month 18. *Responsible Party:* Project Director.
8. ***Project Reporting –*** Quarterly and annual financial and progress reporting will be submitted to HUD ahead of all deadlines. *Start:* Month 3. *Completion Date:* Month 18. *Responsible Party:* Project Director and Financial Manager.

Commitment to Sustain Projects

The Tribe has committed to assuming financial responsibility for the operations and maintenance of the aeration upgrades to the existing Red Lake facultative wastewater stabilization lagoon (*Please see attached Red Lake Band of Chippewa Indians Commitment Letter*). The Red Lake Tribal Facilities Management Department operates all wastewater facilities on the Reservation under Bureau of Indian Affairs (BIA) and Indian Health Services (IHS) standards. The Department also utilizes the Operations and Maintenance Plan recommended from the Minnesota Pollution Control Agency for stabilization pond operations which is summarized as follows:

1. ***Daily or other periodic maintenance activities –*** The National Pollutant Discharge Elimination System permit necessary to operate a wastewater stabilization pond or lagoon requires the weekly inspection of dikes to ensure bank stability. The MPCA O&M Plan recommends that inspectors also look for burrowing animals such as muskrats, badgers and gophers that can cause serious damage to the dike system. Erosion issues should be addressed immediately with the installation of riprap material. For the removal

of rodents and other animal nuisances, the wastewater lagoon operator should discuss with the local Department of Natural Resources (DNR) Conservation Officer the best way to remove the animals. In the late summer, public works employees should be on the look out for floating mats of algae, grease, and oil which can reduce sunlight penetration into the lagoon and lessen algae activity which lowers dissolved oxygen. These mats can also create insect breeding areas. When found, mats should be broken up. Occasionally in the spring or summer months, sludge clumps will also need to be inspected for. While enough wind action will break up the sludge, the clumps may sometimes need to be mixed using a long pole, fire hose, or boat. Routine maintenance for the safety of the grounds and the prevention of pests and insects will also need to take place. Weeds will be removed when needed and both Integrated Pest Management (IPM) and Natural Pest Management will be utilized as appropriate.

2. ***Repairs –*** Occasionally the control structures necessary for controlling water levels within the wastewater lagoon may become corroded and start to leak. By frequently lubricating gates and valves and by moving the gates and valves often enough to ensure mobility wastewater lagoon operators can ensure the long-term durability of the structure. In addition to the occasional leak that may need to be repaired, the synthetic vinyl liner on the bottom and sides of the lagoon may become damaged from animals, equipment, and sunlight which will require replacement/repairs as well. Large bubbles, caused by excessive gas buildup, leakage, or high ground water, can develop under the vinyl liners which can stretch the liner and cause it to develop a leak. The Tribe commits to maintaining a capital reserve fund for investments and repairs that keep the facility in a safe and operable condition.

3. ***Capital Improvements*** **–** The Tribe commits to maintaining a capital reserve fund for investments and repairs that keep the facility in a safe and operable condition.
4. ***Fire and liability insurance*** **–** Does not apply.
5. ***Security*** **–** All pond systems must have an adequate all-weather road to allow the operator to conduct weekly inspections. Ponds must have signs placed on each side of the pond site and one every 500 feet on the perimeter. The sign must inform of the nature of the facility and against trespassing. An entrance gate of sufficient size to allow mowing equipment to enter the pond site must be locked whenever it is not actually in use to prevent unauthorized access. Finally, the entire pond area must be enclosed inside a stock-tight fence to prevent livestock from entering and discourage trespassing. The fence must be placed in such a way that it does not obstruct maintenance vehicles and mowing equipment travelling along the top of the dike.

The Tribe estimates that maintenance of the upgraded wastewater lagoon will cost approximately $50,000 per year when accounting for the increased power consumption needed to run the aspirating aerators continuously. A “Short Term Asset Reserve” is maintained by the Tribe in accordance with standards required by most federal grant funding agencies. The calculated amount in this Reserve at the end of calendar year 2022 was $488,880.

V. Leveraging Resources

Resources to be Leveraged

Due to budgetary restraints and lack of resources the Tribe does not have the ability to leverage any resources for this project at this time.

VI. Comprehensiveness and Coordination

Coordination

Agency Coordination

The Red Lake Public Works Department is working closely with the Red Lake Economic Development & Planning Department as well as Red Lake Health Services on this project. The update of the existing wastewater lagoons is consistent with the policy goals of the Tribe as it seeks expand its affordable housing stock and provide for greater wastewater treatment capacity to accommodate future community development and community service projects such as a Medication Assisted Recovery Services Facility and a 24-bed Supportive Housing Complex. These future projects which will be supported by the upgraded Red Lake Reservation Wastewater Lagoon will further enable the Tribe to "assist every member in achieving independence and security by utilizing today's technology, developing strong infrastructure, and providing a quality education system," per its Accountability Decree to the Nation. Coordination between tribal agencies on this project and other projects that preserve and protect the Tribe's natural resources, health and welfare, cultural heritage, language, and traditions will continue to be a priority well into the future.

Community Coordination

The Tribe published a notice pursuant to and in accordance with 24 CFR 1003.604 (Citizen Participation) and on August 8, 2023 held a Tribal Council meeting which addressed the wastewater stabilization lagoon project. The meeting was held in order to obtain the views of members of the public on community development and housing needs and the meeting was scheduled in a manner that allowed participation. At the meeting, attendees were furnished with information about proposed community development activities and the range of activities that may be undertaken. To conclude the meeting, the Tribal Council passed a resolution *(please see*

attached Tribal Resolution of Support) authorizing the Public Works Department to apply for ICDBG grant funding through HUD in an amount up to $2 million to fund improvements to the sanitary sewer lagoon system.

Outputs, Outcomes, and/or Goals

Goal 1: ***To support future economic and community development projects with increased wastewater treatment capacity.***

Output 1: Installation of aeration devices within preexisting facultative wastewater stabilization lagoon. **Outcome 1:** Increase number of aeration devices from zero (0) to twenty-two (22). **Outcome 2:** Increase of wastewater treatment capacity by 30 to 50 percent. **Output 3:** Reduction of Biological Oxygen Demand (BOD) to 20mg/L or less with aeration by the time wastewater exits into secondary cells.

Goal 2: ***To protect the Red Lake Reservation wastewater stabilization lagoon from issues which might arise due to erosion from increased precipitation events.***

Output 1: Installation of Class 2 Riprap material within preexisting facultative wastewater stabilization lagoon. **Outcome 1:** Increase amount of riprap from zero (0) to 3,520 cubic feet.

Goal 3: ***To prevent unauthorized access to the Red Lake Reservation wastewater stabilization lagoon by people and livestock.***

Output 1: Installation of security fence and gate. **Outcome 1:** Decrease in the number of small animals and/or trash which end up in the wastewater lagoon.

VI. Preference Points

Promise Zones

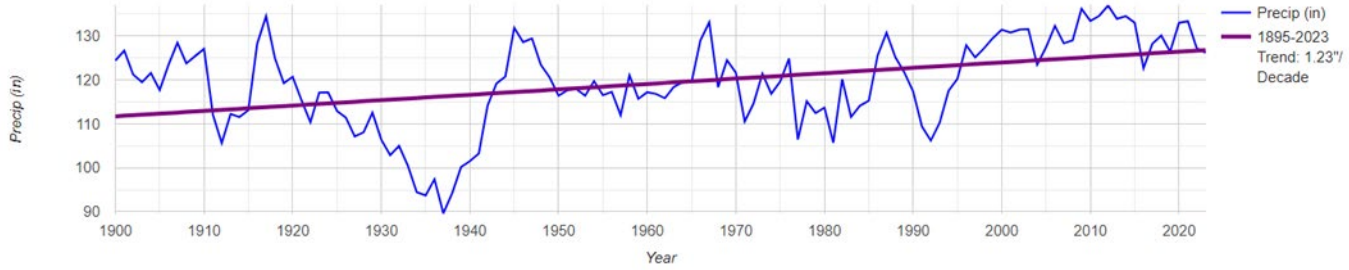
In 2013 former President Barack Obama laid out an initiative to designate a number of urban, rural, and tribal communities as Promise Zones. These Zones are high poverty

communities where the federal government partners with local leaders to "increase economic activity, improve educational opportunities, leverage private investment, reduce violent crime, enhance public health, and address other priorities identified by the community." Since the beginning of the Promise Zone Initiative 22 such zones have been selected via three rounds of national competition. While the Red Lake Band of Chippewa applied to become a designated zone during the third round of competition in 2016, the Tribe was unfortunately not selected for the initiative.

Climate Change

Climate Change is already having sizable impacts on Minnesota's weather. The state is seeing increased precipitation, higher levels of wind, and heavy snow events. Daily average minimum temperatures during the winter (December to February) have increased 7.3 degrees from 1895 to 2021 in Northern Minnesota, 6 degrees in central Minnesota, and 4.9 degrees in southern Minnesota. Warmer days during the winter are leading to larger and more frequent precipitation events, resulting in more snow than ever before. Increased temperatures across the world are contributing to an increased volume of ocean water present in the atmosphere, providing more fuel for passing weather systems to dump rain and snow on the state. Seasonal heavy snow events, defined as calendar days with at least four inches of snow, have been increasing in frequency over time and annual rainfall has increased consistently since 1900 *(see Figure 6)*.

Figure 6: 5-year precipitation in Clay, Wilkin, Otter Tail, Grant, and Douglas Counties since 1900.



Due to the increased precipitation from Climate Change, facultative wastewater stabilization lagoons such as the one located on the Red Lake Reservation are at greater risk of erosion issues that can lead to dike instability and potential environmental contamination. By adding riprap to the lagoon, this project will ensure the Tribe's wastewater system is better protected against such vulnerabilities. In addition to erosion issues, Climate Change can also cause harmful algae blooms (HABs) within facultative wastewater stabilization lagoons. Due to warmer temperatures during the summer in combination with sunlight, high nutrient loads (oftentimes from agricultural and stormwater runoff that brings fertilizers into the lagoon), and other factors, these HABs can cause eutrophication which is the process that occurs when the lagoon receives an excessive amount of nutrients. These nutrients stimulate the rapid growth of algae which depletes dissolved oxygen levels within the water and leads to the eventual death of the algae. Without algae, the decomposition of waste slows, decreasing the wastewater treatment capacity of the lagoon. This process combined with an increase in biological oxygen demand (BOD) and suspended solids (TSS) can contribute to the accumulation of sludge. A wastewater lagoon with HABs is at risk of violating BOD, TSS, and effluent phosphorus limits / environmental permitting regulations. Thanks to the addition of aspirating aerators that this project will bring to the lagoon, however, Red Lake's wastewater stabilization lagoon will be better protected against HABs as the aerators will continuously insert new oxygen into the water to prevent algae die off.

VI. Supporting Documentation

All supporting documents and the ICDBG application narrative are also available to view at the following webpage:

https://www.srfconsulting.com/redlake_icdbg/