



Environment and Natural Resources Trust Fund

2023 Request for Proposal

General Information

Proposal ID: 2023-137

Proposal Title: ALASD's Chloride Source Reduction Pilot Program

Project Manager Information

Name: Scott Gilbertson

Organization: Alexandria Lake Area Sanitary District (ALASD)

Office Telephone: (320) 762-1135

Email: scott@alasdistrict.org

Project Basic Information

Project Summary: The project reduces salt pollution in three impaired lakes in the Alexandria area via an innovative source reduction strategy that protects water quality and could serve as a replicable model.

Funds Requested: \$765,000

Proposed Project Completion: September 30, 2026

LCCMR Funding Category: Water Resources (B)

Project Location

What is the best scale for describing where your work will take place?

Region(s): Central

What is the best scale to describe the area impacted by your work?

Region(s): Central

When will the work impact occur?

During the Project and In the Future

Narrative

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Chloride is toxic to aquatic life and impacts the use and enjoyment of our lakes. Three culturally important lakes in the Alexandria area are impaired because of chloride pollution: Lake Winona, Lake Agnes, and Lake Henry. The primary source of chloride is residential/commercial water softening systems, which are ubiquitous in our community due to hard water. The salt from softening systems (3,000 tons annually) eventually flows to ALASD's wastewater treatment facility, which discharges treated effluent into Lake Winona and downstream waters.

Removing chloride from wastewater is not economically or technologically feasible. The only available wastewater technology, reverse osmosis, is prohibitively expensive (exceeding \$110,000,000) and can harm the environment due to high energy use and generation of a concentrated brine that cannot be disposed of easily and safely. Upgrades to Alexandria's drinking water infrastructure to eliminate the need for home softening is infeasible and cost-prohibitive (\$150,000,000). The only feasible and sustainable way to reduce chloride is to work with the community to upgrade the softening systems used by residents and businesses.

ALASD can solve this problem by implementing a chloride reduction strategy that builds upon information generated by past LCCMR/state investments.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

ALASD hired an expert that evaluated this problem by conducting engineering analysis, water sampling, surveys of waters softening technologies and residential salt use and then developed a computer model to determine the most efficient way to reduce the salt pollution affecting Lake Winona and other lakes.

Based on this analysis, ALASD designed a chloride reduction strategy that includes, in part, an innovative (pilot) rebate program that provides financial incentives ranging from \$500 - \$2,000 for residential households as well as customized rebates for businesses to reduce salt use by upgrading to high-efficiency systems. The pilot program also includes a novel softener discharge disposal program that will further reduce the amount of chloride that enters the sewer system and then the lakes.

The strategy also includes community education, cooperation with Douglas County and the MPCA, and a water quality monitoring program to measure success.

ALASD is seeking funding from the LCCMR to assist implementing the pilot rebate program component of its larger strategy, which requires funds to provide rebates; administer the program; inspect water softeners, and brine disposal system installation; conduct community education and outreach; and conduct water quality monitoring to measure outcomes which will assist with future program implementation.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

Our short-term goal is to facilitate the installation of high-efficiency water softeners, salt-free systems or softener discharge disposal systems to reduce the annual salt load to Lake Winona and downstream waters by 1,600,000 pounds (or 800 tons) by 2026. A reduction of chloride levels will improve water quality and preserve and protect aquatic life in the three lakes and throughout the Watershed. An additional outcome will be creation of a program that can be replicated by other communities to reduce salt pollution and improve water quality in other parts of the state.

Activities and Milestones

Activity 1: ALASD expenses, including consultant contracts, to assist in rebate program design, annual reporting, and rebate evaluations.

Activity Budget: \$100,000

Activity Description:

ALASD's qualified contractor(s) will assist ALASD staff with rebate design, evaluation of rebate applications and determination of rebate amount and eligibility, as well as annual reporting. This effort will also include working with ALASD staff to execute multiple public education efforts to provide customers and area residents information on the rebate program and the need for salt reduction. As indicated below, the budget for contractor services for this activity is \$100,000 over the project period. ALASD staff will perform key administrative functions necessary to manage the rebate program and lead community education and outreach efforts, including staffing the local children's water festival event booth. ALASD estimates that its staff labor and expenses on this activity will exceed \$60,000 during the project period, which ALASD will treat as an in-kind contribution to the project (see Non ENRTF Funds section).

Activity Milestones:

Description	Completion Date
Bill Stuffer regarding Chloride Reduction Education/Activities	September 30, 2023
LCCMR required grant reporting and review.	January 31, 2024
Customer Education Opportunity - Booth at Children's Water Festival or equal	May 31, 2024
Bill Stuffer regarding Chloride Reduction Education/Activities	September 30, 2024
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Customer Education Opportunity - Booth at Children's Water Festival or equal	May 31, 2025
Bill Stuffer regarding Chloride Reduction Education/Activities	September 30, 2025
LCCMR required grant reporting and review.	January 31, 2026

Activity 2: Site Review & Inspections for Brine Disposal Systems

Activity Budget: \$10,000

Activity Description:

Douglas County Land and Resource Management staff will provide on-site review and inspection of brine disposal systems. Douglas County staff will educate and certify installers. Brine disposal system design will require submittal to Douglas County for review. Douglas County will also inspect the soil disposal system prior to hookup to softener system. ALASD will contract with Douglas County for this effort with a budget of \$10,000 over the project period. ALASD staff will document each individual softener plumbing modifications via photographs or on-site visit. ALASD estimates that the ALASD labor and expenses for this activity will exceed \$5,000 over the project period, which ALASD will treat as an in-kind contribution to the project.

Activity Milestones:

Description	Completion Date
Annual Report and Review of Site Inspections	December 31, 2023
Annual Review and Report of Site Inspections	December 31, 2024
Annual Review and Report of Site Inspections	December 31, 2025

Activity 3: Chloride Reduction Rebates

Activity Budget: \$650,000

Activity Description:

ALASD will provide rebate incentives for customers installing high-efficiency water softeners, water softener brine disposal system, or salt-less water conditioner systems. Rebate incentives will cover only a portion of the equipment and installation cost depending upon the individual situation and system installed. Standard residential rebates for high-efficiency softeners are anticipated to be \$500 to \$750/each. Brine Disposal System rebates are anticipated to be up to \$2000/each. Business systems are more complex and will require more detailed review based on the specific customer application/system. Rebates will be considered only for ALASD residential or business customers. Rebate amounts will be dependent on the system installed and must meet minimum high-efficiency standards as specified by ALASD. The rebate incentives may include design, detailed review, installation and equipment costs based on the individual systems.

Activity Milestones:

Description	Completion Date
Annual Report	January 31, 2024
Annual Report	January 31, 2025
Annual Report	January 31, 2026

Activity 4: Lake Monitoring for chloride levels

Activity Budget: \$5,000

Activity Description:

Chloride levels in WWTF discharge, Lake Winona, Agnes and Henry will be sampled/monitored at least quarterly and included in an annual report. The budgeted amount (\$5,000) covers the cost of contract lab analysis for samples during the project period. ALASD staff will perform effluent and water quality sampling during the project period. The ALASD labor associated with this effort is estimated in value at \$5000, which ALASD will treat as an in-kind contribution (See Non ENRTF Funds section).

Activity Milestones:

Description	Completion Date
Annual Report	January 31, 2024
Annual Report	January 31, 2025
Annual Report	January 31, 2026

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
David Rush	Douglas County	Land and Resource Management Director	No
Marty Shultz	City of Alexandria	City Administrator	No
Brian Dahl	Alexandria Light, Power and Water	Superintendent	No
Dr. Stephen Henry	Douglas County Lake Association	President	No

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?

If this project is successful, we will integrate it into ALASD's long-term plan and budget and the program will be funded primarily via wastewater and sewer fees. We project that long-term implementation of the program will cost ALASD between \$5M and \$10M over the next 10 years. While this is a significant investment, it pales in comparison to the cost to reduce chloride via capital infrastructure changes to the Districts WWTF or the expansion of service area for public drinking water infrastructure (\$100M - \$150M) and reduces the amount of energy use and salty waste generation.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Lake Agnes Treatment	M.L. 2018, Chp. 214, Art. 4, Sec. 2, Subd. 04I	\$600,000

Project Manager and Organization Qualifications

Project Manager Name: Scott Gilbertson

Job Title: Executive Director

Provide description of the project manager's qualifications to manage the proposed project.

Scott Gilbertson, Executive Director for Alexandria Lake Area Sanitary District ("ALASD" or "District"), is responsible for overseeing strategic planning and operations of the District, in support of organizational mission and goals. The Executive Director provides leadership, direction, and support to the District's Board of Directors in developing organizational goals, attaining/allocating resources through user fees/tax allocations, and establishing policies to efficiently manage all wastewater district functions. Mr. Gilbertson has previous experience successfully managing LCCMR funded projects on behalf of ALASD. He has extensive experience leading the development and implementation of innovative environmental solutions in the water resources and wastewater fields.

Organization: Alexandria Lake Area Sanitary District (ALASD)

Organization Description:

Alexandria Lake Area Sanitary District ("ALASD" or "District") operates the sanitary sewer collection system and wastewater treatment facility ("WWTF") to provide wastewater services to the City of Alexandria, and the surrounding townships of Alexandria, Carols, Hudson, Ida, LaGrand, Lake Mary and provides contract sanitary services to the City of

Nelson, City of Forada, Leaf Valley Township, Carlos State Park and two rest areas. The mission of ALSAD is to provide sustainable, cost effective wastewater management and preserve the water quality of area lakes.

The ALASD service area covers approximately 102 square miles and a population of more than 26,000 people. The ALASD service area includes the Alexandria Chain of Lakes, which is an environmentally and culturally important lake system in the Long Prairie River Watershed in Central Minnesota.

The mission of ALSAD is to provide sustainable, cost effective wastewater management and preserve the water quality of area lakes.

The District has track-record of providing top quality clean water services and developing and implementing innovative water quality solutions that protect area lakes, limit energy use and advance science and technology in the wastewater and clean water sectors.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
							Sub Total	-
Contracts and Services								
TBD	Professional or Technical Service Contract	Consultant services to assist in annual reporting and in the evaluation of customer applications to determine eligibility and rebate amounts.				0.75		\$100,000
Douglas County Land and Resource Management	Sub award	Certification of installers and inspection of brine disposal systems.				0.3		\$10,000
TBD	Professional or Technical Service Contract	Laboratory testing services				0.15		\$5,000
							Sub Total	\$115,000
Equipment, Tools, and Supplies								
							Sub Total	-
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								

							Sub Total	-
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
		Rebate Incentives	ALASD will provide rebate incentives for customers installing high-efficiency water softeners, water softener brine disposal system, or salt-less water conditioner systems. Rebate incentives will cover only a portion of the equipment and installation cost depending upon the individual situation and system installed. Standard residential rebates for high-efficiency softeners are anticipated to be \$500 to \$750/each. Brine Disposal System rebates are anticipated to be up to \$2000/each. Business systems are more complex and will require more detailed review based on the specific customer application/system. Rebates will be considered only for ALASD residential or business customers. Rebate amounts will be dependent on the system installed and must meet minimum high-efficiency standards as specified by ALASD.					\$650,000
							Sub Total	\$650,000
							Grand Total	\$765,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
			State Sub Total	-
Non-State				
In-Kind	ALASD Budget	Staff labor to support the rebate program, including administration, communications, processing rebates, and community outreach.	Secured	\$60,000
In-Kind	ALASD Budget	For inspection of brine disposal systems in collaboration with Douglas County.	Secured	\$5,000
In-Kind	ALASD Budget	Lake and wastewater sampling performed by ALASD technical staff.	Secured	\$5,000
			Non State Sub Total	\$70,000
			Funds Total	\$70,000

Attachments

Required Attachments

Visual Component

File: [cdf23c40-c28.pdf](#)

Alternate Text for Visual Component

One Page Handout Summarizing ALASD's Program...

Board Resolution or Letter

Title	File
Board Resolution	004d7d32-38e.pdf
Financial Statement/Audit	56b200a0-29a.pdf
Map of Watershed	02eafe52-0a1.pdf

Optional Attachments

Support Letter or Other

Title	File
Letter of Support from Douglas County	f04025e7-cf6.pdf
Letter of Support from Douglas County Lake Association	fddd7250-fdc.pdf
Letter of Support City of Alexandria	cfd9e3ff-666.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Does your project have potential for royalties, copyrights, patents, or sale of products and assets?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

No



ALEXANDRIA LAKES AREA SANITARY DISTRICT

Lake Winona Watershed

May 2022

Figure 1