



Environment and Natural Resources Trust Fund

2023 Request for Proposal

General Information

Proposal ID: 2023-133

Proposal Title: Lino Lakes Water Stewardship Project-Phase 1

Project Manager Information

Name: Tony Havranek

Organization: City of Lino Lakes

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Project Basic Information

Project Summary: The City of Lino Lakes is proposing to implement a system that will empower users and the City to proactively manage groundwater use; addressing concerns surrounding groundwater conservation.

Funds Requested: \$200,000

Proposed Project Completion: December 31, 2023

LCCMR Funding Category: Small Projects (H)

Secondary Category: Water Resources (B)

Project Location

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

Region(s): Metro

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

Region(s): Metro

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.

The City of Lino Lakes provides potable water to 17,000 residents and over 230 businesses (drinking water, irrigation, industrial use) on a daily basis using six (6) wells with an annual MN DNR appropriation of 900 million gallons. There are an additional 1,500 private, non-municipal wells located within the city, and 10 other active water appropriations permitted by the DNR. All of these water users utilize groundwater as the only source.

Clean groundwater is a finite resource that drives economic development and environmental health and is a basic need for all residents of Minnesota. The aquifer which supplies Lino Lakes and many other water users within the northeast metropolitan area has been defined as an area of specific concern by the State of MN due to a risk of overuse and degraded water quality. Furthermore, this aquifer is tied to various surface water resources, wetlands, lakes, streams, and rivers; specifically White Bear Lake. The MN DNR has completed extensive studies to protect the surface elevation of White Bear Lake in regard to groundwater use.

To address this and other issues, the MN DNR formed the NE Metro GWMA which includes the City of Lino Lakes.

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.

This proposal addresses groundwater use for municipal supply in Lino Lakes through real time data acquisition that empowers water users and the city to be proactive in conserving groundwater through a data driven approach.

The solution proposes utilizing a remote, automated data network that is built upon existing City infrastructure. This network is a combination of hardware (base station, antenna, and radio receivers/transmitters) and software that provides continuous data collection and analytics in real time. The base station and antenna would be installed in a strategic location where it can effectively communicate with all radio receivers installed within individual homes and businesses.

The software would be maintained by the city and allow for the generation of analytics as needed by city staff. Residents and business would be able to access the data through a webserver.

Automated data collection would replace drive by and handheld data collection by city staff. Currently this data is collected infrequently (every 3 months) and users do not know water usage until the bill is received on a quarterly basis; making it nearly impossible to adjust use behavior proactively. An example is that customers do not receive their summer watering bill until fall.

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?

Conservation of groundwater resources through reduced usage.

Refined data on who is using and when in order to pinpoint usage issues.

Easy to understand use data in the hands of the city and water users.

Development of an informed city staff and community members on groundwater use and conservation.

Activities and Milestones

Activity 1: Purchase and install antenna, software, and radio receivers

Activity Budget: \$140,500

Activity Description:

The first step will be to purchase and install the necessary hardware.

The base station and antenna will be installed on City water tower #3 which will provide coverage for the entire city.

Following this, the city will install 1,058 510M receivers/transmitters within customers homes and businesses, covering roughly 23% of the water customers of which there are 5,416 (830 have the 510M receiver/transmitter).

Activity Milestones:

Description	Completion Date
Install Antenna and base station	August 31, 2023
Install 510M transmitters/receivers	September 30, 2023

Activity 2: RNI SaaS and Analytics Software Installation

Activity Budget: \$34,500

Activity Description:

After installation of the antenna, base station, and 510M receivers/transmitters, the city will install the network software (SenSus RNI SaaS) and analytics on city computers. Part of the software installation will include training for city staff on the RNI and analytics package.

City staff can develop a custom analytics package that will allow them to ascertain a user specific suite of data on water usage and include real time alerts (unaccounted for water loss, identification of leaks, etc.) The data is anticipated to be communicated every 4 hours rather than every 3 months as is currently the case. As trends are realized and data is assessed, the city can adaptively change settings and analytic calculations as needed.

Activity Milestones:

Description	Completion Date
Install RNI SaaS system	October 31, 2023
Install and develop analytics software	October 31, 2023
RNI and Analytics training	October 31, 2023

Activity 3: Create Customer Portal

Activity Budget: \$25,000

Activity Description:

The final activity will be the development of the customer portal. The customer portal will be the interface with which municipal supply users will interact with the data to become informed on their individual usage habits. This information will include the volume of water used and how that is affecting their water bill. The interface can also be used as a communication tool for the city to relate critical information on the city's water supply in an expedited fashion, including freeze warnings (on meter), exceedance of planned water usage threshold, water usage anomalies, and recommended household actions.

The city plans to host this as a webpage on the city website. Each user with a 510M receiver/transmitter would have a unique user ID that allows them to review water use data for their respective account.

This portal can also be used by the city to communicate other important water related information such as water quality reports and MS4 communications.

Activity Milestones:

Description	Completion Date
Customer Portal Setup	November 30, 2023
Customer Portal Training	November 30, 2023
Release Customer Portal Live	December 31, 2023

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?

Results would be implemented almost immediately after the network and software are installed, and the customer portal (website) is up and running. City staff would be able to set specific thresholds and review for outliers immediately and begin to develop a data review process that establishes an assessment timeline and specific metrics for reporting and thresholds exceedance actions.

This data will allow city staff to address specific usage concerns as identified by the unique radio receiver/transmitter and residents would be able to monitor use and utility billing to make adjustments to use behavior.

Project Manager and Organization Qualifications

Project Manager Name: Tony Havranek

Job Title: Director of Fisheries

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

I am managing the submittal of this grant at the request of the City of Lino Lakes. If the proposal is selected for funding, the project would be managed by City staff. This would most likely be the Community Development Director, Mike Grochala, or the Public Works Superintendent, Justin Williams. Both staff manage multiple projects across the city with many years of budgetary and programmatic experience to maintain City services and develop long term planning documents.

Organization: City of Lino Lakes

Organization Description:

The City of Lino Lakes is located in Anoka County, MN, with a population of 21,399 (2020 US Census Estimate) and covers an area of 23.21 square miles with roughly 20% of this area covered by water resources. The city's diversity index ranks in the upper quartile for MN CDPs. Lino Lakes provides a wide range of its services across its 12 departments with a focus on economic development, public safety, and the environment.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
							Sub Total	-
Contracts and Services								
Core and Main	Professional or Technical Service Contract	Installation of antenna and base station, RNI SaaS, analytics, and customer portal setups and fees				1		\$90,000
							Sub Total	\$90,000
Equipment, Tools, and Supplies								
	Equipment	M400 Base Station	communication with 510M receivers/transmitters					\$30,000
	Equipment	510M receivers (purchase of 470 units under the grant)	these units are required for communication to the base station from individual user residences or businesses.					\$80,000
							Sub Total	\$110,000
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								
							Sub Total	-
							Grand Total	\$200,000

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				
Cash	City Utility Funding	Purchase of an additional 588 510 M transmitter/receivers	Secured	\$100,000
In-Kind	General staffing and Public Works Budget	These funds will support the installation of 510M receivers by city staff, include administrative costs for city staff to deploy the system, and be used for system training.	Secured	\$33,000
			Non State Sub Total	\$133,000
			Funds Total	\$133,000

Attachments

Required Attachments

Visual Component

File: [90069512-29d.pdf](#)

Alternate Text for Visual Component

This graphic shows an example of the customer portal view (top images) and city staff analytics (bottom figure)....

Board Resolution or Letter

Title	File
Lino Lakes Resolution 22-64 approving submission of LCCMR proposal	c6350a1a-ad2.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?

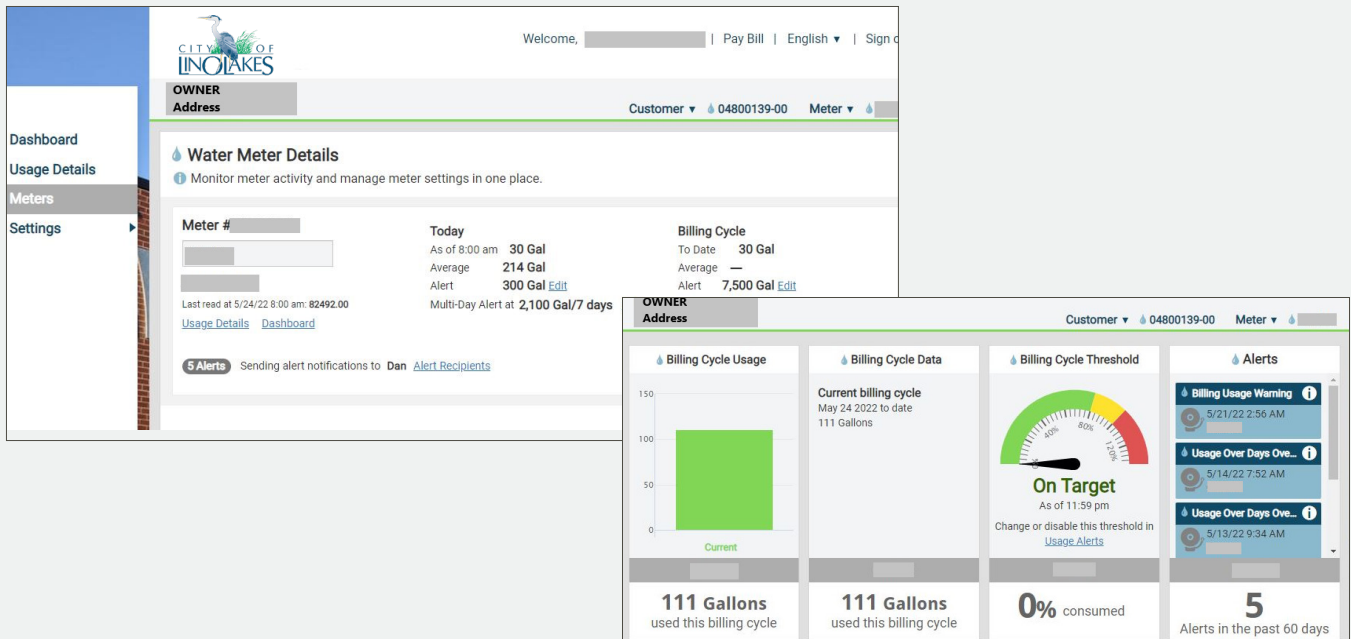
No

Does the organization have a fiscal agent for this project?

No

Dashboard Examples

COMMUNICATION WITH RESIDENTS



DASHBOARD OVERVIEW FOR CITY STAFF

