

**Environment and Natural Resources Trust Fund
2015 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 060-B

Shoreview Water Consumption and Groundwater Awareness Project

Category: B. Water Resources

Total Project Budget: \$ 54,470

Proposed Project Time Period for the Funding Requested: 3 years, July 2015 - June 2018

Summary:

Provide biweekly water consumption data to 400 residential households for a two year period to determine if additional groundwater can be conserved due to a greater awareness of consumption data.

Name: Jessica Schaum

Sponsoring Organization: City of Shoreview

Address: 4600 Victoria St N
Shoreview Minn 55449

Telephone Number: (651) 490-4665

Email jschaum@shoreviewmn.gov

Web Address shoreviewmn.gov

Location

Region: Metro

County Name: Ramsey

City / Township: Shoreview

Alternate Text for Visual:

Source of municipal water use in seven-County Twin Cities Area 1940-2010 (groundwater vs surface water)

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ TOTAL	



Environment and Natural Resources Trust Fund (ENRTF)

2015 Main Proposal

Project Title: *Shoreview Water Consumption and Groundwater Awareness Project*

PROJECT TITLE: *Shoreview Water Consumption and Groundwater Awareness Project*

I. PROJECT STATEMENT: Provide bi-weekly water consumption data to 400 residential households for a two year period to determine if additional groundwater can be conserved due to a greater awareness of consumption data.

Like many metropolitan municipalities, Shoreview supplies drinking water to residents and businesses via groundwater wells instead of surface water resources. Recent attention concerning the sustainability of our groundwater resources in Minnesota is well documented and could pose a serious threat to future availability. Creating a community conservation ethic should lead to reduced groundwater use. This is needed for long-term aquifer sustainability, especially during the growing season. The City of Shoreview has encouraged and incentivized water conservation for decades, and this proposal will take our efforts one step further. We will determine if access to information and comparisons to neighbors and citywide averages (similar to energy bill comparisons) results in groundwater conservation. We will also determine if there are differences in conservation outcomes between lot sizes and soil types given that irrigation habits vary.

Currently in Shoreview, water users are billed for their consumption quarterly. The project will provide 26 times more meter readings to 400 households by making them available on a bi-weekly basis through the existing utility billing website, a separate mailing, or email. Participating homes will also receive a wireless Badger meter reader which displays water use in a digital format inside their home (wirelessly synced with their water meter, each cost \$125). With quarterly billing, by the time users receive their bill, residents likely are unaware of where their water was being used collectively in the previous three months.

Past water use and participant surveys will be analyzed to measure the effects of the project after year one. The program will then be adjusted based on findings prior to year two. If successful, we may consider scaling the project to make the same data available to all households (~10,000) to both increase conscious water use and to further conserve our groundwater resources.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: *Identify and locate pilot study areas and approach neighborhood leaders about promoting participation in the project* **Budget: \$300**

Determine suitable neighborhoods to include in study area based on different lot sizes and soil types. For instance, we want to compare the household water use in large lots in clay soils to smaller lots in clay soils, against the citywide average or control neighborhoods, and the same for sandy soils. (Shoreview has both sand and clay areas.) Fliers and press releases will be created to inform residents of the project scope and intentions.

Outcome	Completion Date
<i>1. Select study areas and review past water use</i>	<i>August 1, 2015</i>
<i>2. Mail flier to ~400 households in study area introducing project, invite to public meeting, share past data and conservation tips</i>	<i>Sept 1, 2015</i>
<i>3. Host open house style public meeting to kick off project</i>	<i>Nov 15th, 2015</i>

Activity 2: *Create methods to conduct additional readings and make data available* **Budget: \$ 53,000**
Purchase and offer programming of the Badger water meters, seek outside assistance to website programming and the online component of the program.

Outcome	Completion Date
<i>1. Create method to host additional information (standard template to compare household use to past data and other households) on City utility billing website</i>	<i>Sept 1, 2015</i>
<i>2. Purchase 400 Badger Orion CE In Home Display meter readers (\$125 each)</i>	<i>Sept 1, 2015</i>



Environment and Natural Resources Trust Fund (ENRTF)

2015 Main Proposal

Project Title: Shoreview Water Consumption and Groundwater Awareness Project

Activity 3: Conduct bi-weekly water use readings and set up Badger readers in 400 households. After two years of data collection we will evaluate participation, estimate groundwater resources conserved, and publish findings.

Budget: In kind staff hours

400 participants will receive a Badger water meter with programming to be completed by utility crew members. The same staff will conduct bi-weekly meter readings for the entire study area which participants will receive via email, mail, or text. Staff will tabulate results and compare overall water use to past data and see if there are differences in lot sizes or soil types. Staff will develop a survey for participants to self-report on impacts of the additional information on their household water habits. A final report of all data, survey responses, and conservation outcomes will be distributed to the City Council, published in a City newsletter, and be shared with local newspapers.

Outcome	Completion Date
1. Utility crew member program Badger reader with resident and obtain water use bi-weekly by driving by to collect wireless water meter readings	Bi-weekly 2016-2017
2. Utility Accountant to publish readings using template	Bi-weekly 2016-2017
4. Conduct survey of participants and tabulate perceived impacts of project. Return meters to City for future participants. Compare overall use, and gallons conserved, normalize for weather.	Jan-March 2018
5. Report findings in City newsletter, press release, online	Summer 2018

III. PROJECT STRATEGY

A. Project Team/Partners

All project team members are current full time City staff receiving salary and benefits, which is considered in kind funding to this project, other than the website programmer detailed below. Jessica Schaum, Project Manager will coordinate all activities relating to managing the project and resident outreach. Terese Roesler, Utility Accounting will tabulate past data and household comparisons for the study area. Our Utility crew will be responsible for the additional meter reads as well as programming the Badger water readers for residents with an appointment. A consultant or website programmer will create additional features within our existing utility billing website for residents to logon and see water use that is user-friendly. This new programming will have the ability to send out automated bi-weekly updates with minimal staff time. *This consultant is not yet contracted, but would be selected through City's RFP process.

B. Project Impact and Long-Term Strategy

The City of Shoreview has encouraged and incentivized water conservation for decades. The City implemented a tiered water conservation rate structure before the MN DNR required them, has an odd/even sprinkling ban, and promotes additional conservation measures in multiple ways to both residents and businesses. Although overall water use has been decreasing, we believe the time gap from our current quarterly water billing schedule doesn't provide an adequate picture of gallons of water consumed to the average resident. The proposal allows for a bi-weekly update and in home access to household water consumption for one year, which may alter behaviors and show support for conservation. If water use is decreased due to a greater awareness, the City may make the data available in real time to others in the future. There is also a possibility that other entities using groundwater may offer similar data to their users to further encourage awareness and conservation.

C. Timeline Requirements

The website enhancements and data template creation will begin as funding is available in summer and fall 2015. Study areas of different housing and soil types will be selected. Past data for these areas will also be evaluated to give a baseline to participants during late 2015. The project will run on a calendar year basis from January 2016 to December 2017, with bi-weekly readings and updates to participants. Evaluation of the project's impacts and participant feedback surveys will take place in early 2018 and all results be reported in June 2018.

2015 Detailed Project Budget

Project Title: Shoreview Water Consumption and Groundwater Awareness Project

IV. TOTAL ENRTF REQUEST BUDGET 3 years

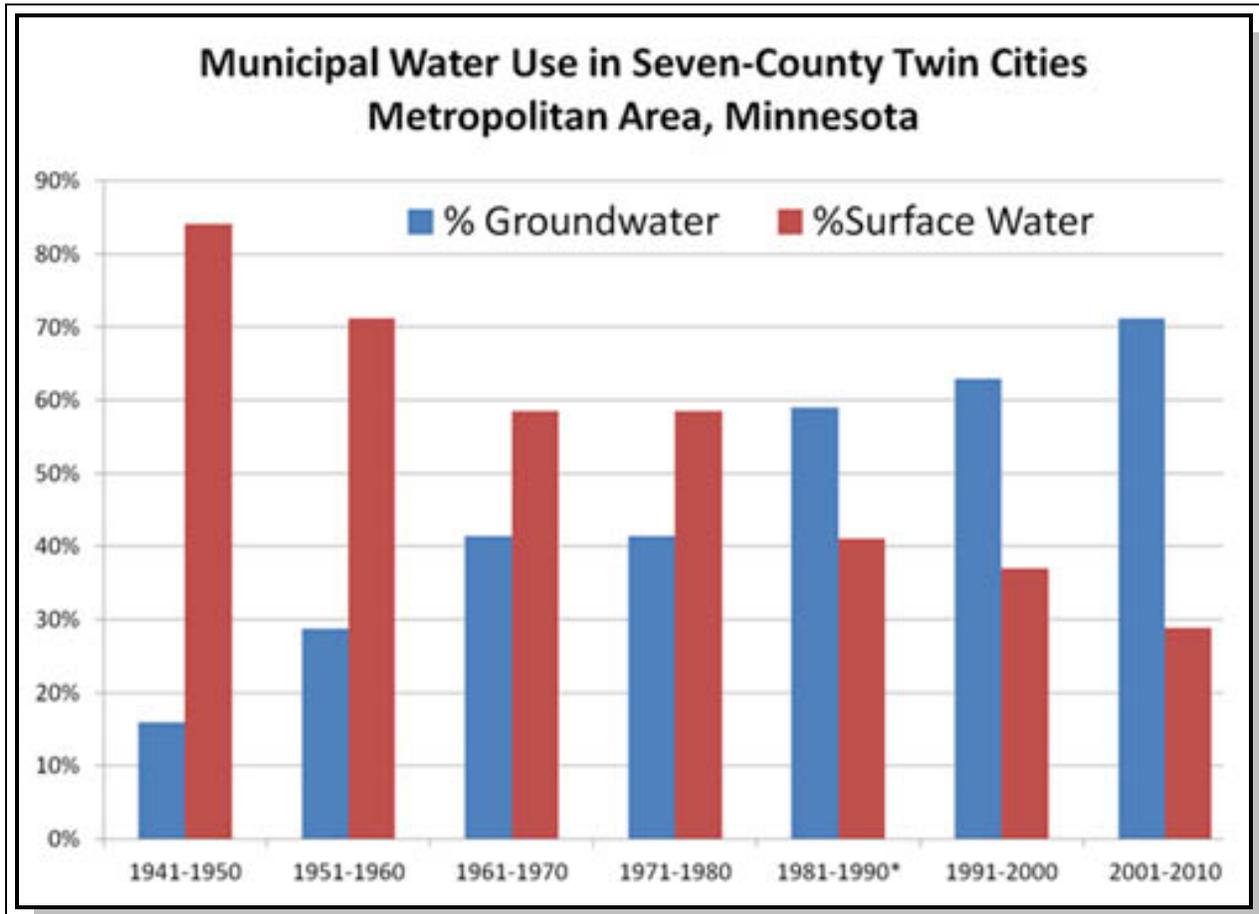
<u>BUDGET ITEM</u>	<u>AMOUNT</u>
Personnel: Jessica Schaum, Project Manager (75% salary, 25% benefits); 10% FTE for 3 years, Terese Roesler, Utility Accounting (75% salary, 25% benefits); 5% FTE for 3 years, Utility Crew member (75% salary, 25% benefits); 15% FTE for 2 years	in kind
Contracts: Website programming and coding for residents to access easily or receive information online and via e-mail (contractor not yet determined, would be selected through City's RFP process)	\$ 3,000
Equipment/Tools/Supplies: Mailing and postage for introduction to project (400 homes) Bi-weekly mailings (if residents opt to have mailed results) Mailed survey at end of project ~400 homes 400 Badger Water Meter Readers (\$125 each)	\$ 50,300
Travel: Weekly trips to study areas by Utility Crew member to drive by and wirelessly read water meters, average 40 miles bi-weekly x 2 years	\$ 1,170
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 54,470

V. OTHER FUNDS

<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>	<u>Status</u>
Other Non-State \$ To Be Applied To Project During Project Period:	NA	
Other State \$ To Be Applied To Project During Project Period:	NA	
In-kind Services To Be Applied To Project During Project Period: <i>All Personnel listed above to coordinate activities and resident outreach. Additionally in-kind staff time to be applied include administratively setting appointments and a utility crew member to deliver Badger meters and meet with residents for programming and questions (400 households x approximately 1 hour each + mileage). Answering questions relating to project and technical guidance for readers if necessary.</i>	\$74,000	<i>Secured</i>
Funding History:	NA	
Remaining \$ From Current ENRTF Appropriation:	NA	

City of Shoreview 2015 LCCMR Proposal

Shoreview Water Consumption and Groundwater Awareness Project



Since 1940, the balance of the region's use of surface water to groundwater has shifted dramatically. Chart courtesy of the Metropolitan Council 8/14/2013.



The Badger Meter Reader is one tool to show real time water consumption to households.



City of Shoreview 2015 LCCMR Proposal
Shoreview Water Consumption and Groundwater Awareness Project

Project Manager Qualifications

The City employs a full time Environmental Officer (Jessica Schaum) to direct all environmental programs and green initiatives within the Public Works Department. Managing this project's work plan and outcomes fits squarely in her environmental education, outreach, and compliance role within the City. Other major responsibilities include forestry, recycling, erosion control inspections, coordinating the National Pollutant Discharge Elimination System (NPDES) permit and related surface water issues, and staffing the City's Environmental Quality Committee.

Jessica has a Masters in Urban and Regional Planning with an emphasis in Environmental Planning from the Hubert H. Humphrey Institute of Public Affairs at the University of Minnesota, Twin Cities. Before joining the City of Shoreview, Jessica served as Government Affairs Manager at Conservation Minnesota for two years.

Organization Description

The City of Shoreview, Minnesota is located just ten miles north of both St. Paul and Minneapolis amidst a beautiful natural landscape that includes 11 lakes, 14 parks and more than 1,100 acres of open spaces. Shoreview is regarded as one of the finest places to live in the Twin Cities metropolitan area, and has a population of about 26,000 residents.

The City's water infrastructure includes 100 miles of water main pipe, 6 groundwater wells, and 1,200 hydrants. All of Shoreview's water comes from a groundwater aquifer, not surface water. Due to the importance of protecting this significant resource, Shoreview has led many efforts to increase conservation measures both internally and for our water customers by:

- Implemented an aggressive leak detection and replacement meter program in 2003 to account for all water use within the City. In 2013 the amount of unaccounted for water was 2.2%, which marked our twelve year historic low. This reflects our commitment to accuracy and calibration of the entire system.
- Transitioning from a 3 tier to a 4 tier conservation rate structure for water billing in 2013. Users using the most water pay the highest rate. Shoreview was one of the first cities to create a conservation rate structure, before the State of Minnesota even required them.
- Watering restrictions – In addition to conserving water, the City's odd/even watering ban helps to level out high demand days, which reduces the need for additional wells and water storage infrastructure.
- Installation of variable frequency drive wells on pumping equipment.
- Robust education efforts by Environmental Quality Committee, Slice of Shoreview, newsletters, and experts at the Environmental Speaker Series
- Rain water re-use – truck washing (in our LEED Gold Maintenance Center) and a partnership with the City of Roseville to offer rain barrels to residents at discount prices.
- Leak detection postcards are sent to homes which register constant water use (over 24 hours) so it can be remedied.
- Our adopted Wellhead Protection Plan involves planning to manage land use within our aquifer's drainage area, as well as our Water Emergency Conservation Plan which guides water use during an emergency.

We anticipate our proposal will take us one step further in conserving groundwater resources.