Please complete the project summary and return the completed form to April Snyder, Associate Administrator for the Institute on the Environment at april.snyder@umn.edu. Paper copies will not be accepted. Please also attach any photos, publications, brochures, event agendas or other materials that were a result of the mini grant summary.

**Date of Report Submission:** 7/25/2014

**Project PI & Dept/School**

Arne Kildegaard/University of Minnesota, Morris, Center for Small Towns

Report prepared by: Troy Goodnough

**Project Title:**

Initial project title:

*Building healthy, vibrant and sustainable communities: a series of convened conversations with meals in west central Minnesota.*

**BUT:** the project became the *Examining the State of Water in West Central Minnesota and the City of Morris Salt Water Project*

Phase 1: The Morris Salt Water project

Phase 2: Examining the State of Water in West Central Minnesota – a convening of water practitioners from around the region

**Grant Amount $:** $2,500

**Project Context & Purpose**

*Please include the original project purpose statement and revise for any changes that occurred in the project after the start date with a short explanation of the changes.*

The purpose of the IonE grant was to conduct engagement around community water challenges and community visioning for our region as a destination.

Here is what we originally proposed:

We intend to convene 2 meetings over the 2012-2013 year with diverse stakeholders. The first will focus on soil conservation and sustainable agricultural practices, bringing together representatives from the Morris USDA Soils Laboratory, Pomme De Terre River Watershed Association, the Morris US Fish and Wildlife Service, the Barnes-Aastad Association, the West Central Research and Outreach Center, Stevens Soil, Water and Conservation District, and others.

The second will focus on connecting the dots between local agricultural tourism assets in the region, bringing together large agricultural producers, small organic producers, chamber of commerce representatives, geography faculty from UMM, and others. This meeting follows up on a recent, more general community meeting in Morris, in the course of which this idea emerged as one of interest to a number of disparate parties.

**What changes happened?**

After beginning this project, the city of Morris came to U of M with concerns about the water treatment facility in Morris. Specifically, the city is putting too much salt (chloride ions) into the sanitary sewer system. The city manager of Morris, Blaine Hill, asked if we could help him address this community water challenge.
Early on, we decided we would work to address this community-focused challenge and then return our attention to community convening work.

**Work Completed**

Please provide a summary of the work that was completed for the mini grant project.

As described above, we turned our attention to understanding the city of Morris “salt water” problem.

Chloride accumulates in our sewer ponds, and is eventually released to the Pomme de Terre river. Minnesota Pollution Control Agency is evolving to a new standard of about 230ppm (of chloride ion) as the permissible discharge to the river.

Morris student, Sam Lee, was our first “water” intern. Sam conducted analytical chemistry experiments and determined that our sewage-pond chloride levels are much higher than the proposed standard. We developed a model that describes how water softeners in the community are contributing to the salt water (chloride ion) problem. Water in Morris is very hard, and ranks among the hardest waters in the state. This requires significant water softening. Unfortunately, based on the work we have done so far, a more radical change in softening might be required, like a centralized water treatment plant.

**During Phase 1 we completed 3 main tasks:**

1) We developed a mathematical model of the chloride/salt problem  
2) We confirmed our understanding of our regional water chemistry (via titration experiments)  
3) We prepared a report for the city manager of Morris to assist in his work with city engineers to address the problem and to be available for community members about why this problem exists, how we know it exists, and what options might be available to address it.

**During Phase 2 we developed and implemented a State of Water in West Central Minnesota convening and developed a report.**

Two Morris students (Lily Mahan and Sharice Fontenot) were hired as “water interns” to continue exploring the state of water in Morris and west-central Minnesota. These two amazing students reached out to representatives from agencies across the region to attend the event. During this time, they also worked to develop a report outlining some of the water challenges in west-central Minnesota. We had assumed that many of these practitioners had not met routinely with each other and might benefit from an opportunity to meet together to share stories about progress and challenges, and to learn more about the roles each agency played in this work.

On March 27, 2014, and during a spring snowstorm, about 20 water practitioners from around the region met in Morris. In attendance were representatives from Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, U.S. Geologic al Survey, regional watershed districts, and several other organizations.

Below is the framing from the event:

**Exploring the State of Water in West Central Minnesota**

**Hosted by:** Center for Small Towns, Morris Office of Sustainability and the Institute on the Environment  
**Time:** 10:00am-3:30pm  
**Where:** Oyate Hall, University of Minnesota, Morris

**AGENDA:**

10:00am-10:30am Greeting and Introduction  
10:30am-11:00am Round Table discussion Topic: Past water issues  
11:00am-11:30am Individual Presentations Topic: Present water issues  
11:30am-12:00pm Individual Presentations Topic: Present water issues  
12:00-1:00 LUNCH  
1:00pm-1:30pm Individual Presentations Topic: Present water issues  
1:30pm-2:00pm Individual Presentations Topic: Present water issues  
2:00pm-3:00pm Round Table discussion Topic: Future of water
3:00pm-3:30pm Q&A with students, open discussion/Networking with students.

The event featured 13 speakers from various water organizations discussing their agency’s role and their own perspective on our regional water situation.

Based on the evaluation from the event we learned:

1) 75% of the respondents said the event was helpful for networking
2) Almost 90% of the respondents said they only knew people “somewhat” or “very little” before the event
3) 100% of the respondents said they would be interested in another event and with more of the public in attendance

Center for Small Towns program coordinator, Kelly Asche, and the two “water” interns presented information about this project at the Upper Midwest Association for Campus Sustainability held at Luther College in November 2013.
Partnerships & Collaborations

Please provide a summary of the project personnel, partnerships and collaborations that worked directly on the project or were started as a direct result of the mini grant project.

Phase 1:

Sam Lee, Morris student, CST water intern
Blaine Hill, city of Morris, city manager
Mick Miller, DENCO II Ethanol Plant, plant manager
Brandon Soine, DENCO II Ethanol Plant, engineer

Phase 2:

Project planning for convening

Kelly Asche, Center for Small Towns, program coordinator – co-lead staff on this project
Troy Goodnough, Office of Sustainability, sustainability director – co-lead staff on this project
Arne Kildegaard, Center for Small Towns, director
Lily Mahan, Morris student, CST water intern
Sharice Fontenot, Morris student, CST water intern
Abdullah Jaradat, USDA ARS North Central Soil Conservation Research Lab, planning partner
David Fluegel, U of M Southwest Sustainable Development Partnership, planning partner

Attendees
Forrest Peterson, Minnesota Pollution Control Agency
Sara Gronfeld, Traverse County Soil and Water Conservation District (SWCD)
Tim Cowdery, U.S. Geological Survey
Mary Homan, Lac Qui Parle Watershed District
Holly Kovarik, Pope County SWCD
Ethan Jenzen, DNR
Karen Terry, U of M Extension,
Jared House, Pomme de Terre Watershed
Joe Montonye, Grant County SWCD
Ariel Herrod, Clean Up the River Environment
Hannah Smith, White Earth Tribal and Technical College

**There were many other people engaged in Phase 2. The list above only indicates people who were involved directly in the State of Water in West Central Minnesota Convening**
Project Outcomes & Impacts

Please provide a summary of the outcomes and/or impacts of the mini grant project including future plans for the project.

Main outcomes from the project include:

Phase 1:

This phase produced a quantitative model that represented the city of Morris’s wastewater system. We developed a model that predicted the chloride concentration expected in the Morris wastewater ponds. This model took into account the amount of salt being used by water softeners in homes and businesses in Morris. Because of this work, the city of Morris has increased confidence that they should move with a water treatment facility to centrally soften water to reduce the amount of chloride accumulating in wastewater ponds, and eventually being released to the Pomme de Terre River. In addition to a quantitative model, we also developed a report and some other communication pieces for the city to use to educate the public about this challenge. The city is currently investigating centralized water treatment plant options.

Phase 2:

This phase successfully developed relationships with “water practitioners” from around the west central Minnesota region. Significant time was spent developing relationships with practitioners from around the region. This phase culminated in a convening at the Morris campus, called “Exploring the State of Water in West Central Minnesota.” Water practitioners from around the region came to Morris and shared information about their work, roles, and plans. The participants indicated that they enjoyed the event, and would like to get together again. One of our goals was to try to distill main bullet points of concerns and opportunities for each region. We were not able to accomplish this during our convening.

A draft report was also written that describes some of the water challenges in west central Minnesota. This report will be finished in the fall 2014 and sent to participants.

During the event, we learned about the complicated water regulatory and monitoring landscape in Minnesota. We learned more about how each of the groups fills a particular role in this landscape. Some groups are working on specific project implementation (putting in buffer strips, etc.), while some groups were working on monitoring water quality indicators or trying to develop better models for the entire water budget for particular regions.

In general, we learned that there is a lot of work to do. The regulatory and monitoring landscape is complex both in relationship terms, but also in regard to the scientific work needed to develop a good water budget for a particular watershed. It was somewhat disconcerting to learn that there are few funds to ensure that our watershed have a well-developed water budget -- which accounts for how much water is falling and making its way into the system (aquifers, lakes, rivers, etc.), in addition to monitoring the levels in each part of the system and rates of withdrawal.

Future plans:

With continued funding there is much to do in Phase 3 of this project. Our assumption was that these regional water practitioners were not routinely convened together to discuss their work together as a group. This assumption was confirmed by the survey at our event. It took a lot of effort to find times to bring these groups together and they each had many competing priorities for their time. We have some work to do to help bring more coherence to future events. Our intention is to continue our regional water convening work, despite its complexity. We are thankful that Minnesota invested in developing the Minnesota Water Sustainability Framework. At a future event, we would use this framework to help organize our discussion.

We also plan to continue to work with the city of Morris to better understand and communicate with the public about our salt water discharge challenges.
Links and materials:

Publicity link to the convening event;

http://www.morris.umn.edu/newsevents/view.php?itemID=12965

Here is a link to Flickr pictures from the event:

https://www.flickr.com/photos/ummorris/sets/72157643021918863/

Attached is the City of Morris Salt Water Report.