Water Resource Center Internship Report

Mitzi Collinsworth December 9, 2020

Introduction

The Water Resource Center (WRC) at Minnesota State University Mankato (MNSU), run by interim director Kimberly Musser, serves "as a center for environmental research and information exchange, including distributing data and providing support to those interested in improving water resources in southern Minnesota" (MNSU, 2020). This organization educates the local region on improved farming and watershed practices to reduce desertification and harmful toxins from entering recreational and reliable water sources. They are part of a national movement to reduce or stop tilling, increase land topsoil coverage, increase multiple crops grown on the same land, and increase the use of land grazing animals. All of these efforts reduce pollution in streams, rivers, lakes, and watersheds, including absorption of carbon from the air into the soil.

My main role as an intern was to aid Kimberly in a water resource case study project to teach new upcoming land managers how to communicate and work with the local landowners and farmers. The projects consisted of developing case study key strategies from expert interviews, creating a summary document overview, and a template for the main case study document. I worked with Kimberly only on all projects for the Fall 2020 semester. Kimberly needed help identifying the key strategies and how to incorporate those into an understandable document to help new employees in land and water management, like a how to guide.

Narrative

Research. The initial two weeks, I had to read a large amount of research Kimberly provided through Microsoft Teams. We communicated through Teams, email, and phone calls. The research pertained to understanding the mission of the Water Resource Center and how to spread their knowledge from experts to new members of their field. All of the research was provided by Kimberly under various files in Teams. In addition, I watched a Netflix documentary called "Kiss the Ground" to understand the projects visually. I introduced Kim to this documentary, which she then got approval to use for an exhibit. To help Kim organize her vision, I had to be familiar with all of the research and the Water Resource Center.

Qualitative Analysis and Coding. The first project was reading through expert interview transcripts for the McKnight case studies and defining the key strategies for success. The process was very timely and difficult to organize, so I utilized NVivo software to determine the key strategies.

Most coding software is for quantitative statistical data or codes for creating website design. What this project needed was qualitative analysis coding. Qualitative analysis coding takes keywords or phrases that are repeated throughout a document, then codes them according to relevance or frequent usage to show a pattern. In the case of the interviews for the McKnight case studies, the codes used were the key elements to break down which were used and how often in each transcript.

There are different types of qualitative analysis software, but I chose NVivo. I chose it for the following reasons:

- Student annual price
- Ease of use
- Free Tutorials
- Application use on my laptop
- Accommodates both Windows and Mac

I tried to figure it out on my own first, and it was an epic failure. I definitely recommend the tutorials. Once I understood how to structure the settings, the coding and analysis were easy. I fashioned up graphs and charts to reflect the results for Kim.

Editing. In the middle of the project, Kim had me do some editing projects that came up throughout the course of the internship. I wanted experience with grants, and she gave me the opportunity to edit their proposal for the Fishers & Farmers Partnership's Proposal for Funding for the Upper Mississippi River Basin, and make sure the information matched the requirements. The grant proposal was about 40 pages in length, and I had about a 24 hour turnaround.

Kim also gave me the opportunity to edit press releases for their annual Trailblazer award. This award was given to individuals or groups who exemplified water resource practices to improve land and water quality. There were four to five different documents I edited over a span of a week. The due date on this project was loosely set and it was more at my discretion.

Near the third week of October, Kim needed my help editing and formatting her Water Resource Conference presentation on PowerPoint. First, I made sure the slides were congruent and had a visually organized flow. Second, I proofread each slide for errors or made suggestions on how to present the information simply for a large audience. Lastly, I went in and cleaned up any last minute changes she made before the actual presentation.

Technical Writing. The last project I am still finishing for Kim is the largest component of the internship. Kim needs me to create a template for a large case study document for new experts in the field to learn from. In conjunction with that template, she also wants a summative overview guide to accompany the template as a "How To" quick reference guide. She will then use both to finish the large case study document. The summative overview will be 20 pages and the case study document will be over 40 pages.

We have been working on this project from the start. Kim and I communicate via email, Teams and phone calls to build upon our progress week to week. I will finish my part by December 13th. I understand this goes slightly passed the last class date, but I want to finish this for Kim. I respect her and the project. I am happy to finish what I can to aid her passion project. I take pride in my work, and I want to leave her with a finished project.

Work Log. To see how these projects flowed over the course of the internship, please view the work log I sent in an email. I fulfilled about 146 hours over the course of the Fall 2020 semester. A sample of the work log is below.

Internship Log

Student Name: Mitzi Collinsworth

	MON	TUE	WED	THU	FRI	TOTAL HOURS
	7-Dec	8-Dec	9-Dec	10-Dec	11-Dec	14+ hours
RESEARCH						146 Total Internship Hours
EDITING						
TECHNICAL WRITING						
Case study and Summary Overview Doc template			4 hours	2 hours	4 hours+	
OTHER						
Internship Work Log		4 hours				

Analysis and Evaluation

I am pleased with the overall internship process. I feel lucky that it worked out with Kimberly Musser. I was initially trying to secure an internship in San Diego where I live, but it didn't work out. I am so glad it didn't.

Kimberly was dedicated to making sure I had a valuable experience. She made sure to provide experience in all areas I desired. She was so easy to talk to. We connected as colleagues, mothers, and supervisor to employee.

I felt the flow of the internship worked in perfect progression with my learning needs. Each week built upon the next leading to bigger projects down the line. All of the projects were connected so I learned more as I performed more tasks. This allowed me to fully understand how she wanted the final projects to come together.

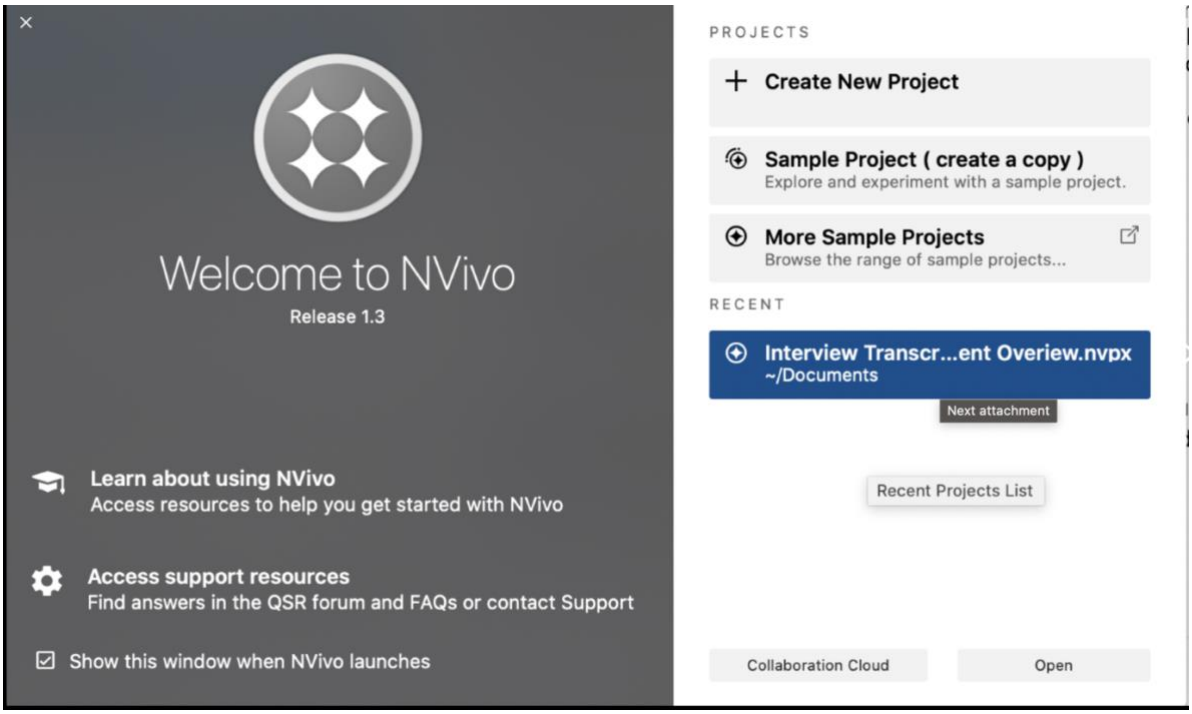
I also felt lucky to work on an environmental project for my internship. Although my major isn't dealing with the environment, I am passionate about it as my own hobby. I felt connected and

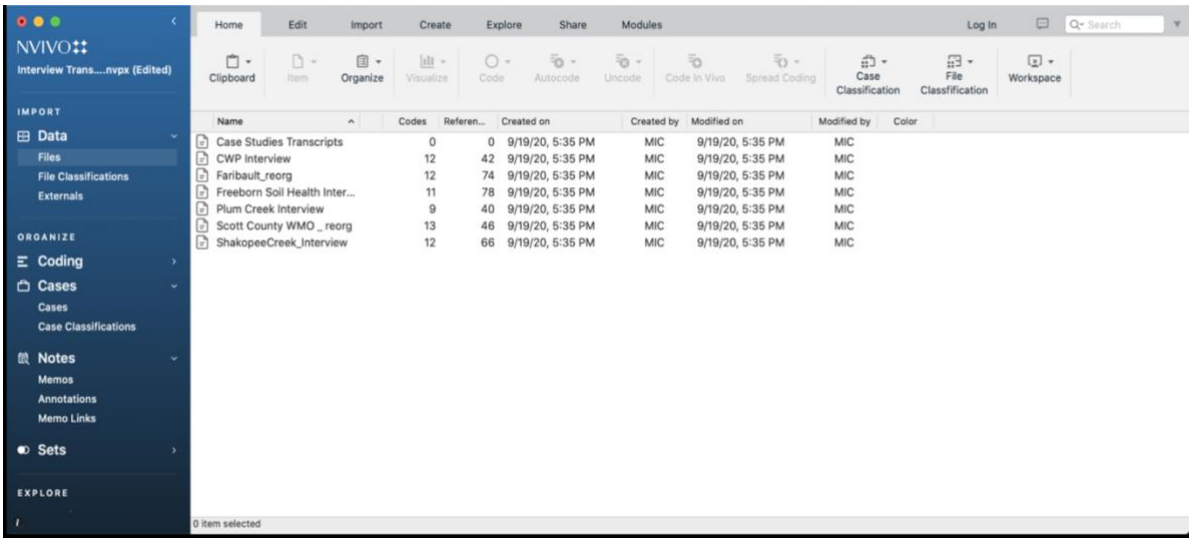
believed in the work we were doing. I agree that the education and support the Water Resource Center provides is crucial to save our future planet. All of the work done now, will pay off in the future.

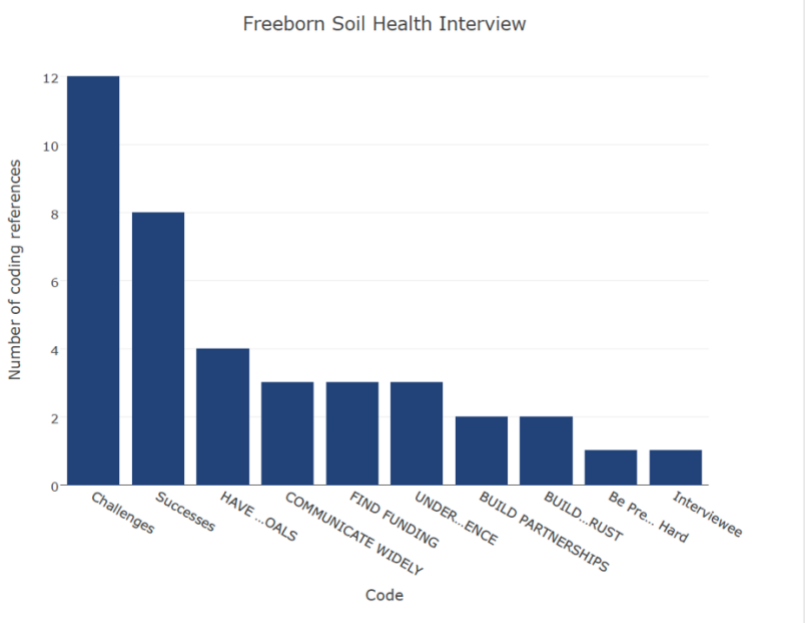
Appendix

All of the following are examples of some of the projects I completed under Kimberly Musser during my internship. Due to size, I will only include snip-its from large documents.

Coding Software Examples






Freeborn Soil Health Interview
Number of coding references
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2
4
6
8
10
12
Challenges
Successes
HAVE ...OALS
COMMUNICATE WIDELY
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UNDER...ENCE
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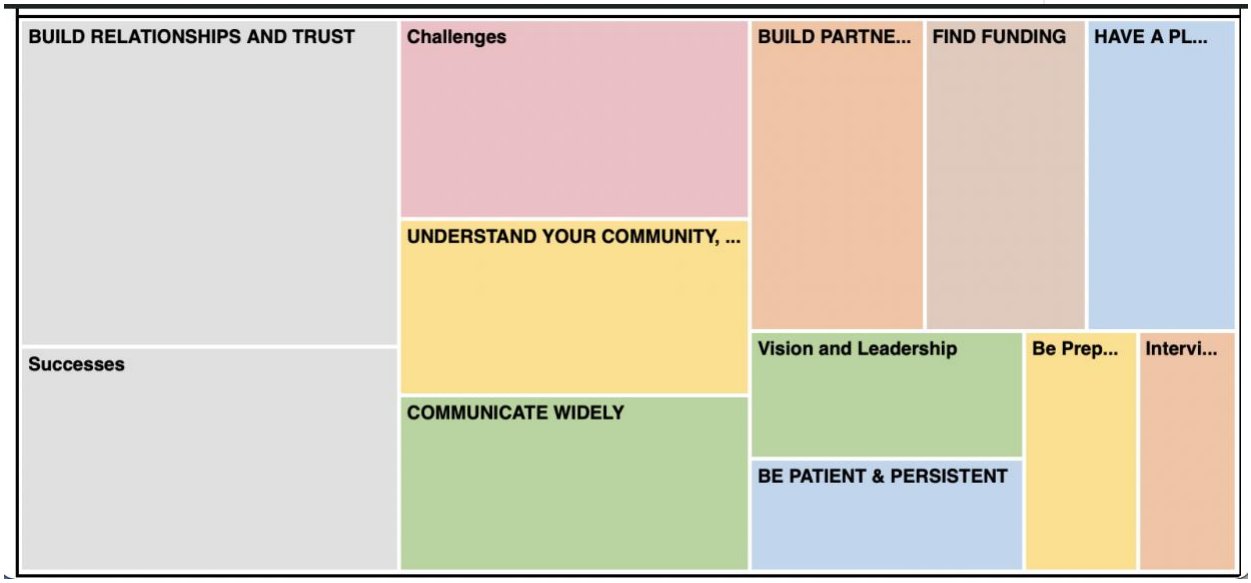
BUILD...RUST
Be Pre... Hard
Interviewee
Code


BUILD RELATIONSHIPS AND TRUST
Challenges
BUILD PARTNE...
FIND FUNDING
HAVE A PL...
UNDERSTAND YOUR COMMUNITY, ...
Successes
Vision and Leadership
Be Prep...
Intervi...
COMMUNICATE WIDELY
BE PATIENT & PERSISTENT

Grant and Press Release Editing

Water Storage Trailblazer Award

Draft for review and feedback, not for distribution: 10-15-2020

Nominate a Trailblazer Today!

Overview/Background

Our area rivers have increased ~~and~~ flashier flows ~~and this is~~ leading to higher rates of erosion, sediment, and nutrient levels. Research shows the long-term solution to improve Minnesota River water quality is to reduce peak flows and store more water on the landscape. Water storage can take many forms, such as wetland restorations and upland impoundments, multi-purpose drainage management, urban rain gardens and stormwater facilities, and improved soil health.

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The goal of the Water Storage Trailblazer award is to honor and recognize citizens, partnerships, and organizations that have made a difference on their land or in their communities to store more water on the landscape. Trailblazer honorees illustrate examples of water storage that slow the flow, filter pollutants, and improve watershed conditions. This award program is an opportunity to lift up and celebrate many watershed stewards' individuals, families, and community groups that are already working to store more water and exemplify a commitment to improve area lakes, ~~and~~ rivers, and overall watershed health.

Award Categories

Water Storage Citizen Award: Given to an individual or family that has demonstrated a personal commitment to manage water on their land.

Water Storage Partnership Award: Given to a group, an organization, or a community that has demonstrated a commitment to implementing innovative and effective water storage management solutions.

Water Storage Outreach Award: Given to individuals or organizations that have raised awareness about the need for more water storage in our region.

Eligibility ~~r~~Requirements

This is the first in a series of water storage awards. This year, projects must be ~~in~~ located in the Greater Blue Earth River Basin (Le Sueur, Blue Earth or Watonwan River watersheds) or Middle Minnesota River Watershed.

Brought to you by ~~p~~Partnership * or you can just say "Partnerships"

Water Storage Trailblazer's Award program is a collaborative partnership associated with the ~~*We are Water Minnesota*~~ We are Water Minnesota Exhibit. The exhibit is focusing on the Greater Blue Earth River Basin and will be on display at the Blue Earth County Historical Society October 22 through December 18, 2020 at 424 Warren Street, Mankato, MN. This exhibit and award program ~~is~~ are co-hosted by Blue Earth County Historical Society, Water Resources

Activity 1: Cover crop seed to xxx acres

Compensation will be provided to participating farmers and a cover consultant via a rebate, after they have: 1) convened~~met~~ a minimum of two times and 2) attended two technical meetings that demonstrate~~ing~~the integration of cover crops into conventional crop rotation. There will be an opportunity to renew annually for a maximum of xx years per participant. Farmers will plant cover crop seed on xxx number of tillable acres. Funds will pay for an applicator to take care of the seed and seeding. The landowner pays what is not covered by the grant (e.g. termination).

Insert total lbs/acre reduced -
[Cover crops reduce tile nitrate on average 10 lbs/ac (UMN) and sediment 250 lbs/ac (MPCA), get Phos and flow reduction data???]
Insert timetable: month/year

Activity 2: Mentoring and Advising

Program participation requires the participating farmer to consult with an advisor knowledgeable about farm operations and cover crops. The cover consultant will meet with the farmer to evaluate their operation and advise best management options that incorporate cover crops, after evaluating crop history and onsite soils. The farmer will be presented with a list of vendors and seed dispersal options during their cover consultation, allowing them to customize their planting plan. Each participating farmer in the program will be linked with a crop advisor/agronomist familiar with soil health and supportive of the effort. Farmers experimenting with cover crops in the watershed can use these mentors as a resource.
Insert timetable: month/year

Activity 3: Outreach & Education

In addition, field days will allow farmers to learn about industry standards for successful cover crops. Participants are expected to attend a minimum of two meetings per year to learn from one another and experts in order to receive compensation for experimenting with~~trying~~ cover crops in their fields.

Logistical and Technical Support for Peer-to-Peer Learning

Soil Health Learning Groups – Provide support to an emerging Soil Health Team based in the Waseca Soil and Water Conservation District. ~~The goal of T~~these meetings would be small group meetings where producers can share their successes and failures and learn from each other. The meetings will also establish~~broader goal of this group would be growing~~ relationships and trust for peer-to-peer networking with area farmers and local conservation partners. Participants will have the opportunity to learn from each other and experiment. (Target: 2-3 meetings per year)

Field Day Logistical Support - Help support logistics of field days to support improved communication and education. Grant would help to provide funding for food and speaker fees to draw producers to Field Days. (Target: 1-2 field days per year)

Improved Communication

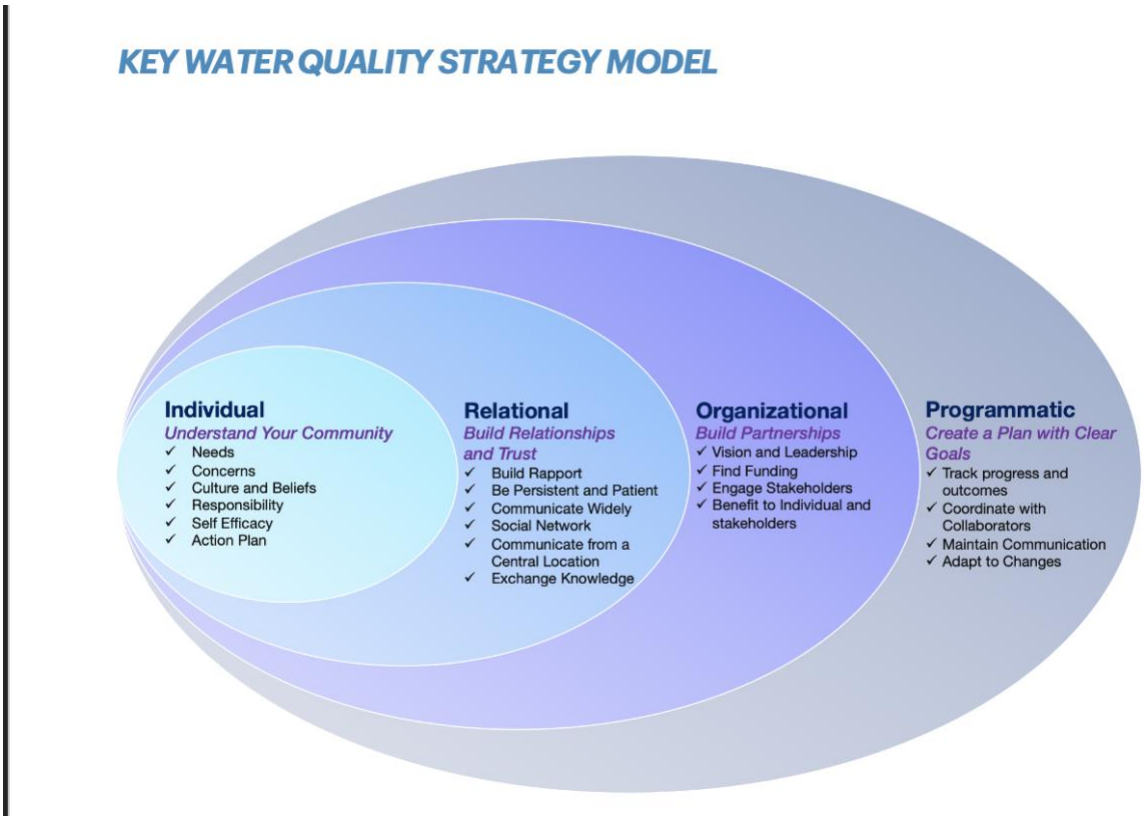
Develop Outreach Materials

Create summary handouts tailored to answer key questions consistently raised in soil health meetings across the watershed. For example, the handouts may include~~could~~ detail regional contacts for soil health services, Frequently Asked Questions, or economic comparison summary). (Target: Create 3 summary handouts per year)

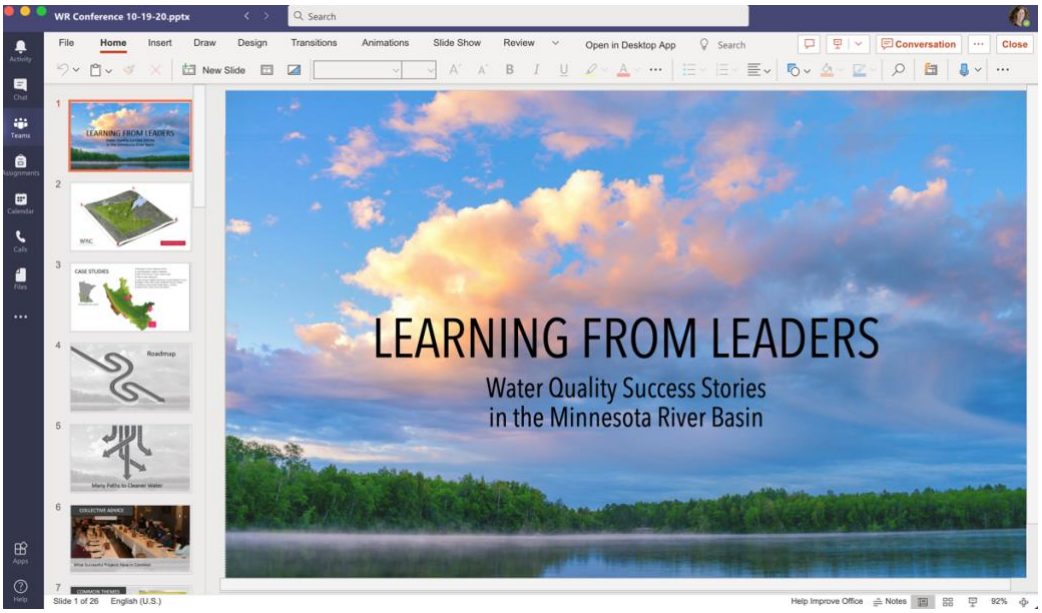
Producer Profiles – Videos or Written Summary

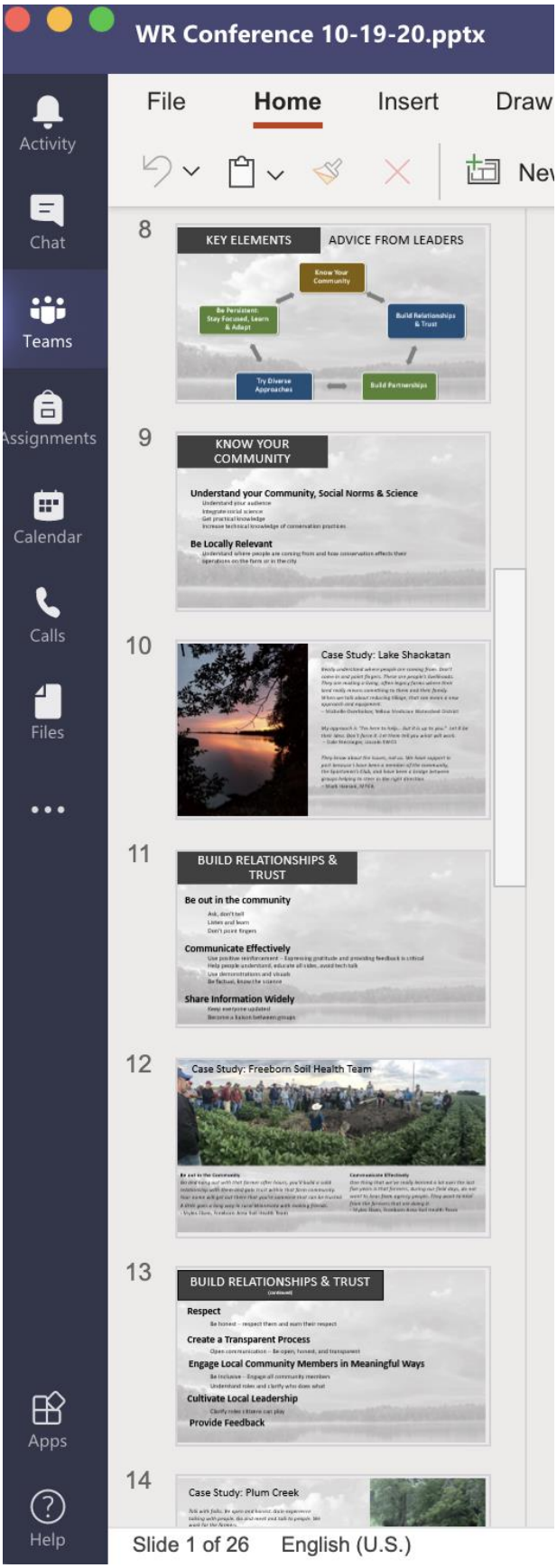
There are numerous producers in the region that are already experimenting with cover crops. In order to foster more farmer-to-farmer mentoring and networking, we will find and profile examples of soil health farmers in the region that are "hiding in plain sight." The goal will be to create video documentation or case studies of soil health producers in the region. The outcome will be knowledge share with a broader audience. (Target: 5 producer profiles per year)

Davenport Models Based on Key Strategies



Water Resource Conference Presentation

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Activity
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Assignments
Calendar
Calls
Files
Apps
Help
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Home
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Draw
8
KEY ELEMENTS
ADVICE FROM LEADERS
Know Your Community
Build Relationships & Trust
Build Partnerships
Try Diverse Approaches
Be Persistent: Stay Focused, Learn & Adapt
9
KNOW YOUR COMMUNITY
Understand your Community, Social Norms & Science
Be Locally Relevant
10
Case Study: Lake Shaokatan
11
BUILD RELATIONSHIPS & TRUST
Be out in the community
Communicate Effectively
Share Information Widely
12
Case Study: Freeborn Soil Health Team
13
BUILD RELATIONSHIPS & TRUST
Respect
Create a Transparent Process
Engage Local Community Members in Meaningful Ways
Cultivate Local Leadership
Provide Feedback
14
Case Study: Plum Creek
Slide 1 of 26
English (U.S.)