Morris Community Climate Smart Municipality Strategic Planning Retreat

STRATEGIC PLAN

SUMMARY OF RESULTS – COMMUNITY AND ORGANIZATIONAL GOALS

Camp Ripley, MN

October 29th and 30th, 2018

I. INTRODUCTION

The City of Morris is one of five communities across the state that is participating in the Climate Smart Municipalities (CSM) program through the University of Minnesota. The CSM program pairs Minnesota communities with communities in North Rhine Westphalia, Germany. Morris is partnered with Saerbeck, Germany. Saerbeck, a small, rural community like Morris, is a leader in renewable energy and energy efficiency and was the first winner of the prestigious European Energy Prize. The City of Morris, the University, county, hospital, the public school system, and area businesses are all involved in what has been labeled the Morris Model. The Morris Model Team aspires to follow Saerbeck's lead. In order to develop goals, brainstorm about potential projects, and build community consensus; a Morris Community Climate Smart Municipality Strategic Planning Retreat was held at Camp Ripley on October 29th and 30th, 2018. Many community organizations and businesses were represented at the event.

Prior to the retreat, many steps were taken to lay a foundation from which to build a better community. The Jefferson Center and the Institute for Agriculture and Trade Policy conducted community dialogues to discuss climate resiliency and renewable energy. Following the two dialogue sessions, a report was drafted by these two organizations, which can be found at www.ruralclimatenetwork.org/content/rural-climate-dialogue-morris-mn. Since 2000, the University of Minnesota, Morris and the West Central Research and Outreach Center have been conducting renewable energy research and outreach with various partners such as the Clean Energy Resource Teams (CERTS). The University's efforts have brought significant funding and resulted in many awards for the community. Due to these early efforts, the Morris community is known throughout the state and nation as a leader in renewable energy. Even though these efforts have been significant, the Climate Smart Municipality program is serving as a catalyst for cultural change across the community. This is being accomplished through multiple visits from Saerbeck delegation members as well as Morris community delegations to Saerbeck. These visits and input from our Saerbeck friends have served as the driving force for development of community and organizational goals. It is the strong desire of the Morris Model Team that these goals will be ratified by each organization and that the goals will then serve as a roadmap for ongoing and future projects.

II. PROCESS

The Morris Model Team developed a grant proposal for a West Central Initiative Community Planning Grant which was submitted by the City of Morris. The $7,500 grant was awarded, and a community Climate Smart Municipality retreat was planned for Camp Ripley on October 29th and 30th, 2018.

Our bus departed Morris from the West Central Research and Outreach Center at 9 AM and arrived at Camp Ripley at 11 AM on October 29th. We began our retreat with a welcome and Introductions. Lissa Pawlisch, Co-Director, U of MN Clean Energy Resource Teams (CERTS), served as our moderator on the first day.

Blaine Hill, Morris City Manager, presented the charge and vision:

***"Your charge** is to actively participate in developing community and organizational goals which will lead to energy, waste reduction and recycling, transportation, and related educational projects. We ask for your leadership in pursuing these goals and projects for the betterment of our community."*

***"Our vision** is for the Morris community to be nationally recognized as an innovation leader in energy, transportation, and waste reduction and recycling. By leading in these areas, we hope to drive a more robust and vibrant economy within our agricultural and manufacturing sectors creating new businesses, jobs, and wealth for our community. Through this process, our community will become more economically and environmentally resilient. We hope to achieve this vision by:*

- *Producing all energy locally keeping more money within our community,*
- *Providing greater opportunities for local ownership of energy production,*
- *Inspiring a new conservation ethic for saving energy and reducing waste,*
- *Developing innovative educational programming for students and all community members, and*
- *Becoming a destination for those wanting to learn and for businesses wanting to participate.*

Finally, we wish to follow the lead of our partner city, Saerbeck, Germany. Saerbeck is a European and global energy, environmental, and climate protection leader."

Following the presentation of the charge and vision, Blaine also provided an overview of the Climate Smart Municipality program. Dr. Sabine Engel, Director of the CSM program, was unable to participate so Blaine stepped in. Troy Goodnough, Director of Sustainability at the University of Minnesota, Morris followed with his presentation, "What is the Morris Model?"

Figure 1. Retreat participants

In an effort to identify the current baseline energy use, Ben Erickson, GreenCorps Member for the City of Morris, and Mickey Cotter, Renewable Energy Scientist, U of MN West Central Research and Outreach Center, outlined energy consumption on a city, greater community, and farm level across Stevens County. The presentations are included in the appendix. Mike Reese, West Central Research and Outreach Center, followed with the key takeaways***. The presentations estimated that the Morris community and Stevens County consume approximately $110 million of energy or energy derived products each year.*** Our community can capture more value and develop more wealth by conserving energy and

producing more energy on a local level. This could also lead to more businesses, industries, and other secondary benefits.

Tara Ritter, Institute for Agriculture and Trade Policy, moderated the afternoon session, "Laying the foundation for developing effective goals." Ms. Ritter began by describing her organization and detailing the report they developed based off of two dialogue sessions conducted in the community. Then, the represented public and private entities were asked to address the following question: "What has and is being done by your organization to develop goals and projects around the topics of energy efficiency and generation, waste reduction and recycling, clean water, and education of these topics?" *Short reports were given by the following groups:*

- City of Morris
- University of Minnesota, Morris
- University of Minnesota – West Central Research and Outreach Center
- County of Stevens
- Morris Area Public Schools
- USDA ARS North Central Soils Conservation Research Lab
- DENCO II
- Ottertail Power Company
- Riverview, LLP
- SCEIC

Figure 3. Jason Grenier, Ottertail Power, describes utilities efforts on efficiency and renewable generation.

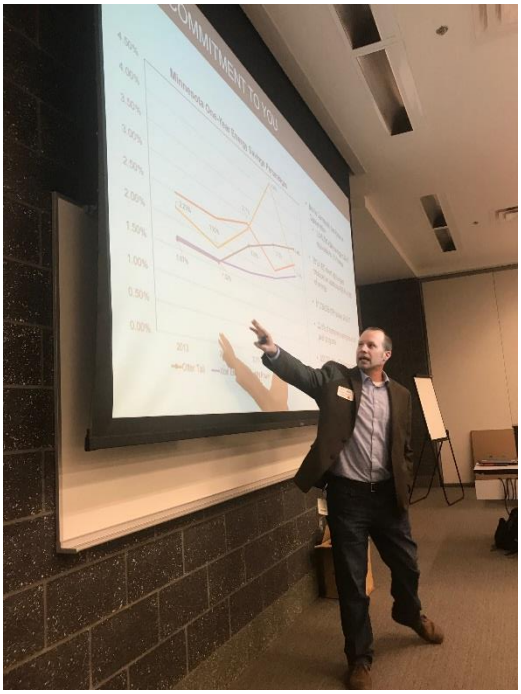

Figure 2. Doug Stahman, Board Member - Morris Area Public Schools, outlines energy activities of the school system.

A table discussion was held following evening dinner. The moderated session dealt with the question, "Should our community lead, follow, or get out of the way?" The follow-up questions were meant to stimulate goal and project ideas for the following day.

The focus of the second day was to set goals and develop project ideas. We began with a Skype call from Mayor Wilfried Roos and Guido Wallraven of Saerbeck, who described their experience with goals and projects and how this process helped Saerbeck achieve success.

Larry Herke, Director, Minnesota Office of Enterprise Sustainability, described the State's goals and implementation. The Morris Model Team then presented overarching goals for the community as well as the early project list, which was developed from input from past meetings.

The BIG GOALS are:

1. ***Produce 80% of the energy consumed in the county by 2030***
2. ***Reduce energy consumption 30% by 2030***
3. ***No land-filling of waste generated within the county by 2025***

The ground rules were discussed again, and the group began setting SMART energy and resiliency goals for our community. The goal setting and project idea sessions were moderated by Will Seuffert, Executive Director, MN Environmental Quality Board. We began by breaking into four random groups. We discussed community stretch goals in these areas:

- Energy – Generation, Efficiency, and Integration
- Transportation – (e.g. Electric and Biofuel transition at all levels)
- Waste Reduction and Recycling
- Energy and Resiliency Education at all levels

Next, with the objective to develop organizational goals, we broke up into organizational groups to discuss goals in these same topic areas. These groups included organizational representatives as well as other community members. The groups included:

- City of Morris
- County of Stevens
- Morris Area Public Schools and University of Minnesota Campuses at Morris
- Business Community

Following lunch we received a briefing about Camp Ripley energy and sustainability initiatives and took a tour of the facilities. Camp Ripley is operates similarly to a city and has its own islandable microgrid and renewable energy systems.

We concluded the day by developing and discussing project ideas for our community and organizations to help achieve our goals. ***The primary action requested is for each organization to ratify their respective goals developed during the retreat.*** These were full and busy days, so we ended by expressing appreciation to all those who participated in the retreat!

III. GOALS

A. ENERGY

Community Energy Goals:

1. *Reduce energy consumption 5% annually with a minimum reduction of 30% by 2030.*
2. *Expand solar generation to 50% of public buildings and 25% of privately-owned homes.*
3. *Using renewable energy, produce 80% of the community's energy needs by 2030 with strong community investment and participation.*

City Energy Goals:

1. 5% annual reduction of city energy consumption
2. 50% of city buildings utilizing solar generation with at least one publically visible solar array

County Energy Goals: (As a note, county representatives attended the first day but were not available the second day. Results were developed by county citizens and feedback from the previous day.)

1. Five new PACE (Property Assessed Clean Energy) participants per year
2. 80% of energy consumption to come from renewable resources by 2030
3. Participate in a smart, islandable microgrid which will support community resiliency

University and Public School Energy Goals:

1. Carbon neutrality at UMM by 2020
2. Use energy produced from local resources
3. Reduce CO2 footprint
4. 5% annual reduction in energy consumption

Industry Energy Goals:

1. Inventory / aggregate current use - energy consumption assessment
2. Collaborate with energy efficiency teams
3. Snowball (spread) successes throughout community

B. TRANSPORTATION

Community Transportation Goals:

1. *Reduce fossil fuel consumption 30% by 2025 with strategies for public and private fleets.*
2. *Establish baseline fossil fuel consumption and then include on-going monitoring*

City Transportation Goals:

1. Reduce fossil fuel consumption 30% by 2025 with strategy for the city fleet.
2. Establish baseline fossil fuel consumption and then include on-going monitoring
3. Purchase and operate one electric transit bus by 2020

County Transportation Goals:

1. Consider renewables first with vehicle replacement
2. Electric Rainbow Rider by 2022.

University and Public School Transportation Goals:

1. School district will adopt community goals
2. UMM will reduce fossil fuel consumption 50% by 2025 and 100% by 2030

Industry Transportation Goals:

1. Evaluate fleet for optimization
2. Enforce fuel usage standards

C. WASTE REDUCTION AND RECYCLING

Community Waste Reduction and Recycling Goals:

1. *Eliminate organics in waste streams*
2. *Achieve 60% diversion from landfills to recycle and composting*

City Waste Reduction and Recycling Goals:

1. Eliminate organics in waste stream by 2025
2. No landfill of waste by 2025

County Waste Reduction and Recycling Goals:

1. Eliminate organics in waste stream by 2025
2. No landfill of waste by 2025

University and Public School Waste Reduction and Recycling Goals:

1. 75% combined (UMM and school) recycling by 2030
2. UMM will have zero waste landfilled by 2025

Industry Waste Reduction and Recycling Goals:

1. Work with local farmers on using organics
2. Work with consumers to reduce waste
3. Work with businesses to target individual behavior (e.g. Train employees to recycle and compost)

D. EDUCATION

Community Education Goals:

1. *Raise awareness through a K-12 curriculum*
2. *Develop semi-annual scorecard and communicate results*
3. *Develop strategies for effective communication and volunteer programs*

City Education Goals:

1. Educate city staff regarding resiliency and sustainability by 2020
2. Lead by example through developing and releasing a report to community about the city's energy efficiency, renewable energy, and waste reduction (2020)

County Education Goals:

1. By 2020, develop conservation ethic programs for staff and citizens to reduce recycling and organics in waste streams
2. Develop a communication plan for the PACE program

University and Public School Education Goals:

1. Participate in a community-wide scorecard.
2. K-12 curriculum on these topics by 2025
3. By 2020, integrate campus and school resiliency plans

Industry Education Goals:

1. Leverage experience with individual businesses within the community
2. Workforce recruitment and retention with energy-focused jobs

IV. PROJECTS

A project list is included in the appendix. The projects are suggestions for organizations on how the goals may be achieved. The project list includes the original Morris Model 100 projects that were developed after large and small group meetings with stakeholders. Projects were then added based on discussions at the Camp Ripley retreat with additional stakeholders. The projects are also broken down into those organizations which may be responsible for initiation and completion of the projects if they so choose. Again, the project list is a suggested approach for organizations to meet goals. The Morris Model team's hope is for the goals to be ratified and adopted by each organization. The organizations can then determine which projects to pursue.

V. SUMMARY

The Morris Community has many assets in place to pursue Climate Smart Goals. These assets include organizations such as the city and county governments, the University campuses (UMM and WCROC), Morris Area Public Schools, USDA ARS Soils Lab, Stevens Community Medical Center, utilities such as Ottertail Power Company, and businesses such as DENCO II, Riverview LLP, and Superior Industries. Many residents of the Morris community are also deeply engaged, but more champions and volunteers are needed. Each organization and resident can contribute in unique ways to improve our community. As Blaine Hill noted at the end of the retreat, "It is truly remarkable that I can purchase E-85 fuel for my vehicle that was produced here in town using corn from Stevens County, and the E-85 fuel is delivered directly from the plant to the gas station. The money never leaves the community! Think about the economic impact of keeping those dollars local! And we can do the same for the other energy we consume as well. I learned this at the retreat by listening to Mick Miller's presentation about DENCO II."

Larry Herke, Director of the Office of Enterprise Sustainability for the State of Minnesota summed up the retreat by providing four suggestions:

1. Continue to Work Together! The Morris community has already achieved a great amount of success in these areas. This will improve even more by working together on these goals and challenges.
2. Encourage each organization to hire or appoint a sustainability coordinator and encourage communication between sustainability coordinators.
3. Develop a central "traffic cop" such as a Morris Model Coordinator to facilitate communication, reporting, and progress towards goals.
4. Use all resources available to achieve goals including:
    a. Legislature
    b. Federal government
    c. Local organizations
    d. Businesses

Ultimately, our success towards these goals depend on the leaders and citizens of the Morris community and Stevens County. We are hopeful the goals developed as part of this retreat will be adopted by each organization! In conclusion, the next steps are to:

- Ratify organizational goals
- Prioritize organizational projects
- Educate community members

VI. ACKNOWLEDGEMENTS

The Morris Model Team extends our sincere appreciation to the West Central Initiative for funding the strategic planning retreat, Camp Ripley for hosting the event, and Lissa Pawlisch, Will Seuffert, Larry Herke, and Tara Ritter for serving as facilitators and speakers.

We also wish to extend our deep gratitude to the thirty-three participants who graciously took time out of their busy schedules to participate! Thank you for your leadership!

VII. APPENDICES

A. Retreat Program
B. Participant List
C. Presentation – City of Morris Estimated Annual Energy Consumption
D. Presentation - Stevens County Estimated Annual Energy Consumption
E. 2019 Morris Community Climate Smart Municipality Project List

Appendix A. Retreat Program

Morris Community Climate Smart Municipality Strategic Planning Retreat
Camp Ripley, MN
October 29th and 30th, 2018

October 29th:

8:30 AM	Load Small Bus at West Central Research and Outreach Center Administration Parking Lot (46352 State Hwy 329, Morris, MN 56267)
9:00 AM	Depart Morris from the West Central Research and Outreach Center
11:00 AM	Arrive at Camp Ripley Education Center ***- May need to present drivers licenses or alternative picture ID entering the guard gate.***
11:30 AM	Welcome and Introductions - *Moderator, Lissa Pawlisch, U of MN Clean Energy Resource Teams (CERTS)*
12:10 PM	Lunch
12:40 PM	Ground rules for the strategic planning session - *Moderator, Ms. Lissa Pawlisch, U of MN Clean Energy Resource Teams (CERTS)*
12:45 PM	Retreat Charge and Vision -*Mr. Blaine Hill, Morris City Manager*

Your charge *is to actively participate in developing community and organizational goals which will lead to energy, transportation, waste reduction and recycling, and related educational projects. We ask for your leadership in pursuing these goals and projects for the betterment of our community.*

Our vision *is for the Morris Community to be nationally recognized as an innovation leader in energy, transportation, and waste reduction and recycling. By leading in these areas, we hope to drive a more robust and vibrant economy within our agricultural and manufacturing sectors creating new businesses, jobs, and wealth for our community. Through this process, our community will become more economically and environmentally resilient. We hope to achieve this vision by:*

- *Producing all energy locally keeping more money within our community,*
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- *Becoming a destination for those wanting to learn and for businesses wanting to participate.*

Finally, we wish to follow the lead of our partner city, Saerbeck, Germany. Saerbeck is a European and global energy, environmental, and climate protection leader.

12:50 PM	The Climate Smart Municipality Program -*Mr. Blaine Hill, Morris City Manager*
1:10 PM	What is the Morris Model? -*Mr. Troy Goodnough, University of Minnesota, Morris*
1:30 PM	Current State of the Community Baseline Energy Consumption in the City and Greater Community *Mr. Ben Erickson, City of Morris Green Corp Member and Mr. Mickey Cotter, Renewable Energy Scientist, U of MN West Central Research and Outreach Center*

1:50 PM What are the takeaways from the current energy baseline? Mr. Mike Reese, *WCROC*

2:00 PM Laying the foundation for developing effective goals, Moderator – *Ms. Tara Ritter, Institute for Agricultural Trade and Policy*

Organizational reports addressing the following:

What has and is being done by your organization to develop goals and projects around the topics of energy efficiency and generation, transportation, waste reduction and recycling, clean water, and education of these topics?

Reports by public entities (10-15 min ea.):

- City of Morris
- University of Minnesota, Morris
- University of Minnesota – West Central Research and Outreach Center
- County of Stevens
- Morris Area Public Schools
- USDA ARS North Central Soils Conservation Research Lab

3:30 PM Afternoon Break

4:00 PM Reports by Businesses (10-15 minutes each):

- DENCO II
- Ottertail Power Company
- Riverview, LLP
- Superior Industries (Will join on Tuesday)
- SCEIC
- Others

5:30 PM End of the afternoon session

5:50 PM Load Bus to transfer across Camp for Dinner

6:00 PM Dinner (at the Snack Shack across the Camp)

7:00 PM Table Discussion – Lead, Follow, or Get Out of the Way!

1. **Should the Morris Community lead, follow, or get out of the way regarding energy, waste reduction, transportation transition, and education of these topics?**
   a. What are the benefits of being a leader or a follower?
   b. In what areas is the community already leading?
   c. Where do we have assets to become a leader?

2. **What big goals and project ideas are needed to be a leader in these four areas?**

Energy, Transportation, Waste Reduction and Recycling, and Education of these topic?

9:00 PM End of Day 1 Program

October 30, 2018:

7:00 AM Breakfast

8:00 AM Setting Community Goals for Energy and Resiliency

Insights from Saerbeck, Germany – The European Energy Award City

8:15 AM State of Minnesota Goals – Mr. Larry Herke, Director, MN Office of Sustainable Enterprise

8:45 AM Morris Model Goals and Project List - Morris Model Team

BIG GOALS:

4. ***Produce 80% of the energy consumed in the county by 2030***
5. ***Reduce energy consumption 30% by 2030***
6. ***No land-filling of waste generated within the county by 2025***

MORRIS 100 PROJECT LIST: (In folder)

9:20 AM Review Ground Rules

9:30 AM Morning Break

9:45 AM Setting SMART Energy and Resiliency Goals for Our Community – *Moderated by Mr. Will Seuffert, Director, MN Environmental Quality Board, State of MN*

- Community stretch goals in these areas:
  - Energy – Generation, Efficiency, and Integration
  - Transportation – (eg. Electric and Biofuel transition at all levels)
  - Waste Reduction and Recycling
  - Energy and Resiliency Education – All levels

- Organizational stretch goals in these areas:
  - Energy – Generation, Efficiency, and Integration
  - Transportation – (eg. Electric and Biofuel transition at all levels)
  - Waste Reduction and Recycling
  - Energy and Resiliency Education – All levels

12:15 PM Lunch

1:00 PM Camp Ripley Energy Briefing and Tour

2:00 PM Action Plans for Our Community and Organizations

- Develop short, mid, and long term joint project list based off of goals
- Discuss key next steps including ratifying goals and following up on the new project list

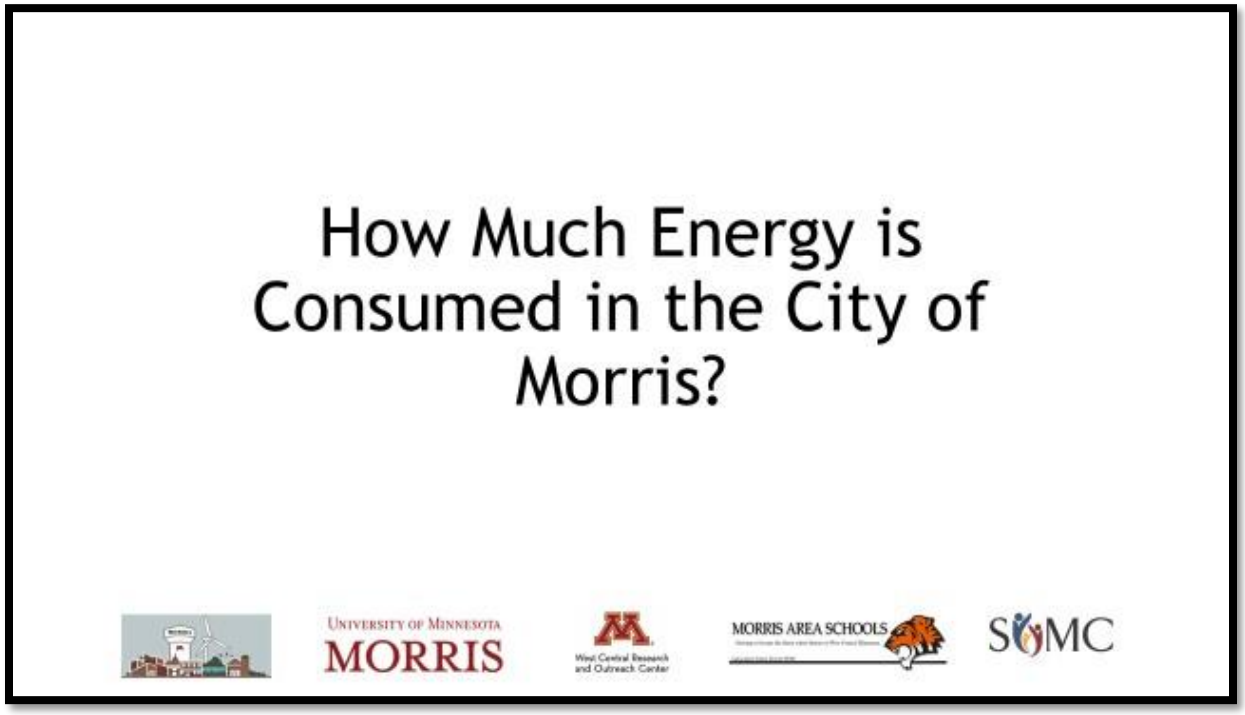
4:30 PM Wrap-up - Blaine Hill, Bryan Herrmann, Larry Herke, and Will Seuffert

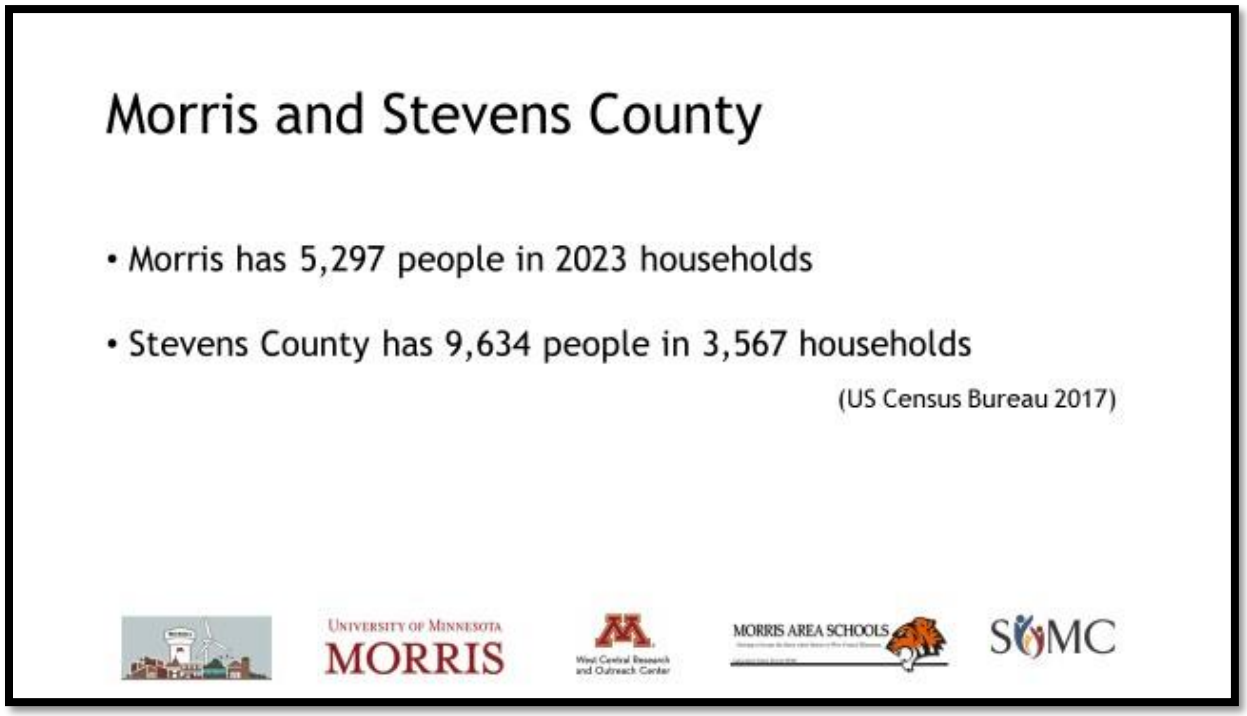
5:00 PM End of Session - Load Bus and return to Morris approximately 7:30 PM

Appendix B. Participant List

Morris Community CSM Retreat Participant List:		
1	Sheldon Giese	Mayor of Morris
2	Blaine Hill	Morris City Manager
3	Ben Erickson	GreenCorps Member for City of Morris
4	Cheryl Kuhn	Stevens Co. Economic Improvement Director
5	Aaron Jordan	City/County Attorney
6	Mike Odello	Clerk/Treasurer/Director Morris Area School Board
7	Douglas Stahman	Director, Morris Area School Board
8	Don Reicosky	Soils Scientist, Retired
9	Mike Reese	WCROC Renewable Energy Director
10	Eric Buchanan	WCROC Renewable Energy Scientist
11	Mickey Cotter	WCROC Junior Renewable Energy Scientist
12	Cory Marquart	WCROC Renewable Energy Engineer / Morris Fire Dept
13	Bryan Herrmann	VC Finance and Facilities, UMM
14	Clement Loo	Environmental Studies Professor, UMM
15	Troy Goodnough	UMM Office of Sustainability, Director
16	Lisa Harris	Director, UMM Facilities Management
17	Vance Gullickson	UMM Recycling and Composting Coordinator
18	Lori Moxness	Energy Management Representative, Ottertail Power Company
19	Abdullah Jaradat	Researcher, USDA ARS North Central Soils Lab
20	Kevin Wulf	Education and Community Relations- Riverview Dairy
21	Mick Miller	CEO, DENCO II
22	Rick Anderson	Community member
23	John Geleneau	Community member
26	Tara Ritter	Senior Program Associate for Climate and Rural Communities, Institute for Agriculture and Trade Policy
27	Jason Greiner	Market Planning Manager, Ottertail Power Company
28	Rebecca Young	Stevens County Coordinator
29	Bill Kleindl	Environmental Services Director- Stevens County
30	Lissa Pawlisch	Director - Clean Energy Resource Teams (CERTs)
31	Eric Hamm	Manager, Safety Services- Ottertail Power Company
32	Bob Kopitzke	District 1 County Commissioner - Steven County
33	Larry Herke	State of MN Office of Enterprise Sustainability
34	Will Seuffert	Executive Director, Minnesota Environmental Quality Board
35	Benson Goins	Human Resources Department-Superior Industries

Appendix C. Presentation – City of Morris Estimated Annual Energy Consumption





What types of energy does Morris consume?

- We consume energy from 3 main sources:
  - Electrical energy from Otter Tail Power Company
  - Natural gas from Centerpoint Energy
  - Gasoline

Electricity: Total estimated expenditure $8.6 million

- In 2017, Morris used 76,460,000 kWh
- Average price of a kWh in MN: $0.1123 (Energy Information Administration [EIA], 2018)

Electricity: By sector

- The average household in MN uses 748 kWh/month (EIA, 2018)
  - 16.6 million kWh residential usage (22%)
- Example commercial/industrial businesses
  - Superior used 7 million kWh in 2017
  - DENCO II used 18 million kWh in 2017
  - SCMC used 3.2 million kWh in the last year
- Public buildings
  - City buildings, wells, and street lights used 1.46 million kWh in 2017
  - University of Minnesota Morris 8 million kWh in 2017
  - County buildings, public schools, etc.

Natural Gas: Total estimated value $3.4 million

- Centerpoint Energy
  - Residential: 1.3 million therms over 1487 accounts
  - Commercial & Industrial: 10.8 million therms over 267 accounts

Gasoline Estimated Expenditure

- Expenditure for the last 12 months (Using $2.640, the average price of gasoline in MN over the last 12 months as per the (EIA, 2018)):
  - **$5.54 million** in Morris
  - **$9.90 million** for Stevens County (non-agricultural/industrial)
  - **$1,059** per person
- **2,100,000 gallons** consumed by Morris residents yearly
- **3,750,000 gallons** consumed by Stevens County residents

Total Estimated Energy Expenditures

Morris is spending **$17.5 million** on energy yearly:

- **$8.6 million** on electricity
- **$3.4 million** on natural gas
- **$5.5 million** on gasoline

Estimated Carbon Footprint

Morris contributes **147,800 metric tons** of carbon yearly

- **64,700 tons** from electricity
- **64,200 tons** from natural gas
- **18,900 tons** from gasoline

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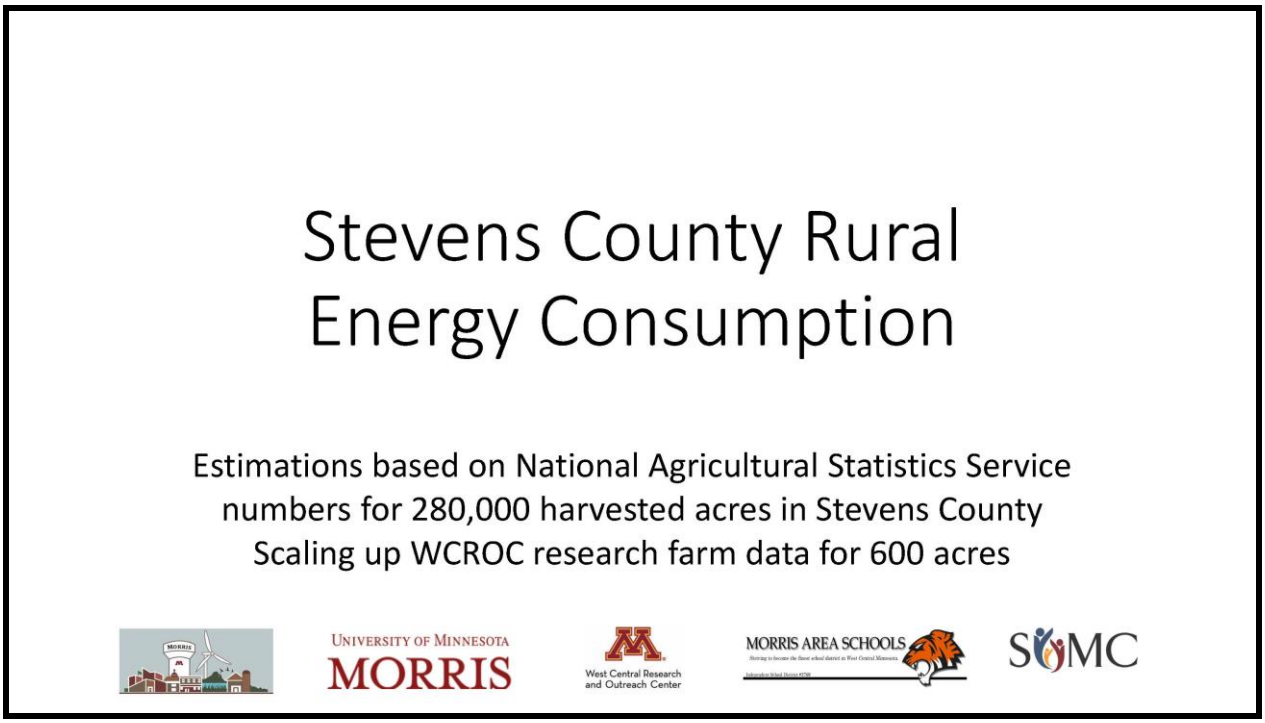
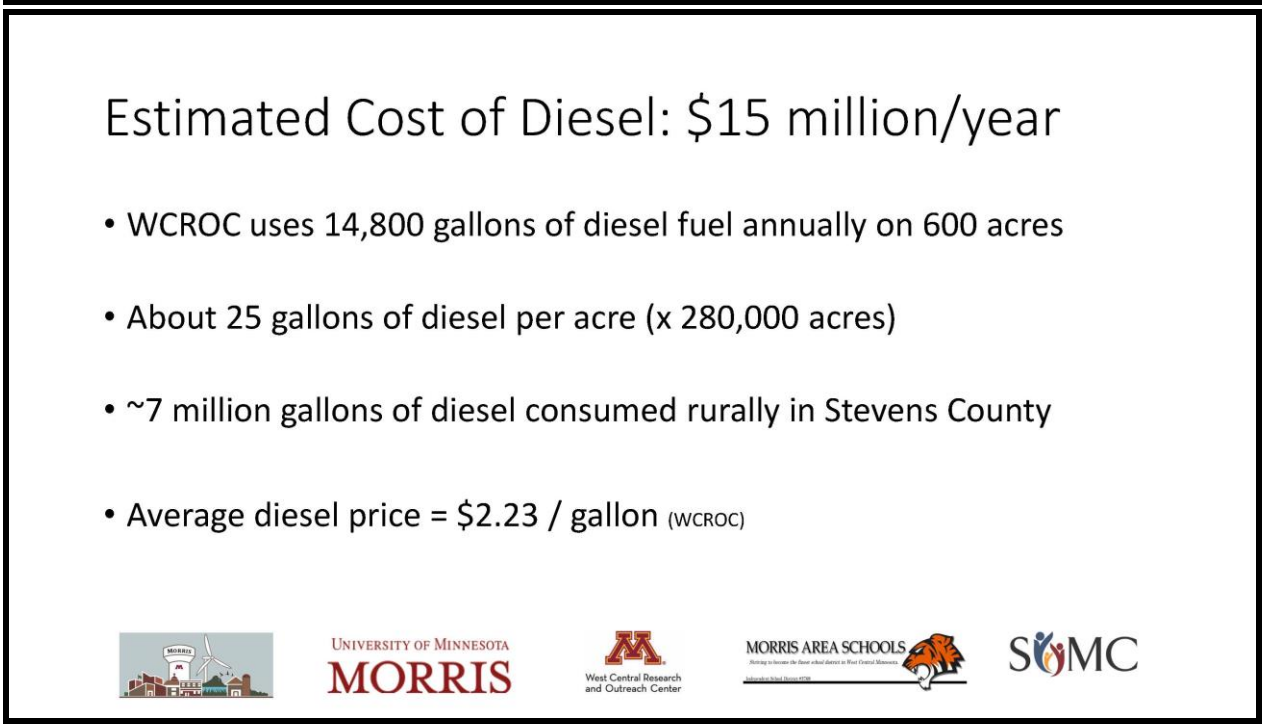
Appendix D. Presentation – Stevens County Estimated Annual Energy Consumption





Estimated Cost of Electricity: $37 million/year

- WCROC uses 700 MWh annually on 600 acres
- About 1,170 kWh per acre (x 280,000 acres)
- ~330,000 MWh consumed rurally in Stevens County
- Electricity price = $0.1123 / kWh (MN Energy Information Administration 2018 average)

Estimated Cost of Propane: $14 million/year

- WCROC uses 30,000 therms of natural gas annually on 600 acres
  - 30,000 therms of natural gas = 32,800 gallons of propane
- About 55 gallons of propane per acre (x 280,000 acres)
- ~15 million gallons of propane consumed rurally in Stevens County
- Average wholesale cost of propane in MN = $0.92 / gallon (EIA)

Estimated Related Costs: $29 million

- Stevens county fertilizer totals including lime and soil conditioners
  - $29,252,000 (2012)
  - Natural gas is a significant component of producing fertilizers

Total Estimated Energy Cost: $66 million/year

- Total Cost of Diesel ~ $15 million/year
- Total Cost of Electricity ~ $37 million /year
- Total Cost of Propane ~ $14 million /year

Appendix E. 2019 Morris Community Climate Smart Municipality Project List

Project Number/ Focus Area	PROJECT	Responsible Parties
ENERGY		
1	Retrofit public buildings with more efficient insulation, by de-lamping unnecessary bulbs, installing smart-strips to plug load, use	CI,CO,U,S,B,
2	Encourage Rental owners, residents, to replace bulbs with LED to re-insulate/make sure insulation is efficeint	CI,B,
3	Solar PV on public buildings, including new water treatment plant (potentially where old plant is), also look at project on the wastewater treatment plant	CI,CO,U,B,
4	1 MW Community Solar Garden by year 2020	CI,B,
5	1 MW Solar at UMM Campus	U,
6	Smart Microgrid - ability to create an islandable microgrid	CI,CO,U,S,
7	Do 5 energy conservation project on low-income homes/rentals and provide case-study	CI,CO,,
8	Green Energy Industrial Park, innovation hub and/or business incubator	CI,CO,B,
9	Occuppancy sensors all public buildings	CI,CO,U,S,
10	Determine baseline for County/Organizational energy use, Audit energy consumption	CI,CO,U,S,B,MM,
11	Semi-annual reports from ottertiail and centerpoint to monitor reduction	CI,CO,U,S,B,MM,
12	District Heating Project	CI,U,S,
13	Get Community Solar array on landfill	CO,B,
14	40kw solar array on high school	S,
15	Small Solar install at UMM vis POP Solar	U,
16	Evaluate waste chips/wood to use as fuel in biomass plant	U,
17	Establish Bio-Gas plant	B,
18	Approach Biogas Developer w/Local Ownership Plan	B,
19	Renewable energy resource assessment for county	U,W
20	Students do a solar roof study for residents in County and present results	U,S,MM,
21	UMM Solar and storage project	U,
22	Develop algae farming plan for renewable fuel	W
23	Make Morris Area Schools net zero	U,S,
24	Align community energy goals with Utility planning	MM,
25	Ramp up NH3 usage/stroage/projects	B,W
26	Develop Three PACE projects	B,MM,W
27	Enhancing energy metering on UMM campus	U,
28	Purchase a thermal imaging drone to conduct energy audits, offer drone studies of commercial and residential buildings	CI,U,MM,W
29	Test NRRI densified biomass / biochar in UMM gasifier	U,MM,W
30	Test NRRI biochar as coal replacement	U,MM,W
31	Develop a city carbon footprint baseline and tracking method	CI,CO,S,B,MM,
32	Feasbility of converting UMM hot water distribution system to steam	U,W
33	Purchase electric commercial lawn mower for UMM Campus	U,
34	Predesign for district heating with city/hospital/campus	CI,U,S,B,MM,W

TRANSPORTATION		
35	City bike racks, bike sharing	CI,
36	E-bike pilot program'	CI,U,S,
37	Install more Level 2 EV charging,	CI,CO,U,S,B,
38	Install DC Fast Charging station in Morris	CI,U,MM,
39	Purchase city EV or PHEV	CI,CO,U,
40	Require flex fuel usage E85	CI,CO,U,S,B,
41	Buy and operate electric transit vans, city, rainbow rider, school bus	CI,CO,U,S,
42	Facilitate and encourage bicycle usage throughout community	CI,CO,U,S,
43	Baseline study of fuel use for bus and other fleets, analysis of fuel conversion	CI,CO,U,S,B,
44	Retrofit vehicles for E85, audit viability	B,
45	Audit potential for E85 in the county	B,W
46	EV ridesharing program	U,
47	EV transportation for UMM Students	U,
48	EV student training car	S,MM,
49	School district electric/renewable bus application and purchases	S,MM,
50	Dialogue with dealers on EV and E85	MM,W
51	Morris Model friendly sticker on car and pump	MM,
52	100,000 gallons pumped of E85 and win a free tank of E85	B,MM,
53	Bike tune-up program	CI,U,MM,
54	Expand/improve Safe-Routes-to-School program and designated bike lanes, MNDOT funding, etc.	CI,CO,S,
55	Convert Police Fleet to EV or PHEV	CI,CO,U,MM,
WASTE		
56	Evaluate waste streems that can be recycled/compost - waste audit	CI,CO,U,S,B,
57	Low flush toilets	CI,CO,U,S,B,
58	Develop county compost site	CI,CO,MM,
59	Start a community garden with accessible compost pile	CI,CO,,
60	Site for local vendors (resturants) to use local compost site	CI,MM,
61	Introduce recycling with standarized signage for waste, composting across county	CI,CO,U,S,B,
62	Add recycling bins at all gas stations by pumps	B,
63	Manage waste at community events ex:Priarie Pioneer Days	CI,CO,U,
64	Complete composting at St. Mary's school	S,
65	Develop test site for large-scale composting- public works garage or neighborhood test run. A place for the compost to go, pick up trials, etc.	CI,CO,U,S,
66	Sustainable purchasing, test project: compostable paper/silverware/plates etc	CI,CO,U,S,B,MM,
67	Streamline composting program in UMM dining facility	U,

EDUCATION		
68	Energy experience path to all units within Stevens County, with App	CI,U,S,MM,W
69	Host public meeting with organization with businesses that attended retreat	CI,CO,U,S,B,MM,W
70	Distill community energy report from the Utilities	CI,CO,MM,
71	Do community project on storm proof opportunities to prepare	CI,U,
72	Hire Morris Model coordinator	CI,MM,
73	Community Tour to Saerbeck	CI,U,W
74	Newspaper, Radio, Social Media for Morris Model message	CI,U,MM,W
75	Develop and expand community resilience work	CI,U,
76	Encourage all participants to present three takeaway messages to neighbors	CI,CO,U,S,B,MM,
77	Develop a conservation team	CI,CO,U,S,B,MM,
78	Create and integrated website showing instantenous or historic energy use and production in community	CI,U,
79	Complete a GESP or LEEP project in County	CI,CO,,
80	Youth competition with video competition with Energy Scouts	S,MM,
81	Create a team like the robotics club - Youth Ecosolutions Team	S,MM,
82	Develop K-12 curriculm, renewable fuels, climate smart	U,S,MM,W
83	Develop carbon footprint for intensive agriculture versus conservation agriculture	W
84	Establish best practice for ag commodities, KWH for pork, milk	W
85	FFA, 4-H - youth groups to encourage sustainability to create advocates	S,MM,
86	Prairie Medical Center Retrofit - highlight	MM,
87	Local Utility LED bulb distrubition to local homes	MM,
88	Develop report to keep track of what is happening in sustainability	U,MM,
89	Host a community event about community solar and investments in local renewable energy	U,MM,W
90	Conservation teams formed at each entity and meet quarterly	CI,CO,U,S,B,MM,
91	Renewable energy visit to area high schools each semester	U,S,MM,W
92	Improved clean energy/energy conservation signage in town/signage at library on geothermal -look at grants CERTs -2018	CI,CO,U,S,MM,W
93	GIS inventory of projects in Morris- renewable energy and how many kWhs used in city buildings- library, liquor store, etc.	CI,U,S,MM,
94	Progress on GreenStep Cities -- advance to Step 3 and get to step 4	CI,
95	Identify -Climate Smart Municipalities / Morris Model Volunteers- Develop volunteer program	CI,MM,
96	Display in Library to demonstrate functions of Geothermal system in building	CI,U,MM,

SAERBECK PARTNERSHIP PROJECTS		
97	Communication partnership with Morris and Münster university students	U,MM,
98	Communication partnership with MAHS students and Saerbeck Gymnasium students- follow up with Morris teachers	CI,U,S,
99	Develop sister city program with Fukushima, Japan by 2020	CI,U,
100	Community event to celebrate completion of 100 projects	CI,CO,U,S,B,MM,W

MORRIS MODEL COMPLETED PROJECTS		
1	First Rural Climate Dialogue (with IATP/Jefferson Center) in 2014	
2	Morris Extreme Weather Action Meeting in 2015	
3	Community Education Event - Chasing Ice in 2015	
4	Extreme Weather and Community Resilience Planning Document (Sophie Bishop/MPCA-grant) in 2016	
5	Morris Model Website in 2016	
6	Morris Model financing plan and CERTs grant in 2016	
7	LEDs in city of Morris on Main Street in 2016	
8	First J-1 student-intern visa completed and hosted in Morris (Jan Broemmelhaus)	
9	Community Education Event - Beyond the Flood in 2017	
10	Outreach to Morris K-12 teachers: on climate change education in 2017	
11	Composting at UMM and elementary school in 2017	
12	Completed study of district heating at campus, school and hospital in 2017	
13	2017 K-12 tours of Morris energy assets (UMM/WCROC) in 2016/2017	
14	30 kW more of solar PV at WCROC (pasture-solar shading)	
15	Fast electric car charger at WCROC by 2020	
16	Electric charging station in the city by 2020	
17	Implement a bike safety -police department already does this	
18	Complete composting at all public schools in Morris	
19	Renew climate protection partnership with Saerbeck- October 2018	
20	Britta- German student intern to do building management studies in the city of Morris	
21	Communications plan for the city - Roger Rose political science student- Ruby	
22	Update to public access system- increase public communications and informations -	
	Responsible Parties Legend	
	CITY = CI	
	COUNTY = CO	
	UMM = U	
	SCHOOLS = S	
	BUSINESSES = B	
	MORRIS MODEL = MM	
	WCROC = W	