

WINONA COUNTY

CLIMATE DIALOGUE

MARCH 2016



RURAL CLIMATE DIALOGUES

Rural communities are at-risk to be seriously affected by both the direct impacts of a changing climate (e.g. extreme weather) and by efforts to mitigate those changes. This is especially true in considering solutions and policies that increase energy, resource, or transportation costs.

At the same time, much of the “production” in climate-sensitive economies will occur in rural areas, including through renewable energy deployment, reinvigorated local and regional food economies, and changes to land use patterns. Rural communities will and must play an integral role in addressing climate issues.

Despite this significance, rural communities have often been overlooked in climate conversations; political debate and policy changes have tended to emphasize urban and suburban perspectives. In many communities, incomplete information and limited public participation have prevented sound, publicly-supported policy from emerging.

But it doesn't have to stay this way.

Rural residents and communities can develop innovative solutions that respond to local and regional challenges to remain vibrant and prosperous. Recent research has shown that 85 percent of rural Minnesotans feel that people like themselves can make an impact and improve local quality of life; 75 percent believe their community can work together across differences.

Drawing on this resilient attitude, rural communities – in conjunction with the [Jefferson Center](#) and the [Institute for Agriculture and Trade Policy](#) – are seeking to move conversations on climate change forward.

Climate Dialogues help rural communities think critically and plan strategically to address local challenges related to weather and climate. To foster high-quality engagement, we use the time-tested Citizens Jury method for community problem solving and leadership development. This approach—which brings together a microcosm of the community to study an issue in-depth and generate a shared community response—has consistently provided a productive, educational, and inclusive way to address complex, divisive challenges.

The [Winona County Climate Dialogue](#) is the third in a series of projects aimed at galvanizing rural citizens to assert leadership and build resiliency in the face of extreme weather and changing climate conditions.

This Dialogue brought together a randomly selected but demographically balanced group of 18 citizens from Winona County in an intense, three-day moderated study and deliberation forum. They were tasked with creating a shared, community-based response to changing weather conditions and extreme weather events. Beyond that charge, the group was completely citizen-driven— no one told them what to do or what to think. The panel had the liberty, information, and resources to produce their own recommendations that respond to community needs, priorities, concerns, and values in order to maintain and strengthen the resilience and prosperity of Winona County. These recommendations will serve as a starting point for community conversations on extreme weather and climate.

The Jefferson Center and the Institute for Agriculture and Trade Policy, along with our local partners, will work to widely publicize the event and engage panelists and community members inspired by the conversation to work on these issues as local leaders. We'll continue to support the community as they work to implement citizen recommendations.

The Rural Climate Dialogues help develop and amplify an informed voice of the people so that regional, state, and national policymakers can take their needs into account when developing climate policy. Through the expansion of this project, we hope to build better climate change policy and stronger, civic-minded communities across rural Minnesota.

DIALOGUE PROCESS

Eighteen Winona County citizens met at the Winona State University Tau Center in Winona, Minnesota for 3 days, 8:30am to 5:00pm, starting Thursday, March 3rd and concluding Saturday, March 5th. Participants were randomly selected and stratified to include a balanced representation of the Winona County population. Participants were paid \$375 plus expenses for the three days.

The group was tasked with deciding how Winona County might best address extreme weather and a changing climate in order to remain a healthy, resilient, and prosperous community. To respond to this charge, community panelists identified and prioritized significant challenges to the long-term prosperity of the community, opportunities to respond to those challenges, and individual and community actions to directly address challenges or realize opportunities. Those challenges, opportunities, and actions, along with other important outcomes from the three days, are highlighted in this report.

A detailed outline of the three day process is offered below.

DAY 1

- » Panelists meet one another and discuss goals and expectations for the 3 days
- » Panelists engage in a simulation exercise as an introduction to the process of assessing information and working together to achieve shared results
- » Panelists determine how to develop clear and useful information for sharing with their neighbors
- » Presentation on local extreme weather and climate conditions by Mark Seeley (*University of Minnesota Extension*)
- » Presentation by Lynn Hinkle (*MnSEIA*) and Chris Meyer (*SE CERTs*) on energy

DAY 2

- » Presentation by Jennifer Biederman (*Winona State University*) and Josh Eash (*Fish & Wildlife Service*) on water resources
- » Presentation by Mark Kulda (*Insurance Federation of Minnesota*) on insurance
- » Presentation by Bruce Snyder (*University of Minnesota*) on public health
- » Presentation by Jake Overgaard (*UMN Extension*) on agriculture

DAY 3

- » Panelists identify and select top challenges
- » Panelists identify and select top opportunities
- » Panelists provide important evidence for each challenge and opportunity
- » Panelists identify top actions
- » Panelists write final statement in group editing process

STATEMENT FOR OUR NEIGHBORS

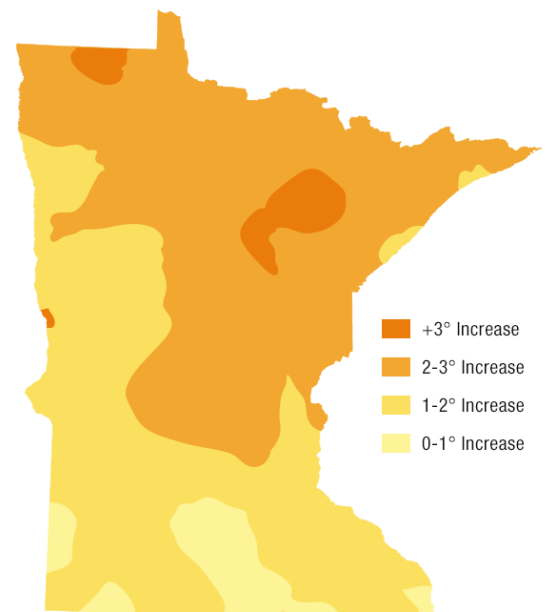
We are 18 residents of Winona County who met for 3 days to consider changes in our local weather and climate and the impacts of those changes on our community's economy, energy sector, water resources, insurance, public health, and agriculture. Based on testimony from subject matter experts and group discussion among incredibly diverse individuals with a wide range of viewpoints, we've changed our own views to find common ground, creating the following list of challenges the community is facing, opportunities to remain resilient and vibrant in the face of those changes, and actions residents and our whole community can take now to begin responding to changes.

Evidence suggests that Minnesota's climate and weather are changing more rapidly and more dramatically than many other parts of the country, including through increasing temperatures and more extreme weather events. These changes will have a real measurable impact on our overall economy, our environment, fish and wildlife habitat, health, insurance rates, and more.

Individually and as a Winona County community, we need to take action by working together to prepare for the future. We need to educate ourselves, our neighbors, and our elected officials to face challenges and pursue opportunities together. By doing so, we can ensure Winona County remains vibrant, resilient, and prosperous into the future.

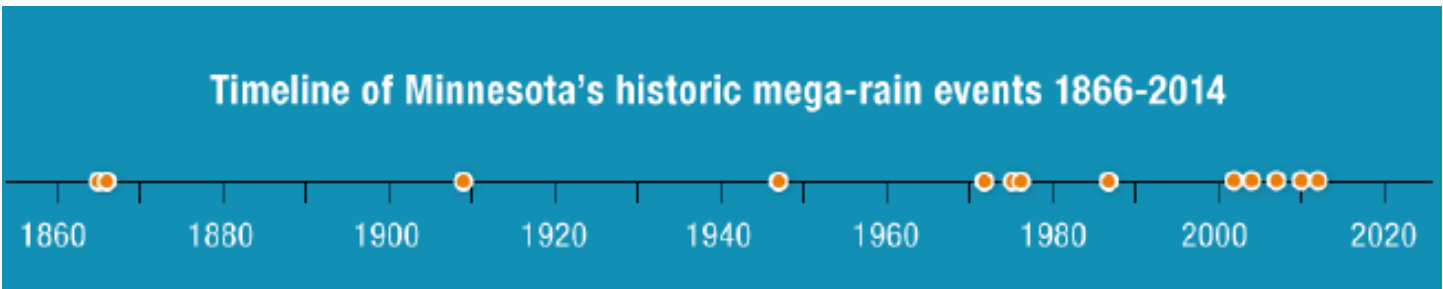
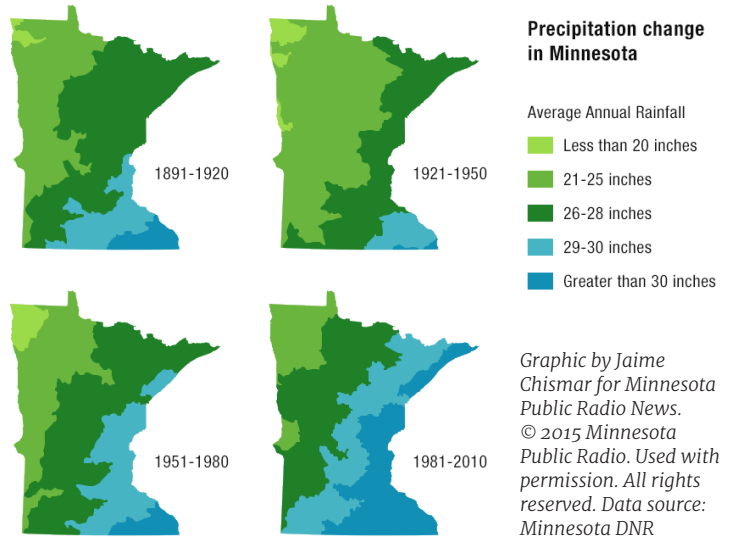
KEY WEATHER AND CLIMATE FACTS

- » Data represent historical measurements over the past century or more; they do not include future projections.
- » The general character of Minnesota's climate, including in Winona County, is trending toward rising temperatures and more precipitation.
- » Temperatures are increasing in Minnesota at a rate of 2°F/century.
- » Average minimum temperatures are increasing faster than average maximum temperatures, with the mean values of nighttime minimum temperatures increasing at twice the rate of the mean values of daytime maximums.
- » Temperatures are increasing more in winter than in other seasons.



Change in average temperature from 1901-1960 period to 1991-2012 period. Graphic by Jaime Chismar for Minnesota Public Radio News. © 2015 Minnesota Public Radio. Used with permission. All rights reserved. Data source: National Climate Assessment

- » Precipitation is increasing at a rate of 4.4”/century in Southeast Minnesota, greater than the state average. This increase can be explained in part by “mega storms.”
- » Minnesota has had 5 mega storms since 2002; there were only 7 mega storms in the century prior to 2002. A mega storm is defined as 6” or greater rains that cover at least 1000 square miles and a peak amount of 8” or greater.
- » More intense precipitation events (thunderstorms/mega storms) create larger geographic disparities (areas where rain falls and where it doesn’t), leading to a higher frequency of drought. It’s becoming more common for Minnesota counties to be declared a drought disaster and a flood disaster in the same year.
- » Minnesota has seen a 37% increase in the amount of precipitation falling in the heaviest 1% of all events.
- » These changes influence our economy, public health (heat waves, allergy season), water resources, infrastructure, local wildlife and plant composition, and more.



1866-1965

Four mega-rains in 100 years

August 6, 1866

Killed 16 people in Fillmore County.

July 17-19, 1867

Known as the state’s greatest flash flood, in central Minnesota.

July 20-22, 1909

Extensive across northern Minnesota, killed 2 children in Duluth.

September 9-10, 1947

More than 8 inches in five hours at Hibbing.

1966-1999

Three mega-rains in 33 years

July 21-22, 1972

Nearly 11 inches in 24 hours at Ft. Ripley, a state record at the time.

June 28-29 and July 1-2, 1975

Intense rain in northwestern Minnesota in two events.

July 23, 1987

9 inches at Minneapolis–St. Paul International Airport, a record.

2000-2014

Five mega-rains in 14 years

June 9-10, 2002

More than 12 inches in 48 hours in northern Minnesota.

September 14-15, 2004

More than 10 inches in 36 hours in Faribault and Freeborn counties.

August 18-20, 2007

15 inches near Hokah, state record for 24 hours.

September 22-23, 2010

More than 10 inches at Amboy.

June 19-20, 2012

7 inches in two day in Duluth, St. Louis River at record level.

Graphic by Jaime Chismar for Minnesota Public Radio News. ©2015 Minnesota Public Radio. Used with permission. All rights reserved. Data source: Minnesota Department of Natural Resources. State Climatology

TOP CHALLENGES FOR WINONA COUNTY

1. *Adjusting farming practices and other rural and urban land management to be adaptable to more frequent extreme weather events while remaining lucrative and having a positive impact on the environment.*

- Across the Midwest, annual precipitation has increased (up to 20% in some locations), leading to more frequent and higher magnitude flooding. Consequences include degrading water quality and infrastructure, increased spread of disease, and the introduction of toxic chemicals into the water supply.
- Supporting agricultural best management practices, including balanced planting and crop diversity, and encouraging plantings of perennials, and buffers on private and public land can improve water quality and reduce sediment runoff.

INDIVIDUAL ACTIONS:

- » Take personal responsibility: Ensure home, business, and farm practices that protect both the quantity and quality of our waters.
- » Let your voice be heard: Advocate for a balanced approach to land and water management, one that ensures water equality.

COMMUNITY ACTIONS:

- » Consider home, business, or public space strategies to promote water retention instead of runoff – such as semi-permeable parking and walkway surfaces, rain gardens, native plantings, and protecting your nearby storm sewer from taking in pollutants and debris.
- » Support and develop land use policies that prepare for extremes: Limit development in floodplains, the overuse of water supplies, and other activities that will increase costs for everyone. Physically or financially, flooding and water scarcity will affect all of us.



2. High intensity precipitation events may lead to short-term increases in water temperature, higher magnitude flooding, erosion, runoff of sediments and pollution, and degraded stream habitat for coldwater fish and other aquatic invertebrates.

- Degraded water quality and water infrastructure are more likely to spread disease, mold, and other pollutants and introduce toxic chemicals to the water supply, especially during extreme weather events.
- Water is a priceless resource.

INDIVIDUAL ACTIONS:

- » Go fishing! Money from trout stamp sales is critical for mitigation and management.
- » Support sustainable agriculture and land use practices.

COMMUNITY ACTIONS:

- » Look to new opportunities for agricultural production that lessen the impact on the environment.
- » Slow runoff, increase infiltration, and improve efficiency of water use.

3. Technology changes quickly. To be knowledgeable about current energy technology, individuals and organizations must know what energy issues to address first and what technology to use.

- Local organizations, like the Southeast Clean Energy Resource Team (CERTs) and others, can provide community members with resources to help successfully implement energy project ideas.
- Tax credits for clean energy and solar were recently extended to help offset the cost of clean energy adoption in the US and clean energy is a quickly developing market experiencing triple digit growth in recent years.

INDIVIDUAL ACTIONS:

- » Identify best available energy technologies: CERTS can help explore projects that would work for your farm or business and provide you with one-on-one assistance in developing a project. Explore the Clean Energy Project Builder. Have your home assessed for energy best practices through an energy audit.
- » Find financing/funding for clean energy projects: Options include pursuing Property-Assessed Clean Energy Financing (PACE) option. PACE provides a loan up-front, with repayment occurring over anywhere from 5-20 years on property taxes. You can also push your community to participate in the Guaranteed Energy Savings Program (GESp).

COMMUNITY ACTIONS:

- » Pursue Guaranteed Energy Savings Plan (GESp), which provides financial and technical assistance for public retrofits and distributed energy generation.
- » Milk The Savings, Dairy Energy Efficiency Program: CERTs can walk farmers through the possibilities for farm energy efficiency upgrades, as well as answer questions about improved energy efficiency. Additionally, CERTs can help farmers consider options for renewable energy.

4. The annual cost of an average homeowners' insurance policy in Minnesota increased 310% (\$368 to \$1140) from 1998 to 2012 due to extreme weather events. Premiums are still not high enough to cover all paid claims.

- There is a clear relationship between patterns in extreme weather events such as hailstorms and floods and increases in insurance claims in Minnesota.
 - Across the Midwest annual precipitation has increased (up to 20% in some locations), with much of the increase due to more high intensity rain events. This leads to more frequent and higher magnitude flooding.
- Minnesota is one of two states in the US without a high-risk home insurance pool to spread risk proportionately among homeowners whose homes are at greater risk for extreme weather events.
- Fewer than 1% of Minnesota's one million households purchase flood insurance

INDIVIDUAL ACTIONS:

- » Support policy in Minnesota that allows insurance companies to create high-risk insurance pools to spread risk evenly among policyholders who make multiple weather-related claims within a short period of time.
- » Reduce fraud and curtail the rising cost of damage repairs in insurance claims by developing relationships with local, trusted contractors.

COMMUNITY ACTIONS:

- » Address knowledge gaps: Promote awareness of "storm chasers" (who charge more than is necessary for repairs after storms); identify local, trusted contractors; and promote education about policy that allows insurance companies to create high-risk insurance pools.
- » Prepare for extremes: Limit development in floodplains, the overuse of water supplies, and other activities that will increase costs for everyone. Physically or financially we will all be affected by flooding and water scarcity.



TOP OPPORTUNITIES FOR WINONA COUNTY

1. ***Local development of clean energy can reduce the state's dependence on imported energy, which costs about \$16 billion/year.***

- Support is available. Tax credits for clean energy and solar were recently extended. Local organizations, like CERTs, can provide community members with resources because technology changes quickly.
- The clean energy economy is growing. Clean energy jobs increased by 78% in MN in that last 15 years, compared to overall job growth of 11%. The average wage for a sustainable energy job is 42% higher than the average state wage.

INDIVIDUAL ACTIONS:

- » Through “Renewable Energy for Greater Minnesota,” Clean Energy Resources Teams (CERTs) can help explore projects that would work for your farm or business, identify potential funding and financing options, and provide you with one-on-one assistance on developing a project.
- » Consider utilizing the Property-Assessed Clean Energy Financing (PACE) option. PACE provides a loan up-front, with repayment occurring over anywhere from 5-20 years on property taxes. This eliminates much of initial cost burden, and allows a more manageable payment plan for many participants.

COMMUNITY ACTIONS:

- » Pursue Guaranteed Energy Savings Plan for public retrofits and distributed energy generation to receive comprehensive technical and financial assistance for state agencies, local government units, school districts, and institutions of higher learning to reduce the knowledge and finance barriers to implementing energy efficiency projects.
- » Participate in the Minnesota GreenStep Cities program. Minnesota GreenStep Cities is a voluntary challenge, assistance, and recognition program to help cities achieve their sustainability and quality-of-life goals. This free continuous improvement program, managed by a public-private partnership, is based upon 29 best practices.

2. ***‘Balance Watersheds’: Drained lands and impervious urban areas must be offset by best management practices (BMPs) and ecosystem restorations aimed at slowing runoff and storing water (infiltration, wetlands, floodplain connectivity, etc.)***

- Flood protection infrastructure must be designed for extremes. Unprotected areas need infrastructure designed to withstand flooding.
- Investing in quality water systems now will allow SE Minnesota to respond quickly and effectively in the event of extreme weather.

INDIVIDUAL ACTIONS:

- » Take personal responsibility by assessing your land and practices; getting technical and financial assistance if needed; and ensuring home and business use protects both the quantity and quality of our waters.
- » Let your voice be heard: Advocate for a balanced approach to land and water management – one that ensures equality in water allocation.

COMMUNITY ACTIONS:

- » Support organizations that provide local assistance, like NRCS, SWCD, MDA, and watershed groups.
- » Participate in the Minnesota GreenStep Cities program.
- » Develop land use policies that strengthen water quality and invest in infrastructure improvements.

3. Adopting agricultural best management practices and planting perennials can reduce nutrient, soil, and water loss while maintaining production and profitability.

- Encouraging balanced planting in urban and rural environments, promoting crop diversity, and using forages instead of or in addition to corn and soybeans reduces runoff.
- Buffer strips could significantly improve water quality and remove sediment from Minnesota water.
- These practices could help reduce the spread of diseases, mold, and other pollutants through runoff, floods, and other extreme weather events.

INDIVIDUAL ACTIONS:

- » Plant pollinator habitat, native plants and prairie grasses, and/or rain gardens on your personal property, considering applicable local statutes.
- » Pursue grants or other financial assistance to help implement best management practices.

COMMUNITY ACTIONS:

- » Develop land use policies and practices that strengthen water quality, invest in infrastructure improvements, and support beginning and existing farmers in looking to new opportunities and adopting new practices.
- » Support programs that provide assistance (NRCS, SWCD, MDA, watershed groups) that aid in production and profitability for agricultural producers.

4. Southeastern Minnesota should strive for healthy, responsible land use practices – especially with agriculture and mining. Healthy shorelines and streams are more resilient to flood events.

INDIVIDUAL ACTIONS:

- » Support state policies that promote healthy land use and natural resource management, support investment in infrastructure improvements, and advocate for land use policies that strengthen water quality.
- » Assess your private land and practices and implement agricultural best management practices/perennials where needed.

COMMUNITY ACTIONS:

- » Seek technical and financial assistance to assess public land and practices on a community-scale.
- » Support research, outreach, and education among farmers and consumers, allowing farmers to adopt new practices.

For the full list of challenges, opportunities, actions, and other resources, visit:

JEFFERSON-CENTER.ORG/WINONA

RURALCLIMATENETWORK.ORG/CONTENT/RURAL-CLIMATE-DIALOGUE-WINONA-MN

PANELIST DEMOGRAPHICS

Invitations to participate in the Winona County Climate Dialogue were sent to 5,000 randomly selected households in Winona County. Interested citizens completed a questionnaire with demographic information and were then added to a pool of potential panelists. 18 panelists were selected from that pool, chosen anonymously to match the demographics, as near as possible, of the county.

DEMOGRAPHIC	WINONA COUNTY PERCENTAGE	IDEAL # OF PARTICIPANTS	ACTUAL # OF PARTICIPANTS
GENDER			
Female	51%	9	9
Male	51%	9	9
RACE/ETHNICITY			
Caucasian/White	94%	16	16
Persons of Color/Multiracial	6%	2	2
PARTY AFFILIATION			
Democrat	38%	7	5
No Party, Other	28%	5	8
Republican	34%	6	5
AGE			
18-39	44%	8	6
40-64	38%	7	9
65 & over	18%	3	3
WINONA / GREATER WINONA			
Winona	54%	10	10
Greater Winona	46%	8	8
EDUCATION			
Less than High School	9%	2	0
High School or GED	52%	9	6
Associate's/Bachelor's	29%	5	9
Graduate degree	10%	2	3
ATTITUDE ON CLIMATE CHANGE			
Worried	50%	9	11
Not Worried	50%	9	7
TOTAL NUMBER OF PARTICIPANTS	100%	18	18

PANELIST PERSPECTIVES

“I have a feeling of accomplishment, of facing something that I’ve been avoiding. There was an air of respectfulness for everyone’s viewpoints. I don’t know exactly what I want to do going forward, but I want to do something, and it feels good to participate in my community like that.”



“From a personal standpoint, I feel like I grew. My views have changed – I was wrong. I was dead wrong.”



“At times I feel completely victimized because we see all these bad things happening that you can’t do anything about individually. It’s really refreshing to sit down with a bunch of community members and realize you share the same core values and are united.”

“You can go into a situation with your mind made up, but with the right information you can really change your mind, and I think that’s where we come in **when we go home and talk to our neighbors.**”

WINONA SENIOR HIGH SCHOOL STUDENT DIALOGUE

To incorporate the voices of young people in the climate conversation, we work to convene a student dialogue that parallels the community *Winona County Climate Dialogue*.

Our student dialogue focused on topics aligned with student interests and areas of study, including the impact of climate change on Winona's outdoor recreation opportunities, wildlife and habitat implications, changes in the spread of disease, and impacts of future floods. Students were also studying the life cycles and population health of trout through a partnership with Trout Unlimited, providing a curriculum crossover with Jennifer Biederman's research on the changing condition of trout streams in Winona County.

Peter Weess' environmental science and biology students prepared for the 90 minute panel of experts with a presentation by Mark Seeley (*University of Minnesota Extension*), focused on historical weather trends and extreme weather incidents. Following this presentation, students created questions for the expert panel using data from Mark's presentation, information from their coursework, and personal knowledge and interest.

Nearly 100 students settled into the auditorium for the 90 minute Q&A session with local experts. The panel consisted of:

Jennifer Biederman – Professor of Biology, *Winona State University*

Kevin Kelleher – Business Development Specialist, *MN Dept. of Employment & Economic Development*

Tex Hawkins – Sustainability Advisor, *Winona State University*

Lynnea Pfohl – Policy Program Organizer, *Land Stewardship Project*

Eric Barnard – Director of Outdoor Education, *Winona State University*

While the panelists fielded questions relevant to their own expertise, citing statistics and professional understanding that comes from years of experience, they reminded the students that they have a voice “more powerful than ours as it more clearly represents the future.”

Weess' students will continue to engage in this conversation by writing letters to the editor, connecting with members of the community Climate Dialogue, and pursuing a local water quality restoration project, among other opportunities percolating.

You can read more about the students' work at:

ruralclimatenetwork.org/content/rural-climate-dialogue-winona-mn



INTERESTED IN YOUR OWN CLIMATE DIALOGUE?

The Jefferson Center and the Institute for Agriculture and Trade Policy are in the process of identifying communities across Minnesota for future Climate Dialogues. If you are interested in hosting a Dialogue in your community, or would like to receive additional information, please contact:

Andrew Rockway at arockway@jefferson-center.org / 651-209-7672

Anna Claussen at aclaussen@iatp.org / 612-870-3423

Hosting a Climate Dialogue requires significant engagement with community members months prior to the event in order to identify issues of principal concern, engage local and regional experts, work with community institutions to develop information sources, and determine community receptivity among policymakers and the general public to incorporate Dialogue findings into community planning efforts.



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The Jefferson Center is a nonpartisan organization committed to strengthening democracy by advancing informed, citizen-led solutions to challenging public issues through deliberation and community action. We're collaborating with governments, nonprofits, and others to unleash the power of citizens and solve today's toughest challenges. We focus on building powerful coalitions, creating meaningful opportunities for education and public deliberation, and empowering citizen-led action.



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The Institute for Agriculture and Trade Policy is a Minnesota-based nonprofit working locally and globally at the intersection of policy and practice to ensure fair and sustainable food, farm and trade systems and to foster vibrant, prosperous rural communities. We support rural communities through research, market development, and policy advocacy to address local challenges, including issues associated with extreme weather and a changing climate.