Community Capacity to Engage in Water Protection and Restoration
What matters most?

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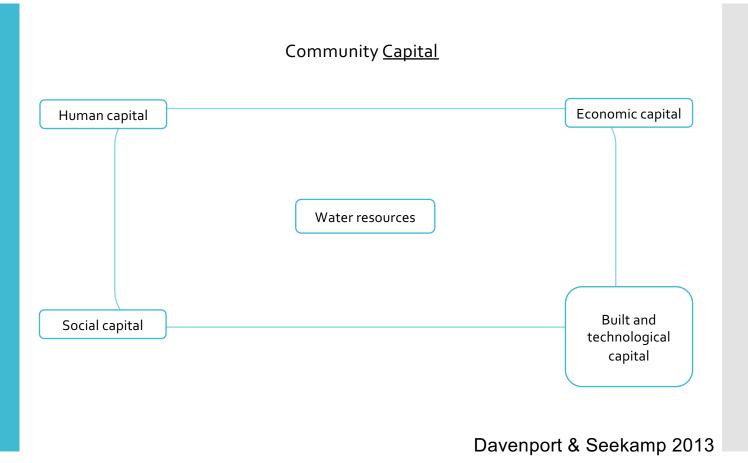
September 20, 2018

"USDA NRCS Launches New, Fully-Funded Voluntary Conservation Program: WONDER"

Water **O**utcomes through **N**orm **D**evelopment, **E**mpowerment, and **R**elationship-Building:
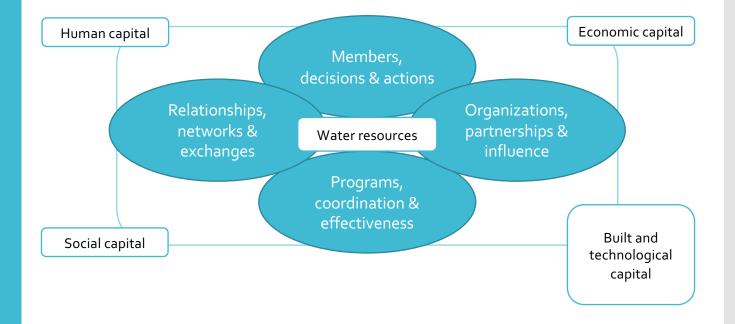
- Conservation leadership, social networks and relationship building
  - Social models of success, social group feedback, social support networks
- Community-focused monitoring and feedback programs
  - Behavioral, social and ecological baseline and outcomes
  - Socially comparative feedback (local benchmarking)
  - Social norm awareness: expectations for behavior

Community Capacity to Protect and Restore Clean Water

Community Capital

Human capital

Economic capital

Water resources

Social capital

Built and technological capital

Davenport & Seekamp 2013

Community Capacity to Protect and Restore Clean Water

Community Capacity

Human capital

Economic capital

Members, decisions & actions

Relationships, networks & exchanges

Water resources

Organizations, partnerships & influence

Social capital

Programs, coordination & effectiveness

Built and technological capital

Davenport & Seekamp 2013

Management is about arranging and telling. Leadership is about nurturing and enhancing.
—Tom Peters

Multi-level Community Capacity Model

Empowering people and communities as leaders clean water

Culture
Values, customs, practices

Individual Capacity
Member beliefs, concern, sense of responsibility, perceived efficacy, and civic/water action

Relational Capacity
Interpersonal relationships and social networks for knowledge exchange, norm development, and organizing action

Organizational Capacity
Organizational development, leadership development, stakeholder engagement, and partnerships

Programmatic Capacity
Clear goals and objectives, cross-jurisdictional coordination, outcomes tracking, and adaptation

Equity
Trust, legitimacy, and fairness

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Davenport & Seekamp 2013

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Education Builds Human Capital, **Civic Engagement** Motivates People, Strengthens Relationships, and Empowers Communities

"making public **decisions** and taking collective **actions** through **processes** that **involve discussion, reasoning, and citizen participation** rather than through the exercise of authority, expertise, status, political weight, or other such forms of power."

Fagotto and Fung 2009, pg. 1

Water Projects Can Empower People and Communities

- **private-sphere actions** like land and water use conservation
  - rain garden installation, maintenance of streamside buffers
- **public-sphere actions** like conservation citizenship, conservation advocacy, and community organizing
  - attending a watershed planning meeting, being willing to pay a fee for water resource protection, participating in a volunteer event or joining a watershed organization

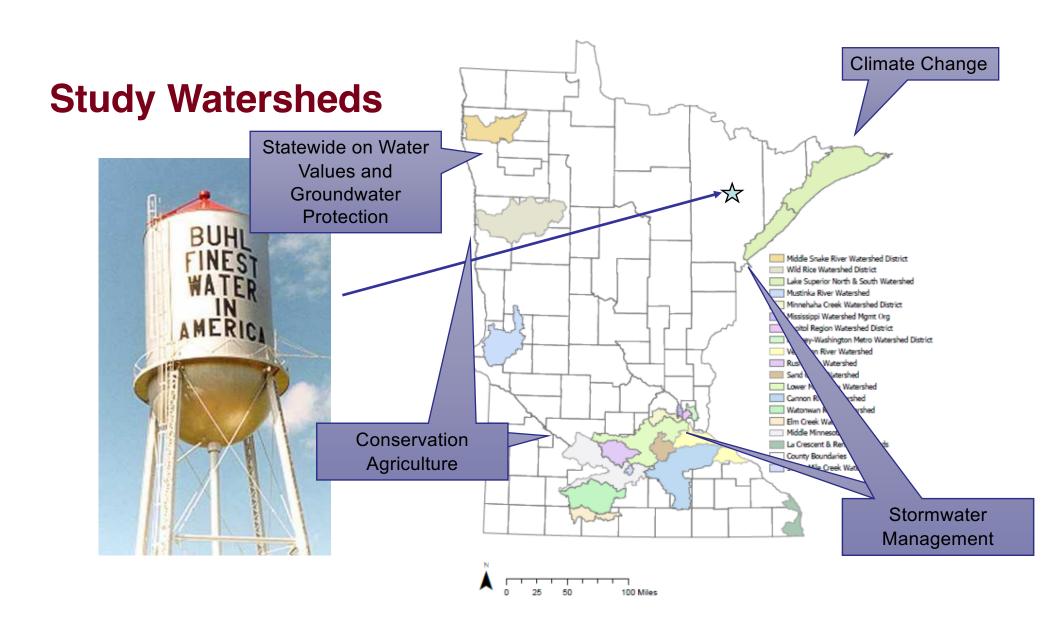Holley 2012, Pradhananga & Davenport 2017, Stern 2000

Why is Understanding Community Capacity Important?

- Target specific audiences for behavior change and social change.

- Evaluate social impacts of projects and planning.

- Build community capacity for planning and implementation.

The Case of Minnesota

Study Watersheds

Climate Change

Statewide on Water Values and Groundwater Protection

Conservation Agriculture

Stormwater Management

Middle Snake River Watershed District
Wild Rice Watershed District
Lake Superior North & South Watershed
Mustinka River Watershed
Minnehaha Creek Watershed District
Mississippi Watershed Mgmt Org
Capitol Region Watershed District
Ramsey-Washington Metro Watershed District
Vermillion River Watershed
Rush Creek Watershed
Sand Creek Watershed
Lower Minnesota Watershed
Cannon River Watershed
Watonwan River Watershed
Elm Creek Watershed
Middle Minnesota
La Crescent & Reno Watersheds
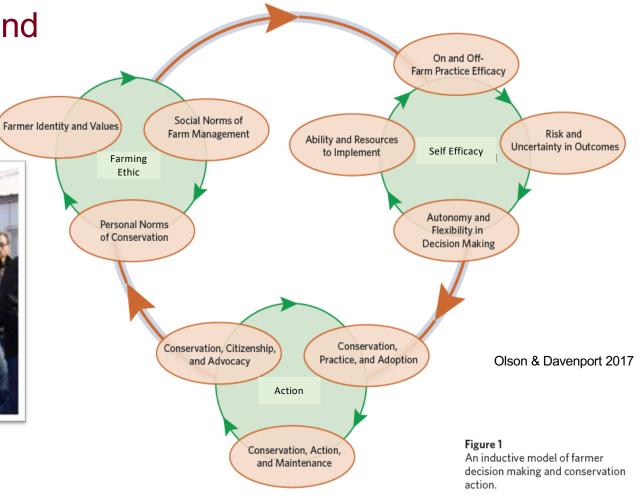County Boundaries
Seven Mile Creek Watershed

N

0   25   50   100 Miles

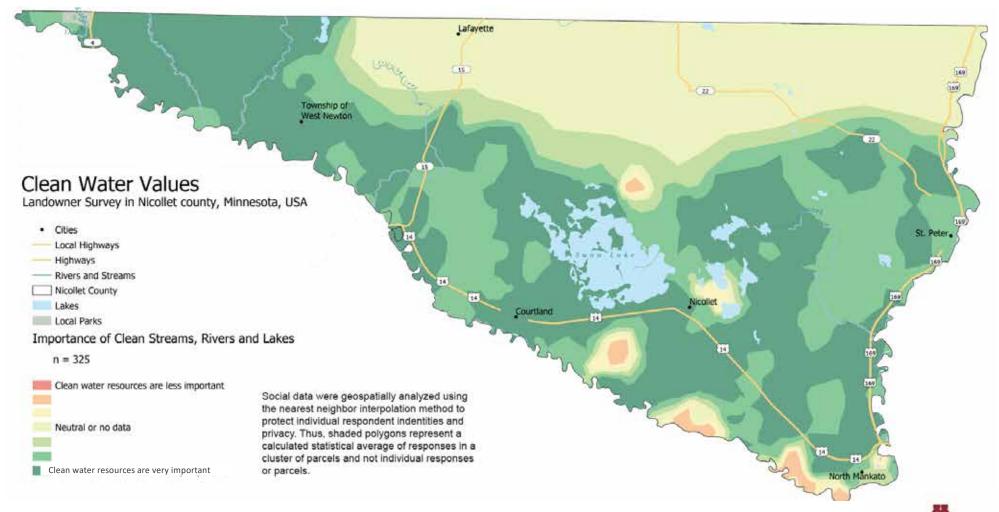# Values and Norms Drive Conservation Ethics and Actions

Elm Creek and Rush River Interviews on Nitrogen Management

Olson & Davenport 2017

Figure 1
An inductive model of farmer decision making and conservation action.

Clean Water Values
Landowner Survey in Nicollet county, Minnesota, USA

- Cities
- Local Highways
- Highways
- Rivers and Streams
- Nicollet County
- Lakes
- Local Parks

Importance of Clean Streams, Rivers and Lakes

n = 325

Clean water resources are less important

Neutral or no data

Clean water resources are very important

Social data were geospatially analyzed using the nearest neighbor interpolation method to protect individual respondent indentities and privacy. Thus, shaded polygons represent a calculated statistical average of responses in a cluster of parcels and not individual responses or parcels.
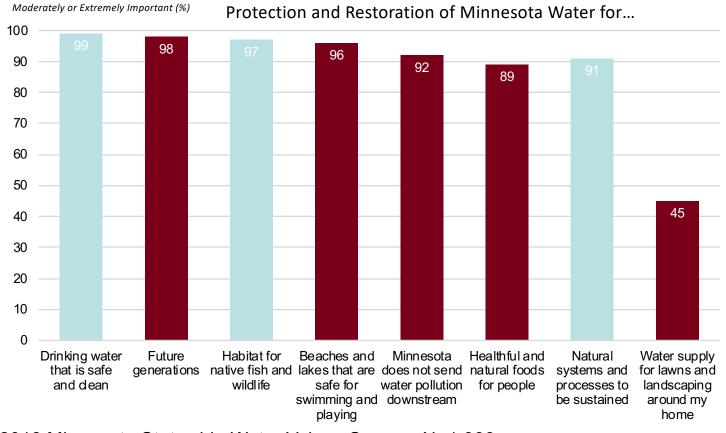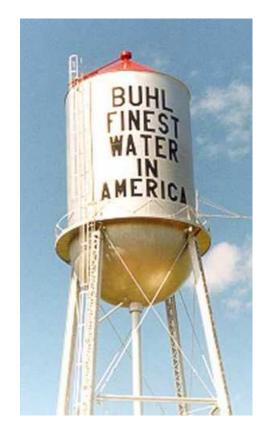
Pradhananga & Davenport 2017, Davenport, Moeller, & Pradhananaga unpublished data

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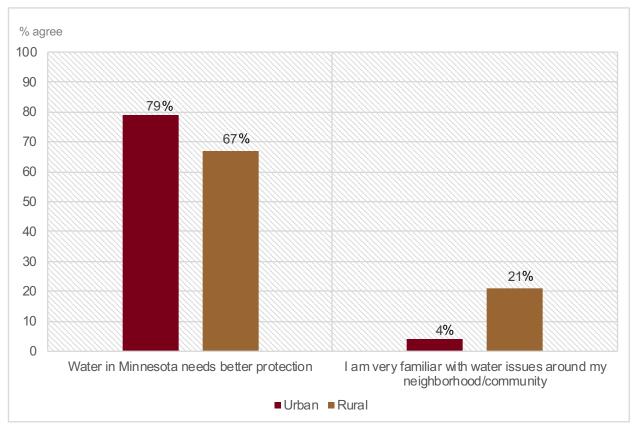
Minnesotans Value Water

Moderately or Extremely Important (%)

Protection and Restoration of Minnesota Water for…

Category	Value
Drinking water that is safe and clean	99
Future generations	98
Habitat for native fish and wildlife	97
Beaches and lakes that are safe for swimming and playing	96
Minnesota does not send water pollution downstream	92
Healthful and natural foods for people	89
Natural systems and processes to be sustained	91
Water supply for lawns and landscaping around my home	45

2018 Minnesota Statewide Water Values Survey   N=1,993

Davenport & Keeler unpublished data

Minnesotans Have "Global" Concern But Local Uncertainty

% agree

Chart showing % agree for Urban and Rural responses:
- Water in Minnesota needs better protection: Urban 79%, Rural 67%
- I am very familiar with water issues around my neighborhood/community: Urban 4%, Rural 21%
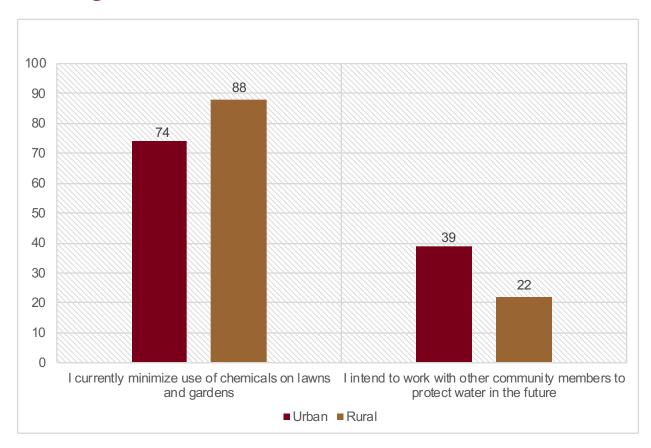
Legend: Urban, Rural

45-55% of Minnesota survey respondents would be more likely to adopt or maintain a conservation practice if they had <u>evidence</u> the practice improved water resources
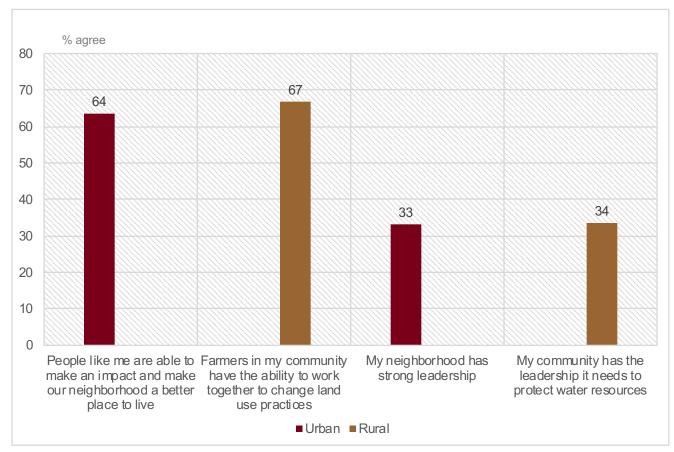
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Nicollet County Survey and Twin Cities Metro Watershed Survey

Davenport, Perry, Pradhananga, & Shepard 2016; Pradhananga & Davenport 2017

Minnesotans Might Be A Little Too "Nice"

Davenport, Perry, Pradhananga, & Shepard 2016; Pradhananga & Davenport, 2017

Minnesotans Lack Confidence in Local Leadership

% agree

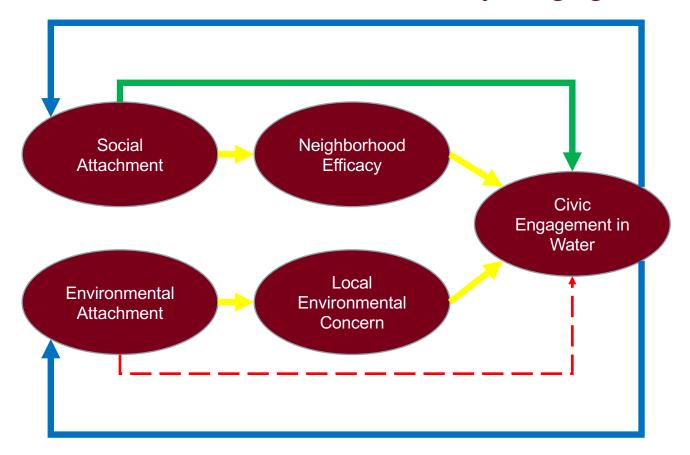|	People like me are able to make an impact and make our neighborhood a better place to live	Farmers in my community have the ability to work together to change land use practices	My neighborhood has strong leadership	My community has the leadership it needs to protect water resources
Urban	64		33	
Rural		67		34

■ Urban ■ Rural

Nicollet County Survey and Twin Cities Metro Watershed Survey

Davenport, Perry, Pradhananga, & Shepard 2016; Pradhananga & Davenport, 2017

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Underused Resource: The Socially Engaged

Davenport, Perry, Pradhananga, & Shepard 2016; Pradhananga & Davenport, 2017b

Social Measures Monitoring System

- Guidance for planning water programs, tracking social change, and reporting social outcomes

SM1. Change over time in individual capacity to be engaged in water resource protection and restoration
SM2. Change over time in relational capacity to be engaged in water resource protection and restoration
SM3. Change over time in organizational capacity to be engaged in water resource protection and restoration
SM4. Change over time in programmatic capacity to be engaged in water resource protection and restoration
SM5. Water resource management is perceived as fair and legitimate

Figure 1. Social Measures 1-5

Davenport 2013

WONDERful Civic Engagement Strategies in Minnesota

McMahon Lake Water Quality Monitoring

Figure 10. Landowner Technical Assistance Requests

- 7 out of 11 strategies in [state nutrient reduction strategy](#)
  - Minnesota Pollution Control Agency
- Local clean water projects
  - [Scott County Watershed Management Organization](#)
  - Cannon River Watershed Partnership
  - Watonwan Watershed Project
- MN [Master Water Stewards](#) program
  - The Freshwater Society
- [We are Water](#) program
  - Minnesota Humanities Center
- [Social Measures Monitoring System](#) for tracking outcomes
  - Davenport 2013
- Handbook: [Inspiring Action for Nonpoint Source Pollution Control](#)
  - Nelson, Davenport, Kuphal 2017

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Acknowledgements

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Intention to Adopt a Buffer/Filter Strip

Local Highways
Highways
Lakes
Rivers and Streams
Nicollet County
State Parks
• Cities

Intention to Adopt Buffers
N=168

Highest intention to adopt

Neutral or no data

Lowest intention to adopt

Social data were geospatially analyzed using the nearest neighbor interpolation method to protect individual respondent indentities and privacy. Thus, shaded polygons represent a calculated statistical average of responses in a cluster of parcels and not individual responses or parcels.

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Davenport, Moeller, & Pradhananaga unpublished data

Intentions to talk to others about conservation practices

Landowner Survey in Nicollet county, Minnesota, USA

- Cities
- Local Highways
- Highways
- Rivers and Streams
- Nicollet County
- Lakes
- Local Parks

Intentions to Engage

n = 320

- Less likely to talk with others
- Neutral or no data
- More likely to talk with others

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Davenport, Moeller, & Pradhananaga unpublished data

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