



# Welcome

Conservation Applied Research & Development (CARD) Webinar

**August 18, 2022**

**Opportunities for CIP to Support Indigenous Food Sovereignty**

# Webinar Basics

- Attendees in listen-only mode
- Type questions into Q&A box
- Send to “All Panelists”
- Questions addressed at end
- Webinar recorded & archived
- Slide set will also be available

For close captions, click the “cc” bubble

stein

Type your question into the Q&A Box and send to “All Panelists”

To open Q&A panel, click ellipse in lower right.

02:09

Q & A

All (0)

Select a question and then type your answer here.  
There's a 512-character limit.

Send Send Privately

# Opportunities for CIP to Support Tribal Food Sovereignty



**Mary Sue Lobenstein**  
Research Planning Director  
MN Department of Commerce  
[marysue.Lobenstein@state.mn.us](mailto:marysue.Lobenstein@state.mn.us)



**Laura Silver**  
Senior State Program Administrator  
MN Department of Commerce  
[laura.silver@state.mn.us](mailto:laura.silver@state.mn.us)

# Presenter Introductions



**Dan Streit**

Senior Researcher  
Slipstream

[dstreit@slipstreaminc.org](mailto:dstreit@slipstreaminc.org)

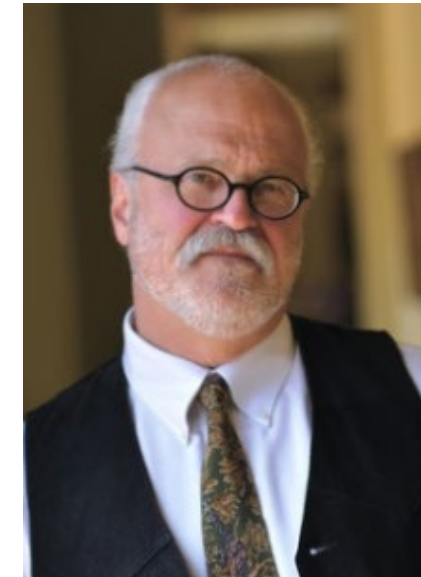


**Bryan Van Stippen**

Program Director for National Indian  
Carbon Coalition  
Indian Land Tenure Foundation (ILTF)

[bvanstippen@iltf.org](mailto:bvanstippen@iltf.org)

[mn.gov/commerce](http://mn.gov/commerce)



**Kelly Cain**

Founder and Principal  
St. Croix Institute (SCI)

[kcain@4xbl.com](mailto:kcain@4xbl.com)

# Minnesota Applied Research & Development Fund

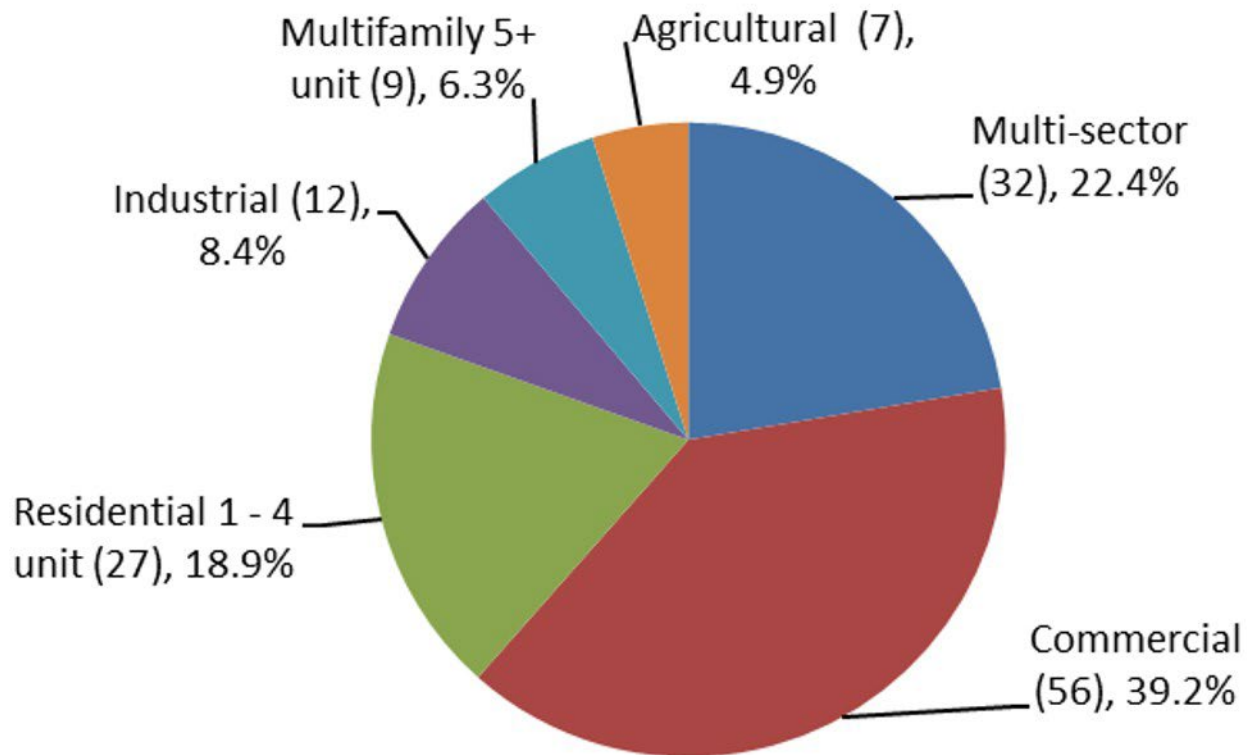
- **Purpose to help Minnesota utilities achieve 1.5% energy savings goal by:**
  - *Identifying new technologies or strategies to maximize energy savings;*
  - *Improving effectiveness of energy conservation programs;*
  - *Documenting CO<sub>2</sub> reductions from energy conservation programs.*

[Minnesota Statutes §216B.241, Subd. 1e](#)

- **Utility may reach its energy savings goal**
  - **Directly through its Conservation Improvement Program (CIP)**
  - **Indirectly through energy codes, appliance standards, behavior, and other market transformation programs**

# CARD RFP Spending by Sector thru FY2020

**CARD RFP Projects by Sectors thru CY2020**



## RFP Summary

- 12 Funding Cycles
- 513 proposals
- 143 projects funded
- \$31.2 million in research



# Indigenous Food Sovereignty

- Opportunities for CIP Support
- August 18, 2022

# Acknowledgments

## **The State of Minnesota Is Located on Anishinaabe Land and Dakota Land.**

We acknowledge the work we do in Mni Sota Makoce, the State of Minnesota, involves land that is of great historical, spiritual, and cultural significance to the Anishinaabe people and Dakota people. We also acknowledge the past and present harm done to Anishinaabe, Dakota, and other Indigenous nations through systematic racism, the forced removal of their people from their lands, and the seizure and colonization of these lands. We reflect on our place in these histories and our obligation to rectify the erasure of Indigenous peoples in our work. We acknowledge the Indigenous peoples on whose land we live, learn, and work as we seek to improve and strengthen our relations with Indigenous and sovereign nations.

This project was supported by a grant from the Minnesota Department of Commerce, Division of Energy Resources, through the Conservation Applied Research and Development (CARD) program, which is funded by Minnesota ratepayers.





# Project Team



Doug Ahl	Executive Vice President
Deb Dynako	Director of Partnership Development
Jeannette LeZaks	Director of Research and Innovation
Dan Streit	Senior Researcher



Bryan Van Stippen | Program Director



Kelly Cain | Founder and CEO



Jim Gehrke | Founder and CEO



# Acknowledgment of Contributors

- One, or more, Native nations of Minnesota that have chosen to remain anonymous
- Gavin Herrera, Chris Bedeau, and Briana Angstman — Leech Lake Band of Ojibwe
- Cherilyn Spears and Michael Van Horn — Red Lake Band of Lake Superior Chippewa
- Dan Cornelius — Intertribal Agricultural Council
- Diane Wilson — Native American Food Sovereignty Alliance
- Vanessa L. Miller — Oneida Nation
- Dani Pieratos — Harvest Nation
- John Hendrix — Mississippi Band of Choctaw Indians and Choctaw Fresh Produce
- Bridget Guiza — Ogema Organics
- Joseph Van Alstine — Little Traverse Bay Bands of Odawa and Ziibimijwang Farm
- Mary Greene-Trottier — Spirit Lake Nation
- Lori Capouch — North Dakota Association of Rural Electric Cooperatives
- Renika Love
- Katie Schmitz — American Indian Community Housing Organization
- Bella Halstead, Jakai Taylor, and Charlie Hood — Xcel Energy
- Ethan Warner — CenterPoint Energy
- Jeff Haase and Jill Eide — Great River Energy
- Kathryn Milun — University of Minnesota, Duluth



# Project Objectives

1. Understand energy issues related to Native nations and food sovereignty in Minnesota.
2. Identify potential non-energy benefits, including food desert mitigation, that may result from additional support from CIP offerings for Native food sovereignty projects.
3. Provide recommendations for how CIP offerings may support Native nations in advancing food sovereignty work.



# Indigenous Food Sovereignty

*“Food sovereignty as the right and ability of tribal nations and peoples to:*

- *freely develop and implement self-determined definitions of food sovereignty;*
- *cultivate, access, and secure nutritious, culturally essential food produced through ecologically sound and sustainable methods; and*
- *design and maintain food systems and enact policies that advance tribal priorities for ensuring that tribal citizens have the sustenance they need to thrive physically, mentally, socially, and culturally not just today, but for the generations to come.”*

**- National Congress of American Indians (2021)**



# Native Nations Food Sovereignty - Key Points

- Consistent objectives, but varied initiatives
  - Cultivation
  - Food Processing
  - Heirloom Preservation
  - Community Engagement
  - Food Distribution
- Projects reflect Indigenous resources, traditions, and priorities
- Strategies extend beyond agriculture



# Native Nations and Utilities in Minnesota

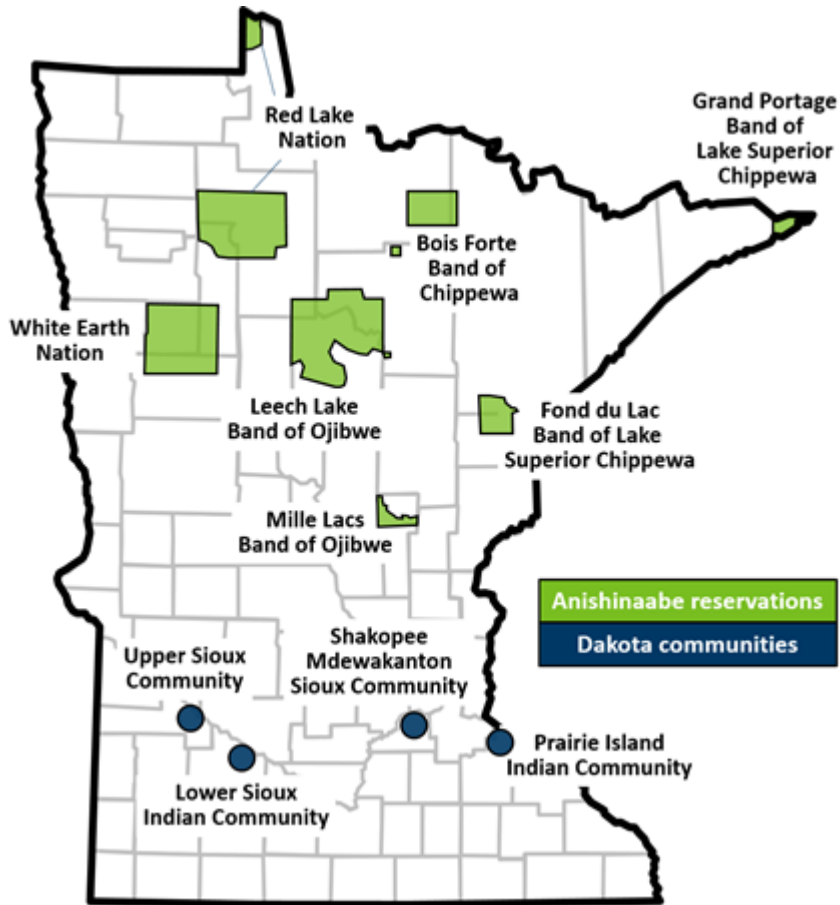


Image courtesy of Minnesota Department of Health

## Utilities Serving Native Reservations

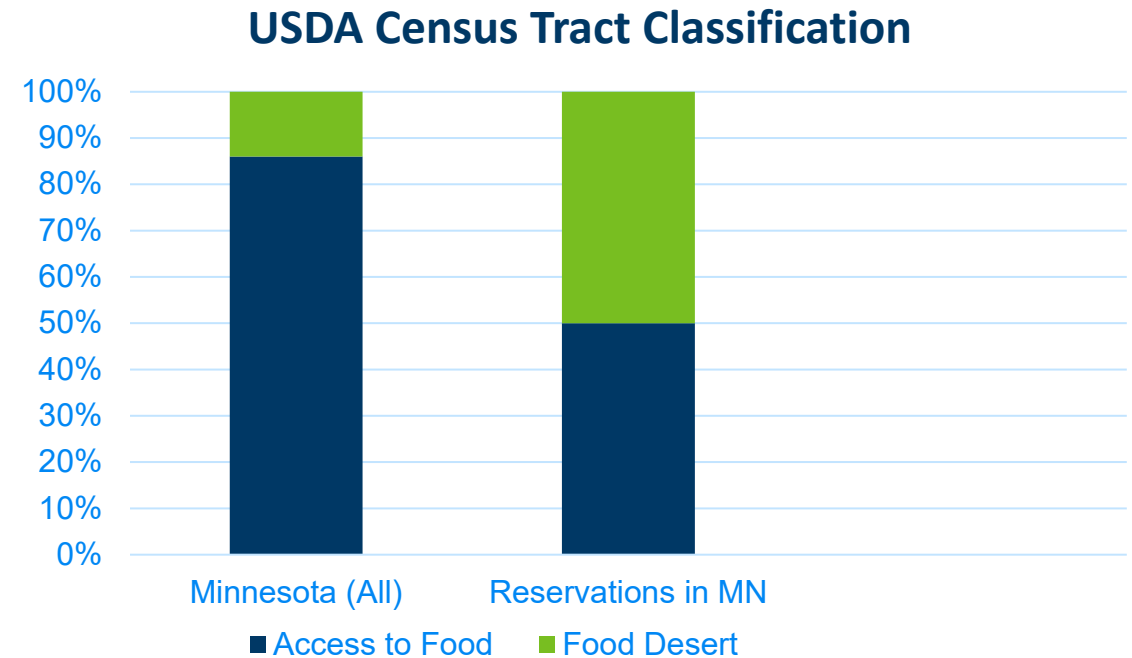
Electric	Natural Gas
Arrowhead Electric Co-op	CenterPoint Energy
Beltrami Electric Co-op	MN Energy Resources
Dakota Electric	
East Central Energy	
Lake Country Power	
Mille Lacs Energy Co-op	
Minnesota Power	
Minnesota Valley Electric Co-op	
North Star Electric Co-op	
Otter Tail Power	
Roseau Electric Co-op	
Shakopee Public Utilities	
Wild Rice Electric Co-op	
Xcel Energy	



# Food Deserts in Minnesota

## USDA Economic Research Service Definition:

- Low-income census tract
- At least 500 people or 1/3 of population live
  - At least 10 miles from a grocery store (rural)
  - At least one mile from a grocery store (non-rural)



# Methodology

- Literature Review
- Stakeholder Interviews
- CIP Review
- Analysis of Findings
  - CIP Intersections
  - GHG Offset Protocol
  - Economic Analysis
- Development of Recommendations



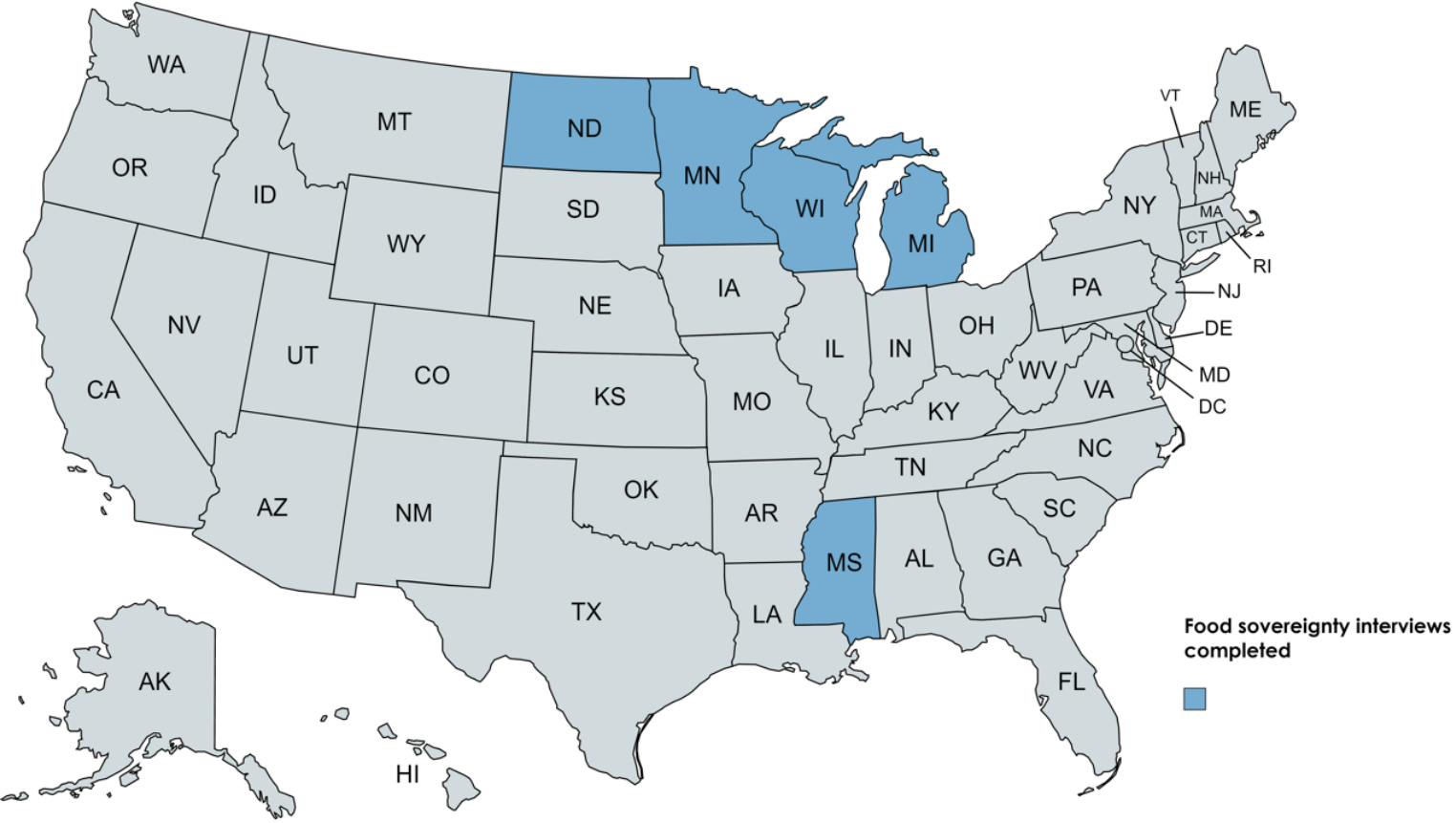


# Data Protection and Confidentiality

- Legacy of exploitation
- Food sovereignty work is proprietary to Native nations
- Project team commitments to confidentiality
  - No disclosure of non-public information
  - No references to specific Native nations or projects



# Geography of Food Sovereignty Interviews



# Food Sovereignty Themes Identified

- Multiple Stakeholders
  - Native nations
  - Households and Individuals
  - Indigenous businesses
- On-Reservation Agriculture
  - Indigenous farms
  - Support for member gardening
  - Seed saving and heirloom preservation
- Harvest of Native Foods
  - Wild rice
  - Maple sugar
  - Walleye
- Community Education and Engagement
  - School-based programs
  - Community events
  - Elder programming
- Food Distribution
  - Incorporation with SHIP
  - Mobile and stationary farmers markets
  - Food deliveries
- Food-based Indigenous businesses
  - Vendor platforms
  - Synergistic businesses



# Energy Uses by Food Sovereignty Strategy (1 of 2)

## Greenhouses

- Lighting
- HVAC
- Envelope

## Farming

- Irrigation
- Tractors
- Field equipment
- Livestock watering
- Fans

## Native Food Harvesting

- Maple syrup evaporator
- Wild rice parcher
- Bottling/packaging



# Energy Uses by Food Sovereignty Strategy (2 of 2)

## Community Engagement

- Food production
- Food service
- Refrigeration
- Lighting
- Water heating

## Food Distribution

- Refrigerated trucks
- Box trucks
- Personal vehicles



# Existing CIP Measures Relevant to Food Sovereignty (1 of 2)

	Agriculture	HVAC/ Water Heating	Ventilation	Refrigeration
Measure Type	<ul style="list-style-type: none"> <li>Irrigation VFD</li> <li>Variable Speed Drive</li> <li>Livestock watering</li> <li>Fans</li> </ul>	<ul style="list-style-type: none"> <li>ASHP</li> <li>GSHP</li> <li>HPWH</li> <li>ERV</li> <li>Economizer</li> <li>Electric heat and water heating</li> </ul>	<ul style="list-style-type: none"> <li>Fan Energy Index</li> </ul>	<ul style="list-style-type: none"> <li>Commercial freezer and refrigerator</li> <li>Condenser fan ECM</li> <li>ECM evaporator fan</li> <li>Cooler case doors</li> </ul>
Potential Food Sovereignty Applications	<ul style="list-style-type: none"> <li>Irrigation pumps</li> <li>Bison farming</li> <li>Greenhouses</li> </ul>	<ul style="list-style-type: none"> <li>Retail outlets</li> <li>Commercial kitchens</li> <li>Ed/classrooms</li> <li>Food hubs</li> <li>Greenhouses</li> </ul>	<ul style="list-style-type: none"> <li>Commercial kitchens</li> <li>Greenhouse</li> </ul>	<ul style="list-style-type: none"> <li>Retail outlets</li> <li>Commercial kitchens</li> <li>Food hubs</li> <li>Meat processing</li> </ul>



# Existing CIP Measures Relevant to Food Sovereignty (2 of 2)

	Food Service	Lighting	Other Programs
Measure Type	<ul style="list-style-type: none"> <li>• Ovens</li> <li>• Dishwashers</li> <li>• Fryers</li> <li>• Griddles</li> <li>• Broilers</li> <li>• Steamers</li> <li>• Hot food holding cabinets</li> <li>• Aerators and sprayers</li> <li>• Ice Machines</li> </ul>	<ul style="list-style-type: none"> <li>• LED fixtures, bulbs</li> <li>• Case lighting</li> <li>• Occupancy controls</li> </ul>	<ul style="list-style-type: none"> <li>• EV Charging</li> <li>• Load management</li> <li>• Custom rebates</li> </ul>
Potential Food Sovereignty Applications	<ul style="list-style-type: none"> <li>• Retail outlets</li> <li>• Commercial kitchens</li> </ul>	<ul style="list-style-type: none"> <li>• Retail outlets</li> <li>• Commercial kitchens</li> <li>• Greenhouses</li> <li>• Bison barns</li> </ul>	<ul style="list-style-type: none"> <li>• Food trucks</li> <li>• Home delivery vehicles</li> <li>• Refrigerated trucks</li> <li>• Indoor agriculture</li> </ul>



# Potential New and Expanded CIP Measures

- Greenhouse HVAC and shell improvements
- Efficient Grow Lighting
- Flash freezers
- Indoor agricultural modules
- Maple syrup evaporators
- Wild rice parchers



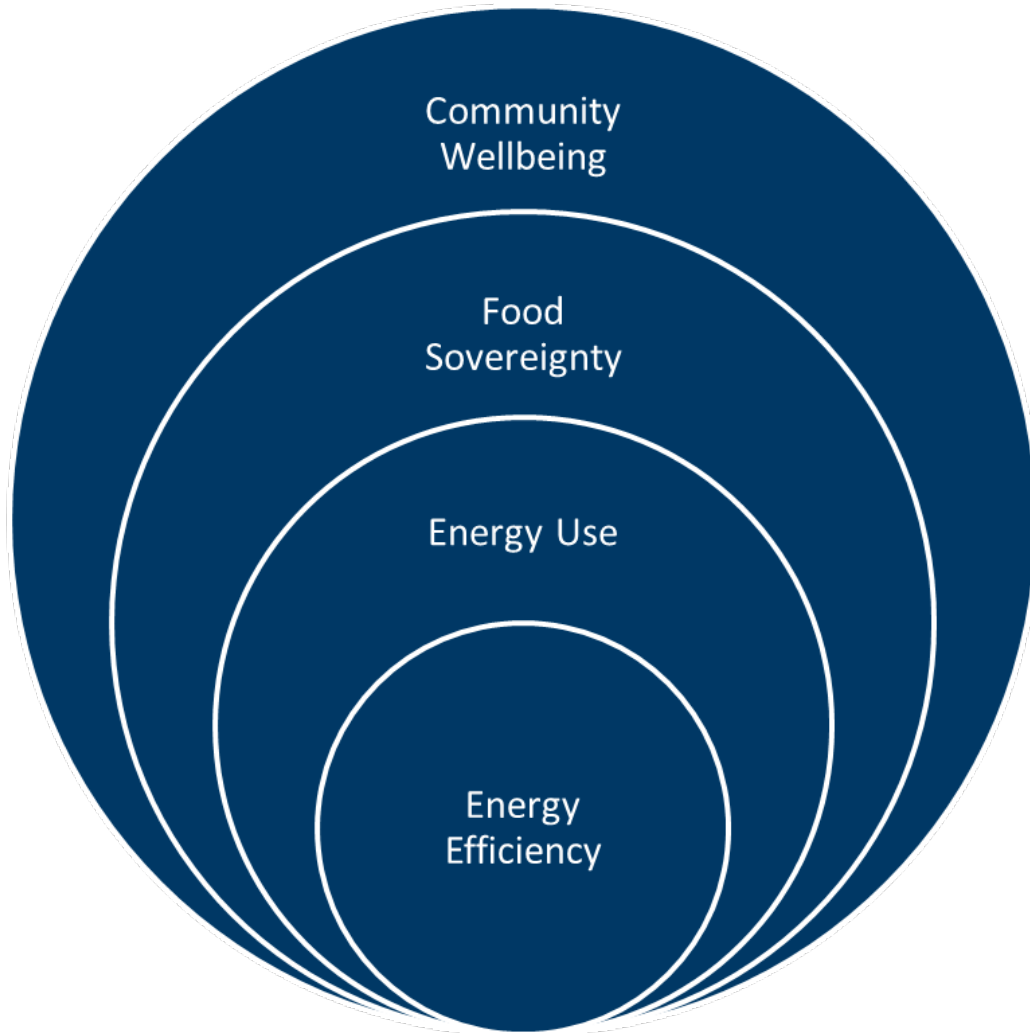


# Opportunities for Additional CIP Support

- Direct messaging for custom measures
- Robust Native nation account management
- Flexible energy savings baseline
- Community engagement sponsorship



# Focus on Holistic Solutions

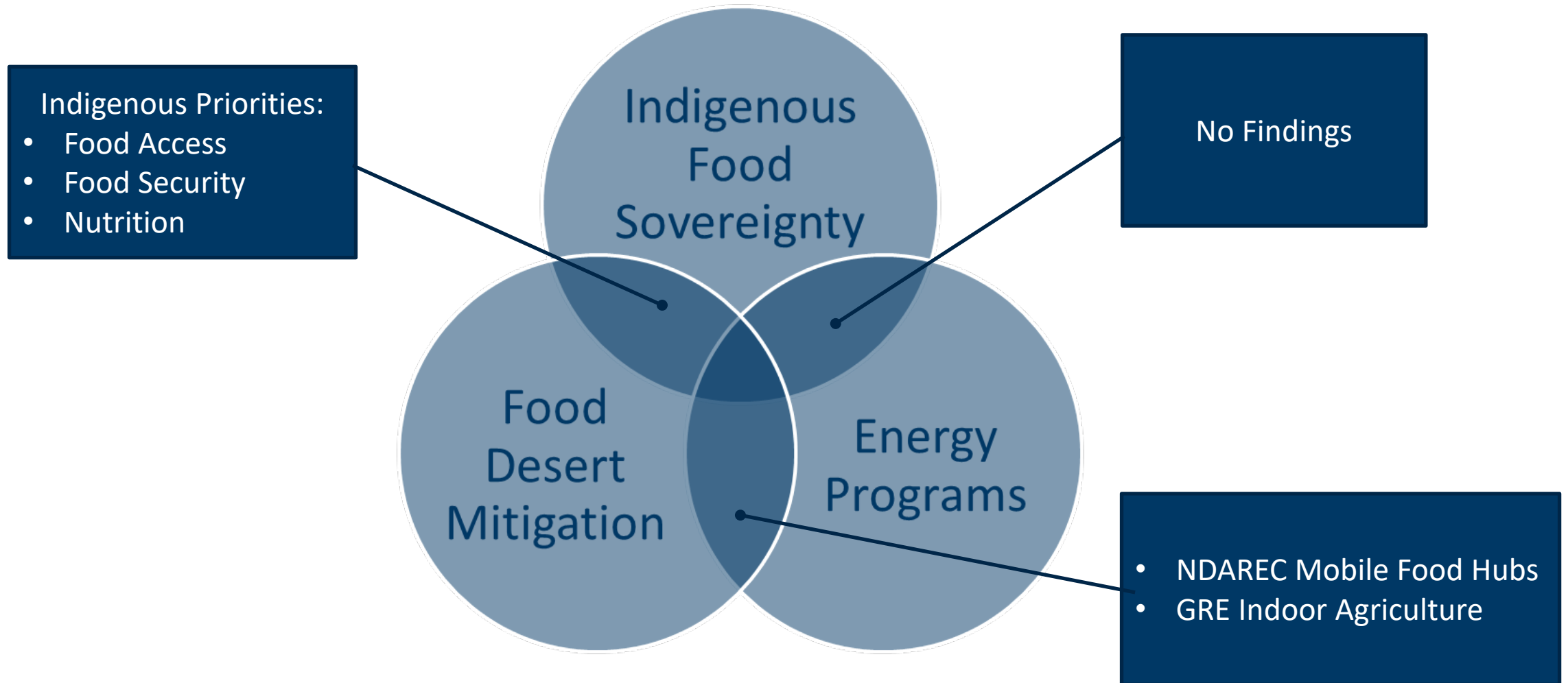


## Key Points of Connection

- Residential + Commercial + Government
- Efficiency + Renewables
- Buildings + Transportation + Field Equipment
- Utility energy + Delivered fuels



# Findings of Intersections



# Potential Non-Energy Benefits

Health	Economic	Cultural Relevance	Environment
<ul style="list-style-type: none"><li>• Food Security</li><li>• Diabetes Prevention</li><li>• Obesity Prevention</li><li>• Enhanced Nutrition</li></ul>	<ul style="list-style-type: none"><li>• Self-sufficiency</li><li>• Safety Net</li><li>• Education and Training</li></ul>	<ul style="list-style-type: none"><li>• Sovereignty</li><li>• Historical connection</li><li>• Relationship to Food</li></ul>	<ul style="list-style-type: none"><li>• GHG Emissions</li><li>• Water Quality</li><li>• Soil Health</li></ul>



# Local Food System Partnership

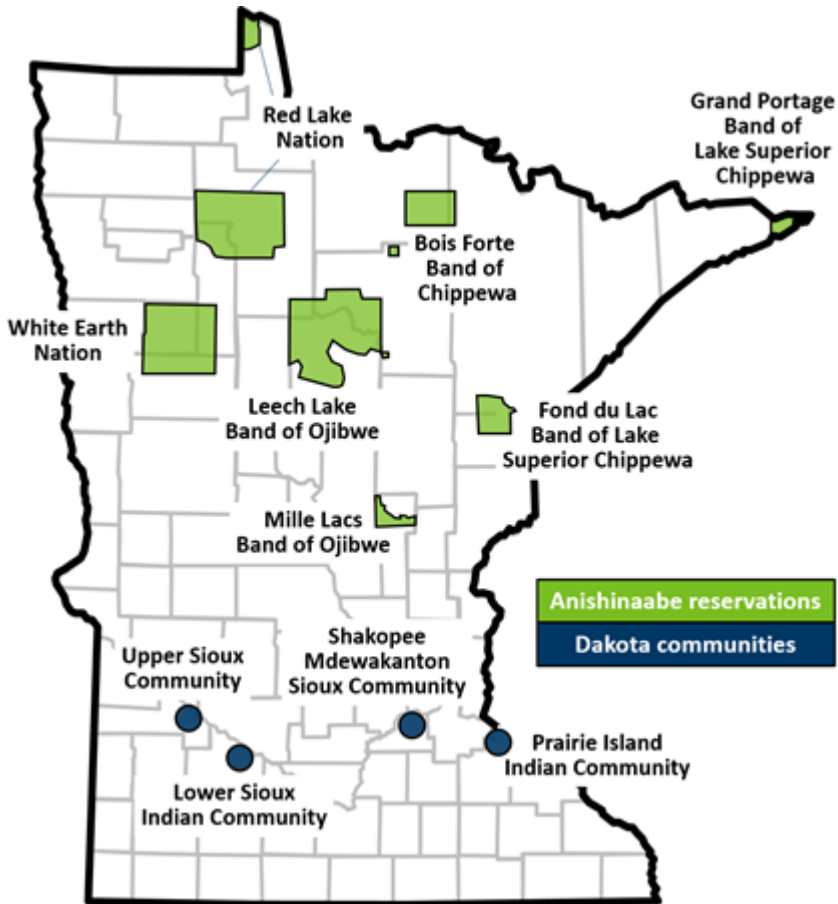


Image courtesy of Minnesota Department of Health

## Healthy Share local food model

- “Shares” of fresh organic produce
- Aligned with USDA nutrition guidelines
- Maximize local sourcing
- Shares delivered weekly to members

## Pilot Progress\*

- Deliveries started November 9, 2021 (Ongoing)
- 14 Local producers
- 42% of delivered food produced locally
- Local portion is seasonally dependent

\*This pilot is funded through a separate grant



# Local Food System GHG Offset Protocol - Scope

## Scope

- Transportation-based
- Harvest to consumption
- Potential savings/penalty for local sourcing

## Approach

- Analyze emissions in local food pilot
- Direct tracking of transportation data
- Participant exit interviews



# Local Food System GHG Offset Protocol - Findings

## Data Inputs

- Distance from production to aggregation
- Distance from aggregation to delivery
- Distance from aggregation to retail
- Distance from households to retail
- Vehicle types and emissions factors
- Food weight

## Key Sources of Uncertainty

- Variability in transportation methods (conventional)
- Shipping fill-levels (conventional)
- Seasonal variability in sourcing locations
- Household counterfactual behaviors



# Local Food System Economic Impact

## Conventional Food System Features

- Multi-national production
- Centralized processing
- Consolidated market
- \$0.75 - \$0.90 of food dollars leave local economy (“leakage”)
- Gaps may create food deserts

## Potential of Local Food Systems

- Support for Indigenous sovereignty
- Increased local economic resilience
- Reduced leakage
- Improved food access





# Economic Leakage Analysis Inputs

Data Sets	Source	Uses
American Community Survey	U.S. Census	<ul style="list-style-type: none"><li>• Determine population and number of households by Indigenous reservations</li><li>• Find household median income by Indigenous reservation</li></ul>
Consumer Expenditure Series	U.S. Bureau of Labor Statistics	<ul style="list-style-type: none"><li>• Estimate household food budgets by income band</li></ul>
Food Dollar Series	USDA Economic Research Service	<ul style="list-style-type: none"><li>• Categorize local and non-local cash flows</li></ul>



# Reduced Economic Leakage

Native Nation Reservation	Baseline Estimate (Low leakage)	Baseline Estimate (High leakage)	Potential Local Benefit (Low estimate)	Potential Local Benefit (High Estimate)
Bois Forte Band of Chippewa	\$1,245,057	\$1,494,068	\$498,023	\$971,146
Fond du Lac Band of Lake Superior Chippewa	\$7,607,936	\$9,129,523	\$3,043,174	\$5,934,190
Grand Portage Band of Lake Superior Chippewa	\$908,769	\$1,090,523	\$363,508	\$708,840
Leech Lake Band of Ojibwe	\$21,809,772	\$26,171,726	\$8,723,909	\$17,011,622
Lower Sioux Indian Community	\$1,000,920	\$1,201,104	\$400,368	\$780,718
Mille Lacs Band of Ojibwe	\$7,656,188	\$9,187,425	\$3,062,475	\$5,971,826
Prairie Island Indian Community	\$362,850	\$435,420	\$145,140	\$283,023
Red Lake Band of Chippewa Indians	\$9,551,089	\$11,461,307	\$3,820,436	\$7,449,849
Shakopee Mdewakanton Sioux Community	\$1,880,175	\$2,256,210	\$752,070	\$1,466,537
Upper Sioux Indian Community	\$232,586	\$279,104	\$93,035	\$181,417
White Earth Reservation	\$16,683,228	\$20,019,874	\$6,673,291	\$13,012,918
<b>Total</b>	<b>\$68,938,570</b>	<b>\$82,726,284</b>	<b>\$27,575,429</b>	<b>\$53,772,086</b>



# Recommendations

Existing CIP Framework	Structural
Create new CIP offerings for food sovereignty focused measures	Value transportation emissions reductions
Expand account management	Value local economic resiliency
Adapt custom rebate offerings	Price comprehensive energy system risks
Increase support for community engagement	Foster partnership development beyond ratepayer program



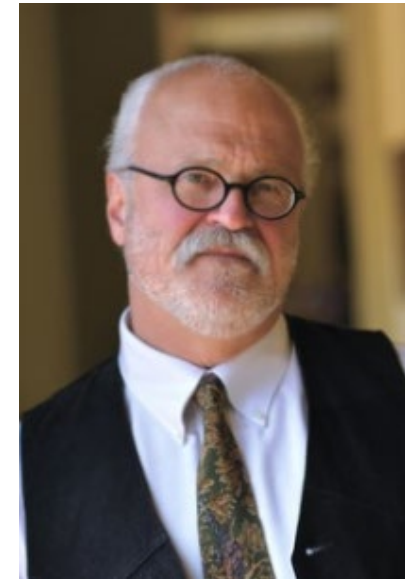
## Opportunities for CIP to Support Indigenous Food Sovereignty



**Dan Streit**  
[dstreit@slipstreaminc.org](mailto:dstreit@slipstreaminc.org)



**Bryan Van Stippen**  
[bvanstippen@iltf.org](mailto:bvanstippen@iltf.org)



**Kelly Cain**  
[kcain@4xbl.com](mailto:kcain@4xbl.com)

Send us your questions using the Q&A panel

# CARD Project Resources

The screenshot shows the 'Applied Research and Development' page. On the left is a navigation menu with categories like 'Industries & Agencies', 'Energy', 'Financial Assistance', and 'Applied Research & Development'. The main content area has a 'RESOURCES' section with links for 'CARD search', 'CARD Webinars & Videos', 'Request for Proposals', 'Proposals & Evaluations', and 'Fact Sheets, Guides & Tools'. Below this is a 'QUESTIONS?' section with contact information for the Department of Commerce. A 'Project Info' tab is selected at the bottom of the content area.

For Reports use **CARD Search Quick Link**

For Webinars use **CARD Webinars & Videos Quick Link**

For Other research documents use **CARD Fact Sheets, Guidelines & Tools Quick Link**

**Webinar Recording & Final Report**  
available in couple months

[R&D Web Page \(https://mn.gov/commerce/industries/energy/utilities/cip/applied-research-development/\)](https://mn.gov/commerce/industries/energy/utilities/cip/applied-research-development/)

# Thanks for Participating!

## Upcoming CARD Webinars:

- **October 12, 2022:** Michaels Energy – Energy Efficiency Potential of Nanofluids
- **October 19, 2022:** CADMUS – TRM v4.0 Recommendations for Residential Thermostats and Heating and Cooling Equivalent Full Load Hours
- **October 2022:** University of Minnesota – Project Overcoat: Affordable High-Performance Enclosure Upgrades for Multifamily Buildings

### Commerce Division of Energy Resources e-mail list sign-up

Mary Sue Lobenstein | R&D Program Administrator

[marysue.Lobenstein@state.mn.us](mailto:marysue.Lobenstein@state.mn.us) | 651-539-1872

Let us know how we did today!

**Your Feedback Matters**