

2019 Project Abstract

For the Period Ending June 30, 2022

PROJECT TITLE: White Earth Nation Community Solar for Community Action

PROJECT MANAGER: Nicole Saccoman

AFFILIATION: Chief Financial Officer

MAILING ADDRESS: 3963 8th St SW

CITY/STATE/ZIP: Backus, MN 56435

PHONE: 763-258-3690

E-MAIL: Nicole@rreal.org

WEBSITE: www.rreal.org

FUNDING SOURCE: Environment and Natural Resources Trust Fund

LEGAL CITATION: M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 07b

APPROPRIATION AMOUNT: \$500,000

AMOUNT SPENT: \$500,000

AMOUNT REMAINING: \$0

Sound bite of Project Outcomes and Results

200 kW of solar community gardens were installed on the White Earth tribal reservation. This project will greatly reduce greenhouse gas emissions for years to come, in addition to providing energy resilience to the White Earth community. Furthermore, this project has increased economic development through environmental education and solar workforce training.

Overall Project Outcome and Results

Five 40 kW ground-mounted solar arrays have been completed, were commissioned, and are now operating at 100% at each of the five chosen sites. Those sites are DOVE Shelter, Head Start Daycare Center, Maadaazizi Workforce Center, Naytahwaush Complex, and the Tribal College; all are located within the White Earth reservation tribal community.

Eight interns, in two rounds of four, completed a 45-hour paid internship at a rate of \$15/hour. They each received a Minnesota Installers Certificate and a professional electronic instrument kit. Each student, as part of the 45 hours, spent 15 hours at the solar construction sites during installation. Rural Renewable Energy Alliance (RREAL) and the White Earth Tribal and Community College are expanding this program into a full Associate Degree program in 2022, including work experiences with Minnesota Power and several rural Habitat for Humanity affiliates.

Project Results Use and Dissemination

This project has directly led to a second year of Solar Tech Customized Education at the White Earth Tribal and Community College. It is also providing the tribal community with sustainable energy to promote energy independence and resiliency. RREAL is continuing to partner with the White Earth tribe to create long-lasting energy sustainability solutions. Please enjoy [this video](#) for further information on the collaboration between RREAL and the White Earth nation and how this project will continue to increase economic development and sustainability within the community.



Environment and Natural Resources Trust Fund (ENRTF)

M.L. 2019 ENRTF Work Plan – Final Report

Today's Date: October 29, 2021

Final Report: October 29, 2021

Date of Work Plan Approval: June 5, 2019

Project Completion Date: June 30, 2022

PROJECT TITLE: White Earth Nation Community Solar for Community Action

Project Manager: Nicole Saccoman

Organization: Rural Renewable Energy Alliance (RREAL)

College/Department/Division: Solar Assistance

Mailing Address: 3963 8th Street SW

City/State/Zip Code: Backus, MN 56435

Telephone Number: cell: (763) 258-3690 Office: (218) 947-3779

Email Address: Nicole@rreal.org

Web Address: www.rreal.org/cs4ca

Location: White Earth Nation Lands in Becker County, Clearwater County, and Mahnomen County

Total Project Budget: \$500,000

Amount Spent: \$500,000

Balance: \$0

Legal Citation: M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 07b

Appropriation Language: \$500,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Rural Renewable Energy Alliance to install a 200-kW White Earth community-owned solar garden to reduce greenhouse gas emissions, increase economic development through environmental education and solar workforce training, and improve energy resilience.

I. PROJECT STATEMENT:

This project will install a 200-kilowatt community solar garden in partnership with the White Earth Nation. The array will provide renewable energy to participating low-income White Earth Tribal members as a fiscally responsible approach to addressing energy assistance. This second 100% low-income community solar array in Minnesota builds on the success of the first LCCMR supported Leech Lake Band's project. The White Earth Nation community solar garden is projected to serve an additional 100 families and provide environmental education and technical workforce development for up to 60 students and 10 solar installation interns.

Solar energy promises to permanently address energy poverty with a renewable solution, and LCCMR support makes solar energy available to low-income families. RREAL has forged a nationally relevant, scalable model of energy assistance: Community Solar for Community Action (CS4CA). Rather than simply paying low-income families' energy bills annually, RREAL is proving that shared solar is a fiscally responsible and environmentally appropriate alternative to conventional, fossil-fuel based energy assistance. Utilizing Minnesota solar energy to meet this need is preserving valuable natural resources and adapting Minnesota's ecosystem for environmental and economic resilience and more responsible social service delivery models.

This project responds to the growing natural resource impacts of using imported fossil fuels to supply Minnesota's low-income energy needs. The solar energy system will increase the state's annual renewable energy production by an estimated 253,837 kilowatt hours, offsetting up to 206,685 pounds of coal equivalent, equal to sequestering the carbon of 223 acres of US forest in one year. The community solar asset will last at least 30 years and is projected to avoid GHG emissions of approximately 6,270.06 MTCO₂e over its lifetime.

II. OVERALL PROJECT STATUS UPDATES:

Amendment Request as of 11/06/2019

Due to employee transitions and organizational restructuring we are requesting an amendment to the personnel and engineering and procurement allotments as follows:

- Reduce Personal (Wages and Benefits) by \$82,800 (Activity 1 & 3) and redirect as follows:
 - Increase Professional Engineering Services – Geo-Tech by \$2,500 – Activity 1
 - Increase PV Modules by \$22,880 – Activity 3
 - Increase Racking by \$5,000 – Activity 3
 - Increase Engineering, Procurement, and Construction (EPC) Labor by \$52,420 – Activity 3

These changes are being requested for three reasons. First, staff work for ECP will be outsourced through an RFP bidding process to compete portions of Activity 1 and all of Activity 3. Second, these changes will reflect price changes anticipated in PV panels and racking components due to increased costs of tariffs in the marketplace. Finally, funding of \$7,880 for the paid White Earth internships in Activity 3 has been funded by another source and these funds have been reallocated to Geo-tech, modules, and racking increases.

Amendment Approved 11/15/2019

First Update March 1, 2020

Recently, the tribal council has made some changes in the selection of the five solar sites for the project, and those sites are now approved. The next step for us will be to verify the solar feasibility of those sites to examine whether they are good candidates for the solar applications.

In November 2019, we had administered a formal RFP bid process from local solar contractors. We had received three proposals, but have not made a final decision. Due to the change in the site selection from the tribe, we will be asking these contractors to submit adjusted proposals once we have verified that the sites are feasible to receive the solar application.

AMENDMENT REQUEST – Amendment Approved by LCCMR 5/20/2020

We are requesting that the project manager be changed from Vicki O'Day to Nicole Saccoman due to separation of employment.

Second Update September 1, 2020

After obtaining additional bids for the five identified solar sites, REAL Solar, SBC has been contracted as the EPC. Deposits have been submitted to the EPC for initial material procurement, which will be included in an additional reimbursement request upon delivery of the materials to site.

REAL Solar anticipates construction commencement on the five sites to begin in November 2020, with full completion on two of the sites by the end of the year 2020. The preparation in ground work prior to the winter season should allow project completion on the three remaining sites in Spring 2021.

Third Update March 1, 2021

Amendment Request as of 2/25/2021

As the project has progressed, we have a better understanding of what the actual costs of the project will consist of and would like to amend the budget to reflect these actuals.

- Increase Professional/Technical/Service Contracts by \$73,803 to a revised budget of \$141,723 and redirect as follows:
 - Reduce Personnel (Wages and Benefits) by \$15,000 to a revised budget of \$12,200
 - Reduce Capital Expenditures Over \$5k by \$50,000 to a revised budget of \$344,880
 - Reduce Travel expenses in MN by \$8,803 to a revised budget of \$197

These changes are being requested because we have a better understanding of the true costs associated to the project as we commence construction. RREAL personnel have accomplished the project development for the project and the bulk of the remaining effort is focused on completing the construction of the solar arrays.

We were able to obtain favorable material and equipment pricing via economic order quantities, therefore we are requesting a reduction in these costs to go towards the previously under-budgeted EPC costs. Travel expenses will also be billed by the EPC and will be allocated to other funding sources. Construction of the five sites at White Earth Nation are underway and expected to be completed before the fall of this year.

Amendment approved by LCCMR 3/2/2021

Final Report

Five 40 kW ground-mounted solar arrays have been completed, were commissioned, and are now operating at 100% at each of the five chosen sites. Those sites are comprised of DOVE Shelter, Head Start Daycare Center, Maadaazizi Workforce Center, Naytahwaush Complex, and the Tribal College; all located within the White Earth reservation tribal community.

Eight interns, in two rounds of four, completed a 45-hour paid internship at a rate of \$15/hour. They each received a Minnesota Installers Certificate and a professional electronic instrument kit. Each student, as part of the 45 hours, spent 15 hours at the solar construction sites during installation. RREAL and the White Earth Tribal and Community College are expanding this program into a full Associate Degree program in 2022, including work experiences with Minnesota Power and several rural Habitat for Humanity affiliates.

III. PROJECT ACTIVITIES AND OUTCOMES:

To get to the recommended \$500,000, Activity 2 will be funded by other funds contributed to the project and indirect costs identified in the original application were removed.

ACTIVITY 1 Title: Solar Project Design, Management, and Reporting

Description: Conduct a Solar Site Assessment, Engineering Analysis and Design, perform Project Management and Reporting. Prior to July 2019 utilizing secured funding through the Carolyn Foundation, in collaboration with the White Earth Nation, RREAL will select several potential sites on tribal property. Approximately 2 acres will be required for the facility. After July 1, 2019, RREAL will then perform a comprehensive solar site assessment and analysis for the 200 kilowatt Community Solar Photovoltaic array in the best locations within Becker, Clearwater, and/or Mehnomin County. The solar site suitability and system design will be conducted in collaboration with the utilities that supply power to the White Earth Reservation.

ACTIVITY 1 ENRTF BUDGET:\$42,700

Outcome	Completion Date
<i>1. Create comprehensive assessment of preferred and potential White Earth solar site(s)</i>	<i>Summer 2019</i>
<i>2. Generate design for solar array</i>	<i>Winter 2019</i>
<i>3. Professional Structural & Geo-technical Engineering</i>	<i>Winter 2020</i>
<i>4. Permitting & Inspections</i>	<i>Summer 2021</i>
<i>5. Perform project management and project reporting</i>	<i>Summer 2022</i>

First Update March 1, 2020

The tribal council has made some changes in the selection of the five solar sites for the project, and those sites are now approved. The next step for us will be to verify the solar feasibility of those sites to examine whether they are good candidates for the solar applications.

COVID-19 is slowing down our ability to perform a solar feasibility test on the five approved sites.

Second Update September 1, 2020

The tribal council has selected five solar sites that deem to be feasible for solar applications and it is anticipated that the sites will undergo structural engineering and geo-technical engineering by the end of the year.

Third Update March 1, 2021

Structural and Geo-technical engineering found soil conditions that were not favorable for our typical ground mount designs. However, we were able to source racking materials that would accommodate these conditions. The majority of the groundwork had been completed prior to the ground freezing and so we are still able to complete preliminary construction on the sites during these winter months.

Final Report

Installations were successfully completed and commissioned at the five selected sites. Funds from the IIsababy Foundation were obtained to fund the additional work involved due to the unfavorable site conditions. The five solar sites are comprised of the DOVE Women’s Shelter, Head Start daycare center, Maadazizi Workforce Center, Naytahwaush Complex, and the Tribal College.

Activity 2 Title: Environmental Education and Solar Workforce Development

Description: Engage White Earth Community College in Environmental Education, select and train solar installation interns.

Activity 2 ENRTF BUDGET: Refer to the Budget, Other Funds Contributed to the Project - Non-State

Outcome	Completion Date
<i>1. Engage White Earth Community College Students with Environmental Education</i>	<i>Summer 2019</i>
<i>2. Select White Earth Community Members for Solar Technical Training</i>	<i>Spring 2020</i>
<i>3. Train White Earth Interns on Solar Installation</i>	<i>Spring 2021</i>

First Update March 1, 2020

Technical training and internships will be postponed due to COVID-19. It is unclear when we will be able to obtain interns as school institutes are closed until further notice. We hope to select interns this fall but are not optimistic that schools will be back in order by then.

Second Update September 1, 2020

The internship engagement is expected to commence this fall 2020 with funding provided by the Carolyn Foundation and the Otto Bremer foundation.

Third Update March 1, 2021

Four interns have successfully completed the 45 hour internship for the first round, including observation and on-site training during the solar array installations. We have already recruited 4 additional interns to complete another 45 hour internship this Spring 2021.

Additionally, we have begun work to create an accredited solar program within the tribal college that has been granted state approval.

Final Report

Eight interns, in two rounds of four, completed a 45-hour paid internship at a rate of \$15/hour. They each received a Minnesota Installers Certificate and a professional electronic instrument kit. Each student, as part of the 45 hours, spent 15 hours at the solar construction sites during installation. RREAL and the White Earth Tribal and Community College are expanding this program into a full Associate Degree program in 2022, including work experiences with Minnesota Power and several rural Habitat for Humanity affiliates.

Activity 3 Title: Construction and Commissioning of Community Solar Garden Array

Description: RREAL will construct and commission the community solar garden on White Earth lands. According to the Project Management plan established during Activity 1, RREAL will begin construction of the community solar asset in 2021. Following installation, the system is anticipated to be inspected and commissioned by Fall of 2021. RREAL employs a competitive bid process for procurement of these items. This activity includes heavy equipment rental and travel costs.

Activity 3 ENRTF BUDGET: \$457,300

Outcome	Completion Date
<i>1. Installation phase 1: footings</i>	<i>Summer 2021</i>
<i>2. Installation phase 2: racking</i>	<i>Summer 2021</i>
<i>3. Installation phase 3: modules and inverters</i>	<i>Summer 2021</i>
<i>4. Installation phase 4: trenching and electrical, production meter, fencing</i>	<i>Summer 2021</i>
<i>5. Installation phase 5: inspection and commission</i>	<i>Fall 2021</i>

First Update March 1, 2020

We have not started this portion of the project yet.

Second Update September 1, 2020

Ground work is anticipated to begin this fall 2020, which will allow the remaining installation to be completed during the spring 2021 season.

It is expected that two of the five sites will also complete installation of all necessary components by the end of the year 2020.

Third Update March 1, 2021

Ground work has been substantially completed and installation of the solar arrays is underway. Completion is expected to occur before the fall 2021. Modules have successfully been installed on one of the five sites.

Final Report

Five 40 kW ground-mounted solar arrays have been completed, were commissioned, and are now operating at 100% at each of the five chosen sites.

IV. DISSEMINATION:

Description: RREAL will summarize the project results and the developed replicable model, presenting the findings and recommendations to the U.S. Low-Income Home Energy Assistance and Weatherization communities. Reports will be disseminated through various statewide and national community solar groups of which RREAL is a partner, and to the public at-large through RREAL's website, at <https://www.rreal.org/cs4ca> and on social media at https://www.facebook.com/pg/ruralrenewableenergyalliance/photos/?tab=album&album_id=10154750786849241

The Minnesota Environment and Natural Resources Trust Fund (ENRTF) will be acknowledged through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the [ENRTF Acknowledgement Guidelines](#).

First Update March 1, 2020

We have not started this portion of the project yet.

Second Update September 1, 2021

We have not started this portion of the project yet.

Third Update March 1, 2021

We have not started this portion of the project yet.

Final Report

This project has directly led to a second year of Solar Tech Customized Education at the White Earth Tribal and Community College. It is also providing the tribal community with sustainable energy to promote energy independence and resiliency. RREAL is continuing to partner with the White Earth tribe to create long-lasting

energy sustainability solutions. Please enjoy [this video](#) for further information on the collaboration between RREAL and the White Earth nation and how this project will continue to increase economic development and sustainability within the community.

V. ADDITIONAL BUDGET INFORMATION:

A. Personnel and Capital Expenditures

Explanation of Capital Expenditures Greater Than \$5,000:

Note: RREAL employs a competitive bid process for procurement of these items.

Capital Expenditures for Solar Equipment and Installation - Activity 3 \$394,880

Footings installed (\$10,000)

PV Modules \$128,880 – Reduction due to economic order quantity

Racking (with shipping) \$103,200 – Increase due to sourcing of alternative racking to accommodate ground conditions.

Inverters (with shipping) 50,000 – Reduction due to economic order quantity

Electrical Parts - Array, Underground, Monitoring, and Balance of System (with shipping) \$38,000 – Increase due to system design

Guarded Access Fence 14,800 – Reduction due to solar guarding necessity at site location. Most locations are already guarded.

Explanation of Use of Classified Staff – Activity 1:

Total Number of Full-time Equivalent (FTE) Directly Funded with this ENRTF Appropriation: 1.38 FTE

Total Number of Full-time Equivalent (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation : TBD

VI. PROJECT PARTNERS:

Name	Title	Affiliation	Role
RREAL Team	Project Managers, Electricians, Construction Manager and Crew, Operations Staff	Rural Renewable Energy Alliance (RREAL)	Project management, construction, commissioning, operations facilitation, and reporting.

A. Partners outside of project manager’s organization receiving ENRTF funding

Name	Title	Affiliation	Role
Contractors	Professional services	Technical Contractors	Structural and Geo-technical Engineering Services and Electrical Permits & Inspection

B. Partners outside of project manager’s organization NOT receiving ENRTF funding

RREAL will work in partnership with the White Earth Nation and Utility Provider(s) to ensure the design of the community solar garden aligns with utility and energy assistance programming frameworks.

Name	Title	Affiliation	Role
Winona LaDuke	Director	Honor the Earth	Director
Pam Mahling	Special Projects Manager	Honor the Earth	Project Manager
Mike Triplett	Planner	White Earth Tribal Council	Economic Development Division
Darrell White	Executive Director	White Earth Nation	Training Employment Rights Ordinance
Lorna LaGue	Director of Development	White Earth Tribal Community College	Environmental Education

VII. LONG-TERM- IMPLEMENTATION AND FUNDING:

This project is being replicated in Vermont and Minnesota and is part of the nationwide Department of Energy Solar in Your Community Challenge to further scale low-income solar models across the U.S. As part of the challenge, RREAL will prove solar can be integrated into the energy assistance program as an environmentally friendly and fiscally responsible approach to making solar accessible to people of all income levels.

VIII. REPORTING REQUIREMENTS:

- Project status update reports will be submitted March 1 and September 1 each year of the project
- A final report and associated products will be submitted between June 30 and August 15, 2022

IX. SEE ADDITIONAL WORK PLAN COMPONENTS:

- A. Budget Spreadsheet**
- B. Visual Component or Map**
- C. Parcel List Spreadsheet**
- D. Acquisition, Easements, and Restoration Requirements**
- E. Research Addendum**

Attachment A:

Environment and Natural Resources Trust Fund

M.L. 2019 Budget Spreadsheet

Legal Citation: M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 07b

Project Manager: Nicole Saccoman

Project Title: White Earth Nation Community Solar for Community Action

Organization: Rural Renewable Energy Alliance (RREAL)

Project Budget: \$500,000

Project Length and Completion Date: 3 Years June 30, 2022

Today's Date: October 29, 2021



ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Approved as of 3/2/2021	Spent	Balance (Revised Budget)
BUDGET ITEM			
Personnel (Wages and Benefits)	\$ 12,200	\$ 12,200	\$ -
Project Managers: \$7,200 (70% salary, 30% benefits); 31% (operations) and 7% (technical) FTE for two years Activity 1			
Program support staff: \$5,000 (70% salary; 30% benefits); 7% FTE for two years Activity 1			
Professional/Technical/Service Contracts	\$ 141,723	\$ 141,723	\$ -
Professional Engineering Services: Structural and Geo-technical (\$10,000) for two years Activity 1	\$ 12,500	\$ 12,500	\$ -
Electrical Permits & Inspection (\$3,000) for two years Activity 1	\$ 3,000	\$ 3,000	\$ -
Engineering, Procurement, and Construction (EPC) Labor	\$ 126,223	\$ 126,223	\$ -
Equipment/Tools/Supplies - Note: RREAL employs a competitive bid process for procurement of these items.	\$ 1,000	\$ 1,000	\$ -
Equipment Rental (Heavy equipment handler, trailer for transport) (\$1,000) Activity 3	\$ 1,000	\$ 1,000	\$ -
Capital Expenditures Over \$5,000	\$ 344,880	\$ 344,880	\$ -
Footings installed (\$10,000)	\$ 10,000	\$ 10,000	\$ -
PV Modules (\$156,000)	\$ 128,880	\$ 128,880	\$ -
Racking (with shipping) (\$73,000)	\$ 103,200	\$ 103,200	\$ -
Inverters (with shipping) (\$55,000)	\$ 50,000	\$ 50,000	\$ -
Electrical Parts - Array, Underground, Monitoring, and Balance of System (with shipping) (\$33,000)	\$ 38,000	\$ 38,000	\$ -
Guarded Access Fence (\$40,000)	\$ 14,800	\$ 14,800	\$ -
Travel expenses in Minnesota	\$ 197	\$ 197	\$ -
Travel to/from work site and related meetings with White Earth and utility partners, mileage and lodging	\$ 197	\$ 197	\$ -
Other	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -
COLUMN TOTAL	\$ 500,000	\$ 500,000	\$ -

OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget	Spent	Balance
Non-State:		\$ 126,250	\$ 45,000	\$ 81,250
Ilisababy Foundation - \$20,000 total				
Carolyn Foundation - \$50,000 total for two years				
Otter Tail POP Rebate program - \$56,250 total	Pending			
State:		\$ -	\$ -	\$ -
In kind:	Pending	\$ 5,000	\$ -	\$ 5,000

PAST AND CURRENT ENRTF APPROPRIATIONS	Amount legally obligated but not yet spent	Budget	Spent	Balance
Current appropriation:		\$ -	\$ -	\$ -
Past appropriations: M.L. 2016, Chp. 186, Sec. 2, Subd. 07a	Completed June 2018	\$ 490,000	\$ 490,000	\$ -

