



Environment and Natural Resources Trust Fund (ENRTF)

M.L. 2019 ENRTF Work Plan (Main Document)

Today's Date: August 27, 2018

Date of Next Status Update Report: March 1, 2020

Date of Work Plan Approval: June 5, 2019

Project Completion Date: June 30, 2022

Does this submission include an amendment request? No

PROJECT TITLE: White Earth Nation Community Solar for Community Action

Project Manager: Vicki O'Day

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: 952-239-6198 office: 218-947-3779

Email Address: vicki@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: \$0

Balance: \$500,000

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:

- First Update March 1, 2020**
- Second Update September 1, 2020**
- Third Update March 1, 2021**
- Fourth Update September 1, 2021**
- Fifth Update March 1, 2022**
- Final Report between project end (June 30) and August 15, 2022**

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: \$65,670

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>

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Fifth Update March 1, 2022
Final Report between project end (June 30) and August 15, 2022

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>

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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: \$434,330

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>

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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](#).

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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	\$377,000
Footings installed (\$10,000)	
PV Modules (\$156,000)	
Racking (with shipping) (\$73,000)	
Inverters (with shipping) (\$55,000)	
Electrical Parts - Array, Underground, Monitoring, and Balance of System (with shipping) (\$33,000)	
Guarded Access (\$40,000)	
Heavy Equipment Rental and job-site Travel (\$10,000)	

Explanation of Use of Classified Staff – Activity 1:

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

Personnel Expenditures – Activity 1 \$ 52,670

Project Managers: \$42,200 (70% salary, 30% benefits); 31% (operations) and 7% (technical) FTE for two years
 Site Assessment Technical Analyst \$5,470 (70% salary, 30% benefits); 6% FTE
 Program support staff: \$5,000 (70% salary; 30% benefits); 7% FTE for two years

Personnel Expenditures – Activity 3 \$ 57,330

Licensed Electricians: \$11,000 (70% salary, 30% benefits); 18% FTE
 Construction Manager: \$9,200 (70% salary, 30% benefits); 15% FTE
 Installation Technicians: \$29,250 (70% salary, 30% benefits); 54% FTE for Activity 3
 White Earth Interns: \$7,880 Activity 3

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

Contractor Expenditures – Activity 1: \$13,000

Professional Engineering Services: Structural and Geo-technical (\$10,000)

Electrical Permits & Inspection (\$3,000)

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 ID: 186- E White Earth Nation Community Solar for Community Action
 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: Vicki O'Day
 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: August 27, 2018



ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Budget	Amount Spent	Balance
BUDGET ITEM			
Personnel (Wages and Benefits)	\$ 110,000	\$ -	
Project Managers: \$42,200 (70% salary, 30% benefits); 31% (operations) and 7% (technical) FTE for two years Activity 1	\$ 42,200		
Site Assessment Technical Analyst \$5,470 (70% salary, 30% benefits); 6% FTE for two years	\$ 5,470		
Program support staff: \$5,000 (70% salary; 30% benefits); 7% FTE for two years Activity 1	\$ 5,000		
Licensed Electricians: \$11,000 (70% salary, 30% benefits); 18% FTE for two years Activity 3	\$ 11,000		
Construction Manager: \$9,200 (70% salary, 30% benefits); 15% FTE for two years Activity 3	\$ 9,200		
Installation Technicians: \$29,250 (70% salary, 30% benefits); 54% FTE for two years Activity	\$ 29,250		
White Earth Interns: \$7,880 for two years Activity 3	\$ 7,880		
Professional/Technical/Service Contracts			
Professional Engineering Services: Structural and Geo-technical (\$10,000) for two years Activity 1	\$ 10,000		
Electrical Permits & Inspection (\$3,000) for two years Activity 1	\$ 3,000		
Equipment/Tools/Supplies - Note: RREAL employs a competitive bid process for procurement of these	\$ -	\$ -	\$ -
Equipment Rental (Heavy equipment handler, trailer for transport) (\$1,000) Activity 3	\$ 1,000		
	\$ -	\$ -	\$ -
Capital Expenditures Over \$5,000			
Footings installed (\$10,000)	\$ 10,000		
PV Modules (\$156,000)	\$ 156,000		
Racking (with shipping) (\$73,000)	\$ 73,000		
Inverters (with shipping) (\$55,000)	\$ 55,000		
Electrical Parts - Array, Underground, Monitoring, and Balance of System (with shipping) (\$33,000)	\$ 33,000		
Guarded Access (\$40,000)	\$ 40,000		
	\$ -	\$ -	\$ -
Travel expenses in Minnesota			
Travel to/from work site and related meetings with White Earth and utility partners, mileage and lodging	\$ 9,000	\$ -	\$ 9,000
Other			
	\$ -	\$ -	\$ -
COLUMN TOTAL	\$ 500,000	\$ -	\$ 9,000

OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget	Spent	Balance
Non-State:		\$ 100,000	\$ -	\$ 100,000
Carolyn Foundation - \$50,000 total for two years	Pending			
McKnight Foundation - \$50,000 for two years				
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	\$ -

