Environment and Natural Resources Trust Fund
2011-2012 Request for Proposals (RFP)

Subd: 07f

Project Title: Conservation Corps Training and Low-Income Solar Home Heating Installation

Category: G. Environmental Education

Total Project Budget: $ $500,000

Proposed Project Time Period for the Funding Requested: 2 yrs, July 2011 - June 2013

Other Non-State Funds (secured): $ 0

Summary:

Conservation Corps Minnesota and the Rural Renewable Energy Alliance will collaboratively install 60 Solar Heating systems on the homes of low-income families and train young corps members in green jobs.

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Sponsoring Organization: Conservation Corps - Minnesota

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Location:

Region: Statewide

Ecological Section: Statewide

County Name: Statewide

City / Township:

2011-2012 MAIN PROPOSAL

PROJECT TITLE: Conservation Corps Statewide Low-Income Solar Home Heating

I. PROJECT STATEMENT

Over two years we will: 1) train two Conservation Corps field specialists to assemble and install solar heat systems and to supervise future installations, and 2) train and supervise 40 young adults, age 18-25, in solar technology and installations. A total of 60 solar heat systems will be installed in low-income homes that have been weatherized, permanently reducing their energy heat costs by 15-25%. The goals of this project, a partnership of Conservation Corps Minnesota and the Rural Renewable Energy Alliance in Pine River, Minn., are to: 1) reduce the fuel-cost burden on families eligible for heating assistance, 2) reduce toxic emissions, 3) prepare young people for green jobs, and 4) increase the solar-technology knowledge base.

Since 2001, RREAL has installed nearly 100 solar heating systems in north central Minnesota homes that Community Action Program (CAP) agencies have certified as low-income and meeting weatherization standards. By engaging Conservation Corps crews in other regions, an additional 60 households will be fitted with solar space-heating systems that will permanently reduce their energy costs. Each system generates about 8-9 million BTUs annually, reducing CO2 emissions by an average 1,400 lbs. Homeowners will save $250 to $500 per year in energy costs, depending on the system's size (determined by the home's layout) and fossil fuel being replaced during the solar furnace's 35-plus year life expectancy.

RREAL, a licensed contractor in the State of Minnesota, has been installing solar heating systems since 2000. RREAL's patent-pending Solar Powered Furnaces, manufactured in Pine River, Minnesota, are the 2nd highest rated in North America (Solar Rating and Certification Corporation 2010) and deliver more BTUs per dollar than any other U.S. made solar air heating collector on the market.

All recipients of solar heat systems must sign RREAL's Homeowner Agreement requiring that systems be maintained by keeping the filters clean, ducting unobstructed, and sun exposure open. Homeowners also agree to let RREAL and the Conservation Corps photograph the installation for future use, to install a data-logger for research and to analyze energy output, and the agreement states that beyond RREAL's 10-year collector warranty, no further liability is associated with the system by RREAL or the Conservation Corps.

Conservation Corps field specialists will be highly trained by RREAL in solar technologies, including hands-on experience installing systems in 28 homes. The specialists will then lead 40 corps members in installing 32 additional systems in eight Minnesota regions, including the Twin Cities, over 16 weeks. RREAL will apply for permits and contract with local licensed electricians at each location to install the fan and thermostat circuit. A training manual and template will be designed for ongoing training through the Corps. Young adults will develop renewable-energy skills and will be better prepared to pursue trades in the green economy.

RREAL will train field specialists to analyze homes and select sites for solar furnaces based on the following criteria:

- The home must have sufficient energy-efficient insulation and/or must have been weatherized by a CAP agency.
- The home must have adequate wall space, facing within 15 degrees of due south.

- The home's architecture must allow for appropriate heat distribution.
- The family must understand and agree to the benefits, operation and limitations of the solar heating system.
- The solar window must be 85% open or greater.
- Local building and permitting codes must allow for the installation of solar air heating systems.

Solar furnace recipients are also selected based on their eligibility for heating assistance under LIHEAP (Low Income Home Energy Assistance Program). Federal LIHEPA funds are matched with state dollars to assist qualifying low-income families with a portion of their energy needs. LIHEAP funds are allocated by the U.S. Department of Health and Human Services to the states as a block grant and are disbursed under state programs designed and distributed by a formula weighted toward cold-weather conditions and households living in poverty.

In Minnesota, LIHEAP and state heating assistance funds are primarily qualified and distributed through Community Action Program (CAP) agencies, which qualify the eligibility of recipients. The State of Minnesota allocates about $80 million annually to the Heating Assistance program for families that cannot afford their heating bills. Currently about 600,000 Minnesotans are eligible for Heating Assistance but only about 250,000 of those apply and only half of those actually receive heating assistance each year.

In communities where solar furnaces will be installed, field specialists will lead educational and outreach activities to expand the public's knowledge of renewable energy systems and their economic and environmental value to Minnesota. Renewable energy is a long-term solution for reducing energy costs and freeing up energy assistance dollars for more families.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Field specialist training & installations____ **Budget:** $221,000

($95,200 for solar systems' hardware; $3,400 per system)

Initial training includes classroom instruction for two Conservation Corps field specialists on the technical aspects of solar heating. They will then assist with 28 system assemblies and installations for hands-on training in solar technologies, site requirements, construction and installation supervision.

Outcome	Completion Date
1. Training manual completed for Conservation Corps members	*August 2011*
2. Classroom training for two field specialists	*September 2011*
3. Hands-on field specialist training with 28 installations	*July 2012*

Activity 2: Site selection in Minnesota communities & outreach ____ **Budget:** $64,000

RREAL staff will work with the two Conservation Corps field specialists to analyze homes, qualify solar system candidates in each of eight regions, and teach members about solar system design and requirements. Community Action Programs and housing agencies will be engaged in the process. Outreach activities will be planned to educate the public about solar installations in their communities.

Outcome	Completion Date
1. Acquisition of home referrals for solar systems	*April 2012*
2. Site analyses, selection & system design for home solar systems	*May 2012*
3. Outreach activities planned in communities with solar installations	*June 2012*

Activity 3: Corps member installation & training ____ **Budget:** $268,000

($108,800 for solar system hardware; $3,400 per system)

RREAL will work with field specialists who will lead corps members in solar heating installations. The Conservation Corps will select and acquire tools, and field specialists will be prepared to lead installations independently across Minnesota. Community outreach and educational activities will continue through the installations.

Outcome	Completion Date
1. 2 field specialists ready to lead installations and train corps members	*August 2012*
2. 32 additional solar systems installed in 8 regions for a total of 60	*June 2013*
3. In each of 8 regions, 5 local corps members are trained and assist with installations, for a total of 40 corps members engaged	*June 2013*
4. Heating production is verified with data-loggers on selected homes	*June 2013*

III. PROJECT STRATEGY

A. Project Team/Partners

The project will be managed by Tim Johnson-Grass, Operations Manager of Conservation Corps Minnesota young adult programs. Tim Olhoff, RREAL Program Development Director, is a certified residential energy auditor in Minnesota and will lead field specialist training, site selection, and collaboration with Community Action Programs, housing agencies and other participants. RREAL's staff also includes a licensed general contractor and electrical engineer who will participate in field specialist training and supervision of installations. Conservation Corps Minnesota and RREAL are requesting funds to offset project expenses. Field specialists will be enrolled after the project starts.

B. Timeline Requirements

RREAL and the Conservation Corps are requesting the full two-year funding cycle. The first year, we will hire and train field specialists, identify sites and plan community outreach activities. The second year we will train and supervise corps members in solar installations.

C. Long-Term Strategy and Future Funding Needs

The intent of this project is to build the Conservation Corps' capacity to continue solar heating installations for low-income families across Minnesota after the project ends. While this project is nicely contained and will produce positive outcomes regardless of ongoing funding, it is designed for replication. RREAL has been funding Solar Assistance for low-income families through grants and donations for a decade. Also, RREAL installs solar systems for other families at market rate, which generates revenue that can be allocated to Solar Assistance.

2011-2012 Detailed Project Budget

IV. TOTAL TRUST FUND REQUEST BUDGET 2 years

BUDGET ITEM	AMOUNT
Personnel:	
RREAL Program Development Director (.125 FTE - 2 years) - Classroom instruction & materials generation	$15,000
2 RREAL training & installation staff (.20 FTE - 2 years)	$48,000
Conservation Corps - Program Manager (.10 FTE - 2 years)	$14,000
Conservation Corps - 2 Field Specialists (2 FTE 22 mos.)	$124,500
Americorps Field Crews (40 corps members total - 16 week installation period)	$29,500
Contracts:	
Electrical Contractors for final fan / thermostat electrical hookup	$25,000
Equipment/Tools/Supplies:	
Two mobile carpentry tool kits for solar installations ($2,800 each)	$5,600
Balance of system including ducting, fasteners, grills, caulking, tape, etc. ($273 per system - 60 systems)	$16,400
Mounting equipment ($317 per system - 60 systems)	$19,000
Thermal Differential Controllers ($317 per system - 60 systems)	$19,000
Fans ($200 per system - 60 systems)	$12,000
Solar Collectors ($2,300 each; 60 collectors)	$138,000
Travel:	
RREAL (Mileage, hotel, meals delivering systems to 8 regions)	$15,000
Conservation Corps (2 years - one truck lease, maintenance, fuel, lodging, meals)	$19,000
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND $ REQUEST	$ 500,000

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State $ Being Applied to Project During Project Period: *Indicate any additional non-state cash $ to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.*	$50,000	*Pending grants: Carolyn Foundation, Willmar Community Fdn, CERTS, MN Power*
Other State $ Being Applied to Project During Project Period: *Indicate any additional state cash $ (e.g. bonding, other grants) to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.*	$ -	
In-kind Services During Project Period: *Indicate any in-kind services to be provided during the funding period. List type of service(s) and estimated value. In-kind services listed must be specific to the project.*	$ -	
Remaining $ from Current ENRTF Appropriation (if applicable): *Specify $ and year of appropriation from any current ENRTF appropriation for any directly related project of the project manager or organization that remains unspect or not yet*	$ -	
Funding History: *Indicate funding secured prior to July 1, 2011 for activities directly relevant to this specific funding request. State specific source(s) of funds.*	$6,500	*Southwest Initiative Foundation & Enterprise Foundation*

Project Manager Qualifications
Conservation Corps Statewide Low-Income Solar Home Heating project

The lead project manager is Tim Johnson-Grass, Operations Manager for Conservation Corps Minnesota. Tim has overseen all AmeriCorps young adult programs and staff since 2005 and manages training and field operations and budgets totaling more than $5 million, including $2.8 million in state and federal government grants. He currently oversees 250 corps members and staff that manage field crews in all regions of Minnesota, Home Energy Squads in the Twin Cities, and seasonal trails crews in the Superior and Chippewa National Forests.

A former Conservation Corps Minnesota crew member, Tim has been involved in conservation corps operations and management for more than 10 years, including five years with EarthCorps in Seattle. He holds a bachelor's degree in conservation and outdoor recreation from Northern Michigan University.

Tim's management responsibilities for the project include:

- Recruiting and training Conservation Corps field specialists for the two year program.
- Collaborating with RREAL on identifying regions and communities for solar heat installations.
- Managing planning and logistics for Corps member training and solar heat installations in eight Minnesota locations.
- Supervising accomplishment tracking and performance evaluations of field specialists and corps members.
- Supervising field specialists' community outreach and education activities in collaboration with RREAL and local Corps members.
- Establishing and evaluating the project's goals and accomplishments.

Conservation Corps Minnesota provides meaningful work for young people in managing natural resources, conserving energy, responding to disasters and leading volunteers. In addition to providing training in resource management, safety, job-readiness and technical skills, the Corps helps young people develop personal responsibility, a strong work ethic and environmental stewardship.

The Conservation Corps Statewide Low-Income Solar Home Heating project is a partnership between Conservation Corps Minnesota and the Rural Renewable Energy Alliance (RREAL). The project team includes RREAL Program Development Director Tim Ollhoff, MSW, whose responsibilities include:

- Designing and implementing a training curriculum and manuals.
- Providing classroom training and supervising hands-on instruction during all installations.
- Facilitating site selection including working with Community Action Programs and housing organizations, analyzing technical requirements of sites, and acquiring homeowner agreements.
- Supervising the manufacture of solar collectors and acquisition of other system components.

RREAL's mission is to make solar energy accessible to people of all income levels. RREAL has experience and a solid reputation for working with Community Action Programs and housing organizations to identify eligible low-income families and managing solar installations.