



**NCAT ENERGY CORPS AMERICORPS PROGRAM
2015-2016
Host Site Application**

Organization Name: City of Red Lodge, MT

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Contact Person: Ed Williams

Title: Mayor

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Name of AmeriCorps member's direct supervisor: William R. Foisy

Title: Alderman, City of Red Lodge Phone: 406-426-0550

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Number of member(s) requested: (1)

If you have a particular individual in mind who might be interested in serving at your site, please provide contact information below:

Name:

Phone:

Email:

Narrative:

1. Describe your organizations and community's unmet needs and opportunities that the member's service activities will address.

The 2013 Red Lodge Growth Policy cites a policy under the Climate Protection section of demonstrating a commitment to environmental protection and sustainability. Infrastructure and city services goals in the Growth Policy include a commitment to recycling in municipal operations and mitigating light pollution affecting the night sky.

The City believes there is a need to reduce energy costs for City buildings, as general fund revenues are stable while operating costs continue to escalate. The City also needs to improve its capital facilities at the recycling facility and recognizes the opportunity to expand the quantity of recyclables and the types of recyclables including electronic waste. As cited in the Growth Policy goals, the City believes that more direct control of its street lighting facilities can result in updated technology to support energy goals and light pollution.

2. Describe the service activities in which the AmeriCorps member will engage. Please be specific.

A. Hands on Energy Assistance – Solar Arrays for City Buildings

Goal – To potentially reduce energy costs for City buildings.



Tasks

- (1) Develop task methodology and confirm with supervisor. The following are preliminary suggested subtasks.
- (2) Research historic electricity costs for City Hall, Library, Public Works Building, Fire Station, Sewer Plant City Pool and any other identified City facilities.
- (3) Identify in the literature the advantages of roof mounted photovoltaic (PV) systems as opposed to ground-mounted systems.
- (4) Inventory the rooftop area available, the number of obstructions on the roof, roof type and structure, age, replacement and warranty period, the angle and orientation of the roof, and the amount of shade present on the roof. Use Google Earth and site visits.
- (5) Determine appropriate type of PV system based on roof characteristics, including the building's aesthetics and historical context. Attempt to include engineering and architectural assistance for a preliminary structural analysis.
- (6) Estimate the total power production capacity of each roof by determining the peak wattage and annual power production for different types of PV systems and for different types of mounting systems.
- (7) Conduct benefit cost analysis with consideration of PV product costs. Identify financing mechanisms, including tax incentives.
- (8) Recommend modifications to the City code for the design of future city buildings in order to make roofs solar ready.

B. Hands on Energy Assistance – Light Emitting Diode (LED) Retrofit for City Buildings

Goal – To potentially reduce energy costs for City buildings.

Tasks

- (1) Develop task methodology and confirm with supervisor. The following are preliminary suggested subtasks.
- (2) Confirm historic electricity costs for City buildings per Task A, Solar Arrays for City Buildings.
- (3) Conduct inventory of each light fixture for each City building to include the fixture type, total number of fixtures for each type, watts per fixture, total kilowatts used, hours on per week and per year, and annual kilowatts used. Include supplemental inventory information for bulb, ballast and maintenance characteristics for each type of fixture.
- (4) Calculate the annual kilowatt energy savings for LED street light fixtures for each fixture type for each City building.
- (5) Calculate the maintenance costs and savings for LED fixtures for each fixture type for each City building.
- (6) Identify financing mechanisms, including tax incentives.

C. Hands on Energy Assistance – LED Lighting for Streets

Goals – To potentially save energy and reduce costs to the City, reduce direct and reflecting light to the sky and improve nighttime visibility and safety.

Tasks

- (1) Develop task methodology and confirm with supervisor. The following are preliminary suggested subtasks.
- (2) Coordinate with Northwest Energy to update the inventory of streetlights within the City conducted by Northwest Energy in April 2013. The inventory includes, among other data, a rate, watts, type of pole, type of lights, location, number of lights, current and monthly lighting tariff costs per kilowatt hour, operations costs per light, maintenance costs per light and ownership charge per light.
- (3) Develop a map of the inventoried street light fixtures.
- (4) Compile the historic and current lighting contracts and amendments between the City and Northwest Energy.



- (5) Calculate the costs for various types of LED street light fixtures to include, based on expected lifespan, the initial cost of the replacement luminaire, annual system energy usage, the percent reduction in energy usage compared to High Pressure Sodium (HPS), annual maintenance and replacement costs, and the percent reduction in maintenance and replacement costs compared to HPS.
- (6) Investigate alternative electric lighting service delivery options to include the transfer of streetlights, or selected types of streetlights, to the City of Red Lodge, transfer into special improvement lighting districts, and removal of selected lighting in residential neighborhoods.

D. Energy Education and Outreach – Expanded Recycling Activities

Goals – To increase the awareness of the importance to recycle household goods, including electronics, and to increase revenues by expanding the City’s recycling activities.

Tasks

- (1) Develop task methodology and confirm with supervisor. The following are preliminary suggested subtasks.
- (2) Document the existing recycling activities for the City conducted at Beartooth Industries to include, among other information, the types of goods recycled, the amounts recycled and income generated per month, and the physical facility and equipment.
- (3) Develop a community education and logistics program with goals to expand the geographic area of coverage, the amount of goods recycled and the types of goods recycled. Include a school-based component.
- (4) Determine the logistics of providing year-round electronics waste recycling at Beartooth Industries in cooperation with REWIND (Recycle Electronic Waste Into New Devices). Include research on certified electronic waste recyclers and develop a process for pick up and disposal of electronic waste that would be collected at Beartooth Industries and stored in a REWIND shed located at Beartooth Industries.
- (5) Determine the feasibility of placing recycling containers in City parks and in the downtown area. Identify types of containers that can withstand damage by animal predators and a process for collection of recyclables that results in the satisfactory separation of trash and recyclables.

E. Hands on Energy Assistance – Electric Destination Charging Station

Goal – To create an electric charging network in the Red Lodge area in order to attract electric motor vehicle travelers.

Tasks

- (1) Develop task methodology and confirm with supervisor. The following are preliminary suggested subtasks.
- (2) Document the logistics of the TESLA Destination Charging system and what is required to obtain free charging equipment.
- (3) Document installation costs to include hardscape alterations, conduit to wall connectors, core drilling and trenching and labor.
- (4) Outline the criteria for a successful site and recommend the location of two sites.
- (5) Coordinate installation.

3. Describe expected accomplishments, results and how the host site and member will gather results-based feedback from service recipients.

Expected major accomplishments are summarized in:

- (1) Tasks 2A(6)-(8), Solar Arrays for City Buildings, to include estimating the total power production capacity of each roof PV system, a benefit cost analysis with consideration of PV product costs and



modifications to the City Code for the design of future city buildings in order to make roofs solar ready.

- (2) Tasks 2B(5), (6), and (7), LED Retrofit For City Buildings, to calculate the annual energy and maintenance cost savings for LED fixtures for each City building, and financing mechanisms, including tax incentives.
- (3) Tasks 2C(2),(3), (5) and (6), LED Lighting for Streets, to include an updated inventory and a map of street lights within the City, the costs for LED fixtures including annual maintenance and replacement, and alternative electric lighting delivery service options.
- (4) Tasks 2D(3), (4), (5), Expanded Recycling Activities, to include a community education and logistics program to expand the geographic area of coverage, the amount of goods recycled and the types of goods recycled, including a school based component, to include the logistics of providing year round electronics waste recycling, and the feasibility of placing recycling containers in City parks and in the downtown area.
- (5) Task 2E(4), (5), Electric Destination Charging Station, to include an outline of the criteria for a successful site and installation of a charging station at two sites.

Feedback on the adequacy of the expected major accomplishments outlined above will be coordinated through City department heads responsible for City buildings, through Beartooth Industries, a social services organization operating recycling activities on City owned land, and through the Red Lodge Area Chamber of Commerce who will assist with the location of the electric destination charging station. A formal interview process with a survey is recommended.

4. Indicate how you plan to sustain these activities after the AmeriCorps program year has ended.

Following completion of the identified tasks, the City will incorporate the remaining and financially feasible projects identified through the AmeriCorps program in the annual assessment of capital needs for the City's Capital Improvements Program. The City adopted a Capital Improvements Program in February 2015 and is implementing projects as part of the City's annual budget.

5. List any specific skills or qualifications this position might require.

Software skills required for the identified tasks include word processing, graphics and strong spreadsheet or database capabilities. Geographic Information Software (GIS) expertise would also be beneficial though the ability of the City to provide readily available GIS software could be an issue.

Working knowledge of the commercial applications of solar and LED technology, and recycling technology including electronics, is desirable. The City will commit to provide local and state based training and education opportunities to further develop capabilities.

6. Indicate the number of individuals an Energy Corps member or members will be able to reach within the definition of accepted performance measures discussed above, that otherwise would not have received assistance, through your host site activities. Refer to performance measures on page two.

The number of individuals the Energy Corps member will be able to reach by task, include:

- (1) Task 2A, Solar Arrays for City Buildings (approximately 15 to primarily include facility managers facility personnel and department heads).
- (2) Task 2B, LED Retrofit for City Buildings (approximately 15 to primarily include facility managers, facility personnel and department heads).



- (3) Task 2C, LED Lighting for City Streets (approximately 20 to primarily include Northwest Energy personnel City department heads and business and residential interests affected by the various types of lights identified in the inventory (i.e. Broadway Avenue historic lights).
- (4) Task 2D, Expand Recycling Activities (approximately 30 to include personnel with the City, Beartooth Industries, Recycle Electronic Waste Into New Devices, commercial recyclers and schools.
- (5) Task 2E, Electric Destination Charging Station (approximately 10 to include manufacturer, local business organizations, local businesses and City personnel).

7. **List opportunities for member development and training.**

The City will request assistance from the National Center for Appropriate Technology, Montana Chapter, for appropriate training opportunities on-line, within the Billings region and statewide. Appropriate solar energy on-line training with Solar Energy International is a possibility. The American Solar Energy Society has state chapters but none exists in Montana. The Montana Department of Environmental Quality has programs for energy planning and renewables, and recycling which may offer group or individual training opportunities. Additional resources in the Red Lodge and Billings area include individuals and organizations with expertise in renewable energy.

- 8. Members that will have "recurring access to vulnerable populations" during their service terms must pass an FBI fingerprint check in order to serve in the program.
 - **Definition of vulnerable populations:** children, elderly, people with disabilities
 - **Definition of recurring access:** access on more than one occasion or access that is not for a 1 day period or episodic in nature

Will member have recurring access to vulnerable populations during the course of their service term? No

9. **For continuation host sites only.**

- Identify successes and challenges with previous Energy Corps projects and how a new member would continue and expand the initiatives of the pervious member.
- Indicate any prospective changes in program supervision or staffing.

Please check below to indicate your ability to meet the following requirements:

- X **Cost Share:** \$11,500 cash match per full-time member
- X **Recruitment:** Participate in member recruitment efforts
- X **Work space:** Provide suitable work space and necessary equipment for member
- X **Supervision:** Provide on-site supervision, ensuring member activities adhere to program requirements and the member's position description
- X **Reporting:** Submit progress reports and evaluations to NCAT as agreed upon in the MOU

I have reviewed the NCAT Energy Corps AmeriCorps 2014-2015 Host Site Application information and submit this application on behalf of the above named agency.

Name:

Title:

Date:

MAYOR

5/31/15

Ed Williams, Mayor, City of Red Lodge, MT