

Application Report



Applicant Organization:	City of Northfield
Application:	Northfield Community Resource Center - Battery Energy Storage System
App ID:	App-25-1890
Funding Announcement:	Microgrids at Community Lifeline Facilities
Requested Amount:	\$78,000.00

Project Summary: The City of Northfield is proposing the design and installation of a battery bank integrated with the existing 40 kW rooftop solar array at the Northfield Community Resource Center (NCRC). The project will create a resilient, sustainable power system that supports critical community services during grid outages and severe weather events.

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APPLICANT QUESTIONS

Section Name: Organization Background and Experience

Sub-Section Name: Organization Background and Experience

1. APPLICANT QUESTION: EXPERIENCE WITH SIMILAR WORK

Please describe your history of performing the work that will be funded by the grant. This could include project management or electrical work, among others.

- Please describe your organization's current staffing and budget. Explain your organization's capacity to administer this project.

Applicant Response:

The City of Northfield has extensive experience managing capital improvement projects and state funded initiatives, including those involving infrastructure, energy efficiency, and facility upgrades. The City has successfully been awarded multiple state and federal grants in recent years, including the Solar on Public Facilities grant, which enabled the installation of solar panels on the Northfield Community Resource Center (NCRC).

Building on that success, the City is well positioned to manage this project and any subsequent implementation phases. A project team has already been established, consisting of the Project Manager, Sustainability Coordinator, Facilities Manager, and City Engineer. This team brings strong project management, technical, and administrative expertise to ensure effective coordination, compliance, and timely delivery of results.

The City operates with an annual budget that supports a full range of municipal services and maintains a professional staff with the capacity to oversee grant funded projects. While local budget limitations have constrained the City's ability to independently fund large scale energy resilience improvements, these constraints have encouraged the pursuit of state and federal grant opportunities to advance sustainability and reliability goals for public facilities.

Through its proven track record, dedicated staff, and established internal processes, the City of Northfield demonstrates the capacity and readiness to successfully administer this project if awarded grant funding.

2. APPLICANT QUESTION: ACTIVE GRANT HISTORY WITH MINNESOTA DEPARTMENT OF COMMERCE

Have You Been Awarded Or Have An Active Grant From The Minnesota Department Of Commerce In The Past 5 Years?

Applicant Response:

Yes

3. APPLICANT QUESTION: OVERVIEW OF ORGANIZATION

Provide an overview of the organization, including when it was established, and its mission or goal.

Applicant Response:

The City of Northfield was established in 1855 and serves as a full service municipal organization dedicated to enhancing the quality of life for all who live, work, and visit the community. Northfield is recognized for its world-class colleges, historic riverfront downtown, and strong commitment to sustainability and inclusivity.

Vision

Northfield is an open, safe, and welcoming community, recognized for its world-class colleges and historic riverfront downtown, and is dedicated to sustainably enhancing and preserving its vibrant culture, celebrated arts, strong economy, and excellent quality of life where all can thrive.

Mission

The City of Northfield works for the common good of its residents and businesses and the improvement of the community by providing excellent, innovative municipal services that carry out the City's vision for a high quality of life for all.

Core Values

The City's work is guided by five core values:

Integrity: Delivering outstanding customer service with honesty, accountability, and fiscal responsibility.

Teamwork: Building collaboration and equity within the organization and community.

Excellence & Innovation: Focusing on continuous improvement and creative problem-solving.

Celebration: Valuing diversity, inclusion, and recognition of community and staff achievements.

Stewardship: Protecting the environment and investing in sustainable infrastructure and people.

Together, these principles guide the City's efforts to foster a thriving, resilient, and equitable community.

Section Name: Project Approach

Sub-Section Name: Project Approach

4. APPLICANT QUESTION: NARRATIVE FOR PROPOSED PROJECT

- Provide a narrative overview of, and the reasons to conduct the proposed project.
 1. Describe the population(s) and community lifeline(s) or hub(s) served and provide the justification for their selection.
 2. Projects that are already in development will be considered.
 3. Allowable projects for this funding opportunity include microgrid design and planning, installation, modification, or expansion.
 4. Allowable activities for this funding opportunity include, and are not limited to, feasibility studies, completion of design and/or engineering specifications, adding controllers to existing or new power systems, equipment purchasing, and construction.

Applicant Response:

The proposed project seeks to design and install a battery bank microgrid at the Northfield Community Resource Center (NCRC). The NCRC is a critical community lifeline facility serving a diverse population, including children in Head Start programs, older adults through the Senior Center, families accessing the local food shelf, and community members utilizing a range of social and educational services. Ensuring reliable, resilient power at this location is essential to maintaining continuous access to these vital services, particularly for vulnerable populations.

The primary goal of this project is to implement a battery bank microgrid that integrates with the existing 40 kW rooftop solar array, providing backup power during grid outages and protecting the facility from energy disruptions. The system will be designed to store and manage excess solar energy, maintain critical operations during emergencies, and ensure seamless operation for all essential programs hosted at the NCRC.

The project will follow a phased implementation approach:

1. Design and Engineering: Develop detailed specifications for the battery bank microgrid, including system size, configuration, and controls.
2. Procurement and Installation Planning: Identify necessary equipment, coordinate with contractors, and establish a project timeline.
3. Installation and Commissioning: Install the battery bank microgrid, test the system, and train staff on operation and maintenance.

By completing this project, the City will enhance energy resilience, improve sustainability, and safeguard essential community services for a broad and diverse population. The battery bank microgrid will allow the NCRC to continue functioning as a resilient community hub, ensuring uninterrupted access to critical programs for children, seniors, and families during power disruptions.

5. APPLICANT QUESTION: FACILITY & GEOGRAPHIC BOUNDARIES

Include a description of the facility and geographic boundaries of the anticipated project. Include a map, satellite photo, or other representation indicating the scope and boundaries of the anticipated project. Links may be included in the narrative

Applicant Response:

6.5-acre property located at 1651 Jefferson Parkway in Northfield, MN. It houses the 58,000 square foot City of Northfield Community Resource Center (NCRC). This facility includes a variety of community-focused organizations and services that provide essential services, housing, and support through various organizations serving the Northfield community.

<https://maps.app.goo.gl/46iUSbyBL31aMCpM7>

<https://maps.app.goo.gl/o7foLX5fv1vEdvwr6>

Documents:

NCRC Building.PNG

6. APPLICANT QUESTION: CARBON-FREE POWER GENERATION ASSETS

List any existing or proposed carbon-free power generation assets (rooftop photovoltaic systems, battery storage, etc.) within the project boundary and explain how these assets would interact with a microgrid. Include technology specifications as available.

Applicant Response:

The City of Northfield recently installed a 40 kW rooftop solar photovoltaic (PV) array at the Northfield Community Resource Center (NCRC) as part of the state funded Solar on Public Facilities program. The system provides a local source of carbon free electricity, helping to offset the building's energy consumption and reduce greenhouse gas emissions.

As part of this grant proposal, the City intends to explore the addition of a battery energy storage system or microgrid ready generator to enhance the building's energy resilience. The existing solar array would serve as the renewable generation source within the microgrid, while the proposed battery storage would store excess solar energy for use during grid outages or peak demand periods. Together, these assets would allow the NCRC to maintain critical operations and function as a community lifeline facility during emergencies or extended power interruptions.

7. APPLICANT QUESTION: PERMITTING REQUIREMENTS & INTERCONNECTION

Explain any state or local permit requirements and utility interconnection needs.

Applicant Response:

The installation of the battery energy storage system at the Northfield Community Resource Center (NCRC) will require coordination with Xcel Energy, the local electric utility, to complete the necessary interconnection application and approval process. The project will follow the Minnesota Distributed Energy Resource Interconnection Process (MN DIP), which governs the safe and reliable connection of distributed energy resources, such as solar and battery systems, to the utility grid. In addition to the interconnection process, the project will comply with all applicable state and local permitting requirements. The selected contractor will prepare and submit the required technical documentation, drawings, and safety certifications to ensure compliance with local codes and standards.

Coordination with Xcel Energy will begin early in the project to ensure that system design and installation meet interconnection requirements and safety protocols. Once installed, the system will undergo utility review and testing before being approved for operation.

8. APPLICANT QUESTION: STAKEHOLDER IDENTIFICATION

Identify key stakeholders and their roles and responsibilities.

Applicant Response:

The City of Northfield is the sole owner and operator of the NCRC building and is responsible for all aspects of its management, including operations, maintenance, safety, and compliance with local regulations and grant requirements. The City makes decisions regarding building upgrades, improvements, and programming and serves as the primary point of contact for all tenant and partner organizations. Regarding this project, the City's project team is responsible for the execution and management of all project activities. The building houses several partner organizations, including the Community Action Center (CAC), 50N, Healthy Community Initiative (HCI), United Way, Three Rivers, Workforce, and Rice County, each of which utilizes the space to deliver programs and services to the community. These organizations collaborate with the City on space usage, scheduling, and program needs and may participate in initiatives or grant-supported projects as appropriate. They have no defined roles or responsibilities for this project but are stakeholders in the project as it will directly benefit tenants of the building.

9. APPLICANT QUESTION: UTILITY LETTER OF SUPPORT

Provide a letter of support from the local distribution utility. If a letter of support from the local distribution utility was not obtainable, please explain and provide any other acknowledgement by the utility.

Applicant Response:

Xcel Letter Of Support Response_NFLD.Pdf

Additional Comments:

A letter of support from the local distribution utility, Xcel Energy, is not currently available. Xcel Energy has indicated that they are unable to provide a formal letter of support until the City's application is officially acknowledged and there are no immediate concerns. Additionally, interconnection assurance cannot be provided for the site prior to the submission of an interconnection application and subsequent approval through the Minnesota Distributed Energy Resource Interconnection Process (MN DIP).

10. APPLICANT QUESTION: LETTER FROM PARTICIPATING FACILITIES

Provide a letter of support from all participating facilities if there are multiple owners.

Applicant Response:

Letters Of Support_NFLD.Pdf

11. APPLICANT QUESTION: ENGAGEMENT AND BENEFIT

Please explain how a proposed project will meaningfully engage and benefit an area that has been historically left out or disproportionately negatively affected by energy disruptions, inefficient or traditional energy systems, and severe weather.

- Community engagement should include actions and activities that allow communities to outline concerns and create opportunity for public engagement in decision making.

- Impact may be demonstrated through response to a particular need, jobs created, emissions avoided or other metrics.

Applicant Response:

The proposed battery bank at the Northfield Community Resource Center (NCRC) will directly benefit populations that have historically been underserved or disproportionately impacted by energy disruptions. The NCRC serves a diverse community, including children in Head Start programs, older adults participating in the Senior Center, families accessing the local food shelf, and other community members who rely on social, educational, and support services. These populations are particularly vulnerable during power outages, extreme weather events, or interruptions in critical services.

By providing reliable backup power, the microgrid ensures that these essential services remain operational, helping to mitigate the negative impacts of energy insecurity. Continuous access to programs and services like the food shelf, Head Start and the Senior Center not only supports health, safety, and education but also helps reduce stress and vulnerability among historically marginalized or low income groups.

The City is committed to meaningful community engagement throughout the project. This includes outreach to program participants, local nonprofit partners, and other stakeholders to gather input on energy needs, priorities, and desired outcomes. By incorporating community feedback into the design and operation of the battery bank microgrid, the project ensures that solutions reflect the voices of those most affected by energy disruptions.

In addition to supporting vulnerable populations, the project has measurable impacts on sustainability and community resilience. The battery bank microgrid will integrate with the existing solar array, reducing reliance on traditional fossil fuel energy and lowering greenhouse gas emissions. By ensuring reliable power at a key community hub, the project strengthens the ability of the NCRC to provide continuous access to essential services during grid outages and severe weather events.

Overall, the battery bank, serving as a key component of a microgrid at the NCRC, will advance equity, resilience, and sustainability, ensuring that historically underserved populations remain protected from energy disruptions and maintain access to critical community resources during severe weather or grid interruptions.

12. APPLICANT QUESTION: RESILIENCE OBJECTIVES

Provide resilience objectives that describe the desired results of the project.

Applicant Response:

The City of Northfield proposes the installation of a battery bank integrated with the existing solar array at the Northfield Community Resource Center (NCRC) to enhance energy resilience for a critical community hub. The NCRC serves a diverse population, including children in Head Start programs, older adults through the Senior Center, families accessing the local food shelf, and other residents relying on essential community services. This project will strengthen the facility's ability to maintain operations during power outages or severe weather, ensuring equitable access to vital programs while promoting sustainability.

Key Resilience Objectives:

- **Maintain Critical Services:** Ensure uninterrupted operation of the NCRC during grid outages or extreme weather events, protecting vulnerable populations.
- **Enhance Energy Reliability:** Provide dependable backup power by integrating the battery bank with the existing solar array, reducing vulnerability to energy disruptions.

- Strengthen Community Preparedness: Position the NCRC as a resilient lifeline facility, capable of supporting residents during emergencies.
 - Promote Sustainability and Equity: Reduce reliance on fossil fuels and lower greenhouse gas emissions while ensuring historically underserved populations continue to access essential services.
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13. APPLICANT QUESTION: OUTCOMES

Provide a description of a successful outcome from installation of a microgrid.

Applicant Response:

A successful outcome of the battery bank installation at the Northfield Community Resource Center (NCRC) would be a fully operational, self-sufficient energy system that allows the facility to function independently during power interruptions. This outcome would ensure that programs serving children, seniors, and low-income families can continue without disruption, even during extended outages or severe weather events.

The system would also optimize energy use, storing excess solar generation for peak demand periods and reducing reliance on the broader grid. By demonstrating the practical benefits of clean energy integration, the project would provide a replicable model for other community facilities, showing how investments in battery storage can increase resilience, sustainability, and equity.

Success would be measured by reliable performance during emergencies, reduced energy consumption from the grid, and continued uninterrupted access to essential services for historically underserved populations.

Section Name: Workplan

Sub-Section Name: Workplan

14. APPLICANT QUESTION: WORKPLAN

Provide a detailed workplan for the scope of work the proposed funding would support. This funding opportunity would allow applicants to make substantial progress toward or complete a microgrid at community lifeline(s) and/or community hub(s). The implementation of project elements may be undertaken by the applicant(s), or the applicant(s) can engage a subcontractor or consultant.

Applicant Response:

Phase 1: Project Mobilization and Planning (Month 1–2)

- Assemble project team, including City staff (Project Manager, Sustainability Coordinator, Facilities Manager, City Engineer) and selected contractor.

- Confirm scope of work, project schedule, and budget allocations for funded activities.
- Conduct initial coordination with Xcel Energy and other relevant stakeholders regarding interconnection requirements

Phase 2: Design and Engineering (Month 3–5)

- Develop detailed system specifications for the battery bank, including capacity, configuration, and integration with existing solar infrastructure.
- Design microgrid controls and power management strategies to ensure seamless operation during outages.
- Prepare installation drawings, safety protocols, and compliance documentation.

Phase 3: Procurement and Contracting (Month 6–7)

- Identify and procure necessary battery storage equipment, inverters, and system components.
- Finalize contracts with installers, electrical contractors, and technical consultants.
- Schedule delivery of materials and equipment to the NCRC site.

Phase 4: Installation and Commissioning (Month 8–10)

- Install battery bank and associated control systems.
 - Integrate with existing solar PV system and test overall functionality.
 - Conduct commissioning tests to ensure reliable performance and compliance with safety standards
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15. APPLICANT QUESTION: PRACTICALITY & VIABILITY ANALYSIS

- Explain what analysis will be done to determine the practicality and viability of adding a microgrid to community lifeline or resilience hub facility(ies). This may include topics such as the technical, financial, permitting, and utility interconnection requirements for construction and operation of a microgrid, among others.

Applicant Response:

The preferred contractor for this project, who previously installed the rooftop solar array at the Northfield Community Resource Center (NCRC), has completed an initial analysis confirming that a Sol-Ark Limitless 60 kWh solar battery is a viable option for the site. Because the contractor is already familiar with the building's electrical systems and solar configuration, they were able to evaluate the technical requirements and system compatibility efficiently.

The analysis reviewed the building's energy use, solar production data, and the power needed to sustain critical services during outages. It also considered available space for installation, structural and electrical connections, and adherence to safety and equipment standards.

As the project moves into final design, additional review will address permitting and utility interconnection. Coordination with Xcel Energy through the Minnesota Distributed Energy Resource Interconnection Process (MN DIP) will ensure the system operates safely and integrates effectively with the existing grid.

Section Name: Budget Estimate

Sub-Section Name: Budget Estimate

16. APPLICANT QUESTION: BUDGET ESTIMATE

Provide a detailed cost breakdown by task, including the class of personnel performing each task of the work, as well as **inhouse** and **subcontractors**, the hourly rate charged for each class, the number of hours charged for each class, an equivalent breakdown of all **subcontracted work**.

- The class of personnel performing each task of the work including inhouse and subcontractors
 - The hourly rate charged for each class
 - The number of hours charged for each class

Applicant Response:

City Of Northfield 60kWh Battery Quote.Pdf
Project Budget_NCRC Budget Estimate.Xlsx

17. APPLICANT QUESTION: DIRECT & INDIRECT COSTS

Provide a detailed cost breakdown for any **direct** and **indirect** cost items which the proposer plans to charge.

Applicant Response:

N/A

18. APPLICANT QUESTION: TOTAL PROJECT COST

Provide the total project cost.

Applicant Response:

\$78,000
