



PART OF **BURNS & MCDONNELL**

QUALIFICATIONS FOR

# SITE ASSESSMENT & EVALUATION FOR SOLAR PV & STORAGE

RFQ NUMBER: 23-99655

SUBMITTED TO

**CITY OF DULUTH, MINNESOTA**

November 13, 2023



November 13, 2023

City of Duluth  
Purchasing Division  
City Hall, Room 120 | 411 West 1<sup>st</sup> Street  
Duluth, MN 55802

**Re: Qualifications for Site Assessment & Evaluation for Solar PV & Storage | RFQ NUMBER: 23-99655**

Dear City of Duluth:

The City of Duluth, Minnesota (the City) is seeking a qualified team to evaluate the feasibility of installing solar photovoltaic (PV) and storage at 8-12 sites across the City. The evaluation shall include analysis of solar resources, utility infrastructure, peak load and energy, soil conditions, slope stability, wetlands and environmental conditions. The analysis will also include structural infrastructure integrity evaluations, feasibility of solar energy storage system design and layout, engineering challenges, economic impact and cost, and benefit analyses. This is why Burns & McDonnell launched 1898 & Co. - to better serve you wholistically by looking beyond your individual projects and programs, delivering the strategic insights and technical expertise to help you succeed in an ever-evolving world. Our multi-disciplinary team combines 1898 & Co.'s in-depth knowledge of renewable energy and Burns & McDonnell's experience evaluating, designing, developing and constructing solar and energy storage.

**Experience with Every Aspect of Your Project.** Our team comprises technical professionals with extensive experience in comprehensive energy studies along with Burns & McDonnell's engineering design, environmental, and construction experience for solar facilities, water reservoirs, existing buildings, landfills, and utilities across the United States.

**Experience with Solar Development.** We have analyzed hundreds of potential solar sites across the county including sites in Minnesota. These projects include new facilities, complex expansions, and retrofits for clients such as Minnesota Power, University California - Berkeley, and Seminole Electric Co-op.

Our Environmental and Global Facilities teams are frequently brought in as a partner for site assessment of potential solar facilities. They are very familiar with evaluating soil conditions, wetland identification, evaluating existing structural infrastructure and identifying utility upgrades, endangered species identification, and any other environmental and engineering challenges that can occur on projects.

Our integrated engineer, procure and construct (EPC) teams have installed more than 15 gigawatts (GW) of solar in the US in the past 10 years. Partnering with our Construction group for these self-perform projects helps create a more accurate cost estimate than an engineering estimate alone. Such an experienced team can identify any red flags or constructability concerns early in the planning phases to help avoid surprises.

**Project Plan.** Our team will partner with the City to evaluate the 8-12 identified sites in a time and cost-efficient manner while thoroughly determining the feasibility of each site. The tasks identified to do this are as follows:

**Task 1: Solar and Storage Feasibility/Preliminary Layouts** - 1898 & Co. will utilize Helioscope solar design software to produce solar layouts for each facility, accounting for rooftop obstacles and shading from nearby buildings and landscape features to estimate the maximum installable nameplate capacity of a solar PV system at



the facilities along with an estimate of its typical annual energy production. At the conclusion of this task and in coordination with the City, any sites identified as having poor solar generation potential will be removed from further consideration in the subsequent tasks.

**Task 2: Structural/Electrical Impact Analysis** - Our engineers will conduct a site visit to gather and confirm any structural and electrical information after which they will perform a desktop structural and electrical analysis on any existing infrastructure that will be impacted by the addition of solar. This will help determine any upgrades or modifications needed and will create a more accurate cost estimate.

**Task 3: Environmental Desktop Analysis/Permit Matrix** - Using observations from the site visit and through desktop evaluation, our team will identify potential environmental constraints and permit requirements for construction of Photovoltaic (PV) systems and evaluate and identify potential triggers for various long-lead environmental permits and approvals. The environmental assessment will also consider triggers for the National Environmental Policy Act (NEPA). An optional scope to further address CEQA is included below under Optional Tasks. The need for other regulatory permits and requirements (e.g., grading permits, Spill Prevention, Control, and Countermeasure (SPCC) plan, borings permits, and air emissions permits) will also be assessed. Our firm's public affairs best practices relating to working with political and administrative bodies to successfully develop ground-mount solar installations will also be shared. The deliverable for this task will be a permit matrix defining the permits needed for each site as well as an estimate schedule for each.

**Task 4: Interconnection Analysis** - Our team will evaluate the requirements for interconnection with both existing facilities as well as with the local utility, Minnesota Power.

**Task 5: Tax Credit/Grant Funding Assessment** - Our team has worked with clients to educate them on their options in regard to tax credits through the Inflation Reduction Act and alternative funding through grant programs. Our team will provide an overview of the Inflation Reduction Act which will include Domestic Content Requirements, Definition of Commencement of Construction, Safe Harbor provisions, Overall guidance of the Inflation Reduction Act, Energy community considerations and site-specific implications, and, Direct pay considerations.

**Task 6: Economic Impact/Proforma** - Our team will perform an economic analysis for each site including a cost estimate, tax credit evaluation, grant funding, and return on investment that will help the City decide which projects should move forward. Incentives for project development, including but not limited to the Investment and Production Tax Credits, will be included in the assessment. The final deliverable will be a slide deck and presentation to all stakeholders. As a part of the final presentation, community engagement strategy and community impact will be discussed.

Sincerely,

Aaron Anderson  
Senior Managing Director

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1898andco.com

Minnesota Tax ID | 4052795  
Sam.gov ID | SS8JL7WNHPX9

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# Relevant Projects



We have analyzed hundreds of potential solar sites across the county including in Minnesota. These projects include new facilities and complex expansions and retrofits for clients.

## Solar and Storage Analysis | Confidential Client, Minneapolis, Minnesota

Our firm was hired to perform an analysis of solar and storage feasibility and economic analysis for one of the Client’s manufacturing plants. This project started with analyzing their existing electrical loads and past year’s electrical bills. The Client had a plot of land to the south of their manufacturing plant that they wanted to look into for installing ground mount solar, as well as rooftop solar on their two main buildings, and carport solar over their parking lots. We first modeled the solar production capacity for each of the different types of solar as well as combinations of the three. These production curves were then used to model the anticipated load after the installation of solar and used these curves to build a case for or against the installation of batteries. Our analysis included the research of local utility requirements for behind the meter solar which included a size limitation for net-metering of 1 MW.



After the solar production models and newly anticipated loads were created, we then recreated the expected utility bill savings on a monthly basis. Our onsite energy group conducted a site visit to determine the required structural and electrical upgrades needed to install and interconnect the new onsite solar facility. In partnership with our internal construction team, cost estimates were created for each scenario and ultimately used in the economic analysis to determine the scenario with the highest present value.

**Through the solar, facility, and economic analysis, we were able to suggest both a ground-mount 1 MW solar facility and a 2 MW solar facility for future investigation and design.**



## Hill Campus Solar & Storage Feasibility | Regents of the University of California

Our firm was hired to conduct a broad assessment of the Hillside Campus capability for providing clean, resilient power to the larger campus. This assessment focused on solar photovoltaic energy generation, but battery energy storage potential was also assessed in combination with the identified potential solar system capacities. Five distinct clusters of sites for solar development were identified following a comprehensive review of the Hill Campus terrain for constructible areas of less than 35% grade slope.

Additionally, these site clusters were subdivided based on the need for tree removal and other potential environmental considerations. In aggregate, 47 MW of nameplate direct-current solar capacity was identified across the five site clusters. 13 MW of potential was estimated from areas with no need for significant tree removal with the remaining 34 MW requiring more extensive tree removal to develop. **The study found the potentially feasible solar generation of approximately 47 MW that, if built, would allow the University to serve 40%\* of its current electricity needs with on-site renewable energy at an upfront cost of \$153 million.**

*\*This percentage is likely to decrease over time due to other planned electrification projects that will increase the University's load.*



### Urban Area Environmental Investigation and Remedial Design | Ameren Services

Our firm was retained by Ameren Services to characterize and remediate manufactured gas plant (MGP) related chemicals of concern (COCs) located at an MGP site in a mixed commercial/industrial and residential setting in Macomb, Illinois. High-resolution site characterization (HRSC) to delineate the extent of impacts in limited mobilization events was conducted using laser induced fluorescence (LIF) technology. Conventional investigation approaches including sonic and direct-push drilling, soil core logging and sampling, monitoring well installation, low-flow groundwater sampling, and slug test analysis were also used to characterize site conditions. A subsequent remedial design was then prepared by us followed by remediation oversight.

### Solar Development | Minnesota Power

Our firm was hired by Minnesota Power to perform a siting analysis at multiple locations to look into adding solar generation facilities to their portfolio. The analysis started with reviewing the local county's zoning ordinances and setback requirements for solar projects and combining these with 1898 & Co.'s best practices for any areas that were not defined by the county. The areas of interest were then viewed in Pivvot to determine any wetlands, waterbodies, roads, high slopes, flowlines, and powerlines that needed to be accounted for. These were then modeled in Rated Power to identify useable and constraint areas in the overall identified area to create a preliminary solar layout and estimated annual production. **Through this analysis, two sites were identified for 110 MWac and 119 MWac solar generation facilities navigating around wetland areas and eagles' nests.**





## Solar Feasibility Study | Adams-Columbia Electric Cooperative

Our firm was hired by Adams-Columbia Electric Cooperative to conduct a solar development feasibility study for two preferred locations in Wisconsin. The objective of this study was to identify the optimal selection of location, technology, and design parameters to maximize financial feasibility.

The analysis started by performing an initial site screening. The first step in the site screening began with reviewing the local county's zoning ordinances and setback requirements for solar projects and combining these with our best practices for any areas that were not defined by the county. Once the offsets

were identified, initial solar layouts were generated, after which we helped identify the technology and ground coverage ratio (GCR) that should be used for the facilities.

After the initial layouts and technologies were identified, the systems were modeled in PVsyst to produce an energy production estimate. This involved looking at the site's 8760 report generated by PVsyst and the Year 1 P50 generation estimate.

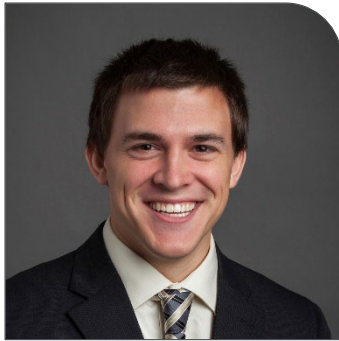
Once the production estimates were complete, we developed a Class 5 cost estimate. The sites were then analyzed to determine the optimal cost layout and to project the net present value and rate of return for each design and layout. Items that were modified were DC size, AC size, GCR, and fixed tilt vs single-axis tracking panels. **Ultimately, our firm was able to recommend the site design with the largest net present value to the client.**

# Resumes



Our team comprises experienced technical professionals with extensive experience in comprehensive energy studies and engineering design, environmental, and construction experience for water reservoirs, existing buildings, landfills, and utilities across the United States. **One-page resumes for our team are located on the following pages.**





## Alex Goedeker, PE

### Project Manager



Alex is a project manager in the renewable energy consulting group. He has experience with solar and battery storage analysis, siting studies, economic analysis, interconnection requirements, construction, equipment design, scheduling, and procurement.

#### EDUCATION

Masters, Master of  
Business Administration

Bachelors, Mechanical  
Engineering

#### REGISTRATIONS

Professional Engineer (IL)

#### EXPERIENCE

9 Years of experience

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#### LinkedIn

[Alex Goedeker | LinkedIn](#)

## PROJECT EXPERIENCE

### Solar Analysis | Takeda Pharmaceuticals

**Project Manager** | Alex served as the project manager for the solar analysis study for Takeda Pharmaceuticals. Takeda was looking into the potential installation of solar onsite behind the meter at one of their manufacturing plants. This included solar production analysis, storage and usage analysis, interconnection analysis, and proforma development to determine return on investment.

### Solar Due Diligence | Tri-State G&T Association Inc

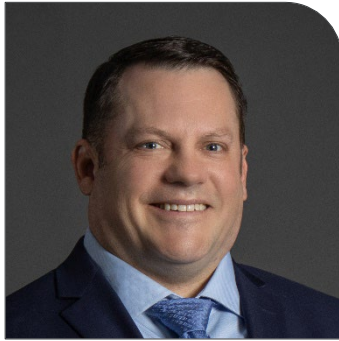
**Project Manager** | Alex was the project manager for the solar due diligence study for Tri-State. Tri-State was looking into the potential purchase of multiple solar sites from Juwi, and our firm was brought in to be the technical consultant for the project.

### Microgrid Assessment | Forefront Power, LLC

**Project Manager** | Alex served as the project manager for the solar and battery study with ForeFront Power. ForeFront Power contracted with our firm to perform outage analysis using System Advisor Model to review the sizing of the solar farm and the capability of the battery to handle outages. He worked with several school districts to review their planned upgrades to aid in decarbonization efforts.

### Pueblo Generation Study | Xcel Energy Inc

**Project Manager** | Alex acted as the Project Manager to support the identification and screening of clean technologies for consideration at the retiring coal plant site for Xcel Energy. This project involved the redevelopment analysis of the Comanche site located in Pueblo, CO. Our firm provided a high-level analysis of the potential redevelopment of the site into various technologies that include renewables, storage, nuclear, hydrogen, geothermal, and natural gas with carbon capture.



## Hans Wronka

### Environmental Lead

Hans is responsible for providing environmental services to clients in numerous market sectors. He has extensive assessment and remediation experience serving the oil and gas and energy industries as well as serving clients responsible for superfund and brownfield sites. His proficiencies include emergency response, materials management, contingency planning, and environmental review and permitting.

#### EDUCATION

Bachelors, Geology

#### EXPERIENCE

28 Years of experience

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#### LinkedIn

[Hans Wronka | LinkedIn](#)

### PROJECT EXPERIENCE

#### Climate Action Plan Development | Duluth Seaway Port Authority

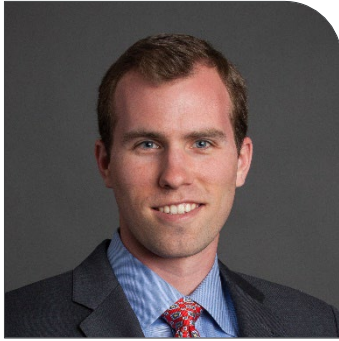
**Project Manager** | Hans evaluated port-operated facilities to assist the client in developing a roadmap towards net zero carbon emission operations. He conducted baseline condition assessment, technology evaluation, renewable energy assessment, grant funding opportunity analysis, and preparation of the resulting climate action plan.

#### Decommissioning and Demolition Design | Xcel Energy

**Project Manager** | Hans managed the design for the decommissioning and demolition of power generation, energy storage, and transmission and distribution systems. He served as the primary point of contact with the client and coordinated engineering and environmental teams preparing demolition scope and bid packages for contractors. Hans provided demolition oversight as the owner's engineer. He managed pre-demo site investigation and prepared materials management contingency plans for sites with historical environmental releases. The challenges involved recycling and disposal of 80 tons of sodium sulfur batteries.

#### Major Flood Response Debris Management Program | Koochiching County Environmental Services

**Project Director** | Hans developed and oversaw a debris management program involving the safe and efficient removal of flood-related debris from public and private properties in Koochiching County in accordance with Federal Emergency Management Agency (FEMA) debris monitoring guidelines. He developed electronic forms using ArcGIS for an overall assessment of over 200 private properties.



## Robert Wright, PE

### Solar Business Line Lead

Robert leads a team whose duties include technology comparisons, O&M and capital cost estimating, performance optimization and definition, economic analysis, conceptual design, siting studies, and project coordination. Additionally, he helps clients determine projects and contracting structures to monetize tax benefits associated with renewable projects. Robert has led numerous front-end studies to coordinate engineering efforts between multiple disciplines and estimators. He is currently focuses on quickly and efficiently identifying and optimizing utility strategies and approaches for solar and energy storage implementation.

#### EDUCATION

Masters, Engineering and Technology Management

Bachelors, Engineering Physics

#### CERTIFICATIONS

Professional Engineer (IL)

#### EXPERIENCE

10 Years of experience

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#### LinkedIn

[Robert Wright | LinkedIn](#)

## PROJECT EXPERIENCE

### Solar PUC Submittal | Minnesota Power

**Project Manager** | Robert led portfolio development for a utility evaluating four solar sites. He worked through project structure and contracting considerations to determine a path forward. Robert provided conceptual design, environmental services, and performance analysis of each site. He worked with the design team to complete detailed layouts, one-lines, quantity takeoffs, and detailed cost estimates for each site. The final deliverable was a package to submit to the PUC for approval of the portfolio. Burns & McDonnell began detailed design, procurement support, and construction management support following the development efforts.

### Solar Program Consulting | DTE

**Project Manager** | Robert led DTE's development of sites for self-build options into their renewables RFP. He supported the market strategy, procurement, conceptual design, and performance aspects. DTE is evaluating up to 500 MW per year of solar installations over the next several years. Our firm worked with DTE and their consultants to evaluate multiple sites to determine optimal land use and which sites to move forward with. Multiple sites co-located with wind which involved detailed technical and performance considerations. Our firm coordinated non-material modification requests, glare studies, visual impact studies, and more to support the program.



## Connor Smith, EIT Solar Consulting Lead



Connor has a breadth of experience across utility and technology consulting. He has conducted transmission planning studies, led strategy, siting and design of solar & energy storage projects, and written asset performance assessments. Connor also has experience in renewable energy incentive programs and economic modeling. Additionally, he has managed program data reporting across nearly all aspects of utility operations. Working in our California office, he has been heavily involved in wildfire mitigation and rebuilding efforts.

### EDUCATION

Bachelors, Electrical  
Engineering

### REGISTRATIONS

Engineer in Training (IA)

### EXPERIENCE

4 Years of experience

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### LinkedIn

[Connor Smith | LinkedIn](#)

## PROJECT EXPERIENCE

### Microgrid Assessment | Port of Los Angeles

**Energy Analyst** | Connor simulated varying microgrid system sizes to interpret their impact on the client's resiliency goals for the microgrid. He analyzed utility load data to develop a charging strategy for the microgrid's battery system to both maximize return on investment and duration of islanded operation.

### DER Feasibility Study | San Francisco International Airport

**Energy Analyst** | Connor was responsible for assessing the feasibility of airport sites for solar installation. He analyzed site electrical load profiles, electricity tariffs, panel orientation, and storage solutions for all sites involved in the study. He also examined pairing electric vehicle charging with solar at each site. Using the Helioscope and System Advisor Model (SAM), he performed a cost-benefit analysis for each site under a variety of financial scenarios and reported on the airport's qualifications for carbon offset and renewable energy credits with respect to projects' economic feasibility.

### Van Nuys Solar Study | Los Angeles World Airports

**Lead Analyst** | Connor led the project execution team through all stages of the project scope. He facilitated the project kickoff to gather stakeholder input regarding the vision for the project and applied that feedback to the physical design and financial modeling of various rooftop and ground-mount solar photovoltaic projects.



## Hannah Brown

### Grant & Public Policy Lead

Hannah brings IIJA and IRA grant consulting leadership to the team. She is actively engaged as strategy lead for utilities and oil and gas clients. Hannah is also experienced in researching and writing fact sheets and policy memos on relevant issues. She recently completed her Master's in Public Policy from Carnegie Mellon University specializing in Energy Systems and spent the second year in DC working on the Hill: one semester with the Senate Energy and Natural Resources Committee and the other with the House Transportation and Infrastructure Committee. Prior to graduate school, Hannah spent five years working as a project manager in commercial construction and has an undergraduate degree in civil engineering.

#### EDUCATION

Masters, Public Policy & Management

Bachelors, Civil Engineering

#### EXPERIENCE

8 Years of experience

#### LinkedIn

[Hannah Brown | LinkedIn](#)

#### ADDITIONAL POLICY & GRANTS EXPERIENCE

Long Duration Energy Storage (LDES) Grant Application | Evergy Kansas Central Inc.

Hydro Hub Grant | Nebraska Public Power District

Policy Retainer | Nebraska Public Power District

MCH2 Full Application | Nebraska Public Power District

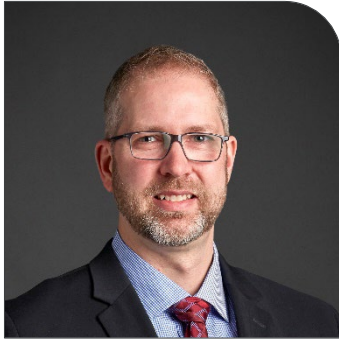
#### PROJECT EXPERIENCE

##### DOE Regional H2 Hub FOA Phase 1 | Nebraska Public Power District

**Project Team** | Hannah was the Lead on the Development of the Hydrogen Hub Grant application to the DOE. Our firm developed models for a regional hub application based on inputs from all three states, executed techno-economic evaluations and life-cycle analysis using the MCH2 decision support tool, provide community benefits plan advisory for the multi-state hub, and help establish a multistate governance structure for MCH2.

##### Jobs Act Grant Support | Evergy, Inc.

**Project Manager** | The Infrastructure Investment and Jobs Act (IIJA) provides for \$1.2 trillion in federal spending over the next five years. The IIJA funding will be managed by applicable federal agencies. Each agency has created specific websites for its IIJA programs and funding opportunity announcements with related documentation. Hannah provided a detailed assessment of any potential grant opportunities within IIJA for which ESI would be eligible & aligned eligible grant opportunities against both interest and availability of shovel-ready projects ESI is planning to complete.



## Duke Kuvaas, PE Sr. Electrical Engineer

Duke’s experience includes impacts and improvements on grid modernization from renewable energy and the oncoming implementation of electrical vehicles. His duties include scope of work development, estimate development, contract reviews, sub-consultant agreement coordination, risk assessments and management review facilitation. He regularly develops and updates the design guides used to help facilitate the standard of care during the design of the project.

### EDUCATION

Bachelors, Electrical Engineering

### REGISTRATIONS

Professional Engineer (AZ, CA, DE, IA, MN, NJ, WI)

### EXPERIENCE

23 Years of experience

LinkedIn

[Duke Kuvaas | LinkedIn](#)

## PROJECT EXPERIENCE

### Solar EPC | Interstate Power and Light Company

**Project Manager** | The IPL Solar Program consists of approximately 200 MWAC grid-connected solar photovoltaic (PV) renewable energy systems located across Iowa. Duke was responsible for the electrical design of the collector substation, Gen-Tie, and for leading the design team of 10+ engineers and designers.

### Solar EPC | Wisconsin Power and Light Company

**Project and Engineering Manager** | The WPL Solar Program consists of approximately 665 MWAC grid-connected solar photovoltaic (PV) renewable energy systems located across Wisconsin. Duke was responsible for the electrical design of the collector substation, Gen-Tie, and for leading the design team of 10+ engineers and designers.

### Sherco Solar | Xcel Energy Inc.

**Project Manager** | Sherco Solar is a nominal 460 MW solar photovoltaic power project located near Becker, Minnesota, approximately 50 miles northwest of Minneapolis. The project is comprised of two electrically distinct blocks. The project encompasses agricultural lands both east and west of the existing Sherco Coal Generation Station where the East Block covers approximately 1600-acres, and the West Block covers approximately 1600-acres on land owned or leased by the company. Our firm provided engineering consultation services as directed by the owner to assist with activities related to the engineering design reviews and equipment procurement reviews for both the solar photovoltaic generating facilities and associated collector substations.



## Kim Wandersee, PE Structural Department Manager



Kim specializes in civil and structural engineering for transmission line and substation projects ranging from 12.5kV to 345kV. As a senior structural engineer, she is responsible for substation arrangements, rigid bus design, site design, shallow and deep foundation design, rolled steel design and detailing, tubular steel design, control house design, firewall design, retaining wall design, decorative wall design, oil containment design, and wood structure design. Kim is also experienced in material procurement, program management, engineering reviews, specification preparation, construction coordination, scheduling, and contract management.

### EDUCATION

Bachelors, Applied Science

Bachelors, Civil Engineering

### REGISTRATIONS

Professional Engineer (IA, MN, ND, SD, WI)

### EXPERIENCE

25 Years of experience



### LinkedIn

[Kim Wandersee | LinkedIn](#)

## PROJECT EXPERIENCE

### Solar EPC | Wisconsin Power & Light Company

**Associate Structural Engineer** | The WPL Solar Program consists of approximately 665 MWAC grid-connected solar photovoltaic (PV) renewable energy systems located across Wisconsin. Responsibilities included the structural design of nine collector substations.

### Sherco Solar | Xcel Energy Inc.

**Associate Structural Engineer** | Sherco Solar is a nominal 460 MW solar photovoltaic power project located near Becker, Minnesota. The project is comprised of two electrically distinct blocks. The project encompasses agricultural lands both east and west of the existing Sherco Coal Generation Station where the East Block covers approximately 1600 acres, and the West Block covers approximately 1600 acres on land owned or leased by the company. Our firm provided engineering consultation services as directed by the owner to assist with activities related to the engineering design reviews and equipment procurement reviews for both the solar photovoltaic generating facilities and associated collector substations.

### Solar Program | Interstate Power & Light Company

**Associate Structural Engineer** | The IPL Solar Program consists of approximately 200 MWAC grid-connected solar photovoltaic (PV) renewable energy systems located across Iowa. Kim’s responsibilities include the structural design of two collector substations.

# Personnel and Materials Fee Schedule



Included in a separate sealed envelope per the instructions in Addendum 2.






## Appendices

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**APPENDIX A - SUBMISSION COVER SHEET  
CITY OF DULUTH  
RFQ 23-99655  
RFQ for Site Assessment & Evaluation for Solar PV & Storage**

<b>Bidder Information:</b>	
Submitter Name	1898 & Co., part of Burns & McDonnell Engineering Company, Inc.
Mailing Address	9400 Ward Parkway, Kansas City, MO 64114
Contact Person	Alex Goedeker
Contact Person's Phone Number	(314) 682-2979
Contact Person's E-Mail Address	alexander.goedeker@1898andco.com
Federal ID Number	43-0956142
Authorized Signature	
Name & Title of Authorized Signer	Aaron Anderson, Senior Managing Director
Email of Authorized Signer	aaron.anderson@1898andco.com

Acknowledgement of Addendums:  
1, 2, 3



City of Duluth  
Supplementary Provisions – Federal Funding (DOE)  
23-99655 RFQ for Site Assessment & Evaluation for Solar PV & Storage

1. Disbursements

- a. No money under this Contract shall be disbursed by the City to any Contractor unless the Contractor is in compliance with the Federal Agency requirements with regard to accounting and fiscal matters to the extent they are applicable.
- b. Unearned payments under this Contract may be suspended or terminated upon the Contractor's refusal to accept any additional conditions that may be imposed by the Federal Agency at any time; or if the grant, if applicable, to the City under which this Contract is made is suspended or terminated.

2. Subcontracting Requirements

- a. The Contractor shall include in any subcontract the clauses set forth in these City of Duluth Supplementary Provisions in their entirety and shall also include a clause requiring the subcontractors to include these clauses in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.
- b. The Contractor shall not subcontract any part of the work covered by this Contract or permit subcontracted work to be further subcontracted without the City's prior written approval of the subcontractors. The City will not approve any subcontractor for work covered by this Contract who is at the time ineligible under the provisions of any applicable regulations issued by a Federal Agency or the Secretary of Labor, United States Department of Labor, to receive an award of such subcontract.

3. Breach of Contract.

The City may, subject to the Force Majeure provisions below and in addition to its other rights under the Contract, declare the Contractor in breach of the Contract by written notice thereof to the Contractor, and terminate the Contract in whole or in part, in accordance with Section 4, Termination, for reasons including but not limited to any of the following:

- a. Failure to begin the Work within the time specified in the Contract;
- b. Failure to perform the Work with sufficient labor, equipment, or material to insure the completion of the specified Work in accordance with the Contract terms;
- c. Unsatisfactory performance of the Work;
- d. Failure or refusal to remove material, or remove and replace any Work rejected as defective or unsatisfactory;
- e. Discontinuance of the Work without approval;
- f. Failure to resume the Work, which has been discontinued, within a reasonable time after notice to do so;
- g. Insolvency or bankruptcy;
- h. Failure to protect, to repair, or to make good any damage or injury to property;
- i. Breach of any provision of the Contract;
- j. Misrepresentations made in the Contractor's bid/proposal; or
- k. Failure to comply with applicable industry standards, customs, and practice.

#### 4. Termination

If the Contractor is in breach of the Contract, the City, by written notice to the Contractor, may terminate the Contractor's right to proceed with the Work. Upon such termination, the City may take over the Work and prosecute the same to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the City for any additional cost incurred by the City in its completion of the Work and they shall also be liable to the City for liquidated damages for any delay in the completion of the Work as provided below. If the Contractor's right to proceed is terminated, the City may take possession of and utilize in completing the Work such materials, tools, equipment, and plant as may be on the site of the Work and necessary therefore.

City shall have the right to terminate this contract immediately without other cause in the event that all or a portion of the funds that the City intends to use to fund its obligations under the contract have their source with the State or Federal government or any agency thereof and said source reduces or eliminates their obligation to provide some or all of the funds previously committed by it to fund City's payment obligations under the Contract. The City agrees that termination hereunder will not relieve the City of its obligation to pay Contractor for Work satisfactorily performed and reasonable costs incurred prior to the effective date.

Notwithstanding anything herein to the contrary, the City may terminate this Contract at any time upon written notice given by the City (for any reason, including the convenience of the City) to the Contractor at least thirty (30) days prior to the effective date of the termination of this Contract. The City agrees that termination hereunder will not relieve the City of its obligation to pay Contractor for Work satisfactorily performed and reasonable costs incurred prior to the effective date of the termination provided that Contractor has not committed a breach of this Contract. Nothing contained in this section shall prevent either party from pursuing or collecting any damages to which it may be entitled by law.

#### 5. Force Majeure.

The right of the Contractor to proceed shall not be terminated nor shall the Contractor be charged with liquidated damages for any delays in the completion of the Work due to any acts of the Government, including controls or restrictions upon or requisitioning of materials, equipment, tools, or labor by reason of war, National Defense, or any other national emergency; any acts of the City; causes not reasonably foreseeable by the parties to this Contract at the time of the execution of the Contract which are beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, acts of another Contractor in their performance of some other contract with the City, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and weather of unusual severity such as hurricanes, tornadoes, cyclones, and other extreme weather conditions; nor to any delay of any Subcontractor occasioned by any of the causes specified above. The Contractor shall promptly notify the City in writing within ten (10) days of the delay. Upon receipt of such notification, the City shall ascertain the facts and the cause of the delay. If, upon the basis of facts and the terms of the Contract, the delay is properly excusable, the City shall extend the time for completing the Work for a period of time commensurate with the period of excusable delay.

#### 6. Contracting with Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms.

Per 2 CFR 200.321, prime contractor must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms (collectively referred to as socioeconomic firms) are used when possible. The affirmative steps must include:

- a. Placing qualified socioeconomic firms on solicitation lists;
- b. Assuring that socioeconomic firms are solicited whenever they are potential sources;

- c. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by socioeconomic firms;
- d. Establishing delivery schedules, where the requirements permit, which encourage participation by socioeconomic firms; and
- e. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

7. Clean Air Act and Federal Water Pollution Control Act

Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA). Contractor agrees to include this provision in any subcontract exceeding \$150,000 that is financed in whole or in part with Federal funds.

8. Energy Standards.

Contractor shall comply with all mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201).

9. Suspension and Debarment.

This contract is a covered transaction for purposes of 49 CFR Part 29. As such, the contractor is required to verify that none of the contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945. The contractor is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into. A contract award must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM.gov), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 19898 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

10. Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended)

Contractors must certify that that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352.

11. Telecommunications and Video Surveillance Services or Equipment

In the performance of this contract, Contractor/Supplier shall comply with Public Law 115-232, Section 889, which prohibits the procurement or use of covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, use of video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision

Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities) is prohibited.

In addition, telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country is prohibited.

#### 12. Domestic Preferences for Procurements

As appropriate and to the extent consistent with law, Contractor shall, to the greatest extent practicable under a Federal award, supply and/or use goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). For purposes of this section, "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

Contractors shall include the preceding language in all subcontracts.

Appendix C

BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION

(To be submitted with each bid or offer exceeding \$100,000)

The undersigned, [Company] Burns & McDonnell Engineering Company, Inc. certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, [Company] Burns & McDonnell Engineering Company, Inc., certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq.*, apply to this certification and disclosure, if any.



Signature of Contractor's Authorized Official

Aaron Anderson, Senior Managing Director

Name and Title of Contractor's Authorized Official

11/10/2023

Date



Purchasing Division  
Finance Department  
Room 120  
411 West First Street  
Duluth, Minnesota 55802

218-730-5340  
purchasing@duluthmn.gov

**Addendum 1**  
**Solicitation 23-99655**  
**Request for Qualifications for Site Assessment & Evaluation for Solar PV & Storage**

This addendum serves to notify all bidders of the following changes to the solicitation documents:

The following questions were received and the answers follow in *italics*:

1. The RFP indicates the city will be selecting sites, can you please clarify if the consultant will be helping to narrow down a larger number of sites to the 8-12 sites, or will the city select 8-12 sites for the consultant to evaluate? *The City will be selecting the 8-12 sites for the consultant to evaluate. Our goal will be to have the majority of these sites selected at the beginning of the contract period so that work can begin quickly. The selected consultant will **not** be part of the final 8-12 site selection.*
2. What is the energy output goal for this project? *Energy output will be site dependent. Each site will have unique constraints that will limit the amount of output available on site. Ideally, if a project has a load, we would like to try to attain 120% of that load on the site. If the site is vacant, we would want to achieve the largest energy output possible for the site while remaining within building/electrical and zoning codes.*
3. Of the 8-12 sites, what is the anticipated mix of roofs, greenfield, and parking structure roofs on these sites? If sites are known, can you provide a GIS map at this time? *We do not know the anticipated mix of sites at this time. We will be working with a pre-selected internal team and a few community partners to select the 8-12 sites from the current list. Until we have the sites selected, we will be unable to provide GIS maps. The selected vendor will be provided with GIS maps within one month of entering into the contract after sites have been identified.*
4. What is the design budget and what is the construction budget for this project? *The design/planning budget will vary for each site depending on the site's size, location, characteristics, etc. We anticipate some sites will require less evaluation/design than others as some information has already been gathered. Any relevant information on each site that has previously been gathered will be shared with the selected consultant. Information gathered during these initial site assessments will be used in determining future construction budgets.*
5. Please clarify the type and concern regarding ground water receptors that should be assessed. *Potential ground water receptors that may be assessed refer to water reservoirs*



*and or pump stations owned and operated by the city. The majority of these reservoirs that may be considered consist of in-ground reservoirs or pumps that have concrete caps in place. If these sites are selected, main concerns would be the capability of the concrete cap to hold solar, how much, and where the solar could be placed and connected. While these would be main concerns, additional evaluations of the site may be necessary.*

6. Is there a screening tool the city prefers to use as a starting point for site selection? Can the Duluth Shines tool be used for non-rooftop sites? *There is no preferred screening tool, and the Duluth Shines tool may be used while doing the initial screening of the site. We also have, and will continue to use alongside Duluth Shines, the PV Watts Calculator developed and used by NREL (<https://pvwatts.nrel.gov/index.php>). Both of these tools may be used for non-rooftop sites.*
7. What is the solar installation inter-connection intended to be with Minnesota Power? *This has not been determined at this time. This RFQ is intended for initial site assessment and possible PV & Storage planning. Interconnection with Minnesota Power would be determined on a per-site basis as each potential site may be developed in its own time and may require its own set of unique interconnection circumstances. Interconnection issues should be investigated and outlined site by site, during investigations.*
8. If we have more than 10 proposed team-members and partners, how would like us to present their experience? *While we understand that teams may include more than 10 members and/or partners, we request that you keep the resume pages limited to the maximum number as listed in the RFQ. Listing more than one team member or partner per page is allowed, but any resumes included after page 10 of team/partner resumes will not be included in the scoring of the RFQ.*
9. What milestones are anticipated for review documents? *Some of the work completed on these sites will be included as examples in the grant's research findings to other cold climate cities. While the RFQ has a deadline of 7/31/2025, we anticipate having most of the work with the selected consultant completed by 1/29/2025. Milestones will be determined in coordination with the project manager on a per-site basis as some sites will be larger than other and may require a longer timeline.*

Please acknowledge receipt of this Addendum by including a copy of it with your proposal. The pages included will not count toward any page limitation, if any, identified in the RFP.

Posted: **October 3, 2023**



**Purchasing Division**  
Finance Department  
Room 120  
411 West First Street  
Duluth, Minnesota 55802

218-730-5340  
purchasing@duluthmn.gov

**Addendum 2**  
**Solicitation # 23-99655**  
**Request for Qualifications for Site Assessment & Evaluation for Solar PV & Storage**

This addendum serves to notify all bidders of the following changes to the solicitation documents:

1. Information and clarification of the City's Renewables Advancing Community Energy Resilience Grant is included in the attached "Statement of Project Objectives".
2. The following will clarify the Proposal Requirements and Format:
  4. Personnel and Materials Fee Schedule – Please submit in separate sealed envelope, one copy of the personnel and materials fee schedule, clearly marked on the outside as "Cost Proposal" along with the responder's official business name and address. Terms of the proposal as stated must be valid for the project length of time. Please **do not** include any cost information in the Proposal.

**PROPOSAL SUBMITTAL**

Submit an original copy of the proposal, plus a flash drive containing the proposal and cost proposal, in an envelope marked "Site Assessment & Evaluation for Solar PV & Storage to:

City of Duluth Purchasing Division  
411 West 1<sup>st</sup> Street, Room 120  
Duluth, MN 55802

Please acknowledge receipt of this Addendum by initialing and dating Addendum 2 below the bid form on the invitation for bids.

Posted: **10/10/23**

Acknowledged by:

11/10/2023



**Form Follows Function (F3):  
A framework for community-based energy resilience planning in the Midwest**

**DE-FOA-0002597 Renewables Advancing Community Energy Resilience (RACER)  
Topic 1: Innovative Community-Based Energy Resilience Planning**

**Principal Investigators**

Mindy Granley  
City of Duluth Sustainability Officer  
[mgranley@duluthmn.gov](mailto:mgranley@duluthmn.gov)  
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411 W. 1<sup>st</sup> Street, Duluth, MN 55802  
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501(c)3

This two-year project seeks to build innovative community-based energy resilience planning methodologies and metrics to inform priority deployment of renewable energy and storage assets within a community.

## Project Overview Format

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### Background

Form Follows Function (F3) is an innovative and replicable community-based energy resilience planning process that integrates new and existing resilience metrics, extends preparedness and response plans, and is developed concurrently using top-down and bottom-up processes through deep engagement with diverse community stakeholders. To meet the critical needs of a community during various periods of grid disruption, the project focuses on energy resilience by developing greater understanding of functional needs at different community-scales and deployment potentials of solar PV plus storage, along with distributed micro-resilience resources (DMRRs). The F3 Framework is applicable to communities across the nation, however the development process and test replications focus on cold climate communities subject to multiple hazards and builds off of past disasters experienced in northeastern Minnesota. This approach will develop novel community-based research that informs resilient energy improvements, de-risks projects for local partners, and is responsive to, and centered-on, traditionally marginalized communities at greatest risk of negative impacts associated with climate change, disasters, and grid outages.

The F3 Framework planning process is designed to address the complexity of community energy resilience planning by creation of a framework and tools that incorporates the needs of utilities and governmental entities to determine the form of the grid and grid assets, while allowing users to participate in defining the critical functions required against multiple outage scenarios at an individual and shared resource level. This process recognizes the need for, and develops, an accessible human-centered design process to inform community energy resilience plans AND effective implementation pathways.

### Overall Objective

To expand existing energy resilience planning tools to improve accessibility to smaller communities that are most at risk of low-attention disasters through streamlined use of existing tools, development of new stakeholder engagement processes, analysis of assumptions against existing methodologies, development of metrics, and applied testing for replication.

### Statement of Novelty

The project extends current resilience planning methodologies through novel social science research combined with traditional asset-based approaches to create a planning process accessible to communities that lack extensive planning capacity and firmly places solar and storage solutions within the greater context of system, shared, and distributed micro-resilience approaches.

## Technical Work Plan

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### **Budget Period 1 (12 months)**

#### **Task 1- Baseline Hazards Analysis and Disruption Scenario Development**

Using existing multi-hazards mitigation plans, FEMA's Hazus program models, research of historical disasters in the target community, and stakeholder input, we will develop 8-12 grid disruption scenarios as a baseline for research and model development. Disruptions scenarios may include cascading failures with other critical systems as required to adequately mitigate negative impacts from disruptions.

##### **Subtask 1.1- Complete Past Disaster and Hazus Analysis**

Review Multi-hazard Mitigation Plan for past disaster experiences and projected vulnerabilities. Using Hazus, quantify potential exposures for target geography. Determine any expected variances in hazard vulnerability between target and regional geography.

##### **Subtask 1.2- Develop Critical Systems & Disruption Scenarios**

Through consultation with the Critical Infrastructure Team (inclusive of IOU/grid operator, municipally-owned water and gas utility, public works and utilities, waste water district, state, county, and city emergency management, and the Ready North Network determine 8-12 power disruption scenarios (e.g. grid outage during high heat event versus extreme rain) with functionally different potential negative impacts or mitigation solutions.

##### **Milestone 1- Disruption Scenarios with Identified Modifiers for Midwest Communities**

A minimum of 8 functionally different grid disruption scenarios have been identified for the target community with an indication of likelihood and severity. Modifiers have been identified for potential variances reflective of the larger midwest region to aid toolkit creation and workshop replication to communities reflected in Task 5.

#### **Task 2- Bottom-Up Functional Resilience Analysis through Community-based Methodologies**

Develop and test a methodology for creating community-based minimum resilience baselines in response to grid disruption scenarios and negative impacts experienced by community entities (i.e. households, businesses, institutions). Define potential/desired resilience solution sets to reach established community-based minimum resilience standards.

**Subtask 2.1- Translation to Individual Experience & Negative Impacts**

Conduct focus groups to develop priority negative impacts to be evaluated related to each grid disruption scenario. Focus groups to include community stakeholder groups experienced in disaster response, provision of critical social services, and representation from traditionally marginalized/vulnerable communities. An example translation of disruption scenario to negative impact could be 24-hour grid outage during heavy rain event resulting in 1) sump pump failure/flooded basement, 2) loss of refrigeration/food, etc.

**Subtask 2.2- Distributional Analysis of Negative Impacts**

Through multiple modes of delivery including online, mailed, and door-to-door canvass of the community (with oversampling in socially vulnerable areas) determine distribution against time, and cost where appropriate, historical/anticipated impact of negative impacts for each discrete grid disruption scenario.

**Milestone 2- Completion of Community Resilience Distributions**

A minimum of eight (8) statistically significant community resilience distributions have been completed representing a diversity of likely grid outage scenarios. Analysis includes developing understanding of the population characteristics, associated green and built environments, and existence of resilience solutions, as appropriate, to better understand the distribution and potential mitigation interventions.

**Subtask 2.3- Development of Community-based Minimum Resilience Metrics**

Conduct two workshopping sessions with community stakeholder group defined in Task 2.1 to 1) refine community resilience distributions, define and prioritize additional data needs, determine draft community-based minimum resilience standards, and provide initial solution sets, and 2) respond to cost-benefit analysis of solutions brainstormed during first session, and establish minimum resilience standards.

**Milestone 3- Completion and Vetting of Community-based Minimum Resilience Standards**

A minimum of eight (8) Community-based Minimum Resilience Standards have been created with an analysis of the population currently below that standard and potential solutions identified to advance all community members to the minimum standard. Solutions may reflect systems level solutions (concurrently being developed in Task 3), shared, and distributed micro-resilience resources).

**Task 3- Top-Down Asset-based Energy Resilience Planning**

Project partners will identify public, institutional, and critical infrastructure sites for viability as community energy resiliency sites. Technical evaluations will be conducted on priority sites for solar, solar + storage, and/or storage options identified.

**Subtask 3.1- Establish Asset-based Resilient Power Siting Criteria**

Applying Task 1 research including evaluation of grid outage data, past disaster damages, power resiliency for critical facilities, and social vulnerability indices, outline potential project siting and evaluation criteria.

**Milestone 4-** Completion of a Resilient Power Siting Criteria evaluation rubric.

**Subtask 3.2- Mapping of Solar/Storage Sites & Determination of Data Needs**

Identification and mapping of geospatial, structural, and field-collected data in alignment with Resilient Power Siting Criteria. Identification of 10-15 publicly-owned and available sites for potential renewable energy and storage development sites (to include open land, large buildings, water reservoir infrastructure, closed landfills, and brownfields). Determination of data needs to evaluate each site for suitability, costs, and benefits.

**Milestone 5-** Identification of 10-15 potential sites with technical/legal/financial evaluation plan established and consultant procurement complete.

**Subtask 3.3- Site Investigations and Cost Analysis**

Gather online data and conduct preliminary field work required for investigation for renewable energy siting, including soil borings, slope analysis, wetland identification, roof or reservoir cap structural integrity, property liens/liabilities, etc. Conduct technical, cost, and legal analysis to determine a prioritized list of resilient power sites/system solutions reflective of highest resiliency return on investment.

**Milestone 6-** A prioritized list of ten to fifteen community energy resiliency site assets is produced, laying out potential barriers that will need to be removed for future community resilience energy projects. The vetted and prioritized site list removes unknowns of future project partnerships, and decreases risk for all partners in resilient energy project development, establishes a phased pathway for implementation, and models an asset-based approach applicable to local governments.

**Go/No Decision Point BP1-** Multi-hazard disruption scenarios have been developed and inform creation of discrete negative impacts for community-based research to be conducted in BP2. Asset and hazards mapping have been completed to inform deeper technical analysis of community sites for solar/storage placement.

**Budget Period 2 (12 months)****Task 4- Form Follows Function Model and Community Energy Resilience Plan Development**

The results from asset mapping and technical analysis will be combined with community-based minimum resilience data and strategies to identify pathways for

community energy resiliency projects (solar and/or storage, microgrid potential). Legal and economic analysis of project sites/programs will be expanded, resulting in an integrated approach that includes public development of solar/storage sites, shared solutions, and as appropriate distributed micro-resilience solutions. Shared values and benefits from proposed approaches will be identified.

**Subtask 4.1- Combined Analysis & Prioritization of Deployable Resources Inclusive of Systems, Shared, and Distributed Micro-Resilience Resources**

Combine models from Tasks 2 & 3 to identify community energy resilience project pathways that have significant overlap in technical feasibility and intended shared values and benefits. Analyze asset-mapping and community input models to identify specific energy resilience projects and pathways. Complete any additional legal/financial/technical analysis for combined solutions.

**Subtask 4.2- Complete Community Energy Resilience Plan**

Draft Community Energy Resilience Plan for review by Critical Infrastructure Team and Community Stakeholder Group. The plan should include projects (Task 3), programs identified to advance shared solutions and adoption of distributed micro-resilience resources, and enabling policies/partnerships. Conduct public review of plan to feedback on identified energy resiliency projects and pathways. Direct outreach for incorporation of plan elements into resilience/hazards planning by other governmental agencies and critical systems operators will be completed.

**Milestone 7-** Completed Duluth Energy Resilience Plan and plan template for incorporation into Task 5 Toolkit.

**Task 5- Toolkit Development and Testing**

This task will bring together the F3 model and approach into a replicable format through development of a Toolkit and workshopping of the methodology with two communities. The replications will focus on establishing community-informed plans with actionable projects and a planning process that minimizes the capacity needed to achieve a successful outcome. This task emphasizes optimization of approaches used in Tasks 1-4 to increase the applicability to smaller communities and/or those lacking resilient energy planning capabilities.

**Subtask 5.1- Develop Community Energy Resilience Planning Toolkit**

Development of Community Energy Resilience Planning Toolkit to include methodology for application of resilient power as a lens for expanding multi-hazard mitigation planning, creation of disruption scenarios, asset-based planning approach and essential geospatial layers, best practices for community engagement and establishment of Community-based Minimum Resilience Standards, Duluth case-study, and plan template.

**Subtask 5.2- Workshop Toolkit through Community Energy Resilience Planning Community Panels**



Using a panel approach, project partners will recruit and support two communities through implementation of the Community Energy Resilience Planning Toolkit. Pre-workshop data gathering and analysis, scope of work development, and scheduling will be conducted. A three-day panel will then be conducted within the community including stakeholder interviews, site visits, and public presentations. The Toolkit and plan template will be revised based upon feedback from replication communities.

**Final Deliverable 1-** Community Energy Resilience Planning Toolkit and Plan Template optimized for cold climate communities with populations under 250,000 including vetted methodology and metrics for establishing Community-based Minimum Resilience Standards and integrated resilient power solutions sets.

### **Task 6- Dissemination and Reporting**

Project dissemination will be completed during the second budget period with dissemination including publication of papers in appropriate journals and presentations at professional conferences.

#### **Subtask 6.1- Dissemination of Project Methodologies and Model**

Due to the blended technical and community advancements toward community energy resilience planning anticipated during the project period, dissemination efforts will include climate, adaptation, emergency government, and energy professionals as well as potential community-based user groups like local governments, environmental justice organizations, and social service providers. Three articles/presentations will be developed regarding 1) Community-based Minimum Resilience, 2) Integration of Asset-based and Community-based planning methodologies for resilient power prioritization, 3) Community-based Energy Planning Toolkit application.

#### **Subtask 6.2- Final Reporting**

All required reports and deliverables are submitted to the DOE.

**Final Deliverable 2-** All required DOE RACER grant reports, whitepapers, presentations, templates, and toolkits are delivered to the DOE.



**Purchasing Division**  
Finance Department  
Room 120  
411 West First Street  
Duluth, Minnesota 55802

218-730-5340  
purchasing@duluthmn.gov

**Addendum 3**  
**Solicitation # 23-99655**  
**Request for Qualifications for Site Assessment & Evaluation for Solar PV & Storage**

This addendum serves to notify all proposers of the following changes to the solicitation documents:

The following questions were received and answers follow in *italics*.

1. Can a certified master electrician in combination with a Licensed Civil Engineer serve as a viable alternative to a professional electrical engineer for this project? *As per the issued RFQ, under the skills and requirements section, subparagraph G, a Minnesota Professional Engineer (PE) is preferred as a skill requirement. While we welcome all proposals, this will be taken into consideration when evaluating and scoring the proposal responses.*
2. Could you please provide more details on the specific requirements and anticipated outcomes for the customized modeling scenarios? *By modeling we are referring to energy use and storage capabilities not specific capacities. We are looking to receive potential projects scenarios possible at each site and not an integrated energy model.*
3. Is it advantageous to have a solar energy company take the lead role in this project instead of an environmental consulting firm? *We welcome proposals submitted by both solar energy companies and environmental consultants. Firm partnerships are encouraged to submit a proposal whether they are a solar energy company or an environmental firm as long as the skill requirements are met and the site conditions can be properly evaluated.*
4. Addendum 2 posted on 10/10/23 says to submit one copy of the personnel and materials fee schedule. A fee schedule identified material cost and personnel hourly rates but does not provide a total project budget. Are you requesting a fee schedule only and/or a total estimated project budget? *We are requesting a personnel and fee schedule only. Do not include a total project budget in your proposal.*
5. Will the firm(s) chosen for this site evaluation project be precluded from developing/installing systems in the future? *No, this will be separate from all future RFP's for construction of solar PV & Storage on any of the sites*
6. For purely energy delivered, putting small arrays in limited and "residential" neighborhood space would be a lot more work for less energy output than larger installations. Will the sites be

best designed and utilized as fewer, larger installations outside of residential neighborhood space, for lower cost and more efficient effort? Hopefully near a substation? *Sites have not yet been identified, but aggregated larger sites are desired on city property and city owned assets. As part of site identification, interconnection criteria will be taken into account.*

7. Solar on its own is certainly proven to lessen demand on the utility. Batteries can buffer energy requirements from the grid, help solar supply in times of less sun and shave demand spikes. Since there will be huge energy requirements, how will the solar and battery units actually be expected to interact with the neighborhoods? If the power is out will the batteries be expected to take over to a limited extent? *The scale of battery storage would vary based on the site and unique public infrastructure that it would support. Batteries could serve a function of shedding demand loads and/or serving as backup power for public service infrastructure.*

Please acknowledge receipt of this Addendum by including a copy of it with your proposal. The pages included will not count toward any page limitation, if any, identified in the RFP.

Posted: **10/20/23**



[1898andco.com](http://1898andco.com)

