AUGUST 6, 2021

RFQ #9734 FOR PUBLIC-PRIVATE-PARTNERSHIP FOR UTILITY PLANT AND DISTRIBUTION INFRASTRUCTURE AT UNMC

Revision 0 – RFQ Issue

Prepared for

UNMC
OMAHA, NE

CONTENTS

1. INTRODUCTION AND GENERAL INFORMATION

1.1 Invitation

The University of Nebraska Medical Center (UNMC) is seeking an experienced partner to expand development of the existing UNMC owned District Energy System up to and including the potential design, construction, ownership, management and operations of the utility systems. UNMC hereby requests Statements of Qualification for the purpose of shortlisting Respondents that demonstrate the technical, financial, and management capacity required to deliver a utility generation and distribution structure under the terms of an anticipated public-private-partnership agreement. This Request for Qualifications (RFQ) is being issued as part of a two-phase selection procedure. Shortlisted Respondents will subsequently be invited to submit proposals for an Agreement, in accordance with a future Request for Proposals (RFP).

As the UNMC/ Nebraska Medicine campus grows through several on-going and projected construction projects, the energy systems will require expansion to support growing demands. There are many potential forms that this partnership may take and UNMC is neither obligated nor pre-disposed to a specific structure, but rather seeks the opportunity that brings maximum value and benefit to UNMC. It is UNMC's intent to maintain ownership of both existing campus utility plants and the utility distribution systems, with an option to lease back those assets over a long-term Agreement with an Energy Partner. New assets constructed as part of the Agreement will be negotiated for transfer to UNMC at the conclusion of the Agreement period. The successful respondent is expected to bring UNMC a deep experience in the engineering design, cost estimation, organization, finance, construction, and operation of utility systems and district energy cooling and heating plant systems along with experience in technologies such as solar energy, thermal storage, and combined heat and power (CHP) plants.

1.2 Background and History

UNMC was founded in 1869 and chartered as the Omaha Medical College in 1881. The College became affiliated with the University of Nebraska in 1902. UNMC is one of four campuses of the University of Nebraska. The campus has an enrollment of over 4,000 students as well as over 5,000 employees. Nebraska Medicine is a $1.8 billion academic health system with 9,500 employees and more than 1,000 affiliated physicians.

Nebraska Medicine is the primary clinical teaching partner for the University of Nebraska Medical Center (UNMC), which allows patients to benefit from one of the nation's leaders in cutting-edge research and education. Many Nebraska Medicine physicians trained at and now teach at UNMC. Together, the two organizations have approximately 12,000 employees, making it the largest employer in Omaha.

Nebraska Medicine was first formed by the 1996/1997 merger of Clarkson and University hospitals, which created the Nebraska Health System (NHS). Before the merger, Clarkson Hospital, founded in 1869, and University Hospital, founded in 1917, had each established themselves as leaders in health care. Because Clarkson Hospital was founded in 1869, Nebraska Medicine is the oldest medical center in the state.

In 2003, the NHS changed its name to The Nebraska Medical Center – which is the state's largest and highest-rated hospital. Seven years later, the organization opened Bellevue Medical Center – a full-service hospital in Sarpy County. UNMC Physicians, a clinical practice group that dates back to 1971, also operated several outpatient clinics in the area.

In October 2014, it was publicly announced that The Nebraska Medical Center, Bellevue Medical Center and UNMC Physicians would operate under one name: Nebraska Medicine. The move clinically integrated the three organizations, which sees more than 500,000 patient visits yearly.

The campus utility distribution system serves the combined UNMC, Nebraska Medicine and the Clarkson College campuses, however is owned solely by UNMC. It consists of electric (independent normal and emergency

systems), steam, hot water, and chilled water supply. Steam, chilled water, hot water, and emergency power are generated on-site, with primary power currently sourced from Omaha Public Power District (OPPD). The 6.5 million square-foot campus is comprised of hospital, medical, research and education facilities requiring an extremely reliable, robust, and diverse utility infrastructure at all times. The system serves 56 buildings across the 124 acre campus including two interconnected utility plants. The existing utility plants and distribution system are in impeccable condition and UNMC management and staff have worked extensively to optimize efficiency, reliability, and redundancy within the existing campus utility supply.
Existing campus load and future growth projections provide opportunity for potential on-site CHP capacity to supplement the existing system with additional capacity configured to maintain the high level of system redundancy, reliability, and sustainability.

1.3 Objective and Goals

The UNMC central utilities systems primary function is to provide the cooling, heating, and electrical utilities to support the operation of the hospital, research, and education mission of the entire the UNMC / Nebraska Medicine Campus. The current system significantly exceeds the minimum efficiency and reliability standards for these types of services. Future expansion will be expected to maintain and improve on the robust nature of the systems. This partnership must both expand existing utility generation capability to serve future load growth and also maintain or enhance the fundamental redundancy, availability, and reliability standards currently established in support of this mission. This partnership is expected to meet some or all of the following objectives, listed in order of priority:

1. Financially benefit the University and its Hospital Partner (Nebraska Medicine) directly through stable and affordable rates by controlling operational costs through growth and development of services and technologies.
2. Engage the next level of management and operational expertise at both the existing plant and distribution systems and future expanded systems to further improve the district energy operations and sustainability at or above current elevated standards.
3. Attain the Capital investment to incorporate additional new technologies such as combined heat and power, thermal storage, and solar energy applications to the campus.
4. Grow the district energy operations and systems to meet both future campus development and the surrounding area development and redevelopment growth needs.

1.4 RFQ/RFP Process and Timeline

Although UNMC / Nebraska Medicine reserves the right to adjust the timeline and sequence of events at its sole discretion, the milestone dates outlined below reflect the anticipated schedule for the RFQ/RFP process. Changes to the anticipated schedule shall be communicated to prospective respondents in accordance with Section 5.5 – Notifications / Clarifications.

RFQ/RFP Process Anticipated Milestone Schedule	
RFQ Issue	8/6/2021
Mandatory Virtual Pre-Submittal Meeting	8/25/2021
RFQ Comment / Question Deadline	9/15/2021
Addenda with Q&A Responses	10/8/2021
Qualifications Submittals Due	**10/15/2021**
Shortlist Selection by UNMC	11/5/2021
Shortlist Notification of Selection for RFP Process	**12/3/2021**
UNMC Issue RFP Information	12/8/2021
Bidder Confirmation of Intent to Bid Deadline	12/23/2021
Site tours - To be scheduled and arranged as Req'd	Jan-Feb
RFP Question Deadline	3/14/2022
Proposal Submittals Due	**4/1/2022**
Proposal Evaluation Completion	5/6/2022
Detailed Negotiations with Bidder(s)	May-July
Recommendation to University Board of Regents	August
Target Award Date	9/1/2022

Any and all proposals shall be reviewed and approved by the University of Nebraska Board of Regents per their policies and procedures which can be found at https://nebraska.edu/regents/bylaws-policies-and-rules.

2. SUMMARY OF EXISTING INFRASTRUCTURE

The following sections provide a brief summary of the existing utility generation and distribution systems. Additional information can be found in the Utility Plant Infrastructure Assessment and Evaluation included in the Supplemental Information.

2.1 Overview of Existing Facilities

The University of Nebraska Medical Center / Nebraska Medicine Campus utility requirements are served from a central utility grid system of chilled water, steam, hot water, and normal and emergency electrical power. The 4.7 million square foot campus is comprised of hospital, medical, research, and education facilities requiring an extremely reliable, robust, and diverse utility infrastructure on a “round the clock-round the year” schedule. Chilled water is produced onsite from electric driven, water cooled chillers totaling nominally 20,000 tons of capacity not including 1,400 tons of heat recovery chilling capacity. 125 psig Steam is generated from natural gas fired steam boilers.

The steam and chilled water capacity is primarily housed in the Central Utility Plant (CUP) and East Utility Plant (EUP). Nameplate steam generation capacity in the CUP totals 240,000 lb/hr, however firing capacity on some of the units is limited by airflow for an effective installed capacity of 200,000 lb/hr and an actual N+1 redundancy firm capacity of nominally 145,000 lb/hr. #6 fuel oil as available as back-up fuel for the natural gas boilers. Two utility scale electrode boilers are installed in the EUP, each with a rated capacity of 45,000 lb/hr although combined output is limited to roughly 63,000 lb/hr due to constraints in the electrical supply.

Normal electric power (13.8 kV) is brought in from the local electric utility company (Omaha Public Power District-OPPD) on 5 automatically switched circuits from the utility and distributed to load by the campus primary power system. Emergency power is supplied to the emergency campus grid from 9 diesel generators with 15.9 MW of capacity serving about 200 transfer switches feeding emergency related building loads.

Over the past 10 years the campus has substantially reduced energy consumption through operational and control improvements and upgrades which has held utility consumption at or lower than previous conditions despite campus expansion. Utility plant improvements completed in that timespan include:

- Reconfiguration of the chilled water system from a decoupled, semi-variable flow secondary distribution system, to a coupled, variable primary flow system.
- Addition of high efficiency chillers in place of older inefficient equipment along with new, low power consumption cooling towers.
- Incorporating variable frequency drives on plant ancillary equipment to improve efficiency.
- A new control system that fully integrates the utility systems with the campus building control systems to improve operational control from the campus energy entrance to the end use in the building.
- At the building level, new controls along with new variable frequency drives and new cooling coils have significantly improved energy performance within specific buildings.

Combining these physical changes with an educated and engaged utility operational staff has resulted in reductions of over 20% of utility energy use to date.

2.1.1 Chilled Water System

Year-round campus cooling is provided by the campus chilled water system to serve a diversity of loads including comfort cooling, dehumidification, closed loop heat pump systems, and cooling for the campus data center. The system generates 40°F chilled water with high efficiency water cooled centrifugal chillers, with 21,335 tons of total chilling capacity as summarized in the table below:

Chiller No.	Location	Installation Year	Manufacturer	Capacity (Tons)
CH-2	CUP	2004	Trane	2500
CH-3	CUP	2007	Trane	2500
CH-6	CUP	1996	York	1900
CH-7	EUP	2002	York	2000
CH-8	EUP	2007	Trane	2500
CH-9	CUP	2012	Trane	2550
CH-10	CUP	2012	Trane	2550
CH-11	CUP	2017	Trane	3700
HR Chiller 1	Clarkson	2014	Trane	250
HR Chiller 2	Clarkson	2014	Trane	250
DRC HR CH-1	DRC	2008	Multistack	350
DRC HR CH-2	DRC	2008	Multistack	285

Chilled water is distributed throughout campus via a series of cross-connected piping systems. The base system design is a variable primary flow system that minimizes pumping energy consumption on campus.

In the cooler/colder seasons when ambient conditions and lower system demand allows, “free cooling” is utilized via the heat exchanger located in the East Utility Plant. Chilled water cooling is maintained on a year-round basis. Year-round chilled water availability allows for the use of water side economizers in building systems which allows more flexibility and creativity in building system design than traditional air side economizers. All of the chillers are served from the campus normal power grid which allows the chilled water capacity to be powered from any of five normal power sources and can also be fed from the emergency power system if needed.

All of the cooling towers except the CUP west cooling tower are stainless steel/fiberglass/PVC construction and are in very good condition. The CUP west cooling tower (7,500 tons) is a traditional wood frame tower that is operating well but requires refurbishment for extended future operation.

The chilled water distribution system is a looped primary header design such that all loads can be fed from at least two different paths from either plant to ensure reliability of service. Typical building entrance configurations include variable speed building distribution pumps piped in series with the primary system loop that is automatically bypassed when adequate system differential pressure is available.

Three satellite heat recovery chillers operate in the system to remove heat from the chilled water return system and generate 140°F hot water for building heating needs. The heat recovery chillers are located in Durham Research Center 1, Durham Research Center 2, and two units in Clarkson Tower. These systems operate year-round.

2.1.2 Steam and Condensate System

Campus heating and sterilization needs are provided by the campus steam system. Food grade, 125 psig saturated steam is generated and distributed to the campus for use in heating, direct inject humidification, cooking, and sterilization uses. The steam is generated from four natural gas boilers (two 50,000 lbs./hr and two 70,000 lbs/hr) located in the Central Utility Plant and two medium voltage (13.8 kV) electric power boilers (two 45,000 lbs./hr nameplate-30,000lb/hr electrically limited capacity) located in the East Utility Plant. In the CUP, an alternate fuel supply of #6 fuel oil is provided to burn in the event the natural gas supply is interrupted or curtailed for any reason. Although nameplate capacity of the CUP boilers totals 240,000 lb/hr, the units are air limited resulting in a combined peak output for the four units of nominally 200,000 lb/hr.

All condensate is returned to the Central Utility Plant where it is recycled back to the steam generation boilers at both plants. The boiler plant routinely operates at a thermal efficiency exceeding 82% without the aid of feedwater economizers. The boiler burner control system is an electronic dual loop offset control with O2 trim to optimize burner efficiency. While the boilers are nominally 50-60 years old, all performance data and maintenance metrics indicate they have been very well maintained and remain in good operating condition. Boiler ancillary equipment: deareators, condensate transfer tank, condensate pumps, feedwater pumps, blowdown heat recovery, etc, have been replaced since 2003 and are also in very good condition.

The campus natural gas supply is subject to curtailment, as such the boilers utilize #6 fuel oil as a backup / alternate fuel. The campus has 360,000 gallons of #6 fuel oil storage capacity.

2.1.3 Hot Water System

In addition to the steam boilers, the CUP has six hot water boilers, each rated for 5,640,000 Btu/hour or 33,840,000 Btu/hour total capacity. Three of the units are capable of firing #2 fuel oil as a backup fuel. The boiler sets were installed in 2015 and 2018, respectively and have an anticipated typical life of 25 years. Hot water distribution is somewhat localized as indicated in the utility distribution maps. Wear and tear on the boilers has been relatively low and they remain in excellent operating condition. The hot water system also utilizes a flue gas economizer system to the greatest extent possible to maximize efficiency.

It is anticipated that expansion of the hot water system and additional load will be incorporated with future renovation and expansion. The following table lists the hot water sources serving the facility. As noted, the natural gas supply is subject to curtailment requiring the three dual fuel units. The plant has 130,000 gallons of #2 fuel oil capacity.

Boiler No.	Location	Type	Manufacturer	Capacity Btu/hour
HWBLR-1	CUP	Natural Gas	AERCO	5,640,000
HWBLR-2	CUP	Natural Gas	AERCO	5,640,000
HWBLR-3	CUP	Natural Gas	AERCO	5,640,000
HWBLR-4	CUP	NG/Fuel Oil	Fulton	5,640,000
HWBLR-5	CUP	NG/Fuel Oil	Fulton	5,640,000
HWBLR-6	CUP	NG/Fuel Oil	Fulton	5,640,000
CEHX-1	CUP	Waste Heat / HW	Tranter	11,900,000
HX-1	CUP	Steam	B&G	23,760,000

2.1.4 Normal Power System

Normal campus power is received from OPPD at 13.8kV via three circuits entering the Central Utility Plant and three circuits entering the East Utility Plant. There is a single cross-connect circuit directly connecting the Central Utility Plant to the East Utility Plant for reliability and switching capabilities. Five of the primary OPPD circuits serve distribution busses that in turn distribute energy to the campus. The sixth circuit solely serves one electric boiler. The campus is served by a dual radial circuit design such that two circuits from separate primary busses are routed to every building service transformer such that either circuit can serve the building transformer. The entire normal campus distribution system from the OPPD substation through the utility plant to the served building is routed in underground duct bank. The five primary campus busses are automatically controlled such that in the event of a loss of one circuit from OPPD, the buss will automatically transfer to another available buss/circuit to restore power. This design provides an extremely high level of reliability to the normal power grid. Through a unique operating arrangement with OPPD, UNMC is also able to perform controlled transfer of loads between circuits without interrupting or "blinking" the circuit via "make before break" control logic of the switchgear. This provides UNMC / Nebraska Medicine with virtually uninterrupted supply of normal power for maintenance on the UNMC or OPPD system.

UNMC utilizes solar panels in three rooftop locations totaling DC capacity of just over 500 kW with an anticipated annual production of 650,000 kWh/yr. The three locations capacity are summarized as follows:

Summary of UNMC Solar Panel Installations					
	Nom Capacity	**# of Panels**	**Panel Area ft^2**	**roof area ft^2**	**%roof area**
Michael Sorrell Center (MSC)	319.47 kW	926	19,874	41,870	47%
Truhlsen Eye Institute (TEI)	129.72 kW	376	8,070	14,590	55%
Mauer Center for Public Health (MCPH)	64.17 kW	185	3,970	11,630	34%

2.1.5 Emergency Power System

Emergency power for critical life safety and important mechanical equipment is served from a central emergency power system for support of both the clinical and research enterprises. This 4160V distribution system is powered from four diesel generators (7,300kW continuous load rating) located in the Central Utility Plant and five diesel generators (8675kW continuous load rating) located in the East Utility Plant for a total capacity of 15975kW. All of the engines are fully compliant with EPA rules for curtailment operations in non-emergency mode. In each plant there are two independent distribution busses served from the generators that will automatically synchronize with each other in the event of total loss of normal OPPD power. Additionally, both plants are cross-connected via a dedicated buss-tie circuit such that loads originating at either plant can be served from the opposite plant. Any new facilities will be required to be integrated into the existing systems including cross-tie to both existing plants maintaining or improving the current level of system redundancy for the existing and identified future campus growth.

Both the emergency and normal power systems are fully automated on their own control network. Unlike typical emergency power systems, the UNMC emergency system remains energized at operating voltage via feeds from the normal power grid such that emergency power is always available at the building. This design ensures rapid identification of faults rather than waiting until testing, or an actual emergency need, identifies the problem. Emergency power is thus immediately available, rather than waiting for generators to get started, for loss of any single normal circuit, other than the circuit serving the emergency systems. Due to the ability to cross connect and interconnect emergency busses, the entire emergency generation system reliability and capacity is available to serve the needs of any single building rather than relying on a single dedicated generator per building typical in most building designs.

The campus design standard requires routing the emergency distribution cable in conduit through the campus tunnels, independent of the normal power routing through underground manholes. In the event of catastrophic failure of normal power cabling, the emergency power will not be affected. Finally, the control system allows full load paralleling (to normal power) and testing capabilities such that the generators can be fully exercised and tested to verify they are ready to perform in an emergency. This capability allows the generation system to also be utilized by OPPD as a load curtailment feature during peak summer loading conditions. UNMC has a contract for 13.5 MW of generation with OPPD for curtailment purposes.

The campus back-feed capability allows emergency power to be delivered to buildings via the normal power grid in the extremely unlikely event of a complete loss of OPPD power and a failure of the emergency power distribution circuit serving a particular building. This integrated system design provides a very high degree of reliability, availability, and redundancy that significantly exceeds any typical commercial application of back-up emergency power.

2.1.6 Expansion within Existing Infrastructure

The existing CUP has space reserved for an additional chiller as well as area for additional cooling tower capacity on the roof, including structural support. This would allow additional chilled water capacity up to nominally 4,000 tons to be cost effectively incorporated into the existing CUP. The existing CUP does not have space within the current building envelope for additional steam generation, therefore it is anticipated that additional steam capacity would be either in the form of replacing one or more of the existing steam generators with larger capacity units or by addition of capacity at a remote facility. Likewise, the existing CUP footprint is not suited for a large combined heat and power capacity addition. Future demand requirements are identified further in Section 2.2.

2.1.7 Distribution Systems

The existing steam, chilled water, hot water, normal power, and emergency power systems are of varying vintage and generally maintained in excellent operating condition with only minimal outstanding maintenance tasks. The majority of steam and chilled water distribution piping is installed within the campus utility tunnel system although there are portions of each system that are direct buried or trenched. A segmented condition assessment of each utility system is provided in the Utility Plant Infrastructure Assessment and Evaluation included with the Supplemental Information. The database appended to that evaluation provides available vintage and condition assessment for each system. Campus utility maps are also included in the supplemental information. Capacity of the distribution systems is sufficient for current campus demands. Maintaining system redundancy with the incorporation of anticipated future campus growth will require network flow analysis so support appropriate expansion of the existing systems.

2.2 Campus Utility Demand

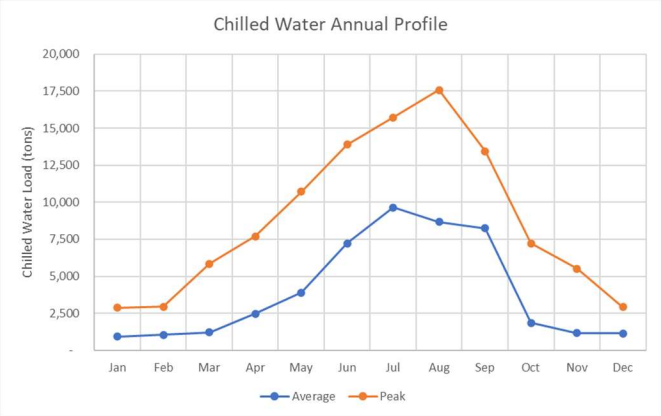
Normal system design practice for all utility systems on the UNMC / Nebraska Medicine campus is to provide N+1 redundancy, meeting peak system demand with the largest generating unit out of service or in reserve. This section provides a summary of the current utility system peaks as well as 20-year projections of system demand which will be required to maintain the same level of system redundancy. The existing campus space

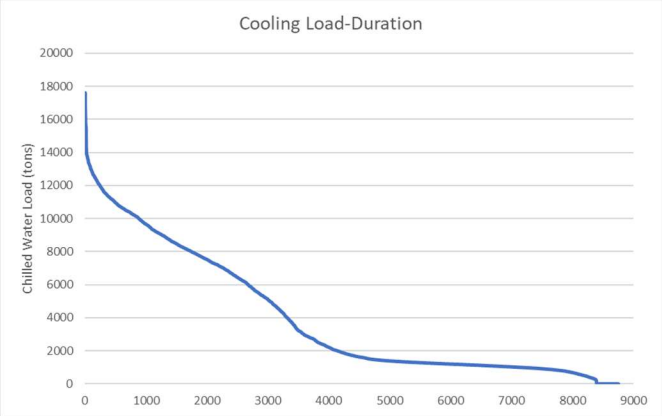
served by utility distribution is nominally 4.7 million sqft (of the total 6.5 million sqft). Specific building lists noting sqft served by each utility in each building can be made available to short-listed respondents.

2.2.1 Current System Demand and Peaks

2.2.1.1 Chilled Water

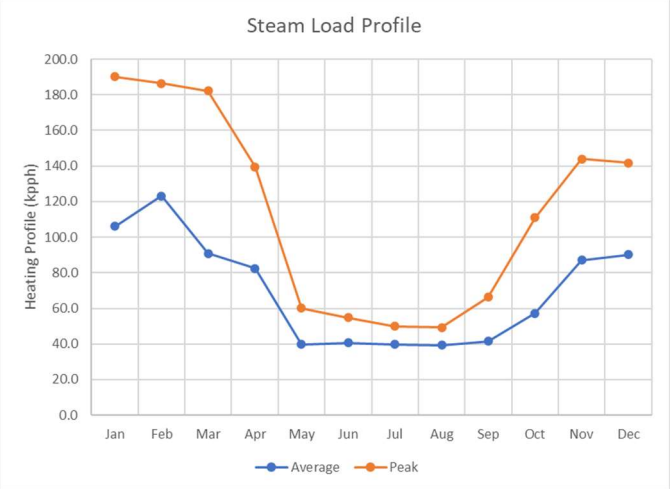
The peak campus chilled water demand is nominally 18,000 tons. As illustrated in the below 2019 Annual Profile and Load Duration curves from the Utility Plant Infrastructure Assessment and Evaluation, actual cooling demand rarely exceeds 15,000 tons (full size graphs can be found in the Supplemental Information). The currently installed system capacity is 20,700 tons of chilling capacity. The N+1 reliability capacity is 17,000 tons meaning there are brief periods where the campus load exceeds N+1 capacity. As noted, the existing CUP has space reserved both for an additional chiller and expanded cooling tower capacity.

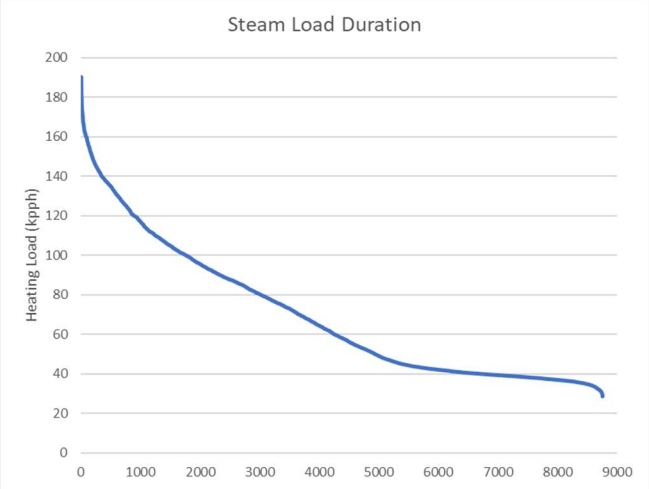




2.2.1.2 Steam

In February of 2021 campus steam demand achieved a new historical peak demand of nominally 190,000 lb/hr. As with chilled water, the steam peak demand is well above typical flows which rarely exceed 160,000 lb/hr, illustrated in the below 2018-2019 load duration curve.





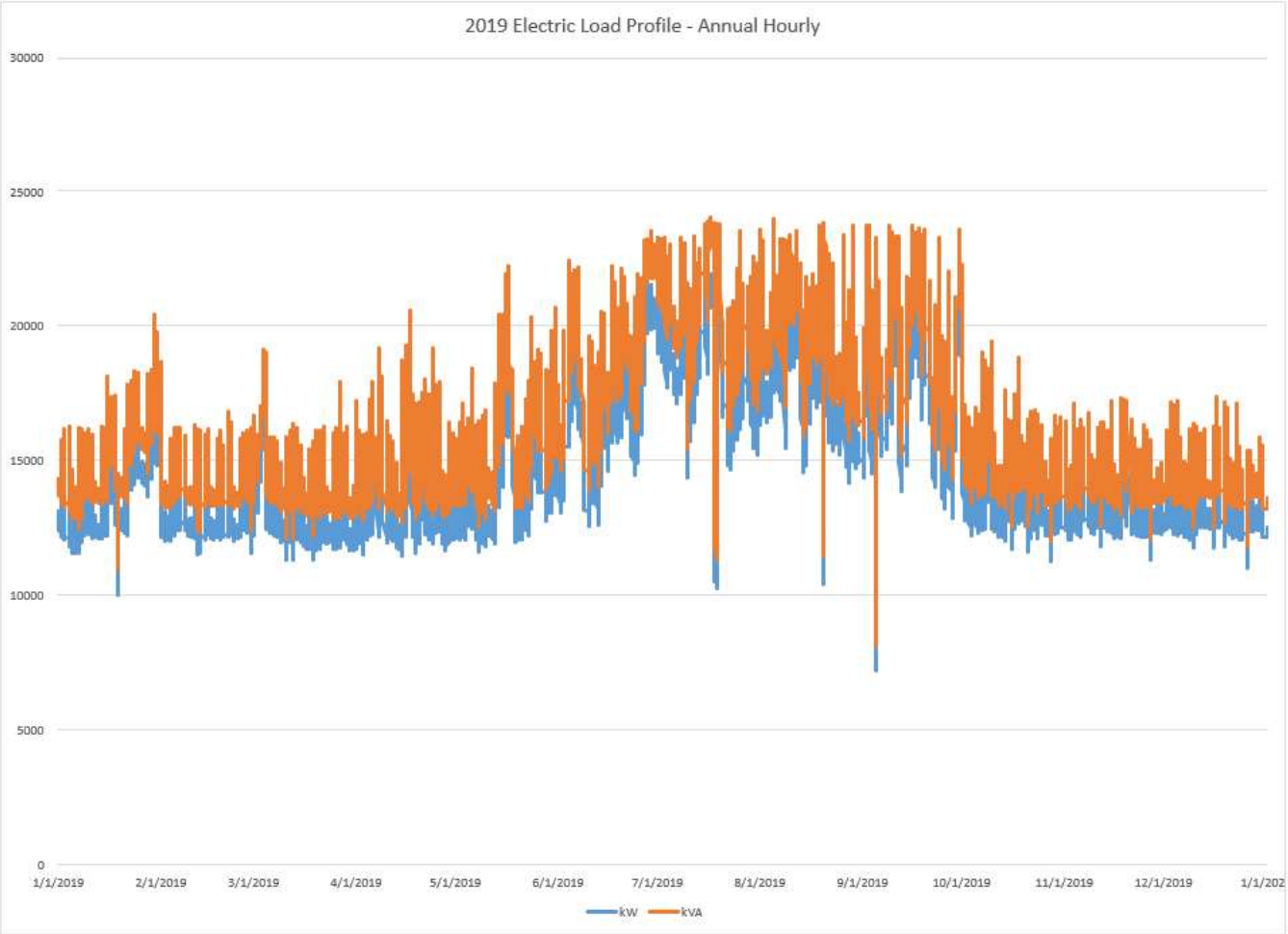
Although the nameplate capacity of the four CUP steam boilers is 240,000 lb/hr, given airflow limitations and incorporation of economizers, the maximum achievable (installed) capacity of the CUP units is nominally 200,000 lb/hr. The two electrode boilers in the EUP provide an additional 60,000 lb/hr of capacity (2 x 45,000 lb/hr nameplate, electrical supply is limits capacity to 60,000 lb/hr). Including maximum output from the electrode boilers, the existing firm capacity currently meets the 190,000 lb/hr peak with N+1 redundancy, however given the limitations on both the CUP and EUP units, there is little reserve margin for future demand growth while maintaining full redundancy in all conditions.

2.2.1.3 Hot Water

The hot water system currently serves a limited portion of campus along the Emile St corridor. It is anticipated that the system demand will grow substantially in the coming years with building renovations and new construction which will be incorporated into the more efficient hot water heating system wherever possible. The hot water system set a historical peak demand in February of 2021 of 35 MMBTU/hr. As shown in Section 2.1.3, the system has sufficient installed capacity to reliably serve current demand.

2.2.1.4 Electric

Campus electric demand from the 2019 calendar year is shown in the graph below. Campus electrical demand is very steady, with nominal peaks in the summer of roughly 22.5 MW and off-peak minimum load throughout the year of roughly 12-15 MW.



2.2.2 Projected System Demand and Peaks

Numerous campus projects are under development which impact future demand projections. The area served by the campus utility systems is anticipated to grow from the current baseline of 4.7 million sqft to a minimum of 5.5 million square feet (18% growth) or as much as 7.0 million square feet (50% growth). For purposes of Submittal of Qualifications, respondents are asked to assume the below projected utility peaks, which will require additional capacity beyond what can be easily incorporated into the existing CUP and EUP facilities.

UNMC Peak Utility Demand	Steam	Hot Water	Chilled Water	Electric	Emrgncy Power
Current Campus System Peaks	190,000	35	18,000	22,500	9,600
20-year Campus Building Projection (existing bldgs)	184,725	52	17,473	21,836	11,024
20-year Campus Building Projection (new bldgs)	120,822	34	11,428	14,282	7,210
Full Campus 20-year Peak Utility Projections	**305,547**	**87**	**28,901**	**36,118**	**18,234**

UNMC's expectation is that the final solution will incorporate and integrate both on site and grid electric power and that close coordination with the local public power district is required.

3. DEFINITION OF SCOPE

As summarized in the preceding sections, the Central Utility Plant and East Utility Plant provide redundant, reliable, and highly efficient supply of chilled water, steam, hot water, and emergency power for current campus demand. The existing distribution systems are well maintained and provide utilities throughout campus with extremely high reliability. Additional utility capacity will be required to meet future campus utility demand. The steady baseload of campus power consumption and year-round heat sink also provides opportunity to incorporate combined heat and power generation on campus.

Proposed equipment configurations and ownership structures are to be provided by selected respondents in the RFP Phase, however it is envisioned that an energy services agreement will incorporate design, construction, and operation of the new West Utility Plant, as well as assuming operation and maintenance of the existing generation and distribution assets in a Design, Build, Own, Operate, and Maintain (DBOOM) structure. Preliminary evaluation has identified a suitable potential site for a new West Utility Plant with sufficient space to provide equipment for projected 20-year campus utility peaks. The West Utility Plant could also increase efficiency and resiliency to the campus by incorporating combined heat and power.

3.1 Anticipated Project Scope and Transaction Structure

This Section presents an overview of the potential structure of a long-term Public-Private-Partnership to be entered into between UNMC and a selected Energy Service Partner.

3.1.1 Project Agreement

UNMC is seeking an Energy Services Partner (Partner) to work cooperatively with UNMC to achieve the optimal energy utility supply conditions to support the campus into the future. This Partner will be expected to reach a mutually beneficial agreement to execute the selected business plan for new capacity to meet future load demand with greater or equal system reliability. The energy partner will recover capital investment via utility rates over the duration of the agreement of all existing/new campus assets transferring back to UNMC at the end of the agreement period. The final agreement is expected to incorporate the following key facets:

- Create a strategic plan to incorporate new technologies such as, but not limited to, chilled water storage, photovoltaic and CHP into future growth applications on and off campus.
- Define requirements for necessary ground leases and easements to serve not only the campus, but also any potential new customers that could be added to the system.
- Define requirements for energy efficiencies for both plant operations.
- Create a long-term business strategy to include a market and economic analysis and strategic plan to grow the utility services (reference the Submittal Requirements List in the Supplemental Information for additional details).

The selected Partner will be expected to:

- Work with UNMC / Nebraska Medicine to develop a clear, transparent structure – understandable to voters and system subscribers – to explain the allocation of public and private investments, risks and benefits of the system.
- Provide district energy system design services for the existing central plant assets, new capacity and storage infrastructure, distribution systems, and customer interface packages.
- Understand individual building loads and aggregate community wide loads, to make informed decisions on sizing of central plant equipment and distribution equipment (pipes and wires).
- Create a financial plan to mitigate fuel price volatility in order to stabilize rates in the long term to minimize risks to both parties.
- Incorporate renewable/sustainable electric generation either locally or remotely to aid UNMC/Nebraska Medicine to meet 2030 sustainability goals as stated at https://livegreennebraska.com/updated-2030-sustainability-goals/ and included in the Supplemental Information.

If third party ownership of physical plant assets is selected, UNMC will require a ground lease and/or easements for access to buildings, equipment, and distribution. Work with UNMC to determine ownership transitions for central plant, real estate, distribution systems, metering, and building interfaces. During the RFP Phase, potential partners will present options that UNMC will model in comparison to current "base case" utility rates to determine the optimal value alternative.

Given campus load and resiliency requirements it is anticipated that Thermal Energy Storage (TES) will be a key component of serving future campus chilled water demand. An acceptable site for substantial TES capacity has been identified to the north of the East Utility Plant for ease of operation and interconnection with the existing systems. Additional details will be provided in the RFP Phase, however Respondents should identify past project experience with design, implementation, and operation of TES systems within the technical experience of the Qualifications package. Additional site water storage will also be required to meet the campus resiliency throughout the projected campus growth.

The final system solution will be "best value" in quality of design, end costs, and operating costs, as defined by a favorable operational agreement to the University System. The term of the Project Agreement is anticipated to be no greater than 50 years.

3.1.1.1 Design and Construction

The Partner will design and construct new generating capacity, currently envisioned as a new West Utility Plant, a.k.a. the "Project" in accordance with the Technical Requirements set forth in the RFP and Project Agreement and in full compliance with applicable Federal, state and local laws, regulations and policies and will conform to environmental regulations from all perspectives. The major elements to be designed and constructed as part of the Project include the following:

- Provide additional generation for campus thermal comfort including chilled water, steam, and hot water capacity
- Expand the existing utility distribution system to incorporate the new generation and maintain or improve the current level of distribution system margin, reliability, and redundancy
- Incorporate combined heat and power generation to improve campus thermal efficiency and offset electric import (specific capacity/offset of purchased power to be defined by Partner)
- Incorporate energy conservation measures within the new plant and distribution systems to maintain or improve the current efficiency standards
- Incorporate system resiliency measures including thermal energy storage, fuel diversity, energy supply, and water storage
- Maintain minimum level of N+1 redundancy for all key systems/components to preclude any single point of failure that would impact delivery of essential energy services to Campus facilities

- Maintain and enhance security and operational flexibility of essential energy service delivery with robust design approaches that minimize impacts from events such as extreme weather or other potentially harmful incidents
- Both normal and alternate (emergency) source generation shall be interconnected between the new and both existing central plants and shall accommodate additional Utility sources of which may not be synchronized with the existing
- On-site power generation shall be integrated with the new and existing normal power campus distribution system, and the new and existing alternate (emergency) generation campus distribution providing the campus a more resilient, available, and seamless operational system. The integration shall include active load management between the utility smart grid system, on-site normal generation, and on-site alternate (emergency) source generation through all failure scenarios due to natural events, equipment failures, equipment upgrades and maintenance outage modes
- Submit qualifications, approach, and experience regarding test and development environments for the benefit of training new staff, advanced incident response exercises (including cyber-attacks), and software and firmware upgrades off-line testing

3.1.1.2 Financing

As currently envisioned, the Partner will provide a structure that will provide flexibility financially benefiting the University directly through stable and affordable rates with options that consider everything from complete financing whether through debt (taxable and/or tax-exempt), equity or any combination thereof from both entities. All proposed financing structures must be without recourse to UNMC. UNMC retains the right to offer milestone payments and/or provide funding for certain elements of the Project including potential federal funds. Further details regarding financing scope shall be set forth and discussed in the RFP.

3.1.1.3 Maintenance

It is expected, not mandated, that the Partner shall be responsible for the routine and life-cycle maintenance of both the Project elements and for the existing utility plants and distribution systems for the duration of the Agreement and will perform such maintenance in accordance with the technical requirements and standards set forth in the Agreement, as well as with applicable laws, regulations, and policies. All maintenance practices shall meet or exceed current practice such that the high degree of utility system reliability is maintained or improved. Key Performance Indicators (KPIs) for the existing systems will be defined in the RFP for development of proposals as discussed in the next Section. It is anticipated that the Partner's point of transition will mirror that of the existing break between campus utilities and building infrastructure, which is generally described as the first isolation valve outside of the building wall.

3.1.2 Compensation Structure

As currently envisioned, upon completion of the Project, the Partner will be compensated over the Term of the Agreement on the basis of a performance-based utility purchase arrangement. Respondents should provide a detailed description of proposed funding and ownership structure for the Agreement as defined further in Section 5.

The final Partnership Agreement will incorporate Key Performance Indicators ensuring that the existing high utility availability and reliability standard is maintained throughout the duration of the Agreement and providing financial incentive to improve operations. Respondent should provide proposed KPIs within the Project Approach portion of the Qualifications, expected to include as a minimum:

- Targets for unplanned outage hours and number of events individually for normal and emergency power, steam, hot water, and chilled water service,
- Response time of maintenance crews,
- Sustainability and Environmental Compliance, and

- Safety

3.1.3 Modifications to Scope and Transaction Structure

Information provided in this document regarding the anticipated scope and transaction structure reflects UNMC's envisioned scope and structure as of the issuance of this RFQ. UNMC reserves the right to modify the proposed transaction structure and/or Project scope in its sole discretion. UNMC will communicate and modifications made during the process in accordance with Section 5.

4. PARTNER SELECTION PROCESS

UNMC intends to follow a two-phased procurement process to select a Partner to undertake the Project and enter into a long-term Agreement with. All Respondents intending to participate in the RFQ process must participate in the Mandatory Virtual Pre-Bid Meeting using the invite issued via eBid.

4.1 Summary of Evaluation and Short-List Process

4.1.1 RFQ Phase

This RFQ solicitation represents the commencement of the first phase of selection. UNMC is soliciting Statements of Qualification to perform the work outlined, which UNMC will evaluate to identify the Respondents most qualified to provide a mutually beneficial Partnership. UNMC will evaluate the RFQ responses in accordance with the criteria set forth later in this Section and will shortlist selected Respondents to be invited to participate in the second phase RFP process. UNMC intends to short-list three to four Respondents for the RFP Phase; however, UNMC may increase or decrease the selected number of short-listed invitees to the RFP in its sole discretion.

4.1.2 RFP Phase

The second phase of the Partner Selection Process will commence with issue of a Request for Proposals to the selected short-listed Respondents. UNMC will evaluate proposals submitted to the RFP in accordance with the criteria set forth in the RFP and will select the successful bidder to be the Partner.

4.2 Evaluation and Qualifications of Respondents

Statements of Qualifications will be reviewed and evaluated by UNMC's Selection Committee in accordance with the requirements and criteria outlined in this Section. Respondents will be evaluated based on their ability to address the priorities listed in Section 1.3 per the evaluation criteria and weighting listed here. Each submittal will be reviewed to determine if it is responsive to the submission requirements listed in Section 5. Failure to comply with any submission requirements may result in rejection of the Respondent's submittal. The selection committee may waive any such failure to meet a requirement of this RFQ in its sole discretion and may request clarification or additional information to remedy a failure to adhere to RFQ requirements.

During the evaluation process, written questions or requests for clarifications may be submitted via eBid to one or more Respondents regarding each Submittal or related matters. Failure to respond in a timely manner to any such questions or requests may be grounds for elimination of the Respondent from further consideration. UNMC reserves the right to invite selected Respondents to participate in interviews to learn more about specific qualifications and experience. UNMC also reserves the right to contact references included in any Submittal and may request a site visit to specific facilities and/or clients associated with significant reference projects noted in Submittals.

4.2.1 Evaluation Criteria and Weighting

Given the unique financial, technical, and operational requirements of the Partner to successfully execute the anticipated Agreement, all Respondents should have direct proven experience with the successful execution of projects of a similar nature. All Respondents shall be evaluated and scored based on Submittals in accordance with the following parameters:

Evaluation Categories	Weighting
Financial Qualifications and Capabilities	**25%**
Equity Members' financing experience	
Financial Capability	
Financial Qualifications Criteria	
Technical Qualifications and Capabilities	**50%**
Ownership Experience	
Design Oversight Experience	
Implementation Experience	
Ongoing O&M Assets (Owned or otherwise)	
Renewable Assets	
Local Presence	
Project Approach	**25%**
Proposed Project Team	
Commodity Risk Management	
Financial Plan	
Project Execution Plan	
Stakeholder Engagement	
Proposed Financial and Operations Structure	
Cost of Capital	
Depreciation	

4.2.1.1 Financial Qualifications and Capabilities (25% of evaluated score)

An evaluation of the financial capabilities of each Respondent will address whether the Submittal adequately responds to the financial capability requirements of the Project with respect to the ability of the Respondent to raise financing without any contingencies and continue to maintain and upgrade all Owned/Transitioned equipment over the life of the project term. UNMC will evaluate Respondent's qualifications and capability in accordance with the following:

- Equity Members' financing experience: The extent and depth of Equity Members' experience in investing equity and/or structuring financing sources to obtain firm financing commitments for similar projects.
- Financial Capability: The Respondent's overall financial strength and capability to carry out the Project and potential allocated Agreement responsibilities, as evidenced by financial statements outlined in the Submittal Requirements. Equity Members capacity and ability to invest equity capital in a manner consistent with the anticipated contractual and financial structure of the Project.
- Financial Qualifications Criteria: Projects referenced that demonstrate Equity Members' financing experience will merit higher scores by satisfying the following criteria:
    - Equity Member held controlling ownership interest in the project company;
    - The project reached financial close;
    - The financed project was an alternative finance and delivery structure; and/or
    - The compensation structure was based on utility purchase agreement, or similar

- The overall financial capability of the Respondent will be assessed based on:
    - The strength of the submitted financial statements, as outlined in Section 5;
    - Any credit ratings of the debt of the Respondent's Equity Members;
    - Details regarding any bankruptcy/insolvency proceedings provided;
    - Other relevant financial information contained in the Submittal.

4.2.1.2 Technical Experience (50% of evaluated score)

The evaluation of technical qualifications and capability will address whether and to what extent the Respondent adequately responds to the technical capability requirements of the Project with respect to the following areas. Quantity, capacity, and recency of all experience will be considered:

- Location and History of Owned Assets: Relevant experience where the Respondent has Owned assets similar to the existing facilities or the Project.
- Design and Implementation Experience: Relevant experience where the Respondent has designed and/or implemented projects similar to the existing facilities or the Project.
- Operation and Maintenance (O&M) Experience: The extent and depth of the experience of the Respondent and its Major Participants with the O&M of similar district energy plants and distribution systems as identified
- Renewable and Sustainability Experience: The Respondents experience with renewable generation and ability to incorporate that experience into the campus or generate credits from a remote site
- Local Resources and Experience: The Respondents availability of resources or 'bench strength' in the Project area as well as demonstrated familiarity with the local site and conditions.

4.2.1.3 Project Approach (25% of evaluated score)

The extent to which the Respondent demonstrates a clear understanding of UNMC's goals and objectives and identifies opportunities and risks involved in delivering the Project. Respondent should address their approach to innovation, mitigating cost impact, collaboration with UNMC, as well as ensuring the long-term economic and operational viability of the proposed solution. The following criteria will be considered in review of each Respondent's Project Approach:

- Team including major subconsultants, subcontractors, or associates
    - Team Structure
    - Team familiarity / prior joint work experience
    - Key Personnel (Pursuit Manager, Commercial Manager)
- Approach to Commodity Risk Management
- Preferred rate structure(s) including explanation of typical approaches to capital and O&M cost recovery and rate determination
- Approach to project financing including estimated Cost of Capital
- Structure of guarantees for efficiency, reliability, and cost
- Project Execution Plan
    - Level of reliance on sub-contractors in each stage of the process
    - Utilization of existing staff / on-boarding process
- Stakeholder Engagement identifying the methodology by which coordination with UNMC will occur throughout the duration of the Agreement

4.3 Notifications

UNMC shall notify all Respondents of the invitees short-listed to the RFP process via eBid (see Section 5.2.2). UNMC may provide Respondents not short-listed with an opportunity to schedule a debrief meeting, should that be requested.

4.4 Discretion to Disqualify Respondent

UNMC may cease evaluating a Submittal and remove a Respondent from further consideration at any time and in its discretion if any of the following circumstances apply:

- The Submittal does not contain each of the submittal requirements identified in Section 5;
- The Respondent or any other entity within Partner's Team has been or is currently disqualified, removed debarred or suspended from performing or bidding on work for UNMC; or
- The Respondent does not provide evidence that it can comply with the bonding requirements by providing a letter as noted in the Submittal Requirements.

5. RFQ RESPONSE SUBMITTAL REQUIREMENTS

5.1 General

UNMC expects Submittals provided in response to this RFQ to at a minimum provide the following:

- Outline the Respondent's Team structure and qualifications, experience and understanding required for the successful design, construction, financing, operating, and maintenance of the Project;
- Concentrate on technical and financial standards and the Respondent's ability to deliver and maintain the Project over the term of the Agreement; and
- Provide sufficient information about the requested items to allow UNMC to evaluate the Respondents and determine which are most qualified to submit Proposal based on the criteria set forth in this RFQ

UNMC is not responsible for errors, omissions, inaccuracies, or incomplete statements in any Submittals received.

5.2 Instruction to Respondents

5.2.1 Form and Content of the Response

Respondents must include all information stipulated in this RFQ. Submittal requirements are specified in the included Submittal Requirements Form provided in the Supplemental Information. All material provided by the Respondent must be submitted through the eBid system.

Responses should follow the format outlined herein. Submittals should be prepared simply and economically, providing a straightforward and concise description of the Respondent's relevant experience and qualifications. In order to ensure a uniform review process and to obtain the maximum degree of comparability, the Submittals should be organized as described in the Submittal Requirements Form and summarized as follows:

	General Forms
Form A	Submittal Letter
Form B	Certifications
Form C	Legal Disclosures
Form D	Request for Confidentiality / Proprietary Information
Volume 1	**Financial Qualifications and Capabilities**
Section 1.1	Financial Form A - Equity Member Experience Form
Section 1.2	Attachments to Equity Member Experience Form
Section 1.3	Financial Form B – Equity Member Financial Information

Section 1.4	Financial Form C – Financial Officer Certificate
Section 1.5	Financial Statements
Section 1.6	Equity Funding Letter
Section 1.7	Surety Letter and/or Letter of Credit
Volume 2	**Technical Qualifications and Capabilities**
Section 2.1	Technical Experience – Design
Section 2.2	Technical Narrative Attachment for Design Experience
Section 2.3	Technical Experience – Construction
Section 2.4	Technical Narrative Attachment for Construction Experience
Section 2.5	Technical Experience – Operation and Maintenance
Section 2.6	Technical Narrative Attachment for Operation and Maintenance Experience
Section 2.7	Technical Capabilities Narrative
Section 2.8	Safety Narrative – Form H
Volume 3	**Project Approach**
Section 3.1	Project Execution Plan
Section 3.2	Project Understanding
Section 3.3	Financial Plan
Section 3.4	Project Team and Resumes

Each Volume should be sub-divided and bookmarked to correspond to the parts and section numbering set out in the relevant submittal requirements per the Submittal Requirements Form.

A comprehensive response to each section is highly recommended. If a Respondent does not include information or materials in its Submittal that are described in the Submittal Requirements Form, the Respondent shall include in the relevant section a statement explaining the omission and the reasons that the Respondent believes that the requirement does not apply.

Respondents are prohibited from submitting information that is not required by this RFQ, with the exception of additional Project relevant experience where applicable.

Respondents should develop Submittals to address the project-specific submittal requirements and should not submit standard corporate brochures, awards, licenses and marketing materials.

5.2.2 Delivery

Submittals in response to this RFQ must be submitted through the eBid system at: https://unlebid.ionwave.net

- No physical, email, telephone, or voice bids will be accepted
- All questions regarding the RFQ response must be submitted through eBid
- All submittals are subject to attached conditions
- To be valid, submittals must be signed and attached in eBid
- Failure to enter delivery date may cause submittal to be rejected
- Exceptions and alternates must be stated and explained
- RFQ Forms provided in the Supplemental Information must be completed, signed, and attached to the eBid submission

- If erasures and alternations are made to this document, the Respondent must initial and date and attach the altered document to their eBid submission

Submittals to eBid are due no later than *2 pm CT, October 15, 2021*.

5.3 Confidentiality

All information submitted by Respondents that is considered confidential or a proprietary trade secret and not releasable to third parties outside of UNMC, its employees, agents, consultants, and representatives must be clearly marked as such. All confidential and proprietary information, which is clearly identified as such, and disclosed to UNMC shall be held in confidence and used only in the RFQ evaluation process to the extent permitted by law. Respondents shall be solely responsible for protecting their own proprietary information and will be responsible for all costs associated with protecting such information from disclosure. UNMC has no duty to defend proprietary or confidentiality information from any public records request. Upon receipt of a public records request pursuant to which UNMC determines it must disclose information marked as proprietary, UNMC shall first deliver a notice to the affected Respondent of its intent to disclose such information. The Respondent shall have a maximum of five business days to respond to pursue legal remedies to stop UNMC's release of the requested information.

UNMC may disclose submissions received in response to this RFQ to non-governmental evaluators. Each non-governmental evaluator will sign or have previously provided Nondisclosure Agreements with UNMC.

5.4 No Obligation / Liability

UNMC reserves the right to modify or terminate this RFQ at any stage if it determines such action to be in its best interest. The receipt of Submittals, proposals, or other documents at any stage of either the RFQ or RFP process will in no way obligate UNMC to proceed with the procurement or enter into any contract of any kind with any party.

5.5 RFQ Clarifications

Protective Respondents requiring additional information or desiring clarifications with regard to this RFQ must present a written request for clarification to UNMC. All communications regarding this RFQ should be submitted via eBid per Section 5.2.2. In all correspondence, please reference the RFQ No. 9734 in the subject line. Only written requests for clarification will be considered. All clarification requests must be submitted by the deadline indicated in timeline provided in Section 1.4, although Respondents are encouraged to submit questions and comments sooner if desired.

UNMC will attempt to address all written requests with written responses provided via addenda to this RFQ. Each interpretation or correction, as well as any additional RFQ provision or amendment that UNMC may decide to include will be posted on the eBid site at: https://unlebid.ionwave.net per Section 5.2.2. Any clarification, addendum or amendment issued by UNMC shall be incorporated by reference into this RFQ and must be taken into account by each Respondent in preparation of Submittals. Only written notices issued by UNMC shall constitute binding revisions to this RFQ.

UNMC will post all addenda and amendments to this RFQ per the timeline presented in Section 5.2.2.

6. SUPPLEMENTAL INFORMATION

General information regarding the Project and other relevant operations information has been compiled for information purposes only to guide Respondents on relevant information to include in their qualifications. The reference material provided is issued for information purposes only and is being provided solely for use by prospective Respondents to assist in analyzing the potential opportunity and Project described.

Neither UNMC, nor any of its respective agents, representatives, advisors, or consultants make or will be deemed to have made any representation of warranty, expressed or implied, as to the accuracy, reliability or completeness of the information contained herein or any information otherwise provided, other than such representations or warranties expressly stated in duly promulgated procurement documents or in a definitive contractual agreement executed between UNMC and a selected Partner. In providing materials in connection with the proposed transaction, UNMC does not undertake any obligation to correct, amend or update such materials.

UNMC, as well as any of its agents, representatives, advisors or consultants shall not be held liable or responsible for any cost or expense incurred in association with the Supplemental Information provided, or in any investigation, negotiation or transaction associated with it.

Shortlisted Respondents shall be afforded the opportunity to conduct further due diligence throughout meetings with UNMC and its representatives, presentations about the Project, inspections by Respondent representatives, and/or review and discussion of the RFP and Project Agreement.

6.1 Submittal Requirements List

6.2 RFQ Submittal Response Forms

6.3 Utility Plant Infrastructure Assessment and Evaluation

6.3.1 Campus Utility Distribution Database

6.3.2 GIS Utility Distribution Diagrams

6.4 2030 UNMC / Nebraska Medicine Sustainability Goals