CITY OF DULUTH

REQUEST FOR PROPOSALS FOR

ENGINEERING SERVICES FOR DES HW DISTRIBUTION SYSTEM BALANCE OF PLANT

RFP NUMBER 19-24AA

ISSUED 10/28/19

PROPOSALS DUE 11/8/19 AT 2:00 PM

SUBMIT TO

CITY OF DULUTH
ATTN: PURCHASING DIVISION
CITY HALL, ROOM 120
411 WEST 1ST STREET
DULUTH, MN 55802

GENERAL INFORMATION

I-1. Project Overview. Duluth Energy Systems (DES) in Duluth, MN, is undergoing a conversion from a steam-based district energy distribution network to a hot water-based district energy network. The current once-through steam distribution network under Superior Street in downtown will be replaced with hot water supply and return piping. The future distribution system will provide hot water to DES customers in place of the steam service they receive today. A component of this overall system is the "Balance Of Plant" (BOP), which is the focus of this RFP. As part of a separate, prior phase, DES will provide a packaged Steam Converter System (SCS) which will heat the distribution water, control the steam and handle all condensate related to the process. This SCS equipment assembly, its structural support, internal piping, electrical interconnections and control panel is expected to be mostly installed prior to the beginning of the BOP construction work (i.e. the construction based on this RFP's design). DES invites you to submit a proposal to provide an engineered BOP package which, when connected to the SCS, results in the completed component of the Hot Water Distribution System local to the Plant. With the exception of the afore mentioned SCS the design scope defined in this RFP will cover the entirety of the Hot Water Distribution System that occurs within the DES property line; mechanical, structural, electrical and limited controls. Additional detail is provided in this RFP.

I-2. Rejection of Proposals. The City reserves the right, in its sole and complete discretion, to reject any and all proposals or cancel the request for proposals, at any time prior to the time a contract is fully executed, when it is in its best interests. The City is not liable for any costs the Bidder incurs in preparation and submission of its proposal, in participating in the RFP process or in anticipation of award of the contract.

I-3. Pre-proposal Conference. There will not be a preproposal conference for tis RFP.

I-4. Questions & Answers. Any questions regarding this RFP must be submitted by e-mail to the Purchasing Office at purchasing@duluthmn.gov.

I-5. Addenda to the RFP. If the City deems it necessary to revise any part of this RFP before the proposal response date, the City will post an addendum to its website http://www.duluthmn.gov/purchasing/bids-request-for-proposals/ . Although an e-mail notification will be sent, it is the Bidder's responsibility to periodically check the website for any new information

I-6. Proposals. To be considered, hard copies of proposals must arrive at the City on or before 2:00 pm on Friday, November 8, 2019. The City will not accept proposals via email or facsimile transmission. The City reserves the right to reject or to deduct evaluation points for late proposals.

Proposals must be signed by an authorized official. If the official signs the Proposal Cover Sheet, this requirement will be met. Proposals must remain valid for 60 days or until a contract is fully executed.

Please submit one (1) paper copy of the Technical Submittal and one (1) paper copy of the Cost Submittal. The Cost Submittal should be in a separate sealed envelope. In addition, Bidders shall submit one copy of the entire proposal (Technical and Cost submittals, along with all requested documents) on flash drive in Microsoft Office-compatible or pdf format.

All materials submitted in response to this RFP will become property of the City and will become public record after the evaluation process is completed and an award decision made.

I-7. Small Diverse Business Information. The City encourages participation by minority, women, and veteran-owned businesses as prime contractors, and encourages all prime contractors to make a significant commitment to use minority, women, veteran-owned and other disadvantaged business entities as subcontractors and suppliers**.** A list of certified Disadvantaged Business Enterprises is maintained by the Minnesota Unified Certification Program at http://mnucp.metc.state.mn.us/ .

I-8. Term of Contract. The term of the contract will begin once the contract is fully executed and is anticipated to end by September 29, 2020. The selected Bidder shall not start the performance of any work nor shall the City be liable to pay the selected Bidder for any service or work performed or expenses incurred before the contract is executed.

I-9. Mandatory Disclosures. By submitting a proposal, each Bidder understands, represents, and acknowledges that:

A. Their proposal has been developed by the Bidder independently and has been submitted without collusion with and without agreement, understanding, or planned common course of action with any other vendor or suppliers of materials, supplies, equipment, or services described in the Request for Proposals, designed to limit independent bidding or competition, and that the contents of the proposal have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder.

B. There is no conflict of interest. A conflict of interest exists if a Bidder has any interest that would actually conflict, or has the appearance of conflicting, in any manner or degree with the performance of work on the project. If there are potential conflicts, identify the municipalities, developers, and other public or private entities with whom your company is currently, or have been, employed and which may be affected.

C. It is not currently under suspension or debarment by the State of Minnesota, any other state or the federal government.

D. The company is either organized under Minnesota law or has a Certificate of Authority from the Minnesota Secretary of State to do business in Minnesota, in accordance with the requirements in M.S. 303.03.

I-10. Notification of Selection. Bidders whose proposals are not selected will be notified in writing.

PROPOSAL COVER SHEET
CITY OF DULUTH
RFP# 19-24AA

Bidder Information:	
Bidder Name	
Mailing Address	
Contact Person	
Contact Person's Phone Number	
Contact Person's E-Mail Address	
Federal ID Number	
Authorized Signature	
Title	

DULUTH ENERGY SYSTEMS – REQUEST FOR HOT WATER DISTRIBUTION SYSTEM PROPOSAL "BALANCE OF PLANT"

October 25, 2019

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Request for Proposal

1. Project Overview

Duluth Energy Systems (DES) in Duluth, MN also referred to as the "Plant" is undergoing a conversion from a steam-based district energy distribution network to a hot water-based district energy network. The current once-through steam distribution network under Superior Street in downtown is being replaced with supply and return hot water piping in multi-year phases. A component of this overall system is the "Balance Of Plant" (BOP), which is the focus of this RFP. As part of a separate, prior phase, DES will provide a packaged Steam Converter System (SCS) which will heat the distribution water, control the steam and handle all condensate related to the process. This SCS equipment assembly, its structural support, internal piping, electrical interconnections and control panel is expected to be mostly installed prior to the beginning of the BOP construction work (i.e. the construction based on this RFP's design). DES invites you to submit a proposal to provide an engineered BOP package which, when connected to the SCS, results in the completed component of the Hot Water Distribution System local to the Plant. With the exception of the afore mentioned SCS the design scope defined in this RFP will cover the entirety of the Hot Water Distribution System that occurs within the DES property line; mechanical, structural, electrical and limited controls.

1.1. Preliminary Schedule

It is anticipated that the selected proposal will be accepted by **Friday, November 8th, 2019**. A Notice of Contingent Award is expected to be issued by **Friday, November 15th, 2019** – with formal approval following the City Council of Duluth vote; **Tuesday, November 26th, 2019**. The selected firm shall consider the formal signed and accepted Notice of Award as permission to begin work preparing the design package described in this RFP, however DES requests that, upon notification of contingent award, the selected firm does its best to schedule and allocate resources to be prepared to begin work as soon as possible after contract signature. The company awarded the contract shall provide early "50%" General Arrangement drawings with all critical design information needed for:

- Pump locations, piping routes, devices, supports and escutcheons, major wall penetrations
- Water header interfaces with the SCS skid (SCS by Others)
- Tap location into the 20" 150# steam main located outside at the northwest corner of the Plant (steam main is existing)
- Primary steam interface to the SCS steam header (steam header by Others)
- Preliminary MCC panel schedule showing where the power will be fed from
- Preliminary Electrical analysis describing any deficiencies in the infrastructure needed to provide power to the system

- Preliminary Structural package generally showing the means of support for components of **this Project's** scope items
- Preliminary Structural analysis describing any deficiencies in the ability to support the components of **this Project's** scope items

Important Note: The DES Structural Engineer, Meyer Borgman & Johnson (MBJ) is contracted to provide the design for the SCS support, as well as the pipes wrapping around the external walls of the Plant. They have also extensively studied the excess load capacity of the Plant's structure and have found it to be generally incapable of supporting any significant additional load. *Coordination between this Consultant's SE with MBJ will be critical to the success of this Project. MBJ contact is Ben Helmer, P.E.*

The expected Project Milestone schedule is as follows:

	Completion Date
Proposals Due	**November 8th, 2019**
Contingent Notice to Proceed	**November 15th, 2019**
Formal Notice to Proceed	**November 26th, 2019**
BOP Design Conceptual Approval (50% Drawing Package)	**February 3rd, 2020**
BOP Design Complete (100% Bid Drawing Package) with final DES approval	**March 25th, 2020**
BOP Construction Package Issued for Bid	**April 3rd, 2020**
BOP Construction Begins (By Others)	May 4th, 2020
BOP Substantial Completion (By Others)	July 31st, 2020
Start-up and commissioning	Start August 18th, 2020 **Complete September 29th, 2020**

2. Project Description and Scope of Services

DES is requesting an engineered BOP package which, when connected to the SCS identified in Section 1 and the enclosed documents, results in the complete component if the Hot Water Distribution System local to the Plant. Most of the critical process performance requirements are identified in the included 'Hot Water Distribution System Schematic.pdf'. System feature highlights include:

- A Primary Distribution Pump (PDP) system in a compact vertical inlet/discharge piping arrangement. These pumps shall be selected to run single-pump mode at minimum design flow (TBD GPM @ TBD') up to double-parallel full *current* design flow (6750 GPM @ ~200'). When selecting the pumps DES requests consideration be given to the future prospect of increased load that would utilize a triple-parallel design flow (~9000 GPM @ ~220'), if practical

- Hot Water Supply temp: 215^{O}F, Hot Water Return temp: 160^{O}F
- New 10" tap from 20" HPS main at the northwest corner of the Plant (exterior). This 10" take-off will be just downstream of the existing main PRV. The 10" HPS will feed back into the building and connect to the new SCS steam header (steam header by others)
- Main hydronic headers connecting the SCS (SCS take-offs by Others) to the 20" HWS/HWR Distribution circuit (this Project). The main headers will exit the Plant through the wall, diverging into 10" lines doubling back to the Canal Park heat exchanger equipment and 20" lines heading to the new tunnel connecting the DES Plant to the northern service area. Pipe connections at the tunnel entrance is the scope limit of this Project
- 10" piping and controls design that extends to the existing Canal Park "Hotel Loop" and "DECC Loop"; currently served by exhaust steam powered plate & frame HX's. It is DES's plan to retire these HX's as the available exhaust steam continues to be reduced by the replacement of turbine motor equipment in favor of electrical variants. Final cut-over may not be performed in 2020, however the termination design should allow for relatively easy final connection in the future. Controls design will be required to reconcile the simultaneous PDP operation with the existing Canal Park pumping circuits. <u>PDP control will come exclusively from SCS signals and cannot be detrimentally influenced by the Canal Park pumps' operation/flow requirements</u>
- Class 250 hydronic piping system components, B31.1 compliant steam system components
- Location, size, qty of expansion tanks are determined by this Project. Due to weight issues, it is expected they will be located on ground level on new pads, likely in a new, heated extension of the building somewhere near the generator set. Some architectural services may be required for this

The proposal shall provide pricing to provide engineering design services including:

- A fully (MESC) engineered construction drawing package that incorporates the BOP system identified in the included 'Hot Water Distribution System Schematic.pdf'. This includes, but is not limited to:
  - Focus on mechanical system design that anticipates - and allows for – a variable pumping operation that accounts for both current and future load profiles
  - General Arrangement drawings; plans, elevations, isometric 3D (Revit preferred. *Note: SCS assembly will be available in Revit for coordination*)
  - Schedules, details, phasing/coordination plan
  - Demolition drawings as required (*note: there is not a significant amount of demolition anticipated as part of this Project*)
  - Control sequences and devices that will allow proper integration of the new PDP system (controlled by the SCS) with the existing pumps that serve the Canal Park "Hotel Loop" and "DECC Loop"

  - Full Specification Documentation that covers all applicable tenets of ASME B31.1, NEC, NFPA and ASCE, with modern Division nomenclature. Note: Spec-On-Plan is not acceptable for any discipline
  - Fully detailed Piping and Instrumentation Diagrams (P&ID)
  - Project Manual, turned over when Project is completed

- Assistance with bid related RFI's. Participation, on-site, with bid walk-through
- Project management and engineering support as required to coordinate execution of this Consultant's design and to efficiently coordinate with other Consultants, Contractors and DES/EGE personnel during the construction phase
- Prioritized (i.e. conducted at Project onset) evaluation of existing power infrastructure as it pertains to electrically driven equipment in the BOP scope, with recommendations of required improvements and an accompanying Opinion of Probable Cost (OPC).

3. Specific Project Information

Provide a description of the project approach you would typically take in organizing and completing a project of this type, the description shall include:

- Identification of work to be completed by your firm as it relates to this Request for Proposal.
- Listing of the types of services or assistance you would require from DES.

4. Coordination with Other Engineering Packages

Concurrent to this Consultant's work will be both concurrent and previously completed design of the hot water Distribution system network piping, which connects the City to the Plant, and the Steam Converter System (SCS); which will heat the water by means of Plant steam. It is this Consultant's scope to connect these two systems; with the battery limits defined in the included 'Hot Water Distribution System Schematic.pdf'. **The DES Project Manager will coordinate the relevant and specific points of intersection between this design and the SCS as the SCS shop drawings arrive in early December, 2019 (anticipated).**

5. Evaluation Criteria and Contract Award

DES will evaluate and validate all qualifying proposals to determine the best value proposal. The proposal evaluation process will permit DES to identify the proposal that best meets its needs. Project cost will be the primary criterion considered, but each proposal will be evaluated and scored as follows:

Selection Criteria	Scoring (Pts)
Project cost	55
Understanding of the requirements of this project.	40
Clarity, conciseness, and organization of the proposal.	5

Proposals will be scored according to the following procedure:

- Maximum points per criteria will be equally divided by the number of proposals received.
- Each proposal will be ranked according to the criteria above compared to the other proposals.
- The formula for scoring proposals shall be:
    - ((Cost Ranking x Max Cost Points) + (Understanding Ranking x Max Understanding Points) + (Clarity Ranking x Max Clarity Points)) /Number of Proposals
- The lowest scored proposal shall be recommended for award of the contract.

End of RFP Letter

Included with this RFP:

'Hot Water Distribution System Schematic.pdf'