

**REQUEST FOR PROPOSAL  
CITY OF DULUTH, MN**

**February 24, 2016**

**Superior Street Reconstruction  
Hot Water System Design**

**Project No.: 1525**

**Bid Number:16-0214**

**Proposals Due: March 23, 2016  
2:00 PM, Local Time**

## PROJECT OVERVIEW

The City of Duluth is interested in retaining a consultant to provide design engineering services for the construction of a district energy hot water system serving the needs of Duluth Energy Systems customers along Superior Street from 4<sup>th</sup> Avenue East to 7<sup>th</sup> Avenue West through the heart of historic downtown Duluth. The City is planning a total street and utility reconstruction. The project will be constructed over a 3 year period starting in 2017. Construction engineering services are not included in this request.

## BACKGROUND

LHB Inc. (LHB) was hired in the fall of 2013 to prepare a preliminary design for the project. The preliminary streetscape and Summary Document which resulted from this preliminary design is available directly from the engineering office and should be requested by all interested proposers. The Summary Document recommends the scope of the proposed street and utility project that will be constructed by the City. LHB has been hired by the City to complete the drawings and specifications for the Superior Street Construction project. Existing Duluth Energy Systems steam lines will be removed and new thin-walled steel hot water supply and return mains, services, and customer mechanical system conversions for the Duluth Energy Systems will also be installed as part of the project. LHB will incorporate hot water design from this contract into their drawings and specifications for the City. Further detail is available in the LHB Summary Document.

Phasing of construction is anticipated to be as follows:

- 2017 7<sup>th</sup> Avenue West to 3<sup>rd</sup> Avenue West
- 2018 4<sup>th</sup> Avenue East to 1<sup>st</sup> Avenue East
- 2019 3<sup>rd</sup> Avenue West to 1<sup>st</sup> Avenue East

The project is expected to be funded by the Duluth Energy Steam Utility.

The City of Duluth will provide the following:

- Superior Street Preliminary Design Summary Document prepared by LHB, Inc.
- Existing topographic and utility survey prepared by LHB, Inc. in paper and AutoCAD format.
- All available street and utility drawings from previous projects. (as requested)
- Assistance in obtaining other related information in City files pertaining to the project if needed.

## GENERAL PROJECT SCOPE

The successful respondent to this RFP will have substantial experience in the engineering design, cost estimation, construction, start-up, and implementation of thin-walled steel hot water district heating distribution systems similar in size and scope to Duluth Energy Systems within the United States.

Consulting Engineering Services are expected to include all work necessary to provide final hot water system design to be let as a single bid package for all three phases.

All work shall be performed in accordance with the most recent version of the City Standard Specifications and Engineering Guidelines (available on the City of Duluth website); Duluth Energy's Standards for Design and Installation of Pre-insulated Bonded Pipe Systems for District Heating; and shall be in compliance with EN standards (EN 253, EN 448, EN 488 and EN 489) and designed in accordance with EN 13941.

LHB will provide the initial layout of corridors for the piping system in AutoCAD (plan and profile) for Consultant's use during design of the piping system, including system analysis and calculations. LHB's role in the hot water system design is limited to establishing the horizontal alignment and vertical profile for coordination with other proposed utilities on the project and based on the Consultant's design recommendations. LHB is responsible for incorporating the final City and Duluth Energy reviewed and approved piping layout and recommended standard details designed by the Consultant into the final City of Duluth bid package for the overall street reconstruction project which includes plans and project special provisions.

## SCOPE OF SERVICES

### 1. Hot Water Design

- Provide the design of a direct buried, insulated, piped hot water distribution system to serve the heating and domestic hot water needs of customer buildings within the project area. The design shall provide the hydraulic flow model for the system, based upon load information provided by Duluth Energy Systems.
- Provide all required data collection and inquiries related to the hot water system design including coordination with Duluth Energy Systems for building service needs and layout, including any required customer mechanical system conversions from steam to hot water systems as it relates to the proposed system design.
- Provide all site investigation, inquiries, details, agency coordination and approvals, permits, specifications, waste management/disposal plans and any other work product related to the removal and abatement of the existing asbestos lined steam lines.
- Provide thermal expansion stress analysis and compensation design based on the general routing provided by LHB. If piping stresses exceed allowable limits for the proposed routing, recommend routing adjustments and/or thermal expansion compensation elements that maintain stresses at allowable levels. Provide recommended anchor locations and loading, if required, and report on any areas with significant pipe movement due to thermal expansion.
- Provide feedback regarding proposed general routing and recommend alternative piping configurations, as required to maintain code compliant stresses and coordination with other utilities. Provide recommended thermal expansion compensation designs and sizing and report significant pipe displacements due to thermal expansion. Provide anchor locations and loading if anchors are required.
- Determine required pre-insulated valve assemblies, access structures, vaults, connections, and locations, as required, as well as components and locations for high-point air vents and low-point drains.
- Provide locations and thickness of application of foam pads for the buried piping.
- Provide specifications and details for inclusion in bid package, including sequencing plan reviewed by Duluth Energy Systems. .
- Provide QA and technical review and comment on design drawings ( 60% and 90% submittals) prepared by LHB as they relate to the routing of the piping system.
- Provide a detailed bill of materials and relevant bid items to be included in project quantity

tabulations for unit price bidding. Identify what labor, materials, equipment are included for payment under each bid item. The Consultant's estimate shall be based on the identified bid items related to the hot water system.

- Design with provisions to simplify and ease future system expansion to serve other parts of the system and system operation and maintenance; and
- Design and specify a moisture detection system for the hot water system.
- Provide a detailed critical path schedule for all removal, abatement and construction tasks related to the hot water system to inform the overall project construction staging and sequencing approach.

### 3. Cost Estimate

Following the completion of the plans and specifications, provide a quantity takeoff and a detailed itemized construction cost estimate for each individual phase of the project shall be provided.

### 4. Project Meetings

The Consultant should plan to attend the 3 public meetings arranged and led by LHB. The Consultant shall also arrange and conduct 3 design review meetings with City, Duluth Energy Systems, and LHB representatives.

### 5. Project Bidding

Upon completion of plans and specifications, the consultant shall coordinate with LHB to provide all applicable documents and services to provide for bidding and award for construction. The consultant shall answer any questions brought up during bidding and attend a pre-bid conference.

### 6. Construction Services

Construction services are not included in the request.

## PROJECT COMPLETION DATES

February 24, 2016	RFP Issued
March 23, 2016	Proposals Due
TBD ( <i>Contingent on Award of</i>	Selection of Consultant
TBD <i>Funding from State</i> )	Council Approval to Award Contract
October 3, 2016	Submit 90% Plan Information to LHB, Inc.
November 21, 2016	Submit Final Plan and Specification Information to LHB Inc.
December 1, 2016	Plans and Specifications submitted to Minnesota State Aid
January, 2016	Advertise for bids
February, 2016	Receive bids

## PROPOSAL CONTENTS

The following will be considered minimal contents of the proposal:

1. A restatement of the goals and objectives and the project tasks to demonstrate the responder's view and understanding of the project.
2. An outline of the responder's background and experience with similar projects. Within the experience, the consultant should demonstrate and provide proof of competency within the past three years in the following areas:
  - Hydraulic models for hot water district energy systems
  - Hot water system design and stress analysis for thin-walled steel hot water district energy systems according to EN 13941 standards.
  - Design, construction oversight and inspection services of hot water distribution systems for district energy systems.
  - Hot water system moisture detection alarm wire layouts and monitoring program strategy.
  - Support for the operation of hot water district energy systems with operating parameters similar to Duluth Energy Systems.
3. Identify personnel to conduct the project and detail their training and work experience. Identify how personnel proposed for this project were involved with the projects listed as experience. Identify a professional engineer registered in the State of Minnesota who will design the piping system. No change in personnel assigned to the project will be permitted without approval of the City.
4. Include a detailed work plan identifying the work tasks to be accomplished and the budget hours to be expended on each task and subtask for the design of the hot water system. An anticipated work schedule shall also be provided. The work plan shall also identify the deliverables at key milestones in the project as well as any other services to be provided by the City. The City staff intends to be actively involved with the project, and a minimum of three (3) status meetings are to be contained in the work plan in addition to any data collection or input/review meetings. Do NOT include any costs in the work plan.
5. A listing of names, addresses and telephone numbers of at least three (3) references for whom the respondent has performed similar hot water and design and construction oversight services within the past three years within the United States.
6. Provide, in separate envelope, one copy of the cost proposal, clearly marked on the outside "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.

The consultant must include a not to exceed total project cost, as well as subtotals for design services and bidding and any sub consultant fees. The cost proposal shall include all of the following:

- A breakdown of the hours by task for each employee.
- Hourly rates for each specific employee proposed. (not general rates by category)
- Identification of anticipated direct expenses and rates for miscellaneous charges such as mileage and copies.

- Identification of any assumptions made while developing this cost proposal.
- Identification of any cost information related to additional services or tasks. Include this in the cost proposal, but identify it as additional costs and do not make it part of the total project cost.
- The Consultant must have the cost proposal signed in ink by an authorized member of the firm.
- The consultant must not include any cost information within the body of the RFP technical proposal response.

The design phase shall be considered complete upon award of the construction project to a contractor.

7. The proposal shall be limited to 20 pages plus a cover letter.
8. Signatures. An official authorized to bind the Proposer to its provisions must sign the proposal. For this RFP, the proposal must remain valid for 120 days or until a contract is fully executed.

## SELECTION

The proposals will be reviewed by City Staff. The intent of the selection process is to review proposals and make an award based upon qualifications as described herein. A 100-point scale will be used to create the final evaluation recommendations. The factors and weighting on which proposals will be judged are:

	Item	Percent
1	Outline of Consultants background and experience with similar projects	20%
2	Qualification/location of personnel working on the project	20%
3	Knowledge of project area and Duluth Energy System requirements	15%
4	Work Plan	15%
5	Project costs/fees	30%

Proposals will be evaluated on a best value basis with 70% qualifications and 30% cost consideration. The review committee will not open the cost proposal until after the qualification points have been awarded. Cost proposals will only be opened for the three top ranked firms.

## SUBMITTAL DATE

Submit original and five (5) copies in an envelope marked, RFP 16-0214, Superior Street Reconstruction – Hot Water System Design Services, by 2:00 PM CDT, March 23, 2016 to:

Amanda Ashbach, Purchasing Agent  
City Purchasing  
411 W. 1<sup>st</sup> Street, Room 100 City Hall  
Duluth, MN 55802-1191

## CONTACT

All questions concerning the project shall be directed to:

Duncan Schwensohn, Project Engineer  
City of Duluth - Engineering Division  
411 W. 1<sup>st</sup> Street, Room 211 City Hall  
Duluth, Minnesota 55802-1191  
(218) 730-5094, FAX (218) 730-5907

## LIMITATIONS

This Request for Proposal does not commit the City of Duluth to award a contract or pay costs incurred in the preparation of the proposal, or to procure a contract for services or supplies.

The City of Duluth specifically reserves the right to accept or reject any or all proposals, to negotiate with any qualified source, to cancel in part or in its entirety the Request for Proposal, to waive any requirements, to investigate the qualifications of any proposal, to obtain new proposals, or proceed to have the service provided in any way as necessary to serve the best interests of the City of Duluth.

The selected consultant must sign the City of Duluth standard Professional Engineering Services Agreement. Any questions concerning this agreement should be asked prior to proposal submittal. These questions should be directed to Eric Shaffer in the City Engineering Office.

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.

Prior to entering into an agreement with the city, the consultant shall furnish proof that it has all legal requirements for transacting business in the State of Minnesota.