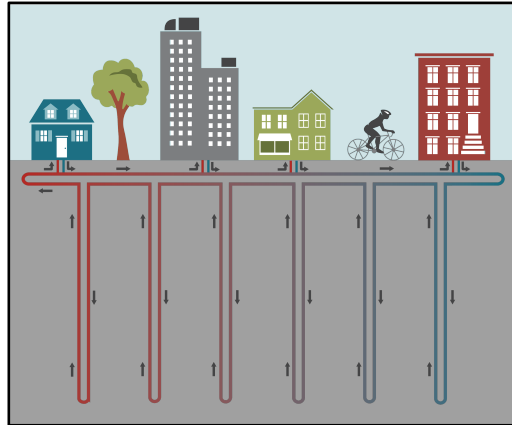


# Municipal Request for Proposals for a Networked Geothermal Franchise Agreement at a Specified Site



**Note:** This generic request for proposals (RFP) is intended for a municipality that seeks to offer a networked geothermal franchise within the municipality's borders to a third-party designer, installer and owner. **The RFP is meant only as a template. It must be tailored to meet your needs, as well as to meet all local, state, and federal legal requirements.**

The assumptions for the RFP are that A) a networked geothermal site, with a mixture of residential and commercial buildings to be connected, has already been selected and B) that the municipality intends to offer an on-going franchise agreement to the winning team's proposal.

You need to create a site map with estimated thermal loads, as well as a contract to accompany this franchise agreement. The contract could include any stipulation your municipality wishes, for instance an ongoing revenue stream to the municipality for the franchise, prevailing wage stipulation, local labor force, or a community engagement plan for the duration of the franchise. The contract could also limit the franchise agreement's potential territory, timeframe or services.

If municipal facilities and public funding are included with any installation, then under MA law (Chapter 149) designers must be selected separately from the installation contractors, unless the installation can be seen as something that falls under Chapter 25A for energy management services. If this installation might fall under energy management services, please contact the MA Dept. of Energy to learn if consolidated design-operation type contracts can be allowed.

Enjoy,

[HEET](http://HEET.org), [info@HEET.org](mailto:info@HEET.org)

## **Project Overview**

The project goal is to design, install, operate, maintain and own a single closed-loop networked geothermal system (also known as a networked ground source heat pump system) capable of supporting the necessary number of heat pumps for heating and cooling all buildings connected to the system. The underground boreholes are expected to be designed and installed in close proximity to the buildings, potentially in the street. A connected heat pump will be installed in each of the attached units.

The installed system should be an ambient-temperature single pipe ground loop system with a pump system and one or more closed loop borehole field(s) interconnected via the ambient-temperature loop. The system must use only water as the heat exchange transfer fluid. Individual buildings should be connected to the ambient-temperature loop via service lines, which connect to a heat pump that extracts or rejects thermal energy based on the building's thermal energy load. Other thermal assets (such as boilers and chillers) can be connected onto the shared ambient-temperature loop to better manage and maintain the temperature range that the networked geothermal system is designed for.

Bidders may partner with other firms to meet all the needs of the RFP. There should be a firm identified as the team lead ie. party accountable for diligent design and successful installation of the networked geothermal system. The winning team shall provide all services required to design, build, start-up, operate, maintain, own, service customers and bill for the thermal energy provided by the networked geothermal system including but not limited to the following:

### **Designing & permitting**

- Community loop, water pumps, and interconnecting piping
- The borehole array, including connections, piping and accessories
- Piping to and from the buildings
- Heat pumps in the buildings, compatible with building's (or unit's) current distribution system, i.e. water-to-air heat pumps, water-to-water heat pumps
- All power and management controls, including all necessary instrumentation to continuously monitor system operations at the surface and subsurface levels, in order to manage and optimize thermal balance and electrical efficiency of the system, and to meter and bill the customers in the connected buildings for the thermal energy delivered

### **Construction and installation**

- Of all of the above, as well as:
  - Thermal conductivity test of the ground
  - Site assessment for Hazardous Material Identification and/or remediation
  - Removal of existing building HVAC systems
  - Surface restoration to include landscape work

### **Commissioning**

- Community loop, water pumps, piping, borehole arrays, power and management controls and instruments to monitor system operations
- Buildings' heat pump system and controls

**Warranty service**

- Community loop, water pumps, piping, borehole array, power and management controls and instruments to monitor system operations
- Buildings' heat pump system and controls

**Ongoing services**

- A method for metering and billing, as well as to service customers' relevant needs
- An annual plan for maintenance and operation of the installed system
- A method for collecting and storing data, including temperature requested and delivered, operations and maintenance

**Qualifications**

The winning team must be highly skilled and experienced with a proven track record, able to demonstrate the following:

- Minimum of three installations in design, installation, and supervision of networked geothermal projects
- At least one year of relevant professional experience in Massachusetts
- Demonstrated technical competence
- All trades shall be licensed
- All components of the system have been installed by the winning team

**Each project team contain:**

- Geothermal designer with at least one of the following:
  - Certified GeoExchange Designer (CGD) from Association of Energy Engineers
  - International Ground Source Heat Pump Association (IGSHPA) accreditation
  - Professional Engineer (PE) with demonstrated experience within the state with shared ground loop heat exchanger systems
- A loop field subcontractor (also known as driller) with at least one of the following:
  - Massachusetts Department of Environmental Conservation registrant
  - Local county and/or municipal Department of Consumer Affairs Well Drilling License
  - A current IGSHPA loop installer or driller accreditation on-site during construction with at least 3 references.
- The geothermal heat pump installer with at least 1 of the following:
  - A current installer certificate from IGSHPA
  - Service territory must cover the local area, The installer must be able to respond to service calls and be onsite within 24 hours.
  - A current accreditation by a major heat pump manufacture for installation, with distributor training – please specify which manufacturer(s)
  - Experience with and success applying for with the local state rebates
- Geothermal heat pump installer company
  - Must have been in business for at least five years
  - Installed at least 50 geothermal heat pumps in the past five years
  - Must have applicable local county and /or municipal Consumer Affairs Licenses
  - A local state Licensed Electrician, as part of the project team

- A demonstrated ability to manage and operate the installed system
- Demonstrated management experience with similar types of geothermal projects
- A Geothermal Inspector, third-party IGSHPA CGI or PE

### **Responsibilities and Technical Requirements**

The project team is responsible for designing, installing, owning, maintaining and ensuring the long-term performance of the geothermal heating and cooling system. A community loop field shall be designed to handle the load profile of the connected combined buildings. The geothermal equipment shall be designed in accordance with the local state Energy Conservation Construction Code applicable on the day of system startup.

### **Prime Contractor Responsibilities**

- Overall project management
- Ensuring all project aspects meet local codes, regulations and governing laws.
- Ensuring safety at jobsite and appropriate safety precautions are planned and executed
- Coordinating with the supervising organization to perform on-site safety assessments
- Managing contractors and project team to complete the project contract on time
- Engaging with the supervising organization on a weekly basis about project status
- Coordinating fencing requirements during drilling, as well as landscape recovery after all drilling and trenching disturbances

### **Design Service Responsibilities**

- Full design of a geothermal shared ground loop heat exchanger system with the use of drilled vertical bore, or installed horizontal loop field where applicable, with piping to each individual unit, including load calculations (Manual J Calculation) for the buildings
- Kickoff meeting, as well as meetings to interface with building owners and the supervising organization as required
- Meeting [CSA 448-16 Standards](#)
- Construction document and specification preparation based on site owner(s) (as well as architect if applicable), and the supervising organization format. These construction documents need to contain all information required by the local municipality for the filing for, and obtaining, a building permit.
- Designed plans should include one or more central water pump and backup supplementary heater and cooler on the shared loop
- Develop specifications for the ground source heat pump equipment to be installed within each unit
- Shop drawing review
- Response to specific job questions as they pertain to the geothermal portion of the work
- Revise plans based on results from Thermal Conductivity Test – if needed. Include revision cost if any.
- Site observation to include at least six trips to the jobsite
- Pre-design and facility assessment meeting
- Drilling site observations

- Commissioning of the ground source heat pumps
- Flushing and freeze protection of the ground loop
- Closeout visit, and other visits, as required by the project team, will be included at no additional cost

### **Driller Responsibilities**

- The drilling subcontractor shall install a vertical closed-loop bore field in accordance with the specifications developed by the project designer
- Containment of runoff and proper disposal of drilling spoils to meet all local regulations
- Perform quality drilling operation to minimize impact to the existing landscape and local residents
- A high-performance grout shall be utilized for all borehole grouting. The exact mixture of grout is to be specified by the designer.
- After the horizontal piping is completed, the entire piping system shall be pressure tested in accordance with IGSHPA and ASTM standard.
- All loops are flushed of debris during the drilling process
- All lateral piping shall be the Dimension Ratio specified by the designer

### **Installer(s) Responsibilities**

- Shall be responsible for providing the geothermal heating and cooling heat pumps that meet the Manual J load calculation requirements for each attached unit
- Shall provide heat pumps that contain:
  - A dual speed compressor
  - Variable speed blower motor
  - Copper Coax heat exchanger
  - Built in energy and performance monitoring, from the factory, with a web connection kit to allow for remote monitoring
  - Sound kits to minimize compressor noise within the house
  - Color touchscreen thermostats
  - Auxiliary Electric heaters
  - 2” Merv 11 or 13 air filters
- Responsible for revoking and disposing of all old HVAC equipment in accordance with EPA specifications. No debris is to be left on site. Building owners reserve the right to keep old equipment or sell the old equipment.
- Ensure all air is bled from the lines between the flow center and the unit, prior to opening the valves and starting the system
- Provide a 2-year service agreement to the building or unit owner with the option to extend service plans (to be negotiated between owner and winning team)
- Provide and install equipment to prevent sagging on the ductwork. The return ductwork needs to be supported to prevent misalignment over time of the filter track.
- Seal and insulate all new ductwork in accordance with local state mechanical and energy code
- Inspect existing ductwork to ensure no broken ducts. Any holes greater than 4” in diameter shall be fixed
- Wire safety switches on condensate pumps (if utilized) to prevent the unit from operating in the event of a pump malfunction

- Insulate all piping installed inside buildings in accordance with local mechanical code

**To submit, please send to - Insert municipal contact name and email address, as well as submission due date**

- Cover letter from the lead company stating the submittal is in response to the RFP and that that company agrees to enter into a contract if selected
  - Include lead company's legal name, address, website and main contact person's phone and email
- Organization chart for each company on the team, showing the name and title of all pertinent team members
- All pertinent professional licenses and resumes
- Describe the team's past and present experience on pertinent municipal and other projects. Include contact information for the owner/manager of the site(s).
- Description of the proposed design and materials, as well as the processes to be used for testing, commissioning, safety and environmental procedures
- Describe contingencies for any difficulties encountered
- Description of maintenance and billing, including what billing will be based on (i.e. monthly billing based on BTUs, gallons of water, number of heat pumps, etc.)
- Whether the team is willing to provide information for the public GeoDatabank created by [HEET](#), including normalized aggregate data, costs, and learned lessons. The resulting data will help scale the industry.
- References for the team

**Each proposal will be evaluated based on the final score from the following Evaluation Scoresheet.**

**Note - You need to create and connect to this form, information about:**

- The selected networked geothermal site and thermal loads (in as much detail as possible) of each of the buildings to be connected
- The franchise agreement contract and stipulations

**Municipal Networked Geothermal Franchise**  
**RFP EVALUATION SCORESHEET TEMPLATE**

*Please note, this scoresheet is meant only as a model. It must be tailored to meet your needs and all local, state, and federal legal requirements. The proposal should be reviewed by a committee including diverse members from various stakeholder groups to select a proposal that is meritorious yet gives special consideration to equity and workforce. Also, if you have public funding involved, then MA municipal criteria chapter 30B criteria is involved, the numeric score would need to be changed to scores of highly advantageous, advantageous, etc. If construction is involved in municipal buildings, then chapters 149 is involved. If construction is involved in the rights of way, then chapters 30 and 39M would be involved.*

**Company Submitting** \_\_\_\_\_

**Technical Reviewer** \_\_\_\_\_

<b>Required Information</b>	<b>YES/NO</b>	
Cover letter from the lead company, stating the submittal is in response to the RFP & that that company agrees to enter into a contract if selected		
Lead company's legal name, address, website, and main contact person's phone & email address		
Organization chart for each company on the team, with names, titles & pertinent professional licenses of all pertinent team members		
List of the whole team's past and present experience on pertinent municipal & other projects		
List of similar projects (with contact names for references) the team has worked on		
<b>Scoring</b>	<b>Score Given</b>	<b>Max Allowed</b>
<b>Qualifications &amp; Experience</b>		
Evaluate up to 5 geothermal projects of similar size and scope in the public or private sector from provided contact information. Preference given to teams that have familiarity with regional geology, as well as experience with ambient-temperature community-loop piping projects.		<b>20</b>
<b>Accreditation &amp; Processes</b>		
Evaluate the accreditations, as well as proposed materials, testing, commissioning, safety and environmental procedures, and contingencies. Do all meet or exceed regulatory codes and RFP stated requirements?		<b>15</b>
<b>Managerial &amp; Staff Capability</b>		
Evaluate the capabilities and resumes of the people assigned to the project, as well as the financial stability of the lead company.		<b>10</b>
<b>Proposed Design</b>		
Evaluate the proposed design for A) ability to maximize current system efficiency through load diversity and opportunistic design taking advantage of neighboring or available wasted thermal energy sources, B) scalability and resilience to the possibility of heating and cooling loads changing over time, C) reduction of potential for any negative environmental impacts.		<b>20</b>
<b>Equity Considerations</b>		
Is the maintainance of the installation well thought out? Is the customer bill reasonable?		<b>5</b>
<b>Professionalism of Proposal</b>		
Was the response to the RFP clear, concise, professionally written, well organized, and responsive?		<b>5</b>
<b>Cost &amp; Time Proposal</b>		
Evaluate the team's process for ensuring the project cost is within budget and completed on time. Has the company demonstrated experience in completing similar projects on time and within budget?		<b>5</b>
<b>Databank</b>		
Is the team willing to provide to the public GeoDataBank: normalized aggregate data, including costs, and learned lessons and best practices?		<b>10</b>
<b>References</b>		
Evaluate the references provided from previous public and private clients with projects of similar size and scope.		<b>5</b>
<b>TOTAL SCORE</b>		<b>5</b>
		<b>100</b>