Eversource Geothermal Pilot Project

Building a Geothermal Network in Framingham

CITY OF FRAMINGHAM
1662 · 1700 · 2018

EVERSOURCE heet

The Basic Components of a Geothermal Network

Ground-Source Heat Pumps

Transfer heat energy between buildings and with the loop.

Thermal Source (Ground Loop Heat Exchanger)

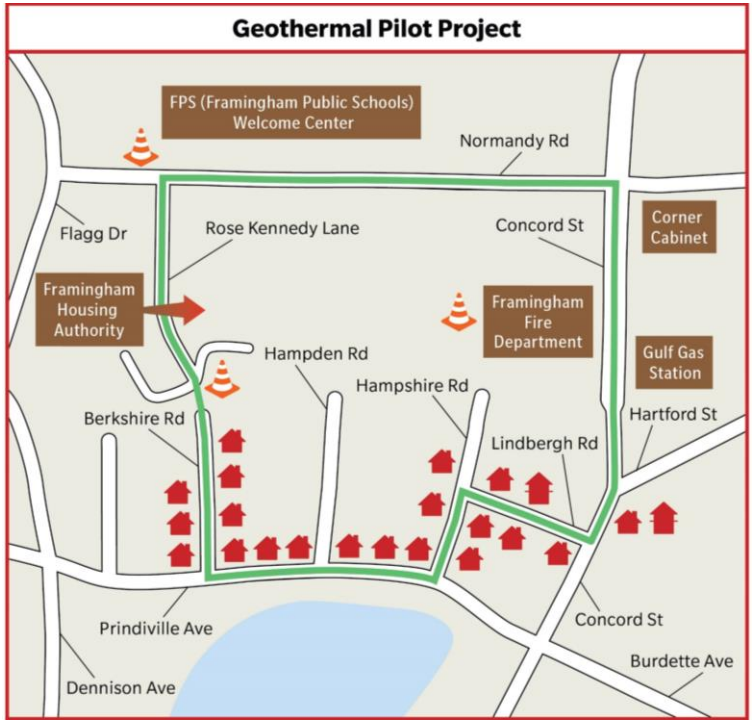
Geothermal boreholes drilled underground which provide access to thermal energy and also allow excess heat to transfer underground.

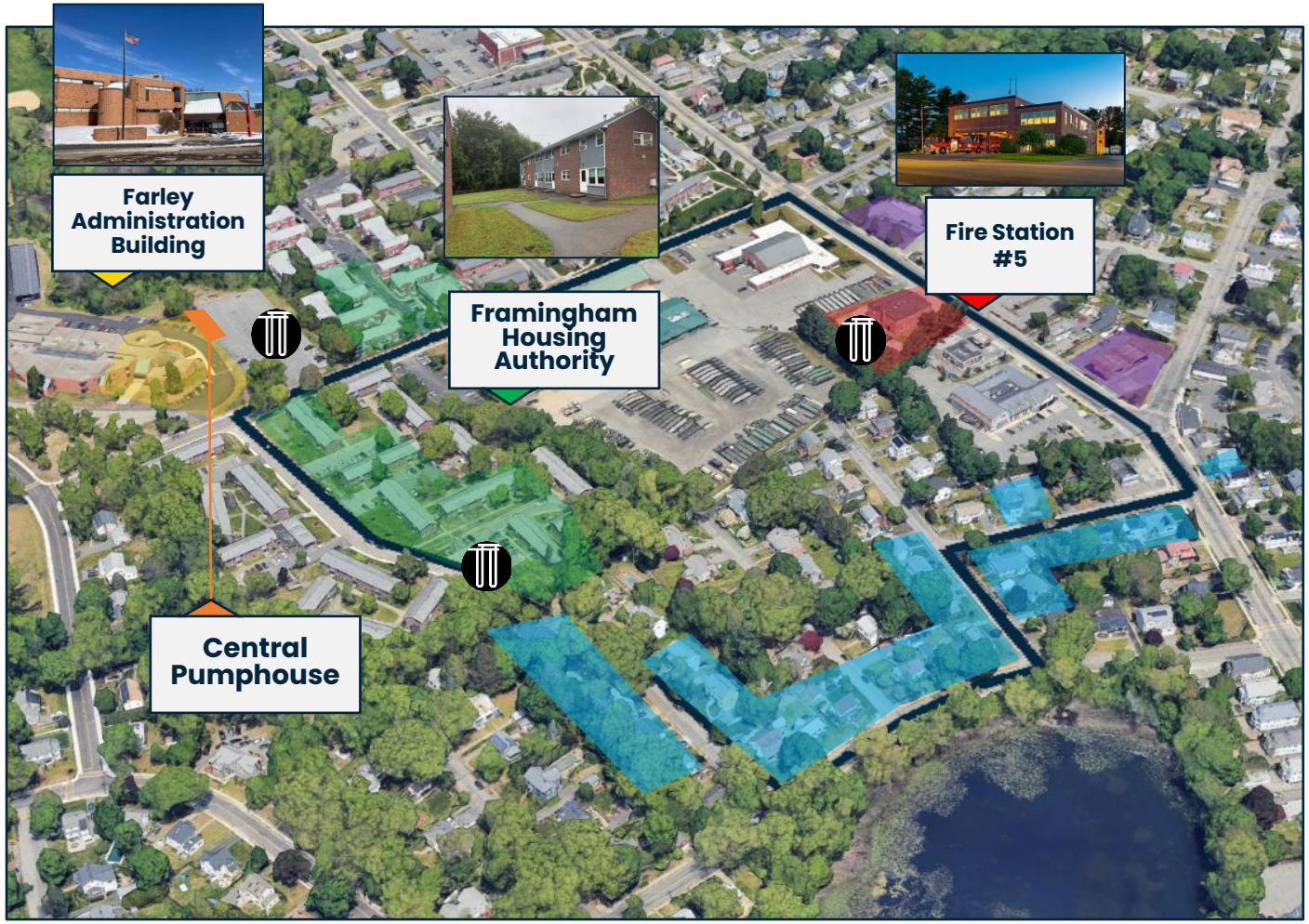
Image: HEET

Thermal Network

An ambient temperature loop (HDPE pipe) which carries liquid to move thermal energy between buildings and the thermal source.

The Eversource Geothermal Pilot Project





1 mile of main

90 boreholes

375 tons of thermal load

36 buildings

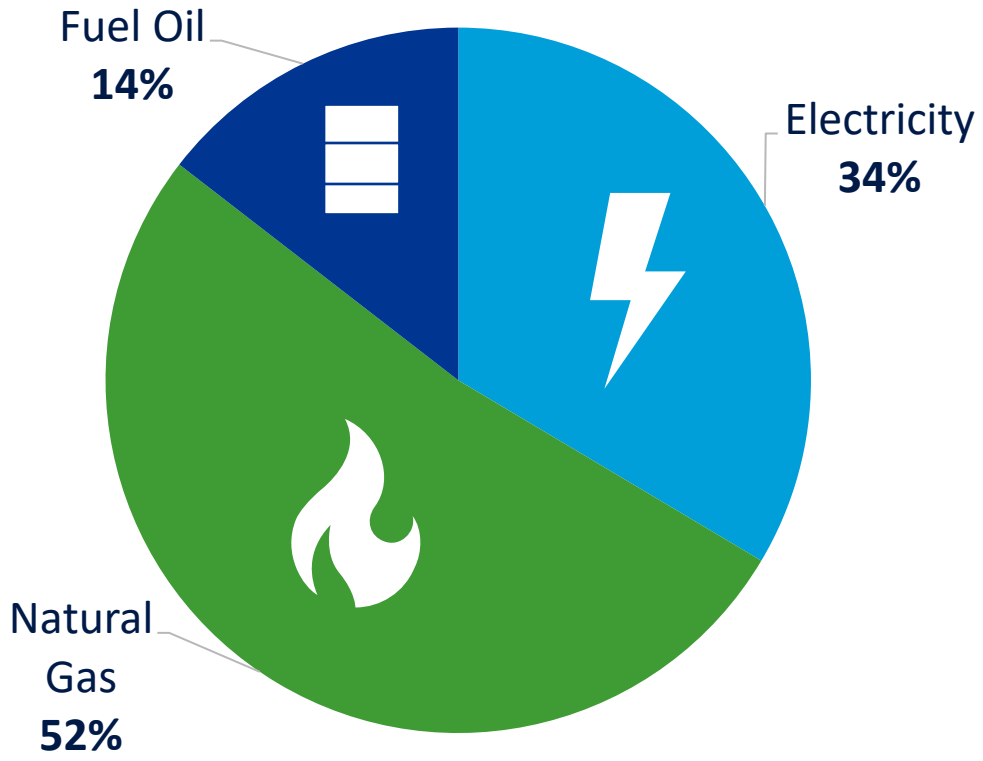
Goals for the Pilot Project

- Determine the scalability of geothermal networks.
- Test alternative to gas pipelines.
- Provide real-world construction and maintenance experience.
- Inform strategy to advance the Commonwealth's climate goals.

Community Benefits of Utility-Scale Geothermal

- Advances progress toward achieving community-wide net zero emissions by 2050.
- Offers an equitable pathway for the transition from fossil fuels and decarbonization of neighborhoods.
- Supports electric grid health in wider electrification efforts.

Framingham Building Energy Emissions by Source (2021)

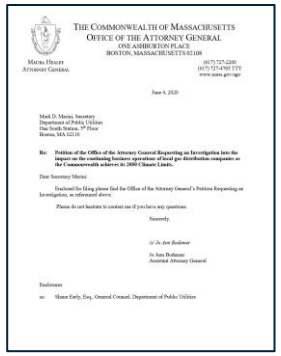


Pilot Development and Framingham Selection

April 2020: Statewide net zero greenhouse gas emissions limit established for 2050.

June 2020: AG investigation into the future of gas utilities and transition to a clean energy future.

October 2020: DPU Approval of Eversource Rate Case to establish pilot.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June 4, 2020

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 5th Floor
Boston, MA 02110

Re: Petition of the Office of the Attorney General Requesting an Investigation into the impact on the continuing business operations of local gas distribution companies as the Commonwealth achieves its 2050 Climate Limits.

Dear Secretary Marini:

Enclosed for filing please find the Office of the Attorney General's Petition Requesting an Investigation, as referenced above.

Please do not hesitate to contact me if you have any questions.

Sincerely,

/s/ Dr. Ann Berkowitz

Dr. Ann Berkowitz
Assistant Attorney General

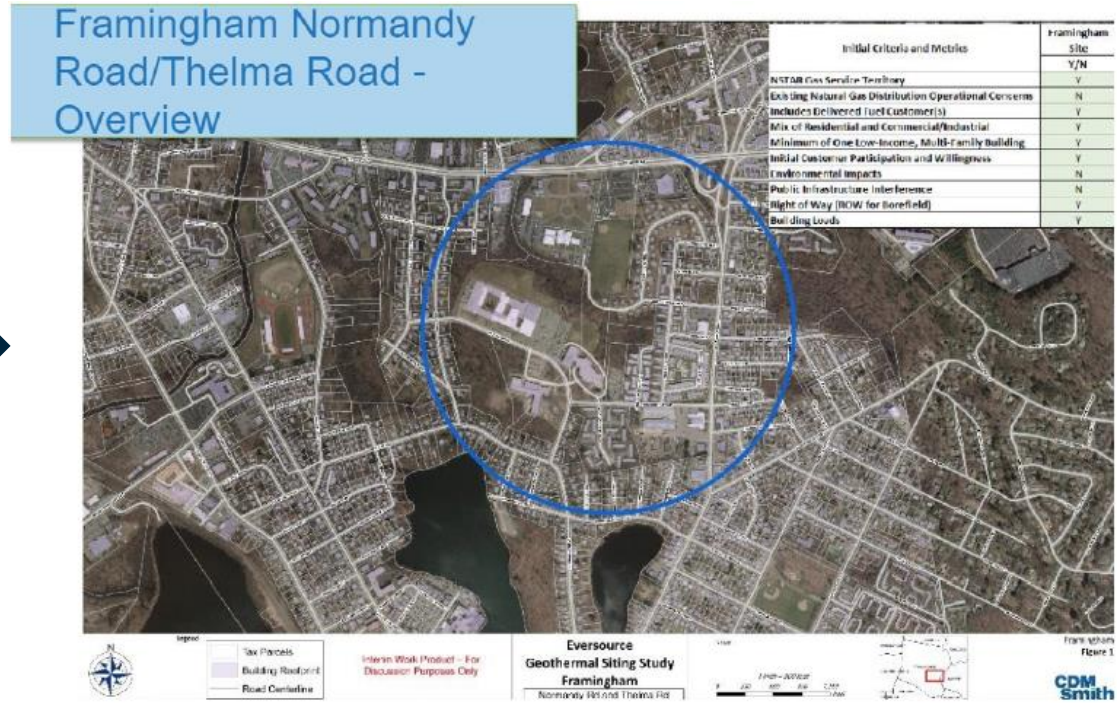
Enclosures

cc: Shaun Early, Esq., General Counsel, Department of Public Utilities

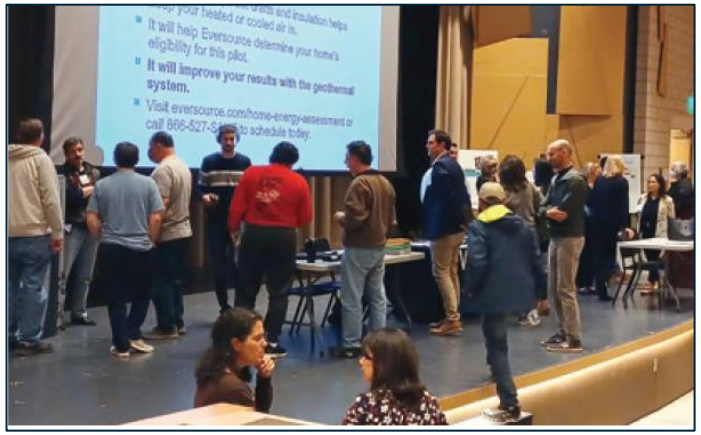
January 2022: Framingham selected for pilot by Eversource.

September 2022: Test boreholes drilled at 3 sites.

Pilot Development and Framingham Selection



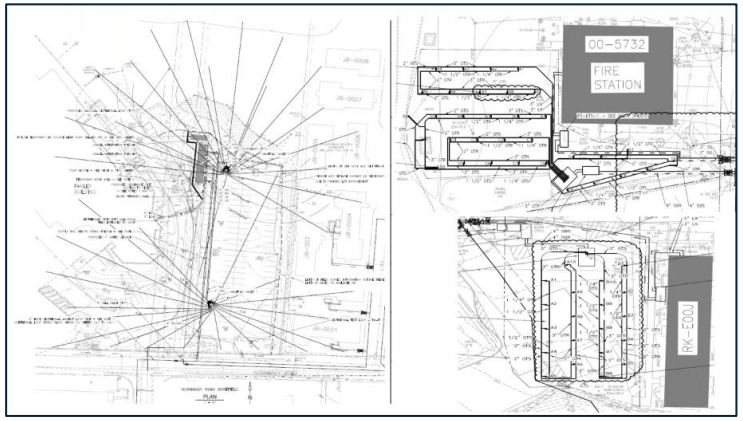
Community Engagement



Project Neighborhood Presentations

Customer Meeting

Project Development



Borefield Drilling

Central Pumphouse

Geothermal Main Installation

Key Considerations

- Conduct community analysis of potential locations for networked geothermal projects and build relationships with key stakeholders.
- Communicate with utility partners and demonstrate community interest.
- Develop strong and sustainable community engagement strategy and interdepartmental coordination.
- Think carefully about the siting of geothermal infrastructure and future uses.
- Explore public data available from other projects such as through the **Geothermal Data Repository (GDR)** and funding opportunities from the Geothermal Technologies Office of the U.S. Department of Energy (DOE).

Project Next Steps and Beyond

Next Steps in Framingham

- Completion of building conversion process (including residential, commercial, and municipal facilities).
- Continued site restoration of borefield locations.
- ***Exploring opportunities to expand the geothermal network to support more residents and facilities.***

Across Massachusetts

- Networked geothermal projects in development in Boston and Lowell with National Grid.
- 13 communities are working to kickstart geothermal networks with HEET and the MassCEC.

Across the Country

- 11 communities are currently working on networked geothermal designs through the **DOE Community Geothermal Heating and Cooling Design and Deployment Program**.