

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION



RECIPIENT: Community Geothermal Heating and Cooling Design Deployment

STATE: MA

PROJECT TITLE: Concord Street Loop: Building a utility-managed geothermal network in Framingham, Massachusetts and exploring options to integrate renewable energy elements

Notice of Funding Opportunity Number
DE-FOA-0002632

Procurement Instrument Number
DE-EE0010662

NEPA Control Number
GFO-0010662-002

CID Number
GO10662

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination

Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

B3.1 Site characterization and environmental monitoring

Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to the Home Energy Efficiency Team, Inc. (HEET) to design and install an ambient-loop geothermal network that would serve a community in Framingham, MA. A workforce plan for the geothermal industry would also be created to engage community members.

A previous NEPA Determination (ND) was signed on 8/18/2023 (GFO-0010662-001; CXs A9 and B3.1). The previous ND reviewed Budget Period (BP) 1. This ND reviews BP2, including the deployment of the proposed Flag Loop geothermal network, retrofitting buildings, construction, and Flag Loop operation.

Award activities taking place at HEET (Boston, MA) would consist of data analysis, computer modeling, preliminary engineering and design, feasibility studies, and workforce analysis. Outreach, recruitment, and training programs would be carried out in Framingham, MA.

The Flag Loop geothermal network would consist of connecting 39 total sites, comprised of 25 single family homes, one group home, and 13 apartment buildings in Framingham, MA. Work on buildings would also include weatherizing and retrofitting buildings. Borehole drilling and conductivity testing would entail drilling a test borehole (up to 6 inches in diameter and no deeper than 500 feet deep) on-site. 88 boreholes would be needed for this project, as well as casings and u-bends as per test well specifications in each borehole to be included in the networked geothermal

system. Boreholes would be grouted and connected to headers. Fiber optic cables would be installed in a subset of the boreholes for monitoring. Exterior work on the homes would include drilling a pair of two-inch holes through the concrete or fieldstone foundation, that would be covered and not visible to the outside. The diameter of each residential foundational penetration would be less than three inches. Interior work would include new heat pump equipment installation including piping, mechanical, and electrical systems, as well as new ductwork, air sealing, and attic insulation. Equipment would be placed in the same rooms where prior equipment was located when possible (ex. Furnace rooms, boiler rooms, mechanical rooms, basements). Patch and/or paint restoration would be carried out if needed. Clearing and excavation would be required for pipe laying but excavated ground would be restored upon the completion of award activities.

Hazards would include those associated with drilling and award activities would be carried out according to industry safety practices. Employee training, proper protective equipment, engineering controls, monitoring, internal assessments, and supervision by qualified personnel would be included in the hazard mitigation plan.

Project activities would comply with all state and local permitting, including Massachusetts Department of Public Utilities, and all local, state, and federal permits. All ground disturbing activities would occur on previously disturbed land that has undergone extensive previous development and/or is actively managed.

A "No Adverse Effect to Historic Properties" Determination was sent to the Massachusetts Historical Commission on 3/20/25 with two phone call follow-ups and no response, therefore DOE is proceeding with above proposal based on the "No Adverse Effect to Historic Properties" determination. DOE also conducted a review of potential issues related to other resources of concern and found no effects that would be expected to result from the proposed project activities.

EERE is aware of the November 12, 2024, decision in *Marin Audubon Society v. FAA*, No. 23-1067 (D.C. Cir. Nov. 12, 2024). To the extent that a court may conclude that the Council on Environmental Quality (CEQ) regulations implementing NEPA are not judicially enforceable or binding on this agency action, EERE has nonetheless elected to follow those regulations at 40 C.F.R. Parts 1500-1508, in addition to DOE's procedures/regulations implementing NEPA at 10 C.F.R. Part 1021, to meet the agency's obligations under NEPA, 42 U.S.C. §§ 4321 et seq.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Geothermal Technologies Office (GTO)
Review completed by Alex Colling on 06/04/2025.

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



Electronically Signed By: Matthew Blevins

NEPA Compliance Officer

Date: 6/6/2025

FIELD OFFICE MANAGER DETERMINATION

- ☒ Field Office Manager review not required
☐ Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____

Field Office Manager

Date: _____