

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



RECIPIENT: City of Saint Paul

STATE: MN

PROJECT TITLE : Como Park Zoo & Conservatory Hydro Geothermal Heat Pump

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0010709	GFO-0010709-001	

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.)

B5.19 Ground source heat pumps

The installation, modification, operation, and removal of commercially available smallscale ground source heat pumps to support operations in single facilities (such as a school or community center) or contiguous facilities (such as an office complex) (1) only where (a) major associated activities (such as drilling and discharge) are regulated, and (b) appropriate leakage and contaminant control measures would be in place (including for cross-contamination between aquifers); (2) that would not have the potential to cause significant changes in subsurface temperature; and (3) would be located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to administer Congressionally Directed Spending (CDS) to the City of Saint Paul to design, construct, and commission a geothermal energy system at the Como Park Zoo & Conservatory (Zoo) in Saint Paul, MN. The proposed project would remove the 18,540 square-foot Primates Building from the Zoo's centralized gas-powered steam boiler system by transitioning to a building-level hydro geothermal system for heating and cooling.

Project tasks would include the installation of geothermal wells and underground piping, HVAC system replacement, and any other necessary upgrades of electrical infrastructure and building controls. Based on the proposed design, the Primates Building would have three (3) dedicated geothermal wells, which would circulate water via plastic pipes through a closed loop system. Heat exchangers would be integrated to transfer heat between the water in the loop and the fluid circulating in the Primate Building's heating and cooling system. Four to five (4-5) water to water heat pumps would be installed to efficiently extract and distribute heat throughout and building. To ensure resiliency of facility operations, the project design includes primary and secondary hot water and chilled water pumps as well as a dedicated natural gas high efficiency condensing hot water boiler and fossil fuel generator backup.

The wells serving the geothermal system would be installed in a vegetated area adjacent to the Cleaveland Court feature on the Zoo campus and bounded on all sides by developed areas of city-owned land, including a parking lot, visitor facilities, and existing paths and roadways. A minor level of clearing and excavation would be necessary to prepare the site for installation of the three geothermal wells. Impacted areas would be re-planted and restored as needed. The proposed project would not involve any new construction or alterations to the size of the Zoo's Primates Building. No changes to the use, mission, or operation of the Zoo facilities would arise out of this effort.

The proposed project would require Bored Geothermal Heat Exchanger and Groundwater Thermal Exchange Device Construction Permits from the Minnesota Department of Health, as well as mechanical/electrical permits from the City of Saint Paul for building retrofits. No hazardous materials are expected to be used or encountered during the retrofitting of the HVAC system to a geothermal heat pump system. However, if asbestos or lead is identified in any building or waste materials during the course of project work, the City of Saint Paul and its contractors would comply with all applicable local, state, and Federal regulations for the safe handling, removal, and disposal of such materials.

The temporary use of drill rig equipment, trenching equipment, and any other gas-powered machinery needed to retrofit the HVAC system may result in minor and temporary noise impacts. The proposed project area is not adjacent to any sensitive community receptors, and The City of Saint Paul and its contractors would follow applicable requirements and best practices to protect zoo animals from disturbance during the construction period.

DOE has considered the scale, duration, and nature of the proposed activities to determine potential impacts on other sensitive resources, including those of a biological, ecological, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

A migratory bird nesting survey shall be conducted no more than seven (7) days prior to ground-disturbing activities occurring between March 15 and September 15. If active nests or eggs are found, an appropriate spatial buffer would be applied per U.S. Fish and Wildlife Service guidelines.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

A migratory bird nesting survey shall be conducted no more than seven (7) days prior to ground-disturbing activities occurring between March 15 and September 15. If active nests or eggs are found, an appropriate spatial buffer would be applied per U.S. Fish and Wildlife Service guidelines.

Notes:

Geothermal Technologies Office (GTO)
Review completed by Whitney Donoghue on 5/20/2024.

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:


NEPA Compliance Officer

Date: 5/20/2024

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: _____