

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



RECIPIENT: NLR

STATE: AK

PROJECT TITLE : NLR - 26-008 Durable Arctic Infrastructure Using a Novel Ground Cooling Geotextile - AK

Notice of Funding Opportunity Number Procurement Instrument Number NEPA Control Number CID Number
GFO-NLR-26-008

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:

B5.1 Actions to conserve energy or water

(a) Actions to conserve energy or water, demonstrate potential energy or water conservation, and promote energy efficiency that would not have the potential to cause significant changes in the indoor or outdoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, manufacturers, and designers), organizations (such as utilities), and governments (such as state, local, and tribal). Covered actions include, but are not limited to weatherization (such as insulation and replacing windows and doors); programmed lowering of thermostat settings; placement of timers on hot water heaters; installation or replacement of energy efficient lighting, low-flow plumbing fixtures (such as faucets, toilets, and showerheads), heating, ventilation, and air conditioning systems, and appliances; installation of drip-irrigation systems; improvements in generator efficiency and appliance efficiency ratings; efficiency improvements for vehicles and transportation (such as fleet changeout); transportation management systems (such as traffic signal control systems, car navigation, speed cameras, and automatic plate number recognition); development of energy-efficient manufacturing, industrial, or building practices; and small-scale energy efficiency and conservation research and development and small-scale pilot projects. Covered actions include building renovations or new structures, provided that they occur in a previously disturbed or developed area. Covered actions could involve commercial, residential, agricultural, academic, institutional, or industrial sectors. Covered actions do not include rulemakings, standard-settings, or proposed DOE legislation, except for those actions listed in B5.1(b) of this appendix.

(b) Covered actions include rulemakings that establish energy conservation standards for consumer products and industrial equipment, provided that the actions would not:

1. Have the potential to cause a significant change in manufacturing infrastructure (such as construction of new manufacturing plants with considerable associated ground disturbance);
2. involve significant unresolved conflicts concerning alternative uses of available resources (such as rare or limited raw materials);
3. have the potential to result in a significant increase in the disposal of materials posing significant risks to human health and the environment (such as RCRA hazardous wastes); or
4. have the potential to cause a significant increase in energy consumption in a state or region.

Rationale for determination:

The U.S. Department of Energy's (DOE) National Laboratory of the Rockies (NLR) is proposing to partner with the Department of War (DoW) to install a newly developed cooling geotextile (CGT) over permafrost locations at the U.S. Army base at Fort Wainwright in Fairbanks, Alaska. The purpose of the project would be to evaluate and demonstrate an innovative and inexpensive solution for resilient infrastructure in permafrost regions.

The project would be funded by the Environmental Security Technology Certification Program, a DoW program. The CGT would be installed at the U.S. Army Cold Regions Research and Engineering Laboratory Farmers' Loop Test site. NLR would act as the project's lead organization installing the CGT and maintaining and repairing the equipment during the term of the project. The NLR subcontractor would be assisting with equipment installation, geotextile characterization, and performance evaluation. The DoW previously completed a NEPA review of the project and applied a categorical exclusion. NLR would follow DoW's requirements.

The proposed project would involve the installation of the CGT over an area measuring approximately 10 meters wide and 6 meters long. The CGT is comprised of rolls of cellulose material with a biodegradable reflective coating that is less than a quarter inch thick in 1-meter-wide strips. The CGT would be placed over an existing road grade which would lay partially on asphalt and partially on rock embankment. The geotextile would be secured to the asphalt and embankment using rocks from the proposed project location.

Once the proposed installation is installed, NLR would monitor several parameters including temperature, solar reflectivity, mid-infrared emissivity, thermal conductivity, mechanical strength, and cooling performance. Work would be conducted on DoW property and completed in accordance with DoW construction policies.

Impacts

Air emissions would occur during local travel, from construction, and operation of small vehicles but it is expected to be de minimis. Workers would follow required specifications to limit air emissions from the construction site. Waste generated during the project would be reused, recycled, or disposed of in accordance with applicable regulations, policies, and procedures.

Erosion and stormwater impacts would occur if excavation is required. Erosion control measures would be required and maintained throughout the project lifecycle. All ground disturbance would occur in areas that have been previously disturbed.

U.S. Fish and Wildlife Service (FWS) has identified two eagle species and four additional migratory bird species for the proposed project location using the Information for Planning and Consultation (IPaC) tool. The Bald Eagle, Golden Eagle, American Golden-plover, Hudsonian Godwit, Lesser Yellowlegs, and Olive-sided Flycatcher are listed as bird species within the range of the proposed project. There is no critical habitat at the proposed project location. The area selected for the CGT would be scanned for ground-nesting birds and installation would not occur if there are nesting birds present. Because the proposed work is located on the site of a preceding project and installation of the geotextile would require minimal ground disturbance of a previously disturbed area, DOE has determined that there would be no effect to listed species nor critical habitat.

Based on a review of the FEMA floodplain mapping and the U.S. FWS National Wetland Inventory, wetlands are located with the proposed project area. The area where the CGT would be installed was disturbed through a previous project. Road grade was installed for a separate research activity that is complete and unrelated to the proposed project. Authorization for filling a portion of the wetlands was obtained and associated with work already performed under Nationwide Permit 14-Linear Transportation Projects, USACE file number POA-2023-00107. As such, no impacts to wetlands are anticipated.

There are 29 historic sites within a 10-mile radius of the proposed project. No historical features or sites were identified within and adjacent to the proposed project area. No visual impacts to these sites are anticipated as the geotextile installation would not be visible from any of these locations.

Individuals working on this project could be exposed to various physical, chemical, and electrical hazards during construction and operation. Existing corporate health and safety policies and procedures would be followed including employee training, work/worker authorization, proper protective equipment, engineering controls, and monitoring, as well as obtaining a Safe Work Permit. Additional policies and procedures would be implemented as necessary if new health and safety risks are identified.

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 completed if project activities involving ground disturbance occur between March 15 and September 15.

All required permits shall be obtained prior to commencing project activities.

Notes:

NLR
Brandon Bammel, 4/1/2026

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposal fits within a class of actions that is listed in Appendix B to 10 CFR Part 1021 or Appendix B and C of DOE's NEPA Implementing Procedures (June 30, 2025). To fit within the classes of actions listed in Appendix B to 10CFR Part 1021, or Appendix B of DOE's NEPA Implementing Procedures, a proposal must satisfy the conditions that are integral elements of the classes of actions in Appendix B of both 10 CFR Part 1021 and DOE's NEPA Implementing Procedures.

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.

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: **Nicole Serio**
NEPA Compliance Officer

Date: 4/1/2026

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: _____