PMC-EF2a

(2.0.6.02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION

RECIPIENT: Middlesex Community College **STATE:** MA

PROJECT TITLE : Middlesex Community College - Geothermal Project

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
N/A	DE-EE0000323	GFO-0000323-002	EE323

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), 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.)
B2.1 Workplace enhancements	Modifications within or contiguous to an existing structure, in a previously disturbed or developed area, to enhance workplace habitability (including, but not limited to, installation or improvements to lighting, radiation shielding, or heating/ventilating/air conditioning and its instrumentation, and noise reduction).
B2.2 Building and equipment instrumentation	Installation of, or improvements to, building and equipment instrumentation (including, but not limited to, remote control panels, remote monitoring capability, alarm and surveillance systems, control systems to provide automatic shutdown, fire detection and protection systems, water consumption monitors and flow control systems, announcement and emergency warning systems, criticality and radiation monitors and alarms, and safeguards and security equipment).
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.

Rational for determination:

Middlesex Community College (MCC) would utilize funding for a Geothermal GSHP energy retrofit to replace existing heating and cooling systems at the Trustee's House on the Bedford Campus in Bedford, Massachusetts. The scope of work consists of the Design and Construction of a GSHP system to condition a 9,800sf facility reducing its total natural gas energy consumption during the heating season and electricity consumption during the cooling season. Additionally, the proposal would serve part of the Environmental Science program through the development of a geothermal course and course modules. The project is divided into six tasks. Tasks 1 and 2 were previously approved by GFO-09-402 on September 24, 2009. This NEPA determination is specific to the remaining project activities (Tasks 3 through 6).

3. Conversion to Geothermal – this task includes the drilling of the borefield, retrofit of the building for the geothermal heat pump equipment, and the testing of the system.
4. Develop Academic Component
5. Development of Demonstration Site – computer based
6. Project Management and Reporting

The GSHP would be a closed loop vertical system utilizing municipal water with propylene glycol (non-toxic/non-corrosive antifreeze solution) added in a 20% ratio to the municipal water working fluid. Seven boreholes to an average depth of 500 feet would be drilled as part of the 17.5 ton system. Drilling would be done by a State licensed and certified driller with an erosion control plan being implemented as required using siltation fencing and haybales. Total area of the borefield is expected to be 420 square feet. A trench (approximately 140 feet by 3 feet) would be excavated to connect the geothermal wells with each other and the building components. All project work would occur within previously disturbed areas. The system would utilize both High Density Polyethylene and Thermally Enhanced

Bentonite Grout, these materials would minimize, if not eliminate any risk of fluid leakage from the system. The system would comply with all IGSHPA design and installation standards. No wetlands and/or floodplains are present at the proposed project location.

Based on the information outlined above and a review of the planned GSHP system, it is determined that this proposed project would not have a significant impact to human health and/or environment. Therefore the proposed project is hereby Categorically Excluded under A9 "Information gathering, analysis, and dissemination", B2.1 "Workplace enhancements", B2.2 "Building and equipment instrumentation", and B5.19 "Ground source heat pumps", from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Insert the following language in the award:

You are required to:
MCC must obtain and comply with all local and state permits required for installation of the GSHP system.

Note to Specialist :

EF2a prepared by Casey Strickland

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 6/19/2012
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

☐ Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
☐ Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

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

Field Office Manager's Signature: _____ Date: _____
Field Office Manager