PMC-EF2a
(2.06.02)

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

RECIPIENT: Tennessee Department of Education **STATE:** TN

PROJECT TITLE : Recovery Act: Hybrid Ground Source Heat Pump System in Tennessee K-12 Schools

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
CDP	DE-EE-0003007	GFO-0003007-005	

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).
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:

Tennessee Energy Efficient Schools Initiative Ground Source Heat Pump (GSHP) Program proposes to install a series of GSHPs which would service up to five schools. Five schools were selected for participation (Brainerd High School, South Lawrence Elementary, Lawrence Public High School, Bolivar High School, and Middleton High School). Phase 1 for Brainerd, South Lawrence, Lawrence Public, and Bolivar was approved by GFO-10-294 on March 23, 2010. Phase 2 and 3 for two of the five schools (South Lawrence and Lawrence Public) were approved by GFO-0003007-002 on June 28, 2011. Phase 1 for Middleton High School as well as Phase 2 and 3 for Bolivar Central High School were approved by GFO-0003007-003 on September 21, 2011. Phase 2 and 3 for Brainerd High School were approved by GFO-0003007-004 on May 15, 2012. This NEPA determination is specific to Phase 2 and 3 for the remaining school in the project, Middleton High School, only.

Middleton High School
Phase 2 includes the installation and commissioning of a 129 ton complete GSHP system in the existing 46,000 square foot Middleton High School building located at 138 Florida Avenue in Middleton, TN 38052. The existing chilled water system would be replaced with a geothermal heat pump system. This would be a hybrid system that would use the existing cooling tower with a new heat exchanger tied to the new geothermal loop field for heat rejection if needed. The closed-loop vertical system would utilize municipal water with no antifreeze solution added. There are no sole source aquifers or known water wells in the project area.

Drilling of the borefield (100 boreholes, 20 foot spacing, to a depth of 250 feet) would occur within a previously disturbed grassy area to the northeast of the main building. The total area of the borefield is anticipated to be 32,400 square feet. Installation of the boreholes would be in accordance with IGSHPA and National Ground Water Association recommendations for closed-loop systems. All piping would be high density polyethylene with heat fused joints. The system would be pressure tested and all leaks would be repaired prior to burial. The selected installer would be a State licensed and/or certified driller who would comply with "Tennessee Well Construction Rules." The site is not located within either a wetland or a floodplain. Once the installation is completed (borefield and trenching), the site would be restored to previous grade and the area would be reseeded after construction.
Phase 3 consists of data collection and project reporting.

Funds associated with Phase 2 and Phase 3: $986,692 (DOE); $1,073,308 (cost share)

The remaining phases of this project are composed of information gathering, analysis, and dissemination; workplace enhancement; and ground source heat pumps; therefore the DOE has categorized this proposal into Categorical Exclusions A9, B2.1, and B5.19.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

EF2a prepared by Casey Strickland

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 7/19/2012

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