

PMC-EF2a

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



(20402)

RECIPIENT: Kent County, MI

STATE: MI

PROJECT TITLE : Kent County, MI EECBG Revised Activity -GSHP

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0000749		0

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:

B5.1 Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

Rational for determination:

The County of Kent, Michigan is proposing to make an addendum to their previously CX'd Activity #3, Kent County Correctional Facility Replacements, by adding two new actions and additional funding from previously approved PAS which are no longer being constructed. A total of \$955,000 reallocated funds will be moved over to Activity #3 to fund the installation of a closed loop ground-source heat pump (GSHP) and energy dashboard for use at the County of Kent Correctional Facility.

The intent of the Energy Dashboard is to provide total building utility load and sub-metered loads to allow building operators to assess relationships between operation, controls, and energy. The dashboard and related hardware allows the user to first benchmark the facilities energy and other utility consumption and then make informed operational decisions regarding the use and optimization of energy consumption and scheduling of equipment run times. The data provided by the dashboard will provide immediate, real-time, feed back regarding system efficiencies and energy consumption. Real-time data can be used in a variety of ways such as assisting in peak demand shaving and instant notification of the validity of various energy conservation measures.

The proposed GSHP will have a heating/cooling capacity of 200 tons with a closed loop vertical heat exchanger consisting of 90 boreholes drilled to a depth of 300 feet spaced 20 feet apart; approximate total borefield area is 1,800 square feet/0.04 acre. At no point during operation will any interaction take place with the groundwater. The proposed borefield will be located over previously disturbed residential lots which were acquired by the County; all empty residences have been demolished. All boreholes will be cased in cementitious grout and GeoPro Thermal Grout Lite which will ensure the area around the borehole is sealed to keep any surface runoff from contaminating ground water. The system will employ high density polyethylene pipe that is heat fused at the joints which greatly minimizes the risk of leaks in the system preventing possible contamination of soil and ground water sources. The system refrigerant is comprised of a mixture of 20% Propoline glycol and potable water.

The feed pipes for the system will be installed using horizontal directional drilling techniques, therefore, no major excavations are anticipated. The connecting pipes within the field and the boreholes are not expected to be a source of erosion concern. Additionally, an erosion control plan will be prepared and implemented for this project and all drilling will be performed by a state licensed drilling company. Well drilling equipment will enter the site using a construction entrance composed of 2" - 6" angular stone to aide in preventing tracking of mud from the construction site. The project area will be restored with topsoil and a permanent seed mixture to establish a grass covered field. The grades will be restored to the preconstruction condition and positive drainage away from the bore holes.

No threatened or endangered species, sensitive habitats, or culutral impacts are antiapted as the GSHP installation will occur over previously disturbed residential land.

After a thorough review of the submitted information, it has been determined that the proposed project will not have a significant impact to human health and/or environment. Therefore, all activities in the proposed project are categorically excluded from further NEPA review under CX B5.1 "actions to conserve energy"

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Date: 6/21/10
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