Department of Energy
Golden Field Office
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DOE/EA-1763

FINDING OF NO SIGNIFICANT IMPACT AND FLOODPLAIN STATEMENT OF FINDING

GEOTHERMAL EXPANSION TO BOISE STATE UNIVERSITY CITY OF BOISE, ADA COUNTY, IDAHO

AGENCY: U.S. Department of Energy, Golden Field Office

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: The U.S. Department of Energy (DOE) and Department of Housing and Urban Development (HUD) are proposing to provide Federal funding[1] to the City of Boise for the design and construction of an extension of the City's geothermal system onto the Boise State University (BSU) campus. The project would extend the existing geothermal system on Capitol Boulevard across the Boise River to the western portion of the BSU campus; it would continue the geothermal pipelines to the eastern portion of the campus and back across the Boise River along Broadway Avenue to reconnect into the existing system. The two bridges on each side of the campus would provide the primary routes for the geothermal utility river crossings. These two delivery routes across the Boise River would enhance service reliability and connectivity and would provide opportunities to serve the entire BSU campus, including buildings under construction and future development cited in the BSU Campus Master Plan. This project includes the construction of 10,100 lineal feet of geothermal pipeline to nine BSU buildings. The project would also provide geothermal connections for up to eleven university buildings for conversion to geothermal heating and for future construction.

All discussion, analysis and findings related to the potential impacts of construction and operation of the project, including the applicant committed measures, are contained in the Final Environmental Assessment (EA). The Final EA is hereby incorporated by reference.

This FONSI was prepared in accordance with the *National Environmental Policy Act of 1969* (NEPA), the Council on Environmental Quality regulations for implementing NEPA (40 CFR 1500-1508), DOE NEPA regulations (10 CFR 1021.322) and HUD NEPA regulations (24 CFR 58.5).

ENVIRONMENTAL IMPACTS: In compliance with NEPA and the DOE and HUD NEPA implementing regulations, the EA evaluates the potential impacts of the DOE's and HUD's proposed decision to provide funding to the City of Boise and also examined a No-Action Alternative. Under the No-Action Alternative, DOE and HUD would not fund the Proposed Project and the geothermal pipeline extension would not be designed or constructed with Federal funds.

[1] Prior to the issuance of this FONSI, DOE has authorized the City of Boise to use a percentage of its Federal funding for preliminary activities, which include: costs associated with the EA preparation, preliminary design, and research. The activities are associated with the Proposed Project and do not significantly impact the environment nor represent an irreversible or irretrievable commitment by DOE or HUD in advance of the conclusion of the EA for the Proposed Project.

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The EA evaluates the potential impacts of the Proposed Project on key environmental resources and outlines the regulations and permitting process that should be followed for construction of the project. The geothermal pipeline extension would be constructed on previously disturbed lands in an urbanized area. The pipelines would be buried primarily within existing roadway rights-of-way and utility corridors. The Proposed Project would not require modification to any roadways and traffic control would be performed by the contractor during construction following Ada County Highway District (ACHD) and Idaho Transportation District (ITD) requirements. During construction activities, noise levels would temporarily increase in the project area, but would cease upon completion of construction activities. The Proposed Project would create construction jobs as well as provide long-term energy related cost savings to BSU by using geothermal energy for heating compared to conventional heating resources. No adverse impacts would occur to any residents of the communities in or near the project area and there would be no adverse and disproportional impacts to minority or low-income populations. Based on this and other information, DOE and HUD conclude that the City of Boise's Proposed Project would have no or minimal impacts on transportation and traffic, noise, aesthetics, socioeconomics, and environmental justice. Additional resources were also considered as part of the analysis including land use, geology and soils, water resources, cultural resources, biological resources and hazardous materials. The findings from each of these resource areas are provided below.

Expansion of the geothermal pipeline would serve both City of Boise and BSU future growth. Growth of the geothermal system is anticipated and encouraged by the City of Boise and extending the pipeline south of the Boise River would provide the potential to serve additional future City and BSU growth in this area. Extending the City's geothermal system would also accommodate existing and future BSU campus buildings and would coincide with the ongoing energy needs of the university. Due to the coordination that occurred between the City of Boise and BSU for this project, impacts to land use in the project area are expected to be minimal. The Proposed Project would be consistent with local and regional planning efforts and documents.

The majority of the soils along the proposed pipeline corridor have been disturbed by construction of existing roadways and placement of existing utilities. The Proposed Project would not result in the permanent loss of any existing landscaped areas and no impacts to geology or tectonics are anticipated by the project. Upon completion of the construction phase, disturbed areas would be stabilized, re-vegetated, or reconstructed to pre-construction conditions.

The geothermal pipeline would be suspended beneath the bridge decks above the Boise River waterway and would not encroach upon Boise River wetlands or the floodway in the project area. With the implementation of stormwater best management practices (BMPs), direct impacts to water quality would be minimized. To mitigate potential spills of petroleum products or other pollutants that could occur during construction of the Proposed Project, an emergency response program for accidental releases would be required. Suspending geothermal pipelines underneath the Broadway Avenue and Capitol Boulevard bridges is the most feasible option for connecting the pipeline to the BSU campus and is consistent with other Boise River utility crossings. Installing the pipeline beneath the bridge decks may require equipment (e.g., front-end loader) positioned beneath the bridge, which would require equipment access to the Boise River. Equipment would access the Boise River during winter months (low river flow period) and would require a US Army Corps of Engineers (Corps) Section 404 permit. The Section 404 permit would be filed jointly with the Idaho Department of Water Resources (IDWR) and would require water quality certification from the Idaho Department of Environmental Quality (IDEQ). The permit would list requirements for site preparation, construction operation, and restoration requirements. In-river access of heavy equipment has been previously permitted by the Corps. Final construction would match current conditions and drainage patterns would not be altered.

A release of geothermal water from a leaking or ruptured pipe into the Boise River may have temporary temperature impacts and could result in localized elevated fluoride concentrations in surface water compared to ambient conditions. However, such impacts would be temporary and would not alter water quality in the Boise River. The City's geothermal pipeline system is equipped with pressure sensors and if a rupture occurred, it would be quickly identified and repaired. The buried pipeline to be installed as part of the Proposed Project would also be equipped with cathotic protection to prevent corrosion, and further reduce the risk of leaks. Normal operation of the geothermal system would not result in water quality or contamination impacts.

A cultural resources survey was conducted to locate, record, and assess any prehistoric and historic or cultural resources visible in the study area. The survey included historic properties authorized under the National Register of Historic Places (NRHP) and through research. The State Historic Preservation Office (SHPO) provided concurrence that the Proposed Project would not affect any historic properties, nor would it constitute adverse cultural resource effects.

The project area does not have habitat to support Federally listed threatened, endangered or candidate species due to existing development and human activities. Bald eagles (removed from the Federal list of endangered and threatened species but protected under the Bald and Golden Eagle Protection Act) are common in the Boise River area during winter months. Temporary construction activities along the bridge crossings could disturb perching bald eagles. Since these areas currently experience a high degree of pedestrian and bicycle traffic (which tend to flush perching eagles), an increase in disturbance to bald eagles associated with construction activities would constitute a short-term and minor effect.

The shallow aquifer beneath most of the BSU campus is impacted with the solvent perchloroethylene (PCE), a common dry cleaning solvent. Therefore, groundwater encountered during construction activities or shallow groundwater that is pumped for other uses would be sampled for PCE and would be treated as required, prior to discharge. Project BMPs would be implemented, such as secondary containment around fuel tanks and other stored chemicals at the job site to ensure that hazardous material releases are avoided.

DOE and HUD evaluated the cumulative effects of the Proposed Project with other past, present, and reasonably foreseeable future projects in the area. It was assumed that ongoing development and infrastructure activities, continued geothermal pipeline system expansion, as well as recreational activities within the project area would continue into the foreseeable future in the same manner and to the same degree as existing and the recent past. DOE and HUD concluded that the Proposed Project, in conjunction with other activities considered, would have no or minimal cumulative impacts on land use, geology and soils, water resources, cultural resources, biological resources, or hazardous materials.

FLOODPLAIN STATEMENT OF FINDINGS: As per the requirements of 10 CFR Part 1022, *Compliance with Floodplain and Wetland Environmental Review Requirements*, DOE and HUD conducted a floodplain assessment. A review of the Federal Emergency Management Agency (FEMA) flood insurance rate maps for the area show that the Boise River is the primary floodway through the City. Most of the project area is located within the 500-year floodplain zone. A small segment of the project area is located within the 100-year floodplain on the north side of the crossing at Capitol Boulevard. Since final construction would match current conditions (e.g., the project area would be restored to existing conditions), drainage patterns and surface elevations would not be altered. DOE and HUD conclude that this project would have no adverse impacts on the natural and beneficial floodplain values associated with the base floodplain, would not affect lives or property in the area, and would comply with floodplain protection regulations.

PUBLIC PARTICIPATION IN THE EA PROCESS: DOE and HUD sent a scoping letter to regulatory agencies and other potentially interested agencies, organizations, and individuals, and posted the scoping letter on the DOE Golden Field Office Public Reading Room website on June 10, 2010. Additionally, DOE conducted consultation with the Idaho State Historic Preservation Office (SHPO). The scoping letter described the Proposed Action and requested assistance in identifying potential issues to be evaluated in the EA. In response to the scoping letter, DOE received comment letters from three agencies: 1) The Idaho Department of Environmental Quality (IDEQ); 2) The U.S. Fish and Wildlife Service (USFWS); and 3) The State Historic Preservation Office (SHPO). Comments from IDEQ and the USFWS referenced permits and regulations that the project would be required to adhere to, including a list of threatened, endangered and candidate species. The comment letter from SHPO verified that no historic properties would be affected by the Proposed Project. Comments received along with responses, as appropriate, are summarized in Table 1-1 of the EA. Scoping correspondence is included Appendix A of the EA.

DOE and HUD issued the Draft EA for public comment on November 16, 2010 and posted it on the DOE Golden Field Office Public Reading Room website. The announcement of the availability of the Draft EA was posted for a 15-day comment period. The comment period for the Draft EA ended on December 1, 2010. No comments were received on the Draft EA.

DETERMINATION: Based on the information presented in the Final EA (DOE EA-1763), DOE and HUD determined that providing funding for the design and construction of the Boise Geothermal System Expansion to the BSU campus would not constitute a major Federal action that significantly affects the quality of the human environment within the context of NEPA. Therefore, the preparation of an environmental impact statement (EIS) is not required and DOE is issuing this FONSI.

The City's commitment to obtain and comply with all appropriate Federal, state, and local permits required for construction and operation of the geothermal pipeline extension project, and to minimize potential impacts through the implementation of BMPs and various mitigation practices detailed in the EA, shall be incorporated and enforceable through DOE's and HUD's financial assistance agreements.

The Final EA is available at http://www.eere.energy.gov/golden/Reading_Room.aspx.

For questions about this FONSI, contact:

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Derek Passarelli
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