

RECOMMENDATION CONCERNING THIRD PARTY GEOTHERMAL PROVIDER

Request

On September 20, 2011, the Board approved a plan for spending \$130 million in CIP 2006 funds, which included a provision that the Facilities Design and Construction Department (FD&C) would “implement additional sustainable design strategies in construction projects, focused on greater energy and water efficiency, such as geothermal heating/cooling”. On February 27, 2012, FD&C issued an RFP to find third party providers for a geothermal system that would provide heated and cooled water for the heating and air conditioning (HVAC) systems at the Richland Creek Elementary (E-25) and West Apex High (H-10) projects. Responses were due on April 16, 2012. Only one company responded, Holocene, LLC.

Background

A geothermal HVAC system has a higher initial cost than the traditional approach using boilers and chillers, although the operating and maintenance cost for geothermal systems is lower. Currently the state and federal governments allow tax credits to install geothermal systems, except public bodies are not eligible to receive tax credits. Only nongovernmental entities can qualify to use the tax credits. Therefore, they are able to use the tax credits to offset some of the higher cost of this system. The proposal from Holocene included a reduction in the initial cost of the geothermal equipment through Holocene’s ability to receive tax credits.

The plan was for staff to determine whether the geothermal proposal was cost effective and if acceptable, then the legal documents to procure this via third party could be negotiated. If the legal documents were acceptable, the interlocal agreement and contracts would be submitted to the Board for approval. Since statutory law prevents local boards of education from entering into this type of contract without public bidding, an interlocal agreement with Wake County would be needed to authorize the Board to act as the County’s agent. This was to allow the project to take advantage of the County’s ability to contract for the acquisition of geothermal equipment as a pilot project pursuant to local legislation without bidding. Therefore, if the County agreed to allow us to use the local legislation, the County would need to approve an interlocal agreement and the contracts with the third party provider. In addition, the third party contracts would need the approval of the North Carolina Local Government Commission.

Investigation

Holocene’s response to the RFP was to provide a geothermal system at both the elementary and high school. The analysis of the high school proposal showed having the third party provide central geothermal would cost much more than doing the traditional 4-pipe boiler/chiller system, even taking into account the long-term cost savings resulting from the use tax credits. Holocene’s initial proposal for a hybrid distributed system at the elementary school was initially not financially realistic, but we engaged in several rounds of negotiations which resulted in a revised version whereby we concluded that it would be cheaper by approximately \$300K (net) over the 30-year period to install a geothermal system via Holocene as opposed to installing it ourselves by traditional means. Once it was determined that the Holocene proposal was financially feasible, the legal documents and issues were examined. The Board attorney identified multiple major issues to be resolved based on a review of the proposed Holocene documents. Over the course of several months, the Board attorney and the Holocene attorney attempted to resolve these issues. As of September 19, 2012, there were still multiple issues yet to be resolved despite having clearly established September 19 as a final deadline to have the primary legal issues resolved. The legal issues being discussed were just the framework for the subsequent contracts and were not the actual contract language.

We are not aware of any geothermal systems having been installed in North Carolina using the proposed third party delivery method. In fact, Holocene represented that they have not installed such a system under this model, although they proposed using a credible HVAC subcontractor in Brady Trane.

Recommendation

Staff recommends that negotiations with Holocene cease. Our experience with the major legal framework taking way too much time to resolve (and still not satisfactorily resolved) is an indication that the actual contract provisions will take more time than has been allowed in the schedule and potentially will not be resolved to WCPSS's satisfaction. We are currently four months behind the initial timeline for this third party arrangement. If everything were resolved today (which they are not), the Holocene portion of this project will not be able to begin design until late January 2013, due to numerous approvals required (BOE, BOC, and LGC). However, the design of the school (including mechanical system and site design) is scheduled to be completed in late October 2012, with permitting to follow. Barnhill is scheduled to bid the project in March 2013. Therefore, the time to reach agreement without impacting the start and completion of the project has expired, and pursuing further negotiations with Holocene would jeopardize the success of the overall project.

While the concept of having a third party provide a geothermal system sounds reasonable, the legal and financial details required more time than was available for this school. The single proposal that was submitted did not produce the savings that would have been desired given the 45% tax credit that is available. Given that there was only one responder to the RFP and the only other known potential vendor did not respond to the RFP due to losing their financing ability, it is not anticipated that the third party approach will be successful in the near future to address any potential use of geothermal equipment.

Next Steps

Staff recommends providing the Richland Creek Elementary project an additional \$350,000 to install a hybrid distributed geothermal system by traditional means (not third party). Over 30 years, it is anticipated that this amount will be recovered in addition to \$262,000 in maintenance and operational savings, as compared to the planned heat pumps with a cooling tower/boiler system. The school system should break even in 25 years based on energy escalation of 3% per year. Since the geothermal system uses no natural gas, this approach protects against natural gas price increases which are at 10 year lows.

September 25, 2012

30 YEAR COST FOR DIFFERENT MECHANICAL SYSTEMS (2.4% interest)

	Capital	Energy	Maintenance	Replacement	Total
4 pipe traditional system by WCPSS Today's impact to project cost is \$435K	\$2,444,274	\$3,594,323	\$595,539	\$2,631,329	\$9,265,465
Cooling tower/boiler system by WCPSS This is baseline and therefore no impact to project cost	\$1,960,325	\$2,366,511	\$882,356	\$2,251,123	\$7,460,315
Hybrid geothermal system by Holocene Today's impact to project cost is \$104K	\$2,091,007	\$1,939,888	\$766,737	\$2,094,615	\$6,892,247
Hybrid geothermal system by WCPSS Today's impact to project cost is \$348K	\$2,397,249	\$1,939,888	\$766,737	\$2,094,615	\$7,198,489