MEMORANDUM

To: Mayor McConnell and Members of the Assembly
Jay Sweeney, Interim Municipal Administrator

From: Michael Harmon, P.E., Public Works Director MH
David Longtin, P.E., Senior Engineer DLL

Reviewed: Mellissa Cervera-Bean, Contract Coordinator MC

CC: Mike Middleton, Deputy Finance Director

Date: September 4, 2013

Subject: AEA Application for Heat Pumps – Assembly support

Background:

The Alaska Energy Authority (AEA) is soliciting applications for grant funding made available through the Renewable Energy Program, Round VII. The Engineering Division would like to pursue design and construction grant funding for the installation of heat pumps at Centennial Hall, the Library and the Wastewater Treatment Plant. The application would benefit from a resolution from the Assembly expressing its support for the projects.

Analysis:

We are requesting a resolution from the Assembly expressing its support for the projects. A resolution is attached. The application deadline is September 24, 2013.

The three heat pump grants under consideration are described here. Heat pumps utilize thermodynamic principles to convert ambient heat sources (i.e., outside air or wastewater) to building heat.

1. Wastewater treatment plant: This heat pump project would utilize WWTP effluent as its heat source. A fuel oil boiler would be used to provide redundancy and supplemental heat during cold weather. Design and construction costs are estimated at $860,000. Estimated life cycle costs of the existing system are $980,000 greater than estimated life cycle costs for the heat pump system, or an average of $33,000 per year over a 30-year period. If the grant is funded and the design and construction costs are backed out of this analysis, annual life cycle cost savings are $60,000.
2. Harrigan Centennial Hall: This heat pump project would utilize outside air as its heat source. Electric heating coils would supply backup heat. Seawater wells were considered,

but the subsurface conditions proved not to be conducive to this. Design and construction costs are estimated at $2,230,000. Estimated life cycle costs of the existing system are $660,000 greater than estimated life cycle costs for the heat pump system, or an average of $22,000 per year over a 30-year period. If the grant is funded and the design and construction costs are backed out of this analysis, annual life cycle cost savings are $92,000.

3. Kettleson Memorial Library: This heat pump project would utilize outside air as its heat source. Electric heating coils would supply backup heat. Seawater wells were considered, but the subsurface conditions proved not to be conducive to this. Design and construction costs are estimated at $590,000. Estimated life cycle costs of the existing system are $290,000 greater than estimated life cycle costs for the heat pump system, or an average of $10,000 per year over a 30-year period. If the grant is funded and the design and construction costs are backed out of this analysis, annual life cycle cost savings are $28,000.

This is the same grant program the Sitka Sound Science Center is seeking a grant from. The Assembly approved a non-monetary sponsorship for their application at the August 27, 2013, meeting.

Fiscal Note:

The CBS would not incur O&M cost increases if these heat pumps are installed. Additional staff maintenance costs of the mechanical equipment were accounted for in the feasibility studies prepared for these projects. The decrease in operational costs is significantly larger than the increase in maintenance costs, as reflected in the estimates above. The grant does require an annual report on the performance of the units and cost savings achieved for the 10 years following the grant award. The costs associated with this small report are not reflected in the annual savings projections cited above.

The grant application allows the applicant to consider energy-related improvements completed in the previous 5 years or planned in the near term as a match. Building envelope (insulation) projects for which funding is already in place at the Centennial Hall and Kettleson Library will be offered as a match to the funding requested. This match will not decrease the amount of funding we would receive for the heat pump projects, yet will make our application more competitive.

Recommendation:

Approve the attached resolution expressing Assembly support for the three heat pump projects.

Sponsor: Administrator

CITY AND BOROUGH OF SITKA

RESOLUTION NO. 2013-15

A RESOLUTION OF THE ASSEMBLY OF THE CITY AND BOROUGH OF SITKA, ALASKA, APPROVING CBS TO SUBMIT AN ALASKA ENERGY AUTHORITY RENEWABLE ENERGY GRANT FOR HEAT PUMP PROJECTS AT THE WASTEWATER TREATMENT PLANT, HARRIGAN CENTENNIAL HALL AND THE KETTLESON MEMORIAL LIBRARY

WHEREAS, heat pump technology has improved to the point where it can be reliably expected to save significant amounts of money over the life cycle of the pumps; and

WHEREAS, the City and Borough of Sitka seeks to obtain financial assistance to design and construct building heat improvements; and

WHEREAS, the State of Alaska, Alaska Energy Authority (the Authority) is offering funding through the Renewable Energy Fund.

NOW, THEREFORE, BE IT RESOLVED that the Assembly of the City and Borough of Sitka, Alaska, by this resolution, affirms and supports the request to submit an AEA Renewable Energy Grant Application for the design and construction of heat pump projects at the Wastewater Treatment Plant, Harrigan Centennial Hall and the Kettleson Memorial Library utilizing already committed funding as the match.

FURTHER BE IT RESOLVED, the Municipal Administrator or his designee is authorized to execute the grant application and the grant agreement with the Authority on behalf of the City and Borough of Sitka.

PASSED AND APPROVED by the Assembly of the City and Borough of Sitka, Alaska on this 10th day of September 2013.

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Mim McConnell, Mayor

ATTEST:

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Colleen Ingman, MMC
Municipal Clerk