

App #111 Juneau Ground Source Heat Pump Construction (Aquatic Center)

Resource: Geothermal

Proposed Project Phase: Construction
Design

Proposer: City & Borough of Juneau

AEA Program Manager: David Lockard

Applicant Type: Local Government

Project Description

The proposed hybrid ground source heat pump system at the new Dimond Park Aquatic Center is to be located in Juneau’s Mendenhall Valley, adjacent the new Thunder Mountain High School and Riverbend Elementary on the Dimond Park site. The facility will primarily serve Juneau residents, but will also serve visitors from nearby southeast Alaska communities and other visitors to Juneau. The City & Borough of Juneau Engineering and Parks and Recreation Departments are directly involved with the design and construction of the facility, as is the Juneau School District. A professional design team led by local architectural firm Jensen Yorba Lott, Inc. is responsible for the project design and construction administration. The City & Borough of Juneau Engineering Department is responsible for design and construction management and progress reports to grant agencies as required. The City & Borough of Juneau Finance Department is responsible for project funding and financial reporting to grant agencies as required.

Funding & Cost

Cost of Power:	\$0.11 /kWh
Requested Grant Funds:	\$1,450,000
Matched Funds Provided:	\$500,000
Total Potential Grant Amount:	\$1,950,000
Existing RE Fund Grant Offer:	
AEA Funding Recommendation: (Not Constrained by Available Funding)	\$1,450,000

AEA Recommendation

- ✗ Full Funding
- Partial Funding
- Special Provision
- Not Recommended
- Did Not Pass Stage 1
- Pending

AEA Funding Recommendation: \$1,450,000

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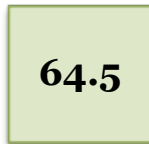
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Scoring & Location



Overall Rank
(out of 99)



Stage 3 Total Score
(out of 100)

Energy Region: Southeast

Election District: 3, Juneau-Downtown-Douglas



Rank within Region
(out of 20)

Stage 3 Scoring Summary

<u>Criterion (Weight)</u>	<u>Score</u>
1) Cost of Energy (Max 30)	4
2) Funding Resources (Max 25)	21
3) Project Feasibility from Stage 2 (Max 20)	18
4) Project Readiness (Max 5)	5
5) Benefits (Max 10)	9
6) Local Support (Max 5)	2
7) Sustainability (Max 5)	5

AEA Review Comments

Applicant proposes final design and construction of a ground source heat pump system at the Juneau Aquatic center. Project appears well-conceived and organized with relatively low risk. Excellent technical analysis and detailed cost info.

Recommend for full funding.

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Economic Analysis

Benefit/Cost Ratio
(Applicant)

4.93

Benefit/Cost Ratio
(AEA)

5.12

Applicant proposes installing a ground source heat pump hybrid heating system with electrical heating as a back up for a new pool facility in place of a purely electrical heating system. As neither system is currently built, we used the additional costs for building the hybrid system over the purely electrical system as estimated by the applicant for capital cost of the system. The applicant provided life cycle cost analysis for four alternative systems with the application, however, they used different assumptions than AEA uses. We used the applicant's estimates of O&M costs and energy costs for the electrical and hybrid systems from their cost worksheet for our analysis. It is assumed that electrical generation offset would be from diesel generation. Based on these assumptions, B/C ratio is 5.12.

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DNR/DGGS Geohazards Comments

DNR/DGGS Feasibility Comments

DNR/DMLW Feasibility Comments