

Memorandum 13-084 Tidal Energy Incubator Project

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TO: Mayor Wythe and City Council

THROUGH: Walt Wrede, City Manger

FROM: Katie Koester, Community and Economic Development Coordinator

DATE: June 5, 2013

SUBJECT: Tidal Energy Incubator Project Update

Background: A group of industry professionals and interested individuals have been exploring the idea of establishing a test center for tidal power at the Deep Water Dock. The vision is a station at the Homer Deep Water Dock with infrastructure for submerging and testing tidal power generation equipment that would be valuable in the relatively nascent field brining researchers, industry and economic development to Homer. Council authorized \$100,000 for this project in Ordinance 12-51(A) in the form of a reimbursable grant. City staff, in consultation with the tidal energy working group, determined that some baseline work needed to be done before a request for proposal could be issued. A group of University of Alaska students approached the City about doing some preliminary design work as part of their senior design project. The Council funded a site visit to Homer for the 7 students and Dr. Orson Smith in Resolution 13-013.

Update: The UAA students visited Homer on February 15, 2013. They completed their senior design project and presented it to faculty and colleagues on April 26, 2013. I have included excerpts from the 106 page report with this memo including the executive summary, summary of final design, conclusion and recommendations, project cost estimate summary and sketches. A copy of the full report and the power point can be found on the City's website at <http://www.cityofhomer-ak.gov/economicdevelopment/tidal-eenergy-incubato...>

Next Steps: The tidal energy working group determined that three things needed to be accomplished as baseline work for the project before the idea of a reimbursable grant can be pursued: 1) a more clear picture of what the infrastructure would look (preliminary design from UAA students); 2) base line data specific to the area (velocity, turbidity and sediment samples) and 3) a market analysis to determine if there is a need for a tidal energy incubator in the field and if researchers and developers would find the Deep Water Dock and the test conditions it provides valuable.

The project is currently at step 2, gathering baseline data. Dr. Tom Ravens, a professor at UAA, submitted a proposal in December of 2012 to gather this data for approximately \$12,000 (attached). There was discussion about performing a more affordable surface velocity survey only since there is debate as to whether there is enough velocity to support power generation at the Deep Water Dock. However, even if the data collected on the surface showed insufficient current, doubts would remain about subsurface conditions and likely prompt further analysis. Port and Harbor Director Hawkins determined that the data collected will be valuable to the City and Deep Water Dock users in addition to any application to the tidal energy incubator project.

Recommendation: Direct staff to work with the University of Alaska Anchorage on a proposed site assessment for the subsurface conditions at the Deep Water Dock and come back to Council with a resolution authorizing the work.

Enclosure:

Experts from Homer Tidal Power and Marine Instrument Test Station Design

Site assessment proposal from Dr. Ravens

Related Ordinances **Memorandum - Related Ordinances:** [Ordinance 12-51\(A\) HART Funds to Re-Pave Fish Dock Road and Improvements to Outer Dock Road and Reimbursable Grant for Tidal Power Incubator Project](#)

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