

**NOTICE OF MEETING
MEETING AGENDA**

- 1. CALL TO ORDER**
- 2. APPROVAL OF THE AGENDA**
- 3. PUBLIC COMMENT REGARDING ITEMS ON THE AGENDA**
- 4. RECONSIDERATION**
- 5. APPROVAL OF MINUTES**
 - A. May 8, 2012 Regular Meeting Minutes Page 1
- 6. VISITORS**
 - A. Aaron Larson, SpitwSpots - Market Homer for High Tech Business Page 5
- 7. STAFF & COUNCIL REPORT/COMMITTEE REPORTS/ BOROUGH REPORTS**
 - A. Review of Resolution 12-041 Page 13
 - B. Staff Report: Resolution 12-041; Market Homer for High Tech Business; Suggested Topics for Next Meeting
- 8. PUBLIC HEARING**
- 9. PENDING BUSINESS**
- 10. NEW BUSINESS**
 - A. Appoint member to the Lease Committee Page 17
- 11. INFORMATIONAL ITEMS**
 - A. City Manager's Report 6/11/12 Page 19
 - B. Families First correspondence Page 23
 - C. 2008 Renewable Energy Fund grant application for tidal generator feasibility study. Page 27
 - D. Certificate of Appointment for Nantia Krisintu Page 49
- 12. COMMENTS OF THE AUDIENCE**
- 13. COMMENTS OF THE CITY STAFF**
- 14. COMMENTS OF THE COUNCILMEMBER**
- 15. COMMENTS OF THE CHAIR**
- 16. COMMENTS OF THE COMMISSION**
- 17. ADJOURNMENT/NEXT REGULAR MEETING IS SCHEDULED FOR TUESDAY, JULY 10, 2012 at 6:00 p.m. in the City Hall Cowles Council Chambers located at 491 E. Pioneer Ave, Homer, Alaska.**

Session 12-05, a Regular Meeting of the Economic Development Advisory Commission was called to order at 6:00 p.m. by Chair Sarno on May 8, 2012 at the City Hall Cowles Council Chambers located at 491 E. Pioneer Avenue, Homer, Alaska.

PRESENT: COMMISSIONER FAULKNER, SARNO, SCHMITT, WAGNER
COUNCILMEMBER: WYTHE
STUDENT: DAVIS
STAFF: COMMUNITY AND ECONOMIC DEVELOPMENT COORDINATOR KOESTER
DEPUTY CITY CLERK JACOBSEN

APPROVAL OF THE AGENDA

The agenda was approved by consensus of the Commission.

PUBLIC COMMENTS REGARDING ITEMS ON THE AGENDA

There were no public comments.

RECONSIDERATION

There were no items for reconsideration.

APPROVAL OF MINUTES

A. April 10, 2012 Regular Meeting Minutes

The minutes were approved by consensus of the Commission

VISITORS

A. Hans Rinke, Area Forester, State of Alaska Division of Forestry - Fire Safety

Judy Reese, Stewardship Forester with the State of Alaska Division of Forestry, presented to the Commission regarding fire safety, challenges going into this fire season, and programs that are underway in the state. She emphasized that fire safety is a concern peninsula wide as the available resources are shared throughout the peninsula. We are not coming into this season in a drought situation which is good as it keeps fires on the surface, takes less work and water to extinguish, and a better chance to catch them. She provided information to link to a pod cast in which National Weather Service in Alaska gives an outlook for this year in relation to El Nino, El Nina, the polar oscillation, jet stream, and an educated approach to fire prediction. Another resource put out weekly by the inter-agency coordination center in Fairbanks that gives an outlook for statewide fire risk. NOAA provides large scale trends nationally, and we are seeing below normal temperatures and normal moisture predicted for Alaska this season. She reviewed the resources available for our area as far as equipment, personnel, and education. Homeowner responsibility is an ever growing program relative to Firewise and having our communities accept part of the risk and mitigation for fire safety. Ms.

ECONOMIC DEVELOPMENT ADVISORY COMMISSION
REGULAR MEETING
MAY 8, 2012

Reese explained one of the biggest challenges is fuel loading, as the grass grows and isn't harvested, grazed, or relinquished for product it accumulates in density and depth and becomes one of the biggest threats to the community and firefighters. Mowing and grazing are the best plans of action but they hope some innovative bio-fuel technology will come to light. They face challenges with retention of firefighters after they are trained so there are always opportunities for people who are interested in becoming a firefighter. Regarding the forestry program, commercial mills are falling by the wayside and firewood is taking that place as we become more aware of fuel wood and energy cost. It is a program that needs to be developed and synchronized with the community need. It is important for the Commission and Council to consider that firewood is a resource for the future and what to do about it as a community and land management. The Division of Forestry is working closely with the Alaska Energy Authority to assess bio-fuel potential as proposals come forward. They are always looking for new insects an invasive species. Regarding stewardship, she works with several different agencies in bringing programs to the community. She noted poor access is a challenge as it limits availability to fire wood on public lands. She thinks more information will be coming forward. She noted that there hasn't been anyone on the peninsula asking for wood in a commercial way other than small local mills. Fire wood will be a growing concern and she encouraged the group to consider where they want to go as a community in planning, and where to save money mitigating fuel costs with wood energy. Ms. Reese spoke of the Tok school project and suggested that while we may not have enough wood products to heat a school, there may be enough to heat a public building. Regarding fire risk, we need to continue to be vigilant about access, egress, public safety, emergency planning, and keeping our schools and EOC's safe from wild land fire.

The Commissioner's talked about different programs with Ms. Reese and thanked her for her information.

Representative Seaton commented briefly to the Commission regarding the gas line proposal and encouraged the Commission to think ahead for the city's sake for savings for things like ice production at the harbor, the ice rink, and other places that could benefit. He has been talking to local installers and hopes to have informational forums for people to become more aware of the possibilities for transitioning to natural gas. He suggested the EDC would be a good group to be involved with the forums. Representative Seaton commented that the State funded a wood fired boiler for Port Graham, and indicated that if the city develops a proposal for a facility to look at the renewable energy grants as it is what funded the Port Graham boiler. Lastly he commented regarding tidal energy and encouraged that the city, HEA, and others can develop a tidal incubator process, he thinks that is something that would fit well into the renewable energies grant. There is a project going on in Nikiski, but it has is challenges with being off shore, silt conditions, difficulty in monitoring and seeing fish interactions. He thinks the Deep Water Dock would be a good location.

The Commissioner's commented regarding the tidal energy information and thanked Representative Seaton for his report.

STAFF AND COUNCIL REPORT

There were no staff or council reports.

PUBLIC HEARING

PENDING BUSINESS

NEW BUSINESS

A. Port and Harbor Improvement Projects

The Commission recognized that the projects proposed in the draft resolution are all necessary projects. There was discussion that the Port and Harbor Committee is the group put together to look at potential and possibilities for funding. The Port and Harbor Commission's recommendations are incorporated in this draft resolution.

FAULKNER/SARNO MOVED TO SUPPORT THE DRAFT RESOLUTION AS PRESENTED TO COUNCIL.

There was brief discussion about proposed increases to selected terminal tariff rates that are needed to raise funds for bond payments and any remaining funds raised will go into the port and harbor reserves.

VOTE: NON OBJECTION: UNANIMOUS CONSENT

Motion carried.

INFO ITEMS

A. City Manager's Report, April 23, 2012

COMMENTS OF THE AUDIENCE

There were no audience comments.

COMMENTS OF CITY STAFF

Community and Economic Development Coordinator Koester commented she will be in contact with the Chair in preparation of the next meeting. Chair Sarno commented she would like them to have discussion about Transition Towns relating to a youtube video Commissioner Wagner provided.

COMMENTS OF THE COUNCIL MEMBER

Councilmember Wythe advised that there is a resolution on the agenda at the upcoming council meeting for CEDS action items for the Commission to consider.

COMMENTS OF THE COMMISSION MEMBERS

Student Representative Davis commented that the meeting touched on renewable energy which is a passion of hers, and she thinks anything the Commission can do to further any benefits to the city with wood chipping or converting buildings with gas will be beneficial.

Commissioner Schmitt commented that it is exciting to see the natural gas pipeline might still be coming to Homer and it will be neat to see what else is in store.

ECONOMIC DEVELOPMENT ADVISORY COMMISSION
REGULAR MEETING
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Commissioner Wagner commented that it is nice to get the updates and he is intrigued by the tidal incubator for the Deep Water Dock. He welcomed Mrs. Koester back.

Commissioner Faulkner advised that he will be absent in June. The idea of funding available for tidal energy is good to know. He knows someone who has a canned design that has computed the power that can be achieved at each of the docks. He said they had talked today about building the prototypes and if they could permission from the city to hook one to the dock. There was brief discussion about the technology that is available.

Chair Sarno asked if they could talk about tidal energy at their next meeting.

ADJOURN

There being no more business to come before the Commission the meeting was adjourned at 7:21 p.m. The next regular meeting is scheduled for June 12, 2012 at 6:00 p.m. in the City Hall Cowles Council Chambers.

MELISSA JACOBSEN, CMC, DEPUTY CITY CLERK

Approved: _____

the basic economy if 1) people from outside the community are buying the products; or 2) locals are buying goods that are produced locally rather than purchasing similar items from sources outside the community (import substitution).

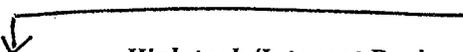
“Big box” retail business is a topic that has been a source of controversy in Homer since 2002, when the Kroger Company first broached the idea of building a 98,000 square foot Fred Meyer store in the Central Business District. Following a moratorium on construction of any store larger than 20,000 square feet, the footprint size cap was first set at 45,000 sf, then 66,000 sf, and is now at 75,000 sf in Homer’s commercial districts. (By way of comparison, the existing Safeway, including liquor store, is 30,250 sf.) As Homer and the surrounding area continue to grow, the need for a larger Fred Meyer or Wal-Mart type store is likely to become more apparent.

3. Services

Homer’s service economy is strong and diverse. In addition to some of the service businesses mentioned elsewhere in this plan (e.g., health services), local businesses meet the needs of Homer residents and visitors in areas ranging from financial services to haircutting to legal assistance.

General recommendations for maximizing the benefits of these sectors (1, 2 and 3 above) include:

- A. Encourage enterprises that will provide jobs and other economic benefits without serious negative side effects; e.g., environmental pollution.
- B. Encourage value-added manufacturing to maximize local resources and provide products for export.
- C. Convey a “How can we help you?” attitude to assist prospective business owners and those seeking to expand existing businesses.
 1. Utilize zoning to ensure adequate land for different needs and publicize available land zoned for different purposes.
 2. Improve the permitting process to clearly communicate requirements and reduce time and frustration for applicants.
 3. Publicize resources provided by other organizations that can assist local business owners; e.g., the Small Business Development Center at the Homer Chamber of Commerce.
- D. Assist with efforts to publicize the availability of locally manufactured goods; promote local procurement of goods and services.



High tech/Internet Businesses

Many businesses in this sector; for example, Information Technology (IT) support services and website design; can also be classified in the Services sector. Other examples of high tech businesses include modern filmmaking/editing, computer-assisted graphic design/printing, software development, and Geographic Information System (GIS) services used for surveying and mapping. *See also discussion regarding Arts and the Creative Class.*

While most if not all businesses in the 21st century utilize computers, Internet-based businesses comprise a special category, wherein the business owner markets and sells a product or service almost solely via the Internet. Because there is no visible retail outlet or office, these businesses may go largely unnoticed by the community at large, yet bring significant money into the community.

The availability of Internet/email service has also made it possible for some individuals to function as “lone eagles,” or as the Homer Comprehensive Plan puts it, “footloose entrepreneurs.” These are the individuals who could live almost anywhere and conduct business via Internet/email. In other words, their choice of where to live is based to a major extent on quality of life factors such as natural beauty, arts and culture, and recreational opportunities rather than factors such as availability of land, labor, or local markets.

What Can Homer Do To Attract “Lone Eagle” Entrepreneurs?

Comments submitted by two area residents via email during development of the Comprehensive Economic Development Strategy. Comments have been edited for space.

My husband and I are what you would call “knowledge entrepreneurs.” We are a good example of the kind of niche markets that are developing because of the Internet. We have customers from around the globe including Australia, Ireland, Italy, Singapore, Canada, and the U.S.

[In response to the question: Do you feel like Homer is currently providing the infrastructure your business needs?] For the most part, yes. We have printers, office supply, Internet, airport, computer folks and supplies etc. DSL needs to be improved in the outlying areas.

[In response to the question: What could we do to attract more lone eagles?] Keep the town attractive. Where you find the most migration to smaller towns is in those towns that have some sort of appeal. This cannot be overstated. If you travel around Oregon and Washington, or elsewhere, the small towns that are thriving are those that have appealed to people who can choose to live where they want and bring with them either retirement income or a small or home-based business. These towns survived the loss of the resource-focused boom/bust economies and reinvented themselves with what they had left. What these towns have to offer is predominantly natural beauty and access to outdoor activities or a quaint setting (like the coastal towns of Oregon and Washington). Homer has numerous benefits over some of these other small towns. Those assets should be advertised.

Your suggestion to promote “lone eagles” to live in Homer has merit. It capitalizes on Homer’s main strength—quality of life. I was a “lone eagle” prior to my retirement. One type of “lone eagle” is the telecommuter. The list of occupations that this would include is almost endless. The following are areas to promote or improve to facilitate getting “lone eagles” to live in Homer:

- 1) For telecommuters it is necessary to have easy access to the fastest Internet and telecommunications networks available. Currently, Homer has no 3G nor do we have the fastest Internet connections.
- 2) For the old-fashioned commuter, easy, reliable, and affordable access to Anchorage is essential.
- 3) The “lone eagle” promotion should be carried out in state with North Slope workers, fishermen, offshore oil field workers, and miners from Red Dog and the potential Pebble project.
- 4) Homer must avoid putting up a negative image by putting up barriers to people and ideas.

Recommendations for growing the high tech/Internet sectors of the Homer economy include:

- A. Support technical upgrades that benefit individuals and businesses who utilize these services extensively; e.g., high speed broadband Internet, improved cell phone service, and wireless connectivity.
- B. Market Homer's quality of life factors and suitability for high-tech/Internet based operations. Use marketing to counter the image of Homer and Alaska in general as too remote for modern business ventures to succeed.
- C. Support training opportunities for skill development in computer-related fields, including Internet-based commerce.

Transportation and Warehousing

The Kenai Peninsula Borough includes the following types of businesses under the heading of Transportation and Warehousing: air transportation, water transportation, truck transportation, transit and ground transportation, pipeline, scenic and sightseeing, support activities, postal service, couriers and messengers, and warehousing and storage. (Guiding by land and guiding by water are classified under Tourism.) In 2008, there were 126 businesses licensed in this sector in Homer, with gross sales of \$19.4 million.²²

Homer benefits economically by having an airport, a float plane lake, a harbor that supports numerous water taxi businesses, and port facilities that include preferential berthing for Alaska Marine Highway vessels. (The Marine Highway can also be classified within the Government sector.) In 2010, Seldovia Village Tribe began offering passenger/light freight ferry service three times a day between Homer and Seldovia, aboard the *Kachemak Voyager*, expanding the options available for getting across the bay.



Maritime Helicopters, based in Homer, has been in business since 1973 supporting marine, petroleum, and construction industries as well as government agencies. In addition to a fleet of helicopters, the company operates the 86-foot vessel *Maritime Maid*, equipped for helicopter operations at sea.

(Photo and information from maritimehelicopters.com)

²²Kenai Peninsula Borough, *Situations and Prospects for Year Ending December 31, 2008*, p. 224.

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**CITY OF HOMER
HOMER, ALASKA**

Wythe

RESOLUTION 12-041

A RESOLUTION OF THE CITY COUNCIL OF HOMER, ALASKA, DESIGNATING COMMUNITY ECONOMIC DEVELOPMENT STRATEGY (CEDs) PRIORITIES AND REQUESTING THAT THE CITY ECONOMIC DEVELOPMENT ADVISORY COMMISSION REVIEW THESE PRIORITIES AND PROVIDE RECOMMENDATIONS REGARDING IMPLEMENTATION STRATEGIES INCLUDING TIMETABLES, RESPONSIBLE PARTIES, AND FUNDING.

WHEREAS, The Homer City Council recently adopted a Community Economic Development Strategy (CEDs); and

WHEREAS, Economic development and job creation is a Council priority and it would like to move forward with implementation of goals and objectives that are feasible and prudent at this time; and

WHEREAS, The Economic Development Advisory Commission's (EDC) work plan for this year includes reviewing the CEDs and making recommendations to the Council regarding implementation; and

WHEREAS, The City Council determined that it would be beneficial to review the document again itself and provide the EDC with a list of priorities that it would like the Commission to focus on; and

WHEREAS, Council members reviewed the CEDs and offered suggestions regarding priorities at a workshop on April 27, 2012.

NOW, THEREFORE, BE IT RESOLVED that the Homer City Council hereby designates the following as CEDs priorities:

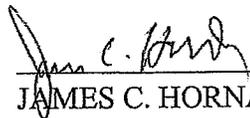
- Affordable Housing
- Voc-Tec or Marine Tech training and education
- Market Homer for High Tech Businesses
- Downtown Vitalization

- 41 • Expand Water and Sewer Distribution Systems and the Number of Customers
- 42 • Expand Shoulder Season Sports
- 43 • Promote Homer as an Agricultural Center

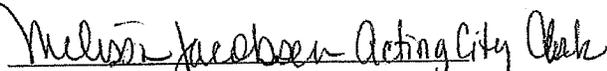
44
45 BE IT FURTHER RESOLVED that the Council requests that the EDC review these
46 priorities and provide recommendation regarding implementation strategies including timetables,
47 responsible parties, and funding sources.

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49 PASSED AND ADOPTED by the Homer City Council this 14th day of May, 2012.

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51 CITY OF HOMER

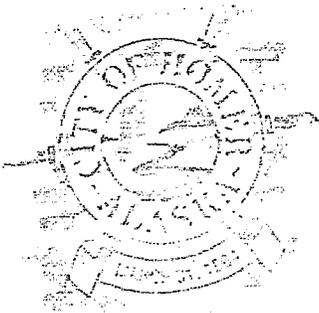
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53 _____
54 JAMES C. HORNADAY, MAYOR

55 ATTEST:

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57 _____
58 JO JOHNSON, CMC, CITY CLERK

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60 Fiscal Note: N/A

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CITY OF HOMER
CITY HALL

MEMORANDUM

To: Economic Development Advisory Commission
From: Katie Koester, Community & Economic Development Coordinator
Date: June 6, 2012
Subject: Staff Report to EDC

Resolution 12-041

The City Council approved resolution 12-041 giving the Economic Development Commission (EDC) guidance as to what elements of the Comprehensive Economic Development Strategy (CEDs) they would like to see EDC focus on:

Affordable Housing, Voc-Tec or Marine Tech Training and Education, Market Homer for High Tech Businesses, Downtown Vitalization, Expand Water and Sewer Distribution Systems and the Number of Customers, Expand Shoulder Season Sports, Promote Homer as an Agricultural Center.

Recommendation: Pick one (max two) of these topics to cover per meeting in addition to regular business. This would include inviting professionals to present, understanding the status quo, and brainstorming the role the City/Commission can play.

Market Homer for High Tech Businesses

To that end, during today's meeting and others the EDC has looked at marketing homer for high tech businesses by discussing internet capacity. The City of Homer CEDs identifies "lone eagles" as entrepreneurs who can live anywhere because their work is done online (see pages 28-30 from CEDs in your packet). These include individuals in gaming, digital imaging, online education, consulting, and graphic design among others. I have had the opportunity to meet with a professional in the digital imaging field in Homer who suggested we further the conversation with high tech professionals in Homer and internet providers, such as SpitwSpots, through a casual round table conversation.

Some of the topics we might want to address are:

- What support capability do we currently have? What needs improvement?
(band width, education, etc)
- What are high tech professions that would be a good fit for Homer?
- How does marketing reach these professionals?
- What is it about homer that attracts these professionals?

Recommendation: The EDC schedule a work session to discuss this topic informally with industry representatives. The commission could help staff by providing questions to ask and suggesting community members to invite.

Suggested Topics for Next Meeting

1) Transition Towns:

Commissioner Wagoner has sent us a TEDx video on transition towns I encourage everyone to look at before the next meeting (<http://www.youtube.com/watch?v=t56cOsXvdc4>). We have also invited Anne Marie Holen, former staff to the EDC, to present on quality of life factors that attract individuals to a town.

2) Promoting Homer as an Agricultural Center:

Chair Sarno asked that the Commission invite Al Poindexter of Anchor Point Greenhouse to present. I will be working with the Chair and others to bring resources and information to facilitate this conversation. Please feel free to provide me with suggestions.

Office of the City Clerk

Jo Johnson, CMC, City Clerk
Melissa Jacobsen, CMC, Deputy City Clerk II
Renee Krause, CMC, Deputy City Clerk I



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Memorandum

DATE: June 7, 2012

TO: Economic Development Advisory Commission

FROM: Melissa Jacobsen, CMC, Deputy City Clerk *MJ*

SUBJECT: Lease Committee Appointment

Former Economic Development Commissioner Micheal Neece served on the Lease Committee as the EDC representative and voting member. Since Mr. Neece is no longer serving, the Commission needs to recommend a Commissioner to fill the EDC representative position on the Lease Committee.

The Lease Committee holds regular meetings quarterly in January, April, July, and October on the 2nd Thursday at 3 p.m. Special meetings are called as needed to review leases.

Recommendation: Select a Commissioner to be the representative on the Lease Committee and forward that recommendation to City Manager Wrede for appointment.

MANAGERS REPORT

June 11, 2012

TO: MAYOR HORNADAY / HOMER CITY COUNCIL

FROM: WALT WREDE

UPDATES / FOLLOW-UP

1. Load and Launch Ramp: You will recall that ADF&G has access to funding to completely rebuild and refurbish the Load and Launch Ramp at the harbor. The City will apply for funding through the Municipal Harbor Matching Grant Program to cover the 25% match required for construction. ADF&G has secured the funds to do engineering and design and the Council recently approved an MOU with authorizing the agency to take the lead on that work. This week I received a call from ADF&G informing me that they will wait until this fall to issue an RFP for engineering and design services. They cited two reasons for doing that. First, it is summer and most contractors are busy and do not have time to respond to RFP's. Second, all of the construction funding is not yet secured. So, a slight delay is not a problem. Construction was not likely to happen until 2014 anyway.
2. R&S Floats: You will recall that Bryan brought to your attention the serious condition of some of the piles on R and S floats. Three were especially bad and dangerous. Council passed an emergency appropriation to fix the problem but we were not able to execute the plan as presented. Some of the piles were so damaged that the Port and Harbor Director condemned and closed R float for safety reasons. I am very happy to be able to report that the harbor staff came up with an innovative and cost effective short term fix that should solve the problem for now and alleviate the safety concerns. The short version is that heavy 10" diameter pipes were purchased from a scrap dealer and inserted into the piles as sleeves. The pipes and sleeves were then welded together. The staff hired a local fishing boat with a crane and that, along with the harbor tug and skill were sufficient to do the job.
3. Deep Water Dock: The design for the new fendering system is essentially complete. (funded by the Cruise Ship Head Tax legislative grant). A pre-bidders meeting was held this past week. October and December is the construction window. This resolution contains a resolution authorizing us to purchase some of the fender elements directly because of the long lead time for delivery. ADOT/PF informed us this week that we can expect to see an MOU for engineering and design of the dock expansion in the next week (\$3 Million in federal and state legislative grants).
4. Cruise Ship Grant Project: The City's term contract engineers have begun engineering and design work on some of the projects elements contained in the

- project description (6 Million legislative grant). Work has begun on the trails and bathrooms.
5. Dredged Materials: This week Carey and Bryan were scheduled to meet with representatives from the Corps of Engineers to discuss long term plans for the beneficial use of dredged materials. Beach replenishment and creation of new uplands are on the agenda.
 6. Harbor Projects: The Council has approved the recommendations of the Port and Harbor Commission and the Port and Harbor Improvement Committee. The next step is to submit the City's grant application for project funding under the Municipal Harbors Matching Grant Program. When that funding is approved, the City will prepare for a bond sale. Katie is working on the application.
 7. Security Facilities Audit: The Port and Harbor staff participated in a security facilities audit this week conducted by the Coast Guard. The City has a port security plan and there are various requirements under the law for security at the Pioneer and Deep Water Dock. I am sure Bryan would be happy to elaborate if you are interested in knowing more. This is important and it requires probably more training, planning, and collaboration with other state and federal agencies and with the private sector companies operating at the port than you might imagine.
 8. Gas Line Distribution System: We are continuing to gather information about financing options and about LID boundary options in preparation for the workshop prior to this meeting. We are also working with the State and with Enstar to make sure the administration of the \$8.15 Million grant for construction of the transfer line goes smoothly.
 9. Employee Committee: The Employee Committee has been meeting periodically to discuss a possible wellness program for employees. We anticipate that the Committee will be prepared to make a recommendation to the Council in the near future.
 10. Budget Amendments: We anticipate bringing you a mid-year budget amendment ordinance sometime soon. There will be several adjustments requested but the primary reason for doing this is to take care of transfers to the Revolving Energy Fund.
 11. CIP List: Believe it or not, it is time to start talking about the CIP List again. There is a resolution establishing the review and approval schedule on this agenda.
 12. 2013 Budget: Believe it or not, work will begin shortly on the 2013 operating budget. I know you are thrilled to hear that! So are we.
 13. Police Department: Things have really picked up the Police Department as we move into summer. Activity at the jail has been especially brisk. Part of the reason for that is stepped up drunk driving enforcement by the State Troopers. The department is currently plagued by turnover and open positions in dispatch which directly affects the public safety and response function.
 14. Planning Department: In the recent past, the activities of the Planning Department have been confined largely to land use planning, code enforcement, and providing support for the Planning Commission. We are working to expand that role, as time and resources allow, into areas such as economic development and capital

project development. The goal is to make better and more efficient use of the staff resources we have city-wide and to take advantage of the skills, training, and experience of the current planning staff.

15. Clerk's Office: The move from the HERC building to the renovated City Hall is now complete. This week, Public Works staff and the High School football team moved the archives from the old school into the new storage areas in this building. These are the files and documents that must be retained under the records retention code. The Clerk's are sorting and organizing the files so that they will be even more organized and easy to access for historians and others who need access to preserved records.
16. Records Retention: As a follow-up to the Council workshop on e-mail retention, I wanted to report that Nick has conducted some research on tablets for the Council and you will see a memorandum to that effect on this agenda. Holly is busy working on proposed amendments to the records retention code and the Council Operating Manual.

ATTACHMENTS

1. City Clerk's Trip / Training Report

Katie Koester

From: Jenny Martin <jenny.martin@bbbsak.org>
Sent: Tuesday, June 05, 2012 12:08 PM
To: Katie Koester
Cc: Lindianne Sarno; Betley, Bonnie R (HSS); Lolita Brache
Subject: Re: ED Commission resolution

Hi Katie & Lindianne,

Our Families First coalition met yesterday and reviewed your suggestions below. We just got our new RFP for FY 13 - and will be incorporating some ideas from below -- ie Task Force, etc - into our new grant. Specifically we will write a goals something to the effect of:

Identify and address economic strategies and needs relating to early childhood education.
activities to include: developing a task force to address issues, finding a way to support new child care businesses / expanding businesses, child care / early learning economic data survey for our area, helping to develop family friendly business policies/procedures in the local area businesses.

We will know in mid July if our grant is approved and will get back to you both then to move forward on this! Thanks again for your help and support!

Jenny Martin
Families First Coordinator

On Mon, May 21, 2012 at 12:34 PM, Katie Koester <kkoester@ci.homer.ak.us> wrote:

Hi Jenny,

The follow up email from the EDC meeting in March got routed to me. I provided some comments on your suggestions below. It looks like you are asking for action and/or budget items from the EDC/Council. Any one of these items could be developed into a resolution for the City Council's consideration. I put my suggestions/comments below in blue.

1. Creation of a Early Education Task Force that will identify short and long term strategies for early childhood education services that will positively affect the well being and economy of the Homer area. Task force will make resolutions, via EDCommission, to the city council for implementation/approval of strategies. Task Force could include Families First co-chair, an EDCommission member, and several professionals from the community (ie: child care providers, parents, early ed professionals, etc). It would be probably be more appropriate for Families First to take the lead on establishing a task force or committee devoted to this subject. The Economic Development Commission could appoint a member to serve on this task force.
2. \$5000 from the annual City Grant fund (administered through the Homer Foundation) dedicated for early childhood education services/programs. Early childhood organizations and child care centers/homes could apply for funding to improve and enhance their services. Families First or another appointed knowledgeable team could review applications and determine awards. It is difficult to get funding out of the City Council, especially a recurring expense. I don't think we would have much luck with a dedicated grant program for one particular industry. The argument can be made why not for

other industries, the arts, etc. Currently the City only supports non-profits through the Homer Foundation awards.

3. Business incentives to promote Family-Friendly businesses practices locally. Collaboration between EDC, City's Economic Development staff, and Families First to develop strategies for improved local business support of early childhood education (i.e., policies, benefits, etc.) This would be a great topic for the Early Education Task Force to tackle.
4. Business support for child care industry organizations and new business development. Have a qualified city staff (Economic Development staff?) who can provide support for early childhood education business owners that create jobs and allow parents to work. (ie., help with finding business loans/grants, start up or expansion capital, licensing paperwork, etc.) The small business development center (staffed by Bryan Zak at the Chamber) is a great resource for business assistance. Any dedication of significant staff time in this direction would be allocation of a city resource and require budget/council considerations. The City may be able to provide support in the form of consolidating information and instructions on how to set up/expand an early childhood business through their website. My position does not have the extra time to become a specialist in early childhood education funding opportunities but I would be willing to help where I can. As I am sure you know, Susannah Webster has been an advocate for encouraging child care for babies in Homer. The Chair suggested inviting her to present to the EDC so the commission can take a closer look at this economic development opportunity and their role. She has presented to the Council and has a great piece in the paper on it.

I am sorry I missed the Families First presentation. I look forward to working with you more on early childhood issues.

Best,

Katie

--
Sincerely,
Jenny

Jenny Martin
Program Specialist, Homer office

Big Brothers Big Sisters of Alaska
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Tel: 907-235-8391 Fax: 907-235-8392
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SECTION 2 – PROJECT SUMMARY

Provide a brief 1-2 page overview of your project.

2.1 PROJECT TYPE

Describe the type of project you are proposing. (Reconnaissance; Resource Assessment/ Feasibility Analysis/Conceptual Design; Final Design and Permitting; and/or Construction) as well as the kind of renewable energy you intend to use. Refer to Section 1.5 of RFA.

The project proposed here is a Reconnaissance and Resource Assessment/Feasibility Analysis/Conceptual Design initiative to determine tidal energy potential in Kachemak Bay, Alaska. Specifically, the communities of Homer, Seldovia, and Port Graham are collaborating to determine potential sites, energy output, system designs, costs, institutional issues, and related parameters for future tidal energy development.

2.2 PROJECT DESCRIPTION

Provide a one paragraph description of your project. At a minimum include the project location, communities to be served, and who will be involved in the grant project.

The City of Homer, with participation from Seldovia Village Tribe and the Port Graham Village Council, proposes to assess the tidal energy potential and development feasibility of four sites within Kachemak Bay. The National Oceanic and Atmospheric Administration (NOAA) will be the lead technology provider through the Center for Operational Oceanographic Products and Services (CO-OPS) and the Kasitsna Bay Laboratory, which is the Coastal Marine Ecosystem Research Laboratory for NOAA in Kachemak Bay. NOAA will deploy both stationary and roving Acoustic Doppler Current Profiling (ADCP) devices, conduct bathymetric mapping, and integrate other existing and new data to construct a comprehensive tidal, energetic, and circulation flow model of the entire Kachemak Bay region. This model will be focused on providing the necessary outputs to determine power densities and to conduct detailed and site specific tidal energy feasibility studies, but it will also have multiple public benefits beyond assessing tidal energy, such as improved spill response, mariculture siting, and impact assessment of local development projects. Terrasond, an industry leading terrestrial and marine floor mapping consultancy firm, will provide additional technical assistance on data collection and spatial data analysis to contribute to the circulation model and generate power density values. Revision consulting LLC, a lead investigator and author on numerous Electric Power Research Institute (EPRI) and other utility ocean energy studies, will then process the NOAA-generated data and model to conduct technical and economic feasibility studies on four selected sites within Kachemak Bay—two near Homer and one each near Seldovia and Port Graham/Nanwalek. A conceptual design for optimal tidal energy production will emerge from the feasibility studies. The Kachemak Bay Research Reserve, a collaboration between NOAA and the Alaska Department of Fish & Game, will investigate potential biological impacts, inventory biological resources in areas identified for potential development, and assist with associated permitting issues. Deerstone Consulting, a renewable energy consulting firm working with the City of Homer on implementation of the City's Climate Action Plan, will provide additional technical assistance in the areas of permitting, data collection and analysis, and project coordination. An assumed project start date of July 1, 2009 will result in project completion in 12 months, i.e., July 1, 2010. The total project budget is \$1,154,341, of which \$482,387 is requested via this proposal, and the remainder, \$671,954, is provided as matching contributions, for a 58% cost-share. Of the \$482,287 requested from AEA, Phase 1 (reconnaissance) would require \$79,910 of AEA funds and phase 2 (feasibility and conceptual design) would require \$403,387 of AEA funds.

2.3 PROJECT BUDGET OVERVIEW

Briefly discuss the amount of funds needed, the anticipated sources of funds, and the nature and source of other contributions to the project. Include a project cost summary that includes an estimated total cost through construction.



Renewable Energy Fund Grant Application

SECTION 1 – APPLICANT INFORMATION		
Name <i>(Name of utility, IPP, or government entity submitting proposal)</i>		
City of Homer		
Type of Entity: Municipal government		
Mailing Address 491 E. Pioneer Avenue Homer, AK 99603		Physical Address 491 E. Pioneer Avenue Homer, AK 99603
Telephone 907-235-8121	Fax 907-235-3148	Email wwrede@ci.homer.ak.us
1.1 APPLICANT POINT OF CONTACT		
Name Carey Meyer		Title Public Works Director, City of Homer
Mailing Address 3575 Heath Street Homer, AK 99603		
Telephone 907-235-3170	Fax 907-235-3145	Email cmeyer@ci.homer.ak.us
1.2 APPLICANT MINIMUM REQUIREMENTS		
<i>Please check as appropriate. If you do not to meet the minimum applicant requirements, your application will be rejected.</i>		
1.2.1 As an Applicant, we are: <i>(put an X in the appropriate box)</i>		
	An electric utility holding a certificate of public convenience and necessity under AS 42.05, or	
	An independent power producer, or	
X	A local government, or	
	A governmental entity (which includes tribal councils and housing authorities);	
YES	1.2.2. Attached to this application is formal approval and endorsement for its project by its board of directors, executive management, or other governing authority. If a collaborative grouping, a formal approval from each participant's governing authority is necessary. (Indicate Yes or No in the box.)	
YES	1.2.3. As an applicant, we have administrative and financial management systems and follow procurement standards that comply with the standards set forth in the grant agreement.	
YES	1.2.4. If awarded the grant, we can comply with all terms and conditions of the attached grant form. (Any exceptions should be clearly noted and submitted with the application.)	

The total project budget proposed here for the reconnaissance and feasibility stages is \$1,154,341. This total includes \$482,387 requested from AEA and confirmed \$671,954 in cost-share contributed by NOAA, re vision consulting, Deerstone Consulting, and the City of Homer. These contributions amount to a 58% match. Total phase 1 requested funds are \$79,910 and matching funds are \$60,100. Total phase 2 requested funds are \$403,387 and matching funds are \$610,994.

The total project cost through construction of a hypothetical 250 kW tidal turbine is based on assumptions of future installed cost per kW from published industry data, namely a recent 1.2 MW project in the United Kingdom by Marine Current Turbines, which stated a \$5,377/kW installed figure. This leads to a total project cost of \$2,498,591, which includes the proposed budget for the feasibility phase of \$1,154,341, and a design and construction budget of \$1,344,250. It should be noted that a 250 kW project is of relatively small size, but given the early stage of development of the technology, we are assuming a project of this size as a "proof of concept" that, if successful, would likely lead to more and larger projects. The feasibility study proposed here would have application for other and larger projects as well, and thus would be even more cost effective in leveraging these funds for additional renewable energy development. Based on the assumed 250 kW turbine, it is estimated that the \$1,344,250 project completion costs would be evenly split; i.e., \$672,125 each, between final design and construction phases.

2.4 PROJECT BENEFIT

Briefly discuss the financial benefits that will result from this project, including an estimate of economic benefits (such as reduced fuel costs) and a description of other benefits to the Alaskan public.

According to estimates of future avoided cost of electricity, HEA will be paying at least \$.109 per kWh in 2012 (stated by Chugach Electric). For a 250kW system in a current peaking at 6 knots, this would lead to \$71,613 in annual revenue less \$5,748 in annual parts and supplies. Over the 20 year lifetime of this project this will come to \$1,317,300 in net revenue. This is likely a very conservative number because if the tidal resource is determined to be viable, then it is probable that systems and projects larger than 250 kW would be installed. If this is the case, then the cost of this single feasibility study, which could lead to multiple installations throughout Kachemak Bay, would be spread over more revenue than what is generated by a single 250 kW installation and the project economics would be much improved.

Additional public benefits will include \$49,228 in contracts to Alaskan businesses in the feasibility study. Through project construction an additional estimated \$336,062 in contracts to Alaskan businesses will be expected.

The operation and maintenance of the 250kW turbine is expected to cost \$22,995 annually (\$.035/kWh and 30% capacity factor for production). Of these operation and maintenance costs, an estimated 25% will be for parts and supplies and the remaining 75% will be in contractual costs to Alaskan marine service companies, amounting to \$17,246 annually. Over the 20 year lifetime of the project this will total \$344,925. It is assumed that the parts and supply costs will not be spent in Alaska (and thus, are not included as public benefits), but the contractual costs will go to an Alaska company, and are considered public benefits.

Additional public benefits associated with this project include ancillary uses of the tidal circulation flow model that will be produced by NOAA, which include the mariculture industry, oil spill response, and fisheries management. Kachemak Bay is world renowned for its oysters. This mariculture industry is valued at approximately \$1 million annually. We estimate that improved management associated with this model will result in increased value of \$25,000 annually. Over a 20 year lifecycle of the installed project, this would amount to \$500,000. In terms of improved spill response, Kachemak Bay is considered a port of refuge for damaged vessels in Cook Inlet. This was dramatically demonstrated two years ago when an oil tanker docked in Nikiski suffered damage and required towing to Homer. This situation did not result in any oil spilled but publicly highlighted the issue. It was stated at the time that spill response contingencies needed improvement, including better understanding of the tides and currents in Kachemak Bay in case of an oil or other toxic chemical spill. Given the increased interest in oil

exploration in the region, it is expected that an improved understanding of tides and currents in Kachemak Bay could result in improved spill response and reduced harm to existing natural resources. Assuming even one fairly large spill during the 20 year lifetime of the proposed project, this can be reasonably estimated to provide \$100,000 of additional public benefit.

It is widely recognized that Alaska has some of the best potential of anywhere in the world for generating tidal energy. This proposed Kachemak Bay project, in combination with other nearby initiatives such as upper Cook Inlet, could help to establish an Alaska-based industry and global leadership in tidal power. While there are perhaps numerous locations throughout the state that may be feasible, there are many reasons to begin establishing this industry in population centers on the road system to reduce early development costs. An initial investment of less than \$500,000 by AEA in this project will allow a leveraging of more than an additional \$670,000 through direct project cost-share. This is a substantial public benefit that will not occur without AEA's support.

2.5 PROJECT COST AND BENEFIT SUMMARY	
<i>Include a summary of your project's total costs and benefits below.</i>	
2.5.1 Total Project Cost (Including estimates through construction.)	\$2,498,591
2.5.2 Grant Funds Requested in this application.	\$482,387
2.5.3 Other Funds to be provided (Project match)	\$672,125
2.5.4 Total Grant Costs (sum of 2.5.2 and 2.5.3)	\$1,154,341
2.5.5 Estimated Benefit (Savings)	\$71,613 annually; \$1,432,260 over project lifetime
2.5.6 Public Benefit (If you can calculate the benefit in terms of dollars please provide that number here and explain how you calculated that number in your application.)	\$1,330,215 – see section 2.4 for explanation

SECTION 3 – PROJECT MANAGEMENT PLAN
<i>Describe who will be responsible for managing the project and provide a plan for successfully completing the project within the scope, schedule and budget proposed in the application.</i>
3.1 Project Manager Tell us who will be managing the project for the Grantee and include a resume and references for the manager(s). If the applicant does not have a project manager indicate how you intend to solicit project management Support. If the applicant expects project management assistance from AEA or another government entity, state that in this section.

Project manager for the Kachemak Bay tidal feasibility project will be Carey Meyer. Mr. Meyer, a professional engineer, has been the Public Works Director for the City of Homer since 1999. His resume and references are attached. We have established a team of City and Tribal staff, contracted technical experts, and government agency personnel who will all contribute to the project. This team is described in more detail below.

3.2 Project Schedule Include a schedule for the proposed work that will be funded by this grant. (You may include a chart or table attachment with a summary of dates below.)

Proposed project schedule (**Note: completion dates below are bold and underlined**):

1. Site reconnaissance (Phase 1) – Begin 7/09; Complete 8/09

Sub-tasks:

- a. Project partner kick-off meeting; coordinate data needs and establish data transition plans – 7/09

- b. Collect all existing relevant data such as bathymetry, ownership maps, biological data, possible electrical grid interconnection points and other existing infrastructure, navigational information, current flows, traditional knowledge, etc. - 7/09
- c. Determine what data is necessary but does not yet exist, such as additional bathymetric maps, current flows, land ownership, etc. - 7/09
- d. Establish detailed monitoring plan to collect additional data to determine current speeds, power density, biological and navigational impacts - 8/09

2. Feasibility Study (Phase 2) - Begin 8/09; Complete 5/10

- a. Deploy Acoustic Doppler Current Profiling (ADCP) devices (stationary and mobile) to determine tidal flows and current speeds over a range of time and selected areas - 10/09
- b. Conduct necessary biological studies to determine potential conflicts and preliminary impacts to biota from tidal energy development - 2/10
- c. Process data to determine power densities over time and space; generate report, model, and graphical overlays - 2/10
- d. Based on 2.c above, select optimal site(s); conduct technical and economic analysis under various assumptions to determine power production costs, output, and availability - 5/10
- e. Identify necessary permits and apply where necessary - 5/10
- f. Determine feasibility of overall project. If "not feasible," terminate the project. If "feasible," continue with next step - 5/10

3. Conceptual Design (Phase 2) - Begin 5/10; Complete 7/10

- a. Select an optimal design and system to harness tidal energy - 5/10
- b. Develop a more precise construction budget - 5/10
- c. Examine and select preferred institutional configuration(s) - 6/10
- d. Draft and distribute final report - 7/10

3.3 Project Milestones

Define key tasks and decision points in your project and a schedule for achieving them.

The following project milestones have been identified:

Phase 1:

- Partner meeting to coordinate roles, expectations, timelines, and data transitions from collection to processing/analyzing (7/09)
- Report identifying existing data gaps and strategies to fill in those gaps (7/09)
- Detailed monitoring plan for tidal characterization and circulation model; agreed to by all project partners (8/09)

Phase2:

- Field work: successful deployment of ADCP sensors and collection of tidal data for at least a full lunar cycle (10/09)
- Technical report and graphical outlay based on model and collected tidal data analysis delivered by NOAA to identify high energy areas within Kachemak Bay (2/10)
- Four sites selected for detailed feasibility analysis (or, determine that there are no adequate sites, and terminate project) (2/10)
- Preliminary biological assessment complete; report delivered (2/10)
- Technical and economic feasibility study completed (5/10)
- Permits identified and applied for, if warranted (5/10)
- If feasible, compare technologies and develop preliminary construction budget (5/10)
- Final report completed (7/10)

3.4 Project Resources

Describe the personnel, contractors, equipment, and services you will use to accomplish the project. Include any partnerships or commitments with other entities you have or anticipate will be needed to complete your project. Describe any existing contracts and the selection process you may use for major equipment purchases or contracts. Include brief resumes and references for known, key personnel, contractors, and suppliers as an attachment to your application.

The City of Homer will be working closely with representatives from other government agencies (e.g., Alaska Department of Fish and Game and the National Oceanic and Atmospheric Administration), along with leaders from Kachemak Bay tribal organizations (Seldovia Village Tribe and Port Graham Village Council), and with private contractors (re vision consulting, Terrasond, and Deerstone Consulting). This project team combines high-level national expertise and tremendous local knowledge in this collaborative effort, and demonstrates how renewable energy can bring together diverse and unique interests.

While Homer is the largest community on Kachemak Bay and connected by the main road system, both Seldovia and Port Graham on the south shore of the Bay are not connected by road, but are connected by power lines. Both of these smaller, more remote communities are participating in this project as well, and will provide local personnel, traditional knowledge for siting and potential impacts, and local support for data collection. Based on a cursory assessment of tidal flows in the region, it is also expected that these locations may have some of the strongest currents, and thus, best opportunities for tidal power generation.

The NOAA National Ocean Service (NOS) Center for Operational Oceanographic Products and Services (CO-OPS) is the leading US authority on tides and tidal currents. CO-OPS and its predecessors have been providing tidal predictions to promote safe and efficient navigation since 1807. The CO-OPS National Current Observation Program (NCOP) meets the Nation's needs for current observations, tidal current predictions, and other tidal current products. The products from this program primarily support safe, efficient and environmentally sound marine commerce, hazardous material response, research, and recreational users. NCOP has recently completed a survey of tidal currents and calculated updated predictions for inclusion in the US Tidal Current Tables at over 30 locations in Cook Inlet including the entrance to Kachemak Bay.

CO-OPS will be the technical lead on the data collection effort. They currently have a tidal model for lower Cook Inlet and recent bathymetric maps of Kachemak Bay. The existing model provides low resolution output, but will be useful to guide the proposed data collection effort to

produce a comprehensive tidal and circulation flow model. This new model will provide high quality output to determine site specific power densities for all of Kachemak Bay, and will guide the feasibility analysis. As well, this new model will be useful for other purposes such as spill response, mariculture, fisheries management, and related resource management activities. NOAA/CO-OPS will be providing \$650,000 of in-kind contributions to this effort and have stated a strong interest in expanding their contribution to this type of work throughout Alaska and nationally, with this being the pilot project.

Terrasond, a private consulting firm who works closely with NOAA on similar projects in other locations, and is the technical lead on a similar tidal characterization effort in upper Cook Inlet, will also provide technical assistance on this effort to ensure consistency and smooth transition for feasibility analysis of the data and application of the new model.

The Alaska Department of Fish and Game (ADF&G), through the Kachemak Bay Research Reserve, has also committed to conduct a biological literature and permit review to identify issues, obstacles, and potential solutions that may be confronted by this project. They will be contributing vast expertise, credibility, and previous site-specific data collection and processing from other projects, such as the current expansion of the Homer Harbor, that will inform the technical reviews.

Re vision consulting and Deerstone Consulting will be involved in the feasibility analysis based on the data output and model generated by NOAA. Re vision consulting is a nationally recognized firm on ocean energy issues, working with the Electric Power Research Institute and many utilities throughout the US, and will be the technical lead on the feasibility component of the project. Deerstone Consulting is a Homer-based firm working with various communities and governments throughout Alaska on renewable energy and community development, including the City of Homer on implementing its Climate Action Plan. Deerstone will be involved in project coordination, permitting, and targeted research for additional inputs to the feasibility study.

Homer Electric Association, the electric utility provider in the area, has been notified of this project and has expressed interest and support. Based on the outcome of the feasibility study, we expect to have more substantive discussions with HEA to conduct a system integration study and determine how this power can best fit on their grid.

See attached resumes and/or statements of work provided by possible project partners and consultants. All of these individuals have assisted in the preparation of this application. It should be noted, however, that no contracts have been offered or will be offered other than in accordance with City of Homer procurement policies. The City's procurement policies will also be followed in purchasing major equipment. Key procurement policy provisions are included in this application as an attachment.

3.5 Project Communications

Discuss how you plan to monitor the project and keep the Authority informed of the status.

The City of Homer will comply with all AEA reporting requirements should a grant be awarded.

This will include providing monthly and quarterly status reports by email to the AEA Project Manager to update the Authority on the project's progress, regulatory and compliance issues, possible delays, and grant expenditures during the month; summarize the progress made on grant tasks during the month; and identify any difficulties in completing tasks or meeting goals or deadlines. We will include copies of any work products due to the Authority during the reporting period.

Should questions, concerns, or issues arise during the implementation of the project that would benefit from consultation with AEA, project staff will contact the AEA Project Manager by phone or email. Site visits will be welcome. Because of the complex nature and diverse entities involved in this project, we have explicitly identified a "project coordination" role that will involve both intra-project communications among participants, and also external communications with AEA and others such as Homer, Seldovia, and Port Graham residents and the general public.

3.6 Project Risk

Discuss potential problems and how you would address them.

There are three types of potential problems that we have identified: 1) Technical, 2) Institutional, and 3) Environmental.

Regarding technical challenges, we will have the most experienced and informed group in the industry conducting the data collection effort, and have built in redundancy with Terrasond providing back-up to NOAA where necessary. Both Terrasond and NOAA have experience in the region doing precisely this type of work, so we believe we have addressed this challenge by working with the best people in the field. By conducting a data reconnaissance with multiple experts before a complete collection plan is developed and implemented, we will hopefully provide checks and balances and create a more robust data collection regimen that meets everyone's needs, thus addressing the technical challenges by anticipating and thinking them through before we are out in the field. As well, collaboration with the tribal governments in Seldovia and Port Graham will provide local knowledge and support for the data operations that should help minimize technical challenges related to working in the more remote and energetically dynamic parts of the Bay. In the long run, past the feasibility stage proposed here, the technical challenges are essentially beyond the scope of the project. The tidal energy industry is progressing significantly, with full-scale projects now producing electricity in other parts of the world, and our assumption is that if Kachemak Bay current speeds are within the range of expectations, the technology will continue to improve and we will be able to effectively and efficiently produce power. In fact, the construction cost estimates used here are based on other projects that are expected to reduce their costs over time.

Institutional problems could emerge as a result of the diverse interests and entities involved in the project. As stated above, we have tried to anticipate and address this challenge by explicitly planning for a project coordination role, starting with a project kick-off meeting to bring all the participants together and develop a broad implementation plan agreed to by all. Throughout implementation of the project, Deerstone Consulting will continue to provide this coordination role. We will also integrate this project with other City initiatives, such as the Climate Action Plan, that will assist in public outreach and communications. We will continue to communicate with Homer Electric to inform them of our progress and seek opportunities for collaboration with them. Finally, we will explicitly address institutional options for development of tidal power in the feasibility study to further anticipate and address any challenges this project may confront.

Environmental problems, if any, would likely not occur during the actual reconnaissance and feasibility study, but rather once the actual device would be installed. In anticipation of any problems, we are working closely with Alaska Department of Fish & Game through the Kachemak Bay Research Reserve. During the proposed project period, this will include a biological study and permit review with the intent of developing a full study regimen for in-the-field impact assessment if the project moves forward to construction. We would anticipate needing to hire additional contractors to conduct impact assessments on fish, marine mammals, sea birds, and other biological resources in the area if a project is constructed. This feasibility study will help to identify the costs required to meet this need during the construction and long-term operation phases.

SECTION 4 – PROJECT DESCRIPTION AND TASKS

- *Tell us what the project is and how you will meet the requirements outlined in Section 2 of the RFA. The level of information will vary according to phase of the project you propose to undertake with grant funds.*
- *If you are applying for grant funding for more than one phase of a project provide a plan and grant budget for completion of each phase.*
- *If some work has already been completed on your project and you are requesting funding for an advanced phase, submit information sufficient to demonstrate that the preceding phases are satisfied and funding for an advanced phase is warranted.*

4.1 Proposed Energy Resource

Describe the potential extent/amount of the energy resource that is available.

Discuss the pros and cons of your proposed energy resource vs. other alternatives that may be available for the market to be served by your project.

The tidal power potential of Kachemak Bay is a little understood or studied resource. To date there has been one study of the tidal potential, but only in the area of the Seldovia harbor. This study was limited to looking at the resource from the perspective of a potential tidal barrage or impoundment style installation. The purpose of this proposed study is to examine the resource potential of tidal currents adjacent to Kachemak Bay communities and then to analyze the technical and economic feasibility of the development of a tidal project in these areas using modern hydrokinetic devices. Kachemak Bay itself has an extreme tidal range of up to 7 meters which generates exceptional currents within the bay. Near the villages of Port Graham and Nanwalek, at the mouth of the bay, the tidal currents of greater Cook Inlet are encountered, driven by the second largest tidal range in the world. The extent, peak velocity, and average power densities of this area is not known, but it is certain that there exist adequate currents for tidal power generation here, and likely near the Homer Spit and the mouth of Seldovia Bay in Kachemak Bay as well. The point of this feasibility study will be to determine if viable currents exist in areas that have the necessary components for an economically viable tidal power installation including depth, lack of conflicts with other uses, and reasonable transmission distances to existing power infrastructure. The feasibility study will identify realistic boundaries for the generation potential within the region and in specific sites. It should also be noted that NOAA's data collection and modeling effort will essentially cover the entirety of Kachemak Bay, not just focus on a few specific sites. The value of this comprehensive model is that it can then be applied to virtually *any* specific site within the Bay to perform more detailed power density and feasibility analysis. This will provide an opportunity to more fully and accurately quantify the tidal power potential of the region.

Currently natural gas (with some conventional hydropower) is the main fuel source for the generation of power purchased by Homer Electric Association and sold to its members. While natural gas has offered a stable price in the past, the contract for natural gas that supplies HEA's electricity is set to expire in 2010, at which point prices for this power will increase an unknown amount and other alternatives will be needed. Natural gas fired power plants also emit CO₂ which may make the technology subject to future carbon taxes and thus higher prices.

Bradley Lake Hydro, situated just above Kachemak Bay, is the largest hydroelectric plant in Alaska. While it is run by HEA, the cooperative does not own it or the power it produces. At the same time, hydro plants have potential to be "resource following" generation facilities that could incorporate resources like tidal power efficiently, ramping their power up and down with (precisely predicted) tidal resource availability, thus reserving the capacity of the Bradley Lake reservoir over a longer period of time. It is possible that Bradley Lake's use could be changed from that of a "dispatchable" resource to a "following" resource through a renegotiation of the wholesale cost of power between utilities. This would allow wind and tidal projects to be

efficiently absorbed and utilized by the local grid infrastructure.

Wind projects are also being studied on the lower Kenai Peninsula, including in the area near the tip of the peninsula and the Gulf of Alaska near Nanwalek. Wind power projects would provide a resource that is clean like tidal power, but not as predictable. While wind power can be economical, lack of predictable output minimizes its value in terms of energy capacity. Tidal power, due to its predictable nature, can be used not only to offset energy use, but also to offset capacity for a given utility and thus is potentially much more valuable as a resource than wind power. As the technology commercializes, tidal power promises to become price competitive with wind power as well.

Another potential power source that HEA has been looking into is the Healy Clean Coal Plant (HCCP). While this plant has received significant investment as a cleaner coal burning technology it has yet to prove itself viable and thus it has sat idle almost since its construction. In addition this particular "clean coal" technology does nothing to capture and sequester CO₂ and thus produces just as much if not more CO₂ per kWh than a normal coal plant. Finally, while HEA currently has the contractual right to develop and re-start HCCP, the actual facility is far removed from HEA's service territory and any electricity generated from this plant would not serve HEA customers, but be subject to wheeling tariffs, or traded with other utilities' power that is closer to HEA's service territory. If a "true" economic analysis of HCCP were conducted, and legal costs and ongoing risk of carbon taxes, etc., were all included, this power option would perhaps be the most expensive of all. In any case, if the feasibility study proves out, the tidal project proposed here would offer a clean alternative to HCCP that will likely prove itself to be economically competitive with coal power in the long run.

4.2 Existing Energy System

4.2.1 Basic configuration of Existing Energy System

Briefly discuss the basic configuration of the existing energy system. Include information about the number, size, age, efficiency, and type of generation.

Railbelt Energy Project – NA

4.2.2 Existing Energy Resources Used

Briefly discuss your understanding of the existing energy resources. Include a brief discussion of any impact the project may have on existing energy infrastructure and resources.

Currently the energy used in the Homer Electric Association service area is purchased by contract from Chugach Electric. HEA is contractually obligated to purchase Chugach power until December 31, 2013. Chugach Electric's energy comes primarily from the Beluga natural gas plant and the gas that supplies this plant comes by contract from Marathon Oil. The contract for this natural gas will expire in 2010, at which time Chugach will be renegotiating its contracts to purchase gas and HEA's electricity purchase price will also be impacted. HEA has stated that this dynamic is leading them to pursue diversified resources for electricity generation. Both Chugach and HEA also receive some power from the state-owned Bradley Lake hydro facility on the south side of Kachemak Bay.

The feasibility phase of this project will preliminarily address potential interconnection issues to integrate tidal power onto the railbelt grid. Currently there is a 25KV transmission line that crosses Kachemak Bay from the end of the Homer Spit to McKewan flats and on to Seldovia. Tying into this transmission line would allow for energy on the scale of this project and larger to be transmitted onto the local grids. From Seldovia on to Port Graham and Nanwalek there is only a single-phase transmission line that would need to be upgraded to accommodate significant power transmission. HEA is already looking into funding for such an upgrade to allow for commercial fish rearing facilities that require three phase power to be built in Nanwalek. This transmission line would also be useful for the transmission of power from a tidal installation in this area.

As well, if a three-phase transmission line is not constructed on the south side of Kachemak

Bay, it may make more sense for the communities to generate tidal power for local consumption to replace both electricity and heating fuel that is currently "imported." Heating fuel especially is quite expensive because these communities are not on the road system, so the value of locally produced electricity used for heat that replaced fuel oil and propane would be substantial. We have not explicitly included this option in our economic analysis but if the tides prove feasible, this could markedly improve the project economics for both the smaller Kachemak Bay communities and provide distributed generation and avoid additional transmission costs incurred by HEA.

4.2.3 Existing Energy Market

Discuss existing energy use and its market. Discuss impacts your project may have on energy customers.

Homer, Seldovia, Port Graham and Nanwalek all fall within the Homer Electric Association service area. Currently all of the power sold here is purchased by HEA from Chugach Electric, whose current natural gas contracts are set to expire in 2010. At that time both the price and availability of power for HEA members will be less certain. While HEA is investigating small scale hydro power and wind projects, there is a need for more project development to provide stable and economical electrical service for HEA customers into the future. This tidal project could provide an economical, stable, and flat priced alternative power source for this market. The potential of this resource is not yet known, but it is likely that the developable tidal resource in the nearby vicinity of Kachemak Bay communities could have a significant impact on the local energy market.

Additionally, it is possible that tidal generation in the selected areas could be smaller scale for primarily local use. Especially for the more remote communities on the south side of Kachemak Bay (Seldovia, Port Graham, and Nanwalek), where the unit price of electricity is higher (per HEA tariff) and diesel fuel is much more expensive because of no road access, it may be possible for tidal energy to replace electricity and heat currently purchased by the communities. For example, transmission constraints may make it difficult and too expensive for large scale tidal development in, say, Port Graham, but perhaps the locally available resource could be developed to power and heat the entire village, including the Tribal fish hatchery and other commercial applications. A village-scale (as compared to utility-scale) hydrokinetic device and construction project may be the most appropriate in certain locations to minimize ecological impact and shorten the development timeline.

4.3 Proposed System

Include information necessary to describe the system you are intending to develop and address potential system design, land ownership, permits, and environmental issues.

4.3.1 System Design

Provide the following information for the proposed renewable energy system:

- A description of renewable energy technology specific to project location
- Optimum installed capacity
- Anticipated capacity factor
- Anticipated annual generation
- Anticipated barriers
- Basic integration concept
- Delivery methods

At this time there are several companies developing tidal hydrokinetic technologies for the tidal energy market. These include axial flow turbines such as those under development by Verdant Power, Lunar Energy, Open Hydro, and Marine Current Turbines (MCT), as well as cross flow turbines being developed by Ocean Renewable Power Company and New Energy Corporation, among others. New Energy Corporation currently has an in-stream hydrokinetic device installed

on the Yukon River in interior Alaska. At this stage, this proposed project is not committed to a particular technology but will study the development and commercialization of these tidal technologies as part of the feasibility study. For purposes of economic feasibility, we will select a particular technology and apply power curves and related information to determine projected production costs. As well, at the four selected locations, we will consider site specific issues that may assist in choosing a particular turbine and installation system. For example, different depths at selected locations may lead to different turbines and system designs, or similarly, differential ease and cost of access to on-shore transmission lines may dictate turbine selection and system design. One of the ongoing questions along these lines is if Kachemak Bay—or specific locations within the Bay—are sufficiently ice-free to consider a floating pontoon structure, or if it will be necessary to submerge the device. It is anticipated that by the time this project has moved into a Final Design phase in 2011–2012, significant advances, modifications, and proving out of these various technologies will have taken place, which will make for more prudent decisions in technology selection.

The optimum installed capacity of tidal systems will be determined in the feasibility phase based on resource availability, and the ability of the nearby power infrastructure to utilize or transmit the energy. It is anticipated that individual units ranging in size from 250kW to 1MW will be feasible in this area with possible build-outs to 5MW or more being conceivable. As these tidal systems increase in size, this will significantly improve the project economics from the calculations here. For example, MCT's projected capital costs per kW installed are reduced by 50% when expanding from a 1.2 MW project installed in 2007 and a 10 MW project currently under installation and slated for commissioning in 2009.

The anticipated capacity factor will depend on the final technology selection but capacity factors of around 30% in a 6 knot current are typical of tidal technologies under development. It should be noted that while 30% capacity factor is similar to wind energy, tidal energy has the distinct advantage of being predictable and thus, can serve as a component of baseload energy.

At this capacity factor a 250KW turbine would produce 657MWh per year. A 1MW turbine would produce 2,628 MWh per year. For economic calculation purposes here, we have selected a single 250 kW turbine for simplicity, but it is expected that if this “proof of concept” project was successful, there would be additional projects installed in Kachemak Bay over time.

Anticipated barriers:

- Confirming adequate current velocities exist in the project areas.
- Confirming that it is possible to economically develop the sites that have adequate currents.
- Assuring that these tidal installations will not interfere with current uses including subsistence and commercial fisheries and marine navigation.
- Assessing the local environmental impact of potential tidal technologies in respect to their effects on marine life including fish and marine mammals.

Basic Integration Concept:

The power produced by this tidal project would be integrated into the local grid via the 25KV transmission line at the end of the Homer spit or in Seldovia. In Port Graham or Nanwalek integration of the power would currently be limited to single phase transmission capacity. As mentioned earlier there is the potential for this service to also be upgraded to a three phase 25KV transmission line in the near future that would allow additional power to be fed north into the railbelt grid. The power would be integrated into the grid at a capacity that is manageable and dispatchable in accordance with the interconnect study to be completed in this feasibility study phase of the project.

As well, if a three-phase transmission line is not constructed to Port Graham and Nanwalek, it may make more sense for the communities to generate tidal power for local consumption to replace both electricity and heating fuel that is currently “imported.” Heating fuel especially is quite expensive because these communities are not on the road system, so the value of locally produced electricity used for heat that replaced fuel oil and propane would be substantial, and

system integration costs would be much reduced. This would also limit the amount of power generated but also reduce the cost. These trade-offs will be examined in the feasibility study.

Delivery Methods:

Being on the road system and having a deep water port, Homer is capable of receiving system components via overland or marine shipping. From there items can be either shipped or put on the regular Alaska Marine Highway ferry service to Seldovia. Port Graham and Nanwalek would require utilizing local marine freight companies to ship items from Homer. Local marine service companies would also be used for system deployment.

It is anticipated that the power itself would be delivered from the hydrokinetic marine installation—either near surface or submerged—to shore via underwater cable. This is a well understood technology that is already deployed in the area with local expertise to support such installation.

4.3.2 Land Ownership

Identify potential land ownership issues, including whether site owners have agreed to the project or how you intend to approach land ownership and access issues.

The City of Homer intends to utilize City property, utility easements, and rights-of-way whenever possible for this project. The City of Homer does have title to submerged lands adjacent to the Homer spit, which is a likely location for future development. If access is needed over private property, the City intends to work with willing landowners to secure the proper easements. At this level of feasibility study, there will not be much, if any, need to access private property. Similarly in the communities of Seldovia and Port Graham, it is not expected that we will need any access to private property. However, for placement of the stationary ADCP devices at the bottom of Kachemak Bay, we will likely need land use permits from the state (discussed below). Land ownership or access issues for any future project will be explicitly considered in site selection and more fully addressed in the feasibility study. Site selection for full feasibility analysis will likely be constrained, in part, by access to grid interconnection, which should minimize land ownership challenges. In general, because of the nature of the project, it is not land use-intensive and we do not expect to have problems or issues with this aspect.

4.3.3 Permits

Provide the following information as it may relate to permitting and how you intend to address outstanding permit issues.

- List of applicable permits
- Anticipated permitting timeline
- Identify and discussion of potential barriers

The City of Homer has extensive experience permitting major public works projects, including those involving submerged lands, such as the Homer deep water dock facility. If the proposed tidal power project is determined to be feasible and the City pursues construction funding, we will undertake and complete all required permitting, in accordance with the Alaska Coastal Zone Management Act.

For these reconnaissance and feasibility stages of the project, we anticipate needing to secure a land use permit from Alaska Department of Natural Resources to access the ocean floor. We have contacts with this agency and do not anticipate any problems securing this permit. The agency has previously indicated support for this type of project.

An important part of the feasibility study will be to identify all necessary permits and the required path, timeline, and expected costs for securing them. We have explicitly budgeted time and money in the feasibility study to address these concerns. Primary among the permits we will need to acquire will be the Federal Energy Regulatory Commission (FERC) preliminary permit. The outcome of the feasibility study will provide the “go/no go” decision point for pursuing this permit, on which all else will depend.

If a tidal energy project is determined feasible and worthy of pursuit, other permits we expect to

need include the following:

- Fish collection permit – Alaska Department of Fish & Game (ADF&F)
- Fish habitat permit – ADF&G
- Water Rights – Alaska Department of Natural Resources (ADNR)
- Title 10 permit – US Army Corps of Engineers
- Coastal Zone Management: local support will facilitate permit issuance if required
- Coast Guard notification: Will be necessary to address potential navigational issues and inform waterway users of installation

4.3.4 Environmental

Address whether the following environmental and land use issues apply, and if so how they will be addressed:

- Threatened or Endangered species
- Habitat issues
- Wetlands and other protected areas
- Archaeological and historical resources
- Land development constraints
- Telecommunications interference
- Aviation considerations
- Visual, aesthetics impacts
- Identify and discuss other potential barriers

Because of the expected location of a tidal energy device, i.e., under the water in Kachemak Bay, minimal impact in regard to avian, telecommunications, archaeological, visual and aesthetic issues would be expected. It should be noted that the City of Homer has title to submerged lands near the Homer Spit that may be good sites for tidal energy production, which will simplify some of these potential land use issues. The primary concerns will likely be biological and habitat, as Kachemak Bay is a National Estuarine Research Reserve and receives special protection. The bay supports significant marine, avian, and terrestrial wildlife. The proposed feasibility study, including biological impacts, will consider the potential environmental issues of concern. By partnering with ADF&G from the beginning, we will be able to identify and address any potential problems. The Department has stated its support for the project and has provided a list of species of concern that we will take special care to address:

SPECIES AND STATUS	OCCURANCE	RANGE IN ALASKA
Endangered		
Blue whale (<i>Balaenoptera musculus</i>)	Rare	Bering Sea, Gulf of Alaska, N. Pacific
Bowhead whale (<i>Balaena mysticetus</i>)	Regular	Chukchi Sea, Beaufort Sea
Cook Inlet beluga whale (<i>Delphinapterus leucas</i>)	Regular	Cook Inlet Chukchi Sea, Bering Sea, Gulf of Alaska, N. Pacific
Fin whale (<i>Balaenoptera physalus</i>)	Regular	Bering Sea, Gulf of Alaska, N. Pacific
Humpback whale (<i>Megaptera novaeangliae</i>)	Regular	Bering Sea, Gulf of Alaska, N. Pacific
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	Rare	Gulf of Alaska
North Pacific right whale (<i>Eubalaena japonica</i>)	Rare	Bering Sea, Gulf of Alaska, N. Pacific
Sei whale (<i>Balaenoptera borealis</i>)	Rare	Gulf of Alaska, N. Pacific
Short-tailed albatross (<i>Phoebastria albatrus</i>)	Rare	Bering Sea, Aleutian Islands, Gulf of Alaska
Sperm whale (<i>Physeter macrocephalus</i>)	Regular	Bering Sea, Gulf of Alaska, N. Pacific
Steller sea lion (<i>Eumetopias jubatus</i>) west of 144°	Regular	Bering Sea, N. Pacific
Threatened		
Green sea turtle (<i>Chelonia mydas</i>) (incl. <i>agassizi</i>)	Rare	Gulf of Alaska

Loggerhead sea turtle (<i>Caretta caretta</i>)	Rare	Gulf of Alaska
Northern sea otter (<i>Enhydra lutris kenyoni</i>)	Regular	Aleutian Islands, Alaska Peninsula, Kodiak Island
Spectacled eider (<i>Somateria fischeri</i>)	Rare	Western and Northern Alaska (coastal)
Steller sea lion (<i>Eumetopias jubalus</i>) east of 144°	Regular	Bering Sea, Gulf of Alaska, N. Pacific
Steller's eider (<i>Polysticta stelleri</i>)	Regular	Southwestern, Western, and Northern Alaska
Candidate		
Kittlitz's Murrelet (<i>Brachyramphus brevirostris</i>)	Regular	Southern, Northwestern Alaska (coastal)

It is expected that additional biological studies, evaluations, and reviews will be necessary before full construction. Such activities will be clarified in the feasibility report, including identification of all required permits and qualified contractors.

4.4 Proposed New System Costs (Total Estimated Costs and proposed Revenues)

The level of cost information provided will vary according to the phase of funding requested and any previous work the applicant may have done on the project. Applicants must reference the source of their cost data. For example: Applicants Records or Analysis, Industry Standards, Consultant or Manufacturer's estimates.

4.4.1 Project Development Cost

Provide detailed project cost information based on your current knowledge and understanding of the project. Cost information should include the following:

- Total anticipated project cost, and cost for this phase
- Requested grant funding
- Applicant matching funds – loans, capital contributions, in-kind
- Identification of other funding sources
- Projected capital cost of proposed renewable energy system
- Projected development cost of proposed renewable energy system

The total anticipated cost of this project through construction of a hypothetical 250 kW turbine is estimated to be \$2,492,591. The cost for the first two phases of the project proposed here (reconnaissance and feasibility/conceptual design) is \$1,154,341. The request for funding from AEA for this part of the project comes to \$482,387. Applicant matching funds amount to \$671,954 in in-kind contributions from NOAA, re vision consulting, Deerstone Consulting, and the City of Homer. Total anticipated costs through construction of a 250 kW turbine are based on published capital and development costs of a 1 MW project completed in 2007 by Marine Current Turbines in the United Kingdom

(<http://www.all-energy.co.uk/UserFiles/File/2007PeterFraenkel.pdf>). Of the two phases proposed here, phase 1 project costs are \$79,910 (AEA requested) and \$60,100 (matching) and phase 2 project costs are \$403,387 (AEA requested) and \$610,944 (matching).

If the resource assessment and feasibility study determine that there are viable tidal power projects in Kachemak Bay, there are several options for future funding. These options will depend in large part on who actually develops the projects, which could be the local utility (HEA), independent power producers, local governments, or a combination of the above. Certainly federal and state grants will be investigated, but other possibilities include local bonds, local dedicated revenue generation, conventional capital markets and/or venture capital. Federal production tax credits for renewable energy projects currently in place, as well as expected future green energy incentives and/or carbon taxes for fossil fuel generation, would also be incorporated into a funding package for project development and improved economic returns.

The estimated capital cost of this project is based on actual installed costs of tidal pilot projects. These costs apply to installations in the 1MW range, but it is anticipated that reduced efficiencies from diseconomies of scale for smaller 250kW systems will be offset by overall costs being driven down by the commercialization of these technologies. Assuming that the capital costs will be roughly 50% of the overall project installation costs, as is typical, at \$5377 per kW installed cost this would lead to a capital cost for a 250kW system of \$672,125. This would make the balance of

the project cost including design, another \$672,125 with the overall project development cost, including the feasibility study, totaling \$1,826,466. With future and likely larger systems, it is expected that the development costs per unit energy would significantly decrease, both in absolute terms and in relation to per unit capital costs.

4.4.2 Project Operating and Maintenance Costs

Include anticipated O&M costs for new facilities constructed and how these would be funded by the applicant.

- Total anticipated project cost for this phase
- Requested grant funding

While it is difficult to estimate O&M for the different technologies that will be considered for this project, based on industry expectations a very conservative value would be \$.035 per kWh produced for small-scale projects such as a 250 kW turbine. This would likely include at least an annual inspection, servicing and replacement of worn parts. For a 250 kW system with a 30% capacity factor, this would result in \$22,995 of annual O&M expenditures. It is reasonable to assume that as the size of the project and amount of energy generated increased, the per unit O&M cost would decline as well. Such costs would be incorporated into the power sales and system servicing agreements, which would vary depending on the institutional and business structure that eventually emerges to develop these projects.

We are requesting no O&M costs for this resource assessment and feasibility project.

4.4.3 Power Purchase/Sale

The power purchase/sale information should include the following:

- Identification of potential power buyer(s)/customer(s)
- Potential power purchase/sales price - at a minimum indicate a price range
- Proposed rate of return from grant-funded project

The potential buyers for the power purchased from this project include all of the railbelt utilities. The most likely one, however, would be Homer Electric Association since the power would be tied into the HEA service area. Current avoided cost rates for HEA are \$0.04043 per kWh, though this is projected to increase in direct proportion to Chugach Electric's avoided cost which is forecast to reach \$0.109 per kWh by 2012 when current contracts for natural gas purchase are no longer in place and both new fuel and new generation hardware will be necessary. This would be the more likely time frame for project implementation and the beginning of power sales to HEA.

As stated several times above, it is also possible—and this will be considered explicitly in the feasibility study—that the more remote villages in Kachemak Bay may want to purchase the power for local use, and not sell back to HEA. This will likely replace not just conventional electricity use but heating fuel and eventually, if electric vehicles become more widespread, liquid transportation fuels as well. In these communities, because they are not road-connected, liquid fuels require expensive marine transport from Homer. If a relatively inexpensive energy source such as tidal power can be harnessed, there will likely be strong interest in maximizing local use of this energy, especially as a replacement for imported and expensive liquid fuels. Currently liquid fuels sell for over \$5.50 per gallon for gasoline and more for diesel.

Costs per kWh of power produced by tidal turbines are highly variable and in some cases theoretical for the various technologies. Manufacturers predict eventual commercialization and economies of scale from larger build outs bringing power into the realm of \$0.08 per kWh. On the scale and timeframe of this project, which would likely be a smaller capacity installation due to existing energy infrastructures, the cost of power produced would be targeted around \$.11–\$.15 per kWh assuming a conservative 20 years of operation before major upgrades are needed. With any increase in projected avoided cost and renewable tax credits or green power incentives this will lead to a profitable energy source by the time of its installation around 2012 or soon thereafter. As well, once proven out, larger projects following on the heels of a pilot project such as that described here would likely realize increased efficiencies, improved economies of scale, and lower per unit production costs.

4.4.4 Cost Worksheet

Complete the cost worksheet form which provides summary information that will be considered in evaluating the project.

See attached cost worksheet.

Capital cost based on Marine Current Turbines published figures (\$5,377/kW installed).

Annual O&M cost based on industry projections plus \$0.01/kWh for conservative estimate of smaller system (assumed total of \$0.035/kWh).

Fuel displacement estimated based on 30% capacity factor of 250 kW turbine (657,000 kWh annually).

Price of displaced fuel based on Chugach Electric projection of \$0.109/kWh avoided cost in 2012.

Alaska public benefits include value of Kachemak Bay tidal circulation flow model to spill response and mariculture industry, along with O&M service contracts to Alaska marine energy firms and the portion of the reconnaissance and feasibility study funds that will be awarded to Alaska firms.

4.4.5 Business Plan

Discuss your plan for operating the completed project so that it will be sustainable. Include at a minimum proposed business structure(s) and concepts that may be considered.

If the proposed economic and technical analyses indicate that construction of tidal energy production devices merits further consideration, the feasibility study will examine institutional and business structures that best take advantage of the resource development opportunities. Likely options include:

- Collaboration with, or “hand-off” to Homer Electric Association;
- Solicitation of independent power producers (IPP) and/or technology providers such as Ocean Renewable Power Company (who is engaged in a similar project in upper Cook Inlet and could perhaps generate synergies with this proposed effort);
- Some combination of utility and IPP and local government;
- Small-scale development, perhaps led by local government and/or other local entities, designed to meet local needs, perhaps including liquid fuel substitution, and avoid transmission upgrades.

An important component of the feasibility study will be to more thoroughly investigate and compare these options. Because of the site specific nature of the resource and the unique infrastructure characteristics and location of each community, it is possible that different locations may require different institutional/business structures to best take advantage of the tidal development potential. For example, it may be preferable to consider large scale tidal development near Homer to “feed” the railbelt grid, while smaller scale projects that meet local needs may be preferable on the south side of Kachemak Bay where transmission constraints currently exist and both electricity and liquid fuels are incrementally more expensive.

Finally, as discussed above, if the resource and technology to harness the resource proves viable, it is likely that much larger systems than the 250 kW turbine proposed here will emerge. This will improve the project economics, shorten the payback, increase competitiveness, and generally alter the dynamic and status quo of power generation in the region. At a larger scale, and in combination with similar projects in Cook Inlet, a tidal energy industry would develop and perhaps require different business models.

4.4.6 Analysis and Recommendations

Provide information about the economic analysis and the proposed project. Discuss your recommendation for additional project development work.

This proposed project is a diverse partnership that holds promise for national significance. In particular, the commitment demonstrated by NOAA's in-kind contribution of \$650,000, and their expressed interest in pursuing this work throughout Alaska and the rest of the coastal U.S. to facilitate tidal development, will be a boon for the tidal energy industry. As a result of the discussions that formalized the commitment documented in this proposal, NOAA has stated their desire to collaborate with AEA in the future to advance tidal resource assessment throughout the state. Alaska's potential tidal resource is widely recognized globally, and with the recent installation of the first in-stream hydrokinetic energy device in the U.S., Alaska is poised to become a national, if not global, leader in harnessing hydrokinetic energy, both ocean and in-stream.

Though not explicitly included as in-kind contributions for this budget, there is also significant value embedded in the bathymetric mapping of part of Kachemak Bay conducted by NOAA last year, and expected to be continued for the rest of the Bay this upcoming summer. Specifically, NOAA stated that 20 days of NOAA ship time at \$20,000 per day plus 100 hours of Cessna flight time at \$3,000 per hour, plus substantial data analysis and processing time, were required to complete the bathymetric maps. This information will be quite valuable when constructing the comprehensive tidal circulation flow model for Kachemak Bay that will emerge from this proposed project.

Feasibility studies such as the one proposed here are necessary for any potential large scale energy project, but these become even more important—and groundbreaking—when the technology is so new and rapidly advancing. While hydrokinetic technology in general is still considered immature, many lessons from the wind energy industry are transferable and have contributed to a steep learning curve, which we expect to continue. This dynamic will result in significant cost reductions in short time periods.

It should be noted that we have based construction costs on recently published figures from Marine Current Turbines' project in the United Kingdom, while they continue to show major cost reductions and expect to find more efficiencies in the future. It is quite reasonable to assume that we will benefit from, and take advantage of, this learning curve and reduced costs over time. Thus, the economic analysis presented here should be viewed as conservative since even an optimistic development timeline would not see project construction until at least 2012, at which time additional cost savings will likely be achieved. As well, as projects become larger in size, further cost savings will occur from increasing economies of scale. In Kachemak Bay, that would mean that the feasibility study costs proposed here would be spread over more projects and more kWh's generated, thus reducing the relative cost of the feasibility study on a per unit basis of energy generated.

In terms of a clean, locally available, reliable resource, tidal energy in Kachemak Bay holds tremendous promise. Supporting multi-community, leading edge initiatives such as this will pave the path for other efforts. An extensive feasibility study is necessary to learn as much as possible at this early stage and ensure that no catastrophic mistakes occur that harm the fledgling industry. The early tidal projects constructed in Alaska should be near communities that can provide relatively low cost logistical and technical support, and obviously have a good tidal resource. We believe that Kachemak Bay fits these criteria, and that an extensive feasibility study is worth the investment to make a "go/no go" decision regarding construction. As well, other potential tidal projects in the region, namely upper Cook Inlet, will result in a critical mass of expertise and community support for these initiatives that will propel Alaska's economy through the 21st century.

SECTION 5- PROJECT BENEFIT

Explain the economic and public benefits of your project. Include direct cost savings, and how the people of Alaska will benefit from the project.

The benefits information should include the following:

- Potential annual fuel displacement (gal and \$) over the lifetime of the evaluated renewable energy project
- Anticipated annual revenue (based on i.e. a Proposed Power Purchase Agreement price, RCA tariff, or avoided cost of ownership)
- Potential additional annual incentives (i.e. tax credits)
- Potential additional annual revenue streams (i.e. green tag sales or other renewable energy subsidies or programs that might be available)
- Discuss the non-economic public benefits to Alaskans over the lifetime of the project

The project proposed here is essentially a resource assessment and feasibility study of Kachemak Bay's tidal energy potential. The communities of Homer, Seldovia and Port Graham are collaborating on this effort, along with project partners NOAA, ADF&G, Terrasond, re vision consulting, and Deerstone Consulting. In-kind contributions to the project total \$671,044.

If the feasibility study determines positive project economics, we are proposing the construction of a 250 kW tidal turbine to demonstrate "proof of concept." At 30% capacity factor with 6 knot peaking tidal currents, this amounts to 657 MW of electricity generated annually. Chugach Electric has stated their expected avoided cost in 2012, once current natural gas contracts run out, will be at least \$0.109. The expected cost of replacing aging capital may increase this figure, but for conservative estimation of benefits, we have used this avoided cost value to calculate \$71,613 in annual benefits derived from power sales and fuel displacement. We have reduced this value by \$5,748 annually because of the assumed O&M component (25% of total) required to purchase parts and supplies. Assuming a 20-year lifetime of the project yields \$1,317,300 in net revenue. If larger projects come on-line over time, the net revenues will be significantly more.

Additional public benefits will include \$49,228 in contracts to Alaskan businesses in the feasibility study. Through project construction an additional estimated \$336,062 in contracts to Alaskan businesses will be expected.

The operation and maintenance of the 250kW turbine is expected to cost \$22,995 annually (\$0.035/kWh and 30% capacity factor for production). Of these operation and maintenance costs, an estimated 25% will be for parts and supplies and the remaining 75% of this will be in contractual costs to Alaskan marine service companies amounting to \$17,246 annually. Over the 20 year lifetime of the project this will total \$344,925. It is assumed that the parts and supply costs will not be spent in Alaska (and thus, are not included as public benefits), but the contractual costs will go to an Alaska company, and are considered public benefits.

Additional public benefits associated with this project include ancillary uses of the tidal circulation flow model that will be produced by NOAA, which include the mariculture industry, oil spill response, and fisheries management. Kachemak Bay is world renowned for its oysters. This mariculture industry is valued at approximately \$1 million annually. We estimate that improved management associated with this model will result in increased value of \$25,000 annually. Over a 20 year life cycle of the installed project, this would amount to \$500,000. In terms of improved spill response, Kachemak Bay is considered a port of refuge for damaged vessels in Cook Inlet. This was dramatically demonstrated two years ago when an oil tanker docked in Nikiski suffered damage and required towing to Homer. This situation did not result in any oil spilled but publicly highlighted the issue. It was stated at the time that spill response contingencies needed improvement, including better understanding of the tides and currents in Kachemak Bay in case of an oil or other toxic chemical spill. Given the increased interest in oil exploration in the region, it is expected that an improved understanding of tides and currents in Kachemak Bay could result in improved spill response and reduced harm to existing natural resources. Assuming even one fairly large spill during the 20 year lifetime of the proposed project, this can be reasonably estimated to provide \$100,000 of additional public benefit.

It is widely recognized that Alaska has some of the best potential of anywhere in the world for generating tidal energy. This proposed Kachemak Bay project, in combination with other nearby initiatives such as upper Cook Inlet, could help to establish an Alaska-based industry and global leadership in tidal power. While there are perhaps numerous locations throughout the state that may be feasible, there are many reasons to begin establishing this industry in population centers on the road system to reduce early development costs. An initial investment of less than \$500,000 by AEA in this project will allow a leveraging of more than an additional \$670,000 through direct project cost-share. This is a substantial public benefit that will not occur without AEA's support.

SECTION 6 – GRANT BUDGET

Tell us how much your total project costs. Include any investments to date and funding sources, how much is requested in grant funds, and additional investments you will make as an applicant.

Include an estimate of budget costs by tasks using the form - GrantBudget.xls

This proposal requests \$79,910 for phase 1 and \$403,387, for a total of \$483,297 from AEA. All project partners combined will be contributing \$60,100 in phase 1 and \$610,944 in phase 2, for a total of \$671,044 of cost-share. This amounts to a total project cost of \$1,154,341.

Within phase 1, requested funds include \$33,410 for travel, meals, and per diem. This will be used to bring all project partners together for a project kick-off meeting in Homer, and for ongoing costs for the NOAA researchers who will remain in the area for data reconnaissance and background research. The remainder of the AEA requested funds for phase 1 are for contractual expenses for NOAA's information technology support (\$20,000); re vision consulting (\$10,000); Seldovia and Port Graham personnel (\$1,000 each); ADF&G (\$2,500); Deerstone (\$7,000); and Terrasond (\$5,000). Cost-share contributions in phase 1 include \$50,000 of donated labor from NOAA personnel; \$5,600 in donated labor from re vision consulting; \$2,500 in donated labor from Deerstone Consulting; and \$2,000 in donated labor from the City of Homer.

Within phase 2, AEA requested funds include \$70,000 in travel, meals, and per diem for NOAA researchers to conduct 35 days of field work in Kachemak Bay; \$50,000 for NOAA vessel support for field work; \$130,000 in contractual for NOAA IT support in data analysis; \$120,659 in contractual for re vision consulting; \$2,000 in contractual for both Seldovia and Port Graham; \$5,480 in contractual for ADF&G; \$21,800 in contractual for Deerstone Consulting; and \$1,448 in contractual for Terrasond. Cost-share contributions in phase 2 include \$150,000 in equipment (ADCP devices) from NOAA; \$150,000 in supplies to install and use the ADCP devices from NOAA; \$300,000 of labor from NOAA personnel who will be collecting and processing the tidal data; \$4,700 of labor from Deerstone Consulting; and \$6,244 of labor from the City of Homer for project management.

By task, and as illustrated in the attached GrantBudget.xls form, task 1 requests \$79,910 in AEA funds and will provide \$60,100 in cost-share; task 2 requests \$353,928 in AEA funds and will provide \$607,500 in cost-share; and task 3 requests \$49,459 in AEA funds and will provide \$3,444 in cost-share.

SECTION 7 – ADDITIONAL DOCUMENTATION AND CERTIFICATION
SUBMIT THE FOLLOWING DOCUMENTS WITH YOUR APPLICATION:

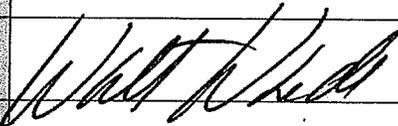
- A. Resumes of Applicant's Project Manager, key staff, partners, consultants, and suppliers per application form Section 3.1 and 3.4
- B. Cost Worksheet per application form Section 4.4.4
- C. Grant Budget Form per application form Section 6.
- D. An electronic version of the entire application per RFA Section 1.6
- E. Governing Body Resolution per RFA Section 1.4

Enclose a copy of the resolution or other formal action taken by the applicant's governing body or management that:

- authorizes this application for project funding at the match amounts indicated in the application
- authorizes the individual named as point of contact to represent the applicant for purposes of this application
- states the applicant is in compliance with all federal state, and local, laws including existing credit and federal tax obligations.

F. CERTIFICATION

The undersigned certifies that this application for a renewable energy grant is truthful and correct, and that the applicant is in compliance with, and will continue to comply with, all federal and state laws including existing credit and federal tax obligations.

Print Name	Walt Wrede
Signature	
Title	City Manager, City of Homer
Date	November 10, 2008

City of Homer

Homer, Alaska

Mayor's Certificate of Appointment

Greetings

Be It Known That

Nantia Krisintu

Has been appointed to

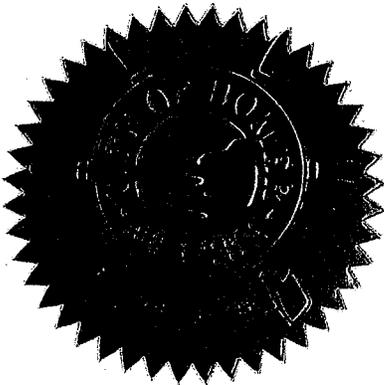
serve as

“Commissioner”

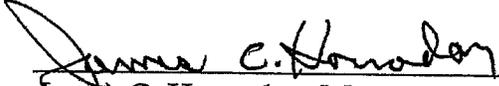
on the

“Economic Development Advisory Commission”

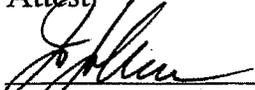
This appointment is made because of your dedication to the cause of good government, your contributions to your community and your willingness to serve your fellow man.



*In Witness whereof I hereunto set my hand
this 31th day of May, 2012.*


James C. Hornaday, Mayor

Attest


Jo Johnson, CMC, City Clerk



Office of the Mayor
James C. Hornaday

Homer City Hall
491 E. Pioneer Avenue
Homer, Alaska 99603-7624

Phone 907-235-8121 x2229
Fax 907-235-3143

May 30, 2012

Nantia Krisintu
P.O. Box 3021
Homer, AK 99603

Dear Nantia,

Congratulations! Council confirmed/approved your appointment to the Economic Development Advisory Commission during their Regular Meeting of May 29, 2012, via Memorandum 12-083.

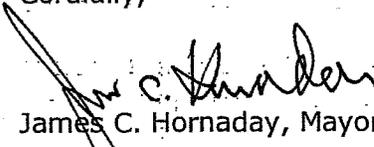
Included is the 2011 Public Official Conflict of Interest Disclosure Statement. Please complete this document and return it to the Clerk's office. This form will be retained in the Clerk's office. It is a public document and may be requested by any member of the public. In the event the Public Official Conflict of Interest Disclosure Statement is requested by a member of the public, you will be notified of the requestor's name.

Also included is the Code of Ethics as outlined in Homer City Code 1.18. This provides important guidelines in your role as a commissioner as to conduct and conflicts of interest. And finally, the Robert's Rules of Order handbook is enclosed to help you with the meeting protocol.

Thank you for your willingness to serve the City of Homer on the Economic Development Advisory Commission. There certainly are exciting times ahead.

Your term will expire April 1, 2015.

Cordially,


James C. Hornaday, Mayor

Enc: Memorandum 12-083
Certificate of Appointment
HCC 1.18 Conflicts of Interest, Partiality & Code of Ethics
2010 Public Official Conflict of Interest Disclosure Statement
Robert's Rules of Order handbook

Cc: Economic Development Advisory Commission



Office of the Mayor
James C. Hornaday

Homer City Hall
491 E. Pioneer Avenue
Homer, Alaska 99603-7624

Phone 907-235-8121 x2229
Fax 907-235-3143

M E M O R A N D U M 12-083

TO: HOMER CITY COUNCIL

FROM: JAMES C. HORNADAY, MAYOR

DATE: MAY 22, 2012

SUBJECT: APPOINTMENT OF NANTIA KRISINTU TO THE ECONOMIC
DEVELOPMENT ADVISORY COMMISSION

Nantia Krisintu is appointed to the Economic Development Advisory Commission to fill the seat vacated by Shelly Erickson. Her appointment will expire April 1, 2015.

RECOMMENDATION:

Confirm the appointment of Nantia Krisintu to the Economic Development Advisory Commission.



**CITY OF HOMER
COMMISSION, COMMITTEE, BOARD & TASK FORCE
APPLICATION FORM**

CITY CLERKS OFFICE
CITY OF HOMER
491 E. PIONEER AVENUE
HOMER, ALASKA 99603
PHONE 907-235-3130
FAX 907-235-3143

RECEIVED BY CLERK'S OFFICE

The information below provides some basic background for the Mayor and Council.
This information is public and will be included in the Council Information packet.

Name Date

Physical Address City

Mailing Address Zip Code

Phone Work # Cell #

Email Address

NOTE: The above information will be published in the City Directory and within the City web pages if you are appointed by the Mayor and your appointment is confirmed by the City Council.

Please indicate the commission(s), committee(s), board or task force you are interested in:

Select	COMMISSION/COMMITTEE/BOARD.TASK FORCE	REGULAR MEETING SCHEDULE
<input type="checkbox"/>	ADVISORY PLANNING COMMISSION	1ST & 3RD WEDNESDAY OF THE MONTH AT 6:30 P.M. WORKSESSIONS AT 5:30 P.M.
<input checked="" type="checkbox"/>	ECONOMIC DEVELOPMENT ADVISORY COMMISSION	2ND TUESDAY OF THE MONTH AT 6:00 P.M.
<input type="checkbox"/>	LIBRARY ADVISORY BOARD	1ST TUESDAY OF THE MONTH AT 5:00 P.M.
<input type="checkbox"/>	PARKS & RECREATION ADVISORY COMMISSION	3RD THURSDAY OF THE MONTH AT 5:30 P.M.
<input type="checkbox"/>	PORT & HARBOR ADVISORY COMMISSION	4TH WEDNESDAY - JANUARY TO APRIL & SEPTEMBER TO DECEMBER AT 5:00 P.M. 4TH WEDNESDAY - MAY - AUGUST AT 6:00 P.M.
<input type="checkbox"/>	PUBLIC ARTS COMMITTEE	QUARTERLY - 2ND THURSDAY OF THE MONTH AT 5:00 P.M.
<input type="checkbox"/>	TRANSPORTATION ADVISORY COMMITTEE	3RD TUESDAY OF THE MONTH AT 5:30 P.M.
<input type="checkbox"/>	PERMANENT FUND COMMITTEE	QUARTERLY - 2ND THURSDAY OF THE MONTH AT 5:15 P.M.
<input type="checkbox"/>	LEASE COMMITTEE	QUARTERLY - 2ND THURSDAY OF THE MONTH AT 3:00 P.M.
<input type="checkbox"/>	OTHER - PLEASE ENTER THE COMMITTEE/TASK FORCE	53

I have been a resident of the City for 6 mos. yrs I have been a resident of the area for 18 mos. yrs.

I am presently employed as:

List any special training, education or background you have which is related to your choice of commission, committee, board or task force:

- ECONOMICS / studies & Interdisciplinary BA was 2012
ETHICS
- ENTREPRENEUR TOKYO 1998-2000

Have you ever served on a similar commission, committee, board or task force? YES.

If so when and where?

When are you available for meetings? Weekly Monthly Bi-Monthly

I am interested in serving on the above because:

I'd like to help Homer grow into an even more vibrant economic & cultural center. I find the CEDS priorities to be sound and well directed in building infrastructure.

Do you currently belong to any organizations specifically related to the area of your choice(s) you wish to serve on?

Yes No If yes, please list organizations:

Questions regarding the Homer Advisory Planning Commission:

Have you ever developed real property, other than your personal residence? NO

If yes, briefly describe the development:

Questions regarding the Port & Harbor Advisory Commission:

Do you use the Homer Port and/ or Harbor on a regular basis? YES

If yes, is you use primarily: Commercial Recreational Both

Please include any additional information that may assist the Mayor in his decision:

The Homer Grange is currently constructing a Kids Cooperative Garden @ Homer Boys & Girls Club, in conjunction with the 4-H and Lindianne Sarno.

When you have completed the form please review all the information and then click on the print button.

is sorry for the messy paper - greenhouse