

YEARLY ACTIVITY PLAN (YAP) - FY '09 – FY10

Division/Attached Agency:

Program Name:

Program ID:

I. PROGRAM PLANNING

Problem, issue or opportunity statement: Describe the problem, issue and/or opportunity your program is attempting to respond to.

The NELHA mission statement defines its role as *“To develop and diversify the Hawaii economy by providing resources and facilities for energy and ocean-related research, education, and commercial activities in an environmentally sound and culturally sensitive manner.”*

PROBLEMS:

- We have earthquake-severed deep sea water pipelines (18” and 40”) still needing repair in order to continue consistent deliveries to commercial tenants. Further, the 40” pipeline has anchor problems, which could result in its “catastrophic” failure.
- NELHA continues to create energy research linked to the ocean for the benefit of the citizens of Hawaii. To accomplish this, NELHA has actively encouraged new energy projects using alternative energy to be located at the site (in fiscal 2007-2008, SolFocus, Sopogy, Cellana, W2Energies signed leases to conduct energy research at NELHA.) NELHA is also diligently working on the formation of a venture to build the world’s first Ocean Thermal Energy Conversion (OTEC) plant.
- NELHA supports agriculture -- to the benefit of the State of Hawaii -- yet receives no assistance in doing so, losing money on a cash basis. To correct this situation, NELHA must continue to raise the rates it charges for seawater it delivers to farmers as well as raise the lease rates it charges for the use of its land.
- It should be noted that the above are being pursued with no operating funds from the State. The State does contribute CIP funding to NELHA, but the future of this source must be considered uncertain at best.
- With the decision of *Ohana Pale Ke Oa v. Board of Agriculture* in the Intermediate Circuit Court of Appeals late last fiscal year, it is urgent that a supplemental Environmental Impact Statement for NELHA be commenced immediately to allow continued commercial and/or new research activities at the facility.

OPPORTUNITIES:

- NELHA should continue taking a leadership role in developing renewable energy resources --- in a sense, back to its roots.
- Another imperative is achieving operating profitability to secure the future of the agency.
- NELHA should promote research on the constituents of the deep sea water to produce new medicines and cures for mankind.
- NELHA is a statewide authority by statute; its operations should be extended to other islands in order to promote their economies.

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Need and partners: Provide quantitative evidence to show the scope and nature of the problem or opportunity you are working on. Identify partners you will be working with to address the problem, issue and/or opportunity. Describe why government should be part of the solution.

NEEDS:

- Despite issuing two Requests for Proposals for repair of the 18” and 40” pipelines, this has not been accomplishable due to flaws in the process. These two lines are needed to supply agricultural tenants with virtually all the seawater consumed in the production of most of Hawaii’s aquacultural exports. The 40” line is also vital to the conduct of Heat Exchanger research for ocean thermal energy development, as is being proposed by Lockheed-Martin Corporation and Makai Ocean Engineering.
- Electrical energy is a major expense at NELHA as it is used to pump and deliver seawater to almost every tenant. Fiscal 2007 – 2008 expenses for electricity rose over 14%. NELHA, for the benefit of the state’s tenants, needs to become independent of the utility. Toward that end, late in 2007, the Green Energy Zone by 2012 concept was developed, whereby it is NELHA’s goal by 2012 to be totally reliant on green energy for itself and its tenants.

PARTNERS:

- Companies such as Habor Offshore, Makai Ocean Engineering and others, all NELHA tenants, various non-tenant energy companies, the Federal government, Federal Emergency Management Agency, National Oceanic and Atmospheric Administration, Hawaii County Planning and Building departments, Office of Hawaiian Affairs, Department of Business, Economic Development and Tourism, State Procurement Office, Department of Water Supply, Environmental Protection Agency, Federal Aviation Administration, Public Utilities Commission, Kona International Airport, Department of Land and Natural Resources, Department of Transportation, Foreign Trade Zone, Public Utilities Commission, State Planning Office, Land Use Commission, Department of Agriculture, the state administration and legislature.

GOVERNMENT AS AN INTEGRAL PART OF THE SOLUTION:

- Government is deeply involved in the operation of NELHA from the regulatory point of view as can be seen from the above list. It is a fact that hardly anything can be undertaken at NELHA without the permission or involvement of a number of government agencies. Therefore, NELHA must interface and work with other governmental agencies to fulfill its mission, accommodate the activities of its existing tenants, and expand the breathe of activities underway through private/public partnerships at NELHA.

Desired results (outputs, outcomes and impacts): What will success look like? Describe what you expect to achieve in the short-term (0-2 years) and long-term (2-6 years).

DESIRED RESULTS IN THE NEXT TWO YEARS:

- a. Repair the severed 18” and 40” pipelines and restore full service capability to deliver sea water for tenant and research --- both energy and new products from the sea -- usage.
- b. Determine how to -- and then secure -- the 40” pipeline anchoring system to prevent a “catastrophic” failure and the resultant negative impacts on tenants and the state for not maintaining a unique valuable asset.
- Achieve total self-reliance for operating expenses through continued execution of higher yielding leases (lease revenues rose approximately 8% in fiscal 2007 – 2008 through continuation of the new lease policy adopted in August of 2006), continued ramp up of

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seawater delivery prices to reflect actual costs, development of new seawater uses (such as its sale for Sea Water Air Conditioning at the Kona International Airport and culture of algae for bio-fuels production) and the development of independent revenue sources such as the delivery of energy related services to others.

- Issuance of RFPs and subsequent contracts for a large solar array project that would supply both NELHA and KOA with at least intermittent power, therefore relief from the grid. (This RFP is at DBEDT for issuance on the state procurement system at present.)
- Issuance of RFP and subsequent contract for construction of a scale-up ocean thermal energy plant (OTEC), which materially would aid in proving the economic feasibility of establishing such plants elsewhere (at commercial size) for the benefit of Hawaiian electricity consumers. This could also create a NELHAcentric revenue base. (This RFP will be filed for issuance by DBEDT by the middle of August 2008.)
- Issuance of, and funding for, an RFP for planning and design (and then construction) of the vital airport connector road, enabling ingress to the largest remaining section of undeveloped NELHA real estate.
- Create the “NELHA” brand as a unique product source. Recent developments in deep sea water branding have shown the need to brand NELHA products for their recognized exclusivity. This will require a new Servicemark as well as participation by tenants using the Servicemark.

DESIRED RESULTS IN THE 2 TO 6 YEAR TIME PERIOD:

- Restore Hawaiian leadership in OTEC development through leadership and implementation of a demonstration OTEC facility.
- Achieve energy independence through privately-financed alternative green power projects at NELHA, fulfilling the objectives of the Green Energy Zone as well as pointing the way for the Hawaii Clean Energy Initiative effort.
- Have a multiplicity of Hawaiian operations throughout the state, not just Keahole Point.
- Have at least one on-going partnership to construct, operate and profit from OTEC plants in various locations.
- With the remaining +/-500 acres, having completed the arduous subdividing, permitting, and platting process, lease these lands at their highest and best use prices to assist in maintaining operating expense self-reliance. With the *Ohana Pale Ke Oa v. Board of Agriculture* ruling and implementation of new requirements by Department of Agriculture regarding importation of species and so forth, this may require NELHA to draft either an entirely new Environmental Impact Statement or at least conduct a Supplemental Environmental impact Statement.

Influential Factors: List the factors you believe will support or hinder your ability to impact the problem or opportunity.

POSITIVE INFLUENTIAL FACTORS:

- An administration and legislature committed to energy independence for Hawaii and its agencies.
- Fossil fuel prices.
- A vigorous Board of Directors, forward-looking and self-reliant directed.
- Increasing public awareness of high energy prices and that it is within the state's ability to “do something about them”.
- New tenants, with business models directed toward more lucrative products than existing tenants, who do not believe paying market rates for leases and sea water

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deliveries is unreasonable to expect.

- Increasingly, a local community interested and concerned about the lack of well-paying jobs, creation of a diversified economic base, and improved opportunities for the younger generations.
- Growing public concern over the high prices of energy and the state’s reliance on fossil fueled power for electricity and transportation.

NEGATIVE INFLUENTIAL FACTORS:

- Current laws and regulations regarding the transmission, distribution and charging for electricity deliveries. This will require corrective action by the Public Utilities Commission and a change in the way private utilities conduct their business.
- The need to engage private enterprise to fulfill NELHA self-sufficiency projects due to a lack of agency or state funding to construct and operate such projects.
- Existing tenants expecting a continuation of the traditional subsidization that they have received in terms of less-than-cost seawater deliveries and substantially-less-than-cost land rents.
- Non-local interest groups, such as some supposed environmental groups that oppose any type of progress or development for their own pecuniary purposes.
- Recent *Ohana Pale Ke Oa v. Board of Agriculture* ruling, which could severely curtail activities at NELHA.
- An Environmental Impact Statement dating from the early 1980’s and a 1990’s Master Plan that restrain modern development, particularly on the HOST Park acreage.

Strategies: List the “best practices” that have helped other programs achieve the kind of results your program promises.

This is an unknown. NELHA is an attached agency and operates in an environment decidedly different than that of state departments. It also is an operating entity that depends upon a fee structure for its revenues and covering of expenses. *There are no other programs in Hawaii similar to NELHA, therefore it is in the unique position of leading the way into the future for state agencies to become self-sustaining and operating as if they were privately run companies.*

Assumptions: State the assumptions behind *how* and *why* the change strategies you have identified will work. Use “If - then” statements, i.e. “if _____ then _____ happens.”

- If NELHA increases its seawater delivery charges proportional to its seawater delivery costs, then it will not suffer a financial loss on this aspect of its operations.
- If NELHA continues to price land leases at competitive rates with other commercial/industrial/urban developments in west Hawaii, then it will gradually increase its land use fees and cover increased operating expenses.
- If NELHA is successful in subdividing its remaining acreage for leasing, especially if current lease rates remain in effect, then it will substantially increase not just revenues but become more self-sustaining.

II. PROGRAM IMPLEMENTATION

Resources: Describe the resources available to support your program.

- Current tax laws favor alternative energy development.
- There is considerable interest in helping NELHA and the state become more self-

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sufficient through public/private partnerships.

- Tenants locate at NELHA to have access to the seawater needed to grow and manufacture products. New tenants have signed leases in the past two years at Board-established market rates for farming purposes --- generally 5 times more than current existing tenants are paying. Tenants are adjusting their business models to factor in the higher prices for using NELHA's unique assets. The unique assets possessed by NELHA have also attracted energy companies to do research into future generations of their products at NELHA.
- A unique offshore ocean research and commercialization corridor, eminently suited for ocean energy projects of both a research and commercial nature.
- The world's only large-scale 3,000 foot deep seawater production facility, the envy of many nations and government agencies wanting to conduct ocean energy research projects..
- A collapse of the mainstay tourism and construction economy is creating public interest in diversifying the economy of west Hawaii. NELHA is the logical place for this to occur as it has land, FTZ and Economic Zone status, and a mandate in favor of such.
- \$1.3 million Special Fund reserve.
- Legislative support of, and interest in, the NELHA programs as evidenced by Capital Improvement Project funding appropriated and *pro viso'ed* by the Legislature in the past two years.
- World energy conditions.
- Substantial amounts of land available for leasing after the planning, permitting, E.I.S., and other steps are completed.
- An excellent dedicated staff, with personnel eager to achieve goals and create positive results for the benefit of the people of Hawaii.
- A Board of Directors that understands the need for forward progress and attainment of objectives that benefit NELHA, not content with the status quo.

Activities: Describe each of the activities you plan to conduct within your program.

THESE ACTIVITIES CREATE THE AGENCY'S LEADERSHIP POSITION:

1. Repair two year old earthquake damage to 18" and 40" deep seawater pipelines.
2. Successfully undertake the first-ever in the world repair of sub-sea anchor systems, vital to the continued operation of the 40" deep seawater pipeline, upon which nearly all aquacultural tenants at NELHA rely.
3. Successfully issue and fulfill an RFP for the private development of up to 5 megawatts of solar power at NELHA, providing considerable energy for the use of NELHA...
4. Issue successfully a RFP for private development of an OTEC scale-up plant at NELHA.
5. Continue developing and implementing the Green Energy Project at NELHA, enabling it by 2012 to be totally reliant on green renewable energy production and consumption.
6. Issue RFPs for planning and design of an expansion to the 55" pipeline system to facilitate future tenants and alternative uses of sea water, such as air conditioning.
7. Development of an electrical micro-grid.
8. Planning, design, and construction of a vital connecting road to the Kona International Airport.
9. Pursue the completion of the new Master plan, which presents a sustainable and diversified operating base of NELHA, comprised of commercial and research activities using the unique resources and assets that NELHA possesses.
10. Develop in-house independent revenue bases such as consulting and/or involvement in

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development of energy projects for other state and governmental entities.

Outputs: For each program activity, identify what outputs you aim to produce.

- Maintenance of capabilities and capacities for deep seawater use by commercial and research tenants (#1 and #2 above).
- Energy production and consumption will not be as subject to fossil fuel energy prices through the completion of #3, #4, and #5. Further, two extremely beneficial outputs are achieved for the state: leading by example the Hawaii Clean Energy Incentive and development and demonstration that ocean thermal energy conversion is economically viable, leading to a long term reduction in energy costs for the entire state.
- The output objective for #6 to expand the agency's ability to facilitate future commercial and research activities and demonstrate new energy saving techniques through the use of cold from seawater for air conditioning and regulation purposes.
- An electrical micro-grid (#7) at NELHA will demonstrate the feasibility and methods of implementation of area-wide off-grid electrical system operation.
- Realization of a connecting road to the Kona International Airport (#8) saves energy on the part of tenants who ship and/or receive products by air – significantly reducing their fossil fuel consumption. This road also enables development of the largest remaining undeveloped portion of NELHA.
- Completion of the new Master Plan, the first at NELHA in many years and which is underway, (#9) paves the way for a coherent development in the future of the entire facility (this will be the first Master Plan that deals with the entirety of NELHA) and provides the foundation for commencement of a new Environmental Impact Statement for the whole of NELHA if that is what eventually becomes necessary in light of *Ohana Pale Ke Oa v. Board of Agriculture*.
- NELHA can share its experience with others for a more energy independent Hawaii and develop alternate revenue sources than it currently has.

Outcomes: Identify the short-term (0-2 years) and long-term (2-6 years) outcomes you expect to achieve.

DESIRED RESULTS IN THE NEXT TWO YEARS:

- a.) Repair the severed 18" and 40" pipelines and restore full service capability to deliver sea water for tenant and research --- both energy and new products from the sea -- usage.
- b.) Determine how to -- and then secure -- the 40" pipeline anchoring system to prevent a "catastrophic" failure and the resultant negative impacts on tenants and the state for not maintaining a unique valuable asset.
- Achieve total self-reliance for operating expenses through continued execution of higher yielding leases (lease revenues rose 7% in fiscal 2007 – 2008 through continuation of the new lease policy adopted in August of 2006 and are estimated to increase 37% in fiscal 2008-2009 -- +/- \$400,000), continued ramp up of seawater delivery prices to reflect actual costs, development of new seawater uses (such as its sale for Sea Water Air Conditioning at the Kona International Airport and culture of algae for bio-fuels production) and the development of independent revenue sources such as the delivery of energy related services to others.
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Impact: Describe the lasting impact you anticipate.

An agency leading the way to more energy independence on the part of Hawaii, continued diversification of the economic base for the entire state through the demonstration and implementation of new energy methodologies using the unique ocean assets of NELHA, and a model for development of similar facilities on other islands of the state and throughout the Pacific Rim and elsewhere.

III. PROGRAM EVALUATION

Indicators: Describe what SMART ('specific; measurable; action-oriented; realistic; and timed') indicators can be collected that would convey the status of your program.

1. Successful repairs to both the 18” and 40” pipelines for deep seawater deliveries.
2. Successful conclusions to pending and anticipated RFPs --- for example, airport connector road, 55” expansion, micro-grid, photovoltaic array, and OTEC.
3. Implementation of the new Master Plan.

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IV. ALIGNMENT

| Is your program linked to DBEDT's six strategic objectives? | | |
|---|----------|--|
| 1. | | Workforce Housing |
| 2. | X | Human Capital Development |
| 3. | X | Hawai'i Clean Energy Initiative |
| 4. | X | Global Links |
| 5. | X | Innovation Infrastructure |
| 6. | X | Improve Hawai'i's Small Business Environment |

| | | |
|---|---------------------------------------|-----------------------------|
| Emerging Industries: Does your program impact Hawai'i's emerging industries? | Yes X <input type="checkbox"/> | No <input type="checkbox"/> |
|---|---------------------------------------|-----------------------------|

Yes, aquacultural, ocean science and industry and energy in particular.

V. APPROVALS

| | | |
|---|---|---|
| <p>a. <u>Ron Baird</u> Submitted by - Print Name</p> | <p>_____ Submitted by - Signature</p> | <p>August 5, 2008 _____ Date</p> |
| <p>b. <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED</p> | <p>_____ Division/Agency Head - Signature</p> | <p>_____ Date</p> |
| <p>c. <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED</p> | <p>_____ Director - Signature</p> | <p>_____ Date</p> |