

Agency: Commerce, Community and Economic Development**Grants to Named Recipients (AS 37.05.316)****Grant Recipient: Alaska SeaLife Center****Federal Tax ID: 92-0132479****Project Title:****Project Type: Maintenance and Repairs**

Alaska SeaLife Center - Veterinary and Emergency Oil Spill Response Equipment

State Funding Requested: \$450,000**House District: Kenai Areawide (28-30)**

One-Time Need

Brief Project Description:

This request covers two separate but closely related components at the Alaska SeaLife Center: 1) purchase of critical veterinary equipment and 2) installation of an ozone system in our "South Beach" quarantine facility. These components are vital to the Center's ability to meet regulatory and permit requirements while maintaining capacity to respond to events involving oiled wildlife or endangered ice seal species.

Funding Plan:

Total Project Cost:	\$450,000
Funding Already Secured:	(\$0)
FY2015 State Funding Request:	<u>(\$450,000)</u>
Project Deficit:	\$0

Funding Details:

We have opportunistically replaced certain pieces of lab equipment in conjunction with various research projects, but have been unable to obtain funding sources for these specific equipment needs.

Detailed Project Description and Justification:**Component 1: Veterinary Equipment:**

A myriad of veterinary equipment is required at the Alaska SeaLife Center to meet regulatory and permit requirements associated with maintaining a healthy collection of marine animals. Much of the veterinary medical equipment currently in use at the Alaska SeaLife Center was purchased when the facility opened 15 years ago. As the only facility in the state authorized by the US Fish and Wildlife Service and the National Marine Fisheries Service to respond to and rehabilitate live marine mammals, having appropriate veterinary equipment is of utmost importance to the State of Alaska.

New veterinary equipment purchased under this request would include items such as staff support facilities (\$25,000), mobile transportation & rehabilitation enclosure (\$45,000), portable ultrasound system (\$25,000), liquid nitrogen freezer (\$25,000), blood analyzers (\$40,000), endoscope (\$65,000) and a thermal imaging camera (\$25,000).

Staff Support Facilities: Our current rehabilitation quarantine area does not have a bathroom or shower. Due to concerns about disease transmission, rehabilitation staff are not routinely allowed in the main facility, and addressing personal needs are challenging. Depending on the time of year and the level of concern, staff are sent home, utilize a portable restroom, or use a bathroom in the main building but restricted for their use. A bathroom with a shower located within the quarantine area

would greatly reduce concerns about disease transmission and provide appropriate facilities for staff.

MTRE (Mobile Transportation & Rehabilitation Enclosure): Not all animals impacted by man-made or natural disasters can or should be brought to the ASLC for treatment. We have designed, built, and tested a prototype MTRE that can be deployed across the state to care for small pinnipeds close to where they are found. The prototype is currently stored at Prudhoe Bay but additional units are needed. A unit stationed in Seward at the Alaska SeaLife Center would allow for training on its deployment and use by Center staff and other trained wildlife responders.

Portable Ultrasound: Unless animals are anesthetized, a portable ultrasound is required to monitor reproductive status, fetal development and various soft tissue anomalies. Our current portable ultrasound no longer charges properly, which complicates its utility. Additionally, it cannot be connected to newer probes designed to improve visualization of specific tissues and its recording and measurement abilities do not allow for post exam assessment, which limits its usefulness. A new machine with the ability to fully record sessions and perform measurements after the exam is essential to provide the best possible veterinary care to animals at the Center and wildlife we respond to in the field.

Blood Analyzers: Having the ability to run routine blood analyses is an essential and permit-required component of ASLC's medical care for our collection, research and stranded animals. While many facilities can rely on local laboratories to run these tests, Seward lacks such a resource so we must maintain appropriate equipment onsite for rapid test turn around (minutes vs. 24 hours or more). Our existing analyzers and generator are currently performing inadequately and are due for replacement. Additionally, we are increasingly being called to be able to deploy to remote areas in support of animal responses. Having deployable equipment would greatly enhance our ability to properly and quickly assess animal health status.

Liquid Nitrogen Freezer: The Alaska SeaLife Center makes use of several ultralow temperature freezers (80 degree C) to store biological samples. At this temperature biological activity is slowed, but not stopped. This means samples can still slowly degrade over time. Purchase of a liquid nitrogen freezer would allow us to permanently store biological samples for future analyses. Liquid nitrogen freezers also operate without electricity for long periods of time, generate significantly less excess heat, and last longer than ultralow freezers. We currently replace an average of one ultralow freezer every other year. Converting over to liquid nitrogen systems rather than replacing our aging ultralow freezers would be more energy efficient, longer-lasting and better preserve our archived biosamples.

Endoscope: Having the ability to visualize internal structures short of exploratory surgery is considered a standard of care with marine mammals. Endoscope systems consist of several separate components. Some of our existing equipment is old and prone to problems. Additionally, our system lacks some of the newly developed tools to facilitate procedures and is challenging to record procedures for analysis and review. Funds are required to update tools and replace aging equipment.

Thermal Imaging Camera: Thermal imaging of animals provides the ability to assess animals from a distance without the need for behavioral or physical control by indicating an animal's thermal profile which can indicate whether inflammation, infection, or fever is present. Use of thermal imaging can better inform us as to an animal's condition, can be used to direct treatment without further handling, or allow us to determine that further exam is not necessary. This diagnostic ability would greatly enhance our care of animals in the event of a natural or anthropogenic disaster, in particular with oiled animals whose thermal-regulatory abilities are compromised.

Component 2: Ozone for South Beach Facility:

The Alaska SeaLife Center's "South Beach" facility was designed for quarantined research on Steller sea lions. The unique

facility is a completely self-contained quarantine area, connected by life support systems to the Center's main building. Four fenced and lighted animal holding tanks are surrounded by a custom-designed aluminum deck, with a loading dock for bringing in animals and supplies. Since the facility is specifically designed for housing pinnipeds from local regions such as Prince William Sound, it lacks the ability to disinfect seawater to the level required for species from other regions in the state.

With the recent listing of ice seals as endangered species and increased emphasis being placed on oil spill response preparedness, we have the added need to equip the South Beach facility with ozonated seawater. The Center already uses on-site ozone generators to treat outgoing seawater and to maintain water quality in our nearly 500,000 gallons of exhibits, but do not have the added capacity to provide ozonation to South Beach. Ozone (O3) is a powerful oxidizing agent which is a strong disinfectant and toxic to most waterborne organisms. It is an effective method to neutralize harmful protozoa and other pathogens, and is faster, cheaper and produces fewer dangerous byproducts than other decontamination methods such as chlorination. Ozone is made by passing oxygen through an electrical discharge; the ozone is then added to the water by bubble contact in a reaction chamber. Residual ozone that is not used up in the decontamination process is then passed through destruction units to break the O3 into oxygen (O2), a less corrosive molecule.

Installation of a dedicated ozone system for the South Beach facility would drastically improve the Center's ability to care for a wider variety of marine mammal species.

Project Timeline:

All components of this project could be completed within one year of receipt of funding.

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

Alaska SeaLife Center

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Has this project been through a public review process at the local level and is it a community priority? Yes No