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BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCE ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Office of Conservation and Coastal Lands
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Ref.:OCCL:MC

CDUP OA-3719

DEC 17 2014

Randy Cates
Mamala Bay Seafood LLC
24 Sand Island Access Road, Box 27
Honolulu, HI 96819

Dear Mr. Cates,

SUBJECT: Conservation District Use Permit (CDUA) OA-3719
Māmala Bay Seafood Mariculture Facility
Reef Runway Borrow Pit, Ke`ehi Lagoon, Honolulu, O`ahu
TMK (1) 1-1-003:005 (submerged lands)

This is to inform you that on December 12, 2014 the Board of Land and Natural Resources approved Conservation District Use Permit (CDUP) OA-3719 for Māmala Bay Seafood to develop and operate a mariculture facility located in the Reef Runway Borrow Pit, Ke'ehi Lagoon, Honolulu, O'ahu, TMK (1) 1-1-003:005 (submerged lands), subject to the following conditions:

1. The permittee shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of this chapter;
2. The permittee, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit;
3. The permittee shall obtain appropriate authorization from the department for the occupancy of state lands, if applicable;
4. The permittee shall comply with all applicable department of health administrative rules;
5. The permittee shall provide documentation (e.g., book and page or document number) that the permit approval has been placed in recordable form as a part of the deed instrument, prior to submission for approval of subsequent construction plans;
6. Before proceeding with any work authorized by the department or the board, the permittee shall submit four copies of the construction plans and specifications to the chairperson or an authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to the permittee. Plan approval by the chairperson does not constitute approval required from other agencies;
7. Unless otherwise authorized, any work or construction to be done on the land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the chairperson, and shall be completed within three years of the approval of such use. The permittee shall notify the department in writing when construction activity is initiated and when it is completed;

8. All representations relative to mitigation set forth in the accepted environmental assessment or impact statement for the proposed use are incorporated as conditions of the permit;

9. The permittee understands and agrees that the permit does not convey any vested right(s) or exclusive privilege;

10. In issuing the permit, the department and board have relied on the information and data that the permittee has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the department may, in addition, institute appropriate legal proceedings;

11. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the permittee shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;

12. Artificial light from exterior lighting fixtures, including but not limited to floodlights, uplights, or spotlights used for decorative or aesthetic purposes, shall be prohibited if the light directly illuminates or is directed to project across property boundaries toward the shoreline and ocean waters, except as may be permitted pursuant to section 205A-71, HRS. All exterior lighting shall be shielded to protect the night sky;

13. The permittee acknowledges that the approved work shall not hamper, impede, or otherwise limit the exercise of traditional, customary, or religious practices of native Hawaiians in the immediate area, to the extent the practices are provided for by the Constitution of the State of Hawaii, and by Hawaii statutory and case law;

14. The maximum growing volume of the facility will not surpass 60,520 m^3, and the maximum number of pens will be ten;

15. The use of feeds containing supplemental hormones shall not be allowed;

16. The approved specie for the facility is moi (Pacific threadfin, *Polydactylus sexifilis*). No other species is approved. Any further culture of fish species must be approved by the Chairperson of the Department of Land and Natural Resources;

17. Signs or other markings of the site shall be regulated by site plan approval. The applicant shall immediately report any ocean use conflicts, such as entanglement of fishing nets on the farm facility, to both the boating and land divisions. Buoys, signs or other markings shall be provided on the ocean surface when required by the Chairperson;

18. The permittee shall forward details of all monitoring efforts to the DLNR and water quality results to the Department of Health in accordance with the existing NPDES permit. The department shall be immediately notified of the failure of the mooring system, a disease outbreak, theft or vandalism;

19. The permittee shall monitor the condition of the submerged fish farm on a daily basis. When weather and surf conditions do not permit physical monitoring, visual monitoring shall be conducted;

20. The lease shall be in compliance with Chapter 190D, HRS. The permittee shall implement mitigative measures approved by the Chairperson to alleviate environmental or use concerns, when the need is apparent or when required by the Chairperson. Such mitigative measures may include the partial or complete removal of the fish farm facility;

21. Cages, anchors, lines and other fish farm facilities shall be removed at the conclusion of the use;

22. Any nets or other debris that foul on the cages or other part of the farm facility shall be disposed of as required by federal, state and city and county regulations and shall not be set free in the marine environment;

23. Dead fish shall not be disposed of in the surrounding waters but shall be removed from the site and disposed of at a County approved site;
24. The permittee will comply with the Reporting Requirements of the Management Plan for the duration of the lease or until amended;
25. The applicant will comply with any restrictions imposed by the Department of Homeland Security when the Airport Security Zone is activated and enforced;
26. That the applicant's lease shall be subject to HRS §171-53, and to the concurrence of the Director of Transportation;
27. The applicant's lease is for commercial purposes;
28. The applicant's lease is clearly in the public interest upon consideration of the overall economic, social and environmental impacts and is consistent with other State policy goals and objectives;
29. The applicant has complied with all applicable Federal, State, and County statutes, ordinances, and rules;
30. Other terms and conditions as prescribed by the Chairperson; and
31. Failure to comply with any of these conditions shall render the permit void;

Please acknowledge receipt of this approval, with the above noted conditions, in the space provided below. Please sign two copies. Retain one and return the other within thirty days. Should you have any questions feel free to contact Michael Cain at 587-0048.

Sincerely,

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

Receipt acknowledged:

_____
Permittee's Signature

_____
Date

copy: John Corbin, Aquaculture Planning and Advocacy, 47-215 Iuiu Street, Kaneohe, HI 96744
DLNR – Chair, Land Division, DAR, DOBOR
USACE, DOT, DOA - Aquaculture

STATE OF HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
Office of Conservation and Coastal Lands
Honolulu, Hawai'i

180 Exp. Date: December 22, 2014

December 12, 2014

Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawai'i

REGARDING: Conservation District Use Application (CDUA) OA-3719 and Management Plan for a Mariculture Facility

APPLICANT: Māmala Bay Seafood, LLC

CONTACT: John Corbin, Aquaculture Planning and Advocacy

LOCATION: Reef Runway Borrow Pit, Ke'ehi Lagoon, Honolulu, O'ahu

TMK: (1) 1-1-003:005 (submerged lands)

LEASE AREA: 75 acres

SUBZONE: Resource

DESCRIPTION OF AREA

Māmala Bay Seafoods (MBS) has submitted an application for an aquaculture facility in the Reef Runway Borrow Pit at Ke'ehi Lagoon, Honolulu, O'ahu, TMK (1) 1-1-003:005. The proposed site is on submerged lands in the Resource Subzone of the State Land Use Conservation District.

MBS proposes to cultivate moi (*Polydactulus sexfilis)* in ten cages in a 75-acre area adjacent to the Honolulu International Airport. The borrow pit (BP) is a steep-sided area that was dredged to fifty feet in the 1970s to provide fill for the airport's reef runway. Sixty acres of the area are under control of the State Department of Transportation, while twenty acres are under the control of the Department of Land and Natural Resources.

The applicant has been involved in mariculture since 1999. His company was the operating partner in the Hawai'i Offshore Aquaculture Research Project that ran a demonstration project offshore of 'Ewa Beach. In 2001 they secured a commercial lease for a moi operation on a 28-acre site, and operated the facility under the aegis of MBS. The site was acquired by Grove

Farms in 2006, and rebranded as Hukilau Foods. The applicant was Chief Operating Officer until 2010.

The borrow pit has steep sides that descend to a relatively flat floor, uniformly around 50 feet deep, and is bounded on the mauka side by a small inner reef flat adjacent to the airport's reef runway. It is protected on the seaward side by an expansive reef flat that extends 2000 to 3000 feet into the ocean. The western part of the borrow pit ends in a continuation of the fringing reef. The eastern part opens into the Ke'ehi Lagoon Drainage Channel.

Prior to dredging the area was part of an extensive fringing reef, with wide mud flats behind the reef. It was an important fishery, and shallow waters limited any boating until construction of three separate sea plane runways during World War II opened up large navigable channels.

Today, Ke'ehi Lagoon functions as a large, mixed-use commercial and recreational area. The eastern portion is bordered by numerous small businesses, many of which require access to the ocean, e.g., sea plane sightseeing, ship repair, ocean tourism, commercial dockage, etc. Passage to the ocean is primarily through the Kalihi Channel. Considerably less activity occurs in the western portion of the lagoon where the borrow pit is located.

Moanalua, Kalihi, and Nu'uanu streams feed freshwater into the lagoon, while flood tide currents enter from the ocean through the Kalihi Channel, which also drains Honolulu Harbor. The mixed lagoon water flows through the borrow pit, exiting at the eastern end of the Ke'ehi Lagoon Drainage Channel. The channel was constructed to provide for a counter-clockwise circulation pattern in the lagoon. It provides the main drainage for both the borrow pit and the lagoon.

The reef flats surrounding the borrow pit have a low coverage of corals; however on the shallow edges of the pit corals are more abundant with a greater diversity. The coral survey noted the presence of an endemic species, ringed rice coral (*Montipora putula*), which was under consideration as a candidate for Endangered Species status.

The applicant conducted a benthic survey that analyzed samples for general appearance, macro fauna, macro algae, oxidation/reduction potential and odor. Subsamples were analyzed for total organic carbon, benthic sand characterization and micro mollusc characterization. Results indicate the Borrow Pit is dominated by open coastal water quality and the benthic environment is composed of fine silt devoid of living animals.

There are two significant protected species in the area: ae'o (Hawaiian stilt, *Himantopus mexicanus knudseni*) and honua (green sea turtle, *Chelonia mydas*). Ae'o are found on the small islets in the lagoon, where they find calm, shallow water to feed and nest. Honua feed on the edges of the fringing reef, but not in the proposed lease area.

The area is not part of the natural open ocean habitat for dolphins or whales. Monk seals have been spotted on the strip of land running along the reef runway.

Biological surveys indicate that the area has a low productivity except for along the edges of the reef. As such, limu gathering, fishing, and other cultural activities do not occur in the leased area. The area is, however, is transited by fishermen seeking to access the more productive reef edge and seaward reef flat.

The area has also been designated a "thrill craft recreation area," although in 80 site visits by the applicant between 2006 and 2013 no thrill craft were seen, and the only recreational vehicles observed were a single kayak on the outer reef. Outrigger paddlers practice in Ke'ehi Lagoon, and occasionally use the borrow pit for training.

Previous surveys of the borrow pit as well as the applicant's survey of the lease site indicate that there are no archaeological resources present.

EXHIBITS

The following exhibits have been included with this report:

1. Project location and vicinity. Ke'ehi Lagoon area and important locations
2. Grid layout. Cage and netting photographs.
3. Cross sectional view of cages, anchors, and lines.
4. Water current patterns
5. Monitoring and maintenance plans.
6. Reef, reef edge, and benthos photographs
7. Correspondence with Department of Transportation, Airports Division
8. TMK Map of Honolulu International Airport and Harbor Facilities
9. Wildlife and Aircraft strikes at civilian airports in Hawaii

PROPOSED FACILITY

The proposal is for a ten-cage mariculture facility to raise moi in the Reef Runway Borrow Pit. Projected annual production at full grow out is estimated to be 1.5 million pounds (750 tons)[1].

The site was selected as it has a high water exchange with the open ocean, is protected from high winds and waves, is relatively deep, has a uniformly flat and depauperate silt bottom, minimal public use, and is close to the MBS base yard at Ke'ehi Lagoon.

Moi are protandric hermaphrodites, maturing as males at age 5-7 months and changing to females as early as 1.5 years of age. The fish spawns naturally in captivity approximately once per month for 3-6 consecutive days and can spawn all year round. There is no commercial fishery for the species in Hawai'i due to low numbers in the wild.

The proposed facility will consist of an anchored grid of ten Aqualine cages. Each cage will be 114 square feet in diameter and twenty five feet in depth, with an enclosed volume of approximately 6052 m^3. A work platform will surround the perimeter of each cage to allow technicians to access the fish. The mooring system connecting the cages will be anchored by 28 Danforth anchors.

[1] For the purposes of comparison: CDUP HA-3720 for Blue Ocean allowed for an increase in volume from 24,000 m^3 to 72,000 m^3, and an increase in production capacity from 500 tons to 1100 tons per year. CDUP OA-3525 for Hukilau allowed for an increase in volume from 24,000 m^3 to 48,000 m^3, and in increase in production capacity from 600 tons to 2500 tons per year. Hukilau went bankrupt before they could implement the changes.

MBS will operate the moi farm as a submerged cage operation, where a few cages will be on the surface for harvesting, stocking, and maintenance during daylight hours only, but others are submerged eight to ten feet below the surface and all cages are submerged at night. Four clump ballast weights will be placed around the lower rim of each cage as part of an air lift system to move the cages up and down.

The cage netting will be a semi-rigid woven copper alloy mesh, a Dyneema fiber mesh, or a combination of both. The applicant has stated that these meshes have proven resistant to biofouling and breakage, which will minimize the potential for unintended environmental degradation. The top cage covering will be Dynamee netting with one inch mesh to hold the fish in the cages in the submerged position.

Fingerlings will be raised from captive broodstock in a land-based hatchery. No selective breeding is planned. Broodstock will be sourced periodically from the wild, such that fingerlings will be F-1 generation, or essentially genetically wild fish. Broodstock for the hatchery will be replenished generally once a year by capturing up to 100 juvenile and adult fish.

When the fingerlings reach two to three inches (at approximately two to three months) they will be transported by truck in tanks to the company's shoreside facility for loading into a boat. At the lease site, stock will be distributed into submerged cages using hoses that carry fish and sea water into the cage. Initial stocking density will be approximately 150,000 individuals per cage. Fish will be held in a smaller net (nursery net) within the larger cage net for a period of time to facilitate feeding.

Feeding will occur daily from the electronically controlled, central feeding barge. The barge will store a two-week supply of pelletized, sinking feed, a portion of which will be distributed to each cage daily through hoses that carry seawater and feed pellets into the cage. Feeding schedules and quantities will vary per cage depending on the biomass present. Feed pellets will be spread widely in a cage to facilitate consumption by all stock and to minimize wastage. The feed distribution will be electronically controlled and monitored by video cameras and divers, so as not to over feed and minimize uneaten pellets.

The feed that will be used is a commercially available, specially formulated slow sinking marine fish diet shipped in bulk from a mainland manufacturer, Skretting Inc. The pellets are a mixture of fish meal, agriculture grains and a vitamin/mineral mix, with a crude protein content of approximately 43%. No additives, such as hormones or antibiotics, will be used. The estimated Feed Conversion Ratio (FCR) is 2:1.

MBS has included calculations of the dilution factor for estimated daily particulate waste products (feces and uneaten food) from an individual cage at maximum fish capacity. Given a typical fish feed assimilation efficiency of 87% and a maximum standing stock single cage biomass of 154,000 lbs fed at 3 % per day, approximately 600 lbs per day of uneaten feed and feces would be released to the environment. At the observed current speed of 1 cm/sec, the flow through the cage would be 168,000 m^3 of seawater per day and the particulate dilution would be approximately one part in 600,000 (i.e. 1 gram of particulate per 600,000 grams of water). At 6 cm/sec (a more typical speed), the flow through the cage would be 1,008,000 m^3/day and dilution would be one part in 3.7 million

Fish will be harvested at 1 to 1 ¼ pounds. Divers inside the cage "herd" marketable fish to a portion of the cage, where they are gently pumped to the deck of the support vessel. On the vessel, fish slide into one of two large ice-brine slurry baths to quickly disable them with minimum damage. Fish are then transported whole in the slurry to MBS's Ke'ehi Lagoon facility for off-loading into containers that are destined for a local wholesaler. No fish processing occurs at sea.

A 72-foot feed barge will also be moored on the site. Stocking, feeding, harvesting, and maintenance will be carried out by surface work boats with occasional SCUBA diver assistance. The barge will be connected near the center of the grid, with a single black feed hose running to each cage.

Pathogenic diseases have not been an issue in previous moi mariculture facilities in the state, and vaccinations, hydrogen peroxide baths, and antibiotic treatments have not been required in the past. Plans for the new farm include instituting disease testing at three stages of the grow-out process: 1) stock going into the cage, 2) at 4 months into the grow-out; and 3) just before the fish are harvested.

Should a disease event occur in the stock, State authorities (DLNR, DOA and DOH) will be notified and approved treatment and stock disposal procedures for aquatic species will be carried out.

A rule change will be requested through the Division of Boating and Recreation (DOBOR) to remove the 75-acre site from the larger State-designated Thrill Craft Recreation Area.

This application focuses on the permitting for the mariculture facility itself; lease negotiations and proposed rule changes will follow as a separate process if the permit is granted. Administration of the proposed lease, should it be approved, is under preliminary discussion with DLNR and Department of Transportation (DOT) administrators.

MBS anticipates beginning construction within six months of lease approval. In Phase I the five easternmost cages will be deployed. MBS estimates that it will take 40 days to deploy the five cages, and that they can begin stocking shortly thereafter.

Phase II deployment of the remaining five cages is planned for three years after lease approval.

In the best case scenario the farm will be completed and fully operational by January 2018.

It is anticipated that the Hawai'i market will consume all of the Phase I production, and approximately 75% of the full-scale production. Much of this will depend on the supply of other bottom fish such as opaka and onaga, which are generally imported. The applicant believes that the market is large enough that the state could potentially sustain six or seven mariculture facilities for moi.

The applicant desires that access by the public to the farm site be controlled and public use of the entire site be restricted. It is requested that no transit or anchoring of any boat or water craft, and no fishing, snorkeling, or SCUBA diving be allowed in the leased area. The applicant will designate a 100-foot wide transit corridor along the inner and outer boundaries of the site to allow public access to the outer reef seaward of the Borrow Pit and to allow the Airport Division access to the Reef Runway. The applicant desires that no public access be allowed on the site at night.

MANAGEMENT PLAN

The management plan was designed to follow a standardized template that OCCL developed for use by mariculture facilities in state waters. The plan was modified to meet the specific conditions of the site and operation. Key elements of the plan include an operational and management plan, a water quality and benthic monitoring and reporting plan, a fish health and monitoring plan, historic resources monitoring plan, a shark management plan, Marine Protected Species Monitoring and Reporting Plan, and a Coral Monitoring Plan. These are included with the exhibits.

As part of the plans, the company will be required to notify OCCL in the event of an unusual occurrence (fish disease or mortality, significant escapes, accidents, interactions with protected species, etc.).

The specific details regarding water quality and benthos monitoring will be specified in the farm's National Pollutant Discharge Elimination System (NPDES) Zone of Mixing (ZOM) permit. These reports will be forwarded to both OCCL and DAR.

Other facilities have not become attractants for large marine species such as sharks, dolphins, whales, turtles, or monk seals. The borrow pit itself is not a known habitat for dolphins or whales. Sea turtles feed on the reef edge, and monk seals have been spotted on the shore by the reef runway. The farm will keep a log of any interactions with these species, and will take note if any are seen within 10 meters of the cages. Any entanglement will be reported immediately to OCCL and DAR.

Other mariculture facilities have been located offshore, away from coral reefs. As the borrow pit edge houses a variety of coral species, MBS will be following a coral monitoring plan that is more robust than the ones required of other facilities.

Should there be unanticipated environmental impacts DLNR will retain the authority to require that a range of mitigation measures be undertaken. These include adjusting the feeding schedules, adjusting the stock biomass, repositioning cages within the grid, letting some cages go fallow for a period, removing cages, or removing the facility.

SUMMARY OF COMMENTS

The Office of Conservation and Coastal Lands referred the application to the following agencies for review and comment: O'ahu Board Member; Kalihi-Pālama Neighborhood Board No. 15; Office of Hawaiian Affairs; County Planning; DLNR- Land Division, DOCARE, Division of Aquatic Resources, DOBOR; Department of Transportation, Airports Division; US Army Corps of Engineers; US Fish and Wildlife Service; US Coast Guard; National Marine Fisheries Service; Department of Health; Department of Agriculture, Aquaculture; and NOAA – Aquaculture Coordinator.

A notice of the application was placed in the July 8, 2014 edition of the Office of Environmental Quality Control's *Environmental Notice*.

Copies of the application and EA were available for review at the Hawai'i State Public Library. They were also available on OCCL's website.

OCCL held a public hearing on July 28, 2014 at the Board of Land and Natural Resources conference room.

Pursuant to HRS §190D-21 LEASING OF STATE MARINE WATERS AND SUBMERGED LANDS FOR PRIVATE USES, a notice of the proposed application was also published three times in the Honolulu Star-Advertiser, with the last notice published on November 8, 2014.

Comments were received from the following agencies:

United States Coast Guard

The project site is part of the Honolulu International Airport North Section Security Zone. Enforcement of the security zone will be triggered whenever the Maritime Security (MARSEC) level, as defined in 33 CFR part 101, is raised to 2 or higher; or whenever the Captain of the Port determines that there is a heightened risk of a transportation-related security risk.

During these periords the requirements might prohibit vessels, divers, and people from being in the zone. If the applicant is willing to comply with the security zone restrictions then the Coast Guard has no objections to the proposal.

Applicant's Response

The applicant will comply with any restrictions.

DLNR – Division of Aquatic Resources

DAR has concerns regarding:

The introduction of large quantity of nutrients:

> The applicant anticipates producing 1.5 million pounds of moi per year. With a 2:1 food conversion ratio (FCR) this will require 3 million pounds of food per year, or 8000 pounds per day. DAR recommends that the applicant research alternate feeds that will give a lower FCR. FCR rates of 1.3:1 can be achieved with this species.
>
> DAR also has questions regarding the circulation patterns that were provided by the applicant. Appendix A of the CDUA shows a circular pattern: the area is flushed south to north by waves breaking over the reef. The water then flows to the east to the dredged gap in the water circulation channel (WCC), and then south to the open ocean. The water in the open ocean then flows to the west, completing the circle. Thus there is some degree of recirculation rather than a 'once through' flush. This would increase the probability of nutrient build-up over time.
>
> Given this probability, DAR recommends that the applicant provide more information on the composition of the feed that will be used.

The applicant is also asked to develop a detailed plan for monitoring nutrient input and settlement beneath and adjacent to the cages. The monitoring plan should be sent to DAR for review; as well as quarterly reports on the information compiled.

The effects of the copper alloy cage mesh on plankton and larvae:

DAR recommends that tests be conducted (such as LC50, a test for the median lethal dose) to determine the effects on plankton and larvae, including coral larvae.

The lack of a detailed treatment plan for illness and parasite problems affecting the cultured animals:

DAR requests that a treatment plan for illnesses and parasite infections be developed that includes the types of chemicals and medications that are proposed, how and how often the treatment will be administered, and whether the animals will be treated off site or *in situ*.

The lack of a detailed implementation plan for addressing natural disasters:

DAR requests a detailed natural disaster preparedness plan be developed and submitted to DAR for review.

The current proposal calls for a two-phase implementation, with five cages being deployed in each phase. DAR requests a scaled down implementation plan, where one cage will be deployed and studied. This would mean that all testing, data collection, and monitoring protocols must be reviewed and approved by DAR prior to the deployment of the first cage.

DAR requests that the results of all data collected be submitted quarterly for review.

DAR requests that the applicant be required to post a bond deposit that is greater than the cost of removing all the material for the operation. The bond deposit will be put towards the removal of all material upon termination of the lease.

Applicant's Response

The applicant, Māmala Bay Seafood (MBS), is aware of the research regarding feed conversion ratios, and participated in some of them. The 2:1 ration used in the draft EA reflects the applicant's experiences at Hukilau; it is anticipated that Māmala Bay will see better results as it is in a more protected location with calmer water, where the feed can be captured and reused. As feed is the largest economic cost to the business, the applicant will continue to monitor the research and to improve the ration as technology improves.

NBS believes that the nutrient impacts can stay within the assimilative capacity of the Borrow Pit based upon the strong currents, a cage-layout that is parallel to the reef, and the mixing pattern of the circulation. They also anticipate rapid uptake of the particulate and dissolved waste products. Individual cage volumes will turn over from 24 to 144 times per 24-hour period.

The applicant analyzed data collected during their baseline water quality studies in December 2010 and August 2013. Their model esimates that 600 pounds per day of uneaten feed and feces will flow into the environment; given the flow speed of water through the system the

particle dilution rate will be between one part in 600,000 to one part in 3.7 million. Given the weak westward current over the outside reef flats and the assimilative capacity of the reef ecosystem the recycling of waste and nutrients should not be a significant issue.

It is also important to note that the company will be staggering harvests over the year, so there will never be a standing stock of 1.5 million pounds at any one time.

The applicant does not believe that copper toxicity tests will be necessary. The copper netting will be used below the surface, while Dyneema netting will be used at the surface. As coral larvae float to the surface when spawned, there will be a separation between the nets and the coral *planula*.

In addition, copper netting has been used world-wide with no known negative effects. In Hawai'i thousands of vessels use copper-based paint, and adjacent to the proposed farm location there are several offshore shipping anchorages using copper paint. The applicant will amend the Environmental Assessment to contain a fuller discussion on copper.

In regards to illnesses and parasite problems, MBS will apply Best Management Practices for maintaining stock health. These include inspection of fingerlings for disease prior to stocking, controlling feed rates to minimize wastage, utilizing low stocking densities, regular removal of fish mortalities, and regular cleaning of the cages.

Any response to disease or parasite problems will be conducted with the prior approval of the State Department of Health, the State veterinarian, and DAR. It is difficult to develop a detailed plan without knowing the specifics of any individual event. It should be noted that Hukilau did not have issues with disease or parasites with moi, and never had to treat the farmed fish in any manner.

Options to deal with disease incidents include depopulating the cages and using a fresh water bath. While the applicant does not anticipate the need for antibiotics or hormones, they will consult with the above agencies should any treatment be needed.

As discussed in the management plan, MBS will bring the feed vessel into port in the case of severe storms and hurricanes, and sink the cages underwater if necessary.. For tsunamis the barge will be left in place. During the 2011 tsunami the applicant's other company, Cates International, was tasked with salvage operations in the Ke'ehi area. They noted that strong and unpredictable currents continued for several weeks, but that the proposed site of the fish farm was relatively unaffected.

The proposed implementation plan is to start the farm in two phases, each with a total of five cages. The initial phase will commence with two cages, and then the remaining three. The availability of hatchlings will affect the exact timing of installation; it is estimated that it will take one year to fully implement each phase.

It is not economically feasible to install one cage and to monitor its effects over time. This is not a research project. However, further monitoring programs will be implemented before the farm is stocked in order to provide baseline data.

MBS agrees that comprehensive monitoring of key parameters is beneficial to both government agencies and the facility itself. MBS envisions three monitoring programs to measure impacts on: water quality, benthic quality, and nearby coral communities. Any

requirements from DLNR and other agencies can be factored into the NPDES and benthic quality permits when they are secured from the Department of Health. DAR and OCCL will both receive these reports, and will be able to analyze them to determine if mitigation measures need to be implemented.

MBS will follow the requirements of HRS Chapter 190D for posting a bond for infrastructure removal with guidance from DLNR's Land Division.

OCCL's comments

OCCL notes that the applicant has complied with DAR's recommendations to submit all data for quarterly review, prepare a detailed natural disaster preparedness plan, and to clarify the treatment plan for illnesses and parasites.

The issue of posting a bond deposit will be undertaken during lease negotiations; any lease will also need BLNR approval.

OCCL feels that the applicant has answered the questions regarding feeds.

The specifics of the plan for monitoring nutrient input and settlement beneath cages will be outlined in the company's NPDES permit.

OCCL concurs with the applicant that toxicity tests need to be conducted on copper alloy meshing, given that copper paint is common on Hawaiian vessels, and is used in offshore shipping anchorages. The use of copper mesh does not introduce a new compound into State waters.

OCCL also concurs with the applicant that a scaled-down implementation plan, or running a test-cage for one year, is not an economically feasible option.

DLNR – Division of Boating and Aquatic Resource (DOBOR)

No comments

DLNR – Land Division

The State submerged land is encumbered by Executive Order 3202 to the State Department of Transportation for airport and harbor uses. The Board's consideration and approval for a lease of the subject request is required.

State Department of Transportation, Airports Division

The Airports Division does not approve of this project. Their concerns are as follows:

The farm could act as a hazardous wildlife attractant. Specifically,

a. The draft EA (DEA) did not mention the auku'u (black crowned night heron, *Nycticorx nyxticorax hoactili),* which roost in the same mangroves as cattle egret. There have been three bird strikes involving these heron since 1998.

b. While the DEA states that the cages will be covered to deter birds, this might not be sufficient to keep birds away. According to the USDA Wildlife Services, the cages could still act as an attractant for birds seeking out food sources even if netting prevents them from actually feeding.

c. The platforms surrounding the cages could also be an attractant by offering a resting place.

d. Hawaiian monk seals could also be attracted to the area by the presence of moi.

As aircraft safety is the Division's top priority, they will not tolerate any semblance of a potential wildlife attractant to be developed within its jurisdiction.

Airports Division also has the following security concerns:

a. Any use of the channel will severely hamper their response to an aircraft emergency in the water by restricting the travel of the Aircraft Rescue Fire Fighting boats.

b. The Division's current security directives require maintaining a clear zone of 400' from the perimeter fence line. Mooring a feed/security barge within the 400' airport maritime security zone poses a security threat and will not be allowed.

c. General security concerns are also heightened. The Transportation Security Administration (TSA), the U.S. Coast Guard, and the Department of Homeland Security also share these security concerns.

Applicant's Response

The proposed facility should not cause hazardous wildlife movement in or across the departure airspace of the airport. Wildlife, particularly seabirds and shore birds, will never be able to have any contact with either the fish or the feed. The ponds are an enclosed system, and the feed pellets are sinking feed that will be released underwater. Neither the fish nor the feed will be visible to the birds.

There have been two fish farms in Hawai'i located within five miles airports. Hukilau foods was located 3.5 miles from the Honolulu International Airport and 3.45 miles from Barber's Point Air Field from 2001 to 2011. A feed barge was moored on site for eight of these years. The mariculture facility in Hawai'i County was located 0.8 miles from the Kona International Airport, and also has feed vessels. Neither farm experienced any increase in bird activity near fish cages that are located at the surface[2].

Similar operations include the Naval Ocean Systems Center located at Kāne'ohe Marine Corps Base, which has nearly 200 dolphin pens. The site was located a few hundred yards from an active runway. The Hawai'i Institute of Marine Biology is located 1.5 miles from the base and houses both dolphin pens and fish cages. Neither has presented issues as wildlife attractants.

Other operations with platforms located within Ke'ehi Lagoon have not had any issues with increased bird activity, nor have moored vessels at Hickam Air Base.

[2] OCCL notes that these facilities utilized submerged cages.

Regarding the auku'u, these nest on sticks in a group of trees, or on the ground in protected locations such as reed beds and coastal marshes. They forage primarily at night and in the early morning by standing on or wading through shallow water. While they do nest within the Ke'ehi Lagoon area, there have been no observations of them in the proposed project area. The proposed farm is not located near any canals or mangroves. The known behavior of auku'u does not associate these birds with deep water. They do not forage on the nearby reef as they need shallower water.

Regarding monk seals, these have not taken up residence on structures similar to fish cages such as swim platforms, jet ski operational platforms, or moored vessels. Should this occur, Māmala Bay will work with the National Oceanic and Atmospheric Agency, who have protocols in place for relocating seals.

Regarding the lease, it is currently designated as a State recreational thrill craft zone. If the permit and lease are issued then DLNR will relocate a portion of the zone to another suitable area.

The facility proposes a 100-foot transit zone around the entire site, which should allow room for vessels to navigate and maneuver. In addition, the site will have security cameras that we have offered to open up to the Airports Division, which should provide a valuable security asset. The proposed feed barge will be located between 1000 and 1200 feet from the fence line, well outside the suggested 400-foot zone.

In conversations with the U.S. Coast Guard, they expressed concern on if the area were to be declared a Federal Security Zone rather than with day to day security. The farm can be left unattended for extended periods of time while the Federal Security Zone is activated.

Follow up

The applicant conducted a site visit with representatives from the Department of Transportation, and has agreed to amend the original plan to use submerged rather than surface cages. The cages will only rest on the surface during feeding, harvesting, and maintenance. This is designed to further reduce the risk of the facility being a seabird attractant. The applicant summarized this site visit in a follow-up letter to the Deputy Director of Airports have been included with Exhibit 7.

State Department of Health, Clean Water Branch

Any project in State waters must meet the following criteria:

- The antidegradation policy contained in Hawai'i Administrative Rules §11-54-1.1
- The designated uses contained in §11-54-3,
- The water quality criteria contained in §§11-54-4 through 11-54-8

They may also be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit.

All discharges related to the project must comply with the State's Water Quality Standards contains in HAR Chapter 11-54 and the permitting requirements in Chapter 11-55.

Applicant's response

The applicant will apply by all Water Quality Standards, and will secure a NPDES permit.

Office of Hawaiian Affairs (OHA)

OHA concurs with the findings of the DOT that the Transportation Security Administration (TSA) and the Federal Aviation Administration (FAA) be contacted.

The proposed exclusion of the public from 75 acres of submerged public trust lands may run contrary to the principals of the public trust doctrine as developed in Hawai'i, as the doctrine preserves the public rights of navigation, commerce, and fishing "freed from the obstruction or interference of private properties."

In addition, the exclusion of all fishing activities, particularly at night, may interfere with traditional and customary practices for the sole benefit of a private commercial interest, with again contradicts fundamental principles of the public trust doctrine. OHA notes that other structures on State submerged lands are maintained pursuant to non-exclusive easements rather than through the award of exclusionary property rights.

Finally, it unclear how such an exclusionary zone may be enforced, and if state resources will be expected to patrol the area for the benefit of a private party.

OHA thus recommends that the requested exclusionary rights be denied or narrowly restricted to conform to the requirements of the project and the rights of Native cultural practitioners.

Applicant's Response

The applicant has been in consultation with the Airports Division regarding their concerns. In regards to fishing rights and access, public access to the fishing grounds along the reef and on the reef flat will be maintained.

Regarding enforcement, the company will provide their own security, and will work with DLNR should incidents arise.

City and County Department of Planning

The area is entirely within the Conservation District, and the Department has no comments.

Neil Frazer, Professor of Geophysics, University of Hawai'i

The proposed site is located close to the surf zone where wild moi are like to be present to transmit the ectoparasite *Amyloodinum ocellatum* to the farmed moi. Epidemics of *A. ocellatum* are common in mariculture operations of susceptible species, and they can be devastating to wild stock. If there is to be any hope of resorting wild fish populations in the coastal waters of O'ahu then sea-cage facilities should be kept further offshore.

Also, it is important to note that moi are carnivorous and that the feed for their culture is manufactured outside of Hawai'i.

Applicant's Response

MBS notes your concerns that there might be more moi in the surf zone than in the open oceans. However, wild moi were also regularly observed around the Hukilau cages. Like other fish, moi travel in large schools and travel offshore to feed. There were no issues with ectoparasites at the previous farm. In addition, moi have been raised for decades in nearshore waters, such as in traditional fishponds, with no epidemics of *A. ocellatum.*

The applicant shares your desire to restore wild fish populations in the coastal waters of O'ahu. Cates International has been a partner in stock enhancement for moi and other species. MBS hopes to be an asset to the future of sustainable fisheries in Hawai'i.

The applicant would also like clarification on whether these comments represent Mr. Frazer's personal views or the views of the University of Hawai'i.

Bennet Lee

Mr. Lee strongly objects to the proposal. As the area has been heavily disturbed in the past it should be allowed to naturally heal. He outlines specific issues he has with the subsurface flow studies, that the area cannot dissipate nutrients as well as open ocean areas. He also questions the number and quality of site visits that were done, and suspects that some observations are being covered up by the applicant. He questions the assertion that no impacts to rare, endangered, or threatened species are anticipated, noting that green sea turtles and monk seals are both known to be in the area. Finally he notes that the area is in a security zone and that the issue of national security is not discussed in the draft Environmental Assessment.

Applicant's Response

Site visits were conducted at various times with representatives from DLNR, NOAA, the EPA, and the Department of Transportation. There was no cover up. The applicant also reiterated the methodology and results of the flow studies that were conducted as part of the environmental assessment. While monk seals and green turtles do transit the area, there is no indication that mariculture facilities interfere with or endanger these species. The applicant also notes that security concerns are discussed in the environmental assessment.

Glenn Tanaka, fisherman (public testimony)

The farm is in the direct path to fishing reefs which he was fished on recreationally for 40 years, as have his father and grandfather. The farm should not deny fishermen access to these reefs. The farm is also too close to the reef runway. The area needs to have the flexibility of being closed off immediately if the U.S. is under a high-level threat.

Applicant's Response

Mr. Tanaka attended the public meeting. He described his fishing practices, and the applicant reviewed the transit corridors around the proposed farm. Mr. Tanaka stated that his concerns had been addressed, provided that fishermen aren't denied access to their fishing grounds.

ANALYSIS

Following review and acceptance for processing, the applicant was notified, by letter dated June 25, 2014, that:

1. The proposal was an identified land use within the Conservation District, pursuant to Hawai'i Administrative Rules (HAR) §13-5-23 *Identified land uses in the resource subzone,* R-1 AQUACULTURE, (D-1) *Aquaculture under a management plan, approved simultaneously with the permit*

   This use requires a permit from the Board of Land and Natural Resources, who have the final authority to grant, modify, or deny any permit.

2. A public hearing will be required pursuant to HAR §13-5-40 *Hearings,* (a) *Public hearings shall be held on* (1) *All applications for a proposed use of land for commercial purposes.* OCCL held the hearing on Tuesday, July 28, 2014 at the Board of Land and Natural Resources conference room.

3. Pursuant to HAR §13-5-31 *Permit applications,* the permit required that an environmental assessment be carried out.

The draft environmental assessment (DEA) was published in the Office of Environmental Quality Control's (OEQC) July 8, 2014 *Environmental Notice.*

The applicant submitted their Final Environmental Assessment on October 16, 2014; after reviewing it and consulting with other concerned agencies OCCL issued a FONSI on October 28, 2014.

HAR §13-5-30 CRITERIA

The following discussion evaluates the merits of the proposed land use by applying the criteria established in HAR §13-5-30.

1) *The proposed use is consistent with the purpose of the Conservation District.*

   The objective of the Conservation District is to conserve, protect and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety and welfare.

   Mariculture operations under an approved management plan are identified uses in the Conservation District. The applicant has submitted a management plan that is similar to others that have been approved for mariculture facilities. Through regular reporting OCCL believes that our office will be able to monitor the site and determine if any unexpected environmental impacts are occurring.

   If impacts were to occur there are a number of potential mitigation measures, including fallowing certain cages, reducing stocking densities, or removing the facility.

2) *The proposed land use is consistent with the objectives of the Subzone of the land on which the use will occur.*

Pursuant to HAR §13-5-14, the objective of the Resource Subzone *is to designate open space where specific conservation uses may not be defined, but where urban use may be premature.*

The proposal in and of itself will not affect open space. The cages are low to the water, and will not be visible to any important view plains.

3) *The proposed land use complies with the provisions and guidelines contained in Chapter 205A, HRS entitled "Coastal Zone Management", where applicable.*

The application is consistent with the following objectives of Chapter 205A:

Recreational resources. The proposed use marginally restricts recreational opportunities at the site by requesting no anchoring or diving at the Farm Site, for safety and security reasons. Recreational boat transit, and troll / drift fishing is not restricted, and no other recreational uses have been identified.

Historical resources. No historic resources have been identified at the site.

Scenic and open space resources. The mooring system and net pens in the proposed use are mostly submerged and are not visible from the nearest public recreation areas.

Coastal ecosystems. The area has been heavily disturbed be dredging and development over the past seventy years. A small sandy beach has formed along the boundaries of the reef runway since then. The farm will not affect the flow of water or transport of sand.

The facility will be located in shallower waters and closer to shore than other mariculture facilities. While the applicant has submitted studies and models that indicate that the farm should have no significant impact on water quality, the benthos, or the near-by reef, the applicant will be required to follow strict monitoring procedures to measure whether the actual impact conforms with the models. If not, and if there are unanticipated impacts, additional mitigative measures will be implemented.

Economic uses. The project will increase local employment on O'ahu, increase private expenditures on local services, and increase the availability of locally produced seafood.

Coastal hazards. The proposed use will not impact coastal hazards. The applicant has reported that the cages were not affected by the tsunami in 2011 or Hurricane Iselle in 2014.

Public participation. The public was invited to comment on the proposal during the environmental review process and the application process. A public hearing was held in July on the proposal.

Beach protection. The proposed use will not impact beach resources.

Marine resources. Other facilities in deeper waters have had no measurable impact on marine resources. As this facility is in shallower water and closer to shore DLNR and the

applicant will pay close attention to the monitoring reports to determine if there are any unexpected impacts.

4) *The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.*

There are three major areas of concern with this aquaculture project regarding causing substantial adverse impact to the surrounding marine environment. They are:

- physical damage from work boats and breakaway cages;
- accumulation of excessive nutrients from feed and waste products; and
- release of potentially harmful feed additives; and
- the potential for an increase in disease, or the transfer of disease into wild stock.

MBS work boats will stay a safe distance from the seaward reef and there is ample room to maneuver. The Aqualine surface cages and mooring systems being used are very sturdy and have been in use for many years around the world in exposed, high energy near shore and offshore locations, unlike the sheltered location for this project.

Concerns were raised by DAR regarding the potential accumulation of nutrients in the shallow waters of the borrow pit. The applicant has presented additional information regarding circulation patterns in the region. They argue that the farm is within the assimilative capacities of the ecosystem given the strong currents, the mixing pattern (inflow over the reef and eastward out into the channel and back to Māmala Bay) and the anticipated rapid uptake of particulate and waste products by the ecosystem. They estimate that the individual turnover of water at each cage will range from 24 to 144 times per 24-hour period.

Staff feels that the applicant has provided sufficient additional documentation that addresses these issues, but notes that DLNR will reserve the right to mandate that mitigation measures be implemented should there be unanticipated impacts. These measures can include reducing the biomass, adjusting the feeding schedule, allowing cages to fallow, removing cages, or removing the facility.

Farmed moi do not appear to be susceptible to parasites or pathogenic diseases, and antibiotic treatments have not been needed at the previous facility. However, OCCL notes that the previous farm was in deeper water and had less biomass, and it is possible that this farm will see a different outcome. Should disease outbreaks become a concern then the farm might need to implement some of the mitigation measures outlined above.

5) *The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels.*

The proposed site is in a region that has been extensively disturbed by urbanization since the 1930's. The specific site was mined for fill for the airport reef runway, and is not a natural feature of the reef or lagoon.

The infrastructure for the fish farm will consist of 10 large cages with copper mesh or Dyneema fiber netting connected by a sturdy mooring system anchored in place. The surface cages will be encircled by a work platform approximately four feet above the sea surface. The cages will be submerged at night and only rest on the surface during feeding, harvesting, and maintenance. In addition, there will be a feed/security barge, approximately 74 ft long, 24 ft wide, and 8 ft high, anchored more or less in the center of the grid. Boat traffic to and from the farm will appear as normal activity. Overall, the fish farm will have a low profile as seen from the nearby HIA property and the distant upland residential housing that is consistent with, and not unlike, the several islands and other structures in Keehi Lagoon.

6) *The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable.*

The project will have little impact on open space.

7) *Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District.*

The proposed project does not involve subdivision of Conservation District land.

8) *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

The proposed lease area is not near any public beaches, and the currents flow out of the borrow pit into the channel, then out to sea. Outrigger paddlers and recreational boats also use the channel to access the ocean, but regular practice sites and race course are not in the flow.

Based upon this and the above discussions, OCCL does not anticipate that the proposal will be detrimental to public health.

Concerns were raised regarding the potential of the farm to be an attractant to seabirds that might be hazardous to aircraft. The concerns and the applicant's response are summarized on pages 10-11, and are included as **Exhibit 7**.

The U.S. Department of Agriculture, Wildlife Services maintains a wildlife strike database that shows that military and civilian airports in Hawai'i had 1511 bird strikes from 1990 through 2005, placing it fifteenth in the nation. For civilian airports, the most common birds identified were the barn owl (26 incidents), Pacific golden plover (58), short-eared owl (10), spotted dove (10), and zebra dove (9). **Exhibit 9** lists bird strikes at civilian airports during this period as compared to the U.S. total.

There were an additional 52 strikes by unidentified birds. There are additional species of concern that the Airports Division aggressively manages due to their potential threat: the

northern cardinal, mourning dove, cattle egret, house finch, black-crowned night heron, western meadowlark, Eurasian skylark, and other passerines.[3]

The applicant argues that previous mariculture facilities have not been bird attractants, and that there is no reason to think that this current proposal will differ.

We also note that the State Department of Transportation, Airports Division remains on record as opposing the project.

[3] Figures in this section are taken from the Final Environmental Assessment, Managing Wildlife Hazards to Aviation at Civil Airports in Hawaii. Prepared by the United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, in cooperation with Hawaii Department of Transportation, Airports Division; Hawaii Department of Land and Natural Resources; Federal Aviation Administration. September 20, 2007.

HRS Chapter 190D Ocean and Submerged Lands Leasing

The following discussion evaluates the merits of the proposed land use by applying the criteria established in Hawai'i Revised Statutes (HRS) 190D, known as the Hawai'i Ocean and Submerged Lands Leasing Act.

Pursuant to Section 11 (d) of the act, the Board shall consider the following in its evaluation of each action:

1. *The extent to which the proposed activity may have a significant adverse effect upon any existing private industry or public activity, including the use of state marine waters for the purposed of navigation, fishing, and public recreation*;

   The proposed site is not in any navigable channels, as the borrow pit is bounded on two sides by a fringing reef and on the third by the airport reef runway.

   Fishermen do not fish in the proposed lease site itself, but they do fish the nearby reef edge and reef flats. The lease will not impede access to these areas.

   The area is in the State's thrill craft recreation area. However, thrill craft do not use the area, preferring instead other areas in Ke'ehi Lagoon. If the lease is approved a rule change will be pursued by the Division of Boating and Ocean Recreation (DOBOR) to change the location of the thrill craft area.

   Outrigger paddlers occasionally train in the borrow pit. While transit corridors will remain that paddlers can still use, the overall width of the run will be reduced.

2. *Whether the proposed activity may have an adverse impact upon the wildlife, aquatic life, or environment of the surrounding area*;

   The primary areas of concern for a mariculture facility at this site are the potential impacts on the nearby reef, benthos, water quality, and wild stocks. As discussed in the previous section, the applicant has submitted studies that appear to indicate that the impacts to the reef, benthos, and water quality will not be significant; however, strict monitoring protocols will be followed so that the actual impact can be measured and assessed.

   Farmed moi at other locations in deeper water have not been susceptible to disease; and the farms have not had noticeable impacts on wild stock. The applicant argues that the same should hold true at a facility nearer to shore. Again, the farm will be monitored closely; should disease prove to be an issue then DLNR will retain the authority to mandate that mitigation measures be implemented.

3. *Other potential uses of the area, including competing uses, which may be in the public interest.*

   Beyond those discussed above, OCCL is not aware of other potential competing uses of the area.

Pursuant to Section 11 (e) of the act, the Board shall not approve an application unless it finds that"

1. *The applicant has the capacity to carry out the project;*

The applicant has been involved in mariculture in Hawai'i since 1999. He has taken part in demonstration projects, and was owner then Chief Operating Officer of the moi mariculture facility off of 'Ewa Beach from 2001 to 2010.

2. *The proposed project is clearly in the public interest upon consideration of the overall economic, social, and environmental impacts.*

   An active and well managed mariculture industry will benefit the Hawaiian economy as well as strengthen food security in the state.

DISCUSSION

Mariculture facilities are an identified land use within the Conservation District, pursuant to Hawai'i Administrative Rules (HAR) §13-5-23 *Identified land uses in the resource subzone,* R-1 AQUACULTURE, (D-1) *Aquaculture under a management plan, approved simultaneously with the permit.*

The site was selected by the applicant based on a number of criteria: the site's high level of protection from severe storms and high surf, its strong currents and high rate of water mixing, a depth suitable for cage culture, a substrate that is suitable for anchoring cages, its compatibility with protected species that might enter the area, the proximity of harbor support facilities, and the rare recreational use of the area.

OCCL has previously worked with existing permit holders, the Department of Agriculture's Aquaculture Development Program, DLNR's Division of Aquatic Resources, and the Department of Transportation's Harbors Division to develop a consistent set of monitoring protocols for mariculture facilities.

OCCL believes that Māmala Bay Seafood has presented a strong management plan that follows the existing template, which has been adapted to suit the unique characteristics of the proposed project site. The management plan is discussed on page 5, and the reporting protocols are included as **Exhibit 5. OCCL will recommend that the Board make the protocols discussed in the management plan a condition of any permit that is approved.**

Significant concerns were raised by the Division of Aquatic Resources, the U.S. Coast Guard, and the State Department of Transportation Harbors Division.

The Division of Aquatic Resources expressed concern about potential nutrient buildup. The applicant amended their final Environmental Assessment to include additional information on dilution rates, circulation patterns, and nutrient uptake. They conclude that particle dilution will be approximately 1 part in 600,000 (i.e. 1 gram of waste per 600,000 grams water) when the flow is at lower levels, and up to 1 part in 3.7 million when the flow is stronger.

OCCL notes that OCCL and DAR will need to closely monitor the results of the water quality and benthic testing reports, and DLNR will reserve the right to mandate that mitigation measures be implemented. These measures can include reducing the biomass, adjusting the feeding schedule, allowing cages to fallow, removing cages, or removing the facility.

The United States Coast Guard noted that the area is part of the airport's North Section Security Zone. Enforcement of the security zone will be triggered whenever the Maritime

Security level is raised to 2 or higher, or whenever the Captain of the Port determines that there is a heightened risk of a transportation-related security risk. The security zone could involve prohibiting vessels, divers, and people from being within the zone when activated. OCCL will recommend that the Board make complying with security zone restrictions a condition of any permit that is granted.

During the pre-consultation phase of the environmental assessment the State Department of Transportation Airports Division raised concerns regarding the potential of the cages to become a hazardous wildlife attractant to seas birds and wetland birds such as the Black-crowned Night Heron. They noted that no wildlife attractants should be located within five miles of an airport, and they asked whether the cages would be covered as mitigation.

The applicant's initial proposal was for surface cages. The Airports Division wrote that they did not approve the project. The applicant revised the initial submission, replacing the surface cages that would be at the surface during stocking, feeding, and harvesting, and submerged the remainder of the time. The applicant also expanded his discussion on hazardous birds and mariculture operations in the project's Final Environmental Assessment.

While OCCL feels that the applicant has offered mitigation to address the Division's concerns, we note that we have not received written confirmation of this from the Division at the time of this submittal.

Finally, pursuant to HRS §190D-21 LEASING OF STATE MARINE WATERS AND SUBMERGED LANDS FOR PRIVATE USES (a) *The board may lease state marine waters for marine activities upon compliance with §171-53 and with the concurrence of the director of transportation.* Thus, the applicant will still need to secure the approval of the State Department of Transportation for the lease even if a Conservation District Use Permit is granted by the Board. **OCCL will recommend that making compliance with Chapter 190D a specific condition of any permit that is granted.**

RECOMMENDATION

Based on the preceding analysis, the Board of Land and Natural Resources APPROVES this application by Māmala Bay Seafood for a mariculture facility, and its associated management plan, located in the Reef Runway Borrow Pit, Ke'ehi Lagoon, Honolulu, O'ahu, TMK (1) 1-1-003:005 (submerged lands), subject to the following conditions:

1. The permittee shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of this chapter;
2. The permittee, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit;
3. The permittee shall obtain appropriate authorization from the department for the occupancy of state lands, if applicable;
4. The permittee shall comply with all applicable department of health administrative rules;
5. The permittee shall provide documentation (e.g., book and page or document number) that the permit approval has been placed in recordable form as a part of the deed instrument, prior to submission for approval of subsequent construction plans;
6. Before proceeding with any work authorized by the department or the board, the permittee shall submit four copies of the construction plans and specifications to the chairperson or an authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to the permittee. Plan approval by the chairperson does not constitute approval required from other agencies;
7. Unless otherwise authorized, any work or construction to be done on the land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the chairperson, and shall be completed within three years of the approval of such use. The permittee shall notify the department in writing when construction activity is initiated and when it is completed;
8. All representations relative to mitigation set forth in the accepted environmental assessment or impact statement for the proposed use are incorporated as conditions of the permit;
9. The permittee understands and agrees that the permit does not convey any vested right(s) or exclusive privilege;
10. In issuing the permit, the department and board have relied on the information and data that the permittee has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in

whole or in part, and the department may, in addition, institute appropriate legal proceedings;

11. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the permittee shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;

12. Artificial light from exterior lighting fixtures, including but not limited to floodlights, uplights, or spotlights used for decorative or aesthetic purposes, shall be prohibited if the light directly illuminates or is directed to project across property boundaries toward the shoreline and ocean waters, except as may be permitted pursuant to section 205A-71, HRS. All exterior lighting shall be shielded to protect the night sky;

13. The permittee acknowledges that the approved work shall not hamper, impede, or otherwise limit the exercise of traditional, customary, or religious practices of native Hawaiians in the immediate area, to the extent the practices are provided for by the Constitution of the State of Hawaii, and by Hawaii statutory and case law;

14. The maximum growing volume of the facility will not surpass 6052 m^3, and the maximum number of pens will be ten;.

15. The use of feeds containing supplemental hormones shall not be allowed;

16. The approved specie for the facility is moi (Pacific threadfin, *Polydactylus sexifilis*). No other species is approved. Any further culture of fish species must be approved by the Chairperson of the Department of Land and Natural Resources;

17. Signs or other markings of the site shall be regulated by site plan approval. The applicant shall immediately report any ocean use conflicts, such as entanglement of fishing nets on the farm facility, to both the boating and land divisions. Buoys, signs or other markings shall be provided on the ocean surface when required by the Chairperson;

18. The permittee shall forward details of all monitoring efforts to the DLNR and water quality results to the Department of Health in accordance with the existing NPDES permit. The department shall be immediately notified of the failure of the mooring system, a disease outbreak, theft or vandalism;

19. The permittee shall monitor the condition of the submerged fish farm on a daily basis. When weather and surf conditions do not permit physical monitoring, visual monitoring shall be conducted;

20. The lease shall be in compliance with Chapter 190D, HRS. The permittee shall implement mitigative measures approved by the Chairperson to alleviate environmental or use concerns, when the need is apparent or when required by the Chairperson. Such mitigative measures may include the partial or complete removal of the fish farm facility;

21. Cages, anchors, lines and other fish farm facilities shall be removed at the conclusion of the use;

22. Any nets or other debris that foul on the cages or other part of the farm facility shall be disposed of as required by federal, state and city and county regulations and shall not be set free in the marine environment;

23. Dead fish shall not be disposed of in the surrounding waters but shall be removed from the site and disposed of at a County approved site;
24. The permittee will comply with the Reporting Requirements of the Management Plan for the duration of the lease or until amended;
25. The applicant will comply with any restrictions imposed by the Department of Homeland Security when the Airport Security Zone is activated and enforced;
26. That the applicant's lease shall be subjected to HRS §171-53, and to the concurrence of the Director of Transportation;
27. The applicant's lease is for commercial purposes;
28. The applicant's lease is clearly in the public interest upon consideration of the overall economic, social and environmental impacts and is consistent with other State policy goals and objectives;
29. The applicant has complied with all applicable Federal, State, and County statutes, ordinances, and rules;
30. Other terms and conditions as prescribed by the Chairperson; and
31. Failure to comply with any of these conditions shall render the permit void;

Respectfully submitted,

Michael Cain

Michael Cain, Staff Planner
Office of Conservation and Coastal Lands

Approved for submittal:

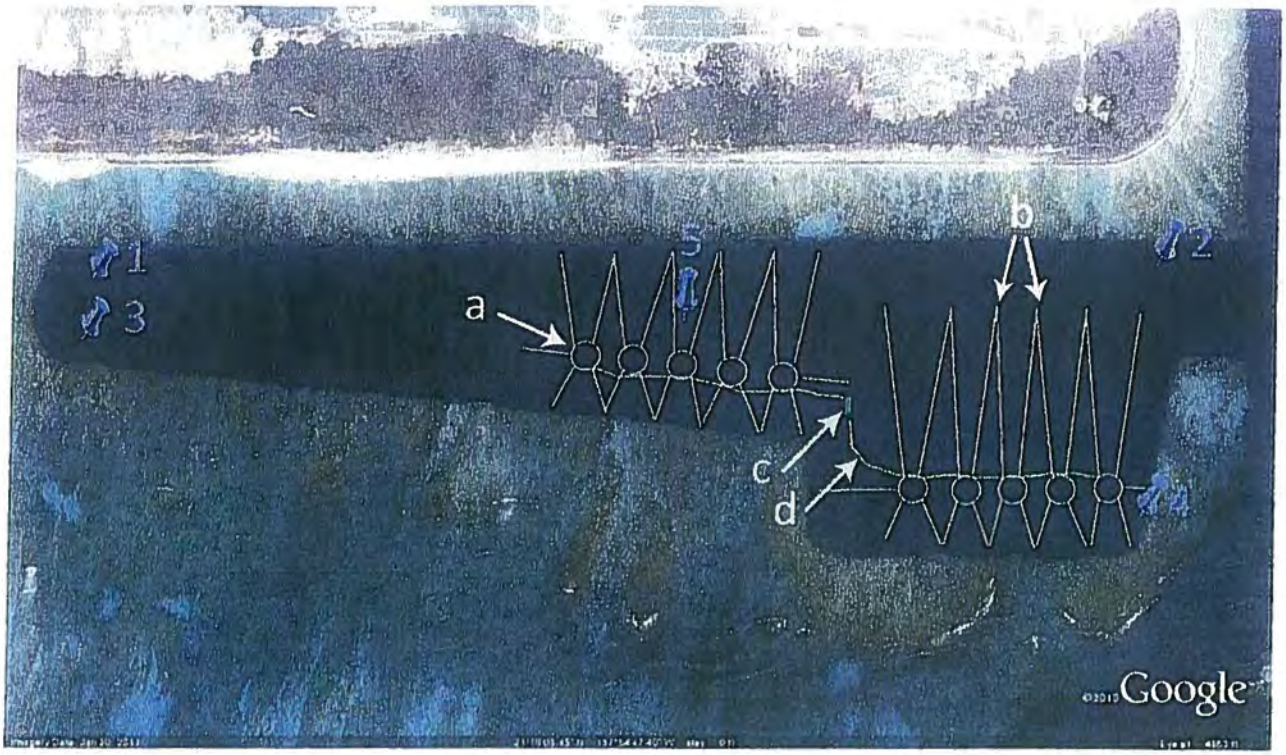
William J. Aila, Chairperson
Board of Land and Natural Resources

Project location and vicinity: Honolulu International Airport, Reef Runway Borrow Pit. Ke`ehi Lagoon, Moanalua, Honolulu, O`ahu.

Ke`ehi Lagoon area and important locations

Key: a) Reef Runway; b) Borrow Pit; c) Sea Plane Runway; d) canoe racing area; e) water skiing area; f) Water Circulation Channel; and, g) Kalihi Channel.

Exhibit 1: Project location

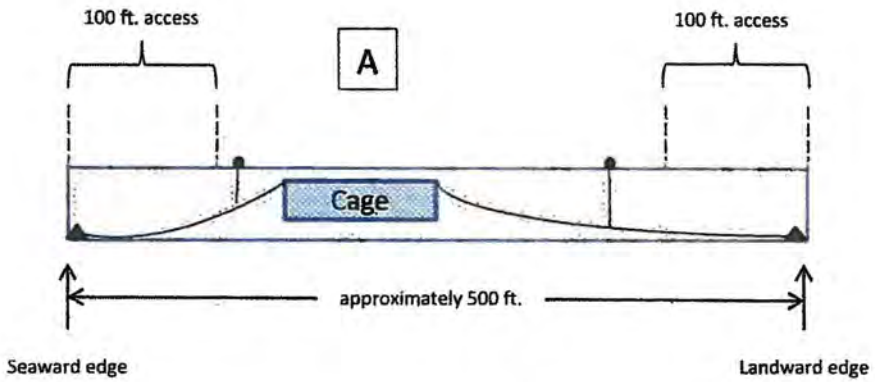


Graphic of the proposed moi farm within the Reef Runway Borrow Pit

Key: a) cages locations; b) anchor lines; c) feed barge; and d) feed distribution

Representative Aqualine FroyaRing Cage. a) cage, b) work platform, c) copper alloy netting

Exhibit 2: Grid layout; Cage netting



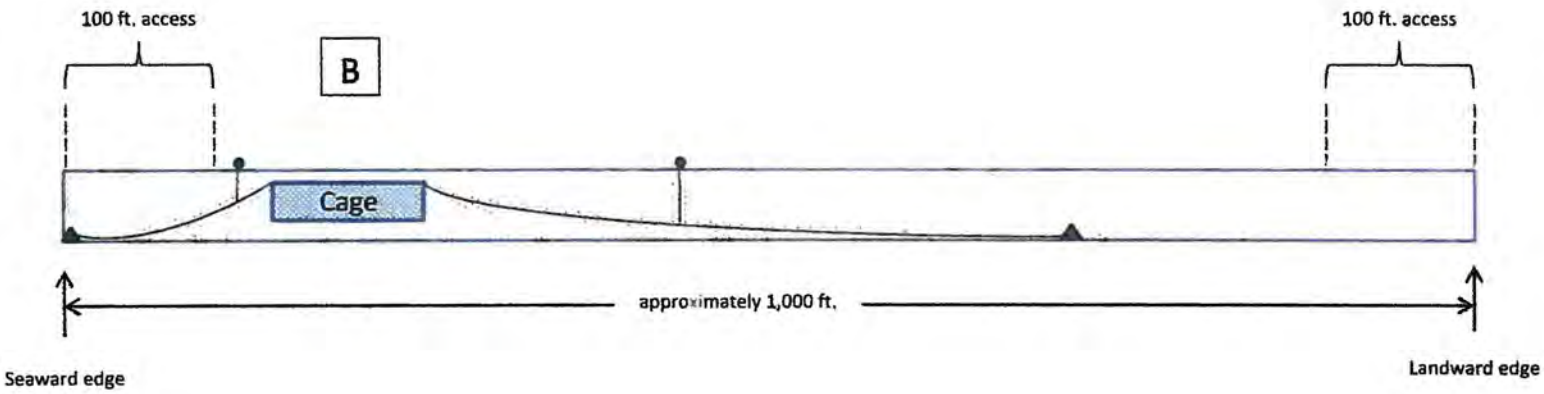


Exhibit 3: Cross sectional view of cages

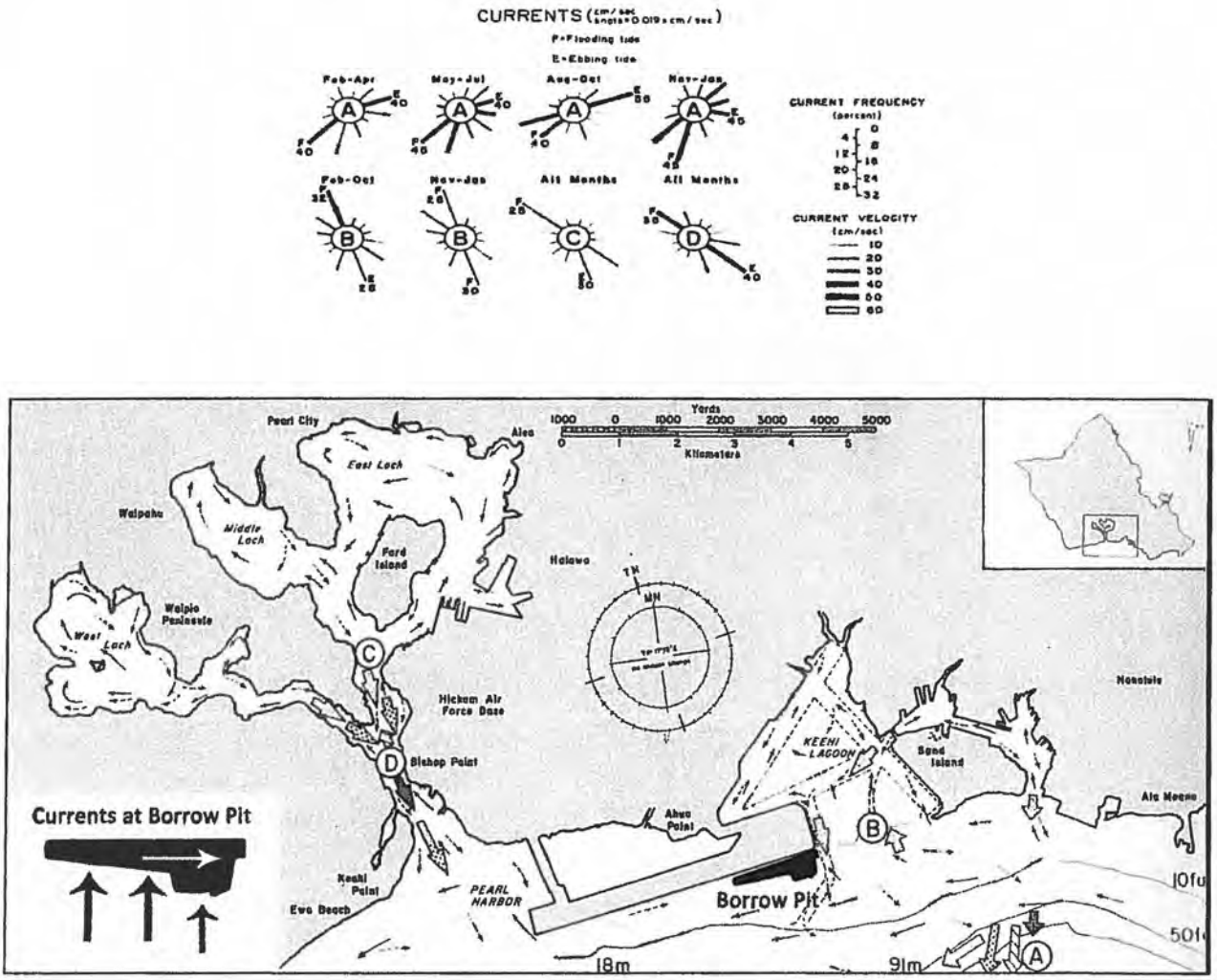


Exhibit 4: Current patterns at Keehi Lagoon

DRAFT

MĀMALA BAY SEAFOOD LLC
MARICULTURE FACILITY

Reef Runway Borrow Pit, Ke`ehi Lagoon, Honolulu, O`ahu
TMK (1) 1-1-003:005

Management Plan Section B:
Monitoring and Maintenance Plans

These requirements shall remain in effect for the full duration of the lease, until amended.

A copy of all reports shall be provided to the Office of Conservation and Coastal Lands

Exhibit 5: Monitoring and maintenance plans

OPERATIONAL AND EMERGENCY REPORTING PLAN

1. It is incumbent upon the permit holder to always ensure that any work or modifications undertaken at the lease area shall be in full compliance with this Management Plan.
2. The project, including moorings and anchor lines shall remain within the boundaries of the approved lease.
3. The approval of Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL) shall be obtained prior to any significant modification to the grid mooring system beyond that described in CDUP OA-3719.
4. The permit holder shall monitor the condition of the farm site on a daily basis. When weather, surf, or security conditions do not permit physical presence on the farm site, monitoring may be conducted from shore, or by remote camera.

Severe Weather (including hurricane)

1. All sea cages and moorings will be inspected to prepare for the storm.
2. The feed/security barge will be towed to MBS's Keehi Lagoon facility and secured.
3. The Company's land-based support facilities and hatchery will be appropriately secured.
4. Any resulting post-storm damage or recovery actions will be reported to DLNR and other agencies as needed.

Theft and Vandalism

1. Staff will secure the affected facilities and fish stocks to prevent escape or further damage.
2. OCCL and DLNR's Division of Aquatic Resources (DOCARE) will be notified of the problem and any further actions requested will be followed.

Tsunami

1. In the event of a tsunami warning, all sea cages will be well secured.
2. The feed/security barge will be secured and remain on site.
3. Company boats will take appropriate measures to prevent harm.
4. Land-based facilities will be secured given time and staff will seek higher ground.
5. Any post-tsunami problems will be reported to DLNR and other agencies, as required.

Collision and Sea Cage Breakaway

1. In the event of collision with the sea cages, work boats or the feed/security barge, the first action will be safeguard human life and the safety of the people involved.
2. Management will contact OCCL as soon as practicable and report the incident and the actions taken.
3. In the event of a sea cage breakaway, MBS will act to retrieve and secure the sea cage, as soon as practicable and return it to the grid. The incident will be immediately reported upon discovery to the U.S. Coast Guard and the OCCL, DLNR and assistance will be requested if needed.
4. In the event of any spill of pollutants, the Clean Water Branch, Department of Health will be notified and action will immediately be taken to control the situation.

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Exhibit 5: Monitoring and maintenance plans

WATER QUALITY AND BENTHIC MONITORING AND REPORTING PLAN

1. Once the farm reaches 100,000 lbs biomass, it must hold and maintain a current, valid National Pollutant Discharge Elimination System (NPDES) Zone of Mixing (ZOM) permit for water quality monitoring and reporting, and shall comply with all requirements of that permit. The NPDES, issued by the State Clean Water Branch (CWB), with oversight from the Environmental Protection Agency (EPA), requires regular monitoring of salient water quality parameters.

2. Monitoring methodology, sampling frequency and reporting requirements will comply with what is specified in the NPDES permit,

3. All water samples collected for routine water quality monitoring (monthly, quarterly or annual sampling) analysis shall be collected by third parties (contractors other than company employees).

4. Water quality and benthic monitoring reports shall be, within 30 days of receiving the completed sampling period, provided to:

    a. State CWB and Federal EPA offices, as specified in the NPDES permit.
    b. Administrator, OCCL, DLNR
    c. Administrator, DAR, DLNR

5. The reports shall also be made available through posting on the company's web site.

6. Should excess nutrients or unacceptable changes be detected, the following mitigation measures are available to the company to correct the situation:

    a. modifying electronically controlled feeding schedules;
    b. adjusting stock biomass;
    c. altering cage cleaning schedules; and
    d. periodically repositioning cages within the grid (i.e. fallowing)

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FISH HEALTH MANAGEMENT AND REPORTING PLAN

1. The goal of the Fish Health Management and Reporting Plan is to ensure:

    a. Optimum fish health is maintained among farm stocks and wild stocks
    b. Disposal of dead fish is done in a responsible manner
    c. Serious disease threats to fish stocks are reported in a timely manner

2. The farm will inspect the fish at three stages of the grow-out process:

    a. Stock going into the cages,
    b. At four months into grow-out, and
    c. Prior to harvesting.

3. If there is an unusual morbidity or mortality event which requires additional diagnostic tests, then the company must immediately notify:

    a. The licensed veterinarian of record for the company
    b. The State Aquatic Health Veterinarian
    c. Administrator, OCCL, DLNR

4. Dead fish shall not be disposed of in the surrounding water, but shall be removed from the site and disposed of at a County-approved land-fill.

5. Any therapeutic veterinary treatment of the farm stock, including vaccinations, shall be in full compliance with all salient Federal regulations. The company shall provide quarterly reports to OCCL on all aquaculture drug use and any vaccines administered. The company shall provide monthly reports to OCCL on all antibiotic use. The company will maintain past records of all aquaculture drug, vaccine and antibiotic use for a minimum of three years.

6. The use of feeds containing supplemental hormones shall not be allowed.

7. The Hawaii State Veterinarian will be notified within 24 hours following the confirmation of any finfish disease that is listed as reportable by the World Organization for Animal Health (OIE).

8. The permit holder shall notify the Division of Aquatic Resources of any significant fish escapes (>50) or disease outbreaks.

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HISTORIC RESOURCES MANAGEMENT PLAN

In the event that any historic resources, such as maritime wreckages, aircraft remains, or structural remnants are discovered, construction or installation work will cease in the vicinity and both the State Historic Preservation Office and the Office of Conservation and Coastal Lands will be contacted immediately.

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SHARK MANAGEMENT PLAN

1. The goal of the Shark Management Plan is to ensure that employee safety and farm security are maintained, without causing unnecessary harm to sharks, or offending cultural traditions.

2. Operations should strive to minimize the attractant power of the net pens when sharks are present in the area by retrieving fish mortalities from the cages every day as early as possible.

3. If a shark is sighted, divers are to notify each other immediately. Divers are not to make any sudden movements, swim away hurriedly, splash, take photographs or flash lights at the shark. No dive is to continue if any diver feels uncomfortable or would prefer to abort. No employee is ever expected to enter the water when sharks are around the cages. Any dive undertaken when sharks have been sighted must be at the diver's sole and absolute discretion.

4. All shark encounters are to be noted in the dive log. The number of sharks, identifying features (species, length, distinguishing marks), behavior towards divers, and period of residence around the cages shall be noted in the dive log. Management must be notified of any unusual encounters.

5. If any one shark starts to exhibit behavior that is considered a danger to divers, then the dive supervisor on site at the time shall secure the site and suspend all in-water work for the day, and notify the Dive Supervisor and Offshore Farm Manager (or other responsible authority). Prior to any further action, management will first consult with the local office of Division of Aquatic Resources to determine what actions shall be undertaken. Non-terminal means shall always be first adopted, such as baiting, hooking and/or tagging the shark, in order to discourage the shark from frequenting the site.

MARINE PROTECTED SPECIES MONITORING AND REPORTING PLAN

The goal of the Monitoring and Reporting Plan is to ensure that there is no significant negative interaction between marine protected species and the farm operations.

Reporting

Report immediately to NOAA Fisheries (Hotline: 1-888-256-9840) and DAR Aquatic Biologist (587-0106):

1. Any observed or reported direct physical contact by any marine mammal or sea turtle with any part of the pen, cage or moorings.

2. Any observed or reported injured or entangled marine mammal or sea turtle within 100 meters of any part of the pen, cage or moorings.

Maintain monthly logs of any approach less than 10 meters by any marine mammal or sea turtle.

All reports should include the following information:

1. Name of observer (and reporter, if not reported by observer)
2. Date and time of report
3. Date and time of incident
4. Contact number of observer (and reporter, if not reported by observer)
5. Marine protected species identification if possible
6. Brief incident description

Activity Modification

In the event of any significant adverse impact on marine protected species, e.g., collision, entanglement, injury, etc., DAR will coordinate a consultation as soon as possible between the permit holder and marine protected species experts to determine an appropriate course of action. DAR staff will then coordinate with OCCL to make recommendations to the BLNR. Activity modifications may range from increased monitoring to immediate project shutdown and removal of the entire structure, depending on the severity of the impact and its likelihood of reoccurrence.

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CORAL MONITORING PLAN

The plan consists of two key components: 1) establishing eight stations on the reef areas surrounding the project to monitor coral coverage and health; and 2) establishing a separate set of four stations surrounding the project to monitor coral recruitment and settlement.

Monitoring Coral Coverage and Health

To monitor coral coverage and health at the site, nine stations have been selected that surround the cage array. Initially, baseline data for each station will be gathered consisting of several photos along one transect, on three different occasions prior to cage installation. Each station will have marker pins to be sure the same location and same transects are photographed every time.

Once Phase I of the project, installation of five cages, is implemented, monitoring will begin. With this first phase under way, monitoring activities will consist of photo transects of the five closest stations, twice a year.

When Phase II of the project begins, installation of the other five cages, monitoring activities will increase to photo transects of all eight stations, three times a year. MBS envisions this level of activity will continue for a minimum of five years. If at that time, the data show no significant impacts from farm operations, MBS will request approval from DLNR to collect data twice a year for the remainder of the lease term.

Monitoring Coral Recruitment and Settlement

To monitor coral recruitment and settlement at the site, four stations have been selected on reef areas surrounding the project. Data will be collected utilizing four coral settlement/recruitment apparatus constructed for this purpose. These apparatus will be suspended at a depth of approximately 20 feet in the borrow pit, near the reef area to ensure they are not disturbed by any vessel traffic or physically impact the reef.

Reporting

The results of the coral monitoring plan will be reported annually to DAR and OCCL, and posted on the company's website.

FIGURE 5. Upper photo shows rubble slope that descends from reef platform to edge of dredged area on reef flat off Reef Runway. Bottom photo shows sand-mud surface that covers the bottom of the dredge area.

Exhibit 6: Reef and benthos photographs

FIGURE 4. Two photos of the upper seaward edge of the dredged Reef Runway borrow pit. Upper photo shows partially dead colony of *Pocillopora meandrina* growing on undercut surface at the pit edge; lower photo shows assemblage of *Pocillopora* and *Porites lobata* at edge of pit.

Exhibit 6: Reef and benthos photographs

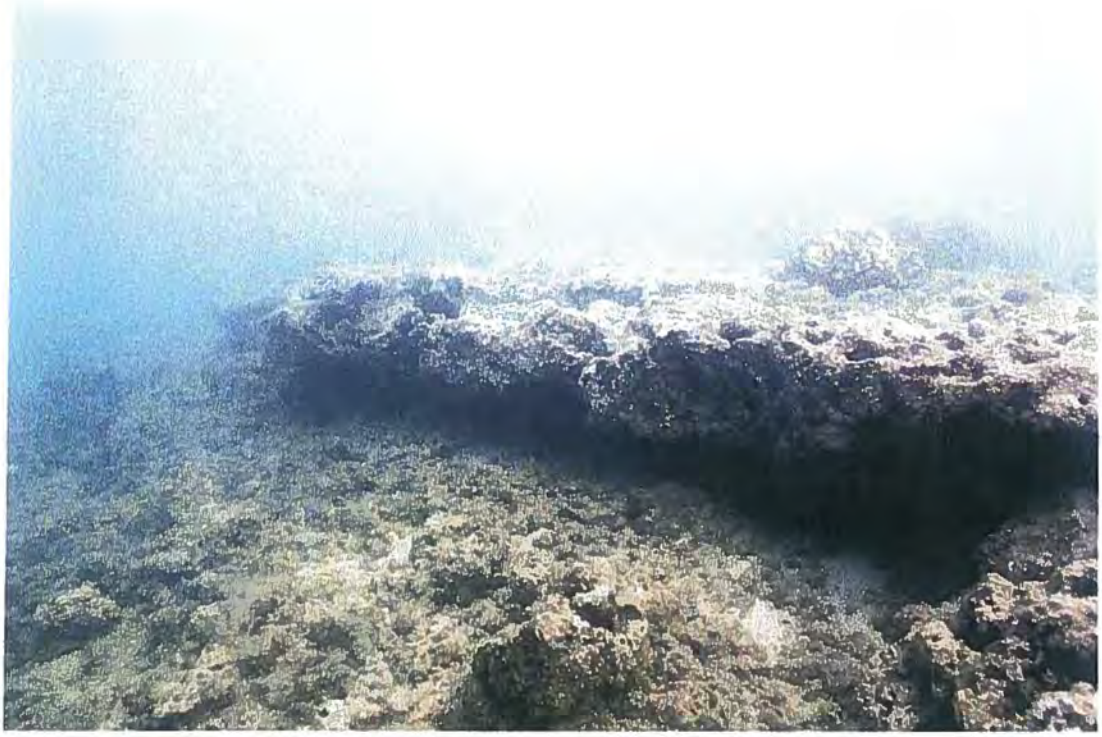

FIGURE 3. Two photos of the reef platform seaward of the dredged Reef Runway borrow pit. Upper photo shows a small ledge on the reef surface, while the lower photo shows a small mound colonized by the green calcareous alga *Halimeda opuntia*. Feather duster worm (*Sabellastarte spectabilis*) is in center of mound. While sparse, the majority of corals colonizing the reef flat were of the genus *Pocillopora*, which are visible in both photos.

Exhibit 6: Reef and benthos photographs

FIGURE 2. Two photos of the upper reef platform adjacent to the dredged Reef Runway borrow pit showing colonies of Pocillopora damicornis. Water depth in both photos is approximately 4 feet.

Exhibit 6: Reef and benthos photographs

NEIL ABERCROMBIE
GOVERNOR

GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
JADE T. BUTAY
FORD N. FUCHIGAMI
RANDY GRUNE
JADINE URASAKI

IN REPLY REFER TO:
AIR-EP
13.0029

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION
400 RODGERS BOULEVARD, SUITE 700
HONOLULU, HAWAII 96819-1880

February 21, 2013

Mr. John S. Corbin
President
Aquaculture Planning & Advocacy LLC
47-215 Iuiu Street
Kaneohe, Hawaii 96744

Dear Mr. Corbin:

Subject: Proposed Commercial Sea Cage Facility for Moi Aquaculture
Reef Runway Borrow Pit in Keehi Lagoon
Moanalua, Honolulu, Oahu, Hawaii

In response to your letter of January 21, 2013 on the proposal by Cates International LLC, we have the following comments:

- The Airports Division is especially concerned about the cages becoming a wildlife attractant to seabirds and possible wetland birds such as the Black-crowned Night Heron. The Federal Aviation Administration's Advisory Circular 150/5200-33 states no wildlife attractant within five (5) statute miles of the airport. There was no mention on whether the cages would be covered or if there was any mitigation proposed to prevent it from becoming a wildlife attractant.

- In addition to the birds, there have been sightings of the endangered Hawaiian Monk Seals along the reef runway which could also become attracted to the moi.

- The depicted location of the sea cages would hamper critical water rescue operations in the vicinity of the Reef Runway.

- We believe that the proposed area is a restricted area, where only marine biologists are allowed to conduct their studies. It is recommended that the Transportation Security Administration (TSA) and the Federal Aviation Administration (FAA) also be contacted.

Thank you for allowing us the opportunity to review your proposal. It is recommended that these items be addressed in your Draft Environmental Assessment and to continue coordination with the Airports Division as you go forward with this project.

Exhibit 7: Correspondence with DOT. 21 Feb 13

Mr. John Corbin
February 21, 2013
Page 2

Should you have any questions regarding the above, please contact Ms. Lynn Becones, Planner, at (808)838-8817.

Aloha,

FORD N. FUCHIGAMI
Deputy Director – Airports

c: Mr. Gordon Wong, FAA-ADO

Exhibit 7: Correspondence with DOT. 21 Feb 13

NEIL ABERCROMBIE
GOVERNOR

FORD N. FUCHIGAMI
INTERIM DIRECTOR

Deputy Directors
RANDY GRUNE
AUDREY HIDANO
ROSS M. HIGASHI
JADINE URASAKI

2014 JUL 31 A 7:34

IN REPLY REFER TO:
AIR-EP
14.0080

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION
400 RODGERS BOULEVARD, SUITE 700
HONOLULU, HAWAII 96819-1880

July 31, 2014

TO: SAMUEL J. LEMMO, ADMINISTRATOR
OFFICE OF CONSERVATION AND COASTAL LANDS
DEPARTMENT OF LAND AND NATURAL RESOURCES

FROM: ROSS M. HIGASHI
DEPUTY DIRECTOR – AIRPORTS

SUBJECT: CONSERVATION DISTRICT USE APPLICATION OA-3719
MAMALA BAY SEAFOODS MARICULTURE FACILITY LOCATED AT REEF RUNWAY BORROW PIT AT KE'EHI LAGOON, HONOLULU, HAWAII

After reviewing the Conservation District Use Application (CDUA) OA-3719, the Draft Management Plan and Draft Environmental Assessment (DEA) for the proposed project, the Airports Division does not approve this project for the following reasons:

1) FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports* recommends a distance of 5 statute miles between the farthest edge of the airport's air operations area (AOA) and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace. Section 2-6 (b) also mentions aquaculture activities (i.e. catfish or trout production) conducted outside of fully enclosed buildings being inherently attractive to a wide variety of birds.

    a. The DEA did not mention the Auku'u or Black-crowned Night Heron (*Nycticorax nycticorax hoactli),* or BCNH which is protected under the Migratory Bird Treaty Act. They are seen mostly at dusk and dawn in the canals and roost in the same mangroves as the Cattle egrets in Ke'ehi Lagoon. There have been three bird strikes involving BCNH in 1998, 2001, and 2005, with the bird strike occurring in 1998 resulting in substantial damage to the engine on a DC-10.
    b. Although the DEA states that the cages will be covered to deter any birds, it will not necessarily keep the birds away from the facility. According to the U.S. Department of Agriculture (USDA) Wildlife Services, although the netting may prevent birds from accessing the fish or feed, the cages could actually be an attractant, as the birds check it out for a possible food source.
    c. The platforms surrounding the cages could also be an attractant to seabirds. Although it may not be a source of food for them, it could possibly provide a resting place for them.

d. Also, as stated in our previous letter of February 21, 2013, there have been sightings of the endangered Hawaiian Monk Seals along the reef runway which could also become attracted to the moi.
e. Aircraft safety is our top priority and the Airports Division will not tolerate any semblance of potential wildlife attractant to be developed within its jurisdiction.

2) Airports Division also has the following security concerns:
   a. Any use of the channel will severely hamper our response to an aircraft emergency in the water by restricting the travel of the Aircraft Rescue Fire Fighting rescue boats.
   b. Under 49 CFR 1542 *Airport Security,* the Airports Division's current Security Directives require maintaining a clear zone of 400' from the perimeter fenceline. Proposing a low profile feed/security barge permanently moored in close proximity to an active runway and within the 400' airport maritime zone poses a security threat and will not be allowed.
   c. With the Honolulu International Airport (HNL) reef runway being in such close proximity to the proposed project, security concerns are heightened. The reef runway is primarily used for large aircraft departures destined for international and domestic destinations. The Transportation Security Administration (TSA), the U.S. Coast Guard and the Department of Homeland security are partners with the Airports Division in ensuring the aviation security for HNL. They also have serious concerns with this project's close proximity to HNL's runways.

Due to serious concerns on wildlife attractants and security, the Airports Division does not approve this project. Should you have any questions regarding this matter, please contact Mr. Roy Sakata, our Airport District Manager at (808) 836-6533.

c: FAA-ADO

Randy Cates
Owner/Operator
24 Sand Island Access Road
Box 27
Honolulu HI 96819
Tel: (808) 479-7104
Fax: (808) 841-4957
Email: cms@hawaiiantel.net

August 25, 2014

ROSS M. HIGASHI
DEPUTY DIRECTOR-AIRPORTS
State of Hawaii
Department of Transportation
Airports Division
400 RODGERS BOULEVARD, SUITE 700
HONOLULU, HAWAII 96819-1880

2014 AUG 26 A 10:04

SUBJECT: CONSERVATION DISTRICT USE APPLICATION 0A-3719 MAMALA BAY SEAFOOD MARICULTURE FACILITY LOCATED AT REEF RUNWAY BORROW PIT AT KE'EHI LAGOON, HONOLULU HAWAII

Thank you for your letter dated July 31, 2014 regarding the proposed Mamala Bay Seafood Mariculture Project, and we appreciate the opportunity to respond to your concerns.

As an experienced Hawaii aquaculture farmer, we understand the importance of addressing any agency and public concerns when it comes to a project such as this. Over the past several years, Mamala Bay Seafoods (MBS) has conducted various studies at the proposed area to ensure that the area is adequate and appropriate for this type of venture. Many onsite visits included staff from both Federal and State agencies. We have also met with representatives of the Airports Division (AD) on several occasions to discuss our intentions and the results of these studies.

Your letter indicates the AD has unresolved concerns about the project which is adjacent to the Reef Runway. The purpose of this letter is to address these issues in the order you have listed them.

Concern #1:
FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports* recommends a distance of 5 statute miles between the farthest edge of the airport's Air Operations Area (AOA) and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure Airspace. Section 2-6 (b) also mentions aquaculture activities (i.e. catfish or trout

production) conducted outside of fully enclosed buildings being inherently attractive to a wide variety of birds.

Response #1:
The proposed ocean fish farm should not cause hazardous wildlife movement in or across the approach or departure airspace of Honolulu International Airport (HIA). Most importantly, wildlife (particularly seabirds and shore birds) will never be able to have any contact with either the fish being farmed or the feed utilized to grow the product. The proposed fish farm and fish cages are an enclosed system design, separating the farm from any contact with avian or aquatic wildlife. Cages are covered with a protective netting preventing birds from having contact with fish, or pelleted food. Seabirds that are located in the Hawaiian waters do not feed upon compounded fish feed. Moreover, the feed is a sinking feed that will be released underwater because the moi, our crop, are naturally a bottom hugging fish.

In Hawaii, there have been two fish farm operations positioned within the five mile radius of both the Honolulu Airport, and the Kona Airport. The farm in Kona is located within one mile from the airport. The farm on Oahu was located within five miles of two airfields. Neither farm has experienced any increase in bird/wildlife activity near fish cages that are located at the surface.

Furthermore, the proposed project is a very different system than a catfish or trout farm (as mentioned above) which utilize a shallow, open pond or raceway system type of grow-out. The proposed cage system is closed-off, therefore, wildlife will not have direct access to the feed and farmed fish and neither the fish or the feed should be visible to any birds.

Concern #2:
The DEA did not mention the auku'u or Black-crowned Night Heron *(Nycticorax nycticorax hoactli),* or BCNH which is protected under the Migratory Bird Treaty Act. They are seen mostly at dusk and dawn in the canals and roost in the same Mangroves as the Cattle egrets in Ke'ehi Lagoon. There have been three bird strikes involving BCNH in 1998, 2001, and 2005, with the bird strike occurring in 1998 resulting in substantial damage to the engine on a DC-1 O.

Response #2:
The Black Crown Night Heron will nest on sticks in a group of trees, or on the ground in protected locations such as islands or reed beds near coastal marshes or canals. They also favor mangrove trees. They forage primarily at night or in the early morning by standing or wading slowly through shallow water (see attached Fact Sheet).

The proposed fish farm is not located near any canals or mangroves within the Keehi Lagoon area. The proposed fish farm is located further outside of the lagoon and near the outer reef area that is subject to trade winds and ocean waves. The known behavior of the auku'u bird does not associate these birds to areas of deep water. The auku'u do not utilize the reef area as they need shallow water, one foot or less, to forage.

Since 2006, MBS has conducted numerous site visits to the proposed project area and have no observations of the auku'u near the project area, although they are found within the Ke'ehi Lagoon in environments described above. The proposed farm will not increase these types of

birds, nor is there any food source for them in the farm area. Other operations with platforms located within the Ke'ehi Lagoon area have not had any issues with increase bird activity utilizing their structures. (Personal communication: Owner/Operator Jet Ski operation)

Concern #3:
Although the DEA states that the cages will be covered to deter any birds, it will not necessarily keep the birds away from the facility. According to the U.S. Department of Agriculture (USDA) Wildlife Services, although the netting may prevent birds from accessing the fish or feed, the cages could actually be an attractant, as the birds check it out for a possible food source.

Response #3:
As stated above, there is no evidence of fish cages in Hawaii becoming a bird attractant. To date, there have been two ocean aquaculture sites located in Hawaiian waters within the five mile zone of an airport.

The first site was Hukilau foods which was located 3.5 miles from the Honolulu International Airport and 3.45 miles from the Barber's Point Air Field and operated from 2001 to 2011. At this site there was a feed barge located onsite for over 8 years without any record of bird interaction. The second site on the Big Island, Keahole Point, is located .8 miles from the Kona International Airport. This operation has feed vessels and cages on the surface, also with no record of any bird activity.

In addition, MBS is aware of other examples of similar types of operations located near an active runway in Hawaii. Naval Ocean Systems Center was located at the Kaneohe Marine Corps Base with nearly 200 dolphin pens that are fed with food sources (fish) similar to what native birds consume. However, there is no history of any interaction between birds and aircraft for nearly 40 years. This facility was located within a few hundred yards of an active runway. The Hawaii Institute of Marine Biology also is located 1.5 miles from the Kaneohe Marine Corps Base runway that houses both dolphin pens and surface fish cages that have not become an issue. (Personal Communication: Former Manager/Supervisor, Naval Ocean System Center and Personnel Hawaii Institute of Marine Biology)

Concern #4:
The platforms surrounding the cages could also be an attractant to seabirds or shore birds.

Response #4:
As noted above, there are numerous examples of surface platforms/structures located in and around active airports throughout the State of Hawaii that are not an attractant to seabirds or shore birds.

The seaplane operation, as well as the two Jet Ski operations located within Ke'ehi Lagoon utilize platforms but have not been an attractant to seabirds or are a cause of concern for aircraft. Moored vessels on platforms at both Hickam Air Base and Ke'ehi Lagoon area have no reported history of increased bird activity.(Personal Communication: Owner/Operators Jet Ski and Sea Plane operations).

Concern#5
Also, as stated in our previous letter of February 21, 2013, there have been sightings of the endangered Hawaiian Monk Seals along the reef runway which could also become attracted to the moi.

Response #5
Monk seals are located throughout the main Hawaiian Islands and typically come ashore on sandy or rocky areas. The netting and cage structures of the proposed fish cages should not have any negative interaction with monk seals. Seals have not taken up residence on structures similar to the fish cages, such as swim platforms, moored vessels, or Jet Ski operational platforms. Both the Federal and State Agencies that are tasked with protection of Monk Seals are fully aware and informed of our proposed fish farm. Dr. Jeff Walters who is tasked with Federal management of Monk Seals has stated that there has not been any negative interaction recorded with Monk Seals and platforms similar to what we are proposing and is not concerned with the project impacting Monk Seals. If in the event there ever was, they have protocols in place for moving Monk Seals from one area to another. (Personal Communication: Dr. Jeff Walters, NOAA)

Concern #6
AD also has the following security concerns:
a. Any use of the channel will severely hamper our response to an aircraft Emergency in the water by restricting the travel of the Aircraft Rescue Fire Fighting rescue boats.

Response #6
The proposed lease area has been designated as a State recreational thrill craft zone for many years. The public has had the ability to utilize the area with various types of vessels. As we point out, DLNR will have to relocate this portion of the thrill craft zone to another suitable location, thus reducing the potential for recreational use of the area.

MBS's operation should not impede use of the channels in the area. We have met with AD staff several times to discuss this issue and believe our use can actually accommodate any movement of security and or rescue craft into the area that may be needed. We believe the proposed 100 ft. wide transit lane around the entire site should be large enough for vessels to maneuver within the area. In addition, our operation will utilize several security cameras that we have offered open access to the AD via internet that can be a valuable security asset. Also, MBS operations will increase the overall security presence in the area and we welcome suggestions of how we can cooperate with the AD.

Concern #7
b. Under 49 CFR 1542 *Airport Security,* the Airports Division's current Security Directives require maintaining a clear zone of 400' from the perimeter fence line. Proposing a low profile feed/security barge permanently moored in close proximity to an active runway and within the 400' airport maritime zone poses a security threat and will not be allowed.

Response #7

The proposed feed/security barge will not be located within the 400' perimeter fence line zone as you suggest. The requested site for the barge is 1000ft – 1200ft from the fence line. It is important to also note that the proposed project site is parallel to the runway and is not located on either end in a flight path. Moreover, in 2000, we note a proposal for a pearl oyster farm was previously approved for the Reef Runway Borrow Pit. The oyster farm was also going to utilize vessels, mooring lines, and structures on the surface in the Borrow Pit area. Similar to the MBS proposal, access by government security/rescue vessels was provided.

Concern #8

c. With the Honolulu International Airport (HNL) reef runway being in such close proximity to the proposed project, security concerns are heightened. The reef runway is primarily used for large aircraft departures destined for international and domestic destinations. The Transportation Security Administration (TSA), the U.S. Coast Guard (USCG) and the Department of Homeland security are partners with the Airports Division in ensuring the aviation security for HNL. They also have serious concerns with this project's close proximity to HNL's runways.

Response #8

In the past few years I have met several times with the U.S.C.G personnel to discuss location of the proposed project and security concerns. After a review of our plans, their issues were not with access to the Borrow Pit area, nor normal day to day security since the area is open to the general public, but rather what happens in the event of the area becoming a security zone. We explained in great detail that the fish farm can be left unattended by our personnel for extended periods of time and the Coast Guard indicated there is a procedure in place to accommodate company personnel, if needed, similar to other security zones near airports, with proper permission. With regards to Homeland Security and FAA, MBS was instructed by AD staff to go through your Division to secure their comments. We are eager to meet with AD and these groups and further discuss the details of our proposal.

In conclusion, MBS takes all of these concerns very seriously. MBS has met with and contacted appropriate agencies and personnel to discuss your concerns. It is important to note that both the Federal Government and State of Hawaii will have the right to shut down farm operations due to environmental and safety concerns as a condition proclaimed in all leases of State marine waters. There are numerous safety guards in place, in addition to this, we have the ability to simply sink the cages if ever a problem were to occur in the case of an emergency. In terms of security, we believe our proposed operation will become a partner with AD, FAA, and Homeland Security, as we will have personnel on site daily and be in a position to report any suspicious activity' In addition, there will be 24-hour security camera surveillance that all parties will have access too. Currently the area is open to the general public with no such security equipment in place.

It is also important to note that with my previous open ocean fish farm, I did not have a single complaint in over 11 years of operation. And, we were able to assist the government on various natural resource issues and became a working partner with both State and Federal agencies. In addition to these already established partnerships, we look forward finding new ways to work with AD, FAA, and Homeland Security.

It is also important to underscore that the proposed area has in the past been approved for an oyster aquaculture project that included platforms and structure in the water. The concerns submitted by the AD were previously addressed successfully and we want to work with you to resolve these issues. This site could become a very important tool for Hawaii to become more sustainable in food production.

I look forward to meeting with you and your staff to further discuss the proposed project. We hope this response has adequately addressed your concerns.

Sincerely,

Randy Cates
Owner/Operator
Mamala Bay Seafood

cc: William Aila (Department of Land & Natural Resources)
Sam Lemo (Office of Conservation and Coastal Lands, DLNR)

NEIL ABERCROMBIE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION
400 RODGERS BOULEVARD, SUITE 700
HONOLULU, HAWAII 96819-1880

FORD N. FUCHIGAMI
INTERIM DIRECTOR

Deputy Directors
RANDY GRUNE
AUDREY HIDANO
ROSS M. HIGASHI
JADINE URASAKI

IN REPLY REFER TO:
AIR-EP
14.0094

September 10, 2014

Mr. Randy Cates
Mamala Bay Seafood
24 Sand Island Access Road Box 27
Honolulu, Hawaii 96819

Subject: Conservation District Use application OA-3719
Mamala Bay Seafoood Mariculture Facility located at Reef Runway
Borrow Pit at Ke'ehi Lagoon, Honolulu, Hawaii

Thank you for your letter of August 25, 2014. However, your response does not negate our concerns.

Our concerns about wildlife are taken very seriously as they endanger the safety and security of human life, and our comments were given after consultation with the U.S. Department of Agriculture, Wildlife Services, who have a cooperative service agreement with the Airports Division to manage the wildlife at our airports.

It was also mentioned in your letter about two fish farm operations positioned within a five mile radius of two airports. These two fish farms are not adjacent to active runways, and are much farther away than the one being proposed just off the reef runway at Honolulu International Airport. Also, the oyster farm that you mentioned in your letter predated September 11, 2001 and did not materialize. Since then, security at commercial airports has been heightened, and we cannot support an activity that could pose a security issue.

Having a permanently moored feed barge will hamper emergency aircraft rescue operations, as it will be an additional hazard to navigate through, especially at night with reduced visibility.

Exhibit 7: Correspondence with DOT. 10 Sept 14

AIR-EP
14.0094

Should you have any further questions regarding the above, please contact Mr. Roy Sakata, Airports District Manager at (808) 838-6533.

Sincerely,

ROSS M. HIGASHI
Deputy Director - Airports

c: Mr. Ronnie V. Simpson, Federal Aviation Administration
Mr. William Aila, Dept. of Land and Natural Resources
Mr. Sam Lemmo, Dept. of Land and Natural Resources, Office of Conservation & Coastal Lands
Mr. Tim Ohashi , Unites States Dept. of Agriculture-Wildlife Services

Exhibit 7: Correspondence with DOT. 10 Sept 14

Mamala Bay
Seafood

Randy Cates
Owner/Operator
24 Sand Island Access Road, Box 27
Honolulu HI 96819

October 8, 2014

Mr. Ross M. Higashi
Deputy Director – Airports
State of Hawaii
Department of Transportation
Airports Division
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819-1880

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR CONSERVATION DISTRICT USE APPLICATION 0A-3719 MAMALA BAY SEAFOOD MARICULTURE FACILITY LOCATED AT REEF RUNWAY BORROW PIT AT KE'EHI LAGOON, HONOLULU, HAWAII (AIR-EP 14.0094)

Dear Mr. Higashi:

This letter is in response to your letter dated September 10, 2014 regarding your concerns over our proposed fish farm. Subsequent to receiving your letter, we have met in person with representatives from DOT-Airports, DLNR, and the FAA at your office where we had a chance to discuss these issues. I would like to once again thank everyone for taking the time to discuss. As stated in our meeting, we will further discuss any of your concerns during a site visit to the area on October 15, 2014, where I believe we will be able to address your concerns in detail.

I wanted to respond to your letter in a timely manner and inform you that we will address your concerns stated in our meeting and agree to change our operational plans to a submerged cage system as we discussed. Both the Airports and FAA had asked if we could convert our operations in such a manner and make the operations similar to our past cage system located off of Ewa Beach. We have taken the time and consulted with several equipment companies to make such changes. Below is a brief description of our proposal that will be included in our revised EA and I will give more detail at our site visit as well.

Mamala Bay Seafood will convert our operations to a submerged cage system. This system has all of the basic components as described in our Draft EA with a few exceptions. We will no longer be utilizing bird netting on the top of the cages and instead be using cage netting with one inch mesh and be secured for submerged operations. We will need to have the ability to float each cage for stocking, maintenance and harvests. Our personnel will be onsite while the cages are at the surface and then be submerged each day when our daily work operations are

tel (808) 479-7104 email cms@hawaiiantel.net fax (808) 841-4957

Exhibit 7: Correspondence with DOT. 8 Oct 14

completed. We will request that during installation of the cages we may need to have them remain on the surface for a day or so while installation is ongoing. This should not take more than one day and in the past we were able to complete these operations within an eight hour period. Please note that during this period no fish will be in the cage nor netting but only the rims.

The feeding operations will be converted from an air delivery system to a water system which means that at no time will feed be airborne to further address your concerns about potential impacts on wildlife. All feed hoses will be submerged as well and the depth of the cages will be sufficient for emergency response vessels to go over. Each cage will be marked with buoys marking each location. The feed barge will be located in the same position as described where it will provide ample room for safety vessels to maneuver all around.

It is my understanding that making these changes will address the concerns raised in our meeting. I look forward to meeting again. If there are other issues to resolve I believe we can address them.

Sincerely,

Randy Cates

cc: Mr. Ronnie V. Simpson, Federal Aviation Administration
Mr. William Aila, Department of Land and Natural Resources
Mr. Sam Lemmo, OCCL, DLNR
Mr. Tim Ohashi, U.S. Dept of Agriculture – Wildlife Services

Exhibit 7: Correspondence with DOT. 8 Oct 14

Mamala Bay
Seafood

Randy Cates
Owner/Operator
24 Sand Island Access Road, Box 27
Honolulu HI 96819

November 17, 2014

Ross Higashi
Deputy Director – Airports
Hawaii Department of Transportation
400 Rodgers Blvd., Suite 700
Honolulu, Hawaii 96819-1880

Dear Mr. Higashi:

This is a follow up on the site visit to the project location I carried out for you and your staff on 10/15/2014. We had a good discussion while on site of the project characteristics and the issues of bird attraction, safety and access. I think I was able to answer all of their questions.

There were additional questions on the permitting/leasing process for the site. Please see the attached correspondence from a previous aquaculture project for the same location that clearly addresses the concerns.

a) December 18, 1996 letter to Brad Mossman, DPEDT from Jerry Matsuda, Deputy Director, Airports, DOT.

b) April 27, 1999 response to Senator Levin from Deputy Attorney General Randall Young

c) July 21, 1999 response to Senator Levin from Deputy Attorney General Linden Joesting.

d) November 3, 2000 letter to Neil Sims, Black Pearls Inc. from Daniel Matsumoto, Honolulu District Office, FAA.

This correspondence indicates that:

1) A proposed aquaculture use of the DOT Airports property encompassing portions of the RRBP under Executive Order (EO) 3202 is considered a non-conforming use. Further, DOT Airports would only be able to issue a Revocable Permit for the site.

Mamala Bay
Seafood

Randy Cates
Owner/Operator
24 Sand Island Access Road, Box 27
Honolulu HI 96819

2) The Board of Land and Natural Resources can issue a commercial aquaculture lease for the entire RRBP, after a Conservation District Use Permit is received, under Chapters 171-11 and 190 D, HRS. Note for the property in question, the seaward portion is under the direst jurisdiction of DLNR.

3) The rent from the property and which agency receives it is subject to discussion between DOT Airports and DLNR. However, we understand there are precedents for DLNR administration of leases for other non-conforming uses in the EO.

4) A previous and generally similar aquaculture project for pearls was approved by the Honolulu Airports District Office, FAA.

You may wish to check with the Airports Property Management Staff to verify these statements. Should you require any further information please contact me as we would like to resolve any outstanding issues as soon as possible. Thank you for your assistance.

Sincerely,

Randy Cates

cc William Aila, DLNR
cc Sam Lemmo, OCCL, DLNR
cc Jeff Chang, Interim Deputy Director Airports, DOT
cc John Corbin, APA

tel (808) 479-7104 email cms@hawaiiantel.net fax (808) 841-4957

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
JERRY M. MATSUDA
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION
400 RODGERS BOULEVARD, SUITE 700
HONOLULU, HAWAII 96819-1880

IN REPLY REFER TO:

AIR 96.134

December 18, 1996

TO: BRAD MOSSMAN, DEPUTY DIRECTOR
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT
& TOURISM

FROM: JERRY M. MATSUDA, DEPUTY DIRECTOR
DEPARTMENT OF TRANSPORTATION, AIRPORTS DIVISION

SUBJECT: FAX DATED DECEMBER 9, 1996

The following comments are provided in response to your fax message of December 9:

1. The area indicated on the map is submerged land and subject to OHA's entitlement claims. Any work in the area would require a Conservation District Use Application (CDUA) and subsequent permit from DLNR.

2. The sea area immediately south of the proposed oyster area is a designated anchorage for ships awaiting Honolulu Harbor. There could be pollutants generated from these ships.

3. The sea off the Reef Runway can be quite rough, particularly in southerly storms.

4. While the site is within the airport boundary, the proposed use is aquatic and therefore, non-conforming. We would only be able to issue revocable permits.

5. Earlier attempts to use the area for aquaculture were opposed due to potentials for a bird problem and security concerns.

Exhibit 7: Correspondence with DOT. 17 Nov 14

6. We would need to coordinate the use with FAA and will have to study certain information such as the property boundaries of the proposed operation, the height of any equipment to be used in harvesting operations and identification of a reasonable revenue return for the use of the area.

Please call me if there are any questions.

bc: AIR-PM
AIR-E
AIR-O
AIR-L

APR 27 1999

BENJAMIN J. CAYETANO
GOVERNOR

MARGERY S. BROMSTER
ATTORNEY GENERAL

THOMAS R. KELLER
FIRST DEPUTY ATTORNEY GENERAL

STATE OF HAWAII
DEPARTMENT OF THE ATTORNEY GENERAL
425 QUEEN STREET
HONOLULU, HAWAII 96813
(808) 586-1500

April 27, 1999

The Honorable Andrew Levin
Senator, Third District
Twentieth Legislature of the State of Hawaii
State Capitol
Honolulu, Hawaii 96813

Dear Senator Levin:

Re: Use of State Waters near Honolulu International Airport for Aquaculture

This responds to your April 12, 1999 letter, which we received on April 23, 1999. We understand that Black Pearls, Inc. ("Black Pearls") wishes to lease State of Hawaii waters for commercial aquaculture purposes. Black Pearls wishes to lease waters located in Keehi Lagoon, near Honolulu International Airport. This area is presently under executive order to the Hawaii Department of Transportation ("DOT").

You asked whether "the terms and conditions of the Executive Order to DOT would allow a commercial aquaculture project. If it is prohibited, is there any way to address the situation that would allow the lease?"

We have reviewed the terms of Executive Order No. 3202, which set this area aside to the DOT. The executive order is for "airport and harbor related purposes." We do not believe that commercial aquaculture is consistent with these purposes.

Although the proposed use may not be consistent with the purposes in the executive order, Hawaii Revised Statutes ("HRS") § 171-11 permits the Board of Land and Natural Resources to issue a commercial aquaculture lease in the area covered by Executive Order No. 3202. All proceeds from any such lease, however, may have to go to the airport special fund, depending upon whether airport bond covenants and Federal Aviation Administration guidelines on airport revenue diversion require the same.

Environmental and regulatory concerns must be addressed for any lease, such as compliance with HRS chapters 343, 183C, and 205A. If the area in question involves submerged lands, HRS section 171-53 must be complied with. In addition, HRS chapter 190D, dealing with ocean and submerged lands leasing, must be complied with. In this regard, we note that chapter 190D in its present form may not allow for commercial aquaculture leases.

Should you have any questions on this, please feel free to call me at 7-2993.

Very truly yours,

Randall Y. K. Young
Deputy Attorney General

APPROVED:

For Margery S. Bronster
Attorney General

7

BENJAMIN J. CAYETANO
GOVERNOR

EARL I. ANZAI
ATTORNEY GENERAL

THOMAS R. KELLER
FIRST DEPUTY ATTORNEY GENERAL

STATE OF HAWAII
DEPARTMENT OF THE ATTORNEY GENERAL
425 QUEEN STREET
HONOLULU, HAWAII 96813
(808) 586-1500

July 21, 1999

The Honorable Andrew Levin
Senator, Third District
The Twentieth Legislature
State of Hawaii
State Capitol, Room 213
Honolulu, Hawai'i 96813

Re: Use of State Waters for Aquaculture
Black Pearls, Inc. Request for Lease

Dear Senator Levin:

Thank you for your letter of June 19, 1999, seeking guidance on commercial aquaculture leases in state waters near the airport. As you may know, recent changes to the law now permit the Department of Land and Natural Resources to lease submerged state lands for mariculture.

The Twentieth Legislature passed Act 176, effective July 1, 1999, which amends chapters 171 and 190D of the Hawai'i Revised Statutes. The changes permit the lease of submerged lands for mariculture and generally describe procedures to apply for a permit. A point of contact who may be of assistance to your constituent is John Corbin, Manager of the Aquaculture Program at the Department of Agriculture. Mr. Corbin's phone number is 587-0030.

Thank you for bringing this matter to our attention.

Very truly yours,

Linden H. Joesting
Deputy Attorney General

Enc.
c: John Corbin

APPROVED:

Earl I. Anzai
Attorney General

Exhibit 7: Correspondence with DOT. 17 Nov 14

U.S Department of Transportation
Federal Aviation Administration

Western-Pacific Region
Airports District Office

300 Ala Moana Blvd., Room 7-128
Honolulu, Hawaii 96813
MAIL: Box 50244
Honolulu, Hawaii 96850-0001
Phone: (808) 541-1232
FAX: (808) 541-3462

November 3, 2000

Mr. Neil Anthony Sims
Black Pearls, Inc.
P.O. Box 525
Holualoa, Hawaii 96725

Dear Mr. Sims:

This is in response to the FAA Form 7460-1, Notice of Proposed Construction, dated September 5, 2000, for a pearl farm at Honolulu International Airport.

Under Aeronautical Study No. 00-HNL-25-NRA, the FAA has conducted an airspace analysis. Our review from an airspace utilization standpoint indicated the proposal is acceptable. Therefore, we do not object provided:

1. The VHF frequencies used for communication between the farm workers and the land-based station will not interfere with Air traffic Control assigned frequencies.
2. The radar system used for nighttime security will not interfere with ASR-9 radar coverage.

This determination should not be construed to mean FAA approval of the physical development involved in the proposal. It is only a determination with respect to the safe and efficient use of airspace by aircraft. In making this determination, the FAA has considered matters such as the effect the proposal would have on existing or contemplated traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, and the effects existing or proposed manmade objects (on file with the FAA) and natural objects within the effected area would have on the airport proposal. This determination in no way preempts or waives any ordinances, laws or regulations of any other government body or agency.

This determination does not indicate that the proposed airport development is environmentally acceptable in accordance with Public Laws 91-190, 91-258, and/or 90-495.

This determination expires on May 3, 2002, unless it is otherwise extended, revised, or terminated.

If you have any questions, please call David Welhouse at (808)541-1243.

Sincerely,

Daniel S. Matsumoto

Daniel S. Matsumoto, Acting Manager
Honolulu Airports District Office

Exhibit 7: Correspondence with DOT. 17 Nov 14

FAA 7450-1 cover do
September 5, 200

The Federal Aviation Authority
Western Pacific Regional Office, Air Traffic Division, AWP-620
15000 Aviation Blvd, Hawthorne, CA 90260

Dear Sirs / Mesdames,

Please find enclosed FAA Form 7460-1, and supporting documentation for our project proposal to se up the first Hawaiian black pearl farm in the waters of Keehi lagoon. The proposed farm lies largel within the boundaries of the Honolulu International Airport. However, the oyster lines themselves wil all be below the water surface. As the animals are filter-feeders, and there is no supplemental fee provided, there is no risk of attracting birdlife to the area.

The three structures we propose to build are all below the height limits specified in Section 77.13. Th two work platforms, to the south of the Reef Runway, are over 500 m (1500') from the runway itself and the platforms are only, at most, 16' above mean sea level. The staging/storage area building is ove 750 m (2,250') from the eastern end of the Reef Runway, and is only of similar height. The location o these buildings themselves is not essential to the farm operation, and we would be pleased to discus alternative sites for these if they are an impediment to your approval of this project.

The farm would use some electronic equipment, but only that typically used by small boats. We woul have radios for communication between our farm workers and a land-base. We are proposing that thes be simple VHF units, either hand-held or the types used by small boats. We may use cell phones on th farm as well. We would propose using radar (sufficient to cover the farm area and approaches) an night-vision binoculars for the farm's night-time security. Again, if you have any objections o concerns with these proposals, we would be happy to discuss with you any alternatives which would be preferable from FAA's perspective.

We believe that this proposal holds great economic and environmental promise, and we hope that we can work with you to conduct our farm operations in a manner which does not interfere with the airpor operations. Thank you for your consideration,

Yours sincerely,

Neil Anthony Sims
V.P. / Research Dir.

c.c. Ben Schlapak, Head Planning Engineer, Honolulu International Airport, Honolulu 96819-1898

b.c. John Corbin, FYI.

Exhibit 7: Correspondence with DOT. 17 Nov 14

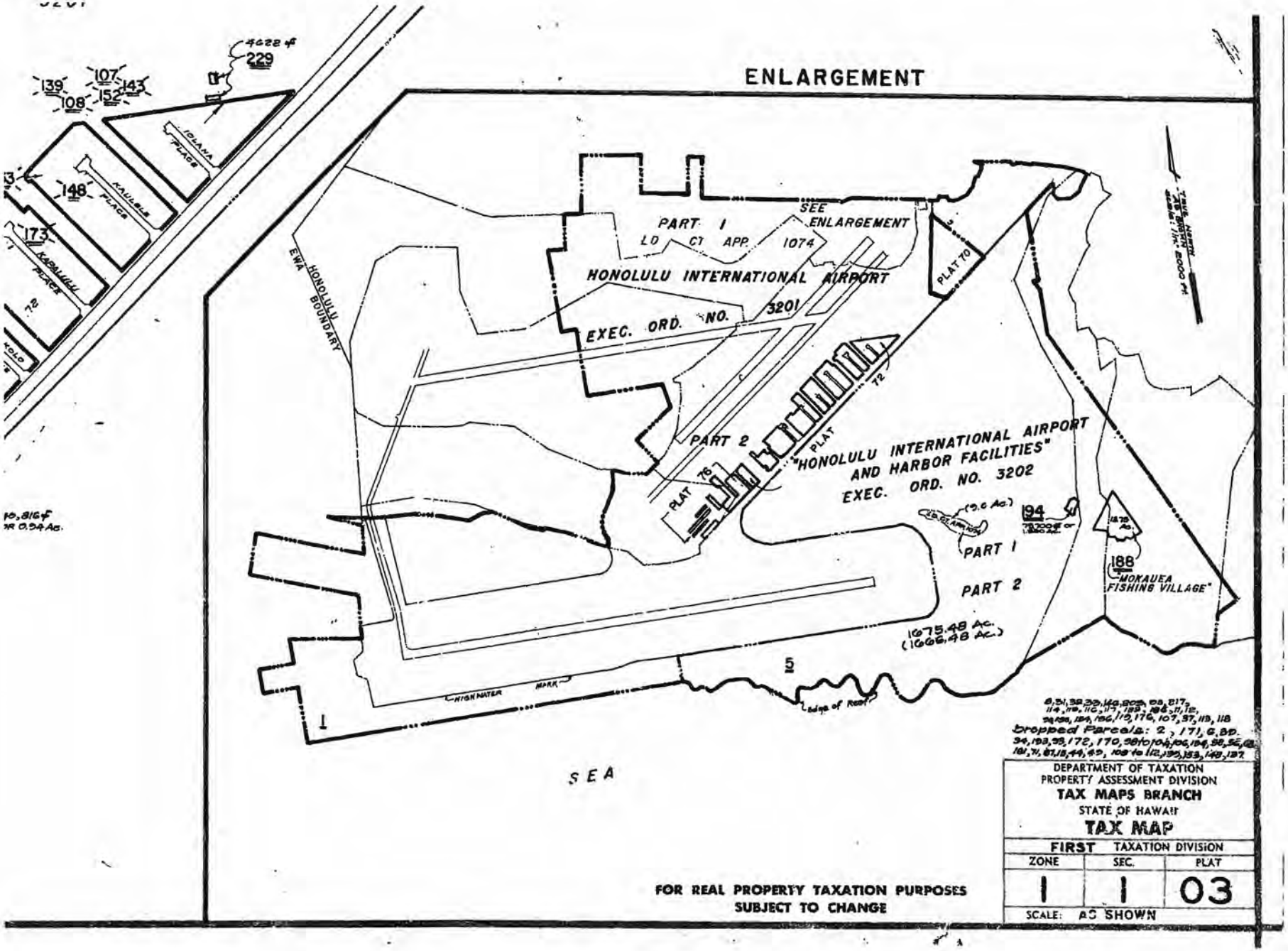

Exhibit 8: TMK map of Keehi

Wildlife/Aircraft strikes at civilian airports in Hawaii relative to the National total for the same species
(March 1995 to February 2005)

Species	Strikes in Hawaii	Total US Strikes
BARN OWL	**26**	**69**
BLACK FRANCOLIN	1	1
BLACK-CROWNED NIGHTHERON	1	3
CATTLE EGRET	1	14
CHESTNUT MANNIKIN	3	3
COMMON MYNA	2	2
COMMON WAXBILL	1	1
DOMESTIC DOG	1	3
DOVES	4	55
EURASIAN SKYLARK	4	5
FINCHES	1	4
HOUSE CAT	1	2
HOUSE FINCH	3	7
HOUSE SPARROW	2	11
MALLARD	1	42
MYNA	1	1
NUTMEG MANNIKIN	7	7
PACIFIC GOLDEN-PLOVER	**58**	**59**
PERCHING BIRDS (y)	2	75
PLOVERS	2	6
RACING PIGEON	1	1
ROCK PIGEON	1	125
RUDDY TURNSTONE	1	1
SANDERLING	1	3
SHORT-EARED OWL	**10**	**16**
SMALL INDIAN MONGOOSE	2	2
SPARROWS	1	157
SPOTTED DOVE	**10**	**10**
TROPICBIRDS	1	1
WEDGE-TAILED SHEARWATER	2	2
WESTERN MEADOWLARK	1	39
ZEBRA DOVE	**9**	**9**
UNKNOWN BIRD	10	2385
UNKNOWN BIRD - LARGE	2	114
UNKNOWN BIRD - MEDIUM	6	385
UNKNOWN BIRD - SMALL	33	1281
UNKNOWN BIRD OR BAT	1	365

From FAA (2006)

Source: Final Environmental Assessment, Managing Wildlife Hazards to Aviation at Civil Airports in Hawaii. Prepared by the United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, in cooperation with Hawaii Department of Transportation, Airports Division; Hawaii Department of Land and Natural Resources; Federal Aviation Administration. September 20, 2007

Exhibit 9: Wildlife and aircraft strikes