

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Honolulu, Hawaii 96813

March 22, 2019

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

REQUEST FOR APPROVAL TO ENTER INTO A MEMORANDUM OF AGREEMENT BETWEEN THE STATE OF HAWAII, BOARD OF LAND AND NATURAL RESOURCES AND HONOLULU SEAWATER AIR CONDITIONING, LLC, REGARDING THE CONSTRUCTION OF SEAWATER INTAKE AND RETURN WATER PIPELINES TO PROVIDE SEAWATER AIR CONDITIONING SERVICES TO DOWNTOWN HONOLULU, OAHU, HAWAI'I, THE PROPOSED LIMITED TAKE OF STONY CORAL AND LIVE ROCK, AND PROPOSED AVOIDANCE AND MINIMIZATION MEASURES DESIGNED TO AVOID OR MINIMIZE LOSSES OF STONY CORAL AND LIVE ROCK

Submitted for your consideration and approval is a request to enter into a Memorandum of Agreement Between the State of Hawaii, Board of Land and Natural Resources (or "BLNR") and Honolulu Seawater Air Conditioning (or "HSWAC"), regarding the construction of seawater intake and return water pipelines to provide seawater air conditioning services to downtown Honolulu, Oahu, Hawai'i, the proposed limited take of stony coral and live rock, and the avoidance and minimization measures designed to avoid or minimize losses of stony coral and live rock that will occur as a result of the development.

The Project is located upon submerged land makai of Kaka'ako Waterfront Park, offshore of Tax Map Key: (1) 2-1-060 and the temporary use of the Channel D of Keehi Lagoon, Oahu, Hawai'i.

Purpose and Need

The State of Hawaii acknowledges that climate change poses the greatest threat to the state's forests, coastlines, and corals, and in response developed the Sustainable Hawaii Initiative in 2016, to make Hawai'i more sustainable in several areas, including the energy sector¹. In order to fulfill the Sustainable Hawaii Initiative to become less oil-dependent, the State is committed to reduce the use of fossil fuels¹. To meet this challenge, the State is committed to reaching 100 percent renewable energy use in the electricity sector by the year 2045¹. The state energy policy is rooted in one principle: to maximize the deployment of cost-effective investments in clean energy production and management for the purpose of promoting Hawai'i's energy security¹. One of the approaches to achieving this goal includes the diversification of the state's energy

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¹ Sustainable Hawaii Initiative, 2016
(<https://governor.hawaii.gov/sustainable-hawaii-initiative/>)

portfolio: by harnessing diverse resources such as solar, wind, hydro, bioenergy, geothermal, and energy efficiency¹. The purpose of the proposed Honolulu Seawater Air Conditioning (HSWAC), LLC, project is to significantly contribute to meeting this goal by developing a seawater air conditioning system (SWAC) using deep cold seawater to serve air conditioning needs of the downtown area of Honolulu.

The renewable energy infrastructure that Honolulu Seawater Air Conditioning, LLC, is proposing to install consists of seawater intake and return water pipelines to provide seawater air conditioning services to downtown Honolulu. The seawater intake and return pipelines would be deployed offshore of Honolulu in the area between Honolulu Harbor and Kewalo Basin, at Kaka'ako, on the southern shore of the island of O'ahu. The HSWAC project is intended to provide 25,000 tons of centralized air conditioning for downtown Honolulu.

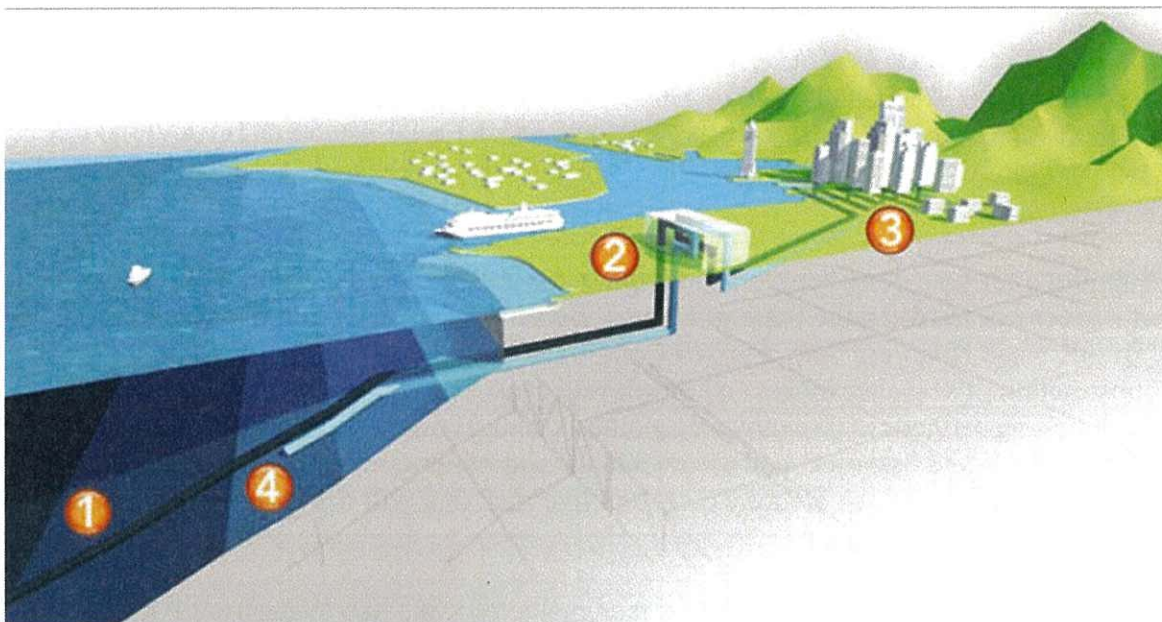


Figure 1. Rendering of the Honolulu Seawater Air Conditioning seawater intake and return water pipelines that will provide seawater air conditioning services to downtown Honolulu, Oahu. (Source: <http://www.honoluluswac.com/>)

Environmental Advantages

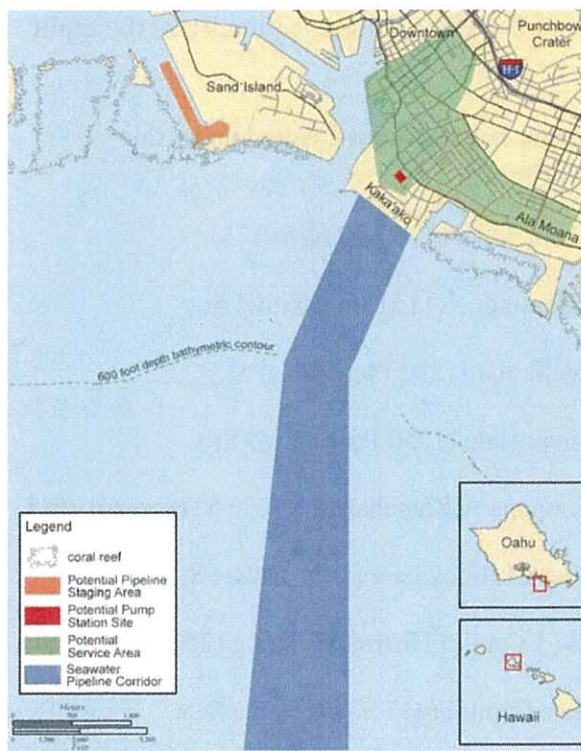
The environmental advantages of utilizing seawater intake and return water pipelines to provide seawater air conditioning services to Honolulu are the following:

- Reduces Hawaii's dependency on oil and conserves up to 178,000 barrels of oil/year
- Saves more than 77 million kWh/year
- Minimizes greenhouse gas emissions by avoiding approximately 84,000 tons of carbon dioxide/year (this equals emissions from 15,000 cars)
- Decreases potable water usage by more than 260 million gallons/year
- Cuts down sewage discharge by up to 84 million gallons/year

Technology and Infrastructure

The main components of a basic seawater air conditioning system are the seawater circulation system, the cooling station where pumps, heat exchangers and other equipment are housed, and the fresh water distribution system.

The HSWAC system will use the available deep cold seawater off of the south shore of Oahu, instead of energy-intensive refrigeration systems to cool the chilled water in one or more buildings. The maximum flow rate through the pipe would be 44,000 gallons per minute (gpm). Temperature of the intake water would be approximately 44°F. Typical air conditioning systems use refrigerant-based chillers to cool water, which is then used to cool the air that is circulated throughout the building. In the HSWAC system, rather than cycling water through a chiller, the water will be routed through a heat exchanger. Fresh water will circulate through one side of a system of titanium (or other corrosion-resistant alloy) plates, giving up its heat to the cold seawater on the other side of the plates. The fresh water loop will be closed; that is, the water will circulate from the heat exchanger to connected buildings and back again to the heat exchanger. In contrast, the cold seawater will pass through the heat exchanger only once before being returned to the sea. The depth at which the water is returned to sea is a depth where the water will quickly mix to achieve the ambient temperature of the surrounding water, and where the water movement and circulation due, to the depth of the water, should facilitate the dilution and quick dispersal of higher nutrient water which is initially sourced from 1,755 feet.



HSWAC Project Area

Four areas near downtown Honolulu would be used in four discrete functions associated with construction and operation of the HSWAC system:

- 1) Seawater Pipeline Corridor: Seawater intake and return pipes would be deployed offshore of Honolulu in the area between Honolulu Harbor and Kewalo Basin;
- 2) Pump/Cooling Station: An onshore cooling station would be built on a site in Kaka'ako;
- 3) Potential Service Area: Freshwater distribution pipes would be installed beneath streets in the downtown Honolulu area; and
- 4) Potential Pipeline Staging Area: A shoreline site in Ke'ehi Lagoon would be used for staging and pipeline assembly.

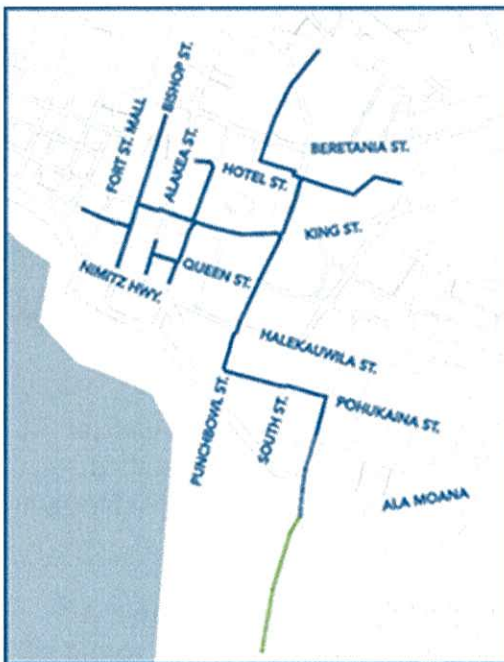
Figure 2. Project Areas associated with construction and operation of the HSWAC system.

Background

On June 23, 2011, the Board of Land and Natural Resources approved HSWAC's Conservation District Use Application OA-3579 ("CDUP") for the Honolulu Sea Water Air Conditioning Project located upon submerged land, makai of Kakaako Waterfront Park, offshore of plat (1) 2-1-060 and the temporary use of Channel D of Keehi Lagoon, island of Oahu. (see

On October 9, 2018, The State of Hawaii Department of Accounting and General Services (DAGS) and Honolulu Seawater Air Conditioning (HSWAC) finalized an agreement to air condition eight state facilities in downtown Honolulu with the deep cold seawater provided by HSWAC's seawater intake and return water pipelines.

As stated previously, the initiative is part of the State's significant renewable energy efforts. Gov. David Ige's office stated that the agreement would be huge step forward in the state's effort to achieve 100 percent renewable energy by 2045 and reduce greenhouse gas emissions. DAGS anticipates that the project will reduce the State's energy consumption by more than 5.3 million kilowatt hours each year and eliminate the production of 10 million pounds of carbon dioxide annually. The State will receive sea water air conditioning service in 26 months under the terms of the agreement. In addition, potable water consumption is expected to drop by 11.4 million gallons per year and sewage discharge will be reduced by more than 1.7 million gallons annually in the eight buildings covered by this agreement.



The eight state facilities covered under this agreement are:

- 1) Keoni Ana (1170 Alakea St.)
- 2) Kalanimoku (1151 Punchbowl St.)
- 3) Keelikolani (830 Punchbowl St.)
- 4) Kinau Hale (1250 Punchbowl St.)
- 5) Leiopapa A Kamehameha (235 S. Beretania St.)
- 6) Queen Liliuokalani (1390 Miller St.)
- 7) No. 1 Capitol District Building (250 S. Hotel St.)
- 8) State Capitol (415 S. Beretania St.).

Figure 3. Streets in downtown Honolulu that the HSWAC pipeline system is proposing to service with air conditioning services.

Impact to Stony Coral and Live Rock

The Department of Land and Natural Resources (“DLNR”) - Division of Aquatic Resources (“DAR”) is the department and division of the State of Hawaii tasked with managing stony coral and live rock.

Hawaii Administrative Rules, (“HAR”) sections 13-95-70 and 13-95-71 prohibit the unauthorized take of stony coral and live rock and HAR sections 13-95-70 (c) and 13-95-71 (c) provide that the Department may authorize damage to stony coral and live rock for the development or operation of renewable energy projects and shall require mitigation to offset any stony coral and live rock losses.

HAR section 13-95-1 defines “stony coral” as “any invertebrate species belonging to the Order Scleractinia, characterized by having a hard, calcareous skeleton, that are native to the Hawaiian Islands” and defines “live rock” as “any natural hard substrate to which marine life is visibly attached or affixed,” and defines “Mitigation” as activities carried out in accordance with this chapter in order to avoid, minimize, restore, or compensate for losses of certain marine resources due to authorized activities, and defines “Renewable energy projects” as projects developed by renewable energy producers, as the term is defined in section 171-95, Hawaii Revised Statutes, that reduce the consumption of non-renewable energy resources or produce renewable energy.

Certain elements of the in-water activities or infrastructure necessary to generate the renewable energy in the HSWAC pipeline system consist of select amounts of preliminary excavation or drilling of stony coral or live rock and the placement of anchoring collars upon stony coral or live rock, when determined to be unavoidable.

Need for Memorandum of Agreement

DAR and HSWAC have prepared this Memorandum of Agreement in order to set the terms and conditions of authorized activities consisting of the construction of seawater intake and return water pipelines, the proposed limited take of stony coral and live rock, and the avoidance and minimization measures that will be implemented to avoid or minimize losses of stony coral and live rock that will occur as a result of the development.

The aspects of the HSWAC renewable energy project requiring an agreement with the DLNR for the take of stony coral and live rock, are the intake and return pipelines of the seawater circulation system and the in-water staging and installation work. Accordingly, this board submittal is limited to these aspects of the project and does not include any terrestrial portions such as the pump/cooling station to be built on a site in Kaka‘ako and the freshwater distribution pipes to be installed beneath streets in the potential service area of downtown Honolulu area.

In addition, potential impacts to other aquatic resources which are also managed by the DLNR-DAR such as protected sea-turtles, monk seals or cetaceans, are addressed in the “Proposed Mitigation Measures” related to potential impacts to “protected species” and “marine biota” in the Federal Final Environmental Impact Statement For the Proposed Honolulu Seawater Air Conditioning Project, Honolulu, Hawaii (“FEIS”) (Cardno TEC, Inc., 2014)(pgs. 14-16, Table ES-1) and are addressed in the special conditions requiring adherence to these same proposed mitigation measures in the FEIS, that were developed within the NEPA consultation process as reasonable mitigation measures to offset impacts to the natural environment, in the U.S. Army Corps of Engineers (“USACE”) permit (DA-POH-2004-01141). The “Proposed Mitigation Measures” from the HSWAC FEIS are listed in the below table (**Table ES-1: Proposed Mitigation Measures pg. 12 of FEIS**):

<i>Resources Potentially Adversely Affected</i>	<i>Proposed Mitigation Measures</i>
Protected Species	<p>The following NMFS-recommended BMPs would be followed during in-water work:</p> <ol style="list-style-type: none"> 1. Constant vigilance would be kept for the presence of Federally-listed species. 2. When piloting vessels, vessel operators would alter course to remain at least 100 yards from whales and at least 50 yards from other marine mammals and sea turtles. 3. Vessel speed would be reduced to 10 knots or less when piloting vessels in the proximity of marine mammals. 4. Vessel speed would be reduced to 5 knots or less when piloting vessels in areas of known or suspected turtle activity. 5. Marine mammals and sea turtles would not be encircled or trapped between multiple vessels or between vessels and the shore. 6. If approached by a marine mammal or turtle, vessel operators would put the engine in neutral and allow the animal to pass. 7. Unless specifically covered under a separate permit that allows activity in proximity to protected species, all in-water work would be postponed when whales are within 100 yards, or other protected species are within 50 yards. Activity would commence only after the animal(s) depart the area.

<i>Resources Potentially Adversely Affected</i>	<i>Proposed Mitigation Measures</i>
Protected Species	<p>8. Should protected species enter the area while in-water work is already in progress, the activity would continue only when that activity has no reasonable expectation to adversely affect the animal(s).</p> <p>9. No attempt would be made to feed, touch, ride, or otherwise intentionally interact with any protected species.</p> <p>10. Except for pipe deployment, limit work to daylight hours so the BMPs can be carried out.</p> <p>Measures to mitigate potential effects on marine mammals may include the following (including requirements for Marine Biota):</p> <ul style="list-style-type: none"> • Establishment of Safety and Exclusion Zones. Before any pile driving, a clearly marked safety zone (typically 50 yards; 100 yards during pile driving) for potentially affected species would be established. The safety zone would be marked by buoys for easy monitoring. A minimum of one biological observer on a boat per pile driver barge would survey the safety zone to ensure that no marine mammals are seen within the zone before pile driving begins. If marine mammals were found within the safety zone, pile driving would be delayed until they move out of the area. If a marine mammal is seen above the water and then dives below, pile driving would wait a specified amount of time and if no marine mammals are seen by the observer in that time it would be assumed that the animal has moved beyond the safety zone. • Soft Start. Although marine mammals would be protected from Level harassment by establishment of a safety zone, mitigation may not be 100 percent effective at all times in locating marine mammals. In order to provide additional protection to marine mammals near the project area by allowing marine mammals to vacate the area, thus further reducing the incidence of Level B harassment from startling marine mammals with a sudden intensive sound, a “soft start” could be implemented. Under a soft start, pile driving would be initiated at an energy level less than full capacity (i.e., approximately 40-60 percent energy levels) for at least 5 minutes before gradually escalating to full capacity. This would ensure that, although not expected, any marine mammals that are undetected during safety zone monitoring would not be injured.

<i>Resources Potentially Adversely Affected</i>	<i>Proposed Mitigation Measures</i>
Protected Species	<ul style="list-style-type: none"> • Shut Down. If a marine mammal is seen approaching or within the exclusion zone, pile driving operations would be shut down until the animal has left the exclusion zone or 15/60 minutes (pinniped/cetacean) have passed without the animal being seen. • No vibratory piling driving would be done during the period between December 1st to March 31st to avoid peak humpback whale season in Hawaii. <p>To reduce entrainment (and impingement):</p> <ul style="list-style-type: none"> • The intake location is approximately 25,000 feet offshore at a depth of 1,741 feet. At the intake depth, biological productivity is much less than at shallower depths and the lower density of organisms reduces the potential for impingement and entrainment. • The maximum intake velocity (approximately 5 feet/sec. or 3.4 miles per hour) would limit entrainment of macro-organisms. • Variable speed pumps would be used which would provide for greater system efficiency and reduced flow requirements (and associated entrainment).

The three main components of the proposed activities or infrastructure that will result in losses to stony coral and live rock are outlined below:

Excavation. HSWAC will excavate a receiving pit and install a corresponding sediment enclosure off the shore of Kaka'ako. The receiving pit is the connection point between the subterranean and above-ground portions of the pipeline system. The subterranean portion of the pipeline runs below the sea floor* from the Kaka'ako shoreline out to the receiving pit, where it moves above ground and extends along the sea floor (on top of the benthic substrate) out seaward for approximately 24,733 feet. (≈ 4.68 miles). Dredged materials will be disposed of at an upland disposal site.

Note: *The pipelines will be micro-tunneled under the seafloor from an upland jacking pit (Kaka'ako) to the offshore breakout point receiving pit approximately 1,608 feet offshore at a water depth of approximately 30 feet. The Receiving Pit will consist of eighty 24" AZ sheet piling driven with a vibratory hammer to a depth of approximately 20'-25' to construct a 40' x 40' containment enclosure necessary to retrieve the MTBM and facilitate pipeline connections necessary to transition the subsurface pipelines to above the seafloor. A perimeter of sheet piles (or a combination of sheet piles and silt curtains) will be installed from the seafloor to above the water surface to effectively isolate the Receiving Pit work area from surrounding waters. A clam shell or open bucket excavator will be used to excavate the seabed sediment, consisting primarily of calcium carbonate and sand, to a depth of approximately 20 feet below the surrounding seafloor. The 1,185yd³ of dredged sediment will be barge transported offsite for upland disposal.

Following retrieval of the MTBM and pipeline connections, the Receiving Pit will be backfilled with 1,185 yd³ of prewashed basalt gravel and capped with tremie concrete to match the surrounding seafloor elevation and the sheet piling will be cut off slightly beneath the seafloor surface and removed. The Receiving Pit construction activities (sheet pile driving, dredging, backfilling, etc.) are expected to take approximately 5 weeks and would be conducted off of an adjacent four-point moored barge or off a temporary pile-supported work platform/deck. The temporary work platform, if used, would consist of a 35' x 35' deck supported by twelve 24" diameter pipe piles, driven by vibratory hammer. Following construction activities, the temporary work platform will be removed and piling would be pulled or cut at the seafloor surface.

Staging, Transport and Deployment. HSWAC will assemble a high-density polyethylene intake and return pipeline system ("pipeline system") in the staging area at Keehi Lagoon, including an intake and return pipe with attached concrete collars that act as anchors (that are secured with steel pipe pilings on the sea floor) and work to elevate the pipeline above the sea floor. Once assembled, HSWAC will transport the pipeline system via vessel tow from Keehi to Kaka'ako and deploy it over a distance of approximately 24,733 feet, beginning between a depth of approximately 30 feet (approximately 1,608 feet off the shoreline) and moving out seaward (\approx 4.68 miles) until it reaches a depth of approximately 1,755 feet.

Footprint of Activities and Pipeline Infrastructure on the Sea Floor. The excavation of the receiving pit and the placement of the concrete collars are the components of the pipeline infrastructure which will have a footprint on the sea floor and will displace any regulated aquatic resources that may be colonized on the sea floor. The concrete collars will consist of "Type A" collars (76 square feet), "Type B" collars (31.7 square feet) and "Type C" collars (3.6 square feet). The footprint per collar is ranges between 3.6 square feet and 76 square feet and the collars will be spaced approximately 20 feet apart along the approximately 4.68-mile pipeline.

*Note: The live rock surface (sea-floor) of the receiving pit is 1600 ft² (40 feet x 40 feet) and is 20 feet deep. The cubic volume of the pit to be excavated is 32,000 ft³. The substrate below the 1600 ft² live rock surface (32,000 ft³) is not categorized as stony coral or live rock, and has not been included in amounts specified for impacts to stony coral and live rock. This nature of this substrate is unknown until excavation is completed and may be categorized as calcium carbonate or sand depending on the results of the excavation.

Over the course of approximately 4.68 miles, the total footprint of the receiving pit (1600 square feet) and collars (19,642.8 square feet) will account for 21,242.8 square feet of displaced sea floor.

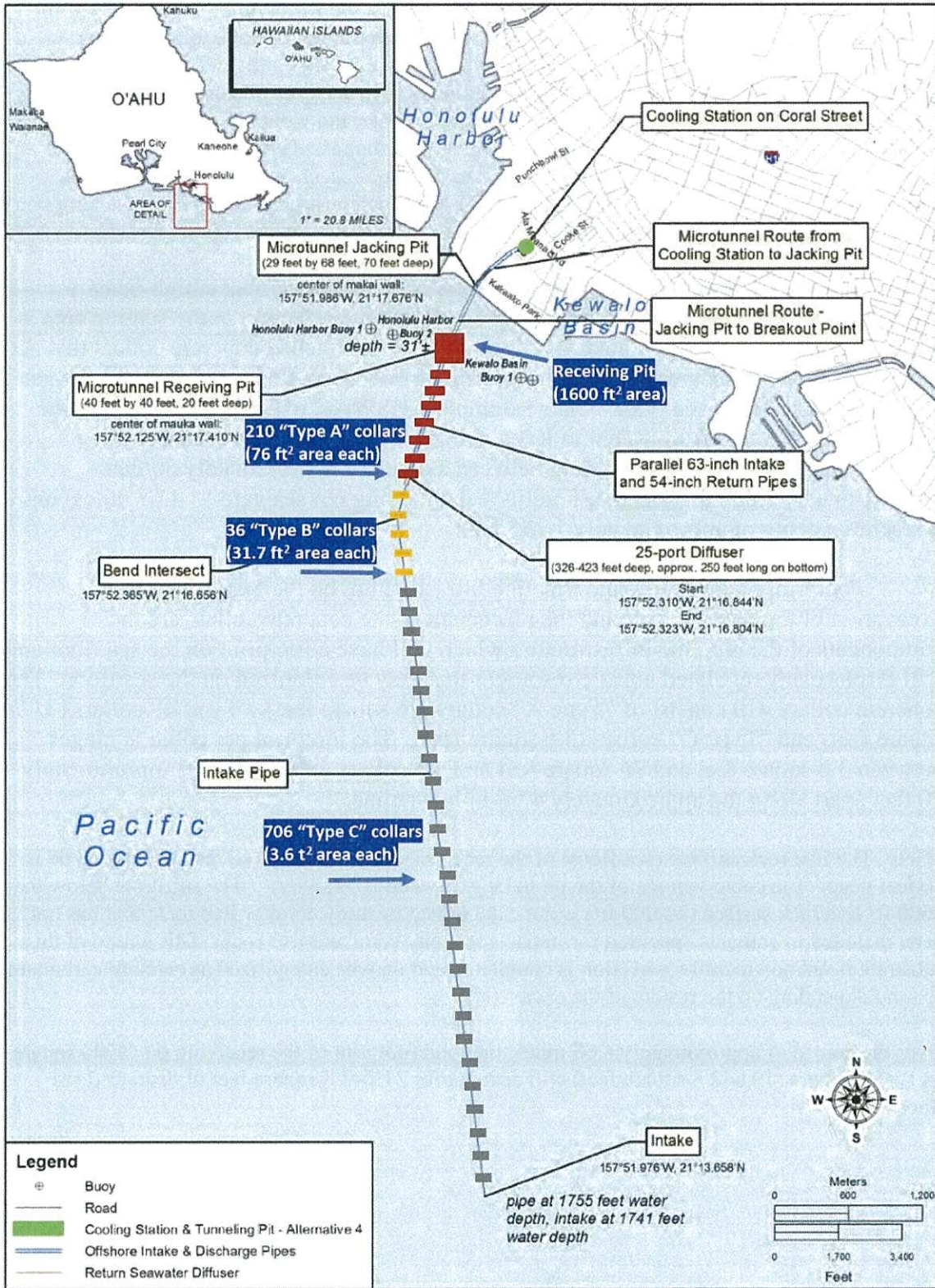


Figure 4. The total footprint of the receiving pit (1600 square feet) and collars (19,642.8 square feet) of displaced sea floor over the distance of approximately 4.68 miles.

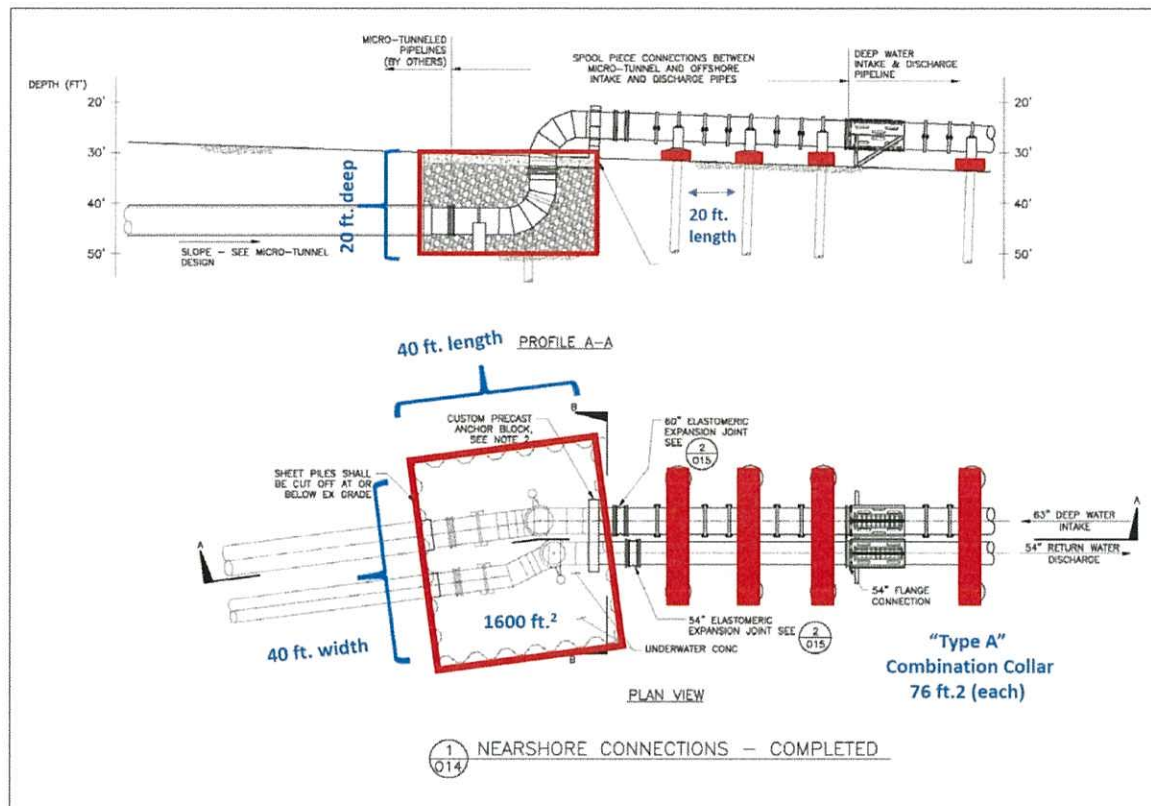


Figure 5. Rendering of the total footprint of the receiving pit (1600 square feet) and example of the footprint of “Type A” or “shallow water” combination collars (each 76 ft.²). See Figure 8 at end of submittal for rendering of “Type A” combination collars.

“Type A” combination collars have the largest footprint, and account for 15,960 square feet of displaced sea floor, as they suspend and anchor down both the intake and outtake pipes, until the system reaches the point where the outtake pipe terminates at a diffuser, in a depth of approximately 326-423 feet. The intake pipe is 63-inch diameter and the outtake pipe is a 54-inch diameter; both are composed of high density polyethylene (HDPE).

After the termination of outtake pipe, the system continues as just a single pipe system (intake pipe) and thus requires smaller collars with a smaller footprint (36 “Type B” collars (31.7 square feet area each). After the Type B are used for an approximate distance of 720 feet, the system will require 706 smaller “Type C” collars (3.6 square feet area each) until the end of the intake pipe, at a depth of approximately 1,755 feet.

HSWAC anticipates after conducting benthic surveys that calculated the percent cover of regulated stony coral and live rock within the total area of 21,242.8 square feet of displaced sea floor, that the totality of the proposed activities (including the excavation of the receiving pit and the placement of the concrete collars, as referenced above), will **cause a maximum of 86 square feet of stony coral loss and a maximum of 14,000 square feet (11,577 square feet + 20% buffer) of live rock loss.**

The impact to stony coral and live rock is based upon the average percent cover of stony coral and live rock, multiplied by the total area of 21,242.8 square feet of displaced sea floor, resulting from the excavation of the receiving pit and the placement of the concrete collars. The value for live rock includes a 20% buffer: maximum percent cover of live rock x total area of substrate + 20%.

HSWAC has estimated that the percent cover of stony coral is between 0.1 - 7.5% in the sections of the pipeline route where coral is present, being primarily the length of the pipeline route between a depth of 30 feet (the receiving pit) to a depth of 600 feet, and the average percent cover of live rock equals approximately 54.5% of the total area of 21,242.8 square feet of displaced sea floor. The corals present in the distance between the shore and the receiving pit will not be impacted, as the pipeline will run subterranean, until it exits at the receiving pit, and becomes an above-ground pipeline. The distance between the depth of 130 feet, out seaward for approximately 25,000 feet. (\approx 4.68 miles) to a depth of 1755 feet, has very low incidence of corals; HSWAC has estimated that only 2 colonies or an estimated total of 3 feet squared will be impacted. Most corals (with a maximum of 7.5% percent benthic cover) were observed in the area between the depth of 30 feet (the receiving pit) to the depth of 130 feet (approximately the first 1,544 feet or 0.29-mile distance of the above-ground pipeline).

Authorized Take of Stony Coral and Live Rock. The Memorandum of Agreement (“MOA”) proposed in this submittal only authorizes the take of stony coral colonies each with maximum diameter of 50 cm and with an aggregate maximum area of 86 square feet and the take of live rock with an aggregate maximum area of 14,000 square feet (aggregate maximum area \pm 20%). The take of or impact to other resources is not covered by this Agreement.

Proposed Avoidance and Minimization Measures

Two actions that are either avoidance or minimization measures but which are not specified as such in the MOA because they are inherent in the overall construction plan are the following:

A) Micro-tunneling:

The avoidance of nearshore stony coral colonies and live rock will be achieved through the action of using a micro-tunnel boring machine (“MTBM”), to micro-tunnel the intake and outtake water pipelines 13 feet to 43 feet under the seafloor, within jacking casing pipes, to the receiving pit 1,608 feet offshore. The stony corals present in the distance between the shore and the receiving pit will not be impacted, as the pipeline will run subterranean, until it exits at the receiving pit, and becomes an above-ground pipeline. This action is beneficial as the nearshore areas consist of a higher percent cover of stony coral cover than the areas that continue after the receiving pit. See Photo # at end of board submittal for examples of corals to be avoided.

B) Use of Collars:

The use of concrete collars to suspend to pipeline system above the sea floor minimizes the direct footprint of the pipeline on stony coral and live rock resources. The footprint per collar is ranges between 3.6 square feet and 76 square feet and the collars will be spaced approximately 20 feet apart along the approximately 4.68-mile pipeline. The evenly spaced placement of the collars will work to reduce the footprint of the entire pipeline laying on the sea-floor, by elevating the pipeline above the sea floor. In addition, the anchoring action of the collars negates the need to excavate a trench along the pipeline route to provide similar protection against water motion on the pipeline. Therefore, approximately every 20 feet apart along the pipeline, a maximum range of 3.6 square feet to 76 square feet of sea floor will be displaced, instead of the entire length of the pipeline.

However, a potentially adverse consequence of this minimization measure may be the shading effect (blocking of the sunlight) that is created by the pipeline and collars, which may negate some or all of the benefits of avoiding direct impact, or may prevent the settlement of new stony coral recruits. The symbiotic algae (zooxanthellae) that live within the polyps of stony coral require sunlight for photosynthesis to provide critical biological services and functions for the coral colonies to persist. This shading effect may limit the amount or duration of sunlight that the coral colonies receive each day, causing reduced health or eventual mortality, and the intensity of this effect may be directly proportional to the depth of water, due to light attenuation. In order to detect or document this potential impact, HSWAC will monitor for effects of shading in areas beneath the pipeline and collars in areas that receive shade.

In addition to these actions, the HSWAC project proposes to implement several additional avoidance and minimization measures to avoid or minimize impact to stony coral and live rock, and consist of some of the following abridged measures (full description of measures can be found in the MOA attached as Exhibit 1):

1. Minimization of Impacts from Sediment Generating Construction Activities:
 - a. *Excavation.*
 - i. *Sediment generating construction activities in waters of Hawaii. must be avoided for a period of two weeks before predicted primary annual coral spawning events, during the predicted primary annual coral spawning events and two weeks after the predicted primary annual coral spawning events. HSAWC shall consult with DAR regarding predicted annual coral spawning events.*
 - ii. *Appropriate sediment control measures (e.g., sheet piling, silt curtains, etc.) must be employed and maintained to contain and minimize sedimentation/turbidity outside of the authorized footprint during sediment*

generating construction activities, including the excavating of the Receiving Pit.

- iii. *Sediment generating activities may include activities such as excavation, dredging or micro-drilling in the receiving pit.*

b. *Deployment.*

- i. *HSWAC will minimize sedimentation and force of impact from deployment of pipeline and associated components, including but not limited to conducting controlled deployment of collars and HDPE pipeline, such as air release control with valves on seaward-end of pipeline during deployment or other method, and controlled deployment (lift-bags or other method, if applicable) of receiving pit components (sheet-piles, piles, pipe connectors, or other various infrastructure). HSWAC will minimize the velocity of descent of the pipeline components, to lessen the impact to the surrounding environment, to the maximum extent practicable, without compromising structural integrity of pipeline or negatively affecting logistical operations.*

2. *Minimization of Impacts to Coral and Live Rock:*

a. *Excavation.*

- i. *HSWAC shall submit to DAR for approval the final "Receiving Pit Location and Construction Plan," which is required by the U.S. Army Corps of Engineers ("USACE") DA-POH-2004-01141 ("USACE permit"), prior to the start of construction activities. The final location of the Receiving Pit shall be approved prior to the start of construction by DAR.*
- ii. *HWSAC shall conduct a Coral Survey of the Receiving Pit, prior to the start of construction, that includes the identification each species of each stony coral colony, amount, size (ecological volume) and condition/health of each colony and provide a copy of the Coral Survey to DAR.*
- iii. *The Receiving Pit must be sited to prevent physical damages to the adjacent coral spur ridges during construction, which may require adjusting the final location of the Receiving Pit prior to construction. The final Receiving Pit Location and Construction Plan and Coral Survey, must demonstrate the exact location of the Receiving Pit and related construction structures (e.g., sheet piling, barge or temporary platform mounted crane/excavator anchoring and/or piling, temporary pipeline holdback structures, etc.), how impacts to the adjacent coral spurs will be avoided, and the unavoidable coral colony impacts that would occur within the footprint of the receiving pit.*

- iv. *HSWAC shall harvest coral colonies from the receiving pit area, transplant them to a recipient site located inshore of the proposed receiving pit, or another site (after approval by DAR) in close proximity to the receiving pit, with similar depth, light quality, and substratum composition as the donor site at the receiving pit footprint, and perform post-transplantation monitoring, as described in the CTP. If the recipient site needs to be relocated, DAR shall review and approve the new recipient site before HSWAC implements transplantation.*
- v. *To minimize losses to stony coral in the Receiving Pit location, HSWAC shall conduct transplantation of coral colonies measuring ≥ 5 cm diameter, in the Receiving Pit Location, at the time of transplantation.*
- vi. *HSWAC shall complete the transplantation of corals before the start of any construction activities.*

b. Deployment.

- i. *HSWAC shall have an in-water marine biologist present to consult with in-water engineers when conducting the pre-survey to determine path of least impact before deployment of the pipe.*
- ii. *HSWAC shall employ appropriate measures, including diver-assisted structure installment, remotely operated submersible vehicles, pre-construction surveys, etc. to ensure that structures are placed over sand, rubble, or otherwise non-coral covered substrate to the extent practicable. The installation of the pipeline system structures on the seafloor (e.g., pipeline collars/weights, pile anchors, etc.) and temporary construction equipment and structures (e.g., pipeline tieback anchors and lines, piling, silt curtains, vessels and anchors, moorages, etc.) shall avoid contact with coral colonies or macro-invertebrates to the maximum extent practicable.*
- iii. *HSWAC shall place structures over sand and not over live rock to the maximum extent practicable.*
- iv. *HSWAC shall adjust spacing between collars to the maximum extent practicable to avoid congregations of small stony corals (0-50cm) that may create a combined coverage area that is ≥ 1 m.*
- v. *HSWAC shall adjust spacing between collars to the maximum extent practicable to avoid live rock that are sized ≥ 1 m in vertical width and or height.*
- vi. *The project shall not exceed a maximum of 210 "Type A" collars (76 square feet), 36 "Type B" collars (31.7 square feet) and 706 "Type C" collars (3.6 square feet) for a maximum total of 952 collars. The footprint*

per collar is ranges between 3.6 square feet and 76 square feet and the collars will be spaced approximately 20 feet apart along the approximately 4.68-mile pipeline. The total footprint of the receiving pit and collars shall not exceed 21,242.8 square feet of sea floor.

c. Staging and Transport.

- i. HSWAC shall take steps to avoid and minimize potential impacts to aquatic resources during staging and transport of pipeline system.*
- ii. Before any staging, transport, and deployment in-water activities are conducted, HSWAC shall prepare and submit to DAR for review and approval operational and contingency plans that minimize potential impact to aquatic resources during staging, transport, and deployment.*
- iii. HSWAC shall maintain buoyancy of all components during staging and transport.*
- iv. HSWAC shall maintaining navigational control during transport.*
- v. HSWAC prepare contingency plans that work to minimize potential risks to aquatic resources that may result from any unforeseen circumstances during staging, transport and deployment.*

e. In –Water Monitoring.

- i. HSWAC shall conduct monitoring surveys designed to determine the impact to ecosystems function and services resulting from this project and the rate of recovery of ecosystem function and services.*
- ii. **Benthic and Fish Surveys:** HSWAC shall conduct benthic (including coral and live rock) and fish surveys of the **a) Receiving Pit:** footprint of the receiving pit before excavation and replicate surveys of the concrete cap situated upon the footprint of the receiving pit; of the **b) Surrounding Areas (of Collars and Pipe):** the areas surrounding the collars affected by the impact force of deployment (areas with fragmentation/pulverization of coral and live rock or suspension and blanketing of sediment) of the collars and HDPE pipeline installation, or areas that receive shade from collars and HDPE pipeline structures, to a minimum depth of 100 feet **c) Pipeline Associated Surfaces:** the surface of the concrete collars and the HDPE pipeline to a minimum depth of 100 feet.*

*A. For **Benthic and Fish Surveys (a, b, c)** surveys shall identify the species and quantify the percent cover of benthic organisms, detect the rates of successional colonization that occur and quantify the changes in associated fish population.*

- B. **Monitoring Duration:** HSWAC shall conduct before and after surveys the first year (except for **Pipeline Associated Surfaces; only one survey after deployment is required for first year**) and then conduct surveys every three years thereafter for a period of 15 years.*
- iii. ***Coral Transplant Surveys:** HSWAC shall conduct coral surveys of the stony coral colonies proposed for transplantation from the footprint of the receiving pit before stony coral colonies are excavated and transplanted. HSWAC shall also conduct coral surveys of the stony coral colonies post-transplantation and compare them to surveys of control colonies.*
- A. Surveys shall be designed to identify stony coral species, amount, size (ecological volume) and condition/health of each colony before transplantation, and will be designed to identify the health, survival, mortality, and growth of each transplanted colony after transplantation.*
- B. **Monitoring Duration:** HSWAC shall conduct one survey of the receiving pit area before excavation and shall conduct one survey of the control site and transplant site within one month after transplantation is completed. HSWAC shall conduct surveys of the control and transplant sites every year thereafter, for a period of 5 years.*
- iv. *HSWAC shall submit all monitoring plans to DAR for review and approval, provide the raw data and analysis to DAR at the end of each survey year, and shall share with DAR the results of any additional future biological surveys of the impact site as well as the results of the Marine Biological Monitoring Plan referenced in the USACE permit and the Field Sampling Plan portion of the HSWAC Proposed Water Quality and Biota Monitoring Program from the Applicable Monitoring and Assessment Plan (“AMAP”), a component of Section 401 Water Quality Certification.*
- v. *HSWAC shall maintain a visual record of operations and surveys including but not limited to photo-documentation and video-documentation. HSWAC will conduct underwater photo or video-documentation of representative portions of the above monitoring, components of the pipeline, impacted areas and in-water operations. HSWAC shall submit all photo-documentation and video-documentation to DAR for review and comment.*
- vi. *HSWAC shall provide annual reports detailing results of the monitoring activities listed above.*

f. Removal of infrastructure. Prior to removal of all or part of the pipeline system, HSWAC shall submit to DAR a written removal plan for approval. The plan shall include a timeline for removal and information regarding compliance with all applicable federal and state laws. In the event that the removal causes any impact to aquatic resources, HSWAC shall notify DAR immediately.

g. Additional In-Water Activities, including Pipe Maintenance, Malfunctions, Repairs, and Removals. In the event of any unforeseen circumstances involving the installation, operation, or removal of the pipeline system (e.g., equipment malfunction or breakage), HSWAC shall do the following:

- i. HSWAC shall immediately notify DAR of any in-water activities not outlined in this Agreement, which may be necessary to minimize impacts to aquatic resources.
- ii. Where any interference, nuisance, harm, or hazard may be caused to stony coral and live rock, HSWAC shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard to stony coral and live rock.

Benefits of Monitoring to DAR

The data from the in-water monitoring of the pipeline system infrastructure will benefit DAR by documenting the scope of impact and recovery for this specific project and providing evidence for informing future management decisions and recommendations for implementing mitigation measures for future projects that are proposed with similar in-water activities or infrastructure.

The data from the benthic surveys will document how stony coral and live rock are impacted through the deployment of this type of infrastructure, from the effects of fragmentation/pulverization of stony coral and live rock, suspension or blanketing of sediment on benthic organisms or the shading (blocking out of the sunlight) of benthic organisms from the infrastructure. Additionally, surveys of the pipeline and collar surfaces may document whether the materials of which the pipeline system is composed is conducive to promoting colonization or growth of benthic organisms and the rate of this colonization or growth or whether the previously occurring densities of benthic organisms in the surrounding environment may affect or determine the levels of this surface growth. The fish surveys will document if this type of infrastructure provides rugosity or habitat complexity (e.g. places for fish to aggregate, take shelter, hide from predators etc.) in some otherwise less complex or less rugose areas (e.g. in deeper areas with sparse benthic organism cover, with higher percent cover of sand). The coral

transplant surveys will document the level of success for transplantation of corals in size classes between 5 cm and 30 cm from the receiving pit to the transplant site and whether this is a viable minimization measure for this current project and future proposed projects. This data collection will aid DAR one making more informed management decisions and mitigation recommendations for future proposed renewable energy projects by providing insight on rates of recovery, colonization and success and whether the environmental benefit of renewable energy outweighs the temporary, or in some cases permanent loss of select ecosystem services and functions, in addition helping determine what further mitigation actions should be implemented in the future, if recovery of ecosystem services and functions is documented to be slower than anticipated.

Restoration of the Submerged Land Premises to its Original State

The potential need to remove the pipeline system, if requested by the BLNR, for various reasons (e.g. abandonment of the project, bankruptcy, termination or revocation of Land Easement, etc.), has been addressed in the required Perpetual, Non-exclusive Easement on State Submerged Lands that is required by the Land Division and the BLNR to proceed with the project, and is therefore not required in this MOA. The easement requires HSWAC to adhere to the following: HSWAC shall, upon termination or revocation of the Perpetual, Non-exclusive Easement on State Submerged Lands, PSF No.: 08OD-064 or other PSF No. (if reissued), peaceably deliver unto the BLNR possession of the premises, together with all improvements existing or constructed thereon or HSWAC shall remove such improvements and shall restore the premises to its original state, or as close thereto as possible, within a reasonable time and at the expense of HSWAC, at the option of the BLNR. If the HSWAC does not remove the improvements or restore the premises to the satisfaction of the BLNR, the BLNR may effect such action and HSWAC agrees to pay all costs and expenses for such action. Furthermore, upon the termination or revocation of this easement, should HSWAC fail to remove any and all of HSWAC's personal property from the premises, after notice thereof, the BLNR may remove any and all of HSWAC's personal property from the premises, and either deem the property abandoned and dispose of the property or place the property in storage at the cost and expense of HSWAC and HSWAC does agree to pay all costs and expenses for disposal, removal, or storage of the personal property. This provision shall survive the termination of the Perpetual, Non-exclusive Easement on State Submerged Lands, PSF No.: 08OD-064 or other PSF No. (if reissued).

RECOMMENDATIONS:

That the Board:

- 1) Authorize and approve the request to enter into a Memorandum of Agreement Between the State of Hawaii, Board of Land and Natural Resources (or "BLNR") and Honolulu Seawater Air Conditioning (or "HSWAC"), regarding the construction of seawater intake and return water pipelines to provide seawater air conditioning services to downtown Honolulu, Oahu, Hawai'i, and the proposed limited take of stony coral and live rock and avoidance and minimization measures designed to avoid or minimize losses of stony coral and live rock that will occur as a result of the development.

Respectfully submitted,



Brian J. Neilson, Acting Administrator
Division of Aquatic Resources

APPROVED FOR SUBMITTAL



Suzanne Case., Chairperson
Board of Land and Natural Resources

Exhibit 1 – **Memorandum of Agreement** Between the State of Hawaii, Board of Land and Natural Resources (or "BLNR") and the Honolulu Seawater Air Conditioning (or "HSWAC"), regarding the construction of seawater intake and return water pipelines to provide seawater air conditioning services to downtown Honolulu, Oahu, Hawai'i, the proposed limited take of stony coral and live rock and the avoidance and minimization measures designed to avoid or minimize losses of stony coral and live rock that will occur as a result of the development.

Exhibit 2 - Conservation District Use Permit ("CDUP") OA-3579

Exhibit 3 - CDUP OA-3769 Modification

Exhibit 4 - U.S. Army Corps of Engineers ("USACE") - DA-POH-2004-01141 ("USACE permit")

Exhibit 5 – Federal Final Environmental Impact Statement For the Proposed Honolulu Seawater Air Conditioning Project, Honolulu, Hawai'i ("FEIS") (Cardno TEC, Inc., 2014); available at this link: <http://honoluluswac.com/enviroreview.html> or by PDF on CD or paper (if requested); 834 pages

Exhibit 6 – Record of Decision for Federal Final Environmental Impact Statement For the Proposed Honolulu Seawater Air Conditioning Project, Honolulu, Hawai'i ("FEIS") (U.S. Army Corps of Engineers ("USACE") 2015).

Exhibit 7 – Acceptance of State Final Environmental Impact Statement For the Proposed Honolulu Seawater Air Conditioning Project, Honolulu, Hawai'i (TEC, Inc., 2009)(Office of Planning in the Hawaii Department of Business, Economic Development and Tourism (DBEDT), 2009).

Exhibit 8 – Supplemental Determination for State Final Environmental Impact Statement For the Proposed Honolulu Seawater Air Conditioning Project, Honolulu, Hawai'i (TEC, Inc., 2009)(Office of Planning in the Hawaii Department of Business, Economic Development and Tourism (DBEDT), 2013).



Figure 6. Boundaries of Proposed Ke'ehi Lagoon Staging Area.
Source: Makai Ocean Engineering, Inc. (Federal Final Environmental Impact Statement (FEIS) For the Proposed Honolulu Seawater Air Conditioning (HSWAC) Project, Honolulu, Hawai'i (Cardno TEC, Inc., 2014)



Figure 7. Plan for Connecting Pipe Segments and Towing From Ke'ehi Lagoon
Source: Makai Ocean Engineering, Inc. (FEIS, HSWAC) (Cardno TEC, Inc., 2014)



Photo 1. Example of Stored Floating Pipeline with Stiffeners and Anchor Weights Being Attached. *Source: Makai Ocean Engineering, Inc. (FEIS, HSWAC) (Cardno TEC, Inc., 2014)*

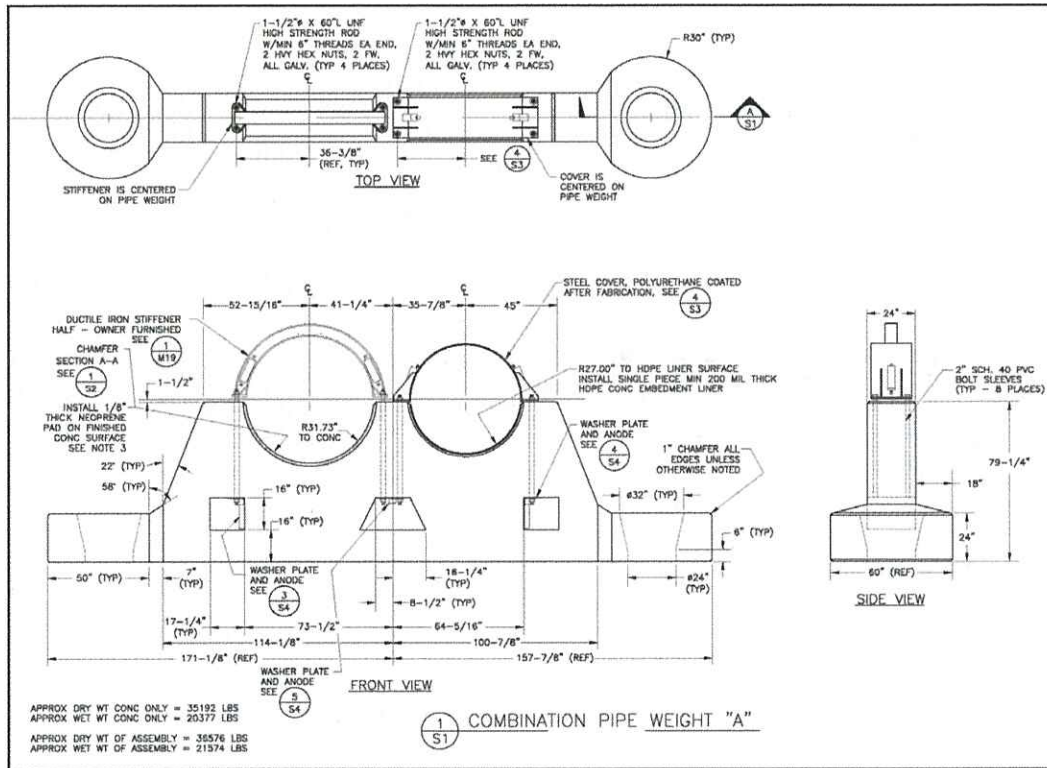


Figure 8. Rendering of "Type A" or "shallow water" combination collars (each 76 ft.²).
Source: Makai Ocean Engineering, Inc. (FEIS, HSWAC) (Cardno TEC, Inc., 2014)



Photo 2. Example of gravity concrete anchors or "collars" for an HDPE Pipe at Keahole Pt., Hawaii. Source: Makai Ocean Engineering, Inc. (<https://www.makai.com/>)



Photo 3. Example of single 1.4 m (55") diameter NELHA deep-water intake pipeline during assembly. *Source: Makai Ocean Engineering, Inc. (<https://www.makai.com/>)*



Photo 4. Example of a single 1.4 m (55") diameter NELHA deep-water intake pipeline during assembly. *Source: Makai Ocean Engineering, Inc. (<https://www.makai.com/>)*



Photo 5. Example of smaller collars for deeper water sections; similar to proposed “Type C” collars (3.6 square feet area each). *Source: Makai Ocean Engineering, Inc. (<https://www.makai.com/>)*



Photo 6. Example of fully assembled NELHA 55-inch Pipe Being Towed From Kawaihae Harbor *Source: Makai Ocean Engineering, Inc. (<https://www.makai.com/>)*



Photo 7. Example of a stony coral to be transplanted to a nearby site, from the receiving pit (30 ft. deep), which will be excavated. *Source: (Shallow Water Benthic Survey, FEIS, HSWAC) (Cardno TEC, Inc., 2014)*



Photo 8. Example of composition of benthic substrate (composed of sand, live rock and small (< 30cm) coral colonies) in the receiving pit (30 ft. deep), which will be excavated. *Source: (Shallow Water Benthic Survey, FEIS, HSWAC) (Cardno TEC, Inc., 2014)*



Photo 9. Example of large coral colonies to be avoided through the micro-tunneling and placement of the receiving pit and areas with sparser percent cover of coral. Colony is, located a depth of 30 ft., west of the receiving pit. *Source: (Shallow Water Benthic Survey, FEIS, HSWAC) (Cardno TEC, Inc., 2014)*



Photo 10. Example of large coral colonies to be avoided through the micro-tunneling and placement of the receiving pit and areas with sparser percent cover of coral. Colony is located a depth of 30 ft., east of the receiving pit. *Source: (Shallow Water Benthic Survey, FEIS, HSWAC) (Cardno TEC, Inc., 2014)*



Photo 11. Example of coral colonies that may be impacted (if $<1\text{m}$ congregated) through the placement of the pipeline and collars. Colonies are located at a depth of 31.5 ft., south of the receiving pit. Stony coral colonies to be impacted did not exceed a maximum diameter of 50 cm. HSWAC shall adjust spacing between collars to the maximum extent practicable to avoid congregations of small stony corals (0-50cm) that may create a combined coverage area that is $\geq 1\text{m}$. Source: (*Shallow Water Benthic Survey, FEIS, HSWAC*) (*Cardno TEC, Inc., 2014*).



Photo 12. Example of larger live rock with smaller coral colonies interspersed, that may be avoided (if $\geq 1\text{m}$) through the placement of the pipeline and collars. Live rock with smaller coral colonies interspersed are located at a depth of 41 ft., south of the receiving pit. HSWAC shall adjust spacing between collars to the maximum extent practicable to avoid live rock that are sized $\geq 1\text{m}$ in vertical width and or height. Source: (*Shallow Water Benthic Survey, FEIS, HSWAC*) (*Cardno TEC, Inc., 2014*).



Photo 13. Example of live rock that may be impacted through the placement of the pipeline and collars. Live rock is located at a depth of 59 ft., south of the receiving pit. Large portions of the total distance of the 4.68 miles were documented to be live rock, mostly devoid of stony coral. *Source: (Shallow Water Benthic Survey, FEIS, HSWAC) (Cardno TEC, Inc., 2014).*



Photo 14. Example of live rock that may be avoided (if $\geq 1\text{m}$) through the placement of the pipeline and collars. Live rock is located at a depth of 59 ft., south of the receiving pit. HSWAC shall adjust spacing between collars to the maximum extent practicable to avoid live rock that are sized $\geq 1\text{m}$ in vertical width and or height. *Source: (Shallow Water Benthic Survey, FEIS, HSWAC) (Cardno TEC, Inc., 2014).*



Photo 15. Example of sand with live rock or algae interspersed. Sand with live rock or algae interspersed is located at a depth of 59 ft., south of the receiving pit. Large portions of the total distance of the 4.68 miles were also documented to be sand, mostly devoid of stony coral. *Source: (Shallow Water Benthic Survey, FEIS, HSWAC) (Cardno TEC, Inc., 2014).*

Exhibit 1 – MOA Between BLNR and HSWAC

MEMORANDUM OF AGREEMENT

BETWEEN THE

THE STATE OF HAWAII, BOARD OF LAND AND NATURAL RESOURCES

AND

HONOLULU SEAWATER AIR CONDITIONING LLC

This MEMORANDUM OF AGREEMENT (“Agreement”) is entered into by and between the STATE OF HAWAII, Board of Land and Natural Resources (“BLNR”), whose principal place of business is 1151 Punchbowl Street, Room 132 Honolulu, Hawaii 96813, and HONOLULU SEAWATER AIR CONDITIONING, LLC (“HSWAC”) whose principal place of business is 1132 Bishop Street, Suite 1410, Honolulu, Hawaii 96813.

WITNESSETH THAT:

WHEREAS, HSWAC proposes to construct seawater intake and return water pipelines from the Kaka‘ako shoreline out seaward to a distance of 25,733 ft. offshore to provide seawater air conditioning services to downtown Honolulu, on the island of Oahu, Hawai‘i (“project”).

WHEREAS, the project will consist of the following:

- a. Excavation. HSWAC will excavate a Receiving Pit and install a corresponding sediment enclosure off the shore of Kaka‘ako. The Receiving Pit is the connection point between the subterranean and above-ground portions of the pipeline system. The subterranean portion of the pipeline runs below the sea floor from the Kaka‘ako shoreline out to the Receiving Pit, where it moves above ground and extends along the sea floor (on top of the benthic substrate) out seaward for approximately 24,733 feet. (\approx 4.68 miles).
- b. Staging, Transport and Deployment. HSWAC will assemble a high-density polyethylene (“HDPE”) intake and return pipeline system (“pipeline system”) in the staging area at Keehi Lagoon, including an intake and return pipe with attached concrete collars that act as anchors (that are secured with steel pipe pilings on the sea floor) and work to elevate the pipeline above the sea floor. The intake pipe is 63-inch diameter and the outtake pipe is a 54-inch diameter. Once assembled, HSWAC will transport the pipeline system via vessel tow from Keehi to Kaka‘ako and deploy it over a distance of approximately 24,733 feet, beginning between a depth of approximately 30 feet (approximately 1,608 feet off the shoreline) and moving out seaward (\approx 4.68 miles) until it reaches a depth of approximately 1,755 feet.
- c. Footprint of Activities and Pipeline Infrastructure on the Sea Floor. The excavation of the Receiving Pit and the placement of the concrete collars are the components of the

pipeline infrastructure which will have a footprint on the sea floor and will displace any regulated aquatic resources that may be colonized on the sea floor. The concrete collars will consist of “Type A” collars (76 square feet), “Type B” collars (31.7 square feet), and “Type C” collars (3.6 square feet). The collars will be spaced approximately 20 feet apart along the approximately 4.68-mile pipeline. Over the course of approximately 4.68 miles, the total footprint of the receiving pit (1600 square feet) and collars (19,642.8 square feet) will account for 21,242.8 square feet of displaced sea floor.

WHEREAS, Hawaii Administrative Rules, (“HAR”) section 13-95-70 prohibits the unauthorized take of stony coral and HAR section 13-95-70 (c) provides that the Department may authorize damage to stony coral for the development or operation of renewable energy projects and shall require mitigation to offset any stony coral losses.

WHEREAS, Hawaii Administrative Rules, (“HAR”) section 13-95-71 prohibits the unauthorized take of live rock and HAR section 13-95-71 (c) provides that the Department may authorize damage to live rock for the development or operation of renewable energy projects and shall require mitigation to offset any live rock losses.

WHEREAS, HAR section 13-95-1 defines “stony coral” as “any invertebrate species belonging to the Order Scleractinia, characterized by having a hard, calcareous skeleton, that are native to the Hawaiian Islands” and defines “live rock” as “any natural hard substrate to which marine life is visibly attached or affixed,” and defines “Mitigation” as activities carried out in accordance with this chapter in order to avoid, minimize, restore, or compensate for losses of certain marine resources due to authorized activities, and defines “Renewable energy projects” as projects developed by renewable energy producers, as the term is defined in section 171-95, Hawaii Revised Statutes, that reduce the consumption of non-renewable energy resources or produce renewable energy.

WHEREAS, HSWAC anticipates after conducting benthic surveys that calculated the percent cover of regulated aquatic resources within the total area of 21,242.8 square feet of displaced sea floor, that the totality of the proposed activities (including the excavation of the Receiving Pit and the placement of the concrete collars, as referenced in section 1. c. above), will cause a maximum of 86 square feet of stony coral loss and a maximum of 14,000 square feet (11,577 square feet + \approx 20% margin of error) of live rock loss.

WHEREAS, the impact to stony coral and live rock is based upon the average percent cover of stony coral and live rock, multiplied by the total area of 21,242.8 square feet of displaced sea floor, resulting from the excavation of the Receiving Pit and the placement of the concrete collars. The value for live rock includes a 20% buffer: maximum percent cover of live rock x total area of substrate + 20%.

WHEREAS, HSWAC has estimated that the percent cover of stony coral is between 0.1 - 7.5% in the sections of the pipeline route where coral is present, being primarily the length of the

pipeline route between a depth of 30 feet (the Receiving Pit) to a depth of 600 feet, and the average percent cover of live rock equals approximately 54.5% of the total area of 21,242.8 square feet of displaced sea floor. HSWAC has confirmed that the corals present in the distance between the shore and the Receiving Pit will not be impacted, as the pipeline will run subterranean, until it exits at the Receiving Pit, and becomes an above-ground pipeline. The distance between the depth of 130 feet, out seaward for approximately 25,733 feet. (\approx 4.68 miles) to a depth of 1755 feet, has very low incidence of corals; HSWAC has estimated that only 2 colonies or an estimated total of 3 feet squared will be impacted. Most corals (with a maximum of 7.5% percent benthic cover) were observed in the area between the depth of 30 feet (the Receiving Pit) to the depth of 130 feet (approximately the first 1,544 feet or 0.29-mile distance of the above-ground pipeline).

NOW, THEREFORE, the parties agree to the following:

1. Authorized Take of Stony Coral and Live Rock. This Agreement only authorizes the take of stony coral colonies each with maximum diameter of 50 cm and with an aggregate maximum area of 86 square feet and the take of live rock with an aggregate maximum area of 14,000 square feet (aggregate maximum area + 20%). The take of or impact to other resources is not covered by this Agreement.
2. HSWAC Responsibilities
 - a. Excavation. HSWAC shall comply with the following during the excavation phase:
 - i. For sediment generating construction activities, HSWAC shall adhere to the following:
 - A. Sediment generating construction activities in waters of Hawaii. must be avoided for a period of two weeks before predicted primary annual coral spawning events, during the predicted primary annual coral spawning events and two weeks after the predicted primary annual coral spawning events. HSWAC shall consult with DAR regarding predicted annual coral spawning events.
 - B. Appropriate sediment control measures (e.g., sheet piling, silt curtains, etc.) must be employed and maintained to contain and minimize sedimentation/turbidity outside of the authorized footprint during sediment generating construction activities, including excavation of the Receiving Pit.

- C. Sediment generating activities may include activities such as excavation, dredging or micro-drilling in the Receiving Pit.
- ii. HSWAC shall submit to DAR for approval the final “Receiving Pit Location and Construction Plan,” which is required by the U.S. Army Corps of Engineers (“USACE”) DA-POH-2004-01141 (“USACE permit”), prior to the start of construction activities. The final location of the Receiving Pit shall be approved by DAR prior to the start of construction.
 - iii. HSWAC shall conduct a Coral Survey of the Receiving Pit, prior to the start of construction, that includes the identification each species of each stony coral colony, amount, size (ecological volume) and condition/health of each colony and provide a copy of the Coral Survey to DAR.
 - iv. The Receiving Pit must be sited to prevent physical damages to the adjacent coral spur ridges during construction, which may require adjusting the final location of the Receiving Pit prior to construction. The final Receiving Pit Location and Construction Plan and Coral Survey, must demonstrate the exact location of the Receiving Pit and related construction structures (e.g., sheet piling, barge or temporary platform mounted crane/excavator anchoring and/or piling, temporary pipeline holdback structures, etc.), how impacts to the adjacent coral spurs will be avoided, and the unavoidable coral colony impacts that would occur within the footprint of the Receiving Pit.
- b. HSWAC shall provide to DAR, prior to fabrication, a material safety data sheet (“MSDS”) that contains information on the chemicals, compounds or mixtures, including instructions for the safe use and potential hazards associated with the proposed type of concrete used for collars and concrete cap.
- c. Staging and Transport. HSWAC shall take steps to avoid and minimize potential impacts to aquatic resources during staging and transport of pipeline system, including but not limited to:
- i. Before any in-water staging, transport, and deployment activities are conducted, HSWAC shall prepare and submit to DAR for review and approval operational and contingency plans that minimize potential impact to aquatic resources during staging, transport, and deployment;
 - ii. Maintaining buoyancy of all components during staging and transport;

- iii. Maintaining navigational control during transport; and,
 - iv. Preparing contingency plans that work to minimize potential risks to aquatic resources that may result from any unforeseen circumstances during staging, transport and deployment.
- d. Deployment: Avoidance or Minimization Measures 1. HSWAC shall do the following during the deployment phase:
- i. HSWAC shall have an in-water marine biologist present to consult with in-water engineers when conducting the pre-survey to determine path of least impact before deployment of the pipe.
 - ii. HSWAC shall not conduct in-water construction operations during periods where wave heights exceed 5 feet.
 - iii. HSWAC shall employ measures, including diver-assisted structure installment, remotely operated submersible vehicles, pre- construction surveys, etc. to ensure that structures are placed over sand, rubble, or otherwise non-coral covered substrate to the extent practicable. The installation of the pipeline system structures on the seafloor (e.g., pipeline collars/weights, pile anchors, etc.) and temporary construction equipment and structures (e.g., pipeline tieback anchors and lines, piling, silt curtains, vessels and anchors, moorages, etc.) shall avoid contact with coral colonies or macro-invertebrates to the maximum extent practicable.
 - iv. HSWAC shall place structures over sand and not over live rock to the maximum extent practicable.
 - v. HSWAC shall adjust spacing between collars to the maximum extent practicable to avoid congregations of small stony corals (0-50cm) that may create a combined coverage area that is $\geq 1\text{m}$.
 - vi. HSWAC shall adjust spacing between collars to the maximum extent practicable to avoid live rock that are sized $\geq 1\text{m}$ in vertical width and or height.
 - vii. HSWAC shall minimize sedimentation and force of impact from deployment of pipeline and associated components, including but not limited to conducting controlled deployment of collars and HDPE pipeline, such as air release control with valves on seaward-end of pipeline during deployment or other method, and controlled deployment (lift-bags or other method, if applicable) of Receiving Pit components (sheet-piles,

piles, pipe connectors, or other various infrastructure). HSWAC shall minimize the velocity of descent of the pipeline components, to lessen the impact to the surrounding environment, to the maximum extent practicable, without compromising structural integrity of pipeline or negatively affecting logistical operations.

- viii. The project shall not exceed a maximum of 210 “Type A” collars (76 square feet), 36 “Type B” collars (31.7 square feet) and 706 “Type C” collars (3.6 square feet) for a maximum total of 952 collars. The footprint per collar is ranges between 3.6 square feet and 76 square feet and the collars will be spaced approximately 20 feet apart along the approximately 4.68-mile pipeline. The total footprint of the Receiving Pit and collars shall not exceed 21,242.8 square feet of sea floor.
- e. Minimization Measure 2: Coral Transplantation. Twenty-nine (29) coral colonies were documented in the proposed Receiving Pit location in a coral survey conducted by HSWAC in 2013 (Coral Survey, 2013, HSWAC) and each measured ≤ 30 cm diameter. To minimize losses to stony coral in the Receiving Pit location, HSWAC shall conduct transplantation of coral colonies which measure ≥ 5 cm diameter, in the Receiving Pit location, at the time of transplantation.
 - i. HSWAC shall submit to DAR for approval 1) the most current Coral Survey so that DAR can review the baseline information for accuracy, and 2) the “Coral Transplantation Monitoring Plan” (“CTMP”) for DAR’s review and approval, before HSWAC implements the plan.
 - ii. HSWAC shall harvest coral colonies from the Receiving Pit area, transplant them to a recipient site located inshore of the proposed Receiving Pit, or another site (after approval by DAR) in close proximity to the Receiving Pit, with similar depth, light quality, and substratum composition as the donor site at the Receiving Pit footprint, and perform post-transplantation monitoring, as described in the CTP. If the recipient site needs to be relocated, DAR shall review and approve the new recipient site before HSWAC implements transplantation.
 - iii. HSWAC shall complete the transplantation of corals before the start of any construction.
- f. In –Water Monitoring: HSWAC agrees to do the following:

- i. HSWAC shall conduct monitoring surveys designed to determine the impact to ecosystems function and services resulting from the project and the rate of recovery of ecosystem function and services. HSWAC shall provide the raw data and analysis to DAR at the end of each survey year:
 - A. Benthic/Fish Surveys of Receiving Pit Area. HSWAC shall conduct benthic (including coral and live rock) and fish surveys of the footprint of the Receiving Pit before excavation and replicate surveys of the concrete cap situated upon the footprint of the Receiving Pit. Surveys shall identify the species and quantify the percent cover of benthic organisms, detect the rates of successional colonization that occur and quantify the changes in associated fish population. HSWAC shall conduct one baseline benthic and fish survey before excavation of the Receiving Pit and another replicate survey after the concrete cap is installed. In addition, HSWAC shall conduct surveys every three years thereafter for a period of 15 years after the installation of the concrete cap.
 - B. Benthic/Fish Surveys of Surrounding Area. HSWAC shall conduct benthic (including coral and live rock) and fish surveys of the areas surrounding the collars affected by the impact force of deployment (areas with fragmentation/pulverization of coral and live rock or suspension and blanketing of sediment) of the collars and HDPE pipeline installation, or areas that receive shade (where blocking of the sunlight occurs) from the collars and HDPE pipeline structures, to a minimum depth of 100 feet. Surveys shall identify the species and quantify the percent cover of benthic organisms, detect the rates of successional colonization that occur in areas around the collars, and quantify the changes in associated fish population. HSWAC shall conduct one survey of the benthic area before the deployment of the collars and HDPE pipeline and another survey of the benthic area after the deployment of the collars and HDPE pipeline within the first year of deployment. In addition, HSWAC shall conduct a survey every three years thereafter for a period of 15 years after the deployment of the collars and HDPE pipeline.
 - C. Benthic/Fish Surveys of Pipeline Associated Surfaces. HSWAC shall conduct benthic (including coral and live rock) and fish surveys of the surface of the concrete collars and the HDPE pipeline to a minimum depth of 100 feet. Surveys shall identify the species and quantify the percent cover of benthic organisms, detect rates of successional colonization occurring on the surfaces

of the concrete collars and the HDPE pipeline and quantify the changes in associated fish population. HSWAC shall conduct one survey within one year after installation of the HDPE pipeline, and conduct surveys every three years thereafter for a period of 15 years.

- D. Coral Transplant Surveys. HSWAC shall conduct coral surveys of the stony coral colonies proposed for transplantation from the footprint of the Receiving Pit before stony coral colonies are excavated and transplanted. Surveys shall be designed to identify stony coral species, amount, size (ecological volume) and condition/health of each colony. HSWAC shall also conduct coral surveys of the stony coral colonies post-transplantation and compare them to surveys of control colonies. Surveys shall be designed to identify the health, survival, mortality, and growth of each transplanted colony after transplantation. Surveys shall include of tagging test and control colonies for repeated identification, identifying stony coral species, amount, size (ecological volume) and condition/health of each colony. HSWAC shall conduct one survey of the Receiving Pit area before excavation. HSWAC shall conduct one survey of the control site and transplant site within one month after transplantation is completed. In addition, HSWAC shall conduct surveys of the control and transplant sites every year thereafter, for a period of 5 years.
- ii. Prior to conducting surveys, HSWAC shall submit all monitoring plans to DAR for review and approval. HSWAC shall share with DAR the results of any biological surveys of the impact site as well as the results of the Marine Biological Monitoring Plan referenced in the USACE permit and the Field Sampling Plan portion of the HSWAC Proposed Water Quality and Biota Monitoring Program from the Applicable Monitoring and Assessment Plan (“AMAP”), a component of Section 401 Water Quality Certification.
 - iii. HSWAC shall maintain a visual record of operations and surveys including but not limited to photo-documentation and video-documentation. HSWAC shall conduct underwater photo or video-documentation of representative portions of the above monitoring, components of the pipeline, impacted areas and in-water operations.
 - iv. HSWAC shall submit all photo-documentation and video-documentation to DAR.

- v. HSWAC shall provide to DAR annual reports detailing results of all the monitoring activities listed above.
 - g. Removal of infrastructure. Prior to removal of all or part of the pipeline system, HSWAC shall submit to DAR a written removal plan for approval. The plan shall include a timeline for removal and information regarding compliance with all applicable federal and state laws. In the event that the removal causes any impact to aquatic resources, HSWAC shall notify DAR immediately.
 - h. Additional In-Water Activities, including Pipe Maintenance, Malfunctions, Repairs, and Removals. In the event of any unforeseen circumstances involving the installation, operation, or removal of the pipeline system (e.g., equipment malfunction or breakage), HSWAC shall do the following:
 - i. HSWAC shall immediately notify DAR of any in-water activities not outlined in this Agreement, which may be necessary to minimize impacts to aquatic resources.
 - ii. Where any interference, nuisance, harm, or hazard may be caused to stony coral and live rock, HSWAC shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard to stony coral and live rock.
3. Review of Documents and Plans by DAR. For all documents and plans requested from HSWAC by DAR, DAR shall make reasonable efforts to review and respond to these documents and plans within 45 days.
 4. Contractors and Agents under HSWAC. HSWAC is responsible for ensuring that its contractors and agents comply with the provisions of this Agreement.
 5. Liability. This Agreement does not make the BLNR or the State of Hawaii liable to HSWAC or its contractors and agents in any way for any claim or personal injury or property damage which may occur during any activity authorized under this Agreement; moreover, HSWAC agrees to indemnify, defend, and hold the State harmless against any and all claims of personal injury, death, or property damage resulting from HSWAC's or its contractor's or agent's activities under this Agreement. This provision shall survive the termination of this agreement.
 6. Amendments. This Agreement shall not be altered, amended, modified or otherwise changed, in any respect or whatsoever, except by a writing duly executed by the BLNR and HSWAC. This Agreement contains the entire agreement between HSWAC and the BLNR.

7. Termination. This Agreement may be terminated by (1) written agreement; or (2) if the BLNR determines that HSWAC has violated any of the Terms and Conditions of this Agreement; or (3) completion of all of the Terms and Conditions of the Agreement.
8. Severability. If any provision of this Agreement shall be judged by a court of competent jurisdiction to be void, invalid, illegal, or unenforceable for any reason, the same shall in no way affect, to the maximum extent permissible by law, any other provisions of this Agreement, the application of such provision under circumstances different from those adjudicated by the court, or the validity or enforceability of this Agreement as a whole, and to the extent necessary, this Agreement shall be construed as if the void, invalid, illegal, or unenforceable provision had never been contained herein.
9. Governing Law. This Agreement shall be construed, interpreted and applied in accordance with the laws of the State of Hawaii.
10. Binding on and Inuring to Benefit of Successors and Assigns. This Agreement shall be binding upon, and shall inure to the benefit of the parties, and their respective successors and assigns.
11. Notices. All notices and other communications in connection with this Agreement shall be in writing and shall be deemed to have been received by a party when actually received in the case of hand delivery or facsimile transmission to the following addresses:

STATE:

State of Hawaii

Board of Land and Natural Resources

Department of Land and Natural Resources

Division of Aquatic Resources, Room 330

1151 Punchbowl Street

Honolulu, Hawaii 96813

Attention (Position Title): _____

Telephone: _____

Facsimile: _____

HSWAC:

Honolulu Seawater Air Conditioning, LLC

1132 Bishop Street, Suite 1410,

Honolulu, Hawaii 96813

Attention (Position Title): _____

Telephone: _____

Facsimile: _____

12. Any refusal to accept delivery of a written notice delivered or mailed to the addresses set forth below, or the non-receipt of any facsimile transmission sent to the facsimile number set forth in herein below resulting from the non-operation of the receiving party's facsimile equipment, shall be deemed to be receipt of such notice for the purposes of this Agreement.
13. Effective Date. This Agreement will become effective upon the last signature of the Parties.

In view of the above, the parties agree to abide by the terms and conditions of this Agreement, and execute said Agreement by their signatures, on the dates below, to be effective as of the date of the last signature on this document.

APPROVED: _____
ERIC MASUTOMI
President and CEO
Honolulu Seawater Air Conditioning

APPROVED: _____
SUZANNE D. CASE
Chairperson
Board of Land and Natural Resources

APPROVED AS TO FORM:

Deputy Attorney General

Exhibit 2 - Conservation District Use Permit ("CDUP") OA-3579

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



RECEIVED
DEPT. OF CONSERVATION
& COASTAL LANDS
2011 JUN 30 P 2:38

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY H. KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII DEPT. OF LAND & NATURAL RESOURCES
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:TM

CDUP: OA-3579

George Krasnick
TEC Inc.
1003 Bishop Street
Pauahi Tower, Suite 1550
Honolulu, HI 96814

JUN 27 2011

SUBJECT: Conservation District Use Permit (CDUP) OA-3579 for the Honolulu Seawater Air Conditioning Project

Dear Mr. Krasnick:

This is to inform you that on June 23, 2011, the Board the Board of Land and Natural Resources approved your client, Honolulu Seawater Air Conditioning, LLC's Conservation District Use Application OA-3579 for the Honolulu Sea Water Air Conditioning Project located upon submerged land, makai of Kakaako Waterfront Park, offshore of plat (1) 2-1-060 and temporary use of Channel D of Keehi Lagoon, island of Oahu subject to the following conditions:

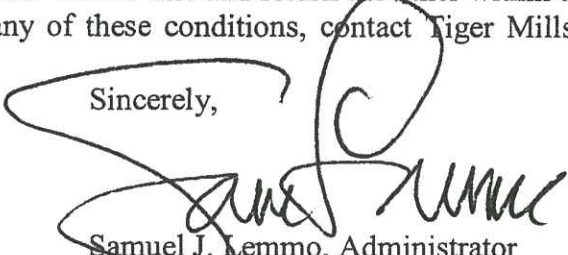
1. The applicant shall comply with all applicable statutes, ordinances, rules, regulations, and conditions of the Federal, State, and County governments, and applicable parts of the Hawaii Administrative Rules, Chapter 13-5;
2. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury or 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 applicant shall obtain appropriate authorization from the Department for the occupancy of State lands;
4. The applicant shall consult with the Division of Aquatic Resources in regards to a determination for a Special Activity Permit;
5. The applicant shall coordinate with the Department of Transportation's Oahu District Office due to the proximity of the project to Honolulu Harbor to avoid conflicts with maritime operations during construction of this project;

6. The applicant shall coordinate with the Division of Boating and Ocean Recreation at Keehi Lagoon and the Coast Guard relative to maintaining safe navigation during construction activities and operations;
7. The applicant shall comply with all applicable Department of Health administrative rules;
8. Before proceeding with any work authorized by the Board, the applicant shall submit four (4) copies of the construction and grading plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three (3) of the copies will be returned to the applicant. Plan approval by the Chairperson does not constitute approval required from other agencies;
9. Any work done or construction to be done on the land shall be initiated within three years of the approval of such use, in accordance with construction plans that have been signed by the Chairperson, and, unless otherwise authorized, shall be completed within five years of the approval. The applicant shall notify the Department in writing when construction activity is initiated and when it is completed;
10. All mitigation measures set forth in the application materials, in the final environmental impact statement, and all required permits within the conservation District for this project are hereby incorporated as conditions of this permit;
11. The Applicant shall provide public notification to inform the public of the project;
12. The applicant understands and agrees that this permit does not convey any vested rights or exclusive privilege;
13. In issuing this permit, the Department and Board have relied on the information and data that the applicant has provided in connection with this permit application. If, subsequent to the issuance of this 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/or the Department may, in addition, institute appropriate legal proceedings;
14. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take the measures to minimize or eliminate the interference, nuisance, harm, or hazard;
15. Should historic remains such as artifacts, burials or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact HPD (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;
16. The applicant shall insure access to Mokauea Island to those individuals that have a vested interest related to the island;

17. Other terms and conditions as may be prescribed by the Chairperson; and
18. Failure to comply with any of these conditions shall render this Conservation District Use Permit null and void.

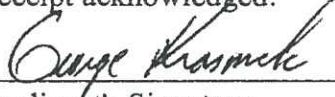
Please acknowledge receipt of this approval, with the above noted conditions, in the space provided below. Please sign two copies. Retain one and return the other within thirty (30) days. Should you have any questions on any of these conditions, contact Tiger Mills at (808) 587-0382.

Sincerely,



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

Receipt acknowledged:


Applicant's Signature

Date 6/29/11

c: Chairperson
ODLO/DAR/DOBOR/SP
DOT-Harbors/Coast Guard/DOA
City & County of Honolulu, DPP

**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
Honolulu, Hawaii**

180-Day Exp. Date: July 9, 2011

June 23, 2011

**Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii**

REGARDING: Conservation District Use Application (CDUA) OA-3579
for the Honolulu Sea Water Air Conditioning (SWAC)
Project

AGENT/APPLICANT: TEC Inc. for Honolulu Seawater Air Conditioning, LLC.

LOCATION Submerged Land, Makai of Kakaako Waterfront Park,
Offshore of Plat (1) 2-1-060 and Channel D of Keehi
Lagoon, Island of Oahu

LANDOWNER: State of Hawaii

USE: Kakaako -Approximately (≈) 8.0 Acres
Keehi Lagoon - ≈ 50.0 Acres

SUBZONE: Resource

DESCRIPTION OF AREA AND CURRENT USE (Exhibits 1 & 2)

The project corridor lies offshore of Kakaako Waterfront Park, south of Honolulu Harbor, on the Island of Oahu. Temporary use of Channel D of Keehi Lagoon, for offshore staging is also proposed. Both the permanent and temporary use of submerged lands are within the Resource subzone of the Conservation District.

The shoreline area is fixed by a man-made revetment and storm water box culvert. The revetment was constructed on a limestone bench in 6-15 feet of water between Fort Armstrong and Kewalo Basin along the seaward side of Kakaako Waterfront Park. The Park has a number of paved walking, jogging and running trails. The park sits atop a former landfill and solid waste disposal site.

According to the applicant, the marine area in the vicinity of the proposed pipeline corridor has been subjected to municipal waste dumping, sewage discharges, dredged

APPROVED BY THE BOARD OF
LAND AND NATURAL RESOURCES
AT ITS MEETING HELD ON

JUN 23 2011

ITEM K-3

material dumping and other waste disposal activities. The area is also exposed to barge tow cables dragging on the seafloor and sediment inputs from Honolulu Harbor.

Based on benthos surveys taken at the project corridor, the area has limited marine biological resources and is seasonally subject to high surf that keeps the marine community in an early stage of succession. High summer surf causes turbidity and abrasion by moving rubble along the seafloor thereby reducing the biological productivity and potential establishment of coral colonies. Four biotopes are present seaward of the shoreline including scoured limestone, scattered corals, dredged rubble and sand. A more detailed marine biological survey of the pipeline breakout area (Approximately 1,800-ft offshore) was conducted to verify the presence/absence of corals¹.

An archaeological study and cultural impact assessment was prepared for the project. No valued cultural, historical or natural resources customarily or traditionally used by native Hawaiian's will be adversely affected within the Conservation District. It is believed that there are no historic, archaeological or cultural sites within or near the submerged land portion of the project.

There are no known permanent habitations of rare, threatened or endangered species in the vicinity of the project. Turtle nesting beaches, haul-outs, and preferred algal forage areas are limited if not entirely absent in both the pipe assembly area and the pipe corridor. There may be transient species of importance such as whales, monk seals and particularly turtles in the vicinity of the project site.

Flies and Point Panic are surfing spots near here. Paddling may also take place in the vicinity. Pole, net and spear fishing is practiced near shore. Commercial fishery landings data verify that this area is not an important fishing ground.

Keehi Lagoon

Channel D parallels the western shore of Sand Island and is \approx 0.75 miles long and dredged to a 12-foot depth with a mud bottom. Its benthic community is consistent with highly disturbed marine ecosystems. The area is lightly used for small boat moorings. The southern end of the channel is closed off with no access to the ocean, reducing ocean effects in this area. The area is relatively remote amongst an industrial setting.

Canoe paddlers practice to the far north of the temporary site. Arrangements have been made to ensure access to Mokauea Island. The staging area is not known to have species of concern, valued habitat or pristine coral reefs.

An archaeological study and cultural impact assessment was prepared. No valued cultural, historic, natural or traditional resources were identified as Keehi Lagoon and the adjacent onshore staging area were created from fill generated by dredging. However, a

¹ The project calls for micro-tunneling out to about 1,800-feet offshore and then placement of pipes on the ocean floor for the remainder of the pipeline distance.

fishing settlement is located on Mokauea Island on the opposite side of Channel D and access to the island will be maintained thru agreements made with individuals wanting access.

PROPOSED USE (Exhibits 3, 4, 5, 6, 7 & 8)

Honolulu Seawater Air Conditioning, LLC is proposing to utilize submerged land within the Conservation District to accommodate underground and submerged intake and return pipes. The applicant is proposing to obtain deep, cold seawater, utilize its thermal properties to cool a closed loop freshwater system and return the seawater back to the sea. Approximately (\approx) 8-acres of submerged land is proposed for permanent use and \approx 50-acres of the waters of Keehi Lagoon are proposed for temporary use. The project consists of:

- A 63"Ø seawater **intake pipe** extending offshore beyond State waters \approx 5-miles to a depth of about -1,700-ft;
- A 54"Ø seawater **return pipe** extending offshore \approx 3,500-ft. to a depth of \approx -150-ft; and
- A temporary staging area to assemble the pipes along the western shore of Sand Island and in the adjoining Channel "D" of Keehi Lagoon.

Other components of the proposal outside of the State Conservation District within the Urban District include a two-story pumping/cooling station containing pumps, heat exchangers and auxiliary chillers and a network of chilled water distribution pipes from the station to customer buildings in the downtown area.

The pipelines would be installed behind the shore and micro-tunneled to about 1,800-feet offshore in order to reduce negative impacts to the near shore benthic environment and to protect the pipes from high waves and storm surge in the nearshore zone. An offshore receiving pit would be excavated and backfilled at the pipeline's "breakout" location. The breakout point and the remainder of the offshore route of the seawater intake pipe were determined based on bathymetry, biological characteristics, and the use of the area.

The intake and return pipelines will be installed adjacent to each other and would be supported on pre-cast concrete supports which would be placed on the pipelines prior to their filling and sinking at the project site. The seaward end of the **intake** pipe would be unscreened and would terminate in a right-angle elbow, such that water would be drawn into the pipe from about 14-feet above the sea bottom. The seaward end of the **return** pipeline would terminate in a diffuser.

Breakout & Receiving Pit

Through micro-tunneling, the intake pipe and the return pipe will emerge \approx 1,800-feet offshore (\approx 31' deep). A 30' x 40' receiving pit would be excavated 20-ft below the sea floor and contained in sheet piles extending from the bottom of the pit to 10-ft above the seafloor. The pit would facilitate retrieval of the micro-tunneling machine. About 2,700

cubic yards of material is expected to be removed from the pit. All soil removed from the tunnel, jacking pits and receiving pit would be processed and disposed of on land.

The pit and breakout point would serve as a junction to join the underground pipes with the portion of the pipes that continue seaward on the ocean bottom. After completion of the connections, the pit would be backfilled and covered with a concrete cap at roughly the same elevation as the surrounding seafloor. The cap material would not be subject to movement and would be permanent. Concrete used for the cap has previously been shown to create substratum for the recruitment of corals. The bathymetry would be restored to original conditions to the extent practical so that ocean currents would not be modified and the probability of underwater landslides would not be increased. The backfill would be crushed pre-washed basalt gravel graded between 3/8" and 2" size. The sheet piles would be removed or cut off at least 2-feet below the existing seafloor.

Pipelines

From the breakout point at 1,800-feet offshore, the seawater intake and return pipe would parallel one another for about 1,700 linear feet to the end of a diffuser. Both the intake and return pipes would be secured in combination anchor collars that would hold both pipes adjacent to one another. As there is a concern with barge tow cables that drag on the seabed near the harbor entrance, specially designed snag-resistant anchor weights would be used down to a depth of -150-feet where the **return pipe** would terminate at a discharge point with a 25-port, 400-foot long diffuser about 3,500-feet offshore. The **intake pipe** would extend beyond the State's jurisdiction and into federal waters.

The temperature of the return seawater would vary between 53°-58° F depending on system demand. There will be a Zone of Mixing (ZOM) around the diffuser. The plume would be denser than the receiving water as it is colder than the surrounding waters. As such, the returned seawater would tend to sink rather than rise and the discharge is unlikely to reach surface waters. The applicant will obtain a ZOM permit from the **State Department of Health** that shall regulate the mixing and discharge criteria.

The pipes would be pinned to the bottom with hollow steel piles driven through anchor collars mounted on the pipeline and filled as necessary with concrete. Beyond the terminus of the return pipe, the intake pipeline would be held in place by gravity anchors. Each anchor would weigh \approx 17,800 pounds and provide an effective weight of 10,300 pounds when submerged.

Keehi Lagoon Staging and Deployment

The Keehi Lagoon would be used temporarily for floating storage and staging of the pipes assembly. Individual pipe segments would be heat-fused to form longer segments and then flange-bolted to form a continuous line at the temporary staging area on shore. Private security guards and/or patrols will be located onsite at the staging area. During pipe assembly activities, BMPs shall be implemented to reduce, minimize and mitigate potential impacts. On the landward adjacent staging area, construction fencing and silt fences would be installed to reduce sediment runoff.

Once the pipe segments are fused together on the adjacent shoreline into 3,300-ft segments, the assemblage would be launched directly into the waters of the Lagoon as fused and then moored. The floating segments would be stored (moored) in Channel D pending completion of all segments. Five to eight 3,300-foot long sections of pipeline could be stored in the Lagoon. Concrete anchors and stiffening rings would be added to the pipe from a barge while the pipe sections float in the Keehi Lagoon staging area. A 150-ft to 200-ft buffer would be established between the floating pipe and the adjacent east and west shoreline to ensure safety and security of the floating pipe and will minimize any interruption of access along the shoreline.

Deployment of the pipe assembly would most likely take place in the winter when large southern swells are infrequent. As the pipeline is towed out of Keehi Lagoon, sections would be added and would be maneuvered out via the Kalihi channel. A minimum of 3 tugs would be used to maneuver the pipelines to their final position offshore of Kakaako once all the segments are fused together.

The pipelines would be towed to and extended seaward of the breakout point. The shore end would be temporarily secured to provide tension and the pipeline sunk in a controlled manner from shallow to deep water by filling the pipes with seawater. The pipelines would be positioned in a single day and sunk at night to avoid the effects of differential heating of the pipe segments during the day. During the final assembly of the pipelines and towing from Keehi Lagoon, a fleet of boats would guide vessel traffic safely around the work area. Over the course of the following week, the offshore pipes would be connected to the pipes contained in the micro tunneled shaft at the breakout point. Subsequently, the breakout point would be capped with concrete.

Impacts/Mitigation

According to the applicant, the location of the breakout point is sufficiently far offshore to avoid and minimize impacts from high waves and storm surge to the pipes, while reducing potential negative effects on benthos ecosystems including coral reefs. The breakout point is located in coral rubble. The applicant shall coordinate with the Coast Guard relative to maintaining safe navigation during construction activities and operations.

Construction impacts would be mainly associated with the excavation of the receiving pit for the micro-tunneling machine at the breakout point. The offshore construction at the breakout point would require vessels and possibly a pile-supported platform to occupy the area for 7-9 months. Water activities in the immediate area surrounding the breakout point, an area of about 200-ft², ≈1,800-ft offshore would be restricted for 7-9 months during construction activities.

Sediments would be removed and bathymetry would be altered at the pit. Identified temporary impacts would include elevated levels of suspended sediments in waters surrounding the excavation area. There is no practicable alternative to the proposed discharge of gravel and concrete to cap the breakout pit. As the breakout point is very sparse in coral coverage and along the seaward path of the pipes, construction activities would potentially affect a few square feet of living coral colonies.

According to the applicant, there would likely be loss of coral colonies within the ZOM if the temperature at the bottom is reduced below thermal thresholds. Once operational, the system would impact water quality and marine biota within a defined ZOM. According to the applicant, the pipes and anchors would increase substrate area for benthic organisms and could increase the number of areas in which fish could avoid predation.

It is not anticipated to interrupt or diminish recreational activities makai of Kakaako Park as the surf spot is to the east of the site and paddlers tend to stay clear of the west end of Kakaako Park near the vicinity of Honolulu Harbor.

According to the applicant, once completed the presence of the pipes would have no effect on current recreational uses of the offshore area. The pipes would increase bottom relief and provide habitat. Bathymetry was considered to find the shortest pipe length required to get to the desired intake depth. The primary biological criterion was avoidance of areas of high coral coverage. A marine biological survey of the breakout area was conducted.

Construction activities would cease if listed (endangered or threatened) marine species are observed entering the active project construction site and work would be allowed to resume only after the listed species departs the construction site on its own. The National Marine Fisheries Service would be notified of each such occurrence.

Best management practices (BMPs) would be fully implemented during construction of the receiving pit and breakout point such as daily inspections of equipment for conditions that could cause spills or leaks; cleaning of equipment prior to deployment in the water; proper location of storage, refueling and servicing sites; and implementation of adequate spill response and storm weather preparation plans. The applicant has proposed specific mitigation measures to address potential adverse effects noted as **Exhibit 9**. The submerged portions of the pipeline and its anchoring structures are unlikely to be visible from boats passing over them given their depth and the water clarity in the vicinity.

Public fishing, boating and paddling in Keehi Lagoon would be temporarily restricted for safety reasons during the pipe assembly and storage portions of the project, the HSWAC shall work in close collaboration with the Division of Boating and Ocean Recreation in this regard. Access along the shoreline in the vicinity of the onshore staging area would be temporarily restricted during the pipe assembly activities.

Additional Discretionary Government Permits

According to the applicant, further authorizations within the Conservation District are required. Effluent discharge will be regulated through the National Pollution Discharge Elimination System (NPDES) Permit and a Zone of Mixing Permit from the Department of Health. A Department of the Army (DA) Permit is also required for compliance with both Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. In addition Essential Fish Habitat and Endangered Species Act Section 7 Consultation will be required as part of the DA permit. In accordance with the above-mentioned

permits, water quality and marine biota monitoring would be conducted during construction and operation. The Draft Environmental Impact Statement under the National Environmental Policy Act (NEPA) to support the Department of the Army permit is currently being processed.

The purpose of the development is to transfer the cold from the deep seawater to a closed loop fresh water distribution network for air conditioning of various buildings located downtown. According to the applicant, this proposal will eliminate the need to use up to 260 million gallons of potable fresh water per year and reduce up to 84 million gallons of wastewater generation per year. The HSWAC will reduce the use of ozone depleting substances and chemicals (refrigerants) used in maintaining existing conventional air conditioning systems. The project would further the objectives of numerous plans and policies of the State of Hawaii. The proposal is estimated to cost approximately \$200 million and once all permits are obtained, it is projected that the system will be operational within 18 months thereafter.

SUMMARY OF COMMENTS

The application was referred to the following agencies for their review and comment-the Federal Offices of National Oceanic & Atmospheric Administration; the Fish & Wildlife Services; the Coast Guard, and the Department of the Army; the State: Department of Land and Natural Resources Divisions of: Aquatic Resources, Boating & Ocean Recreation, Conservation & Resource Enforcement, Oahu District Land Office and Parks; the Department of Health; the Department of Transportation-Harbors; the Office of Hawaiian Affairs; the Office of Environmental Quality Control; the City: Department of Planning and Permitting and the Ala Moana/Kakaako Neighborhood Board. In addition, this CDUA was also sent to the nearest public library, the Hawaii State Public Library, to make this information readily available to those who may wish to review it.

Comments were received by the following and summarized by Staff as follows:

THE STATE

OFFICE OF HAWAIIAN AFFAIRS

OHA recognizes that major project components that have the potential to adversely impact natural and cultural resources will occur outside of the Conservation District and are not subject to this CDUA.

OHA is continuing to assess the potential impacts of project activities that may adversely impact marine resources and activities within the Conservation District.

Applicant's response

HSWAC looks forward to contributing to Hawaii's energy independence while doing so in a culturally sensitive fashion that implements prudent management practices and protocols. Precautions will be taken to minimize impacts to the natural environment. Disruption of public access will be restricted to the work area for public safety.

DEPARTMENT OF LAND AND NATURAL RESOURCES

Aquatic Resources

In response to our comments that have been included with the Final Environmental Impact Statement (EIS), the applicant has stated that they will work with DAR and comply with all state laws concerning coral and live rock. DAR would like to remind Honolulu Seawater Air Conditioning, LLC. that they may need to get a Special Activity permit from DAR if this project damages coral or live rock.

DAR would like to request a copy of the "videos and still photos" mentioned in their response to our comments of the path of the pipes.

Applicant's response

HSWAC will comply with all state laws concerning coral and live rock and we look forward to collaborating with DAR in obtaining a special activity permit, where applicable. HSWAC will gladly share useful videos and still photos of any submerged areas surveyed.

Boating and Ocean Recreation

No objections

Conservation and Resource Enforcement

No comments

Oahu District Land Office (ODLO)

The applicant is aware that easements are required on State lands.

Office of Conservation and Coastal Lands

Some of the concerns that the OCCL continues to have include the effects the nutrient rich deep-water return may have on benthos communities in the vicinity of the return pipe, potential coral damage, and lack of mitigation to prevent sea life from entering the intake pipe. However, Staff believes that these matters will be covered under the Department of the Army Permits for construction and water quality.

State Parks (SP)

State Parks has agreed to the use of the park for the assembly and storage of the pipeline prior to its being placed in Keehi Lagoon. Conditions for the use of the park will be addressed in the permits issued by us to the applicant.

Should the CDUA be approved, please forward a copy to Parks to insure that the conditions imposed in the permits we issue do not conflict with those conditions imposed through the CDUP for Keehi Lagoon and the shoreline of the park.

Applicant's response

We will continue collaboration, dialogue and coordination with your Office to ensure consistency in the conditions of approval. We greatly appreciate your support for using a portion of the Sand Island State recreation Area in the future for temporary staging of the project.

DEPARTMENT OF TRANSPORTATION

We request that the applicant coordinate with our Oahu District Office due to the proximity of the project to Honolulu Harbor to avoid conflicts with maritime operations during construction of this project.

Applicant's response

We will continue collaboration, dialogue and coordination with Harbors Oahu District Manager to ensure efficient maritime operations in Honolulu Harbor and its surroundings during the HASWAC project construction and staging.

THE CITY AND COUNTY OF HONOLULU

DEPARTMENT OF PLANNING AND PERMITTING

Applicant's Response

Communications with your agency has been very helpful and we appreciate the guidance and insight of your staff. We will continue to collaborate with your agency.

ANALYSIS

After reviewing the application, by letter dated January 13, 2011, the Department finds that:

1. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to §13-5-22, Hawaii Administrative Rules (HAR), P-6 PUBLIC PURPOSE USES land uses which are undertaken by non-governmental entities which benefit the public in accordance with public policy and the purpose of the conservation district. Please be advised, however, that this finding does not constitute approval of the proposal;

2. Pursuant to §13-5-40 of the HAR, a Public Hearing is required;
3. In conformance with Chapter 343, Hawaii Revised Statutes (HRS), as amended, and Chapter 11-200, HAR, the Final Environmental Impact Statement has been reviewed and accepted by the State Office of Planning. Notice was published in the September 23, 2009 issue of the Environmental Notice; and
4. The Conservation District portion of this project does not lie within the Special Management Area.

Notice of CDUA OA-3579 was published in the February 8, 2011 issue of the Environmental Notice.

A public hearing took place at 6 pm on March 8, 2011, at the Kalanimoku Building Board Room. Four individuals, OCCL Staff and the applicant's associates and agents were present. All testimony supported the project.

CONSERVATION CRITERIA

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

1. *The proposed land 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.

Staff believes the proposal is consistent with the purpose of the Conservation District. The project uses cold ocean water and returns it to the sea in its natural state. Estimates of proposed reduction of uses include: potable water (260 million gallons/year); wastewater generation (84 million gallons per year); fossil fuel consumption and the production of pollutants associated with fossil fuel combustion (reductions of CO₂ emissions-84,000 tons/year; VOC emissions-5 tons/year; Carbon Monoxide emissions-28 tons/year; Nitrogen Oxides emissions-169 tons/year; Sulfur Oxide emissions - 165 tons/year) and reduces the use of harmful chemicals (refrigerants) utilized in air conditioning.

The energy reduction and removal of harmful emissions increases the public health and is a step towards moving the State towards natural energy alternatives thereby increasing the State's sustainability.

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

The objective of the Resource subzone is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to §13-5-3, Hawaii Administrative Rules (HAR), §13-5-22, P-6, PUBLIC PURPOSE USES.

The project site is not pristine and areas have been previously disturbed. Once the pipeline is completed, aquatic species may colonize along the permanent structure.

Staff believes the project is a good use of an existing natural resource that leaves no residuals or by-products. Ocean water is used and returned in its natural state.

Further authorizations are required by State and Federal agencies that will contribute to ensuring the sustained use of the resources.

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

Staff believes that recreational resources, historical resources, scenic and open space resources, and coastal ecosystems, shall be preserved with the incorporation of best management practices and compliance with government regulations.

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

According to the applicant, the proposed routing for the HSWAC offshore pipes were located specifically to avoid and minimize adverse impacts to existing natural resources. Mitigation for the project is noted as Exhibit 9. Staff generally believes the proposed land use will not cause substantial adverse impacts to existing natural resources within the surrounding area, community or region. The proposed land use does not change the existing use of the area.

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

Staff believes that the proposed land use will be compatible and appropriate to the physical conditions of the area, as the proposed use does not require new construction of above ground facilities. The project will not create a visual or functional change in the project area.

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

Upon construction completion, the project area shall return to its natural state and mitigation for potential impacts have been formulated. Staff believes the existing physical and environmental aspects of the land shall be preserved.

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

There will be no subdivision of land for this proposed project.

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

Staff believes the proposed project will not be materially detrimental to the public health, safety and welfare. During the construction period, the public shall be restricted from entering the work area to maintain safety. There shall be controlled access to clearly define and limit work areas, which shall protect the public from potential hazards.

As previously mentioned, the proposal will have a number of beneficial impacts including reductions in consumption of fossil fuels, electricity, potable water, and refrigerant compounds that will positively contribute to the public's health, safety and welfare.

DISCUSSION

The project will utilize an abundant ocean resource, cold deep seawater to cool a closed loop freshwater system that will traverse Honolulu's Downtown area. The cold of the deep will be transferred to the water in the loop system by corrosion-resistant alloy plate heat exchangers and then returned to the ocean.

The applicant has proposed specific mitigation measures to address potential adverse effects noted as **Exhibit 9**. Mitigation commitments contained in the Final Environmental Impact Statement are to be incorporated into the project and will be made conditions of the permit. Should endangered or threatened marine species enter the active project construction site, construction activities would cease and work would be allowed to resume only after the listed species departs the construction site on its own. The National Marine Fisheries Service would be notified of each such occurrence.

Staff notes, a request for comments regarding this application was forward to the Federal Offices of National Oceanic & Atmospheric Administration, the Fish & Wildlife Services, the Coast Guard, the Department of the Army (DOA) and the State Department of Health (DOH). Although no comments were forthcoming from these agencies, additional required authorizations from the DOA and the DOH could incorporate concerns these agencies may have.

During the processing of the draft EIS, staff had noted a concern with the lack of mitigation to prevent curious life forms from entering the unscreened intake pipe.

However staff notes that the intake pipe commences in federal jurisdictional waters under the Department of the Army permit and we anticipate that these issues and potential affects to marine species of concern will be further mitigated thru the Federal permitting process.

Staff also has a concern regarding the introduction of nutrient rich deep-sea water to warmer near the coast waters and the potential for algal blooms in the zone of mixing. However staff notes the Department of Health has oversight over the ZOM.

As stated by the applicant, construction activities would potentially affect a few square feet of living coral colonies. As it appears there will be damage to coral or live rock, consultation shall take place with the Division of Aquatic Resources in regards to a determination for a Special Activity Permit.

As there will be temporary impacts to recreational users and makai view planes at Keehi Lagoon and makai of Kakaako Waterfront Park, the public should be notified of the project. Upon completion, the ocean view plane will be restored and the submerged portions of the pipeline and its anchoring structures are unlikely to be visible from boats passing over the system given their depth and the waters clarity in the vicinity.

The DOT Harbors Division requests that the project managers coordinate with the Oahu District Office due to the proximity of the project to Honolulu Harbor to avoid conflicts with maritime operations during construction of this project. In addition, the applicant has stated that they shall coordinate with the Division of Boating and Ocean Recreation at Keehi Lagoon and the Coast Guard relative to maintaining safe navigation during construction activities and operations.

State Parks has agreed to the use of the park for the assembly and storage of the pipeline prior to its being placed in Keehi Lagoon. Conditions for the use of the park will be addressed in the permit issued by State Parks.

The applicant is aware that easements are required for the use of submerged State land.

Further authorizations within the Conservation District are required. Effluent discharge will be regulated through the National Pollution Discharge Elimination System (NPDES) Permit and a Zone of Mixing Permit from the Department of Health. A Department of the Army (DA) Permit is also required for compliance with both Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. In addition Essential Fish Habitat and Endangered Species Act Section 7 Consultation will be required as part of the DA permit. In accordance with the above-mentioned permits, water quality and marine biota monitoring would be conducted during construction and operation. Staff believes compliance with all State, Federal and County requirements will ensure the sustained use of the resources.

Staff believes the project will contribute positively towards the State's Energy Policy and the State 2050 Sustainability Plan. A number of similar systems are now in operation around the world in Sweden, Hong Kong, Canada, the USA and Keahole Point on the

Kona side of the Big Island. The engineering design and deep water pipeline installation has been proven to be feasible, reliable and economical.

When the Honolulu Seawater Air Conditioning is operational, estimates of proposed reduction of uses include: potable water (260 million gallons/year); wastewater generation (84 million gallons per year); fossil fuel consumption and the production of pollutants associated with fossil fuel combustion (reductions of CO₂ emissions-84,000 tons/year; VOC emissions-5 tons/year; Carbon Monoxide emissions-28 tons/year; Nitrogen Oxides emissions-169 tons/year; Sulfur Oxide emissions - 165 tons/year) and the use of harmful chemicals (refrigerants) utilized in air conditioning.

This project involves a number of components with impacts occurring landward to support the distribution of chilled water. Long-term impacts of the intake and return of seawater in the Conservation District are limited to the affects of the pipeline on the benthic community. Staff believes that impacts are not significant and that additional permits, authorizations and mitigative measures will act to further reduce environmental affects.

Staff believes that the proposal furthers the State and the City's ability to achieve energy savings, reduce fossil fuel dependency, and furthers Hawaii's stated sustainability goals.

RECOMMENDATION:

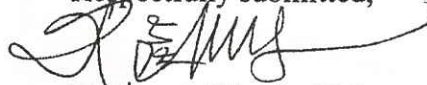
Based on the preceding analysis, Staff recommends that the Board of Land and Natural Resources APPROVE Honolulu Seawater Air Conditioning, LLC's Conservation District Use Application OA-3579 for the Honolulu Sea Water Air Conditioning Project located upon submerged land, makai of Kakaako Waterfront Park, offshore of plat (1) 2-1-060 and Channel D of Keehi Lagoon, Island of Oahu subject to the following conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules, regulations, and conditions of the Federal, State, and County governments, and applicable parts of the Hawaii Administrative Rules, Chapter 13-5;
2. The applicant, 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 or 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 applicant shall obtain appropriate authorization from the Department for the occupancy of State lands;
4. The applicant shall consult with the Division of Aquatic Resources in regards to a determination for a Special Activity Permit;

5. The applicant shall coordinate with the Department of Transportation's Oahu District Office due to the proximity of the project to Honolulu Harbor to avoid conflicts with maritime operations during construction of this project;
6. The applicant shall coordinate with the Division of Boating and Ocean Recreation at Keehi Lagoon and the Coast Guard relative to maintaining safe navigation during construction activities and operations;
7. The applicant shall comply with all applicable Department of Health administrative rules;
8. Before proceeding with any work authorized by the Board, the applicant shall submit four (4) copies of the construction and grading plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three (3) of the copies will be returned to the applicant. Plan approval by the Chairperson does not constitute approval required from other agencies;
9. Any work done or construction to be done on the land shall be initiated within three years of the approval of such use, in accordance with construction plans that have been signed by the Chairperson, and, unless otherwise authorized, shall be completed within five years of the approval. The applicant shall notify the Department in writing when construction activity is initiated and when it is completed;
10. All mitigation measures set forth in the application materials, in the final environmental impact statement, and all required permits within the conservation District for this project are hereby incorporated as conditions of this permit;
11. The Applicant shall provide public notification to inform the public of the project;
12. The applicant understands and agrees that this permit does not convey any vested rights or exclusive privilege;
13. In issuing this permit, the Department and Board have relied on the information and data that the applicant has provided in connection with this permit application. If, subsequent to the issuance of this 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/or the Department may, in addition, institute appropriate legal proceedings;
14. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take the measures to minimize or eliminate the interference, nuisance, harm, or hazard;

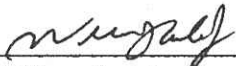
15. Should historic remains such as artifacts, burials or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact HPD (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;
16. The applicant shall insure access to Mokauea Island to those individuals that have a vested interest related to the island;
17. Other terms and conditions as may be prescribed by the Chairperson; and
18. Failure to comply with any of these conditions shall render this Conservation District Use Permit null and void.

Respectfully submitted,

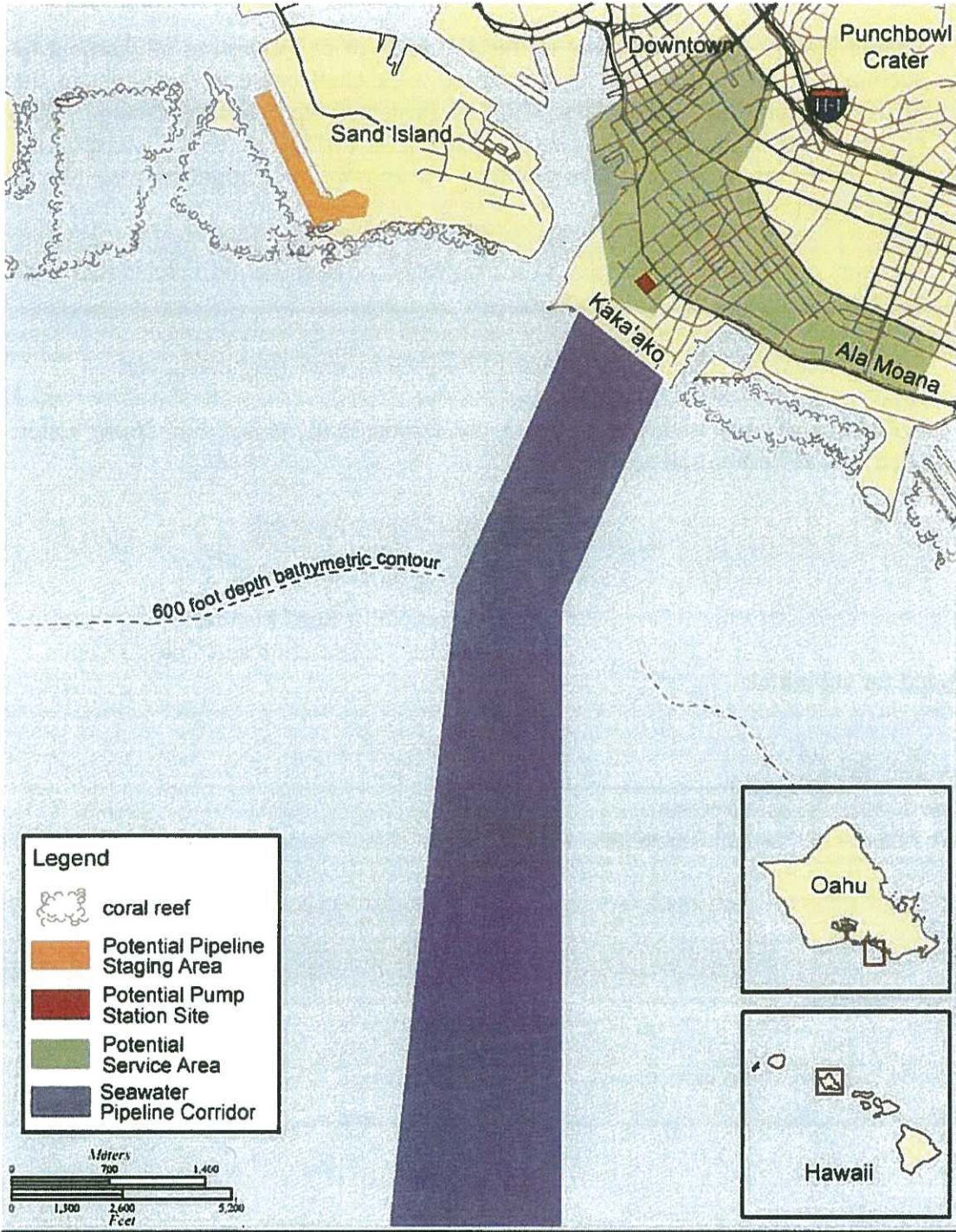


K. Tiger Mills, Staff Planner
Office of Conservation and Coastal Lands

Approved for submittal:



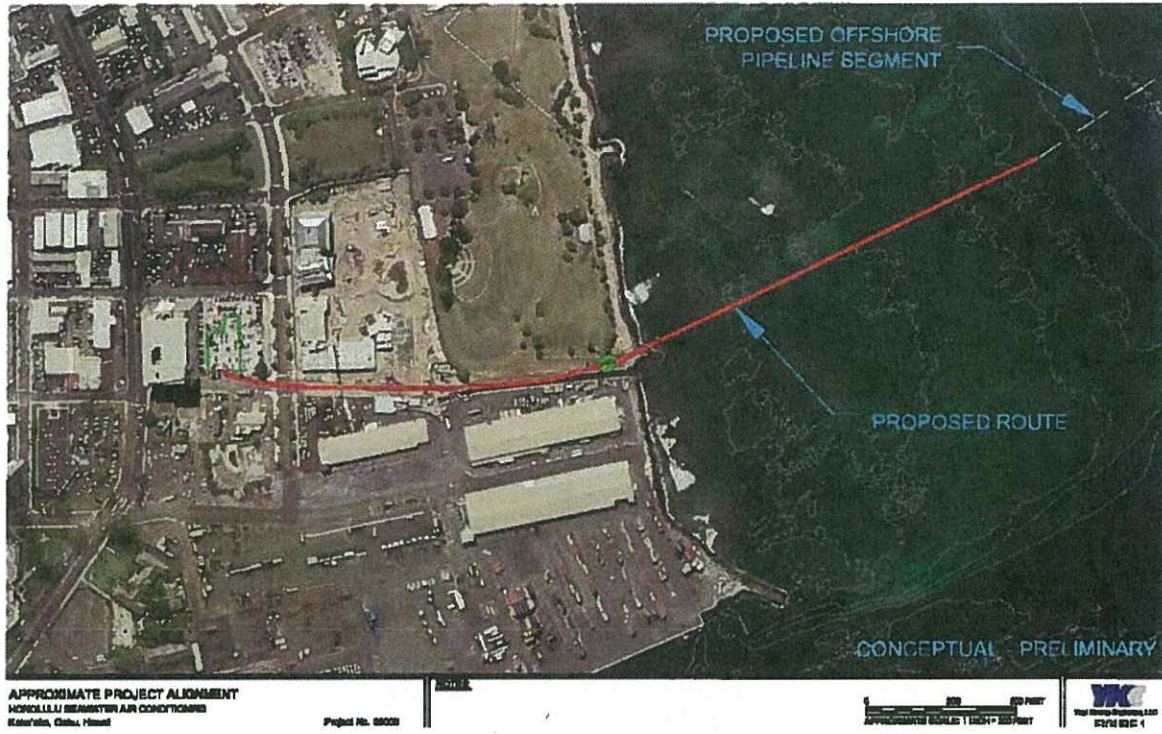
William J. Aila, Jr., Chairperson
Board of Land and Natural Resources




HSWAC Project Area



EXHIBIT 1



Approximate Project Alignment

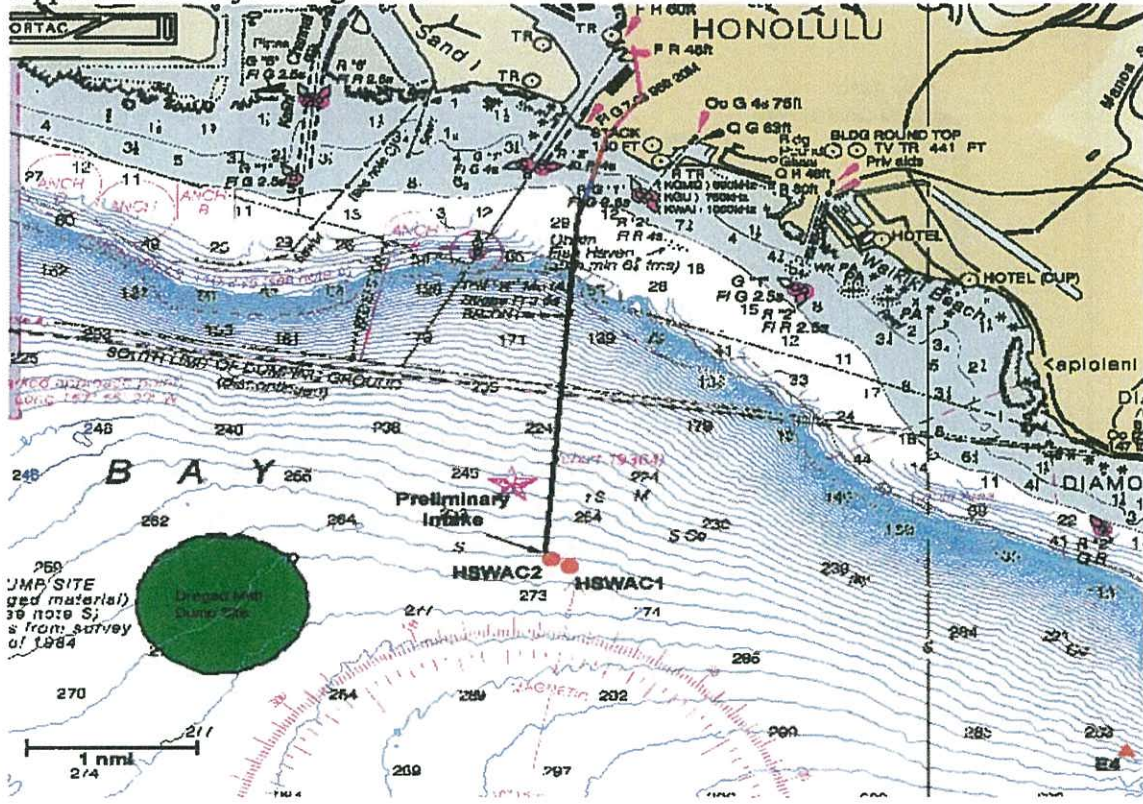
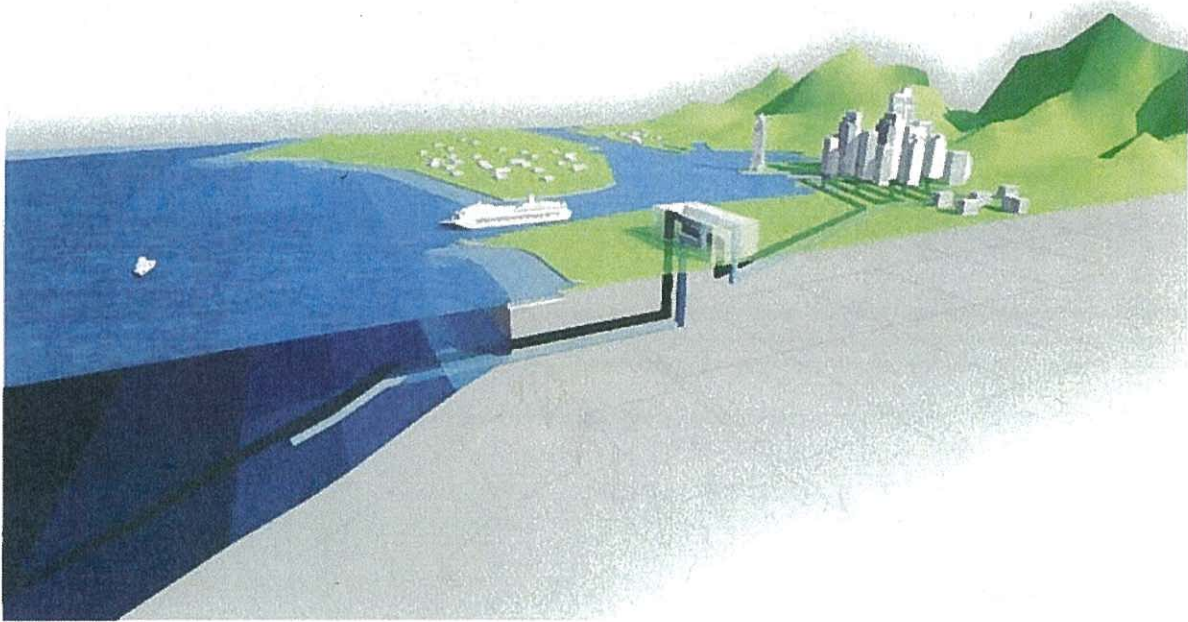
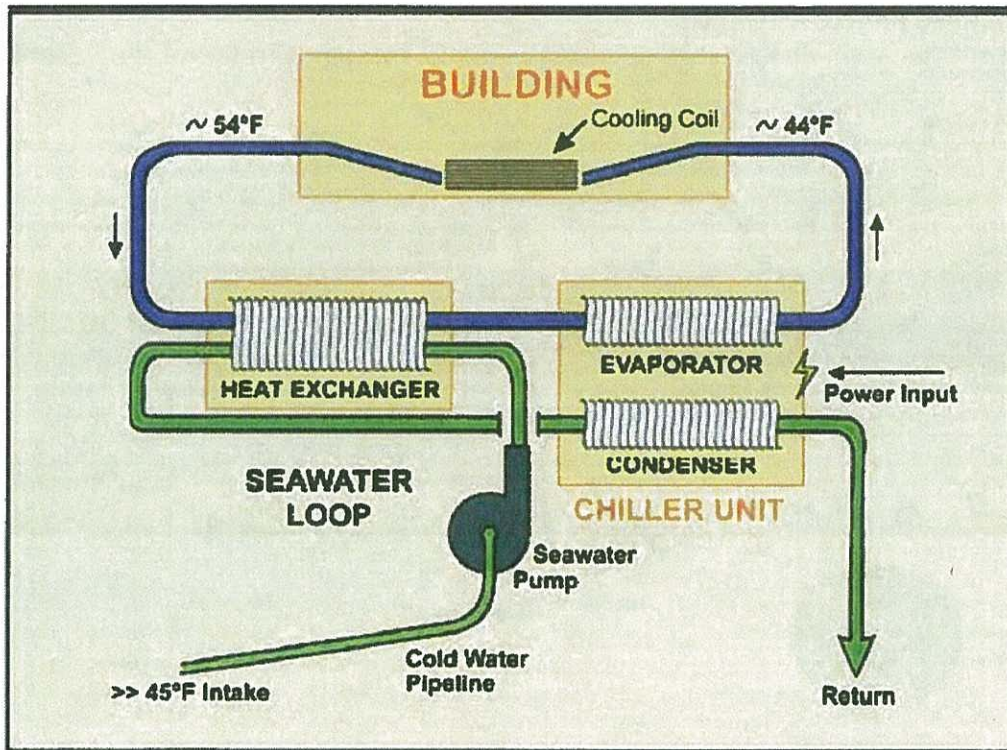


EXHIBIT 2



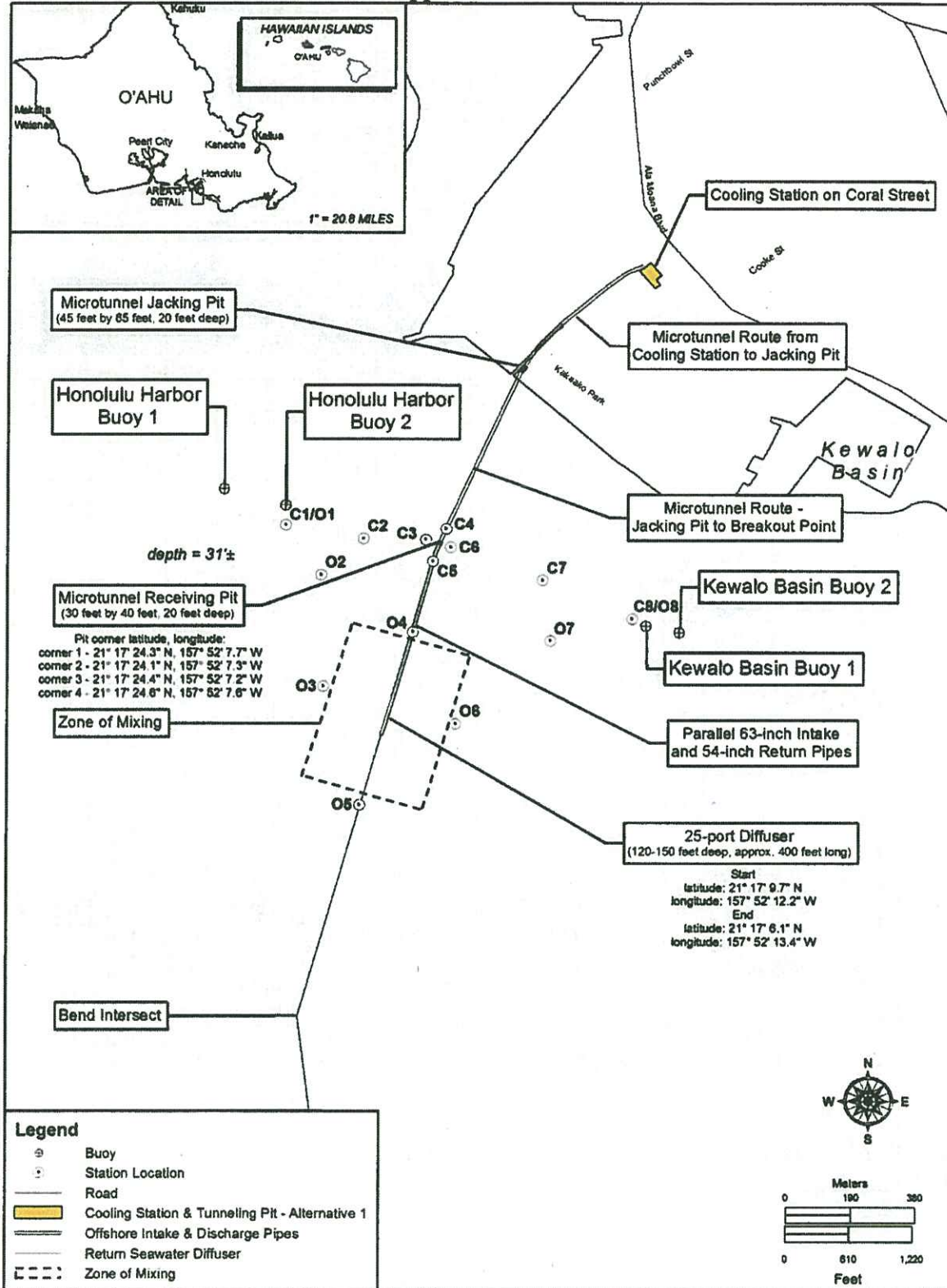
Conceptual drawing of major components of the HSWAC System



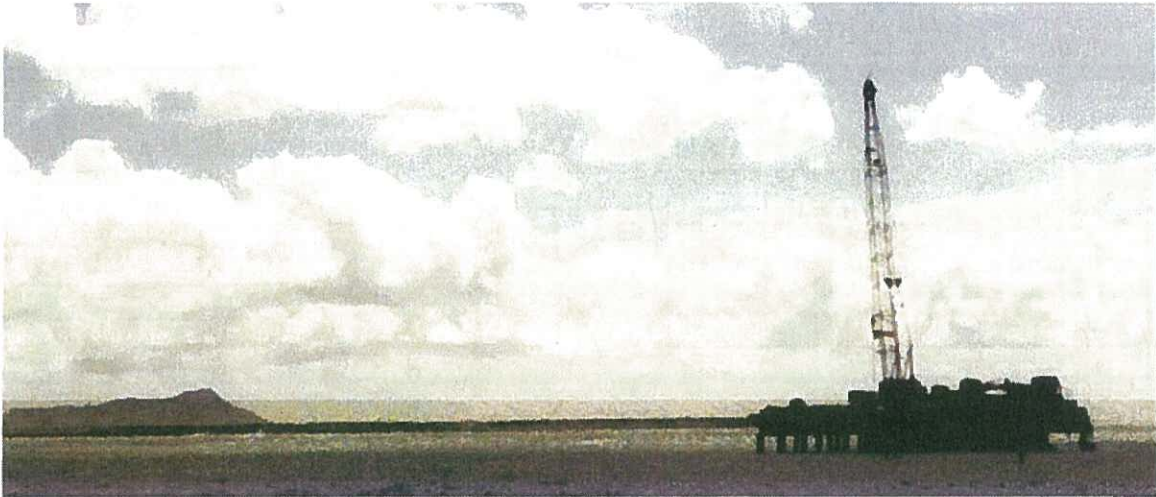
Schematic drawing of the HSWAC System with chiller enhancement

EXHIBIT 3

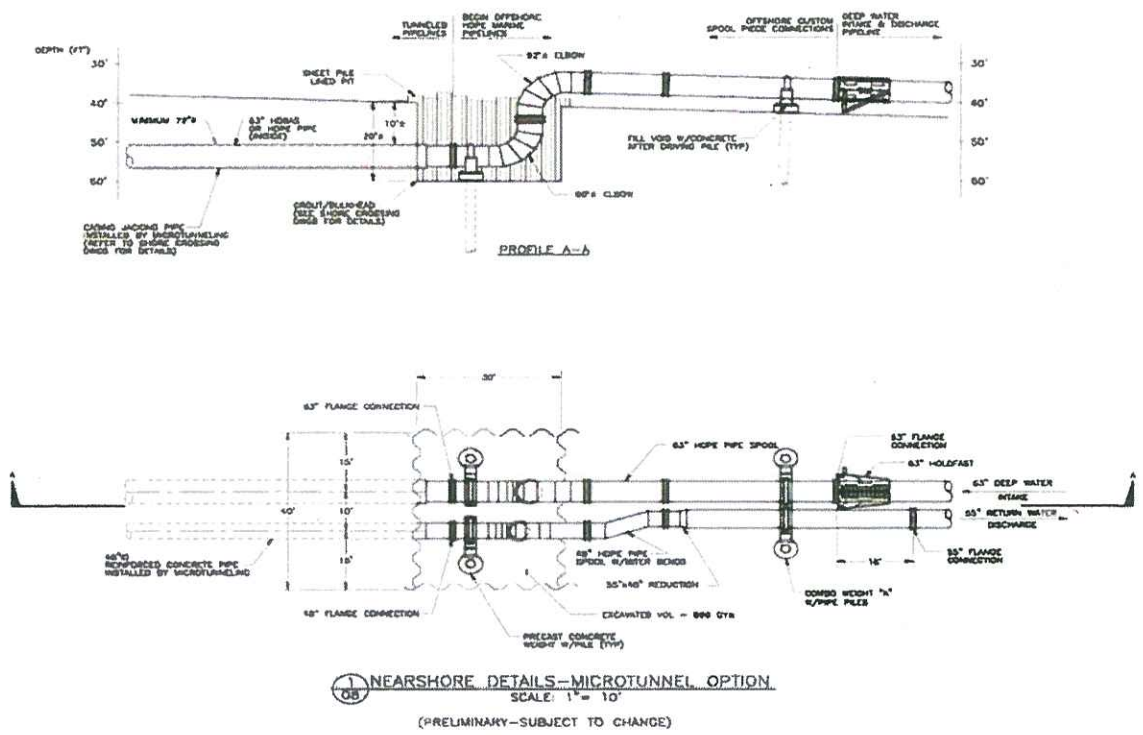
From the Conservation District Use Application



Components in the Conservation District



Example of micro-tunneling rig

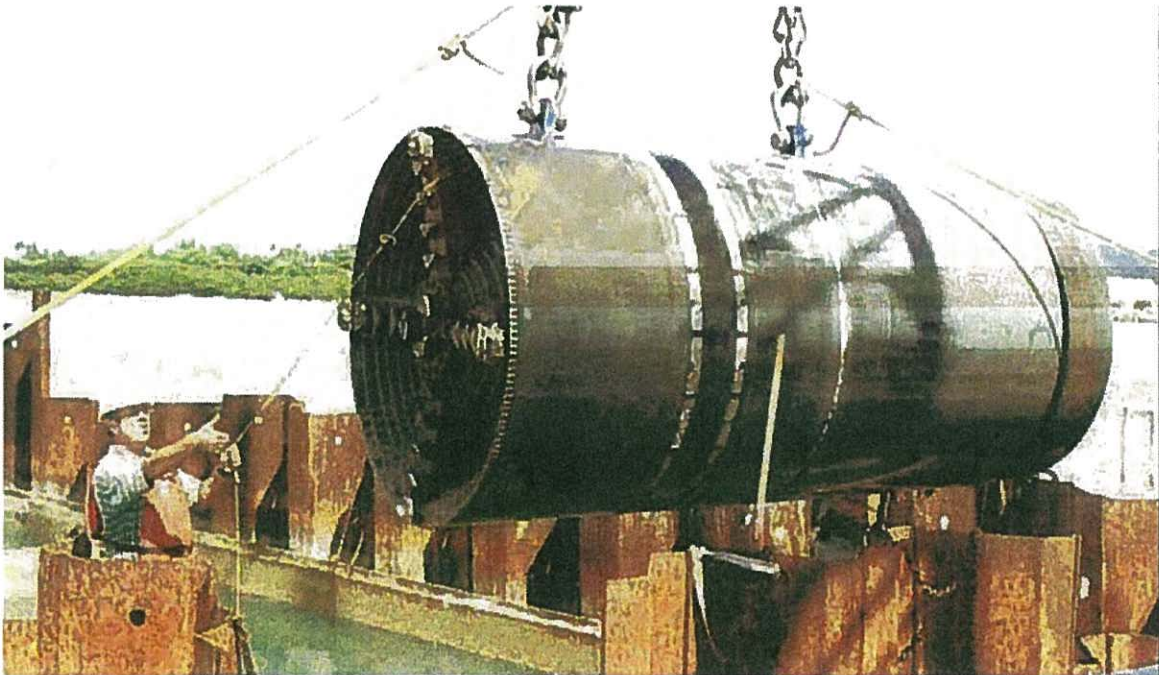


Details of Connection Between Micro-tunneled and Surface-mounted Segments of Seawater Pipes

Photos from the Honolulu Seawater Air Conditioning Final Environmental Impact Statement August 2009



Sample of Micro-tunnel Shaft



Retrieval of Micro-tunnel Machine



Sand Island Channel D- Boundaries of Proposed Nearshore Keehi Lagoon Staging Area

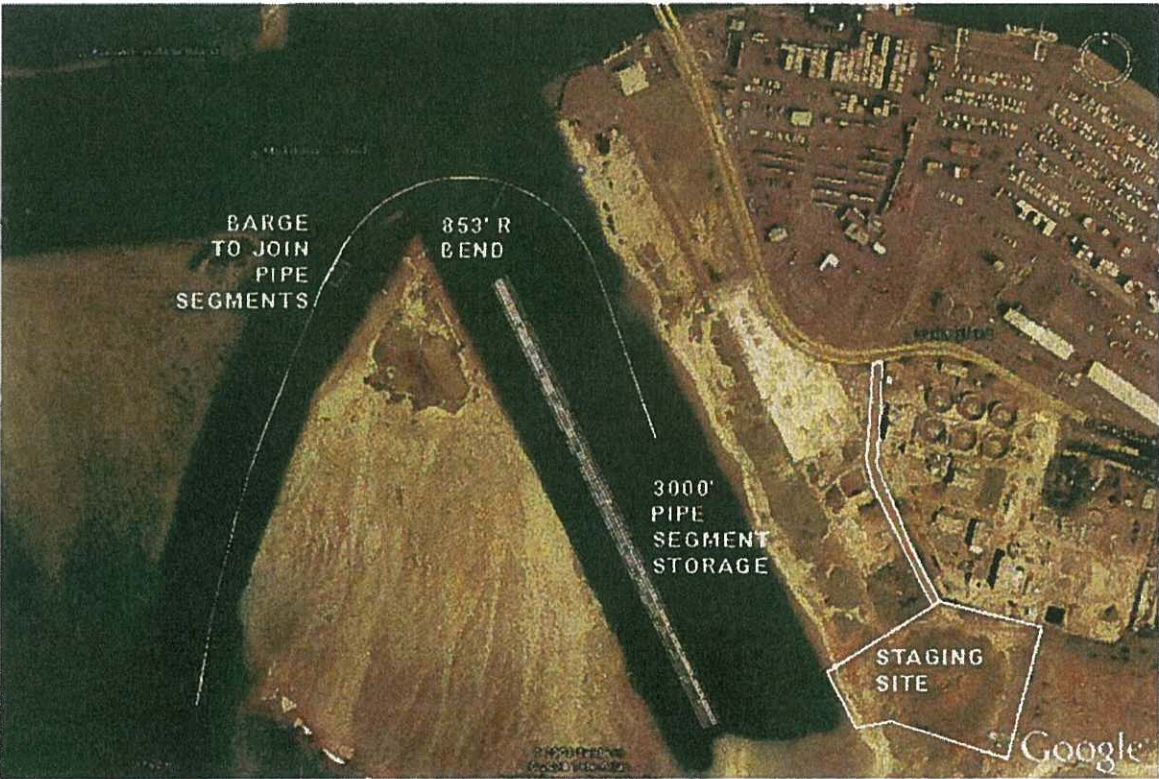


Table 3: Proposed Mitigation Measures for the Overall Project (not specific to the CDUA)

<i>Resources Potentially Adversely Affected</i>	<i>Proposed Mitigation Measures</i>
Cultural/ Archaeological	Implement approved "Archaeological Mitigation Plan"
Navigation	Publish "Notice to Mariners" Post picket boats in Ke'ehi Lagoon channel during tow-out of pipe strings
Recreation	Minimize size of restricted areas Restore areas of Kaka'ako Waterfront Park and Sand Island State Park to prior or better condition after use
Utilities/Traffic/ Health & Safety	Applicant to continue to participate in City and State Utilities Coordinating Committee to minimize conflicts with existing systems and scheduled improvements
Noise	Restrict work times Employ proper mufflers on vehicles and equipment
Hazardous and Toxic Materials/ Health & Safety	<p>Test excavated sediments and if contaminated segregate, characterize and properly disposed of</p> <p>Implement proven and effective best management practices (BMPs) and standard operating procedures (SOPs) to:</p> <ul style="list-style-type: none"> Prevent, contain, and/or clean up spills and leaks, and Provide personnel training, operational protocols and procedures and any necessary equipment required to protect human health and the environment. <p>Specific mitigation measures that would be implemented include:</p> <ul style="list-style-type: none"> Create/implement a "Hazardous Materials and Hazardous Waste Management Plan," Create/implement a "Facility Response Plan," Create/implement a "Spill Prevention Control and Countermeasure Plan" (to include training, spill containment and control procedures, cleanup procedures, agency notifications, etc.), Ensure personnel are trained as to proper labeling, container, storage, staging, and transportation requirements for hazardous substances. Also, ensure they are trained in accordance with spill prevention, control, and cleanup methods, Provide adequate and appropriate personnel protection equipment, an eyewash fountain and quick-drench facilities in the work area, and Perform all vehicle maintenance activities off-site.
Traffic	<p>The following restrictions would be employed to mitigate impacts:</p> <ul style="list-style-type: none"> No work would be done during morning and afternoon peak traffic hours. Standard work hours would be between 8:30 am and 3:30 pm, All roads would be open during peak traffic hours before 8:30 am and between 3:30 pm and 5:30 pm, Off-duty policemen would be used to direct traffic when working on major/busy intersections, The contractor would provide a minimum of two lanes for through traffic unless the street is too narrow to make this practicable, in which case work would proceed in half the roadway while keeping the other half open to traffic and alternating the flow of traffic, When activities cross intersections, safe crossings would be provided for vehicles and pedestrians, When work is done in pedestrian walkways, an alternate walkway for pedestrians would be provided,

<i>Resources Potentially Adversely Affected</i>	<i>Proposed Mitigation Measures</i>
	<p>Work on parallel streets would be performed at different times, Access to driveways would be provided when feasible, Depending on the situation, steel plates or jersey barriers shall be used to protect open trenches during non-working hours, No equipment storage or stockpiling would be done in the street right-of-way, and City requirements for repaving trenches would be followed by the contractor.</p> <p>Mitigation measures to be implemented by the contractor would include: Use night work to limit the disruption to local businesses and daytime traffic. Limit night work in streets near residential buildings, Ensure conformance with the "Traffic Management Plan," Establish a telephone hotline with advance schedule information and feedback capability, Provide construction schedules at least two weeks in advance to emergency providers, transportation companies, and businesses and residents, Launch a project website with similar capabilities, Hold a community meeting prior to beginning construction, and Prohibit lane closures during the following times:</p> <ul style="list-style-type: none"> ○ Chinese New Year, ○ Thanksgiving Day and the following day, ○ Christmas Day and two weeks before and after, ○ King Kamehameha Day Parade, ○ Honolulu Marathon, and ○ Great Aloha Run.
Health & Safety	<p>Use police escorts or oversized loads on public roadways Implement applicable OSHA requirements</p>
Natural Hazards	<p>Comply with appropriate design codes and construction specifications</p>
Water Quality	<p>Enclose offshore receiving pit in sheet piling to 10 feet above seabed Employ BMPs during construction, including: Standard BMPs for construction in coastal waters, such as daily inspection of equipment for conditions that could cause spills or leaks, Clean equipment prior to deployment in the water, Proper location of storage, refueling, and servicing sites, and Implement adequate spill response and storm weather preparation plans.</p> <p>Backfill receiving pit with pre-washed basalt gravel Grout microtunnel wall as construction proceeds to minimize possibility of contaminant migration Dispose of excavated material on land Conduct water quality monitoring during construction and operations Outfit return seawater pipe with a terminal diffuser Apply for a Zone of Mixing</p>
Protected Species	<p>The following NMFS-recommended BMPs would be followed during in-water work:</p> <ol style="list-style-type: none"> 1. Constant vigilance shall be kept for the presence of Federally-listed species, 2. When piloting vessels, vessel operators shall alter course to remain at least 100 yards from whales, and at least 50 yards from other marine mammals and sea turtles, 3. Reduce vessel speed to 10 knots or less when piloting vessels in the proximity of marine mammals, 4. Reduce vessel speed to 5 knots or less when piloting vessels in areas of known or

Honolulu Sea Water Air Conditioning Project

<i>Resources Potentially Adversely Affected</i>	<i>Proposed Mitigation Measures</i>
	<p>suspected turtle activity,</p> <ol style="list-style-type: none"> 5. Marine mammals and sea turtles should not be encircled or trapped between multiple vessels or between vessels and the shore, 6. If approached by a marine mammal or turtle, put the engine in neutral and allow the animal to pass, 7. Unless specifically covered under a separate permit that allows activity in proximity to protected species, all in-water work will be postponed when whales are within 100 yards, or other protected species are within 50 yards. Activity will commence only after the animal(s) depart the area, 8. Should protected species enter the area while in-water work is already in progress, the activity may continue only when that activity has no reasonable expectation to adversely affect the animal(s), and 9. Do not attempt to feed, touch, ride, or otherwise intentionally interact with any protected species. <p>If an Incidental Take Authorization (ITA) or Letter of Authorization (LOA) from NMFS is required under the MMPA, measures to mitigate potential impacts may include the following:</p> <p>Time restrictions. Construction activities, including pile driving, would only take place during daylight hours between 7 am to 5 pm, when marine mammal monitoring prior to and during the pile driving could be effectively implemented.</p> <p>Establishment of Safety Zones. Before any pile driving, a clearly marked safety zone for potentially affected species could be established. The safety zone would be marked by buoys for easy monitoring. Biological observers on a boat would survey the safety zone to ensure that no marine mammals are seen within the zone before pile driving begins. If marine mammals are found within the safety zone, pile driving would be delayed until they move out of the area. If a marine mammal is seen above the water and then dives below, pile driving would wait a specified amount of time and if no marine mammals are seen by the observer in that time it will be assumed that the animal has moved beyond the safety zone.</p> <p>Soft Start. Although marine mammals will be protected from Level A harassment by establishment of a safety zone, mitigation may not be 100 percent effective at all times in locating marine mammals. In order to provide additional protection to marine mammals near the project area by allowing marine mammals to vacate the area, thus further reducing the incidence of Level B harassment from startling marine mammals with a sudden intensive sound, a "soft start" could be implemented. Under a soft start, pile driving would be initiated at an energy level less than full capacity (i.e., approximately 40-60 percent energy levels) for at least 5 minutes before gradually escalating to full capacity. This would ensure that, although not expected, any marine mammals that are undetected during safety zone monitoring will not be injured.</p> <p>To reduce entrainment (and impingement):</p> <p>The intake location is approximately five miles offshore at a depth of about 1,700 ft. The euphotic zone (zone of photosynthetic light) typically does not extend beyond the first 330 ft of depth. At the intake depth biological productivity is much less than at shallower depths and the lower density of organisms reduces the potential for impingement and entrainment.</p> <p>The maximum velocity of the intake (approximately 5 ft/sec. or 3.4 miles per hour) would limit entrainment of macroorganisms.</p> <p>Variable speed pumps would be used which would provide for greater system efficiency and reduced flow requirements (and associated entrainment).</p>

Honolulu Sea Water Air Conditioning Project

<i>Resources Potentially Adversely Affected</i>	<i>Proposed Mitigation Measures</i>
Terrestrial Geology/Surface Water	Prepare and implement an "Erosion control Plan"
Air Quality	Implement BMPs to control fugitive dust
Groundwater	Implement BMPs, use settling ponds, tanks or filtration systems to treat dewatering effluents
Terrestrial Biota	Note location of "Exceptional Trees" on construction plans Survey for white terns prior to construction



"Abbott, Thorne E."
<TEAbbott@tecinc.com>
06/17/2011 03:19 PM

To "Kimberly.Mills@hawaii.gov" <Kimberly.Mills@hawaii.gov>
cc
bcc
Subject RE: HSWAC

Tiger

Thanks for the report. Looks very good.

Regarding Exhibit 4:

C's and O's represent water quality sampling stations.

The ring of C's is to capture – ambient conditions and inputs from other sources such as a rain event that is discharged to the area from the harbor or Kewalo Basin as opposed to the Zone of Mixing (box with O3, O4, O5, O6). That way we should be able to compare HSWAC discharge effects on water quality and separate those out from other discharges.

C's are water quality monitoring during construction

O's are during operation

Thanks!

I was in Maui and out of email range working so my apologies for the delayed response

Thorne

From: Kimberly.Mills@hawaii.gov [mailto:Kimberly.Mills@hawaii.gov]
Sent: Tuesday, June 14, 2011 4:55 PM
To: Abbott, Thorne E.
Subject: HSWAC

Sup?

You are not your usually gregarious self.

Attached is the board submittal for the HSWAC.

Please review carefully and let me know if there are any misstatements or misinformation so I can let Sam know prior to him going to the meeting.

We dont like surprises,esp. when the Planner makes mistakes.

Could you please do me a favor and take a look at EXHIBIT 4 of the report and let me know what are those 'stations' like O1, C7 are for Sam's information just in case the Board asks .

I will e-mail the submittal to Fredric Berg too. [Im not sure what role he plays]

The notice of the meeting and a hard copy of the submittal will be mailed to George Krasnick [Your Boss].

Sorry this took a while. It seemed complicated but when I was pau, it was a simple concept.

~Tiger

Kimberly K. Tiger Mills, Staff Planner
State of Hawaii

Special Activity Permit Processing Procedures

1. Application Process:

- Applications will be posted on the DAR web site and are available via a pdf form to download and fill out, or they can be faxed to the applicant.
- Permits will be awarded to the Principle Investigator, Project Coordinator, Teacher or Investigator in charge of the research/project. Permits will not be awarded to the institution. All assistants, students and or employees involved in the project must be listed on the permit.
- Applicant must submit the permit application to DAR at least 45 days prior to the commencement of field activities.

2. Review Process:

- DAR will not process an application for renewal unless the applicant has complied with all of the previous permit requirements.
- Any activity involving an organism protected under Federal law must have a federal permit or prior written approval from the appropriate Federal agency to engage in the requested activities. The Federal approval must accompany this application or the Division of Aquatic Resources (DAR) will not process the application.
- Certain applications may require an environmental assessment (EA) or environmental impact statement (EIS) in compliance with chapter 343, Hawaii Revised Statutes, depending on the scope of work proposed. The Division will notify the applicant of this determination. If the applicant has already prepared an EA or EIS, please submit it with the application.
- The Division reserves the right to limit the number, type or amount of organisms allowed to be collected under a permit.
- Minor permits for educational programs will be reviewed and processed by an individual staff member.
- Permits involving multiple species that have the potential to impact the resource, or where collection activities may be performed in regulated areas, will be reviewed by two staff. In the case of permits awarded on neighbor islands, the neighbor island staff may provide the second review.
- Permit applications will be processed within a 45-day time frame, unless significant concerns regarding proposed collections are present.
- Limits will be placed on the collection of organisms that have been identified as rare, have a limited range, are only found in isolated areas, or when the removal of significant amounts of the organisms could result in removal of three dimensional substrate and therefore potential habitat loss.
- Live stony coral species may not be moved or transplanted without a permit.

- The placement of multiple or large semi-permanent objects in or on the substrate requires a Special Activity Permit due to the potential impacts to coral or other benthic biota.

- If approved for processing, a blank permit will be prepared and sent to the applicant for review and signature. The applicant and all assistants must complete all of the following steps:
 - The applicant must make two copies of this permit; and
 - The applicant and all assistants must read, understand, and agree to abide by all the permit conditions by signing both copies; and
 - Mail the two signed, originals to the Division of Aquatic Resources; Special Activity Permit; 1151 Punchbowl Street, Room 330; Honolulu, HI 96813.

3. Approval/Renewal Process:

- The signed permit will be submitted to the Board of Land and Natural Resources for review and approval at a regularly scheduled public meeting. If approved, DAR will send the two signed, originals to the chairperson for signature. After signature, we will send one copy to the now valid permittee and keep one copy for our records.

4. Permit Amendments:

- The permittee may request changes to the permit. Any such request to make changes to the permit must be made in writing and received by the DAR at least 45-days prior to the change. The addition of new assistants will require each individual to sign an "Attachment" stating that they have read, understood, and agree to abide by all general and special permit conditions. No change may be implemented without written approval from the Department/DAR.
- The permittee may request to:
 - Add assistants to the permit by having each assistant sign an "Attachment" and send the document to DAR;
 - Add another permittee or be replaced by another permittee in the manner stated above; and
 - Change the activities allowed under this permit.

State of Hawai'i
 Department of Land and Natural Resources
 DIVISION OF AQUATIC RESOURCES
 1151 Punchbowl St., Rm. 330
 Honolulu, Hawai'i 96813
 (808) 587-0100 voice
 (808) 587-0115 fax

<i>For office use only</i> Permit no.: _____ Date issued: _____ Expiration date: _____

SPECIAL ACTIVITY PERMIT APPLICATION

Please fill out this application form and submit, with any relevant information, to the Division of Aquatic Resources at the address listed above. **This application must be submitted (via mail or fax) no later than 45 days prior to the projected fieldwork start date.**

Name: _____
 Organization: _____
 Address: _____
 City: _____ State: _____ Zip Code: _____

Purpose of request: <input type="checkbox"/> Scientific <input type="checkbox"/> Propagation <input type="checkbox"/> Education <input type="checkbox"/> Other
--

1. Check the actions to be authorized:

- Take (harvest) Posses Transport Inter-island Out-of-state
- Catch Kill Disturb/Transplant Observe
- Other: _____

2. Describe the activity:

D. Purpose of the activity (please provide complete details/project proposals for evaluation of the request to justify why you should receive this exemption):

D. Will the organisms be kept alive in Hawaii during the period the permit is valid?
 yes no

- ◆ Specific site/location: _____
- ◆ Is it an open or closed system? open closed
- ◆ Is there an outfall? yes no
- ◆ Is there an NPDES permit for this site? yes no
- ◆ Will these organisms be housed with other organisms? yes no
- ◆ If so, what are the other organisms?

◆ Are any of the above listed organisms non-indigenous to Hawaii?

E. What will be done with the specimens after the project has ended?

F. Please indicate the specific island(s) where the activity is to be performed?

- Kauai Niihau Oahu Molokai Maui Lanai Kahoolawe
- Hawaii NWHI location: _____

3. Who will be doing the collecting? Please indicate all persons to be covered by this permit with their institutional affiliation (i.e. "University of Hawai'i"), role in the project (such as "collector" or "photographer"), and qualification to be exempted for fishing regulations (such as "zoology major" or "professional scientist").

Name	Affiliation	Role	Qualifications
_____	_____	_____	_____

Applicant Name: _____ Phone: _____

Fax: _____ Date Submitted: _____

Email: _____

Exhibit 3 - CDUP OA-3769 Modification

DAVID Y. ICE
GOVERNOR OF HAWAII



RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS

2016 AUG 22 A 9:33

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON P.E.
DEPUTY DIRECTOR - WATER

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

REF:OCCL:TM

CDUP: OA-3769

Frederic Berg
Berg Enterprises
44-420 Kāneʻohe Bay Drive
Kāneʻohe, HI 96744

AUG 11 2016

SUBJECT: Conservation District Use Permit (CDUP) OA-3769 for the Modification to a Portion of the Honolulu Seawater Air Conditioning (HSWAC) Project

Dear Mr. Berg:

On August 9, 2016, the Chairperson of the Board of Land and Natural Resources approved the Honolulu Seawater Air Conditioning, LLC's Conservation District Use Application OA-3769 for the modification to the Honolulu Sea Water Air Conditioning Project located upon submerged land, makai of Kakaako Waterfront Park, offshore of plat (1) 2-1-060, island of Oahu subject to the conditions of attached CDUP OA-3579 as amended and the following conditions:

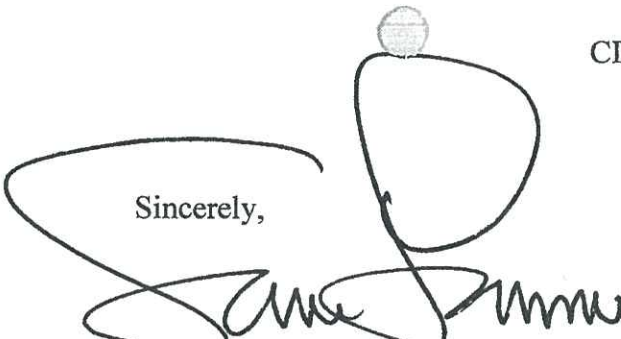
1. The permittee acknowledges that the approved work shall not hamper, impede, or otherwise limit the exercise of traditional, customary, or religious practices of native Hawaiians in the immediate rea , to the extent the practices are provided for by the constitution of the State of Hawai'i, and by Hawai'i statutory and case law;
2. Other terms and conditions as prescribed by the Chairperson; and
3. Failure to comply with any of these conditions shall render a permit void under the chapter, as determined by the Chairperson or Board.

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 (30) days. A copy of the staff report is included for your information. Should you have any questions regarding any of these conditions, contact Tiger Mills of our Office of Conservation and Coastal Lands at (808) 587-0382.

Frederic Berg
Berg Enterprises

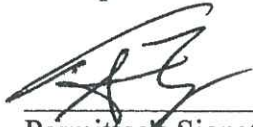
CDUP: OA-3769

Sincerely,



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

Receipt acknowledged:



Date

August 16, 2016

Permittee's Signature or Representative

c: Chairperson
ODLO
DBEDT
DOA

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
Honolulu, Hawaii

180-Day Exp. Date: November 6, 2016

TO: Chairperson's Office, Department of Land and Natural Resources

REGARDING: Conservation District Use Application (CDUA) OA-3769 for Modifications to the Honolulu Sea Water Air Conditioning (SWAC) Project

**AGENT/
APPLICANT:** Frederic Berg
Honolulu Seawater Air Conditioning, LLC.

LOCATION Submerged Land, Makai of Kaka'ako Waterfront Park, O'ahu, Offshore of Plat (1) 2-1-060

LANDOWNER: State of Hawai'i

SUBZONE: Resource

BACKGROUND

On June 23, 2011, the Board of Land and Natural Resources approved Conservation District Use Permit (CDUP) OA-3579 for the Honolulu Sea Water Air Conditioning (HSWAC) project. The purpose of the HSWAC is to transfer the cold from the deep seawater to a closed loop fresh water distribution network for air conditioning of various buildings located downtown.

The approved major project components within the Conservation District consist of:

- A 63"Ø seawater **intake pipe** extending offshore beyond State waters approximately (~) 5 miles to a depth of about 1,755 ft. below sea level;
- A 54"Ø seawater **return pipe** extending offshore ~3,500 ft. to a depth of about 150 ft. below sea level; and
- A temporary staging area to assemble the pipes along the western shore of Sand Island and in the adjoining Channel "D" of Keehi Lagoon.

Other components of the HSWAC outside of the State Conservation District within the Urban District include a two-story pumping/cooling station containing pumps, heat

exchangers and auxiliary chillers and a network of chilled water distribution pipes from the station to customer buildings in the downtown area (**Exhibit 1**).

The system draws water from 1,755 feet deep at approximately 5 miles offshore through the intake pipe, runs the water through a heat exchanger to cool chilled water for distribution and discharges the "warmer" water (53-58°) through a diffuser at the end of the return pipe.

On June 9, 2016, the Board of Land and Natural Resources approved a second time extension request to initiate and complete the project. According to HSWAC, the Department of Health (DoH) Section 401 for water quality certification was approved on November 27, 2015. However other DOH permit applications noted as the National Pollution Discharge Elimination System and the Zone of Mixing application continue to be under review. This review process has been on-going since November of 2010 and may be completed as early as the third quarter of 2016.

DESCRIPTION OF AREA AND CURRENT USE (Exhibit 2)

The project corridor lies offshore of Kaka'ako Waterfront Park, south of Honolulu Harbor, off the island of O'ahu within the Resource subzone of the Conservation District. According to the applicant, the proposed route traverses an area that has been adversely impacted by past events of discharge and disposal of dredged materials. The project site of the proposed return pipe extension descends steeply down the head of an alluvial channel that begins at a depth of about 320 feet and extends to about 600 feet below sea level.

According to the applicant, the bottom in the survey area generally consisted of variable grade, medium to coarse sands with broken coral. A loose sediment layer was observed to be at least 6-inches thick at all locations surveyed. The slopes encountered were variable, typically between 1-9 degrees and never exceeded 15 degrees.

According to the applicant, based on benthos surveys taken at the project corridor, the area has limited marine biological resources and is seasonally subject to high surf that keeps the marine community in an early stage of succession. High summer surf causes turbidity and abrasion by moving rubble along the seafloor thereby reducing the biological productivity and potential establishment of coral colonies.

An archaeological study and cultural impact assessment was prepared for the project. It is believed that there are no historic, archaeological or cultural sites within or near the submerged land portion of the project.

The applicant has stated that there are no known permanent habitations of rare, threatened or endangered species in the vicinity of the project. Turtle nesting beaches, haul-outs, and preferred algal forage areas are limited if not entirely absent in both the pipe assembly area and the pipe corridor. There may be transient species of importance such as whales, monk seals and particularly turtles in the vicinity of the project site.

Flies and Point Panic are surfing spots near here. Paddling may also take place in the vicinity. Pole, net and spear fishing is practiced near shore. Commercial fishery landings data verify that this area is not an important fishing ground.

PROPOSED USE (Exhibits 3 & 4)

Subsequent to the Board's approval, HSWAC LLC. in proceeding with the National Environmental Policy Act (NEPA) review, made the decision to relocate the discharge diffuser further offshore to expedite the review process. This was in response to a recommendation dated May 2, 2011 from the US Fish and Wildlife Service to extend the seawater return pipe to depths that are consistent with an anticipated discharge temperature of 58 ° F.

Therefore, this current CDUA proposes to extend the seawater **return pipe** 1,900 feet. The return pipe currently proposed to end ≈3,500 feet offshore is now proposed to end ≈5,400 feet offshore. The diffuser that is currently proposed to lie at a depth of 150 feet would now be located between the depths of 326 to 423 feet. At this depth most or all of the photosynthetically active radiation would be unable to take place as it is too dark. Stimulation of benthic algae and the possibility of adversely affecting coral would be reduced.

From the breakout point at 1,800 feet offshore, the seawater intake and return pipe would parallel one another for about 3,600 linear feet to the end of the diffuser. Both the intake and return pipes would be secured in combination anchor collars that would hold both pipes adjacent to one another. As there is a concern with barge tow cables that drag on the seabed near the harbor entrance, specially designed snag-resistant anchor weights would be used down to a depth of 150 feet.

The pipes would be pinned to the bottom with hollow steel piles driven through anchor collars mounted on the pipeline and filled as necessary with concrete. Each anchor would weigh ≈ 17,800 pounds and provide an effective weight of 10,300 pounds when submerged.

At depths greater than 150 feet deep, tsunami wave forces are not sufficient to require steel pipe piles to secure the concrete collars to the seabed; the weight of the collars alone would be enough. No additional steel pipe piles would be used to extend the discharge pipe. Effluent will be released via a 25-port, 250 feet in length diffuser.

138 additional large combination collars to support both the intake and discharge pipe to the end of the diffuser would replace the former 138 smaller single pipe collars supporting the intake pipe. The intake pipe would continue to extend beyond the State's jurisdiction and into federal waters. The additional pipe and greater surface area of the larger collars would result in additional benthic habitat created by the project.

The temperature of the return seawater would vary between 53°-58° F depending on system demand. There will be a Zone of Mixing (ZOM) around the diffuser. The plume would be denser than the receiving water as it is colder than the surrounding waters. As

such, the returned seawater would tend to sink rather than rise and the discharge is unlikely to reach surface waters. The applicant will obtain a ZOM permit from the State Department of Health that shall regulate the mixing and discharge criteria.

Impacts/Mitigation

According to the applicant, the location of the breakout point is sufficiently far offshore to avoid and minimize impacts from high waves and storm surge to the pipes, while reducing potential negative effects on benthos ecosystems including coral reefs. The breakout point is located in coral rubble. The applicant shall coordinate with the Coast Guard relative to maintaining safe navigation during construction activities and operations.

Construction activities would cease if listed (endangered or threatened) marine species are observed entering the active project construction site and work would be allowed to resume only after the listed species departs the construction site on its own. The National Marine Fisheries Service would be notified of each such occurrence.

Best management practices (BMPs) would be fully implemented during construction of the receiving pit and breakout point such as daily inspections of equipment for conditions that could cause spills or leaks; cleaning of equipment prior to deployment in the water; proper location of storage, refueling and servicing sites; and implementation of adequate spill response and storm weather preparation plans. The submerged portions of the pipeline and its anchoring structures are unlikely to be visible from boats passing over them given their depth and the water clarity in the vicinity.

SUMMARY OF COMMENTS

The application was referred to the following agencies for their review and comment-the Federal Offices of National Oceanic & Atmospheric Administration and the Department of the Army; the State: Department of Land and Natural Resources Divisions of: Aquatic Resources, Boating & Ocean Recreation, Conservation & Resource Enforcement and the Oahu District Land Office; the Department of Health; the Office of Hawaiian Affairs; the Office of Environmental Quality Control; the City: Department of Planning and Permitting and the Ala Moana/Kakaako Neighborhood Board. In addition, this CDUA was also sent to the nearest public library, the Hawaii State Public Library, to make this information readily available to those who may wish to review it.

Comments were received by the following and summarized by Staff as follows:

THE STATE

OFFICE OF HAWAIIAN AFFAIRS

The new proposed discharge depth of 326-423 feet would avoid adversely affecting the coral ecosystem, as at those depths are too deep for photosynthetically active radiation to stimulate benthic algae, which are necessary to support a coral habitat. Accordingly, OHA has no objections to the grant or denial of the subject CDUA modifications.

Applicant's response

We acknowledge you have no objections to the granting or denial of the modification.

DEPARTMENT OF LAND AND NATURAL RESOURCES

Division of Aquatic Resources (DAR)

Entanglement Mitigation

DAR recommends that precautions be taken and best management practices be employed by permittee to avoid potential entanglement of marine turtles, cetaceans, monk seals or any other marine organism as a result of the assembly or transportation.

DAR recommends precautions and that entire line of piping be monitored by the permittee or contactor while in assembly or transit stages, for entanglement of marine organisms. DAR must be notified of any incidences of entanglement. The NOAA Protected Species Division should also be notified. DAR: 808 587-2270 NOAA Marine Turtle Program: 808 725-5730 NOAA Fisheries Marine Mammal Hotline 1 888 256-9840.

Mitigation for Impact to Benthic Organisms

DAR recommend potential impact to benthic organisms be minimized in the staging area and in transportation by maintaining buoyancy and navigational control of all pipe and construction components while connecting the individual segments of the pipe and during the transport phase. A contingency plan, in the case of an emergency such as the loss of navigational control, rough seas or hurricane conditions that displace components or disrupt operations during assembly or transport phases should be in place with redundancy built in that would include backup vessel power should emergency maritime conditions necessitate more vessel power. DAR would like the opportunity to review and evaluate operational and contingency plans for staging, transport and deployment procedures before operations are conducted.

DAR recommends that the footprint of the combination collars avoid large coral colonies ($\geq 1\text{m}$) if sites with large coral colonies are identified in pre-survey and placement of the combination collars can be controlled. DAR recommends that combination collars be deployed in sand, soft-bottom or bare substrate areas whenever possible.

DAR requests if future data is collected that can quantify the impacts to protected or regulated marine organisms from the footprint of the anchor collars of the return pipe, that DAR be allowed to review this data and evaluate for potential impact to marine protected or regulated marine organisms.

Comments presented here only address the modification of the pipe extension proposed. All other recommendations or conditions that aim to minimize the biological impacts from all other aspects of the project will be outlined and addressed in a Special Activity Permit issued by DAR in the near future pursuant to condition #4 of CDUP OA-3579 for the Honolulu Seawater air Conditioning Project which states: *The applicant shall consult*

with the Division of Aquatic Resources in regards to a determination for a Special Activity Permit.

Applicant's response

Your comments relate to mitigation of the impact on marine organisms entanglement during assembly, storage, transport and deployment of the offshore pipe as well as mitigation impacts to benthic organisms during the deployment of the pipe. Mitigation measures as detailed in the Federal EIS, Table ES-1 have been attached (**Exhibit 5**).

Land Division

Upon completion of the installation of the pipeline, Honolulu Seawater Air Conditioning, LLC is required to furnish finalized drawings in order to determine the additional amount of consideration to be paid due to the expanded easement area.

Applicant's response

We acknowledge the project is required to provide finalized drawings to the Department to determine the additional consideration due as a result of the additional easement area.

THE CITY AND COUNTY OF HONOLULU

DEPARTMENT OF PLANNING AND PERMITTING

No comment

ANALYSIS

After reviewing the application, by letter dated May 16, 2016, the Department finds that:

1. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to §13-5-22, Hawaii Administrative Rules (HAR), P-8 STRUCTURES AND LAND USES, EXISTING (C-1) Moderate alteration of existing structures, facilities, uses, and equipment. Please be advised, however, that this finding does not constitute approval of the proposal;
2. Pursuant to §13-5-40, HAR, a Public Hearing is not required;
3. In conformance with Chapter 343, Hawaii Revised Statutes (HRS), as amended, and Chapter 11-200, HAR, the final Environmental Impact Statement (EIS) for this project has been reviewed and accepted by the State Office of Planning. Notice was published in the September 23, 2009 issue of the Environmental Notice; and
4. The Conservation District portion of this project does not lie within the Special Management Area.

By correspondence dated February 20, 2013, the Office of Planning, as the approving agency for the EIS, determined that no Supplemental EIS would be required for the

modification. Notice of CDUA OA-3579 was published in the May 23, 2016 issue of the Environmental Notice.

CONSERVATION CRITERIA

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

1. *The proposed land 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.

Staff believes the proposal is consistent with the purpose of the Conservation District. The project is a modification to an already approved use. The extension of the discharge pipe will place the discharge diffuser much deeper than coral habitat found at depths of -300feet. Discharging below the coral habitat would result in minimizing potential negative impacts of nutrient rich deep seawater on coral habitat found in shallower waters. The additional pipe and collars would also create more substrate for marine habitat.

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

The objective of the Resource subzone is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to the Hawaii Administrative Rules (HAR), §13-5-22, P-8 STRUCTURES AND LAND USES, EXISTING (C-1) Moderate alteration of existing structures, facilities, uses, and equipment.

The site is not pristine and areas have been previously disturbed. Once the pipeline is completed, aquatic species may colonize along the permanent structure.

Staff believes the modification will lessen impacts to the natural resources in the locality. The project in its entirety is a good use of an existing natural resource that leaves no residuals or by-products. Ocean water is used and returned in its natural state.

Authorizations required by State and Federal agencies will contribute to ensuring the sustained use of the resources.

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

Staff believes that recreational resources, historical resources, scenic and open space resources, and coastal ecosystems, shall be preserved with the incorporation of best management practices and compliance with government regulations.

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

According to the applicant, the proposed routing for the HSWAC offshore pipes were located specifically to avoid and minimize adverse impacts to existing natural resources. Staff generally believes the proposed land use will not cause substantial adverse impacts to existing natural resources within the surrounding area, community or region. The proposed land use does not change the existing use of the area.

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

Staff believes that the proposed land use will be compatible and appropriate to the physical conditions of the area, as the proposed use does not require new construction of above ground facilities. The project will not create a visual or functional change in the project area.

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

Upon construction completion, the project area shall return to its natural state and mitigation for potential impacts has been formulated. Staff believes the existing physical and environmental aspects of the land shall be preserved.

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

There will be no subdivision of land for this proposed project.

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

Staff believes the proposed project will not be materially detrimental to the public health, safety and welfare. During the construction period, the public shall be restricted from entering the work area to maintain safety. There shall be controlled access to clearly define and limit work areas, which shall protect the public from potential hazards.

The Seawater Air Conditioning project will have a number of beneficial impacts including reductions in consumption of fossil fuels, electricity, potable water, and refrigerant compounds that will positively contribute to the public's health, safety and welfare.

Cultural Impact Analysis

No cultural artifacts or burial remains were uncovered or discovered nor have any been observed during periods of investigation of the site. Traditional or culturally significant resources are not expected in the project site area. The project will be conditioned that if cultural finds are discovered, all work will cease and the Historic Preservation Division will be notified.

During the processing of this application, no comments in regards to traditional or cultural were received from native practitioners. The Office of Hawaiian Affairs had no objections to the proposed modification. To the extent to which traditional and customary native Hawaiian rights are exercised, the proposed action does not appear to affect traditional Hawaiian rights; it is believed that no action is necessary to protect these rights. Staff believes no valued cultural, historical or natural resources customarily or traditionally used by native Hawaiian's will be adversely affected within the Conservation District should this modification be approved.

DISCUSSION

The proposed land use is a modification to a component of the already approved Seawater Air Conditioning project. This current CDUA proposes to extend the seawater **return pipe** 1,900 feet. The return pipe currently proposed to end \approx 3,500 feet offshore is now proposed to end \approx 5,400 feet offshore. The diffuser that is currently proposed to lie at a depth of 150 feet would now be located between the depths of 326 to 423 feet. At this depth most or all of the photosynthetically active radiation would be unable to take place as it is too dark. Stimulation of benthic algae and the possibility of adversely affecting coral would be reduced.

The applicant has proposed specific mitigation measures to address potential adverse effects as noted in their response to DLNR-Aquatic Resources comments (**Exhibit 5**). Mitigation commitments contained in the Final Environmental Impact Statement are to be incorporated into the project and will be made conditions of the permit. Should endangered or threatened marine species enter the active project construction site, construction activities would cease and work would be allowed to resume only after the listed species departs the construction site on its own. The National Marine Fisheries Service would be notified of each such occurrence.

Staff notes, a request for comments regarding this application was forward to the Federal Offices of National Oceanic & Atmospheric Administration and the Department of the Army (DOA) in addition to the State Department of Health (DOH). Although no comments were forthcoming from these agencies, additional required authorizations from the DOA and the DOH could incorporate concerns these agencies may have.

Further authorizations within the Conservation District are required. Effluent discharge will be regulated through the National Pollution Discharge Elimination System (NPDES) Permit and a Zone of Mixing Permit from the Department of Health. A Department of the Army (DA) Permit is also required for compliance with both Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. In addition Essential Fish Habitat and Endangered Species Act Section 7 Consultation will be required as part of the DA permit. In accordance with the above-mentioned permits, water quality and marine biota monitoring would be conducted during construction and operation. Staff believes compliance with all State, Federal and County requirements will ensure the sustained use of the resources.

Upon completion of the entire system, the ocean view plane will be restored and the submerged portions of the pipeline and its anchoring structures are unlikely to be visible from boats passing over the system given their depth and the waters clarity in the vicinity.

The applicant is aware that additional easements are required for the expanded use of submerged State land.

When the Honolulu Seawater Air Conditioning is operational, estimates of proposed reduction of the use of natural resources and emissions that would include: potable water (260 million gallons/year); wastewater generation (84 million gallons per year); fossil fuel consumption and the production of pollutants associated with fossil fuel combustion (reductions of CO₂ emissions-84,000 tons/year; VOC emissions-5 tons/year; Carbon Monoxide emissions-28 tons/year; Nitrogen Oxides emissions-169 tons/year; Sulfur Oxide emissions - 165 tons/year) and the use of harmful chemicals (refrigerants) utilized in air conditioning. Staff believes the Seawater Air Conditioning project will contribute positively towards the State's Energy Policy and the State 2050 Sustainability Plan.

The proposed modification will not affect or change the use of the authorized project. The proposed modification will hopefully expedite the National Environmental Protection Act (NEPA) process and review in addition to reducing potential adverse effects to coral habitat.

RECOMMENDATION:

Based on the preceding analysis, Staff recommends that the Chairperson APPROVE Honolulu Seawater Air Conditioning, LLC's Conservation District Use Application OA-3769 for the modification to the Honolulu Sea Water Air Conditioning Project located upon submerged land, makai of Kakaako Waterfront Park, offshore of plat (1) 2-1-060, Island of Oahu subject to the conditions of CDUP OA-3579 (**Exhibit 6**), as amended and the following conditions:

1. 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 rea , to the extent the practices are provided for by the constitution of the State of Hawai'i, and by Hawai'i statutory and case law;

2. Other terms and conditions as prescribed by the Chairperson; and
3. Failure to comply with any of these conditions shall render a permit void under the chapter, as determined by the Chairperson or Board.

Respectfully submitted,



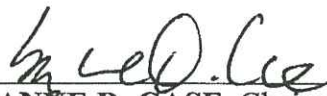
K. Tiger Mills, Staff Planner
Office of Conservation and Coastal Lands

Under the authority of § 13-5-30(a) and 13-5-33, Hawaii Administrative Rules, this request for a Departmental Permit for CDUA OA-3769 is hereby:

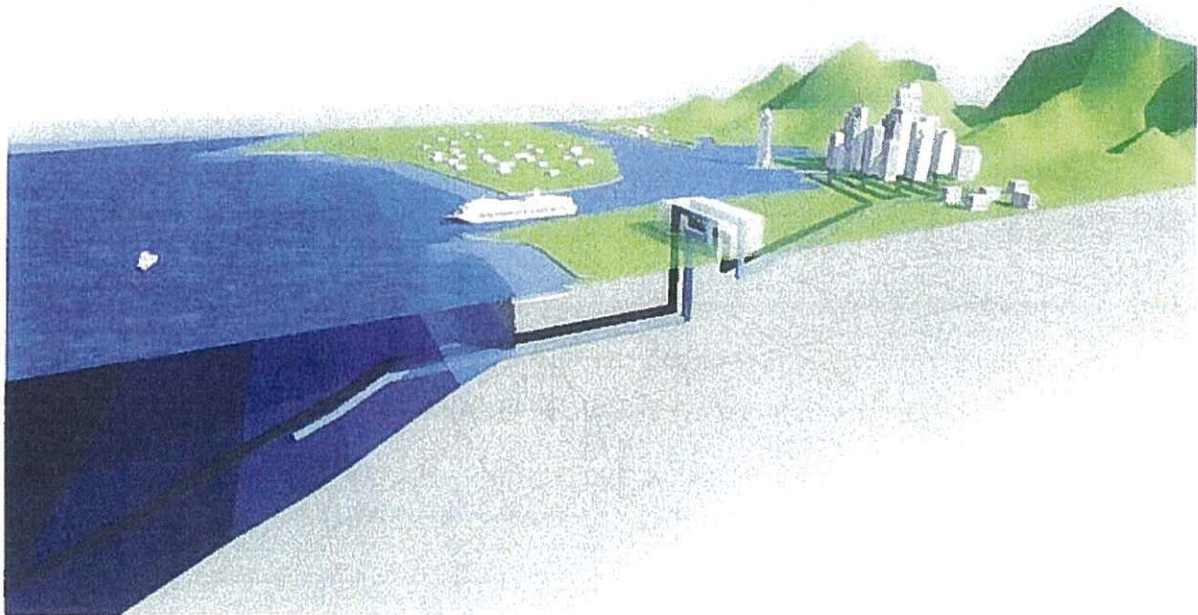
Approved

Disapproved

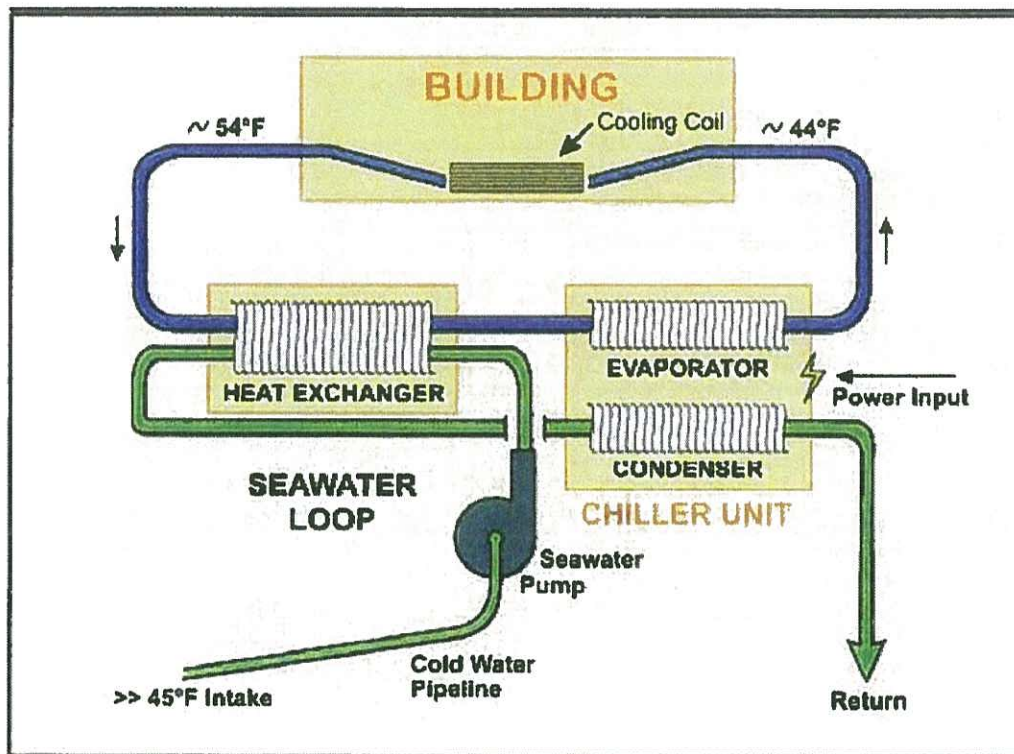
Dated at Honolulu, Hawaii 9/9/16



SUZANNE D. CASE, Chairperson
Board of Land and Natural Resources

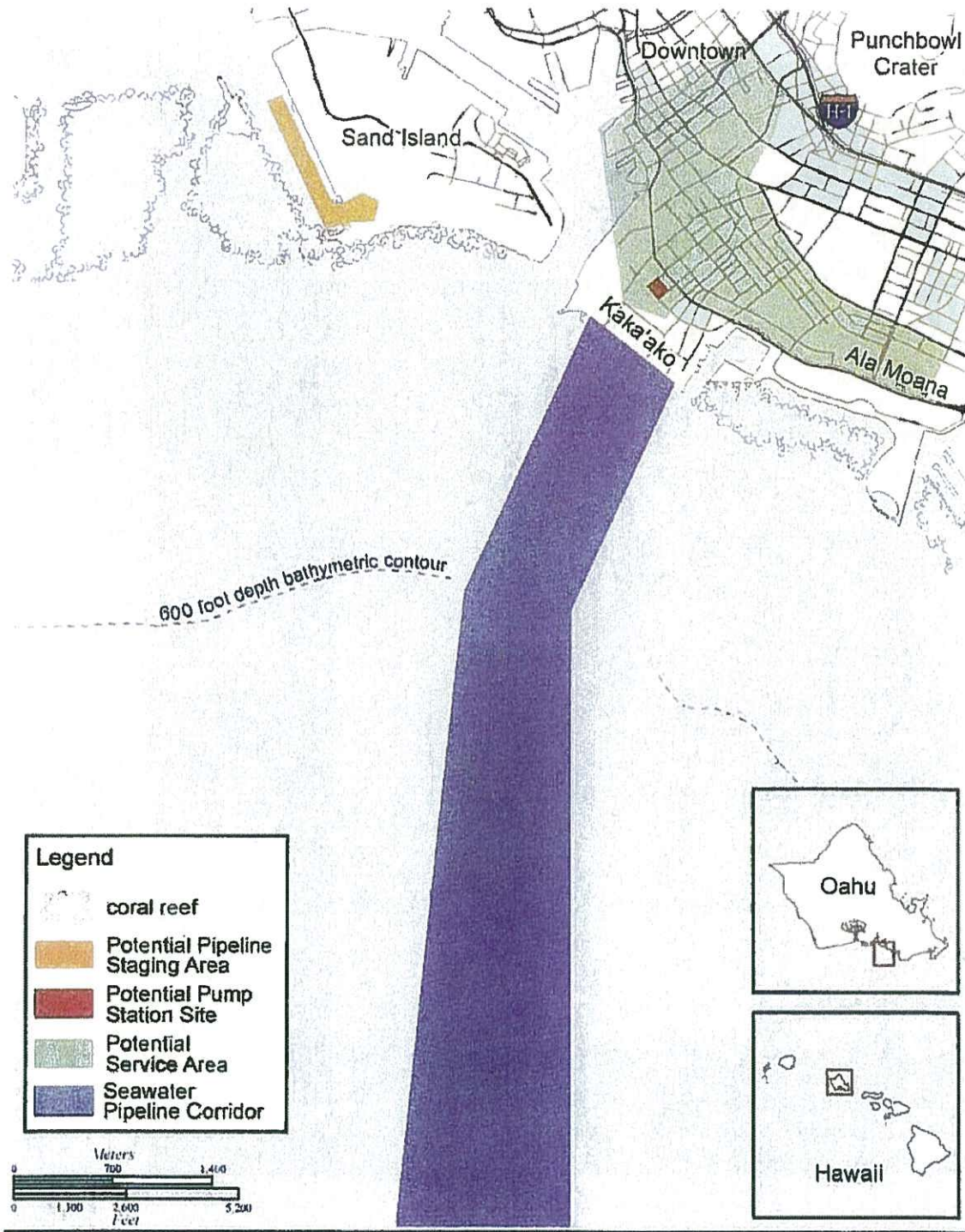


Conceptual drawing of major components of the HSWAC System



Schematic drawing of the HSWAC System with chiller enhancement

EXHIBIT |



HSWAC Project Area



EXHIBIT 2

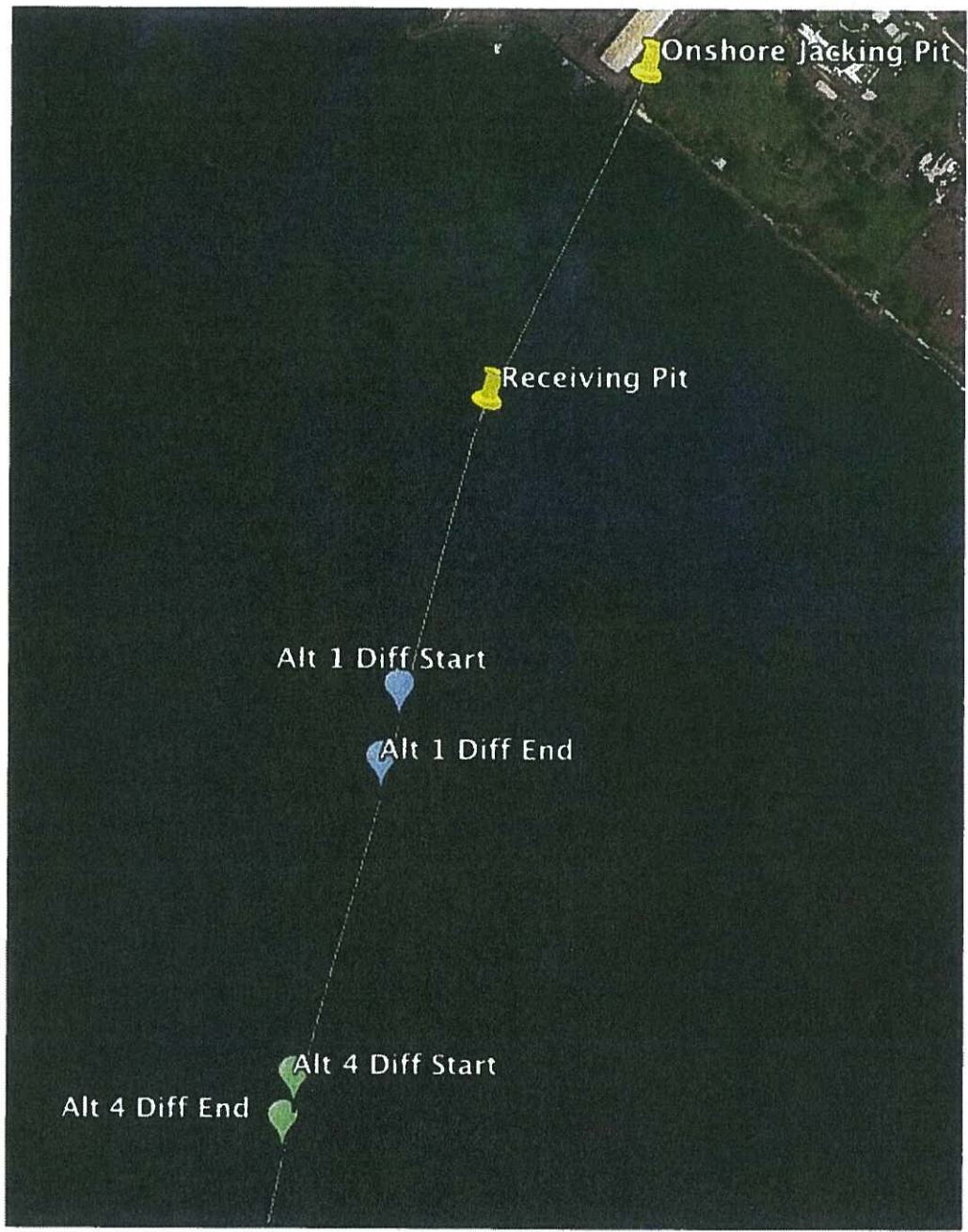


FIGURE 2. ORIGINAL (ALT 1) AND REVISED (ALT 4) DIFFUSER LOCATION. THE DISCHARGE PIPE EXTENSION WOULD START AT THE ALT 1 DIFFUSER END AND TERMINATE AT THE ALT 4 DIFFUSER END.

EXHIBIT 3

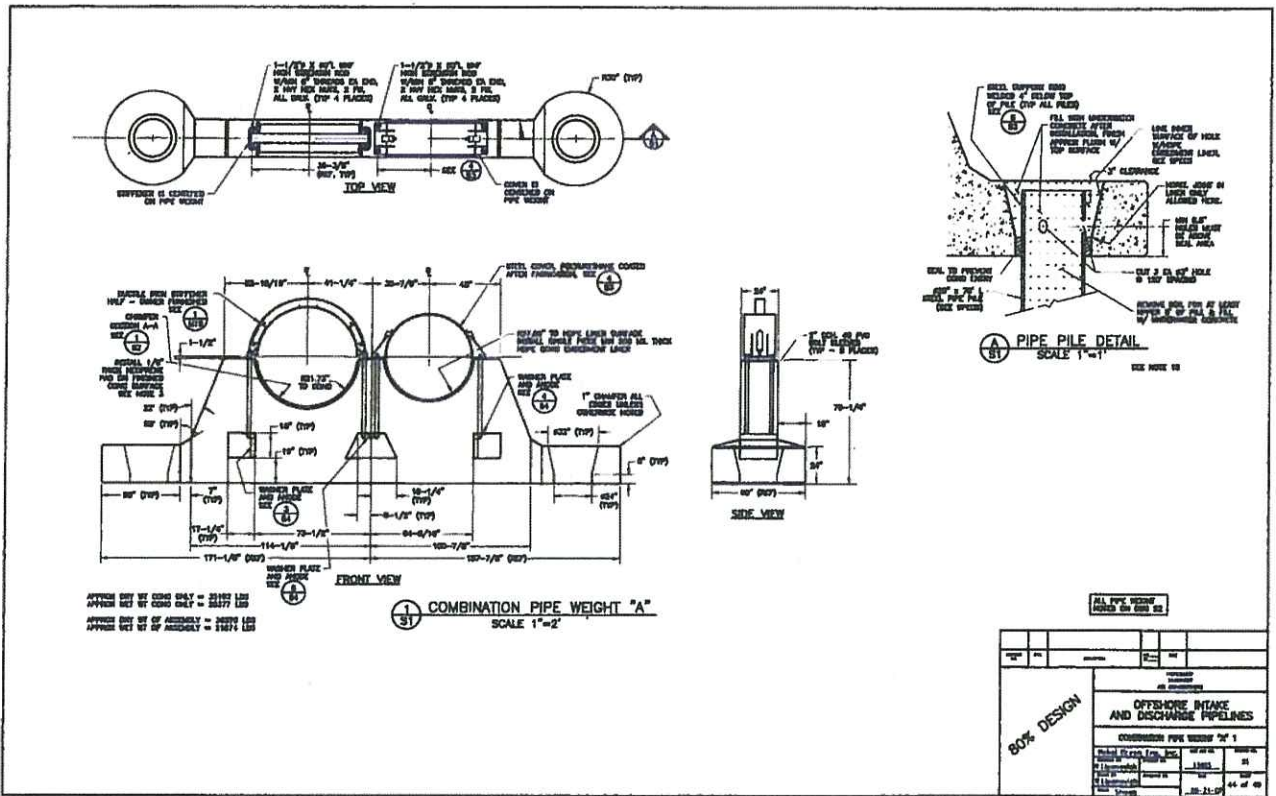


FIGURE 4 SHALLOW WATER TYPE "A" COMBINATION COLLAR

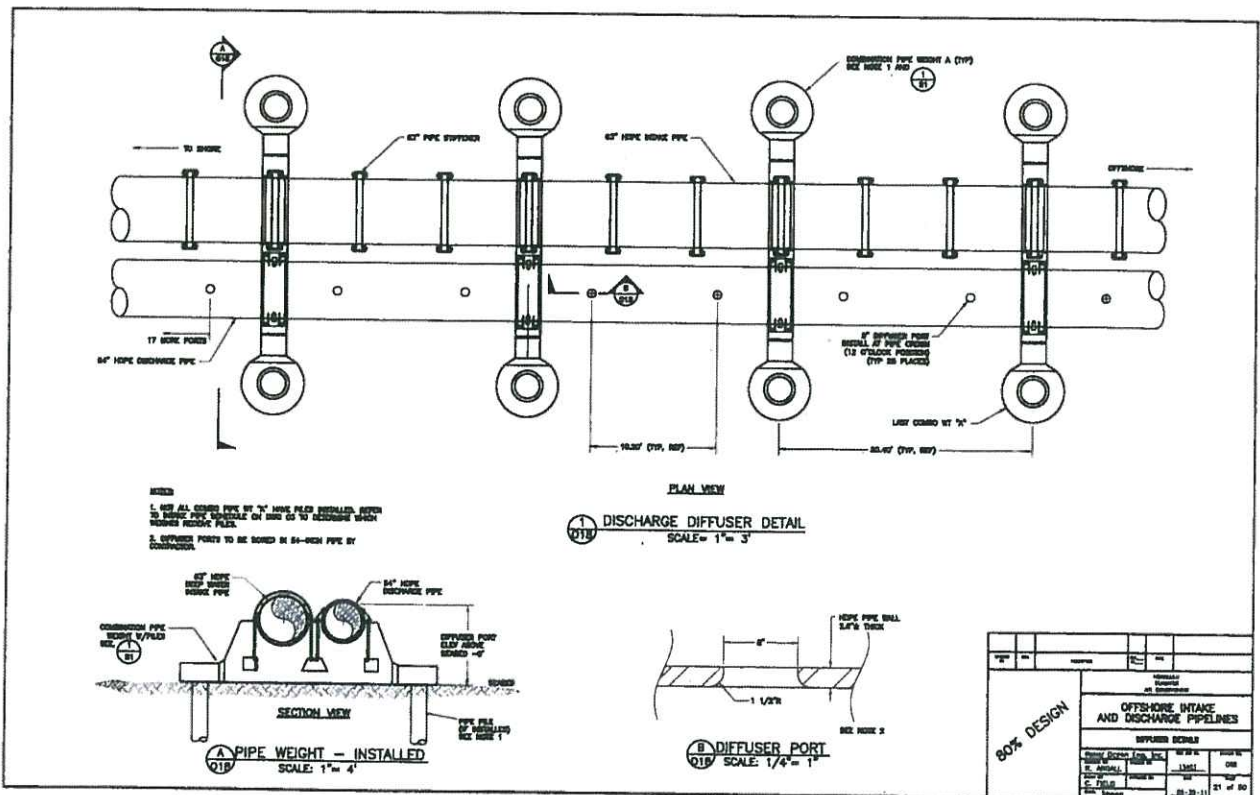


FIGURE 5 DIFFUSER DESIGN



Honolulu Seawater Air Conditioning, LLC
1132 Bishop Street, Suite 1410
Honolulu, Hawaii 96813

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
808.531.7922
808.531.7923
hls@luswac.com

2016 JUL 13 A 10:12

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

July 8, 2016

Ms. Cathy Gewecke
State of Hawai'i
Department of Land and Natural Resources
Division of Aquatic Resources
1151 Punchbowl Street, Room 330
Honolulu, Hawai'i 96809

Dear Ms. Gewecke:

Subject: Conservation District Use Application (CDUA: OA-3769)
Honolulu Seawater Air Conditioning Project

Thank you for your comments dated June 15, 2016 on the Honolulu Seawater Air Conditioning project CDUA OA-3769 modifying the depth at which it would discharge system effluent from between 120 feet and 150 feet to between 326 feet and 423 feet deep.

The comments relate to mitigation of the impact on marine organisms entanglement during assembly, storage, transport and deployment of the offshore pipe as well as mitigating impacts to benthic organisms during the deployment of the pipe. The response can be found below in two sections; 1) Entanglement; 2) Benthic Organisms

Entanglement

To mitigate the potential for marine organisms entangling with the pipe and accompanying equipment and anchoring systems during assembly, storage and transportation phases, the contractor will employ best management practices and take precautions to avoid potential entanglement of marine organisms. As detailed in the Federal Environmental Impact Statement, Table ES-1 on proposed mitigation measures, the contractor would abide by the following during in water operations:

EXHIBIT 5

Precautions:

- Constant vigilance would be kept for the presence of Federally-listed species,
- When piloting vessels, vessel operators would alter course to remain at least 100 yards from whales, and at least 50 yards from other marine mammals and sea turtles,
- Vessel speed would be reduced to 10 knots or less when piloting vessels in the proximity of marine mammals,
- Vessel speed would be reduced to 5 knots or less when piloting vessels in areas of known or suspected turtle activity,
- Marine mammals and sea turtles would not be encircled or trapped between multiple vessels or between vessels and the shore,
- If approached by a marine mammal or turtle, vessel operators would put the engine in neutral and allow the animal to pass,
- Unless specifically covered under a separate permit that allows activity in proximity to protected species, all in-water work would be postponed when whales are within 100 yards, or other protected species are within 50 yards. Activity would commence only after the animal(s) depart the area,
- Should protected species enter the area while in-water work is already in progress, the activity may continue only when that activity has no reasonable expectation to adversely affect the animal(s), and
- Project personnel would not attempt to feed, touch, ride, or otherwise intentionally interact with any protected species.

Best Management Practices:

- Establishment of Safety and Exclusion Zones. Before any pile driving, a clearly marked safety zone (typically 50 yards; 100 yards during pile driving) for potentially affected species would be established. The safety zone would be marked by buoys for easy monitoring. A minimum of one biological observer on a boat per pile driver barge would survey the safety zone to ensure that no marine mammals are seen within the zone before pile driving begins. If marine mammals were found within the safety zone, pile driving would be delayed until they move out of the area. If a marine mammal is seen above the water and then dives below, pile driving would wait a specified amount of time and if no marine mammals are seen by the observer in that time it would be assumed that the animal has moved beyond the safety zone.
- Soft Start. Although marine mammals would be protected from Level A harassment by establishment of a safety zone, mitigation may not be 100 percent effective at all times in locating marine mammals. In order to provide additional protection to marine mammals near the project area by allowing marine mammals to vacate the area, thus further reducing the incidence of Level B harassment from startling marine mammals with a sudden intensive sound, a "soft start" could be implemented. Under a soft start, pile driving would be initiated at an energy level less than full capacity (i.e., approximately 40-60 percent energy levels) for at least 5 minutes before gradually escalating to full capacity. This would ensure that, although not expected, any marine mammals that are undetected during safety zone monitoring would not be injured.

- **Shut Down.** If a marine mammal is seen approaching or within the exclusion zone, pile driving operations would be shut down until the animal has left the exclusion zone or 15/60 minutes (pinniped/cetacean) have passed without the animal being seen.
- **Temporal Restriction.** No vibratory pile driving would be allowed during the period December 1 to March 31

As noted on page 3-150 of the Federal EIS, the contractor would minimize entanglement by keeping lines as tight as practical and use one line per attachment. This could be broadened to all underwater lines associated with controlling the pipe during assembly, storage, transportation and deployment of the pipe. Care would be taken to eliminate configurations of equipment and structural components that could present a potential entanglement risk to marine organisms as well.

HSWAC would be responsible for obtaining an Incidental Harassment Authorization which would include a Mitigation, Monitoring and Reporting Plan. The contact information you provided for reporting entanglement incidences would be included in the reporting requirements of the plan as well as in the contractor's BMP reporting list.

Benthic Organisms

Pipe Staging and Transport:

- **Buoyancy.** Section 2.4.2.6 of the Federal EIS describes the use of blind flanges on the end of long segments of fused HDPE pipe stored in Ke'ehi Lagoon to assure its buoyancy. This buoyancy will assure the pipe does not sink and impact the benthic community on the bottom of Ke'ehi Lagoon. The pipe remains buoyant during assembly of concrete collars and pipe stiffeners until controlled flooding during deployment as the pipe settles to the bottom along the intended offshore alignment outside of Kaka'ako. Breaching this buoyancy through the 3 inch thick walls of the High Density Polyethylene (HDPE) pipe is highly unlikely at any stage of the pipe assembly, staging, transportation and deployment.
- **Control.** Section 2.4.2.6 of the Federal EIS also describes the pipe staging in Ke'ehi Lagoon. The equipment used to keep the pipe in place will be designed to resist hurricane wind forces should such weather impact the lagoon. Upon completion of the pipe assembly and preparations of the offshore receiving pit, the pipe will be transported to the deployment site in one long section. The deployment process takes 24 to 48 hours. This is a sufficiently small window that the weather can be accurately forecast for the duration of the process. The contingency plan for severe weather is a "go", "no go" decision rather than the addition of more vessel power. This will be described in the notices of the operations to harbormasters to post and distribute and a published Notice to Mariners.

Deployment:

- A requirement of the US Army Corps of Engineers conditional permit is to survey the pipe alignment prior to construction for coral colonies of value (≥ 1 meter) that may exist along the alignment. For coral found at depths to which divers can access,

survey results can be correlated with navigational coordinates with reasonable accuracy. Beyond diver depth the accuracy of correlation drops with depth. Correlation below diver depths may not be sufficiently accurate to make the necessary adjustments to avoid a coral colony. This is in part due to the uneven seabed and in part due to inaccuracies created when surveying through water. Every effort will be made to avoid corals of value (≥ 1 meter) so long as it can be identified and located with sufficient accuracy. *Leptoseris sp.* colonies found along the Hawaii Undersea Research Laboratory *Pisces* submersible dive at depths between 165 to 660 feet may be too deep to determine their location with sufficient accuracy to avoid the colonies.

We thank you for your interest in the HSWAC Project. We value your input and look forward to continued collaboration on this project. If you have any questions, please feel free to contact me at 808.284.4221.

Aloha,

Frederic Berg

cc: Ms. Tiger Mills, Office of Conservation and Coastal Lands

NEIL AHERCROMBIE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY H. KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
DIVISION AND OCEAN RECREATION
BUREAU OF CONSERVATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERS
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:TM

CDUP: OA-3579

George Krasnick
TEC Inc.
1003 Bishop Street
Pauahi Tower, Suite 1550
Honolulu, HI 96814

JUN 27 2011

SUBJECT: Conservation District Use Permit (CDUP) OA-3579 for the Honolulu Seawater Air Conditioning Project

Dear Mr. Krasnick:

This is to inform you that on June 23, 2011, the Board the Board of Land and Natural Resources approved your client, Honolulu Seawater Air Conditioning, LLC's Conservation District Use Application OA-3579 for the Honolulu Sea Water Air Conditioning Project located upon submerged land, makai of Kakaako Waterfront Park, offshore of plat (1) 2-1-060 and temporary use of Channel D of Keehi Lagoon, island of Oahu subject to the following conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules, regulations, and conditions of the Federal, State, and County governments, and applicable parts of the Hawaii Administrative Rules, Chapter 13-5;
2. The applicant, 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 or 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 applicant shall obtain appropriate authorization from the Department for the occupancy of State lands;
4. The applicant shall consult with the Division of Aquatic Resources in regards to a determination for a Special Activity Permit;
5. The applicant shall coordinate with the Department of Transportation's Oahu District Office due to the proximity of the project to Honolulu Harbor to avoid conflicts with maritime operations during construction of this project;

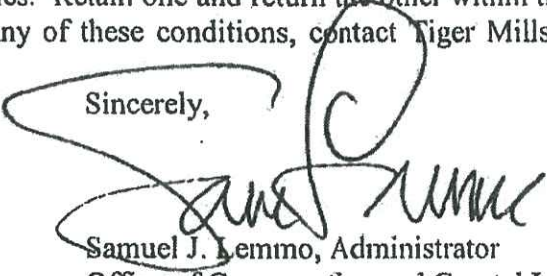
EXHIBIT 6

6. The applicant shall coordinate with the Division of Boating and Ocean Recreation at Keehi Lagoon and the Coast Guard relative to maintaining safe navigation during construction activities and operations;
7. The applicant shall comply with all applicable Department of Health administrative rules;
8. Before proceeding with any work authorized by the Board, the applicant shall submit four (4) copies of the construction and grading plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three (3) of the copies will be returned to the applicant. Plan approval by the Chairperson does not constitute approval required from other agencies;
9. Any work done or construction to be done on the land shall be initiated within three years of the approval of such use, in accordance with construction plans that have been signed by the Chairperson, and, unless otherwise authorized, shall be completed within five years of the approval. The applicant shall notify the Department in writing when construction activity is initiated and when it is completed;
10. All mitigation measures set forth in the application materials, in the final environmental impact statement, and all required permits within the conservation District for this project are hereby incorporated as conditions of this permit;
11. The Applicant shall provide public notification to inform the public of the project;
12. The applicant understands and agrees that this permit does not convey any vested rights or exclusive privilege;
13. In issuing this permit, the Department and Board have relied on the information and data that the applicant has provided in connection with this permit application. If, subsequent to the issuance of this 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/or the Department may, in addition, institute appropriate legal proceedings;
14. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take the measures to minimize or eliminate the interference, nuisance, harm, or hazard;
15. Should historic remains such as artifacts, burials or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact HPD (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;
16. The applicant shall insure access to Mokauea Island to those individuals that have a vested interest related to the island;

17. Other terms and conditions as may be prescribed by the Chairperson; and
18. Failure to comply with any of these conditions shall render this Conservation District Use Permit null and 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 (30) days. Should you have any questions on any of these conditions, contact Tiger Mills at (808) 587-0382.

Sincerely,



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

Receipt acknowledged:


Applicant's Signature

Date

6/29/11

c: Chairperson
ODLO/DAR/DOBOR/SP
DOT-Harbors/Coast Guard/DOA
City & County of Honolulu, DPP

DEPARTMENT OF THE ARMY PERMIT

Permittee: Honolulu Seawater Air Conditioning, LCC

Permit No.: POH-2004-01141

Issuing Office: U.S. Army Engineer District, Honolulu

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below:

Project Description:

Construct seawater intake and return water pipelines in and under navigable waters of the U.S. to provide seawater air conditioning services to downtown Honolulu, on the island of Oahu, Hawai'i. The pipeline system will consist of a 63-inch diameter high density polyethylene (HDPE) seawater intake pipe extending offshore approximately 4.7 miles, to a water depth of 1,755 feet, and a 54-inch diameter HDPE seawater return pipe extending offshore approximately 1 mile, to a water depth of 423 feet. The pipelines would be microtunneled under the seafloor from an upland jacking pit to an offshore breakout point Receiving Pit approximately 1,650 feet offshore at a water depth of approximately 31 feet. From the Receiving Pit, the subsurface pipelines transition above the seafloor to surface mounted pre-cast concrete collars/weight supports for the remainder of the offshore route. Structures and work in navigable waters of the U.S. include the following:

Using a microtunnel boring machine (MTBM), the intake and return water pipelines will be microtunneled 13' – 43' under the seafloor within jacking casing pipes to the Receiving Pit 1,650 feet offshore. The Receiving Pit will consist of eighty 24" AZ sheet piling driven with a vibratory hammer to a depth of approximately 20'-25' to construct a 40' x 40' containment enclosure necessary to retrieve the MTBM and facilitate pipeline connections necessary to transition the subsurface pipelines to above the seafloor. A perimeter of sheet piles (or a combination of sheet piles and silt curtains) will be installed from the seafloor to above the water surface to effectively isolate the Receiving Pit work area from surrounding waters. A clam shell or open bucket excavator will be used to excavate the seabed sediment, consisting primarily of coralline sand and shell, to a depth of approximately 20 feet below the surrounding seafloor. The 1,185 yd³ of dredged sediment will be barge transported offsite for upland disposal. Following retrieval of the MTBM and pipeline connections, the Receiving Pit will be backfilled with 1,185 yd³ of prewashed basalt gravel and capped with tremie concrete to match the surrounding seafloor elevation and the sheet piling will be cut off slightly beneath the seafloor surface and removed. The Receiving Pit construction activities (sheet pile driving, dredging, backfilling, etc.) are expected to take approximately 5 weeks and would be conducted off of an adjacent four point moored barge or off a temporary pile-supported work platform/deck. The temporary work platform, if used, would consist of a 35' x 35' deck supported by twelve 24" diameter pipe piles, driven by vibratory hammer. Following construction activities, the temporary work platform will be removed and piling would be pulled or cut at the seafloor surface.

The seafloor mounted pipelines will be secured above the seafloor on pre cast concrete collars spaced on average 30 feet apart. The pipes will be fitted with concrete collars of four types, depending on depth. From the Receiving Pit seaward to the terminus of the discharge pipe (water depth of 423 feet), the pipelines will be secured in tandem on a combination pipeline collar support (type "A"). Type "A" collars will be anchored with 20" steel pipe piles until a water depth of approximately 150 feet, after which they will serve only as gravity anchors. There will be a total 229 type "A" collars installed, 52 of which will have two pile anchors and 9 with one pile. Seaward of the diffuser, single pipe collars will be used to support the intake pipe. Between 423-700 feet water depth, 36 type B collars will be installed. Between 700-1,755 feet depth, 713 type C collars will be installed. At the terminus of the intake pipe,

five special type D collars will be installed.

The seafloor mounted pipelines, concrete collars and stiffening rings would be preassembled and floated in 3,000' sections in Keehi Lagoon adjacent to the western shore of Sand Island. Approximately 15 (20" diameter) pipe piles will be temporarily installed in Keehi Lagoon to secure the floating pipeline segments. The preassembled pipelines, with collars and stiffeners attached, will be towed into place and the pipelines sunk in a controlled manner from shallow to deep water by controlled flooding. At least three tugs will be used to maneuver the pipelines to their final position. The nearshore end of the pipeline will be temporarily secured with pile anchor holdbacks to allow the pipelines to be put under tension during installation. The pipes will be pulled into place in a single day and sunk at night when the HDPE pipe's strength properties are maximized.

All work will be performed in accordance with the attached plan (Enclosure 1), sheets 1-25, dated December 2014.

Project Location: The locations of authorized work in, over, and/or under navigable waters of the U.S. subject this permit include the following:

Staging Area: The in-water staging area, approximately 50 acres in size, where pipeline sections would be floated and stored, would occur off the western shore of Sand Island in Channel D of Keehi Lagoon; Oahu, Hawaii; 21° 18.4' N., 157° 53.3' W.

Pipelines: The parallel pipelines will extend in Mamala Bay from behind the shoreline of the southwestern corner of Kaka'ako Waterfront Park (21° 17.676' N., 157° 51.986' W.) to the return water diffuser terminus (21° 16.804' N., 157° 52.323' W.) approximately 1 mile offshore. The intake pipeline will extend an additional 3.6 miles seaward to the intake terminus (21° 13.658' N., 157° 51.976' W.) approximately 4.7 miles offshore.

Receiving Pit: Approximately 1650' offshore of Kaka'ako Waterfront Park in Mamala Bay (21° 17.410' N., 157° 52.125' W.).

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on January 31, 2020. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.
2. Prior to in-water construction activities, you must coordinate with the United States Coast Guard (USCG) for issuance of a "Notice to Mariners" for construction and installation operations. You must install and maintain, at your expense, any safety lights and signals prescribed by the United States Coast Guard (USCG), through regulations or otherwise, on your authorized facilities. The USCG may be reached at the following address and telephone number: Commander (dpw), 14th Coast Guard District, 300 Ala Moana Blvd., Floor 9, Suite 200, Honolulu, Hawaii 96850; or by telephone at (808) 535-3409.
3. You understand and agree that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
4. The National Ocean Service (NOS) has been notified of this authorization. At least two weeks before you begin work, you must notify NOS and this office, in writing, of the date you anticipate beginning work. Upon completion of the activity authorized by this permit, you must provide NOS and this office with a written notification of completion. Your notification of completion must include a drawing which certifies the location and configuration of the completed activity (a certified permit drawing may be used). Notifications to NOS will be sent to the following address: NOAA, National Oceanic and Atmospheric Administration, Office of Coast Survey, Marine Chart Division, Nautical Data Branch, NCS-26, 1315 East West Highway, Silver Springs, Maryland 20910-3282.
5. Prior to tow-out of pipeline sections from Ke'ehi Lagoon, you must coordinate your operations plan with the USCG, Honolulu Harbor - Harbor Master, HDOT Harbors Division, and the Hawaii Pilots Association to ensure that impacts to navigation are minimized to the maximum extent practicable. Additionally, pipeline sections stored in Ke'ehi Lagoon must be configured to allow vessel maneuvering around the sections and to avoid blocking access to docks serving adjacent residences.

Rationale: Conditions 1-5 are necessary to maintain and/or mitigate effects to navigation in navigable waters of the U.S.

6. Excavated sediments from the "Receiving Pit" may not be discharged into waters of the U.S.

Rationale: The DA permit does not authorize a discharge of dredged material in waters of the U.S.

7. You must implement and adhere to the "Proposed Mitigation Measures" summarized in Table ES-1 in the *Final Environmental Impact Statement For the Proposed Honolulu Seawater Air Conditioning Project, Honolulu, Hawai'i*, dated June 2014.

Rationale: The applicant proposed mitigation measures were developed in the NEPA process as reasonable mitigation measures to offset impacts to the human and natural environment.

8. The Receiving Pit must be sited to prevent physical damages to the adjacent coral spur ridges during construction activities, which may require adjusting the final location prior to construction. Prior to commencing construction activities, you must submit to this office a final Receiving Pit

Location and Construction Plan and Coral Survey, to demonstrate the exact location of the Receiving Pit and related construction structures (e.g., sheet piling, barge or temporary platform mounted crane/excavator anchoring and/or piling, temporary pipeline holdback structures, etc.), how impacts to the adjacent coral spurs will be avoided, and the unavoidable coral colony impacts that would occur within the footprint of the receiving pit. Construction activities may not commence until you have obtained this office's approval of the Receiving Pit Location and Construction Plan.

9. You must implement and adhere to the Coral Transplantation and Monitoring Plan (CTMP) (Enclosure 2), dated 6 December 2013, prior to commencing Receiving Pit construction activities. If the Receiving Pit location is modified in accordance with Special Condition #8, you must submit a revised Coral Survey and CTMP to reflect the changes in coral colony presence. You must obtain this office's approval of the revised Coral Survey and CTMP, if one is required, prior to commencement of construction activities.
10. To minimize the risk of uncontrolled movement of equipment and structures, you must avoid conducting in-water nearshore construction operations during periods where wave heights exceed 5 feet.
11. The installation of the pipeline system structures on the seafloor (e.g., pipeline collars/weights, pile anchors, etc.) and temporary construction equipment and structures (e.g., pipeline tieback anchors and lines, piling, silt curtains, vessels and anchors, moorages, etc.) must avoid contact with coral colonies or macro-invertebrates to the maximum extent practicable. That is, you must employ appropriate measures, including diver assisted structure installment, remotely operated submersible vehicles, pre construction surveys, etc. to ensure that structures are placed over sand, rubble, or otherwise non-coral covered substrate to the extent practicable.
12. Sediment generating construction activities in waters of the U.S. must be avoided for a period of two weeks before to two weeks following predicted primary annual coral spawning events. Please coordinate with that National Marine Fisheries Service, Pacific Islands Regional Office, at (808) 944-2200 for additional information regarding anticipated annual coral spawning events.

Rationale: Special Conditions 8-12 are necessary to appropriately mitigate impacts to aquatic resources.

13. Appropriate sediment control measures (e.g., sheet piling, silt curtains, etc.) must be employed and maintained to contain and minimize sedimentation/turbidity outside of the authorized footprint during sediment generating construction activities, most notably dredging of the Receiving Pit.
14. You must implement and adhere to the Water Quality and Marine Biological Monitoring Plan (Enclosure 3) and Data Quality Objectives (WQO) (Enclosure 4), dated 6 and 3 December respectively. The monitoring plan and/or DQOs may be modified and/or superseded by requirements of your state Water Quality Certification (WQC), if issued.

Rationale: Special Conditions 13-14 are necessary to maintain state water quality standards and prevent unnecessary impacts to aquatic resources outside of the authorized footprint.

15. You must comply with the terms and conditions (Section 9.4) of the Incidental Take Statement of the National Marine Fisheries Service, Pacific Islands Region, Endangered Species Act – Section 7 Consultation Biological Opinion, dated 13 September 2012, NMFS File No. (PCTS) F/PIR/2011/06432.

Rationale: Special Condition #15 is necessary for compliance with the Endangered Species Act.

Any condition incorporated by reference into this permit by General Condition 5, remains a condition of this permit unless expressly modified or deleted, in writing, by the District Engineer or his authorized representative.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

() Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Honduran Sawatewan Conditioning LLC
Eric Mafleton 2/5/15

(PERMITTEE) AND TITLE ERIC MAFLETON (DATE)
PRESIDENT + CEO

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Christopher W. Crary (DATE)
Lieutenant Colonel, U.S. Army
District Engineer

When the structures or work authorized by this permit are still in existence at the time the property is transferred the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions have the transferee sign and date below.

(TRANSFEREE) (DATE)

NOTIFICATION OF ADMINISTRATIVE APPEAL PROCESS

Applicant: Honolulu Seawater Air Conditioning LLC		File Number: POH-2004-01141	Date: January 2015 Date
Attached is:			See Section below
XX	INITIAL PROFFERED PERMIT (Standard Permit)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/net/functions/cw/cecwo/reg> or U.S. Army Corps of Engineers (Corps) regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. Your signature on the Standard Permit means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must provide a written response explaining your objections to the permit. Your objections must be received by the district engineer within **60 days** of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit, a Request for Appeal (RFA) form, and a copy of the decision document for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. Your signature on the Standard Permit means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit because of certain terms and conditions therein, you may appeal the declined permit under the Corps Administrative Appeal Process by completing the RFA form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of the proffered permit.

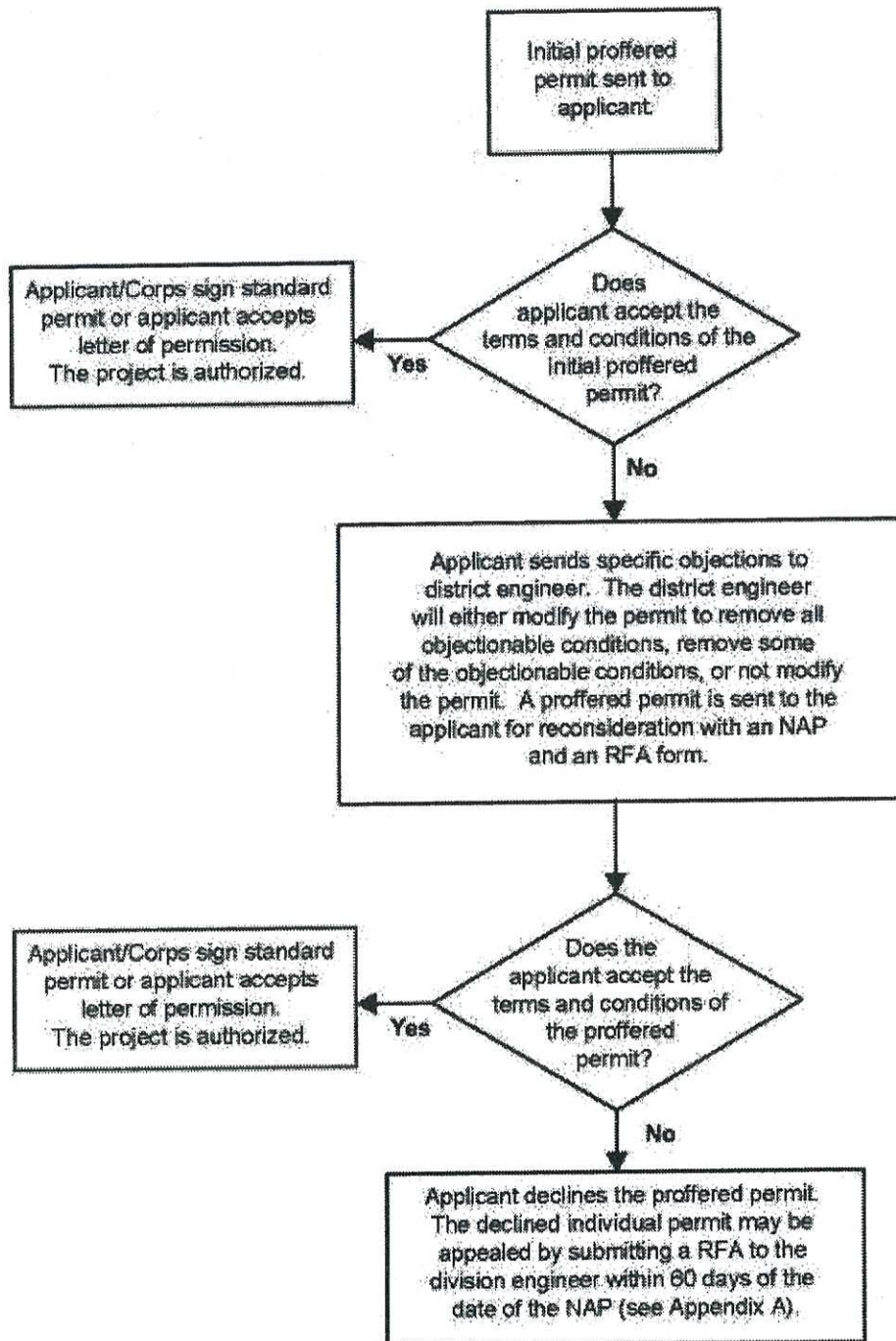
C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps Administrative Appeal Process by completing the RFA form and sending the form to the division engineer. The RFA form must be received by the division engineer within 60 days of the date printed on the RFA form.

D: APPROVED JURISDICTIONAL DETERMINATION (JD): You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

Applicant Options with Initial Proffered Permit



Appendix B



Exhibit 6 – Record of Decision for Federal Final EIS For the Proposed Honolulu Seawater Air Conditioning Project, Honolulu, Hawai‘i (USACE, 2015)

RECORD OF DECISION

CORPS FILE NO.: POH-2004-01141

APPLICANT: Honolulu Seawater Air Conditioning, LCC

PROJECT NAME: Honolulu Seawater Air Conditioning

I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning the permit application for the proposed action, as well as the stated views of interested agencies and the public. In doing so, I have considered the possible consequences of the proposed action in accordance with regulations published in 33 Code of Federal Regulations (CFR) Parts 320 through 332 and 40 C.F.R. Part 230.

As described in the Final EIS, the proposed action is to provide seawater air conditioning services to downtown Honolulu, on the island of Oahu, Hawai‘i. The applicant proposes to construct seawater intake and return water pipelines in and under navigable waters of the U.S., consisting of a 63-inch diameter HDPE seawater intake pipe extending offshore approximately 4.7 miles, to a water depth of 1,755 feet, and a 54-inch diameter HDPE seawater return pipe extending offshore approximately 1 mile, to a water depth of 423 feet. The pipelines would be microtunneled under the seafloor from an upland jacking pit to an offshore breakout point (where a Receiving Pit would be constructed), approximately 1,650 feet offshore, to a water depth of approximately 31 feet. From the Receiving Pit, the subsurface pipelines transition above the seafloor to surface mounted pre-cast concrete collars/weight supports for the remainder of the offshore route. DA permit authorization is required for the proposed work, structures, and discharge of fill material in navigable waters of the U.S., pursuant to both Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344). The proposed action involves the discharge of dredged or fill material into 0.04 acres of waters of the United States for the construction of the Receiving Pit and the installation of 4.7 miles of seawater pipelines under and in navigable waters of the United States.

I. Background

A complete application for a DA permit under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act was received on November 8, 2008. The U.S. Army Corps of Engineers, Honolulu District (Corps) determined an Environmental Impact Statement (EIS) would be prepared. Scoping for the EIS began on February 17, 2009, with the publication of a Notice of Intent to Prepare an EIS in the *Federal Register* (74 FR 7402-7404). In addition to informing the public that the Corps would be preparing an EIS to inform a decision on the permit application, the Federal Register notice announced a public scoping meeting which was subsequently held on March 5, 2009, at McKinley High School, Honolulu, HI. The Corps also issued a Special Public Notice announcing the meeting, which was posted on the Corps website and mailed to resource agencies and interested parties. The Environmental Protection Agency agreed to be a cooperating agency in the preparation of the EIS.

In March 2011 a Draft Environmental Impact Statement (DEIS) was issued by the Corps for a 45-day review period. A Notice of Availability was published in the Federal Register on March 18, 2011 (76 FR 14953-14954) and in a Special Public Notice, which was posted on the Corps website and mailed to resource agencies and interested parties. During the DEIS public review period, fourteen comments were received.

The Final EIS (FEIS) was issued in June 2014 for a 45 day review period. A Notice of Availability was published in the *Federal Register* on June 13, 2014 (79 FR 35346-35347) and in a Special Public Notice, which was posted on the Corps website and mailed to resource agencies and interested parties.

II. Project Purpose and Need

a. Purpose: The purpose of the Honolulu Seawater Air Conditioning (HSWAC) project is to contribute to meeting the needs outlined in section II(b) by developing a seawater air conditioning (SWAC) system to serve buildings in downtown Honolulu.

b. Need: There is a need, based on economic and environmental considerations, to increase the use of renewable energy resources and decrease the use of imported oil to generate electricity in Hawai'i. There are also mandates at both State and Federal levels to increase energy efficiency and renewable energy use in government facilities, reduce potable water consumption, and decrease toxic chemical use.

III. Alternatives Considered

Four action alternatives and the no-action alternative were considered in the FEIS. The DEIS considered only two action Alternatives (Alternatives 1 and 2). Based on recommendations provided in response to the DEIS from the State of Hawaii, U.S. Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS), the FEIS considered two additional action alternatives (Alternatives 3 and 4), for which the location of the return water pipeline diffuser is located in successively deeper waters. Alternative 1 was the applicant's preferred alternative in the DEIS and continues to be the basis for comparison of alternatives in the FEIS. Alternative 4 is identified as the applicant's preferred alternative in the FEIS. All action alternatives employ the same overall construction and operational technology and design. Additionally, the location of the intake pipeline terminus would be common to all action alternatives. Alternatives 1, 3, and 4 are similar with the notable exception of the return seawater pipeline length, diffuser length, and terminus water depth. Alternative 2 involves notable differences including the location of the cooling station, the microtunnel route from the cooling station to the breakout point, the location of the breakout point Receiving Pit, the pipeline route seaward of the breakout point, and the location of the diffuser. The number and type of pipeline collar supports employed are different between all alternatives due to the differences in pipeline routes and return seawater pipe lengths.

a. No Action Alternative (permit denial):

The No Action Alternative would not implement a SWAC system in downtown Honolulu. Seawater pipes would not be installed offshore of Kaka'ako and therefore no construction related impacts associated with the microtunnel, receiving pit, or seafloor mounted pipelines would occur. The potential environmental impacts associated with the action alternatives would be avoided; however, downtown buildings would continue to be independently cooled with on-site, electrically-powered chillers. Potable water would continue to be used in cooling towers, and the Sand Island Wastewater Treatment Plant would continue to treat and dispose of the wastewater through its Mamala Bay outfall.

b. Alternative 1:

Alternative 1 involves microtunneling the seawater intake and return pipelines from a jacking pit located adjacent to the 'Ewa-makai corner of Kaka'ako Waterfront Park to a receiving pit approximately 1,650 feet offshore (31' water depth) where the Microtunnel Boring Machine (MTBM) would be recovered. The location of the offshore receiving pit is designed to avoid the nearshore biotope of scattered corals. From the receiving pit seaward the pipelines would be mounted above the seafloor on concrete collars. The return seawater pipeline would run an additional 1,900 feet offshore and terminate in a diffuser extending between the depths of 120 and 150 feet. The seaward route of the pipes under Alternative 1 would be off the western portion of the area between Honolulu Harbor and Kewalo Basin, i.e., relatively close to the Honolulu Harbor entrance channel.

c. Alternative 2:

In Alternative 2, the location of the microtunnel, breakout point Receiving Pit, return water diffuser, and pipeline route would differ from Alternative 1. The cooling station would be located on Pier 1 of Honolulu Harbor, slightly west of the Alternative 1 location. The microtunnel breakout point Receiving Pit would be to the east of the Receiving Pit for Alternative 1, i.e., near the Kewalo Basin entrance channel. With the exception of the extreme deep water portion of the intake pipeline, the seafloor mounted pipelines would run to the east of the Alternative 1 route. The intake pipe would terminate at the same intake location as under Alternative 1.

d. Alternative 3:

With the exception of the return seawater pipeline length, diffuser length, and terminus water depth, Alternative 3 would be the same as Alternative 1. Under this alternative, the return seawater pipe would extend seaward an additional 1,580 feet and terminate at a 300 ft. water depth with a 24 ft. diffuser.

e. Alternative 4 (Preferred Alternative):

With the exception of the return seawater pipeline length, diffuser length, and terminus water depth, Alternative 4, the applicant's Preferred Alternative, would also be the same as Alternative 1. Under this alternative, the return seawater pipe would extend seaward an additional 2,000 feet and terminate at a water depth of 423 feet, with a 250 ft. diffuser.

The diffuser under this alternative would lie on a relatively steep slope of an alluvial channel that begins at a depth of about 330 feet and continues to 600 feet deep.

IV. Comments on the Final Environmental Impact Statement

Comment letters were received from the Federal Emergency Management Agency (FEMA), USEPA, NMFS, and the State of Hawaii [Division of Aquatic Resources (DAR), Department of Health-Clean Water Branch (DOH), and Department of Transportation-Harbors Division (DOT-Harbors)]. The following is a summary of comments and my consideration:

a. FEMA (letter received: 25 June 2014):

- **Flood Insurance Rate Maps:** The FEMA stated that the Flood Insurance Rate Maps (FIRM) for the City and County of Honolulu should be reviewed and recommended contacting the local community floodplain manager for more information on local floodplain management building requirements. FEMA also provided a summary of the National Flood Insurance Program (NFIP) floodplain management building requirements.

This comment is outside the purview of the Corps. However, the applicant has reviewed applicable FIRMs and indicated that all facility designs will comply with applicable building codes and city, state and federal regulations as well as any additional requirements by the local floodplain manager. A DA permit, if issued, would not obviate the need to obtain all other Federal, State, or local authorizations required by law. See section V(h) for a discussion of the Corps' compliance with Executive Order 11988

b. Hawaii DOH (letter received 25 July 2014):

- **National Pollution Discharge Elimination System Permit (NPDES):** The state DOH stated that the applicant must ensure that the information contained within their NPDES application, Section 401 Water Quality Certification (WQC) Application and Notice of Intent (NOI) to obtain NPDES general permit coverage is consistent with the FEIS.

This comment is outside the purview of the Corps. However, the applicant is currently completing its NPDES and Section 401 WQC applications. The applicant has indicated that it will update the applications and NOI for consistency with the FEIS.

- **State Water Quality Discharge Compliance:** DOH stated that all project discharges must comply with State of Hawaii Water Quality Standards.

Section 401 of the Clean Water Act requires the applicant to obtain a certification from the State of Hawai'i and that any discharge into navigable waters will comply with other substantive provisions of the Act, including applicable state

water quality standards. Conditions of the WQC, if issued by the State, will become conditions of the DA permit, if issued.

c. Hawaii DAR (Letter received 31 July 2014)

- Reports in the FEIS: The DAR requested copies of several new reports in the FEIS which updated information contained with the DEIS. DAR expressed a particular interest in obtaining the proposed mitigation plan to minimize impacts to the aquatic resources and analyses of potential effects to coral reef ecological services.

All of the referenced reports are contained within the body or appendices of the FEIS. Copies of the proposed mitigation plan to minimize impacts to the aquatic resources and analyses of potential effects to coral reef ecological services are included in the FEIS as Appendix O and in Section 3.7.5.1 respectively.

- Coral Transplantation: The DAR questioned whether the proposed coral transplantation was limited to 15 colonies and whether the draft plan would be circulated for review.

The proposed coral transplantation is limited to those coral colonies greater than 10 cm in size that would be otherwise unavoidably lost due to the excavation and backfilling of the Receiving Pit. Based on the surveyed coral inventory of the proposed Receiving Pit boundaries, a total of 15 coral colonies met this parameter. The draft transplantation plan is included in the FEIS.

- Pipe Removal Plan Submerged Land Lease Termination: The DAR recommended the applicant develop a pipe removal plan if it is appropriate to do so upon termination of the project or submerged land lease termination. The DAR recommended standard removal conditions be included in the state lease permit.

This comment is outside the purview of the Corps. Land lease concerns and permits are between the State and the applicant, and the Corps has no control or responsibility on this matter.

- New Alternatives 3 & 4: The DAR expressed appreciation for extension of the return water pipeline into deeper waters.

d. NMFS (Letter received: 19 August 2014)

- Night Fishing, Benthic Surveys, Monitoring, Renewable Energy, Alternative 4: The NMFS expressed appreciation for the inclusion of considerations of night fishing, benthic surveys and water quality monitoring plans in the FEIS. The NMFS also expressed their support for the overall purpose of the project to reduce reliance on fossil fuels and the new preferred alternative 4.

- Mitigation: NMFS stated that coral transplantation should only be considered a minimization effort and expressed their continued concern over a lack of a compensatory mitigation plan to offset unavoidable losses of EFH, including coral reef resources.

The applicant's Coral Transplantation Plan is considered a minimization measure. The Corps has determined that compensatory mitigation is not required for the preferred alternative considering that specifically identifiable aquatic resource losses would be minimal. A detailed consideration of project related aquatic resource losses and mitigation is contained with the Corps CWA Section 404(b)(1) evaluation (Attachment A).

e. Hawaii DOT-Harbors

- Deployment of offshore pipelines: DOT Harbors stated that the applicant should coordinate the deployment of the offshore pipe with all those concerned with maritime traffic including the DOT-Harbors Oahu District Office.

The DA permit, if issued, will require the applicant to coordinate the deployment plan with DOT-Harbors and other interested parties.

- Anti-Snag pipeline structures: DOT recommended that the applicant confirm with the maritime industry that the proposed mitigation measures to prevent snagging of tow lines to -150' MSL depth is sufficient.

The applicant coordinated their proposed anti-snag mitigation measures with the Pilots Association (operators of the tug boats). The Pilots Association expressed their support in a letter dated 29 October 2014.

f. USEPA (Letter received 28 July 2014)

- Energy Efficient Technologies and new Alternatives 3 & 4: The USEPA expressed appreciation for many improvements in the FEIS and the development of energy efficient technologies, such as the proposed seawater air conditioning project, as it assists the nation in meeting its energy requirements while reducing greenhouse gas emissions. The USEPA also applauded, amongst others, the additional action alternatives (Alternatives 3 & 4), for which the return water outfall would be located in successively deeper water and closer to ambient temperature.
- Mitigation: The USEPA expressed concerns over the lack of compensatory mitigation for the direct and indirect loss of corals and recommended a robust compensatory mitigation plan. The EPA recommended debris removal as a compensatory mitigation option to open new natural habitat. The USEPA also

recommended that a 75% survival rate after 2 years to be recognized as a coral transplantation success criteria.

The applicant's Coral Transplantation Plan is considered a minimization measure. Therefore, success criteria will not be required. Coral recruitment on the installed structures is expected to exceed pre-project conditions. The Corps has determined that compensatory mitigation is not required for the preferred alternative considering that specifically identifiable aquatic resource losses would be minimal. Additionally, the Corps does not consider debris removal to be an appropriate compensatory mitigation option to commensurately offset the anticipated impacts of the project, nor would it likely generate a discernible lift in ecological functions. A detailed consideration of project related aquatic resource losses and mitigation is contained with the Corps CWA Section 404(b)(1) evaluation (Attachment A).

- 316(b) of the Clean Water Act: The USEPA appreciated the fact that the FEIS clarified the applicant's intent to comply with the CWA 316(b) phase I rule via Track II, which requires the applicant to submit, as part its NPDES permit application, information required under 40 CFR 122.21(r) and 125.86(c), and to demonstrate that the intake and cooling system use the best available technology. While Track II does not require a screened intake, the USEPA expressed their belief that a screened intake would reasonably reduce adverse impacts to biological organisms and that the proposed project provides an opportunity for innovations in screen design technology. The USEPA recommended considerations of a breakaway screen design and the feasibility of a velocity cap.

The Corps acknowledges the applicant's responsibility to comply with the requirements of CWA Section 316(b) as part of its NPDES application.

V. Consideration of Applicable Laws, Regulations, Executive Orders and Policies

a. National Environmental Policy Act (NEPA):

The Corps determined that the proposed action had the potential to significantly affect the quality of the human environment. Therefore, an EIS was completed to evaluate a reasonable range of alternatives and the cumulative impacts associated with the proposed Honolulu Seawater Air Conditioning Project. The Corps has conducted all public disclosures, environmental analyses and timing restrictions, in accordance with 40 CFR Parts 1500-1508 (see section 1, background). The FEIS forms the basis for my decision on the proposed project. Signature of this Record of Decision (ROD) completes the Corps' NEPA requirements and responsibilities.

b. Section 401 of the Clean Water Act:

The proposed project must be in compliance with the Section 401 of the CWA. A DA permit may not be issued without a Section 401 Water Quality Certification (WQC) or

waiver. The WQC application is currently under review with the State of Hawaii Department of Health. Pursuant to 33 U.S.C. 1341(d), if issued, special conditions of the Section 401 WQC will become special conditions of the DA permit and will be included as an appendix to the DA permit.

c. Endangered Species Act of 1973:

The Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) (ESA) declares the intention of Congress to conserve threatened and endangered species and the ecosystems on which those species depend. Under Section 7 of the ESA, an agency must, in consultation with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS), take such action as necessary to ensure that any action it authorizes is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat.

The Action Area of the proposed project contains no designated critical habitat. The Corps determined that the applicant's proposed action may adversely affect the following species listed as threatened or endangered under the ESA:

- Humpback Whale (*megaptera novaeangliae*)
- Hawaiian Monk Seal (*monachus schauinslandi*)
- Hawksbill Sea Turtle (*eretmochelys imbricata*)
- Green Sea Turtle (*chelonia mydas*)

Where potentially impacted, each species is under the jurisdiction of NMFS. Accordingly, pursuant to Section 7 of the ESA, the Corps consulted with the Protected Resources Division of NOAA's NMFS Pacific Islands Regional Office. The NMFS issued its Biological Opinion, including an Incidental Take Statement, on September 13, 2012. The NMFS determined that the proposed action is anticipated to result in no mortality, injury, reduction in fitness, or reduction in reproduction for the listed species found in the ROI. Therefore, the impacts of the proposed action are not expected to reduce the abundance of the listed species populations. Considering the status of the listed species, the environmental baseline, and cumulative impacts and effects, the NMFS concluded that the proposed project is not likely to jeopardize the continued existence of humpback whales, Hawaiian monk seals, or green and hawksbill sea turtles. To minimize the amount of potential take, the NMFS proposed two Reasonable and Prudent Measures (RPMs). The Corps will implement the RPMs by requiring the applicant to comply with the Terms and Conditions of the Incidental Take Statement.

d. Fish and Wildlife Coordination Act:

The Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) (FWCA) provides for effective integration of fish and wildlife conservation within Federal water resources development. The FWCA requires Federal agencies to coordinate with the USFWS and relevant state wildlife resource agencies in order to help prevent the loss of and damage

to fish and wildlife resources. Through the NEPA process, the Corps coordinated and solicited comments from the USFWS regarding the proposed projects anticipated affects on fish and wildlife resources and conservation measures to prevent direct or indirect losses from the applicant's proposed activity.

In response to comments received from the USFWS on the DEIS, the applicant conducted 1) additional marine biological surveys of the entire pipeline route and quantitatively estimated losses of habitat, coral cover and other biota, including mesophotic organisms, (2) conducted additional water quality surveys, (3) agreed to implement additional measures to avoid coral loss including using divers to guide emplacement of piles and anchors associated with construction of the receiving pit and pipeline deployment, (4) reexamined the feasibility and effects of screening the intake, and (5) prepared a coral transplantation and monitoring plan.

e. Magnuson-Stevens Fishery Conservation and Management Act:

The proposed project is in compliance with the MSFCMA. The Magnuson-Stevens Fishery Conservation and Management Act, commonly referred to as the Magnuson-Stevens Act, requires Federal agencies to consult with NMFS on any action proposed to be authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH). The Corps determined that the applicant's proposed action may adversely affect EFH and accordingly consulted with the Habitat Conservation Division of NOAA's NMFS Pacific Islands Regional Office. EFH consultation concluded with the Corps final response to the NMFS's EFH conservation recommendations on 28 February 2013.

f. Section 106 of the National Historic Preservation Act:

Under Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.) (NHPA), an agency with jurisdiction over a proposed undertaking or having authority to permit any undertaking must take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. These resources are referred to as "historic properties." In carrying out its Section 106 responsibilities, a Federal agency must afford the State Historic Preservation Officer (SHPO) the Advisory Council on Historic Preservation and any Native Hawaiian organization that attaches religious and cultural significance to historic properties that may be affected a reasonable opportunity to comment on the undertaking.

Archaeological, historic and cultural resources in the proposed Permit Area are described in Section 3.2 of the FEIS. The Corps determined that the proposed undertaking, with incorporation of the monitoring requirements of the applicant's approved archaeological monitoring plan as a condition of any issued DA permit, would result in "no historic properties adversely affected." Based on SHPO's decision to allow the consultation period to lapse, the Corps has presumed concurrence with the determination and considers consultation with SHPO pursuant to Section 106 completed.

g. Section 176(C) of the Clean Air Act (CAA) General Conformity Rule Review:

Section 176(c) of the Clean Air Act requires that Federal agencies assure that their activities are in conformance with Federally-approved Clean Air Act state implementation plans for geographical areas designated as “nonattainment” and “maintenance” areas under the Clean Air Act. Hawaii does not have any geographic areas designated as nonattainment or maintenance areas. In addition, the activities proposed by the applicant would not exceed de minimus levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps’ continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action. Potential impacts of the HSWAC project on air quality are considered in Section 3.8.3.2 of the FEIS.

h. Executive Order 11998: Floodplain Management:

Executive Order 11988 requires federal agencies to prepare floodplain assessments for proposed actions located in or affecting floodplains. If an agency proposes to conduct an action in a floodplain, it must consider alternatives to avoid adverse effects and incompatible development in the floodplain. If the only practicable alternative involves siting in a floodplain, the agency must minimize potential harm to or in the floodplain and explain why the action is proposed there.

Flood zones in the HSWAC project area of impact are described in Section 3.6.2.2. of the FEIS. The FEMA assigns flood zones to areas based on the risk of flooding within that zone. These areas are indicated on Flood Insurance Rate Maps (FIRMs). The 2011 reevaluation of the flood hazard zone boundaries places the preferred site of the downtown cooling station and a small portion of the Microtunnel Jacking Pit in flood zone AE, at elevations 5 and 7 respectively. The DA permit, if issued, would not obviate the need to obtain all other Federal, State, or local authorizations required by law. The applicant is required to comply with local and NFIP floodplain management building requirements. The proposed project would not adversely affect the natural and beneficial values served by floodplains.

i. Executive Order 11990: Protection of Wetlands:

Executive Order 11990 requires federal agencies to prepare wetland assessments for proposed actions located in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no alternative is available and the proposed action includes all practicable measures to minimize harm to wetlands. The Corps has determined that the proposed project would not affect wetlands.

j. Executive Order 13175:

Consultation with Indian Tribal Governments. There are no federally recognized Indian tribes in the State of Hawaii, therefore no consultations were conducted. The Office of Hawaiian Affairs indicated a concern with the lack of information about archaeological sites and protections along the proposed routes for distribution pipelines, but the upland distribution pipelines and any associated impacts are outside the purview of the Corps. Nonetheless, information on these impacts was included in Section 3.9.1 of the FEIS.

k. Environmental Justice (Title VI of the Civil Rights Act and EO 12898):

The proposed action is not expected to negatively impact any community, and therefore is not expected to cause disproportionately high and adverse impacts to minority or low-income communities (Reference Page 4-10 of the FEIS for discussion of Environmental Justice).

VI. Consideration of Mitigation Measures

The FEIS considers all reasonable measures to mitigate adverse impacts to the human and natural environment. The applicant's proposed mitigation measures are summarized in Table ES-1 in the FEIS.

VII: Compliance with 404(b)(1) Guidelines:

The Corps 404(b)(1) Guidelines Analysis is attached (Attachment A)

Based on the discussion in Chapter 3 of the EIS are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the U.S." or at other locations within these waters?

Yes ___ No X

If the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

Yes X No ___

The overall project is not water dependent, as defined in the 404(b)(1) Guidelines. While it is debatable whether the project is in a special aquatic site, the applicant has nonetheless clearly demonstrated that practicable alternative sites that would not affect coral colonies are not available.

Will the discharge:

Violate state water quality standards?

Yes ___ No X

Violate toxic effluent standards under Section 307 of the Clean Water Act?

Yes ___ No X

Jeopardize endangered or threatened species or their critical habitat?

Yes ___ No X

Violate standards set by the Department of Commerce to protect marine sanctuaries?

Yes ___ No X

Evaluation of the information above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s):

(X) based on the above information, the material is not a carrier of contaminants.

The proposed discharge would consist of clean pre washed gravel and tremie concrete.

() the levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

() acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

Will the discharge contribute to significant degradation of "waters of the U.S." through adverse impacts to:

Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and/or special aquatic sites?

Yes ___ No X

Life stages of aquatic life and/or wildlife?

Yes ___ No X

Diversity, productivity, and stability of the aquatic life and other wildlife? Or wildlife habitat or loss of the capacity of wetlands to assimilate nutrients, purify water or reduce wave energy?

Yes ___ No X

Recreational, aesthetic and economic values?

Yes ___ No X

Will all appropriate and practicable steps be taken to minimize adverse impacts of the discharge on the aquatic ecosystem?

Yes X No ___

Does the proposal include satisfactory compensatory mitigation for losses of aquatic resources?

Yes X No ___

The Corps has determined that compensatory mitigation is not required for the proposed action.

VIII. Public Interest Review

- a. **The relative extent of the public and private need for the proposed work has been considered:** The proposed project is intended to provide seawater air conditioning services to buildings in downtown Honolulu. Construction and operation of the proposed project would provide some temporary and permanent employment opportunities. Seawater air conditioning services would provide a renewable alternative to conventional methods of air conditioning, thereby reducing greenhouse gas emissions and the consumption of electricity, petroleum, and potable water. There is a substantial long term public need both regionally and globally for environmentally preferable alternatives to the energy demands, including conventional air conditioning in densely populated tropical climates like Honolulu. It is assumed that the private need of the applicant for the proposed action is limited to the economical benefits associated with selling the service.
- b. **The practicability of using reasonable alternative locations and/or methods to accomplish the objective of the proposed structure or work has been evaluated:** Four practicable alternative pipeline routes were evaluated. The Corps has determined that there are no practicable alternative locations that would have less environmental impacts than the preferred alternative (Alternative 4) and accomplish the objective of the proposed action. With the inclusion of special conditions to minimize impacts to the aquatic environment, the Corps has determined that there is no practicable alternative method to accomplish the objective of the proposed project that would have fewer impacts than the preferred alternative.
- c. **The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses which the area is suited has been reviewed:** The proposed project is expected to adversely impact aquatic resources and public recreation (fishing, diving, and the use and enjoyment of the adjacent park) temporarily during construction of the Receiving Pit and pipeline installation, with approximately 1 month of cumulative in-water working days spanned over 11 months. The extent of the adverse impact is expected to be minimal. The proposed return seawater discharge may permanently affect water quality and biological communities in the immediate area. While substantial adverse effects are not anticipated,

the extent of the anticipated effects is not specifically known. To minimize potential effects, the return water pipeline in alternative #4 (Preferred Alternative) consists of a longer diffuser and terminal depth, which substantially decreases water quality (temperature and nutrient level) differences between the return water and ambient conditions. State water quality standards would be required through state administered permits (NPDES/WQC). The intake of deep seawater would permanently result in biological organism entrainment. The applicant must comply with the requirements of CWA Section 316(b) as part of their NPDES application to minimize these effects to the maximum extent practicable. The installment of the pipeline (including the tug boat tow-out of the pipelines from Ke'ehi Lagoon) is expected to temporarily affect navigation at Honolulu Harbor for approximately 1 day. The extent of impact would be minimized by coordination with the Honolulu Harbor – Harbor Authority, USCG, Hawaii Pilots Association, and a Notice to Mariners. The pipeline system has the potential to snag tow cables from tug-towed barges entering and exiting Honolulu Harbor, which may drag long tow wires on the seabed near the harbor entrance. The extent of this impact would be permanent. To minimize the potential for adverse effects, specially designed snag-resistant pipeline collars/anchor weights would be used down to a depth of 150 feet. The in-water staging area in Ke'ehi Lagoon, where pipeline sections would be preassembled and floated for storage would affect vessel navigation for not more than 2 years. The extent of impact would be minimized by the proposed configuration of floating structures to maintain navigation. The proposed project would provide a renewable alternative to conventional air conditioning energy consumption for buildings in downtown Honolulu. The proposed HSWAC system is expected to result in relatively permanent benefits to Honolulu by reducing greenhouse gas emissions and the consumption of energy and potable water. The proposed project is expected to reduce almost 85,000 tons/year of CO₂ (amongst other gas emissions), 77.5 million kWh/yr of energy, and over 1 million MMBtu/yr in crude oil (179,000 Barrels/year). The proposed pipeline structures are expected to result in permanent opportunistic coral growth and nekton presence in and around the structures, which may provide public recreational diving and fishing benefits although the extent to which is unknown.

IX. Special Conditions

The following special conditions will be included in the DA permit, if issued, to ensure the project is not contrary to the public interest and complies with the 404 (b)(1) Guidelines:

1. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.
2. Prior to in-water construction activities, you must coordinate with the United States Coast Guard (USCG) for issuance of a "Notice to Mariners" for construction and installation operations. You must install and maintain, at your expense, any safety lights and signals prescribed by the United States Coast Guard (USCG), through regulations or otherwise, on your authorized facilities. The USCG may be reached at the following address and telephone number: Commander (dpw), 14th Coast Guard District, 300 Ala Moana Blvd., Floor 9, Suite 200, Honolulu, Hawaii 96850; or by telephone at (808) 535-3409.

3. You understand and agree that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
4. The National Ocean Service (NOS) has been notified of this authorization. At least two weeks before you begin work, you must notify NOS and this office, in writing, of the date you anticipate beginning work. Upon completion of the activity authorized by this permit, you must provide NOS and this office with a written notification of completion. Your notification of completion must include a drawing which certifies the location and configuration of the completed activity (a certified permit drawing may be used). Notifications to NOS will be sent to the following address: NOAA, National Oceanic and Atmospheric Administration, Office of Coast Survey, Marine Chart Division, Nautical Data Branch, NCS-26, 1315 East West Highway, Silver Springs, Maryland 20910-3282.
5. Prior to tow-out of pipeline sections from Ke'ehi Lagoon, you must coordinate your operations plan with the USCG, Honolulu Harbor - Harbor Master, HDOT Harbors Division, and the Hawaii Pilots Association to ensure that impacts to navigation are minimized to the maximum extent practicable. Additionally, pipeline sections stored in Ke'ehi Lagoon must be configured to allow vessel maneuvering around the sections and to avoid blocking access to docks serving adjacent residences.

Rationale: Conditions 1-5 are necessary to maintain and/or mitigate effects to navigation in navigable waters of the U.S.

6. Excavated sediments from the "Receiving Pit" may not be discharged into waters of the U.S.

Rationale: The DA permit does not authorize a discharge of dredged material in waters of the U.S.

7. You must implement and adhere to the "Proposed Mitigation Measures" summarized in Table ES-1 in the *Final Environmental Impact Statement For the Proposed Honolulu Seawater Air Conditioning Project, Honolulu, Hawai'i*, dated June 2014.

Rationale: The applicant proposed mitigation measures were developed in the NEPA process as reasonable mitigation measures to offset impacts to the human and natural environment.

8. The Receiving Pit must be sited to prevent physical damages to the adjacent coral spur ridges during construction activities, which may require adjusting the final location prior to construction. Prior to commencing construction activities, you must submit to this

office a final Receiving Pit Location and Construction Plan and Coral Survey, to demonstrate the exact location of the Receiving Pit and related construction structures (e.g., sheet piling, barge or temporary platform mounted crane/excavator anchoring and/or piling, temporary pipeline holdback structures, etc.), how impacts to the adjacent coral spurs will be avoided, and the unavoidable coral colony impacts that would occur within the footprint of the receiving pit. Construction activities may not commence until you have obtained this office's approval of the Receiving Pit Location and Construction Plan.

9. You must implement and adhere to the Coral Transplantation and Monitoring Plan (CTMP) (Enclosure 2), dated 6 December 2013, prior to commencing Receiving Pit construction activities. If the Receiving Pit location is modified in accordance with Special Condition #8, you must submit a revised Coral Survey and CTMP to reflect the changes in coral colony presence. You must obtain this office's approval of the revised Coral Survey and CTMP, if one is required, prior to commencement of construction activities.
10. To minimize the risk of uncontrolled movement of equipment and structures, you must avoid conducting in-water nearshore construction operations during periods where wave heights exceed 5 feet.
11. The installation of the pipeline system structures on the seafloor (e.g., pipeline collars/weights, pile anchors, etc.) and temporary construction equipment and structures (e.g., pipeline tieback anchors and lines, piling, silt curtains, vessels and anchors, moorages, etc.) must avoid contact with coral colonies or macro-invertebrates to the maximum extent practicable. That is, you must employ appropriate measures, including diver assisted structure installment, remotely operated submersible vehicles, pre construction surveys, etc. to ensure that structures are placed over sand, rubble, or otherwise non-coral covered substrate to the extent practicable.
12. Sediment generating construction activities in waters of the U.S. must be avoided for a period of two weeks before to two weeks following predicted primary annual coral spawning events. Please coordinate with that National Marine Fisheries Service, Pacific Islands Regional Office, at (808) 944-2200 for additional information regarding anticipated annual coral spawning events.

Rationale: Special Conditions 8-12 are necessary to appropriately mitigate impacts to aquatic resources.

13. Appropriate sediment control measures (e.g., sheet piling, silt curtains, etc.) must be employed and maintained to contain and minimize sedimentation/turbidity outside of the authorized footprint during sediment generating construction activities, most notably dredging of the Receiving Pit.
14. You must implement and adhere to the Water Quality and Marine Biological Monitoring Plan (Enclosure 3) and Data Quality Objectives (WQO) (Enclosure 4), dated 6 and 3

December respectively. The monitoring plan and/or DQOs may be modified and/or superseded by requirements of your state Water Quality Certification (WQC), if issued.

Rationale: Special Conditions 13-14 are necessary to maintain state water quality standards and prevent unnecessary impacts to aquatic resources outside of the authorized footprint.

15. You must comply with the terms and conditions (Section 9.4) of the Incidental Take Statement of the National Marine Fisheries Service, Pacific Islands Region, Endangered Species Act – Section 7 Consultation Biological Opinion, dated 13 September 2012, NMFS File No. (PCTS) F/PIR/2011/06432.

Rationale: Special Condition #15 is necessary for compliance with the Endangered Species Act.

X. Findings


a. The evaluation of the proposed action and alternatives was done in accordance with all applicable laws, executive orders, regulations, and agency regulations. The EIS and supporting documents are adequate and contain sufficient information to make a reasoned permit decision.

b. The selected alternative is **Alternative 4**, and with appropriate and practicable mitigation measures to minimize environmental harm and potential adverse impacts of on the aquatic ecosystem and the human environment, the applicant's proposed project, as mitigated by these conditions, is considered the environmentally preferred alternative.

c. The discharge complies with the Section 404(b)(1) guidelines, with the inclusion of appropriate and practicable general and special conditions in the permit to minimize pollution or adverse effects to the affect ecosystem.

d. Issuance of a Department of the Army permit, with the inclusion of special conditions in the permit, as prescribed by regulations published in 33 C.F.R. Parts 320 to 332, and 40 C.F.R. Part 320 is not contrary to the public interest.

APPROVED BY:


CHRISTOPHER W. CRARY, DISTRICT ENGINEER

Christopher W. Crary
Lieutenant Colonel, U.S. Army
District Engineer

26 JAN 2015
Date

Attachment A

Compliance with the CWA 404(b)(1) Guidelines Honolulu Seawater Air Conditioning Project POH-2004-01141

The Honolulu Seawater Air Conditioning (HSWAC) project would involve a discharge of fill material in waters of the U.S. requiring Department of the Army (DA) authorization under Section 404 of the Clean Water Act (CWA). Section 404(b)(1) of the CWA (33 U.S.C. 1344(b)(1)) requires discharges of dredged or fill material into waters of the U.S. authorized by U.S. Army Corps of Engineers (Corps) permits to be in compliance with guidelines specified under 40 CFR Part 230. This document constitutes an evaluation of the proposed HSWAC project in conformance with the Section 404(b)(1) Guidelines (Guidelines).

The HSWAC project would involve several components in navigable waters of the U.S.: the installation of seawater intake and return water pipelines, a pipeline assembly staging area, and the construction of an offshore pipeline receiving pit. The only project component that would involve a discharge of fill material into waters of the U.S. subject to Section 404 of the CWA is the proposed receiving pit. The pipelines would be micro-tunneled from an upland jacking pit to the receiving pit location 1800 ft offshore, where the subsurface pipelines installed in the micro-tunnel would be connected to the seafloor surface mounted pipelines extending seaward. The receiving pit would involve excavating a 40-ft x 40-ft area of seafloor, approximately 20 ft deep, backfilling the pit with clean gravel, and capping the gravel with concrete to restore original seafloor contours. The applicant proposes to dispose of the dredged materials at a state approved upland location or landfill. There would be no discharge of dredged material in waters of the U.S.

Subpart B – Compliance with the Guidelines

§230.10 Restrictions on discharge

Least Environmentally Damaging Practicable Alternative:

Section 230.10(a) "...no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem..." Practicable alternatives are those that are available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

The Corps has defined the basic and overall project purposes of the HSWAC project as follows:

Basic Project Purpose: Construct facilities to provide seawater air conditioning services. This basic project purpose does not require siting within a special aquatic site. Therefore, practicable alternatives that do not involve special aquatic sites are presumed to be available and to have less adverse impact on the aquatic ecosystem under the Guidelines.

Overall Project Purpose: Construct facilities to provide sea water air conditioning services to downtown Honolulu, HI. This overall project purpose provides the basis for the evaluation of the practicability of potential alternatives.

Activities which do not involve a discharge of dredged or fill material into the waters of the United States:

The only potential alternative that would not involve a discharge of dredged and/or fill material in waters of the U.S. would entail seafloor surface mounted pipes the entire length of the in-water portion of the project, from an upland jacking pit to the offshore intake and return water terminuses. This alternative would result in greater impacts to aquatic resources associated with pipe collar placement within the near shore limestone reef, which contains higher coral abundance. Additionally, according to the applicant, deploying the pipes on the seafloor in the near shore shallow waters would not be logistically practicable considering that the pipes would be exposed to extreme wave forces during storm and high surf events which could result in failures. The construction of seawater air conditioning facilities for the proposed project necessitates a discharge of fill material in waters of the U.S. associated with either trenching and backfilling or micro-tunneling across near shore shallow waters to interface the subterranean pipeline with the seafloor. Therefore, the Corps has determined that alternatives not involving a discharge of dredged and/or fill material in waters of the U.S. are not practicable.

Discharges of dredged or fill material at other locations in waters of the United States or ocean waters:

The proposed project would not involve a discharge of dredged material in waters of the U.S. All dredged material would be disposed of at an approved upland site(s). The applicant completed a comprehensive evaluation of practicable alternatives for siting the facilities and routing the pipelines, considering micro-tunneling and water pumping distances, to the downtown Honolulu service area. All available real estate adjoining Honolulu Harbor and Kaka'ako was evaluated using a set of feasibility criteria. Once the available and practicable sites for a cooling station, on-shore jacking pit, and pipeline staging areas were identified, all practicable alternative locations for the receiving pit and the pipeline route were investigated. Practicable locations for the receiving pit were limited to locations within proximity (i.e., within technological and logistical micro-tunneling length limitations) of the upland jacking pit and cooling station near/in downtown Honolulu.

Avoidance and minimization of impacts to coral aquatic resources was a fundamental consideration. Alternatives 1, 3, and 4 share a common receiving pit and westerly pipeline route. Alternative 2 would employ a receiving pit location and easterly pipeline route which would result in substantially greater losses of coral aquatic resources. Considering technological and logistical micro-tunneling distance limitations, micro-tunneling greater distances offshore increases risks and uncertainty with potential machine failure and/or loss of directional control, which could result in an undesignated location for receiving pit retrieval. More than minor increases in micro-tunneling distance offshore would necessitate an offshore jacking pit in addition to the offshore receiving pit, which would increase discharges of fill material and direct and secondary impacts to aquatic resources, including corals. Prior to construction, minor adjustments to the receiving pit location may be made to avoid unnecessary direct impacts to corals occurring on spurs adjacent to the receiving pit. No practicable pipeline receiving pit locations were identified that would completely avoid losses or impacts to coral resources. The proposed offshore receiving pit site was selected to minimize impacts to coral aquatic resources to the maximum extent practicable.

Alternative Analysis and LEDPA Determination

In planning for the HSWAC system, the applicant applied numerous practicability criteria in the areas of cooling station location and design, equipment availability, pipe routing and installation methods, materials selection, hazard mitigation, maintenance, and economics based on system cost and customer demand. Four alternatives were determined to be practicable, based on the overall project purpose, which were carried forward for analysis in the Final Environmental Impact Statement (EIS).

The following paragraphs summarize the comparisons of the practicable alternatives leading to the selection of the Preferred Alternative (Alternative 4) as the Least Environmentally Damaging Practicable Alternative (LEDPA). The types of environmental impacts would be the same with all of the action alternatives. However, the scale of anticipated impacts to coral aquatic resources and water quality, the fundamental comparison basis of this LEDPA analysis, would differ. For the purposes of establishing the LEDPA, the Corps must consider environmental impacts of project components other than the actual discharge site. This includes the anticipated environmental damages to aquatic resources (primarily coral) associated with the placement of pipeline collars and the return water effluent zone of mixing (ZOM).

Once practicable locations for the cooling station and on-shore jacking pit were identified, the applicant analyzed potential construction methodologies. Preliminary analysis of alternatives for installation of the pipelines evaluated all

potential alternatives. Alternatives evaluated and rejected based on logistical impracticability and/or excessive environmental damages included entirely deploying the pipes on the seafloor, burying the pipes in a backfilled trench from the shore to a water depth of about 80 feet, and burying the pipes from the breakout point to a depth of about 80 feet. Trenching in the soft sediments characteristic of the project area, either from the shore to depth or from the breakout point to depth, would require a very large amount of dredging and filling considering the necessity to create a shallow side slope angle to prevent sediment slumping into the trench. These alternatives would also impact a large area surrounding the trench due to the necessity to side cast and stockpile removed materials. Therefore, to minimize discharges of dredged and/or fill material in waters of the U.S., including coral aquatic resources, all of the action alternatives include a micro tunnel under near shore shallow water limestone reef and surface mounting at depths 30 ft. and greater where wave forces diminish. Micro-tunneling greater distances offshore to greater depths may require an offshore jacking pit in addition to the receiving pit, which would increase discharges of fill material and direct and secondary impacts on aquatic resources, including coral. Additionally, near shore pipeline collars, where coral resources and wave energies are greater, were designed to be pile anchored to provide stability without expanding the footprints. Excavated materials would be disposed of on land and the area of backfilling would be minimized.

Construction and operation of any of the alternatives would have impacts on biota, including unavoidable impacts to coral aquatic resources. Construction impacts would be caused by bottom disturbance and vessel activities, and the degree of impact would depend on the location of activities, the surface area affected and the duration of disturbance. With regard to location, direct construction related impacts on biological resources from Alternative 2 (eastern route) would be greatest, due to the crossing of a relatively vibrant reef, and would be least under Alternative 1 (western route) due to the smaller pipeline collar footprint in shallower, more productive waters. Construction duration would be similar under all alternatives and wouldn't be a discriminator. Construction effects on protected species would be similar under all of the action alternatives.

Coral Resources:

Qualitative biological underwater surveys using towed divers and submersible recording devices were conducted for the proposed pipeline routes and included in the draft EIS. Alternative 2 was identified as having greater impacts to biological communities, including coral aquatic resources, compared to other practicable alternatives with a more westerly route. Therefore, subsequent quantitative coral benthic surveys (including colony size, species, etc.) were conducted for the westerly pipeline routes of Alternatives, 1, 3, and 4 in water depths ranging from 30-150 ft. and a complete coral colony inventory was conducted for the receiving pit discharge site, which would occur at a 30 ft. depth near the seaward edge of biotope scattered corals. Within the 30-150 ft. depth ranges, the pipeline would cross substrates consisting primarily of sand and

rubble with scattered individual coral colonies (0.3 -1.1% coverage) ranging in size from 1-30 cm. Coral colonies indentified in the 150-300 ft. depth range by submersible video were limited to scattered individual plating/encrusting colonies (0.2% coverage) of the mesophotic coral *Leptoseris*, approximately 30-45 cm in size. Coral coverage occurrence within the crossed biotopes, extending seaward from the receiving pit to a 300 ft pipeline depth (where occurrence of *Leptoseris* colonies ceased) for project alternatives are listed below (percentages for deep water zone 1 were estimated from the remote submersible video biological survey).

Coral Coverage by Biotope

<i>Biotope</i>	<i>Alt. 1</i>	<i>Alt. 2</i>	<i>Alt. 3</i>	<i>Alt. 4</i>
Biotope: Scattered Corals	0.3%	5.0%	0.3%	0.3%
Shallow Dredged Rubble	1.1%	0.01%	1.1%	1.1%
High Coral Coverage Spur		49.0%		
Sand	0.7%	0.0%	0.7%	0.7%
Deep Dredged Rubble	1.1%	0.001%	1.1%	1.1%
Deep Water Zone 1 (150-300 ft. water depth)	0.2%	0.2%	0.2%	0.2%

Coral Colony Size Frequency Distribution based on quantitative surveys from biotope scattered corals (Receiving Pit and Transects C &D) moving seaward to biotope deep dredged rubble (transects J and K) for Alternatives 1, 3, & 4:

Transects	Pipeline Route Survey (10-40m), Coral Colony No. in Size Class (cm)					Total No.
	0<2	2<5	5<10	10<20	20<40	
C	1	4	7	1	1	14
D	0	4	1	2	2	9
E	4	19	3	3	1	30
F	0	1	0	0	0	1
G	3	24	3	2	0	32
H	0	0	0	0	0	0
I	0	12	14	6	0	32
J	2	7	8	0	0	17
K	16	5	0	0	0	21
Total No.	26	76	36	14	4	156
Rec. Pit Count	0	0	4	15	10	29

Average and Maximum Coral Colony Size by Biotope (Alt. 1, 3, & 4):

Biotope	Avg. Size (cm)	Max. Size (cm)
Scattered Corals	14.3	30
Dredged Rubble (shallow)	7.9	24
Sand	3.2	15
Dredged Rubble (deep)	4.2	15

Discharge Site (Receiving Pit): Alternatives 1, 3, and 4 would occupy the same receiving pit discharge site location and would therefore impact the same quantity and quality of coral resources. Up to 29 coral colonies, averaging in size from 5-30 cm would be lost covering a total area of 4.63 ft² (assuming complete failure of coral colony transplantation). Coral colonies larger than 10cm (approximately 15 of the 29 total colonies) would be transplanted to a nearby suitable site and monitored. The receiving pit discharge site location in Alternative 2 presumably contains little to no coral colonies based on cursory qualitative data.

Pipeline Collar Placement: Alternative 2 would result in the greatest amount of coral resource losses, both quantitatively and qualitatively. The pipelines of Alternative 2 would cross a band of comparatively well developed and dense coral reef with an estimated coral coverage of 50%. Compared to the other alternatives, this section of reef is considered to provide substantially greater ecological functions based on its structural complexity and density and accordingly provides valued recreational services known for SCUBA tours. The anticipated coral losses associated with pipeline collar placement within this region greatly surpasses that of the other alternatives. The cumulative anticipated coral losses associated with Alternative 2 would be almost 7 times greater than Alternative 4 (preferred alternative). Alternative 1, which would have the smallest collar footprint, would result in the least amount of anticipated coral mortality from collar placement. Alternatives 1, 3, and 4 differ only in the length of the return water pipes and the location (water depths) of the return water effluent diffuser. The return water pipes of Alternatives 1, 3, and 4 would terminate at depths 150, 300, and 423 feet respectively. The increased return water pipeline lengths of Alternatives 3 and 4 requires additional Type A (double pipe) collars, which are larger than the Type B (single pipe) collars, compared to Alternative 1. Therefore, minor increases in potential coral colony mortality would be anticipated based on the larger collar footprints of Alternatives 3 and 4. Alternatives 3 and 4 would result in identical coral losses from collar placement considering that mesophotic corals were not identified at water depths deeper than 300 ft.

Operations: HSWAC operations would impact biota through seawater intake

and return water discharge. The intake would be at the same location for all action alternatives, but the return water discharge locations are different. Under Alternative 1, the return water discharge would be through a 250-ft long diffuser at depths between 120 and 150 ft. Under Alternative 2, due to the flatter bathymetry in the discharge area, the return water discharge would be through a 345-ft long diffuser between the depths of 145 and 150 ft. A much larger area of benthos would be within the Alternative 2 ZOM. Alternative 3 would have a 250-ft long diffuser between the depths of 276 and 300 ft. At this depth, the return water discharge would be within the thermocline for at least a portion of the year. Alternative 4 would have a 250-ft long diffuser between the depths of 326 and 423 ft. At this depth, the diffuser would be at the approximate interface of the mixed layer and the thermocline and limited light penetration would reduce the likelihood of eutrophication.

A primary environmental concern identified during the draft EIS review process was the potential effects of the return water discharge on biological communities considering the difference in both nutrient level concentrations and temperature between the return water discharge and ambient water quality conditions. As water depth increases, nutrient concentrations increase and temperatures decrease. The return effluent water would have higher nutrient levels and lower temperatures compared to ambient water quality conditions, which would inevitably affect biological conditions and community structure, including the survivability of coral communities, the extent to which is not definitively known. By increasing the depth of the return water discharge, the difference in water quality conditions between the effluent discharge and ambient conditions become more similar and would presumably result in fewer impacts on established biological communities. While mobile organisms may relocate, immobile benthic organisms like coral cannot, and some degree of mortality would be anticipated. While coral losses associated with the construction of the receiving pit and pipeline collar placement may be offset by subsequent coral colonization on the created hard substratum, the relatively unknown potential long term effects associated with changes in water quality conditions at the return water ZOM was identified as a priority environmental consideration. Benthic surveys revealed generally that coral colony presence becomes scarcer and coral colony size becomes smaller with increased water depth and that corals did not occur in water depths beyond 300 ft. Therefore, alternatives with deeper return water discharge depths (Alternatives 3 and 4) were added to the National Environmental Policy Act (NEPA) alternatives analysis in the Final EIS to address concerns over long term operational impacts to corals.

With increasing depth, the nutrient assimilation capacity of the receiving waters decreases, resulting in larger ZOM areas needed for assimilation before compliance with state water quality standards can be achieved. However, the water quality characteristics of the return water discharge would be closer to ambient conditions at increasing depths and consequently it is presumed that biota would be less stressed by interactions with the plume. Therefore, the

anticipated potential impacts on the physical, chemical, and biological characteristics of the ecosystem are believed to be relatively proportionate to the depth of the return water discharge. The deeper return water discharges of Alternatives 3 and 4 would return the seawater to depths where differences between the discharge and receiving waters are less than at the shallower discharges of Alternatives 1 or 2. The estimated permanent coral mortality that would occur from the return water effluent discharge ZOM would decrease with Alternative 3 and would be absent in Alternative 4, which has a return water discharge depth beyond the depth of coral occurrence. It is anticipated that Alternative 4 (preferred alternative) would result in the least amount of coral loss and would have the least adverse operational impacts on biological resources overall. Alternative 4 (preferred alternative) would result in an estimated cumulative loss of 86 ft² (0.002 acre) of coral resources, with coral colony sizes ranging between 1-30cm.

Summary of Estimated Cumulative Coral Area (ft²) Lost by Biotope:

Impact Type	Biotores	Alt 1	Alt 2	Alt 3	Alt 4
Receiving Pit and Collars	Scattered Corals	5.7	167.4	5.7	5.7
Collars	Shallow Dredged Rubble	12.2	0.2	12.2	12.2
	Coral Spur (High coral %)		409.6		
	Sand	17.9	0.0	17.9	17.9
	Deep Dredged Rubble	31.9	0.1	31.9	31.9
	Deep Water Zone	7.7	6.2	18.3	18.3
Zone of Mixing	Deep Water Zone	19.0	0.023	4.0	0.0
Total		94.5 ft²	583.6 ft²	90.0 ft²	86.1 ft²

Human Use, Ecological Services: All of the alternatives would restrict human use of the construction area while the system is being installed. Subsequently, there would be no restrictions on recreational activities around the pipes. Construction and operation of Alternative 2, however, would adversely affect the research being done at the Kilo Nalu Observatory of the University of Hawai'i and known SCUBA tours. Scientific measurement devices are mounted on the seafloor off the eastern side of Kaka'ako Waterfront Park. To the extent that the structures in the water encourage recreational pursuits such as diving and fishing, Alternative 4 (preferred alternative), which would have more of the larger Type A collars and a longer discharge pipe, may have a slightly more beneficial effect than any of the other action alternatives.

Summary: In summary, Alternative 2 would have the greatest adverse impacts to coral aquatic resources, biota, water chemistry and human uses. Alternatives

1, 3 and 4 differ in the depth of the diffuser, with Alternative 4 having the deepest diffuser and consequently more installed physical structure. Direct, construction impacts to biota would be least under Alternative 1. However, after considering both direct and secondary operational impacts of all alternatives, the Corps has determined that both Alternative 1 and Alternative 3 would have greater, potentially significant adverse environmental impacts than Alternative 4. Alternative 4, while having slightly greater potential construction related impacts to coral colonies than Alternative 1, would result in the least environmentally damaging impacts to the aquatic ecosystem overall, including coral aquatic resources, and has therefore been determined to represent the LEDPA.

§ 230.10(b) “No discharge of dredged or fill material shall be permitted if it:”

(1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard: The fill proposed to backfill the receiving pit would consist of clean gravel and tremie concrete which would not violate state water quality standards. Mitigation measures would include complete containment of the receiving pit with sheet pile and silt curtains from seafloor to water surface and water quality monitoring and shut down procedures during excavation and backfilling to minimize turbidity and sedimentation outside of the footprint. Water quality impacts associated with the construction of the receiving pit are expected to be minimal.

(2) Violates an applicable toxic effluent standard or prohibition under Section 307 of the Act: All dredged material would be disposed of in an approved upland disposal site, potentially a landfill. The proposed receiving pit would consist of clean gravel backfill and concrete. The proposed fill materials are not prohibited under the CWA and would not contain any known toxic materials or violate toxic effluent standards.

(3) Jeopardizes the continued existence of species listed as endangered or threatened under the ESA or results in likelihood of the destruction or adverse modification of critical habitat: Pursuant to Section 7 of the ESA, the Corps consulted with the Protected Resources Division of the National Oceanic and Atmospheric Administration’s (NOAA) National Marine Fisheries Service (NMFS) Pacific Islands Regional Office. Formal consultation was completed with NOAA’s issuance of its Biological Opinion on September 13, 2012. The Corps and NOAA concluded that the proposed project would not jeopardize the continued existence of any ESA listed species. NMFS-recommended mitigation measures would be implemented into the DA permit as special conditions, if issued, to minimize potential adverse effects.

(4) Violates any requirement imposed by the Secretary of Commerce to protect any marine sanctuary: The proposed action would not occur in or affect designated critical habitats or marine sanctuaries.

§ 230.10(c) "...no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States...". "Under these Guidelines, effects contributing to significant degradation considered individually or collectively, include:

(1) Effects on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites: The proposed fill material would consist of clean gravel, precast concrete and tremie concrete at the receiving pit discharge site. The receiving pit would be completely contained to limit impacts to within the contained area of the receiving pit to the maximum extent practicable. The proposed action would reduce municipal water supply demands long term. Immobile benthic organisms, including coral colonies, would be lost within the footprint of the 1600 ft² receiving pit. Approximately 4.63 ft² of coral colonies (30 cm and smaller) may be lost at the discharge site. The anticipated impacts to aquatic organisms and special aquatic sites would be minimal and not expected to affect human health or welfare.

(2) Effects on life stages of aquatic life and other wildlife dependent on aquatic ecosystems: Immobile benthic biota within or on the sandy rubble substrate of the 40 ft x40 ft receiving pit would be destroyed by excavation and upland disposal. Plankton or demersal fish remaining in the water column within the 1,600 ft² pit would be subject to potential physical impact and elevated turbidity during excavation and elevated temperature and pH during placement of tremie concrete. Impacts to water quality would be contained to the receiving pit footprint to the maximum extent practicable and prohibited during coral spawning events. Construction of the receiving pit would not significantly affect life stages of aquatic life within the ecosystem. Following construction of the receiving pit, no adverse affects to aquatic organisms are anticipated.

(3) Effects on aquatic ecosystem diversity, productivity, and stability: The proposed project area has relatively low species and structural habitat diversity and productivity. The area consists primarily of unconsolidated sand and dredged rubble, which is continuously resuspended and redistributed, resulting in a relatively unstable environment. The benthic biological community is kept in an early successional stage by the scouring effects of sand and rubble mobilized by seasonal high surf. The proposed discharge of fill material would not be expected to have more than a minimal effect on aquatic ecosystem diversity, productivity, and/or stability. Following construction, the concrete cap on the receiving pit would potentially provide a hard, stable substratum for colonization by benthic organisms.

(4) Effects of discharge of pollutants on recreational, aesthetic, and economic values: During construction, recreational use of the project area would be curtailed and aesthetics of the vicinity would be affected by the presence of moored barges. Based on available information, the proposed discharge site

would not occur in an area with known recreational, aesthetic, and/or economic values. Following construction the discharge site would not adversely affect recreational, aesthetic, and/or economic values. The proposed discharge site would not be expected to have more than minimal effects on nearby harbors and/or recreational areas.

The Corps has determined that the proposed discharge would not cause or contribute to a significant degradation of waters of the U.S. individually or collectively. The proposed excavation and backfilling of the receiving pit would remove a small amount of benthic habitat and resident infauna as well temporarily decrease water quality in the immediate vicinity affecting nearby adjacent coral reef aquatic resources. The receiving pit location was selected to be in a sand channel to minimize losses of coral colonies and avoid direct impacts to nearby coral resources. An additional preconstruction benthic survey would be required to ensure that the proposed receiving pit is located to minimize direct losses of coral colonies and impacts to nearby adjacent coral reef aquatic resources to the maximum extent practicable. The affected biotope and the associated biota is abundant in the project area. The proposed discharge would alter 0.037 acre of sand and rubble seafloor into a concrete capped gravel pit at preexisting grade. The former sand bottom would be replaced by concrete at the receiving pit providing a hard substratum, which may provide opportunities for settlement of coral and other sessile organisms.

§ 230.11 Factual determinations. Nature and degree of short and long term individual and cumulative effects:

Physical Substrate: The receiving pit would be backfilled with clean gravel and capped with concrete to the level of the existing seabed. Approximately 0.037 acre of sand and rubble bottom would be permanently replaced with concrete. The existing bottom contour would be maintained.

Water circulation, fluctuation, and salinity: Containment of the receiving pit within sheet piles and/or turbidity curtains would have a short-term effect, approximately 7 months, on water circulation within and around the 40' x 40' pit. The alteration of circulation patterns would be temporary and minimal. Following construction, preconstruction elevations would be restored. No effects to water fluctuation and/or salinity levels are anticipated.

Suspended particulate/turbidity: Identified temporary impacts would include potentially elevated levels of suspended sediments and turbidity within the receiving pit footprint and in waters surrounding the pit during construction. The applicant proposes to install sheet piles and floating silt curtains around the pit, which would minimize this effect. The sheet piles and silt curtains would extend from seafloor to water surface to isolate the receiving pit from the surrounding waters. Sediments removed from the pit would be disposed of on uplands. The DA permit, if issued, would require the implementation of water quality BMPs,

monitoring, and shut down procedures during all construction operations to minimize adverse impacts to the maximum extent practicable. The proposed discharge would result in temporary adverse effects on turbidity during construction; no long-term or cumulative effects are anticipated.

Contaminants: During construction, the use of heavy equipment would involve the use of petroleum, oil and lubricants (POLs), which include gasoline, diesel, oil, grease, and other related products. The DA permit, if issued, would require the employment of effective measures to prevent, contain, and/or clean up spills and leaks. No excavated material would be stored or disposed in waters of the U.S. With the implementation of BMPs, no more than minimal impacts are anticipated.

Aquatic ecosystem and organisms: Approximately 0.037 acre of sand and rubble bottom at the receiving pit would be replaced with concrete at grade. Benthic organisms in the receiving pit that are not avoided and/or transplanted would be destroyed. Aside from fish and/or plankton potentially trapped within the confines of the sheet pile enclosed receiving pit during construction, 29 coral colonies, ranging in size from 5-30 cm, would be affected by the proposed discharge. Coral colonies larger than 10 cm (approximately half) would be transplanted by the applicant and monitored. The concrete capped receiving pit area is expected to be colonized by coral following construction. No more than minimal long term impacts are anticipated.

Proposed Disposal Site:

(i) Depth of water at the disposal site: The water column averages 31 feet at the receiving pit.

(ii) Current velocity, direction, and variability at the disposal site: Strong tidal velocities measured at Barbers Point and Diamond Head are oriented parallel to the depth contours and directed towards the middle of Mamala Bay. Weak currents result where the flows merge from opposite directions. Converging flows at flood tide cause a downwelling (downward flow) at the center of the bay, which reverses at ebb tide. Consequently, large changes in stratification occur over the tidal cycle, with the water column often becoming homogeneous at different sites. Peak currents of about 20 inches per second were measured at the Sand Island Wastewater Treatment Plant outfall located about two miles west of the HSWAC receiving pit site in approximately 250 feet of water. Net drift from Mamala Bay is toward the southwest, roughly perpendicular to the route of the proposed pipelines. Sediments suspended in construction activities, if not contained within the receiving pit, would therefore tend to move toward deeper waters to the southwest.

(iii) Degree of turbulence: The discharge area is exposed to swells from the south. High surf conditions are experienced seasonally in summer when

dredged rubble and sediments are mobilized and resuspended.

(iv) Stratification attributable to causes such as obstructions, salinity or density profiles at the disposal site: There are no obstructions at the disposal site. The water column and seafloor at the discharge site is well mixed by wind and waves and relatively uniform.

(v) Discharge vessel speed and direction, if appropriate: Filling at the discharge site would be accomplished from a stationary vessel and would not require multiple trips.

(vi) Rate of discharge: Tremie concrete would be discharged into the receiving pit through a pipe or hose extending to the bottom at a rate slow enough to avoid washout. Likewise, the inert gravel would be delivered to the bottom through a pipe at a rate slow enough to allow divers to control placement.

(vii) Ambient concentration of constituents of interest: There would be no discharge of dredged material in waters of the U.S. The relatively inert gravel and concrete fill material would not affect ambient constituent concentrations at the discharge site following construction.

(viii) Dredged material characteristics, particularly concentrations of constituents, amount of material, type of material (sand, silt, clay, etc.) and settling velocities: The proposed project would not involve a disposal of dredged material in waters of the U.S. The proposed fill material would consist of clean coralline gravel fragments containing less than five percent fines. The gravel-sized particles would settle rapidly. The volume of fill material would be approximately 1,185 cubic yards.

(ix) Number of discharge actions per unit of time: Approximately 1,185 cubic yards would be discharged into the receiving pit over approximately one week.

(x) Other factors of the disposal site that affect the rates and patterns of mixing. Discharge of fill material into the receiving pit would be contained by the sheet piling and/or turbidity screens to the immediate work area. No more than minimal mixing outside of the receiving pit footprint is anticipated. The sheet piling and/or turbidity screens would be maintained in place and not removed until the receiving pit is stable.

Cumulative Effects on the Aquatic Ecosystem:

The proposed discharge of fill material would minimally contribute to cumulative effects within Mamala Bay. The project area has been subject to repeated historical discharges of dredged materials which has altered the biotic community structure. In addition, Māmala Bay receives discharges from numerous streams, canals and storm drains, which drain industrial, commercial and residential

areas. Incinerator waste and other unburned waste were used to fill a section of shoreline. Treated and untreated domestic sewage has been dumped in the area for decades. Anthropogenic debris, including discarded military munitions, litters the seafloor in the area. Waves and currents resuspend sand and mobilize rubble, which scours the bottom keeping the benthic community in an early successional stage. Little solid substratum exists for recruitment by sessile benthic organisms and there is little shelter for fish.

In the area of the receiving pit, the soft bottom would be replaced by a concrete cap covering the connections between pipes in the microtunnel and the surface mounted pipes. The concrete capped discharge site would potentially provide hard substratum which would increase potential for coral and other sessile benthic organism colonization over the existing unconsolidated bottom which is seasonally subject to scouring by rock and coral fragment movements associated with high surf events. Cumulatively, the proposed discharge is not expected to substantially contribute to the adverse anthropogenic ecological stresses within the bay. The proposed discharge following construction may provide limited beneficial effects.

The introduction of invasive species is a primary concern in Hawaii. To minimize the potential for the proposed activities to cause or promote the introduction or spread of aquatic invasive species, the following special conditions would be included in the DA permit, if issued:

- To minimize the potential to cause or promote the introduction or spread of invasive species, prior to the start of in-water work, the applicant must thoroughly clean each vessel and/or equipment used for in-water work. The cleaning of each vessel must include appropriate steps to minimize the introduction or spread of invasive species from ballast water discharge, ballast sediments, and hull fouling.
- The applicant must thoroughly clean the remotely operated vehicle (ROV) used during pipeline deployment prior to each use in Hawai'i waters. Following each use, the applicant must store the ROV dry.

Secondary Effects on the Aquatic Ecosystem:

Following construction, the proposed discharge site would be restored to pre project seafloor contours and relatively maintenance free with minimal anticipated secondary impacts on the aquatic ecosystem. The concrete capped discharge pit would be expected to be more conducive to coral recruitment and growth than the preexisting unconsolidated sand and rubble substrate to a limited extent.

Construction activities at the receiving pit would entail driving sheet piles, mounted crane excavation of approximately 1200 yd³ of substrate, barging excavated material and fill material to/from upland loading sites, removal of the

micro-tunneling machine, connecting subsurface pipes with seafloor mounted pipes, backfilling and concrete capping the pit, and piling removal. In order to accomplish a stable platform from which to enable construction activities, the applicant would either need to install a 4-point anchored jack-up barge or a pile supported work platform trestle. Construction activities may take up to 7 months.

Secondary impacts during construction may include physical impact damages or water quality (turbidity) impacts to the immediately adjacent coral spur ridges and potential releases of pollutants (fuel, construction debris, chemicals, lubricants, etc...) in the aquatic environment. The DA permit, if issued, would include special conditions to require locating the receiving pit and construction related structures and equipment to prevent physical impacts to the adjacent coral spurs, prevention of construction related pollutants from entering the water, and water quality monitoring and shut down procedures. The sheet pile and silt curtain perimeter containment structure, which would span the entire water column from sea floor to water surface, would be expected to alter water circulation to a limited extent. Recreational activities would be displaced to other shoreline or offshore areas, but these effects would be short-term and less than significant due to the limited number of people affected and the large amount of other park area or offshore water available. Aesthetics, both visual and noise would be affected in the immediate vicinity for up to 7 months.

Subpart C – Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

§ 230.20 Substrate: The receiving pit would be backfilled with clean gravel and capped with concrete to the level of the existing seabed, which would permanently physically replace approximately 0.037 acre of sand and rubble bottom with gravel and concrete. The capped receiving pit would match the existing seafloor grade and elevation and it is anticipated that wave-driven resuspension of sand and rubble would cover the capped receiving pit. No more than minimal impacts to the physical and chemical characteristics of the aquatic ecosystem would be anticipated.

§ 230.21 Suspended Particulates/turbidity: Turbidity in the project area is often high due to resuspension of unconsolidated sediments by wind and waves. Elevated levels of suspended sediments in waters within and surrounding the discharge site are anticipated during excavation and backfilling activities. The applicant proposes to install sheet piles and floating silt curtains around the perimeter of the pit from seafloor to water surface, which would minimize turbidity in adjacent waters. The sheet piles either would extend to the sea surface or would be augmented by silt curtains at shallower depths to completely isolate the receiving pit from the surrounding waters to the maximum extent practicable. Other sources of turbidity would include pile driving, if required to secure working platforms or vessels offshore during construction. Following construction, the

capped discharge site would not be expected to affect suspended particulates/turbidity characteristics of the aquatic ecosystem. No more than minimal impacts are anticipated.

§230.22 Water: Water quality in the project area is affected by waste discharges, terrestrial runoff and sediment resuspension. Turbidity from backfilling the receiving pit would be minimized by isolation and containment. In addition, only clean, pre-washed 3/8-inch to 2-inch crushed basalt gravel and concrete would be used. Temporary adverse impacts to the physical and chemical characteristics of the water column within and immediately adjacent to the discharge site would be anticipated. Following construction, the proposed discharge would not be expected to affect water quality conditions. The material proposed for discharge would not introduce, relocate, or increase contaminants.

§230.23 Current Patterns and Water Circulation: Containment of the receiving pit within sheet piles and/or turbidity curtains would have a short-term physical impact on water circulation around the pit during construction. Following construction, the proposed discharge site would match existing seafloor elevations and would not be expected to affect current patterns and/or water circulation.

§230.24 Normal Water Fluctuations: The proposed discharge site would match existing seafloor elevations following construction and would not be expected to affect tide levels or wave patterns.

§230.25 Salinity Gradients: The waters within the discharge area are well mixed by winds, waves and currents above the thermocline. No measureable effects to salinity gradients are anticipated.

Subpart D – Potential Impacts on Biological Characteristics of the Aquatic Ecosystem

§230.30 Threatened and Endangered Species: Pursuant to Section 7 of the ESA, the Corps consulted with the Protected Resources Division of the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) Pacific Islands Regional Office. Formal consultation was completed with NOAA's issuance of its Biological Opinion on September 13, 2012. The proposed project would not jeopardize the continued existence of any ESA listed or proposed species, and terms and conditions of the incidental take statement will become conditions of the DA permit, if issued, to minimize potential adverse effects.

§230.31 Fish, Crustaceans, Mollusks, and other Aquatic Organisms in the Food Web: At the receiving pit, the epibenthic and infaunal organisms would be destroyed and/or relocated during excavation of the 0.037 acre receiving pit. 29

coral colonies, ranging in size from 5-30 cm would be destroyed or relocated, resulting in a total potential loss of 4.6 ft² of coral. The applicant proposes to transplant and monitor coral colonies larger than 10 cm in size to suitable sites nearby. The concrete capped discharge site would provide a hard substratum for potential coral colonization following construction. Nekton and plankton trapped within the water column of the sheet pile contained receiving pit during construction may be subject to injury or death during construction activities. Additionally, in the vicinity of construction operations, temporary adverse impacts on aquatic organisms, including nekton, plankton and benthos may result from physical impacts from vessel anchoring and turbidity generation. Nekton would be expected to be temporarily displaced during construction activities. In turbid areas, light available to phytoplankton and corals would be temporarily reduced; filter feeding zooplankton may ingest particulate matter. Following construction, the proposed discharge would not be expected to have more than minimal impacts to aquatic organisms within the food web.

§230.32 Other Wildlife: No terrestrial wildlife would be impacted by the proposed discharge.

Subpart E – Potential Impacts on Special Aquatic Sites

§230.40 Sanctuaries and refuges: The proposed project would not involve a discharge of dredge or fill material in a sanctuary or refuge.

§230.41 Wetlands: The proposed project would not involve a discharge of dredge or fill material in wetlands.

§230.42 Mudflats: The proposed project would not involve a discharge of dredge or fill material in mudflats.

§230.43 Vegetated Shallows: The proposed project would not involve a discharge of dredge or fill material in vegetated shallows.

§230.44 Coral Reefs: The proposed discharge area occurs within a spur and groove coral reef area that is relatively degraded with minimal vertical relief. The actual discharge site would occur within the groove area composed primarily of unconsolidated sand and dredge rubble, with scattered small coral colonies. The discharge site is 0.037 acre (1,600 ft²), within which 29 coral colonies ranging in size from 5 to 30 cm occupy a total area of 4.6 ft². Coral reef communities occur on the spurs adjacent to the discharge site. The adjacent coral reef communities have larger (older) colonies, which are more abundant and structurally complex. These adjacent communities could be indirectly impacted during the construction activities by turbidity generation and potential physical damage from the presence and operation of a jack up barge and excavation activities. The receiving pit would be contained within sheet piling and silt curtains, which would minimize sediment deposition outside of the receiving pit footprint. Additionally,

the applicant proposes to transplant coral colonies within the discharge site that are larger than 10 cm (approximately half of the total colonies) to suitable areas nearby to minimize losses. Therefore, the unavoidable coral losses would be approximately 15 total coral colonies smaller than 10cm (largest measurement) in size. However, it cannot be reasonably assumed that all of the transplanted coral colonies would survive. Conservatively assuming that half of the transplanted colonies survive, approximately 7 additional colonies, ranging in size from 14-30 cm would also be lost. Following construction, the receiving pit footprint would be returned to preconstruction contours and the hard substrate (concrete cap) that would remain would likely be colonized by coral.

The DA permit, if issued, would require the applicant to conduct a pre construction survey to ensure that direct and indirect impacts to coral colonies are minimized to the maximum extent practicable. Based on this survey, the receiving pit location may be adjusted to further minimize unavoidable coral losses within the receiving pit as well as allow adequate spacing between the receiving pit construction and the adjacent coral spurs to prevent physical damages and/or sedimentation. Provided that physical damages and/or turbidity exposure to higher value coral spur communities are avoided and minimized to the maximum extent practicable, no more than minimal unavoidable impacts to coral reef special aquatic sites are anticipated.

§230.45 Riffle and Pool Complexes: The proposed project would not involve a discharge of dredge or fill material in riffle and pool complexes.

Subpart F - Potential Effects on Human Use Characteristics

§230.50 Municipal and Private Water Supplies: No more than minimal impacts to water supplies is anticipated.

§230.51 Recreational and Commercial Fisheries: The proposed discharge site is infrequently used for recreational and/or commercial fishing. During construction activities, fishing within the vicinity of the discharge site would be curtailed. Following construction, the proposed discharge would not be expected to have more than minimal effects to fisheries.

§230.52 Water Related Recreation: The proposed discharge site is not a known or established water recreation area. During construction, water related recreation would be temporarily displaced to other shoreline or offshore areas for safety purposes. These effects would be short-term and less than significant due to the limited number of people affected and the large amount of other park areas or offshore water recreational sites available. Following construction, the proposed discharge would potentially provide beneficial scuba diving recreational use.

§230.53 Aesthetics: During construction, visual and sound related aesthetics

would be temporarily altered from the physical presence and operation of the barge, excavator, etc. Following construction, the discharge would not be visible above the surface. No more than minimal temporary effects anticipated.

§230.54 Parks, National, and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves: The proposed discharge site would not be located within or near these areas and would accordingly not produce an impact. Inshore of the proposed location of the discharge, Kaka'ako Waterfront Park fronts Mamala Bay. A portion of the sparsely used western edge of the park would be used for construction of a jacking pit and staging of the microtunneling equipment. The University of Hawaii's Kilo Nalu Observatory, an oceanographic research site with bottom-mounted sensors for data collection, is located more than a half mile to the east. The applicant's preferred alternative was selected to avoid affecting the research site. No more than minimal impacts anticipated.

Subpart G – Evaluation and Testing:

The evaluation and testing procedures of Section 230.60 of the CWA 404(b)(1) Guidelines are intended to characterize potentially contaminated materials to be dredged from one aquatic location and discharged into another. The proposed action would not involve a discharge of dredged material in waters of the U.S. The 1,185 yd³ of material excavated from the receiving pit would be disposed at an approved upland location. The excavated materials, after settling and dewatering onsite, would be tested for long-term disposal options according to the Hawaii Department of Health Technical Guidance Manual, which may include beneficial reuse as construction fill. If a beneficial reuse cannot be identified, the applicant proposes to dispose of the material at the PVT Land Company, LTD construction and demolition materials landfill on Oahu where they could be used for interim cover. The PVT landfill operates in accordance with Chapter 342H, Hawaii Revised Statutes and Title 11 Hawaii Administrative Rules Chapter 58.1 Solid Waste Management Control, which preclude disposal of hazardous or toxic materials at the landfill. The pit would be backfilled with clean prewashed gravel, a naturally occurring inert material, and then capped with tremie concrete, which would also become inert after setting up. When the concrete is first placed there likely would be some suspended solids and turbidity generated within the contained pit area. The alkaline nature of the cement would tend to elevate the pH of the immediately surrounding water. This would be a short-term adverse effect on water quality. Containment of the work site within sheet piles and/or silt curtains would limit the extent of the effect. The concrete would contain no additives that would inhibit settling or growth of marine organisms. Settling of particulates and mixing, advection, and diffusion of dissolved substances would restore the ambient water quality. Water quality surrounding the sheet pile/silt curtain-contained pit would be monitored during construction.

Subpart H – Actions to Minimize Adverse Effects:

§230.70 Location of the Discharge: Section 230.70 describes actions concerning the location of the discharge to minimize the effects of an unconstrained discharge of dredged materials. The proposed action would not involve a discharge of dredged material in waters of the U.S. The action is limited to the discharge of backfill at the confined receiving pit.

(a) Locating and confining the discharge to minimize smothering of organisms:

There would be no discharge of material outside of the receiving pit. The receiving pit would be contained within sheet piling and silt curtains from seafloor to water surface to prevent sediment deposition outside of the receiving pit footprint. To avoid impacting shallow limestone reef in near shore waters, the proposed pipelines would be micro-tunneled to a breakout point approximately 1,800 ft. offshore in a water depth of 31 ft. The offshore receiving pit location would occur in a groove consisting primarily of sand and rubble and would avoid coral reef resources closer to shore and on adjacent coral spurs. Excavation of the pit would destroy organisms on and within the substrate. Organisms outside of the pit would not be smothered as there would be no side casting or stockpiling of materials in the marine environment. Following construction, the receiving pit footprint would be returned to preexisting contours. A preconstruction survey would be required by the DA permit, if issued, to ensure that the receiving pit is located to minimize coral losses to the maximum extent practicable, including adjacent coral spurs.

(b) Designing the discharge to avoid a disruption of periodic water inundation patterns:

The receiving pit would be backfilled to its original grade, at a water depth of approximately 30 ft. The discharge would not affect inundation patterns.

(c) Selecting a disposal site that has been used previously for dredged material discharge:

There would be no discharge of dredged material in waters of the U.S.

(d) Selecting a disposal site at which the substratum is composed of material similar to that being discharged:

There would be no discharge of dredged material in waters of the U.S. The excavated pit would be back filled with clean gravel and capped with concrete to properly secure the transition of the micro-tunneled pipeline to the seafloor mounted pipeline.

(e) Selecting the disposal site, the discharge point, and the method of discharge to minimize the extent of any plume:

The receiving pit would be contained with a sheet pile and silt curtain perimeter from seafloor to water surface to minimize any plume outside of the footprint during excavation and backfilling operations.

(f) Designing the discharge to minimize or prevent creation of standing bodies of water in areas of normally fluctuating water levels:

The excavated pit would be

backfilled to preexisting grade. The proposed discharge would not prevent or create standing bodies of water or affect fluctuating water levels.

§230.71 Material to be Discharged

(a) Disposal of dredged material in such a manner that physicochemical conditions are maintained and the potency and availability of pollutants are reduced: There would be no disposal of dredged material in waters of the U.S. The receiving pit would be backfilled with clean gravel and concrete. The concrete mix would be introduced into the pit within the area contained by sheet piles/silt curtains and would contain additives designed to enhance setup underwater. This would minimize potential temporary disturbances of physicochemical conditions outside the immediate area of discharge.

(b) Limiting the solid, liquid, and gaseous components of material to be discharged at a particular site: The discharge would consist entirely of gravel and concrete.

(c) Adding treatment substances to the dredged material: There would be no discharge of dredged material in waters of the U.S. The fill material would be prewashed gravel and concrete. Treatment substances would not be necessary.

(d) Utilizing chemical flocculants to enhance the deposition of suspended particulates in diked disposal areas: There would be no diked disposal areas and the proposed fill material would rapidly settle.

§230.72 Controlling the Material after Discharge

Section 230.72 describes actions to control the material after discharge and applies to materials that could migrate after emplacement. The proposed gravel backfill in the receiving pit would be confined within sheet piles and capped with concrete to preexisting grade. Migration of discharged material outside of the disposal site would not be expected to occur.

§230.73 Method of dispersion

Section 230.73 describes actions affecting the method of dispersion. Potential actions applicable to the proposed discharge are as follows:

(e) Minimizing water column turbidity by using a submerged diffuser system: The gravel and concrete would be delivered from a moored barge to the bottom in a controlled manner through submerged pipes or hoses at rates slow enough that divers can control placement. The tremie concrete delivery hose would be submerged in the concrete as soon as possible to further minimize washout.

(f) Selecting sites or managing discharges to confine and minimize the release of suspended particulates to give decreased turbidity levels and to maintain light penetration for organisms: The proposed work area would be enclosed within sheet piles and silt curtains from seafloor to water surface to minimize suspended particulates and turbidity outside of the receiving pit footprint. After connecting the tunneled pipes to the respective surface-mounted pipes, the pit would be backfilled and covered with a concrete cap. These operations would take about one week. The backfill would be crushed basalt gravel graded between 3/8-inch and 2-inch size and pre-washed to remove any fines. After backfilling and capping of the receiving pit, the sheet piles would be removed or cut off below the existing seafloor grade.

§230.74 Technology

Section 230.74 describes actions related to technology. Potential actions applicable to the proposed discharge are as follows:

(a) Using appropriate equipment or machinery, including protective devices, and the use of such equipment or machinery in activities related to the discharge of dredged or fill material: The proposed micro tunneling of the pipes 1,800 ft. offshore beneath the biotope of scattered corals on the near shore limestone reef would minimize impacts to aquatic resources compared to trenching and backfilling or seafloor mounting the near shore pipes. Vibratory hammer driven sheet piles and silt curtains around the perimeter of the receiving pit would contain the pit from surrounding waters. To minimize physical damages to adjacent coral aquatic resources during construction (e.g., sheetpile driving, pit excavation and seafloor mounted pipe assembly) heavy equipment would occur off of either a four point mounted jack-up crane barge or off of a pile supported platform, as opposed to working from anchored barges.

(b) Employing appropriate maintenance and operation on equipment or machinery, including adequate training, staffing, and working procedures: According to the applicant, contract specification would include requirements for maintenance and operation of equipment and machinery, staff qualifications and training, and operating procedures to avoid and minimize potential impacts to aquatic resources.

(e) Employing appropriate machinery and methods of transport of the material for discharge: According to the applicant, contract specifications for the marine contractor would include use of appropriate equipment and machinery for transport and emplacement of the fill material.

§230.75 Plant and Animal Populations

Section 230.75 describes actions affecting plant and animal populations. Potential

actions applicable to the proposed discharge are as follows:

(a) Avoiding changes in water current and circulation patterns which would interfere with the movement of animals: The final elevation of the top of the backfilled discharge site would be approximately even with the surrounding bottom contours. Following construction, no changes to water currents or circulation patterns associated with the discharge site are anticipated.

(b) Selecting sites or managing discharges to prevent or avoid creating habitat conducive to the development of undesirable predators or species which have a competitive edge ecologically over indigenous plants or animals: Considering that the backfilled pit would match surrounding bottom contours and would be covered with adjacent sand and rubble, the proposed discharge would not be expected to result in the creation of differing habitat. The concrete capped receiving pit would provide hard substratum for potential coral recruitment, however, no competitive advantage for undesirable species is anticipated. With the exception of the blue-lined snapper, which is now common throughout the Hawaiian Islands, invasive species are rare in the receiving pit area and would not be anticipated to preferentially relocate or recruit to this area. To minimize the potential for the proposed activities to cause or promote the introduction or spread of aquatic invasive species, the following special condition would be added to the DA permit, if issued:

To minimize the potential to cause or promote the introduction or spread of invasive species, prior to the start of in-water work, the applicant must thoroughly clean each vessel and equipment used for in-water work. The cleaning of each vessel must include appropriate steps to minimize the introduction or spread of invasive species from ballast water discharge, ballast sediments, hull fouling, etc.

(c) Avoiding sites having unique habitat or other value, including habitat of threatened or endangered species: No information has been identified that would indicate that the proposed discharge site has unique values for habitat or threatened or endangered species.

§230.76 Actions affecting Human Use

Section 230.76 of the 404(b)(1) Guidelines describes actions affecting human use. Potential actions applicable to the proposed action include:

(a) Selecting discharge sites and following discharge procedures to prevent and minimize any potential damage to the aesthetically pleasing features of the aquatic site...particularly with respect to water quality: No information has been identified to suggest that the proposed discharge site is a popular recreational site or that provides unique aesthetically pleasing features. The discharge site occurs in a groove consisting of sand, rubble and sparsely scattered small coral

colonies. The work area in general is on an open coast exposed to high summer surf and storm surge. Much of the seafloor is covered with sediments deposited from previous dredging of Honolulu Harbor. These sediments are remobilized and resuspended during high wave energy events so the biological community is periodically exposed to high suspended sediment concentrations and turbidity. Immediately adjacent to the proposed discharge site are higher value coral spur ridges. A preconstruction survey may modify the exact location of the discharge site to minimize potential physical damages to these resources. The proposed discharge site and methods would minimize damages, including water quality impacts, to adjacent coral ridge resources to the maximum extent practicable.

(b) Selecting disposal sites which are not valuable as natural aquatic areas:
Based on available information, the proposed discharge site is not considered to be a valuable natural aquatic resource area.

(d) Following discharge procedures which avoid or minimize the disturbance of aesthetic features of an aquatic site or ecosystem. The applicant's proposed physical containment of the receiving pit footprint, water quality monitoring, and methods for discharge would avoid and minimize disturbance of aesthetic features of the aquatic ecosystem. The capped receiving pit would match pre-project seafloor grade and would have no more than minimal affects on aesthetic features. Additionally, the receiving pit would be situated to avoid damages to higher value aquatic resources on adjacent coral spur ridges.

§230.77 Other Actions:

The applicant is proposing to use a form of trenchless technology to route pipes beneath the nearshore area where the majority of the corals are located and has selected a preferred breakout point to avoid coral reefs and coral-dominated communities. Additionally, the receiving pit was designed to be completely isolated from surrounding waters and dredged material would not be discharged into waters of the U.S. The size of the receiving pit would be the minimum size required to accommodate retrieval of the micro-tunneling machine and connect the subsurface pipeline with the seafloor mounted pipeline.

Subpart J – Compensatory Mitigation for Losses of Aquatic Resources

The LEDPA would cumulatively result in a direct loss of approximately 86 ft² (0.002 acre) of scattered individual small coral colonies ranging in size from 1-30 cm. The cumulative loss of coral colonies would occur from the excavation and backfilling of the receiver pit and over a linear distance of approximately 3,500 ft. of pipeline (distance from the receiver pit to the 300 ft. water depth contour), where placement of support collars may potentially crush scattered colonies. The 86 ft² (0.002 acre) potential coral loss would occur over an area of 94,670 ft² (2.2 acres). To minimize unnecessary losses to corals directly in the footprint of the receiving pit, the applicant would be

required to implement a transplantation plan to relocate and monitor corals larger than 10 cm in size from the receiving pit footprint to nearby suitable locations. Additionally, pre construction surveys would be required to potentially further minimize coral losses associated with the receiving pit and collar placement. The proposed collar and pipeline structures would create vertical relief, which would provide nekton habitat opportunities, and would create approximately 160,000 ft² (3.67 acres) of hard substratum, which would be conducive to coral recruitment and sustainable growth, compared to the existing relatively flat unconsolidated sand and dredge rubble substrate. The Corps has determined that the proposed project would result in relatively minimal losses of aquatic resources from construction related activities, which would be expected to be offset and/or exceeded, albeit artificial and out-of-kind, by project related resource gains. Therefore, the Corps has determined that compensatory mitigation is not required for the proposed action.



DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

OFFICE OF PLANNING

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Ref. No. P-12769

September 24, 2009

Mr. Ingvar Larsson
Vice President for Engineering
Honolulu Seawater Air Conditioning, LLC
7 Waterfront Plaza, Suite 407
500 Ala Moana Boulevard
Honolulu, Hawaii 96813

Dear Mr. Larsson:

Subject: Acceptance of Final Environmental Impact Statement (EIS) for the Honolulu
Seawater Air Conditioning Project

This is to convey our acceptance of the final EIS for the Honolulu seawater air conditioning project. We have determined that it complies with provisions and guidelines of Chapter 343, Hawaii Revised Statutes, and Title 11, Chapter 200, Hawaii Administrative Rules.

The availability of this EIS for public review was published by the Office of Environmental Quality Control in its September 23, 2009, issue of the *Environmental Notice*.

We note in Chapter 5 of the final EIS that there are unresolved issues including (1) the final depth of seawater intake; (2) the position of the onshore jacking pit; and (3) the final routing of the distribution system. We also note that no soil borings and testing to gauge the environmental consequences of the hazardous waste contained in the former landfill were conducted, and that no mitigation plans to prevent endangered marine species monk seals from probably entering the intake pipe were prepared. These will need to be resolved before the applicable permits can be issued.

This acceptance notice is an affirmation of the adequacy of the EIS under the applicable laws and does not constitute an endorsement of the proposed action.

Sincerely,

A handwritten signature in black ink, appearing to read "Abbey Seth Mayer".

Abbey Seth Mayer
Director

c: TEC, Inc.
Department of Health,
Office of Environmental Quality Control
Department of the Attorney General

SL/do
Disk #2



**OFFICE OF PLANNING
STATE OF HAWAII**


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Ref. No. P-13880

February 20, 2013

To: Gary Gill, Acting Director
Office of Environmental Quality Control
Department of Health

From: Jesse K. Souki, Director 

Subject: Supplemental Environmental Impact Statement Determination for the Honolulu Seawater Air Conditioning Project

The availability of the Final Environmental Impact Statement (Final EIS) for the Honolulu Seawater Air Conditioning (HSWAC) Project was published by the Office of Environmental Quality Control in the September 23, 2009, *Environmental Notice* (2009 Final EIS).

The HSWAC project consists of the following five components:

1. A 63-inch seawater intake pipe extending offshore Kakaako approximately five miles to a depth of approximately 1,700 feet below the sea level;
2. An adjacent 54-inch seawater return pipe extending offshore Kakaako approximately 3,500 feet to a depth of 150 feet below the sea level;
3. A two-story (one-story with a basement) pumping and cooling station containing pumps, heat exchangers, and auxiliary chillers in the makai area of Kakaako;
4. A network of chilled fresh water distribution pipes from the cooling and pumping station to consumer buildings in downtown Honolulu; and
5. A staging area to assemble the pipe along the western shore of Sand Island and in the adjoining Channel "D" of Keehi Lagoon.

Subsequent to acceptance of the Final EIS under the requirements of Hawaii Revised Statutes Chapter 343, Honolulu Seawater Air Conditioning, LLC (HSWAC, LLC) has been going through environmental review and permitting processes with the U.S. Army Corps of Engineers. In response to a recommendation dated May 2, 2011 from the U.S. Fish and Wildlife Service to extend the seawater return pipe to depths that are consistent with an anticipated

Gary Gill
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discharge temperature of 58 degrees Fahrenheit, HSWAC, LLC proposes to extend the seawater return pipe with a diffuser ending at 150 feet deep to a new diffuser ending at a depth of 423 feet. The proposed extension of the discharge pipe is expected to mitigate the effects of cold return seawater on marine organisms such as corals in the area of the HSWAC diffuser.

Upon a request from HSWAC, the Office of Planning (OP), as the approving agency for the subject project, has initiated a review of the Final EIS with respect to changes in size, scope, location, intensity, use, and timing. In consultation with various state agencies that have jurisdiction and regulatory responsibility over the HSWAC Project, OP notes that the proposed extension of the seawater return pipe with a diffuser ending at a depth of 423 feet:

1. Will not cause the HSWAC Project to change substantively in size, scope, location, intensity, use, or timing; and
2. Will not result in reasonably foreseeable significant effects or cumulative impacts not disclosed in the 2009 Final EIS.

OP determines that no Supplemental EIS will be required at this time for the HSWAC Project under Hawaii Administrative Rules §11-200-27.

Please publish an appropriate notice of this determination in the next available *Environmental Notice*.

If you have any questions, please contact Leo Asuncion, Coastal Zone Management Program Manager, at 587-2875.

c: ✓ Mr. Frederic Berg, HSWAC, LLC