

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



March 12, 2004

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Manager and Chief Engineer

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Deputy Manager and Chief Engineer

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OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Finding of No Significant Impact for the Board of Water Supply's Proposed
Kaka'ako Cold Seawater Source Well, Oahu, Hawaii, TMK: 2-1-060: 009

The Board of Water Supply has reviewed the comments received during the public comment period, which began on January 23, 2004. We have determined that the environmental impacts of this project have been adequately addressed as discussed in the Final Environmental Assessment (EA) and therefore, are issuing a Finding of No Significant Impact. We request that the proposed project be published as a Finding of No Significant Impact in the next Office of Environmental Quality Control (OEQC) Bulletin.

We have enclosed the following:

- Completed OEQC Bulletin Publication Form;
- Four (4) copies of the Final EA; and
- Project summary (for publication in the Environmental Notice) and diskette.

If you have any questions, please contact Barry Usagawa at 748-5900.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

Enclosures

cc: Wilson Okamoto Corporation

2004-03-23 FONSI
HONOLULU CENTRAL DISTRICT
COOLING FACILITY AT KAKAAKO

MAR 23 2004

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HONOLULU BOARD OF WATER SUPPLY DISTRICT COOLING FACILITY

FINAL ENVIRONMENTAL ASSESSMENT

Proposing Agency



**City & County of Honolulu
BOARD OF WATER SUPPLY**

Prepared By



**WILSON OKAMOTO
CORPORATION**
ENGINEERS | PLANNERS | CONSULTANTS

March 2004

HONOLULU BOARD OF WATER SUPPLY
DISTRICT COOLING FACILITY
FINAL ENVIRONMENTAL ASSESSMENT

Proposing Agency

City & County of Honolulu
Board of Water Supply

Prepared by:

Wilson Okamoto Corporation
Engineers and Planners
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

March 2004

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PREFACE

This Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawaii Revised Statutes (HRS). The Honolulu Board of Water Supply proposes to develop a district cooling facility in Kakaako, Oahu to serve the John A. Burns School of Medicine and potentially other developments in the vicinity.

Pursuant to Chapter 343, HRS, the project requires compliance with environmental assessment requirements based on the use of State of Hawaii lands and County funds. Regional impacts for proposed uses in the Kakaako Makai Area were covered by the *Kakaako Community Development District Makai Area Plan, Final Supplemental Environmental Impact Statement* prepared in June 1998 which encompassed the subject property. A separate Environmental Assessment and Finding of No Significant Impact was also prepared for the proposed new campus comprising the University of Hawaii John A. Burns School of Medicine (JABSOM) and research facilities.

In the Draft EA, the proposed method of effluent disposal was to discharge water into the concrete drainage channel southwest of the project site. After consultation with the State Department of Health, however, effluent is now proposed to be disposed of through injection wells. This Final EA has been revised to reflect this change.

This EA has been processed as a Finding of No Significant Impact (FONSI) as no significant impacts are anticipated from the construction or operation of the project.

PROJECT SUMMARY

- Proposing Agency:** Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96843
Contact: Mr. Barry Usagawa
- Location:** Kakaako, Oahu, Hawaii
- Tax Map Key:** (1) 2-1-060: pors. 8, 9
- Land Area:** The project will utilize an approximately 2,000 sq. ft. area of Tax Map Key (TMK) 2-1-060: 009. In addition, three of the facility's five injection well will be located within the maintenance easement of the drainage channel located on the northwest boundary of TMK 2-1-060: 008.
- Recorded Fee Owner:** State of Hawaii
- Existing Uses:** The University of Hawaii John A. Burns School of Medicine is presently under construction on TMK's 2-1-060: 7, 9, and 10. The proposed site of the three injection wells in TMK 2-1-060: 008 has been set aside for maintenance of the concrete drainage channel.
- State Land Use Classification:** Urban
- HCDA Makai Area Plan Land Use Designation:** The well and pump site is designed "Commercial". The injection well sites in TMK 2-1-060: 008 is designated "Park".
- Proposed Action:** The Honolulu Board of Water Supply proposes to develop a centralized district cooling facility using deep well technology that would serve the John A. Burns School of Medicine (JABSOM) and potentially other developments in the vicinity. The district cooling facility will reduce or eliminate the need to use air

conditioning chillers and cooling towers, which will substantially reduce electricity use, operating cost, and water consumption.

In the Draft EA, the proposed method of effluent disposal was to discharge water into the concrete drainage channel southwest of the project site. After further consultation with the State Department of Health, however, effluent is now proposed to be discharged into injection wells that will be located along the southwest boundary of the JABSOM and within the maintenance easement for the drainage channel in TMK 2-1-060: 008.

Impacts:

No significant impacts are anticipated during construction or operation of the facility. Short-term impacts to air quality, water quality, and ambient noise levels may occur during the construction phase of the project. Impacts will be mitigated by applying appropriate Best Management Practices and by complying with required permit conditions.

In the long-term, the project is anticipated to have a beneficial impact by reducing energy consumption, potable water use, and operating costs. The project is also anticipated to have beneficial long-term air quality and noise effects.

Required Permits:

Special Management Area Use Permit
Noise Variance Permit
NPDES Individual Permit
Zone of Mixing Permit
Underground Injection Control Permit
Well Construction Permit
Pump Installation Permit
Water Use Permit

**Parties Consulted
During
Pre-Assessment
Consultation:**

State Agencies

Department of Land & Natural Resources,
Commission on Water Resource Management
Department of Health (DOH)
Hawaii Community Development Authority

City & County of Honolulu Agencies

Department of Planning & Permitting

**Parties Consulted
During
Draft EA
Consultation:**

Federal

Fish and Wildlife Service
National Marine Fisheries Service
U.S. Army Corps of Engineers

State

Department of Business, Economic Development and
Tourism (DBEDT)
DBEDT, Office of Planning
Department of Health (DOH)
DOH, Environmental Management Division
DOH, Office of Environmental Quality Control
Department of Land and Natural Resources (DLNR)
DLNR, Historic Preservation Division
Department of Transportation
Hawaii Community Development Authority
Office of Hawaiian Affairs
University of Hawaii, Environmental Center

City & County of Honolulu

Department of Design and Construction
Department of Planning & Permitting
Department of Transportation Services
Ala Moana/Kakaako Neighborhood Board No. 11

Other

State Main Library

Hawaiian Electric Company, Inc.

Kakaako Improvement Association

KSBE Properties

1 INTRODUCTION

Centralized district cooling systems have gained popularity in recent years as an energy efficient alternative to conventional air conditioning systems within each building. District cooling systems typically use mechanical chilling equipment coupled with ice thermal storage systems or naturally cold surface water or ground water to provide cooling water for chilled water air conditioning systems. A centralized plant with an underground piping network delivers chilled water to buildings for air conditioning. This eliminates the need for air conditioning chillers and cooling towers within buildings and enables the connected buildings to focus human, financial and real estate resources on core business.

The application of deep well technology for district cooling, taps a renewable source of cold seawater for building cooling. Cold seawater becomes the primary supply of cooling water and replaces conventional air conditioning equipment, lowering capital and operation and maintenance costs. Freshwater is conserved by the elimination of evaporation losses in cooling towers. The proposed centralized district cooling plant utilizing deep well technology has the potential to substantially reduce energy consumption and potable water use.

The Honolulu Board of Water Supply proposes to design and construct a central district cooling system utilizing a deep seawater source well to serve the John A. Burns School of Medicine (JABSOM) facilities in Kaka'ako. The chilled water air conditioning system within the JABSOM site may also be extended in the future to serve adjacent developments. The central district cooling system will be developed on the grounds of the JABSOM facilities and will consist of a well pump and piping to the JABSOM Central Cooling Plant where heat exchangers will transfer the cold temperatures from the seawater to cool the water for the JABSOM's chilled water air conditioning system. Water pumped for the facility will be disposed of through injection wells.

This Environmental Assessment has been prepared in accordance with the requirements of Chapter 343, Hawaii Revised Statutes. Pursuant to Chapter 343, HRS, the project requires compliance with environmental assessment requirements due to the use of State of Hawaii lands and County funds.

2 SETTING AND PROJECT DESCRIPTION

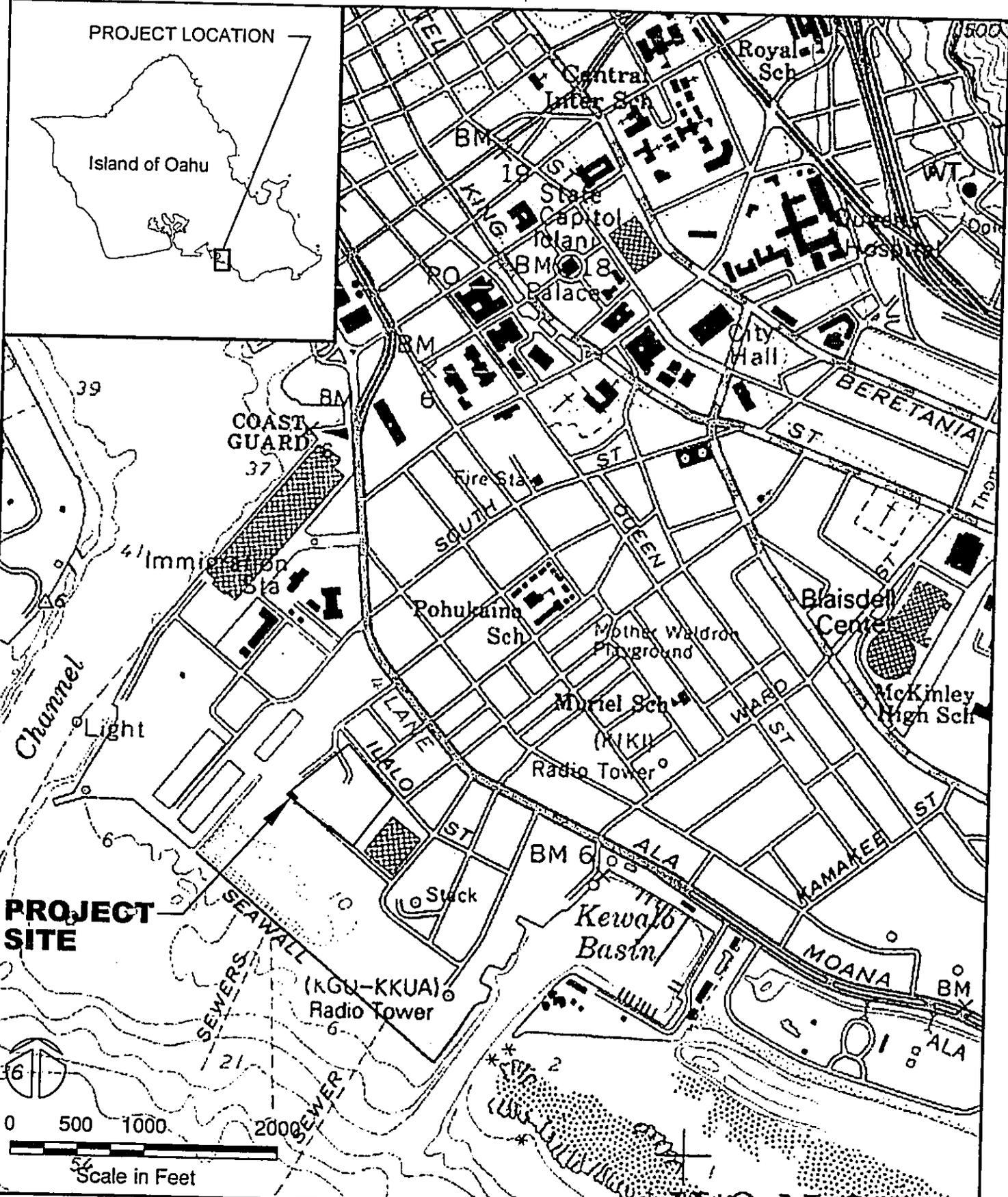
2.1 Project Location

The district cooling facility will be located in the Makai Area of the Kakaako Community Development District of Oahu (see Figure 1). The well, pump and connecting piping will be constructed at the southwest corner of the John A. Burns School of Medicine (JABSOM). (TMK 2-1-060: por. 09). The well will provide water to the JABSOM's Central Cooling Plant, located about 100 feet north of the well. The project also involves the construction of five injection wells to dispose of water extracted for the facility. Two of the injection wells will be located on the southwest boundary of TMK 2-1-060: 009 and three of the injection wells will be located within the maintenance easement for the concrete drainage channel in TMK 2-1-060: 008. Figure 2 illustrates the location of the well, JABSOM Central Plant, injection wells, and transmission pipes.

2.2 Project Need

District cooling systems have been constructed in over 100 cities throughout the United States as an energy efficient alternative to conventional air conditioning systems within each building. District cooling systems use a central facility to produce chilled water by using mechanical chilling equipment coupled with ice thermal storage systems or by pumping naturally cool water from ground water or surface water sources. The chilled water is pumped through an underground piping network to customer buildings where an energy transfer station uses the incoming chilled water to cool the building's internal loop of water that is used to cool the air within the building. The centralized district cooling system, therefore, eliminates the need for chillers and cooling towers at customer buildings, which substantially reduces energy and water consumption and enables the connected buildings to focus human, financial and real estate resources on core business. The application of deep well technology for district cooling taps a renewable source of cold seawater for building cooling. Cold seawater becomes the primary supply of cooling water and replaces conventional air conditioning equipment, lowering capital and operation and maintenance costs. Freshwater is conserved by the elimination of evaporation losses in cooling towers. The combination of a centralized district cooling plant utilizing deep well technology has the potential to substantially reduce energy consumption and potable water use.

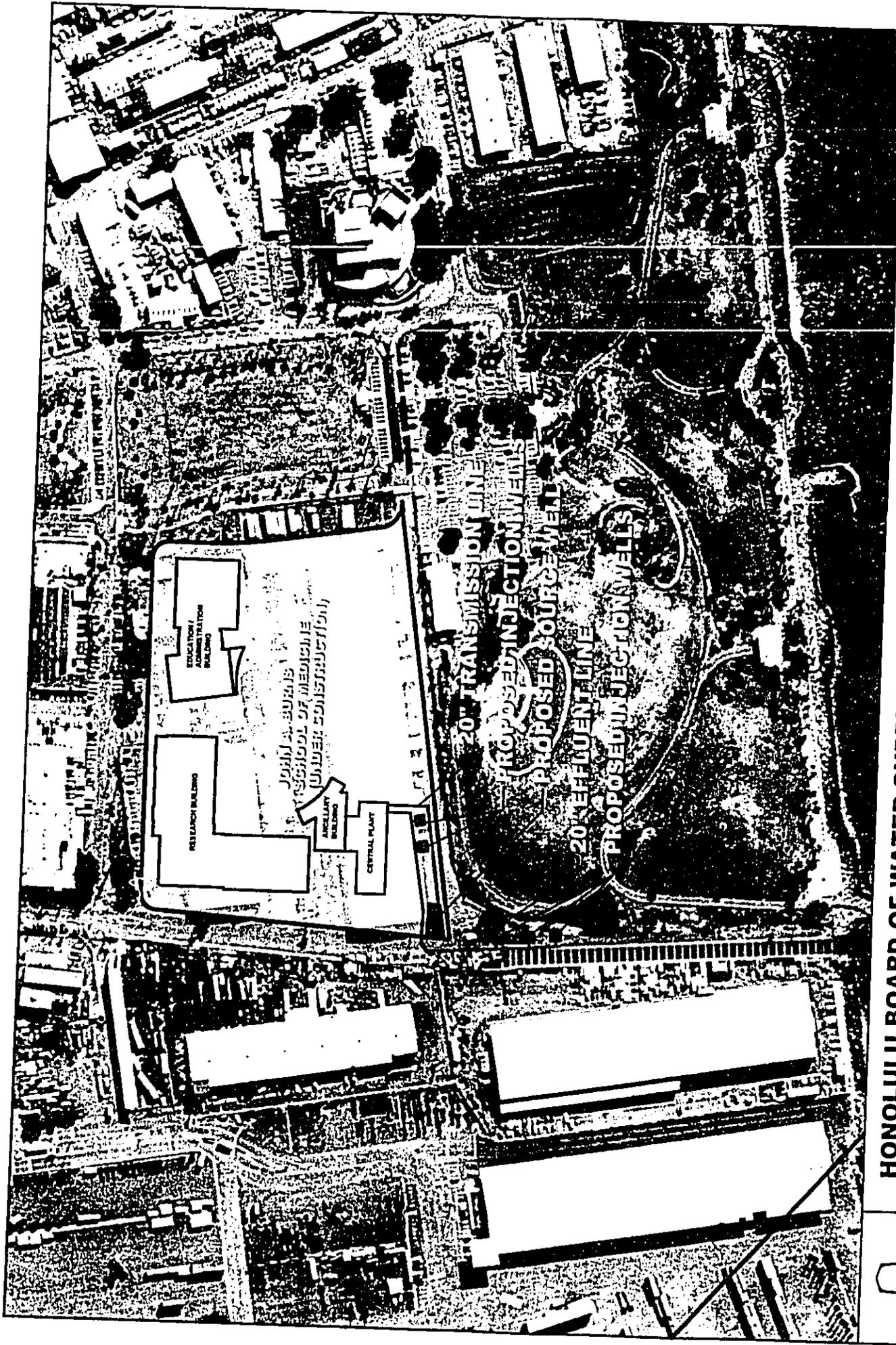
The Honolulu Board of Water Supply is investing in deep well district cooling as a water conservation program to avoid the capital cost of additional potable sources. This investment is in alignment with the BWS Vision of Sustainability to



HONOLULU BOARD OF WATER SUPPLY DISTRICT COOLING FACILITY

LOCATION MAP

Figure 1



HONOLULU BOARD OF WATER SUPPLY DISTRICT COOLING FACILITY

PROJECT SITE


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Figure 2

develop renewable water resources that protect the environment, sustain affordable water rates and support Hawaii's economy. BWS knowledge of deep well development, pumping and water distribution is ideally applicable toward district cooling. In addition, deep well district cooling has the potential to reduce a building's power cost for cooling by as much as 85%. With the concentration of cooling needs anticipated in Kaka'ako and adjacent areas of the central business district and Waikiki, the power and water savings could defer future power generation plants and water source projects.

The JABSOM administrative and research and development buildings, as well as future adjacent research facilities will require reliable chilled water air conditioning. The University of Hawaii is modifying its conventional chilling plant design with deep well district cooling to embrace renewable technologies and further elevate the JABSOM facility into a position of attracting world-wide medical research investment.

2.3 Project Description

In coordination with the University of Hawaii, JABSOM, the district cooling system proposed by the Honolulu Board of Water Supply will extract approximately 10 million gallons per day (mgd) of cold salt water from a well extending 2,000 to 3,000 feet deep. A pump will be installed in the well located about 100 feet southwest of the JABSOM's Central Plant. Water will be piped to the JABSOM's Central Cooling Plant where plate frame heat exchangers will extract the cold temperatures from the seawater to cool the water for the JABSOM's chilled water air conditioning system. The chilled water air conditioning system, which consists of cold freshwater, not seawater, could be extended in the future to serve other developments in the vicinity of the JABSOM.

Depending on the seawater temperatures, trimming chillers may be required to achieve the desired chilled water temperatures. If trimming chillers are required, the seawater could then be used to cool the condenser water, which will replace the need for cooling towers and its associated water loss to evaporation and blow-down cleaning.

The well construction will proceed in two phases; a test bore phase and a production well phase. A test bore of about 8-inches in diameter will be drilled 2,000 to 3,000-feet deep and the water will be tested for temperature. The coldest water will be sought. The actual depth of the well is dependent on the seawater temperature profile, however, it is anticipated that a 2,000 to 3,000 foot deep well will produce water between 42 °F and 52 °F. Upon receiving the test

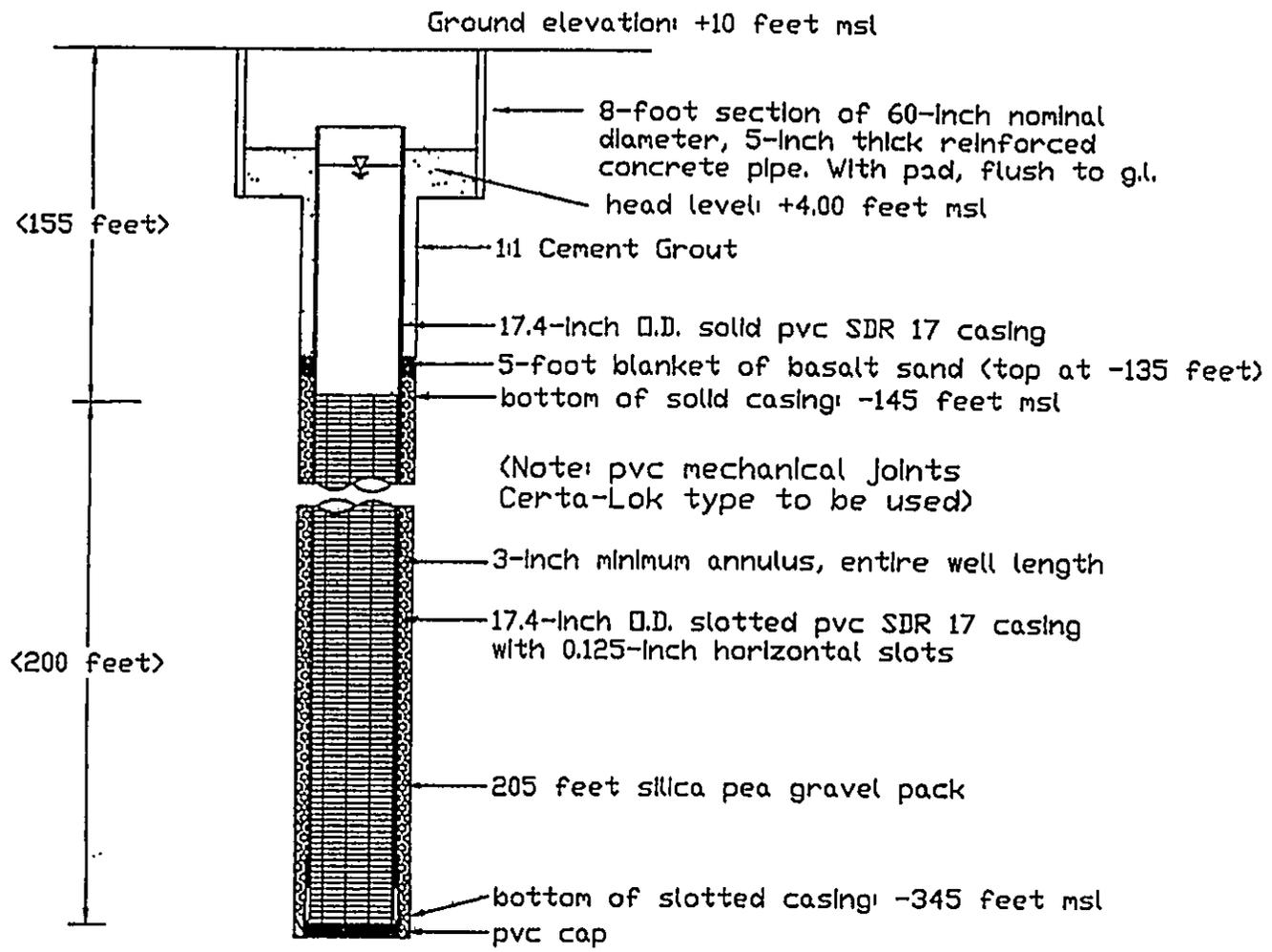
bore results, the production well will be designed and constructed by increasing the well diameter to approximately 32-inches and a PVC casing and grout will be installed in the well to the required depth.

A low-rpm vertical turbine pump will be installed in the well to extract seawater. The pump will be housed in a concrete vault that will be partially sub-grade. In order to minimize the visibility of the vault, the surrounding soils will be bermed and landscaping will be used to screen the vault. Noise absorbing panels will also be installed to minimize noise. Seawater pipelines will be installed connecting the well pump to the central cooling plant and from the central plant to the injection wells.

In the Draft EA, it had been proposed that seawater pumped for the facility would be discharged into the concrete drainage channel southwest of the JABSOM site. However, upon further consultation with the State Department of Health, the preferred method of disposal is now through injection wells. Disposal through injection wells will alleviate concerns regarding the temperature difference between the effluent and ambient ocean temperature and regarding the quality of water pumped for the facility. Two injection wells will be located along the southwest boundary of the JABSOM site and three injection wells will be located within the maintenance easement for the drainage channel southwest of the JABSOM site. The injection wells will be about 350 feet deep and constructed of 155-feet of solid 17.4-inch (outside diameter) PVC casing and 200-feet of slotted 17.4-inch PVC casing packed with gravel. The preliminary design of the injection wells is provided in Figure 3.

2.4 Project Schedule and Cost

Construction of the district cooling facility is expected to begin in the first quarter of 2004, or as soon as necessary permits and regulatory approvals are received. Construction is expected to be completed by the fourth quarter of 2004. The cost of the project is estimated to be between \$3,500,000 and \$6,000,000.



NOT TO SCALE



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HONOLULU BOARD OF WATER SUPPLY DISTRICT COOLING FACILITY

PROPOSED KAKAAKO CAPROCK INJECTION WELLS

Figure 3

2.5 Existing and Surrounding Uses

2.5.1 Existing Uses

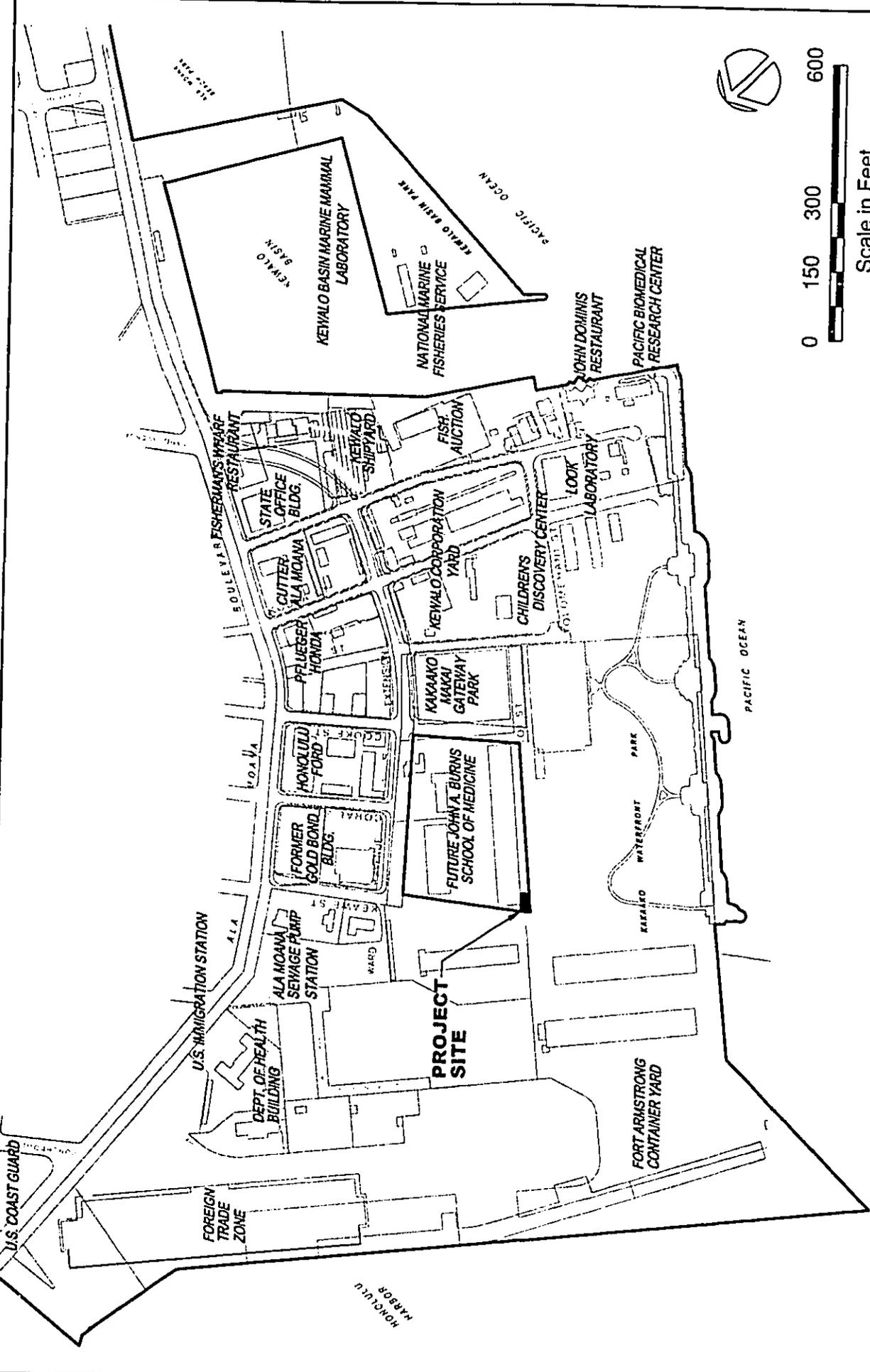
Phase I of the JABSOM is presently under construction on TMK's 2-1-060: 7, 9, and 10. Phase I of the project includes the construction of buildings that will house the JABSOM administrative, biomedical research and development facilities, the campus' Central Plant and parking structures. The site for the three injection wells on TMK 2-1-060: 8 is reserved for maintenance of the adjacent drainage channel.

2.5.2 Surrounding Uses

Uses immediately adjacent to the project site include the Kakaako Waterfront Park to the south, the Kakaako Makai Gateway Park to the east, the Fort Armstrong Container Yard to the west, and the former Gold Bond building and Honolulu Ford Dealership to the north.

Other uses in the Kakaako Makai area include the Children's Discovery Center, Foreign Trade Zone No. 9, Pacific Biomedical Research Center, Kewalo Basin Marine Mammal Laboratory, National Marine Fisheries Service, Look Laboratory, office buildings, and several automobile dealerships. Major uses in the Kakaako Makai Area are shown in Figure 4.

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HONOLULU BOARD OF WATER SUPPLY DISTRICT COOLING FACILITY

EXISTING LAND USES



WILSON OKAMOTO CORPORATION
ENGINEERS ARCHITECTS

Figure 4

3 DESCRIPTION OF THE EXISTING ENVIRONMENT, PROJECT IMPACTS AND MITIGATION MEASURES

3.1 Climate

The climate of the project site, similar to that of other coastal areas in Honolulu, is characterized by abundant sunshine, persistent trade winds, relatively constant temperatures, and moderate humidity. The mean temperature in Honolulu ranges from 73 degrees Fahrenheit (°F) in the winter to 81°F in the summer. The mean annual rainfall is approximately 23 inches with most of the rainfall occurring between the months of November and April. Relative humidity ranges between 56 and 72 percent. Cooling tradewinds from the northeast prevail throughout most of the year, while occasional "Kona" winds from the south bring warm, humid air.

Cooler microclimatic conditions have resulted from the replacement of large paved areas with the parks and landscaping. These cooling conditions are anticipated to continue with the addition of landscaped park and buffer areas planned throughout the Kakaako Makai Area.

3.2 Geology, Topography and Soils

The project site is approximately 15 feet above mean sea level and flat. The United States Department of Agriculture, Soil Conservation Service, classifies the soils underlying the project site as Fill Land, Mixed (FL). Areas with this designation include those filled with material dredged from the ocean or hauled from nearby areas, garbage, or general material from other sources. It is believed that the caprock underlying the project site is about 900 feet thick and that Koolau basalts are below the caprock.

A geotechnical exploration prepared for the JABSOM project site found that the site is underlain by variable surface fill materials of medium dense and stiff consistency extending to depths of about 5 to 10 feet below the existing ground surface. The surface fill materials were generally underlain by highly compressible lagoonal deposits consisting of soft sandy silts and loose silty sands extending to depths of about 45 to 55 feet below the existing ground surface. The lagoonal deposits were generally underlain by a relatively thick lower coral ledge, about 10 to 20 feet thick, extending between depths of about 40 and 70 feet below the existing ground surface. Below the lagoonal deposits and/or coral ledges, the exploration generally encountered coralline detritus

materials consisting of medium dense silty coralline sands and gravel extending to depths of about 110 to 135 feet below the existing ground surface.

Phase II Environmental Site Assessment reports prepared for the JABSOM project detected lead, dieldrin, PCB's and fluoranthene in limited areas of the JABSOM site at levels that exceeded the DOH Tier 1 action level. Lead-affected soil was found near the southern boundary of the JABSOM site 2.5-feet below the ground surface. Dieldrin-affected soil was found in the vicinity of two former cattle pens at the northwest portion of the JABSOM site. PCB's and fluoranthene were detected six feet below the ground surface in one soil boring along the southern boundary of the JABSOM site. (Kimura International, *Limited Phase II Environmental Site Assessment Report*, January 16, 2002 and *Additional Phase II Environmental Site Assessment Report*, March 2002).

Impacts and Mitigation Measures

Since the JABSOM has already been cleared and graded, minimal earthwork will be required. The Department of Health has approved a Construction Management Plan for the JABSOM project that addresses the presence of contaminants at the JABSOM project site. If contaminated soils are unearthed during construction, they will be handled in accordance with the construction management plan.

3.3 Water Resources

The nearest surface stream in the vicinity of the project site is Nuuanu Stream, located about 1.2 miles north of the project site. Groundwater underlying the project site is essentially seawater. The site was at one time a shallow reef that was filled in the early 1900's. The area *makai* of the project site, which generally includes the Kakaako Waterfront Park, was filled with noncombustible material from a nearby incinerator starting in the mid 1950's by the City and County of Honolulu. The project site overlies the Nuuanu aquifer system of the Honolulu aquifer sector. However, due to the site's close proximity to the ocean and because the site was at one time nearshore waters, there is no fresh water aquifer underlying the site.

An open drainage channel extends from the southwestern corner of the project site to the ocean. The open concrete channel is approximately 30 feet wide and 630 feet in length and has sufficient depth to be subject to tidal influence.

Coastal waters in the vicinity of the project site are designated as Class "A" according to the State Department of Health Water Quality standards. Class "A"

waters are to be protected "for recreational purposes and aesthetic enjoyment" and are not to act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class.

Impacts and Mitigation Measures

The project is anticipated to have no adverse impact on surface or ground water resources. Appropriate Best Management Practices such as local grading, berming and silt fences will be used during construction to prevent stormwater runoff from affecting surface waters. In the long-term, the project will have a beneficial impact on potable water resources by reducing water consumption by 30 to 40 million gallons annually, thereby preserving potable water resources for higher priority uses.

Based on preliminary consultation with the Commission on Water Resource Management, a water use permit and a well construction permit will be required. Since the deep well will be extracting seawater rather than potable water, water use is not expected to be of concern. Construction of the well for extracting seawater would require grouting at the surface and all the way down to avoid salt water intrusion to the basal aquifer. Consultation with the State Historic Preservation Division is also required.

Discharging water from the facility into the proposed injection wells is anticipated to have no impact on ground or coastal water quality. It is anticipated that the water extracted for the facility will be of high quality, similar, if not exceeding, the quality of nearby coastal waters and underlying groundwater. Water from the facility's source well will be sampled after test drilling is completed and submitted to the DOH for the project's Underground Injection Control Permit. The quality of groundwater at the injection well sites will also be sampled to ensure that there are no contaminants in the groundwater that would leach as a result of the injection wells. No thermal impacts to coastal waters are anticipated because based on the coastal bathymetry, the water would need to migrate over 4,000 feet before it enters coastal waters, by which time the discharge would be highly diluted.

3.4 Flood and Tsunami Hazard

According to the *Flood Insurance Rate Maps* prepared by the Federal Emergency Management Agency, the project site is designated Zone X (see Figure 5). Zone X includes areas subject to 500-year floods, areas of 100-year floods with average depths of less than 1-foot, or areas with drainage areas less than 1 square mile.

Impacts and Mitigation Measures

The project will have no impact on flood hazards at the project site or adjacent properties.

3.5 Flora and Fauna

3.5.1 Terrestrial Flora and Fauna

There are no known threatened or endangered species at the project site or nearby areas. As the JABSOM site is presently under construction, most of the vegetation has already been removed and the site does not provide a suitable habitat for faunal species.

Avifauna species that are known to inhabit the Kakaako Makai area include mynahs, finches and doves.

3.5.2 Marine Flora and Fauna

The following description of the marine environment in the vicinity of Kakaako Waterfront Park is from the *Honolulu Waterfront Master Plan* prepared by the Office of State Planning in October 1989.

A shallow, disturbed reef fronts the present rock seawall along the Kakaako shoreline. The reef margin and reef front are composed of consolidated reef rock, broken by depressions and sand patches. The reef platform slopes gradually offshore to a depth of about 30 feet, then drops to 40 feet. Coral cover ranges from 17 to 30 percent. Fish are abundant and sea cucumbers, starfish and an occasional lobster are present. The reef flats support a large number of water-dependent recreational and commercial activities, such as fishing, skin and scuba diving.

Impacts and Mitigation Measures

Development of the project will have no significant adverse impact to terrestrial flora or faunal species. The project is located at a previously disturbed site in a highly urbanized area that does not provide a habitat for any known threatened or endangered species.

Discharging water from the facility into the proposed injection wells is anticipated to have no impact on marine flora or fauna. It is anticipated that the water

extracted for the facility will be of high quality, similar, if not exceeding, the quality of nearby coastal waters and underlying groundwater. Water from the facility's source well will be sampled after test drilling is completed and submitted to the DOH for the project's Underground Injection Control Permit. The quality of groundwater at the injection well sites will also be sampled to ensure that there are no contaminants in the groundwater that would leach as a result of the injection wells. No thermal impacts to coastal waters are anticipated because based on the coastal bathymetry, the water would need to migrate over 4,000 feet before it enters coastal waters, by which time the discharge would be highly diluted.

3.6 Air Quality

The primary stationary source of air pollutants in the Honolulu waterfront area is Hawaiian Electric Company's (HECO) downtown power plant while vehicular traffic is the principal mobile contributor of air pollutants. Emissions from HECO's power plant are in compliance with State and Federal air pollution control regulations. Vehicular traffic on Nimitz Highway/Ala Moana Boulevard, however, has contributed to carbon monoxide levels that have occasionally exceeded State standards.

The State of Hawaii Department of Health monitors the ambient air for gaseous and particulate air pollutants at various monitoring stations throughout the State. The closest monitoring stations to the project site are the Honolulu monitoring station located at 1250 Punchbowl Street and the Sand Island monitoring station located at the University of Hawaii's Anuenue Fisheries. The Honolulu monitoring station is about one-mile northeast of the project site and the Sand Island monitoring station is about ¾-mile northwest of the project site. According to the *2002 Annual Summary, Hawaii Air Quality Data*, ambient air quality measured at the stations is well within Federal and State standards.

Impacts and Mitigation Measures

Short-term construction related air quality impacts may include dust from grading and excavation activities and emission of hydrocarbons and exhaust fumes from construction equipment and employee vehicles. Under normal tradewind conditions, dust and fumes will be dispersed away from the project site toward the ocean. However, during the presence of Kona winds, pollutants would be blown landward which may contribute towards a decline in air quality. Impacts from fugitive dust will be mitigated by complying with the provisions of the State Department of Health, Hawaii Administrative Rules, Chapter 11-60.1 "Air Pollution Control." Possible mitigative measures include erecting dust screens, watering down loose soils, and establishing temporary groundcover. In addition,

all construction equipment must meet the requirements of the State emission control laws in order to mitigate the effects of construction on air quality.

Long-term air quality impacts of the district cooling facility are favorable. The estimated reduction in electricity use is between 2,250,000 and 6,750,000 kWh per year. This reduction in electricity consumption will reduce emissions of volatile organic compounds (VOC's), nitrogen oxides (NO_x) and sulfur oxides (SO_x) from HECO's powerplant. Furthermore, the district cooling facility will reduce or eliminate the need to evaporate chemically-treated water into the air from cooling towers, which will also improve air quality.

3.7 Noise Quality

The primary sources of noise in the vicinity of the project site are vehicular traffic, industrial equipment, and aircraft. An Acoustic Study prepared for the Honolulu Waterfront Master Plan and the 1990 Supplemental EIS for the Kakaako Makai Area found that the existing 24-hour average noise level for traffic within the Makai Area is approximately 60 Ldn at a 50-foot distance from the centerline of streets makai of Ala Moana Boulevard. Aircraft noise levels are between 60 and 65 Ldn and noise levels estimated from industrial equipment averaged between 72 and 80 decibels.

Impacts and Mitigation Measures

During construction, ambient noise levels may increase temporarily. Noise generating equipment that may be used include earth moving equipment such as bulldozers and diesel-powered trucks. Since noise levels during construction are anticipated to exceed allowable limits, a permit must be obtained from the Department of Health.

In the long-term, the district cooling facility may have a favorable impact on noise quality. The facility will reduce the hours or eliminate the hours of cooling tower operation, which in turn will reduce the noise associated with fans and falling water. While not always a consideration in industrial settings, this can be an especially important consideration in campus and urban environments. Noise from the facility's pump will be minimized by using a low-rpm vertical turbine pump housed in a concrete vault. Noise absorbing panels will also be installed to reduce pump noise.

3.8 Open Space and Scenic Resources

The Kakaako Makai Area consists of low-rise structures with the exception of the ten-story former Gold Bond Building. Although there are pockets of open spaces in the Makai Area, the major open spaces are in the Fort Armstrong area and the Kakaako Makai Area Gateway Park and Waterfront Park.

The *Coastal View Study* prepared by the City and County of Honolulu identifies significant views within the Special Management Area boundary on Oahu. Significant views identified in the Downtown and Ala Moana study areas include:

- Continuous and intermittent views of Honolulu Harbor from Nimitz Highway
- Stationary views from Sand Island Park looking east, west and mauka.

Existing views identified in the *Makai Area Plan* include:

- Ala Moana Boulevard to Kewalo Basin
- Kewalo Basin Park along the shoreline
- Kakaako Waterfront Park along the shoreline
- Kakaako Waterfront Park lookout in all directions
- Mauka views from local streets

The plan also calls for the creation of a mauka-makai view corridor along Cooke Street.

The project site itself does not possess scenic resources although it does provide intermittent mauka views.

Impacts and Mitigation Measures

The proposed project will have no significant impact on open space or scenic resources. The only visible feature associated with the project will be a partially sub-grade concrete vault housing the facility's pump. Soils surrounding the vault will be bermed and landscape plantings will be used to screen the vault.

3.9 Historic, Archaeological and Cultural Resources

There are no significant historic or archaeological resources present at the project site or traditional customary practices occurring at the site. Significant historic resources in the vicinity of the project site include the Department of Health Building next to the Foreign Trade Zone, the U.S. Immigration Station, and the former Ala Moana Wastewater Pump Station. The latter two structures are currently listed on the National Register of Historic Places, although all of the

buildings are considered to have "high" preservation potential, historic significance, and can be feasibly maintained and sustained in their present condition.

A cultural impact assessment for the JABSOM project determined that the JABSOM project site was the nearshore waters of the 'ili of Ka'ākaukui, of which the majority of the lands, or 125 acres, were awarded to Victoria Kamāmalu through Land Commission Award 7713. Smaller kuleana lands were also awarded to seven other native tenants. A review of Native and Foreign Register and Testimony records revealed that claimants registered for house lots, fishponds, salt beds and cultivation areas including mauka kalo patches. By 1919, a seawall had been constructed near the present alignment of Olomehani Street and the area makai of Ala Moana Boulevard, including the project site, had been filled. In the early 1900's these lands supported an unauthorized fishing village until the Territorial government evicted the squatters in 1926. Cultural activities that continue to be practiced in the vicinity of the project site include fishing, shoreline gathering, and recreational activities including swimming and surfing.

Impacts and Mitigation Measures

Development of the proposed project is anticipated to have no impact on historic, archaeological, or cultural resources. Because the project site consists of fill land, it is unlikely that any archaeological resources will be uncovered during construction of the project. Should any archaeological deposits be found, however, work in the immediate vicinity will cease and the State Historic Preservation Division will be notified immediately.

3.10 Recreational Resources

The primary recreational resource in the vicinity of the project site is the 30-acre Kakaako Waterfront Park and the adjacent Kakaako Makai Gateway Park which provide opportunities for surfing, bodyboarding, fishing, walking, bicycling, sightseeing, and picnicking. Another resource is the Children's Discovery Center which provides interactive educational exhibits for children.

Impacts and Mitigation Measures

The proposed project will have no impact on recreational resources available to the public. It is anticipated that the water extracted for the facility will be of high quality, similar, if not exceeding, the quality of nearby coastal waters and underlying groundwater. Water from the facility's source well will be sampled after test drilling is completed and submitted to the DOH for the project's

Underground Injection Control Permit. The quality of groundwater at the injection well sites will also be sampled to ensure that there are no contaminants in the groundwater that would leach as a result of the injection wells. No thermal impacts to coastal waters are anticipated because based on the coastal bathymetry, the water would need to migrate over 4,000 feet before it enters coastal waters, by which time the discharge would be highly diluted.

3.11 INFRASTRUCTURE SYSTEMS AND SERVICES

3.11.1 Transportation System

Major roadways in the vicinity of the project site include Ala Moana Boulevard, Ilalo Street, Ward Avenue, and South Street. The principal collector in the Kakaako Makai area is Ilalo Street, a four-lane roadway with a center median. Ala Moana Boulevard is a six-lane principal arterial that provides access in an east-west direction. Ward Avenue is a four-lane mauka-makai minor arterial and South Street is a four-lane two-way minor arterial from Ala Moana Boulevard to Pohukaina Street, and a one-way mauka bound roadway beyond Pohukaina Street.

Impacts and Mitigation Measures

During construction, construction vehicles traveling to and from the project site may marginally affect traffic operations. Since the facility is not a traffic generator, it will not have a significant impact on long-term traffic operations.

3.11.2 Water System

The potable water system in the vicinity of the project site consists of 8-inch waterlines in Keawe Street and 8- and 12-inch waterlines in Ilalo Street. The nearest Board of Water Supply potable water source in the vicinity of the project site is the Beretania Station.

Impacts and Mitigation Measures

The district cooling facility will have a long-term beneficial impact on the water system by reducing water consumption by about 30 to 40 million gallons annually, thereby preserving the capacity of waterlines for higher priority freshwater uses.

3.11.3 Wastewater System

Wastewater disposal in the Kakaako Makai Area is provided by the City Department of Environmental Services. Wastewater flows are routed to the Ala Moana Wastewater Pump Station which conveys flows to the Sand Island Wastewater Treatment Plant.

Impacts and Mitigation Measures

The project will have no impact to the wastewater system as no wastewater flows will be generated from the facility.

3.11.4 Drainage System

Presently, stormwater runoff at the project site flows into a system of drain inlets that convey flows to the drainage channel located to the west of the project site.

Impacts and Mitigation Measures

The project will not significantly increase the quantity of stormwater runoff entering the drainage system. The only impervious structures anticipated to be constructed are an 80-sq. ft. vault for the source well and five 36 sq. ft. vaults for the injection wells.

4 RELATIONSHIP TO LAND USE PLANS AND POLICIES

4.1 State Plans, Policies and Controls

A number of State plans, policies and controls provide guidelines for development within the State of Hawaii. These guidelines include the Hawaii State Plan, State Land Use Districts, Coastal Zone Management Act, and the Kakaako Makai Area Plan. The following describes the relationship of the proposed project to each of these plans/regulations.

4.1.1 Hawaii State Plan

The Hawaii State Plan was developed to serve as a guide for future development for the State of Hawaii in the areas of population growth, economic benefits, enhancement and preservation of the physical environment, facility systems maintenance and development, and socio-cultural advancement. The Plan identifies the goals, objectives, policies and priorities for the development and growth of the State, for which guidelines have been provided to give direction to the overall development of the State.

The proposed district cooling facility is consistent with the objectives and policies of the Hawaii State Plan. Described in the following sections are the relationship and compatibility of the district cooling facility with relevant objectives and policies set forth in the Hawaii State Plan.

4.1.1.1 Energy/Telecommunications (HRS §226-18)

§226-18 Objectives and policies for facility systems – energy/telecommunications. (a) Planning for the State's facility systems with regard to energy/telecommunication shall be directed towards the achievement of the following objectives:

- (1) Dependable, efficient, and economical statewide energy and telecommunication systems capable of supporting the needs of the people.*
- (2) Increased energy self sufficiency*
- (b) To achieve the energy/telecommunication objectives, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable power and telecommunication services to accommodate demand.*
- (c) To further achieve the energy objectives, it shall be the policy of this State to:*
 - (1) Support research and development as well as promote the use of renewable energy sources;*

- (2) *Ensure a sufficient supply of energy to enable power systems to support the demands of growth;*
- (3) *Promote prudent use of power and fuel supplies through conservation measures including:*
 - (A) *Development of cost-effective demand-side management programs;*
 - (B) *Education; and*
 - (C) *Adoption of energy-efficient practices and technologies; and*
- (4) *Ensure that development or expansion of power systems and sources adequately consider environmental, public health, and safety concerns, and resource limitations.*

The proposed district cooling facility will use naturally cold ground water, a renewable resource, to reduce electricity consumption by 2,250,000 to 6,750,000 kWh. The technology used by the district cooling facility is environmentally friendly and will reduce demand on HECO's power facilities.

4.1.2 State Land Use Districts

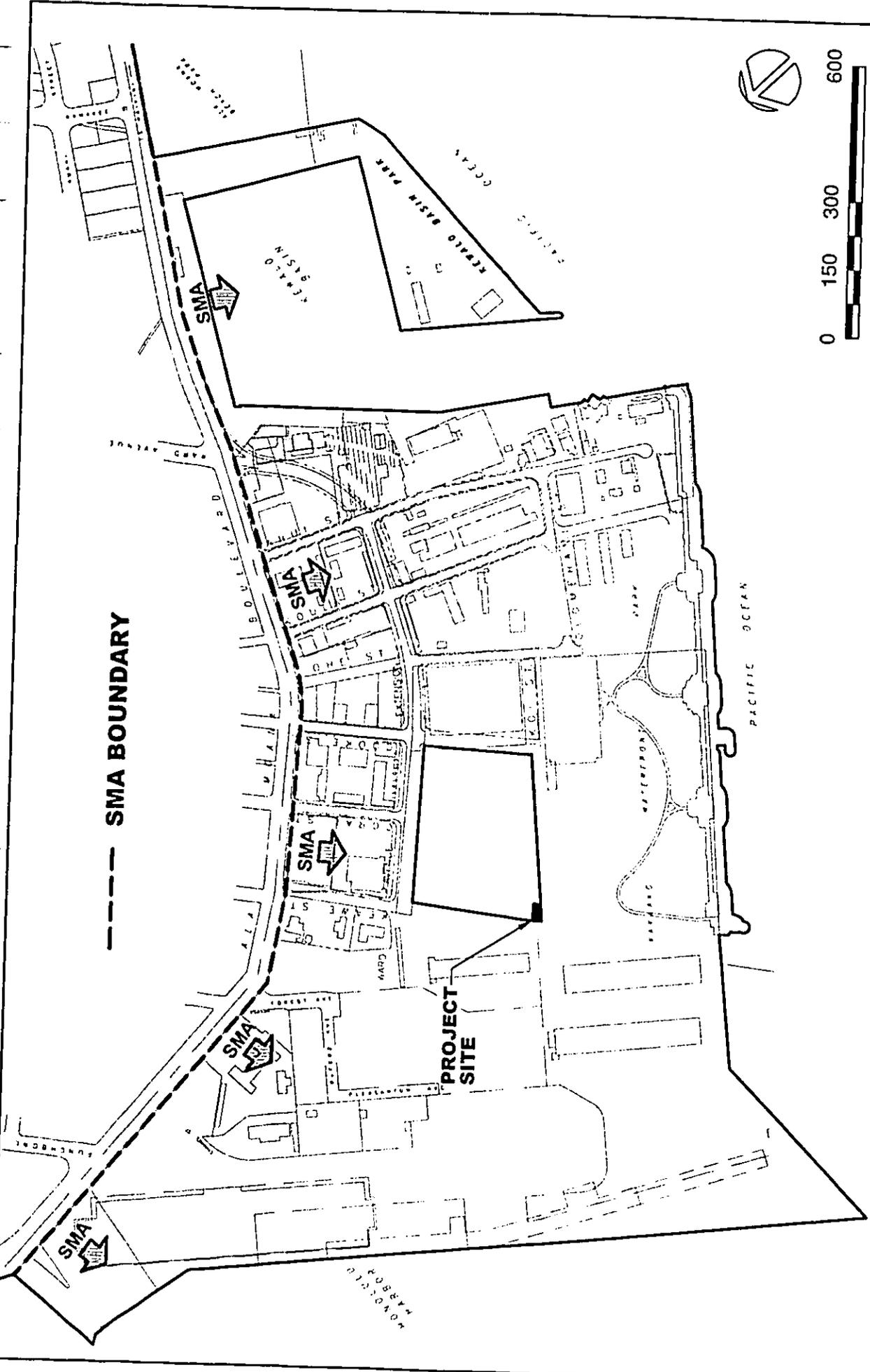
The State Land Use Law, Chapter 205, HRS, is intended to preserve, protect, and encourage the development of lands in the State for uses that are best suited to the public health and welfare for Hawaii's people. All lands in the State are classified into four land use districts by the State Land Use Commission: Urban, Agricultural, Conservation, and Rural.

The project site is within the "Urban" district and conforms to the Urban district standards.

4.1.3 Special Management Area

Pursuant to the Hawaii Coastal Zone Management Act (Chapter 205A, Hawaii Revised Statutes) any development within the SMA, including development proposed by the State, requires an SMA permit. Although normally administered by the City and County of Honolulu, because the project site is located within the HCDA Kakaako Community Development District, the approving agency for the SMA permit will be the State Office of Planning. The SMA boundary is shown in Figure 6.

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--- SMA BOUNDARY



HONOLULU BOARD OF WATER SUPPLY DISTRICT COOLING FACILITY
SPECIAL MANAGEMENT AREA BOUNDARY

Figure 6

A discussion of the project's consistency with the objectives and policies of the Coastal Zone Management Program is provided below.

(1) Recreational Resources

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies

- (A) *Improve coordination and funding of coastal recreational planning and management; and*
- (B) *Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:*
 - (i) *Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;*
 - (ii) *Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;*
 - (iii) *Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*
 - (iv) *Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
 - (v) *Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*
 - (vi) *Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters.*
 - (vii) *Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and*
 - (viii) *Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions;*

and crediting such dedication against the requirements of Section 46-6, HRS.

Development of the proposed project is anticipated to have no adverse impact on coastal recreational opportunities available to the public. Water extracted for the district cooling facility will be disposed of through injection wells. It is anticipated that the water extracted for the facility will be of high quality, similar, if not exceeding, the quality of nearby coastal waters and underlying groundwater. Water from the facility's source well will be sampled after test drilling is completed and submitted to the DOH for the project's Underground Injection Control Permit. The quality of groundwater at the injection well sites will also be sampled to ensure that there are no contaminants in the groundwater that would leach as a result of the injection wells. No thermal impacts to coastal waters are anticipated because based on the coastal bathymetry, the water would need to migrate over 4,000 feet before it enters coastal waters, by which time the discharge would be highly diluted.

(2) Historic resources

Objective:

Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

- (A) *Identify and analyze significant archaeological resources;*
- (B) *Maximize information retention through preservation of remains and artifacts or salvage operations; and*
- (C) *Support state goals for protection, restoration, interpretation, and display of historic resources.*

No known archaeological or cultural resources are known to be present at the project site. Inasmuch as the project site consists of fill land, such resources are unlikely to be present. During preparation of the Supplemental Environmental Impact Statement for the 1998 Kakaako Makai Area Plan, the State Historic Preservation Division commented that "because the area makai of Ala Moana Boulevard is comprised of fill lands, we believe that the development of the area will have no effect on subsurface cultural deposits because it is unlikely that any are present." However, should archaeological remains be discovered during

construction of the project, work in the immediate vicinity will cease and the State Historic Preservation Division will be contacted immediately.

(3) Scenic and open space resources

Objective:

Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

- (A) *Identify valued scenic resources in the coastal zone management area;*
- (B) *Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*
- (C) *Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*
- (D) *Encourage those developments which are not coastal dependent to locate in inland areas.*

The proposed project will have no significant impact on open space or scenic resources. The facility's pump will be housed in a concrete vault that will be partially sub-grade. Soils surrounding the vault will be bermed and landscape plantings will be used to minimize the visibility of the vault. The facility's transmission pipes and injection wells will be underground.

(4) Coastal ecosystems

Objective:

Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

- (A) *Improve the technical basis for natural resource management;*
- (B) *Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;*
- (C) *Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and*

- (D) *Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.*

Impacts to water quality that may occur during construction will be mitigated by applying appropriate Best Management Practices, such as minimizing open grading activities, grassing or paving exposed areas as soon as practicable, frequent cleaning of paved surfaces of mud and silt, and structural controls such as silt fences or temporary berms. In the long-term, discharging water from the facility into the proposed injection wells is anticipated to have no impact on ground or coastal water quality. It is anticipated that the water extracted for the facility will be of high quality, similar, if not exceeding, the quality of nearby coastal waters and underlying groundwater. Water from the facility's source well will be sampled after test drilling is completed and submitted to the DOH for the project's Underground Injection Control Permit. The quality of groundwater at the injection well sites will also be sampled to ensure that there are no contaminants in the groundwater that would leach as a result of the injection wells. No thermal impacts to coastal waters are anticipated because based on the coastal bathymetry, the water would need to migrate over 4,000 feet before it enters coastal waters, by which time the discharge would be highly diluted.

(5) *Economic Uses*

Objective:

Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

- (A) *Concentrate coastal dependent development in appropriate areas;*
(B) *Ensure that coastal dependent developments such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and*
(C) *Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:*
(i) *Use of presently designated locations is not feasible;*

- (ii) Adverse environmental effects are minimized; and
- (iii) The development is important to the State's economy.

The project is suitably situated in a highly urbanized area adjacent to developments that could benefit from the district cooling facility.

(6) *Coastal hazards*

Objectives:

Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.

Policies

- (A) *Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;*
- (B) *Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;*
- (C) *Ensure that developments comply with requirements of the Federal Flood Insurance Program;*
- (D) *Prevent coastal flooding from inland projects; and*
- (E) *Develop a coastal point and nonpoint source pollution control program.*

The project site is not located in an area subject to tsunami hazard, storm waves, stream flooding, erosion, subsidence or pollution.

(7) *Managing Development*

Objective:

Improve the development review process, communication and public participation in the management of coastal resource and hazards.

Policies:

- (A) *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*
- (B) *Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and*

- (C) *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the public to facilitate public participation in the planning and review process.*

Government agencies, organizations and the general public are being notified of the proposed project, and being given an opportunity to comment on the project, through the environmental review process. The Special Management Area Use Permit process will include a public hearing and provide additional opportunities for agency and public input.

(8) Public participation

Objective:

Stimulate public awareness, education, and participation in coastal management.

Policies:

- (A) *Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;*
- (B) *Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and*
- (C) *Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.*

Government agencies, organizations and the general public are being notified of the proposed project, and are provided an opportunity to comment on the project through the environmental review process. The Special Management Area Use Permit process will also provide an opportunity for agency and public input.

(9) Beach Protection

Objective:

Protect beaches for public use and recreation.

Policies:

- (A) *Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;*
- (B) *Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and*
- (C) *Minimize the construction of public erosion-protection structures seaward of the shoreline.*

The proposed project does not involve the construction of improvements in the shoreline setback or erosion-protection structures. The project will not adversely affect coastal recreational opportunities available to the public.

(10) Marine Resources

Objective:

Implement the State's ocean resources management plan.

Policies:

- (A) *Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;*
- (B) *Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
- (C) *Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;*
- (D) *Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;*
- (E) *Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and*
- (F) *Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

The proposed project is anticipated to have no impact on marine and coastal resources. Impacts to water quality that may occur during construction will be mitigated by applying appropriate Best Management Practices, such as minimizing open grading activities, grassing or paving exposed areas as soon as practicable, frequent cleaning of paved surfaces of mud and silt, structural controls such as silt fences or temporary berms. Discharging water from the facility into the proposed injection wells is anticipated to have no impact on ground or coastal water quality. It is anticipated that the water extracted for the facility will be of high quality, similar, if not exceeding, the quality of nearby coastal waters and underlying groundwater. Water from the facility's source well will be sampled after test drilling is completed and submitted to the DOH for the project's Underground Injection Control Permit. The quality of groundwater at the injection well sites will also be sampled to ensure that there are no contaminants in the groundwater that would leach as a result of the injection wells. No thermal impacts to coastal waters are anticipated because based on the coastal bathymetry, the water would need to migrate over 4,000 feet before it enters coastal waters, by which time the discharge would be highly diluted.

4.1.4 Kakaako Makai Area Plan and Makai Area Rules

The HCDA was created by the 1976 State Legislature to bring about the timely planning, regulation and development of underutilized areas in the State. The 670-acre Kakaako District was designated as the HCDA's first "Community Development District". In 1982 and 1987, the Kakaako Community Development District was expanded by adding the area south of Ala Moana Boulevard known as the Makai Area. Separate plans specifying desired land uses, urban design guidelines, infrastructure improvements, and phasing have been prepared for the Mauka Area and Makai Area. The latest plan for the Kakaako Makai Area was adopted by the HCDA in 1998. Land use zones established by the plan are shown in Figure 7. Last amended in January 2000, the Makai Area Rules set forth regulations to implement the policies and programs of the Makai Area Plan.

The source well and two of the five injection wells for the district cooling facility will be within the Makai Area Plan's Commercial zone and three of the injection wells will be within the Park zone. The proposed project is consistent with the Kakaako Makai Area Plan as it will support the John A. Burns School of Medicine, a project previously approved by the HCDA, and possibly future developments in the vicinity. A Development Permit or an exemption will be obtained from the HCDA in conjunction with this project.

4.2 County Plans, Policies, and Controls

Pursuant to Act 153, SLH 1976, the HCDA has the authority to supersede certain local controls, such as Development Plan and Zoning Ordinances. The project, however, is consistent with the land use development goals of the City and County of Honolulu, as expressed in the General Plan and Primary Urban Center Development Plan.

4.2.1 City and County of Honolulu General Plan

The General Plan of the City and County of Honolulu sets forth broad statements of social, economic, environmental, and design objectives and policies that are desired over the long run. The proposed project is consistent with the following General Plan policies and objectives:

II. Natural Environment

Objective A: To protect and preserve the natural environment.

Policy 4: Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water-recharge areas, distinctive land forms, and existing vegetation.

Policy 7: Protect the natural environment from damaging levels of air, water, and noise pollution.

No significant impacts to the natural environment are anticipated to result from construction or operation of the district cooling facility. The project site is not subject to natural hazards and does not possess significant natural resources.

V. Transportation and Utilities

Objective B: To meet the needs of the people of Oahu for an adequate supply of water and for environmentally sound systems of waste disposal.

Policy 1: Develop and maintain an adequate supply of water for both residents and visitors.

Policy 2: Develop and maintain an adequate supply of water for agricultural and industrial needs.

The proposed project has the potential to reduce potable water consumption by 30 to 40 million gallons annually, which would preserve water resources for higher priority uses.

VI. Energy

Objective A: To maintain an adequate, dependable, and economical supply of energy for Oahu residents.

Policy 1: Support programs and projects which contribute to the attainment of energy self-sufficiency on Oahu.

Objective D: To develop and apply new, locally available energy resources.

Policy 1: Support and participate in research, development, demonstration, and commercialization programs aimed at producing new, economical, and environmentally sound energy supplies from:

- a. solar insolation;*
- b. biomass energy conversion;*
- c. wind energy conversion;*
- d. geothermal energy; and*
- e. ocean thermal energy conversion.*

The district cooling facility will substantially reduce energy use by eliminating or reducing the need for air conditioning chillers and cooling towers. The district cooling facility will use naturally cool groundwater, a renewable resource, to reduce electricity use by 2,250,000 to 6,750,000 kWh per year.

4.2.2 Primary Urban Center Development Plan

4.2.2.1 Existing Development Plan

The island of Oahu is divided into eight Development/Sustainable Communities Plan regions. Each plan implements the objectives and policies of the General Plan and serves as a guide for public policy, investment, and decision making within their respective region.

The project site is located within the region encompassed by the Primary Urban Center Development Plan (PUC-DP). The Development Plan Special Provisions

for the Primary Urban Center contain the following provisions with respect to the Kakaako district:

Sec. 24-2.2(b)(6) Kakaako. (6) Kakaako. Kakaako is the area generally bounded by South Street, King Street, and Piikoi Street. It includes the entire Kewalo Peninsula makai of the Ala Moana Boulevard. Kakaako includes the entire Kewalo Peninsula makai of Ala Moana Boulevard from Pier 2 on the west to the Kewalo Basin-Ala Moana Park boundary on the east, and the area mauka of Ala Moana Boulevard bounded by Punchbowl Street, Pohukaina Street, South Street, King Street, Ward Avenue, Kapiolani Boulevard, and Piikoi Street.

The purpose of the following principles and controls is to permit the redevelopment of this area for mixed uses within an attractive setting and to preserve mauka-makai views and views of Punchbowl from within Kakaako as well as from areas beyond its boundaries.

- (A) Commercial emphasis mixed-use shall be the predominant form of development in Kakaako, with limited areas also set aside for commercial-industrial emphasis mixed-use in the central portion and for marine industrial use at the Ewa end of Kewalo Peninsula.*
- (B) The makai portion of Kewalo Peninsula shall be developed into a regional park.*
- (D) A special pedestrian corridor system shall be provided for safe and pleasant access to major activity centers adjacent to this area, enhancing the compatibility of the mixed uses in the area. The system shall also include a pedestrian walkway along the shoreline from the mouth of Honolulu Harbor into Ala Moana Park.*
- (E) In addition to the above, special height, design and use controls may be applied where necessary to ensure the preservation of important views, landmarks and historic structures, and the compatibility of the permitted mixture of uses within the area.*

The PUC-DP Land Use Map designates the project site as "Commercial". The project is consistent with the principles and controls for the Kakaako Area as stated in the PUC-DP Special Provisions as it will support commercial developments in Kakaako.

4.2.2.2 Proposed Development Plan

A revised Development Plan has been prepared for the Primary Urban Center and is presently before the Honolulu City Council for adoption. The PUC-DP Land Use Map proposes industrial, commercial, and park uses in the Kakaako Makai area and designates the project site for Parks and Open Space. However,

unlike the current Development Plan, the revised Development Plan is not regulatory and the DP Land Use Map illustrates conceptual land uses consistent with the objectives of the plan.

The following policies and guidelines relating to infrastructure and public facilities are relevant to the project:

4.1 *Water Allocation and System Development*

4.1.2 *Policies*

- *Adapt and implement water conservation practices in the design of new developments and modification of existing uses, including landscaped areas.*

4.1.3 *Guidelines*

- *Conserve the use of potable water by implementing the following measures, as feasible and appropriate:*
 - *Install low flush toilets, flow restrictors and other mechanical water conserving devices in commercial and residential developments;*

4.2 *Electrical Power*

4.3.2 *Policies*

- *Promote and implement energy conservation measures.*

The proposed project is consistent with the vision for the Primary Urban Center as it will support commercial uses, such as the JABSOM, envisioned to be developed in the Kakaako Makai area. The project is also consistent with the plan's policies relating to water systems and electrical power as it will reduce electricity use by between 2,250,000 and 6,750,000 kwh annually and potable water use by 30 to 40 million gallons annually.

Based on preliminary consultation with the Department of Planning and Permitting, the City acknowledges State of Hawaii jurisdiction in the Kakaako Makai Area. The Development Plan does not go into detail regarding specific developments, although wells and other infrastructure developments are generally considered acceptable uses.

5 ALTERNATIVES TO THE PROPOSED ACTION

The following sections discuss alternatives to the preferred option of a deep basal seawater well for providing the cooling effect for the centralized district cooling system:

5.1 No Action Alternative

Under the No Action alternative, the JABSOM will operate with a conventional chilled water air conditioning system. The conventional air conditioning system would consume an additional 2,250,000 to 6,750,000 kWh and 30,000,000 to 40,000,000 gallons of potable water annually. In the long-term, this could result in additional or accelerated facility development by both the Board of Water Supply and Hawaiian Electric Company to serve future loads.

5.2 Deep Ocean Pipeline

Under the Deep Ocean Water Pipeline alternative, large diameter piping (60 to 72 inches) would be installed along the sea floor and extended approximately 5-miles along the bathymetry to over 2,300-feet of depth for use as the primary cooling source. This technology has been studied extensively and applied at the Natural Energy Laboratory of Hawaii at Keahole, Big Island because of its close proximity to deep water. Seawater temperatures in the low 40 degrees Fahrenheit were achieved. In South Oahu, the distance to deep water is about 5 times that of Keahole and construction of a deep ocean pipeline is therefore much more expensive. Because of the high initial capital cost, deep ocean pipelines are fundamentally dependent on a large-scale cooling load commitment, which is presently unavailable. At this time, deep basal seawater wells are preferred over a Deep Ocean Pipeline because they have high flow capacity, are modular and are significantly less expensive than an ocean pipeline, although the well temperatures may be slightly warmer than the ocean at similar depths.

5.3 Conventional Chilling with Ice Thermal Storage

Under this alternative a centralized district cooling plant could be constructed using conventional chilling equipment with increased operational efficiencies from load shifting using ice thermal storage. Large quantities of ice are made using power off the peak demand, when power costs are less. The ice is then used for cooling chilled water during peak power demand when premium price schedules

apply. Although feasible, this option does not take advantage of the large cold, water resource that is available.

5.4 Alternative Disposal Options

The following sections discuss alternatives to the preferred option of effluent discharge into injection wells. If discharge into the open drainage channel were to be pursued (Section 5.4.4), alternatives to raise the temperature of the effluent are discussed in Sections 5.4.5 and 5.4.6.

5.4.1 Deep Basal Injection Well

Injecting water extracted for the district cooling facility into a deep basal well is an alternative to discharging the water into the drainage canal west of the project site. The basalt geologic formations have higher water transmissivity than the coral and sediment caprock formation above it. Under this alternative, a large capacity injection well extending about 1,000 feet deep would be developed and effluent from the district cooling facility would be pumped into the well. This alternative is less desirable than the proposed alternative because the injected water, which will be several degrees warmer after passing through the district cooling facility, may create a mixing environment with the colder seawater source well. A change in seawater temperature over time will affect the operational efficiency of the final chilling plant design and this is unacceptable.

Environmental impacts associated with development of a deep basal injection well would be similar to the preferred alternative. No impact to coastal or ground water quality is anticipated since the water will be used only for non-contact cooling and no chemical additives will be used. An Underground Injection Control permit would be required from the Department of Health.

5.4.2 Separate Ocean Outfall

Under this alternative, a separate ocean outfall is constructed to discharge the seawater, which will be adjusted to ambient ocean temperatures. This alternative assumes that permitting, approval or capacity is not available in the drainage canal. This option will increase project cost and time and will impact the near shore water environment during its construction. The hydraulic capacity of the drainage canal is limited under Keawe Street, the covered portion. However, the makai open channel segment near the ocean outlet may accommodate the discharge effluent. This option will require further analysis.

Coastal water quality and marine flora and fauna may be impacted during construction of the ocean outfall. Impacts could be minimized by installing the

outfall along the surface of the sea floor so no trenching is required. No long-term impact is anticipated since the effluent discharged would be similar in quality to ambient seawater.

5.4.3 Combination of Drainage Channel Discharge and Caprock Disposal Wells

Under this alternative, a combination of disposal options offers more flexibility with increased project costs. There may be adequate space to accommodate fewer disposal wells on the JABSOM site and the lower flow rates into the drainage canal will lessen any, as yet unidentified impacts to the drainage system capacity, especially during high rainfall periods. Environmental impacts associated with this alternative would be similar to the proposed alternative.

5.4.4 Discharge into Open Drainage Channel

Discharging water extracted for the facility into the open drainage channel south of the project site was discussed as the preferred alternative in the Draft EA. Under this alternative, the effluent would be pumped from the JABSOM's Central Plant to an outfall located near the channel's outlet to the ocean. This alternative has been rejected because although it would be possible to bring the effluent to near ambient temperature, it would be difficult to precisely match the ambient temperature of coastal waters. Concerns were also raised regarding the capacity of the drainage channel and quality of the source water. In addition, the permitting requirements and long-term water quality monitoring costs for the outfall make this alternative less desirable.

5.4.5 Blending Ocean Discharge to Match Ambient Ocean Temperatures

If the alternative of discharging into the open drainage channel were pursued and the effluent was too cool to be discharged directly into the concrete drainage canal, the effluent could be blended with ambient temperature seawater to bring it to near ambient temperature prior to discharge. A blending box or vault would be required. The blending ratio is not known at this point because the test bore hole data is not available. The colder the effluent, the greater amount of blending water will be needed. Ocean intakes could consist of an inlet structure in the nearshore waters but this option is costly and will have environmental impacts to the nearshore environment. An alternative is a subterranean ocean intake structure constructed near the shoreline. Construction in the near shore waters would be avoided and there would be less permitting requirements.

5.4.6 Increasing Seawater Effluent Temperature by Condenser Water Cooling

Effluent from the facility could also be raised to ambient temperature by using it for condenser water cooling. Under this alternative, after the cold temperature is extracted and transferred to the chilled water system, a mechanical design adjustment will allow the seawater temperature to rise by cooling the condenser water. This alternative assumes a trimming chiller is required to reduce the chilled water to desired temperatures of about 40 degrees Fahrenheit. The trimming chiller will create hot gas that must be condensed back to liquid in the refrigeration cycle. Using seawater as a condenser method is common in several buildings in Honolulu and will eliminate the need for the cooling towers and its associated loss of potable water. The final exit temperature will be determined during the permitting and design phase. The water would then be discharged into the drainage canal west of the project site.

6 REQUIRED PERMITS AND APPROVALS

The following is a list of permits and approvals that may be required prior to construction of the preferred development option of the proposed project.

State of Hawaii

- Special Management Area Use Permit – Office of Planning
- Noise Variance Permit – Department of Health, Noise Radiation and Indoor Air Quality Branch
- National Pollutant Discharge Elimination System Individual Permit – Department of Health, Clean Water Branch
- Zone of Mixing Permit – Department of Health, Clean Water Branch
- Underground Injection Control Permit – Department of Health, Safe Drinking Water Branch
- Well Construction Permit – State Commission on Water Resource Management
- Pump Installation Permit – State Commission on Water Resource Management
- Water Use Permit – State Commission on Water Resource Management

7 DETERMINATION OF FONSI

The proposed project is not anticipated to have a significant impact based on the criteria set forth in the State Department of Health Rules, Chapter 200, Title 11, Section 12. The proposed project's relationship to each of the significance criteria is discussed below.

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.*

Development of the proposed project will involve an irrevocable commitment of labor, capital and materials. Land at the project site would also be committed to the proposed project for the foreseeable future. The project site, however, does not possess significant natural or cultural resources.

2. *Curtails the range of beneficial uses of the environment.*

Development of the project will not curtail the range of beneficial uses of the environment. The project will generate no significant environmental impacts and will be developed on lands that have already been urbanized. In the long-term, the project will have favorable environmental impacts by reducing potable water and electricity use, air pollutant emissions, and noise impacts.

3. *Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions or executive orders;*

The proposed project is consistent with the environmental policies, goals and guidance set forth in Chapter 344, HRS.

4. *Substantially affects the economic or social welfare of the community or state.*

In the short-term, the project will have beneficial economic impacts due to the hiring of construction workers and purchasing of materials from local suppliers. The project will also have a long-term beneficial fiscal impact by reducing energy and water consumption, thereby reducing utility costs for the JABSOM and other developments served by the facility.

5. *Substantially affects public health.*

The project will have no significant adverse effects on public health. The project may have favorable long-term impacts on public health by reducing air pollutant emissions and noise impacts.

6. *Involves substantial secondary impacts, such as population changes or effects on public facilities.*

The project is not expected to induce secondary impacts or have an impact on population. The project will have a favorable impact on public facilities by reducing potable water demand by 30,000,000 to 40,000,000 gallons annually, thereby preserving water sources and the capacity of waterlines for higher priority uses.

7. *Involves a substantial degradation of environmental quality.*

The project is not anticipated to involve a substantial degradation of environmental quality. Short-term impacts to air and water quality and ambient noise levels may occur during the construction phase of the project. Impacts during construction will be mitigated by implementing appropriate Best Management Practices and complying with required permit conditions.

8. *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

The project does not involve a commitment for larger actions nor will it trigger cumulative environmental impacts. Although the facility will have the capacity to serve additional developments, its success is not contingent upon a commitment by other developments.

9. *Substantially affects a rare, threatened or endangered species, or its habitat.*

There are no known proposed, candidate, or listed threatened or endangered species present at the project site.

10. *Detrimentially affects air or water quality or ambient noise levels.*

Short-term impacts to air and water quality and ambient noise levels may occur during construction of the proposed project. Environmental impacts to air and

water quality can be mitigated through proper construction techniques. Construction activity at the JABSOM site will be done in accordance with the National Pollutant Discharge Elimination System (NPDES) permit for stormwater runoff previously procured for the JABSOM project. In the long-term, the project is anticipated to have a favorable impact on air quality by reducing emissions from HECO's downtown power plant and by eliminating the need to evaporate chemically-treated water. The project is anticipated to have no long-term impact on water quality since the discharged water will be of similar quality to coastal waters since the extracted water will be used only for non-contact cooling and no chemical additives will be used.

11. *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters.*

The project site is not located within an environmentally sensitive or hazardous area nor will it affect such areas.

12. *Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.*

As discussed in section 3.8 of this EA, the project will not have a significant impact on scenic resources identified in the City and County of Honolulu's *Coastal View Study*, or the Kakaako Makai Area Plan.

13. *Requires substantial energy consumption.*

By eliminating or reducing the need for air conditioning chillers and cooling towers, the project will have a favorable impact by reducing energy consumption by 2,250,000 to 6,750,000 kWh per year.

8 CONSULTATION

8.1 Pre-Assessment Consultation

The following agencies and organizations were consulted during the preparation of the Draft EA.

State

Department of Land and Natural Resources, Commission on Water Resource Management

Department of Health

Hawaii Community Development Authority

City & County of Honolulu

Department of Planning & Permitting

8.2 Draft EA Consultation

The following agencies and organizations were consulted during the public review period of the Draft EA.

Federal

Fish and Wildlife Service
National Marine Fisheries Service
U.S. Army Corps of Engineers

State

Department of Business, Economic Development and Tourism (DBEDT)
DBEDT, Office of Planning
Department of Health (DOH)
DOH, Environmental Management Division
DOH, Office of Environmental Quality Control
Department of Land and Natural Resources (DLNR)
DLNR, Historic Preservation Division
Department of Transportation
Hawaii Community Development Authority
Office of Hawaiian Affairs
University of Hawaii, Environmental Center

City & County of Honolulu

Department of Design and Construction
Department of Planning & Permitting
Department of Transportation Services
Ala Moana/Kakaako Neighborhood Board No. 11

Other

State Main Library
Hawaiian Electric Company, Inc.
Kakaako Improvement Association
KSBE Properties

8.3 Final EA Consultation

The Final EA will be distributed to the following agencies and organizations:

Federal

Fish and Wildlife Service
National Marine Fisheries Service
U.S. Army Corps of Engineers

State

Department of Business, Economic Development and Tourism (DBEDT)
DBEDT, Office of Planning
Department of Health (DOH)
DOH, Environmental Management Division
DOH, Office of Environmental Quality Control
Department of Land and Natural Resources (DLNR)
DLNR, Historic Preservation Division
Department of Transportation
Hawaii Community Development Authority
Office of Hawaiian Affairs
University of Hawaii, Environmental Center

City & County of Honolulu

Department of Design and Construction
Department of Planning & Permitting
Department of Transportation Services
Ala Moana/Kakaako Neighborhood Board No. 11

Other

State Main Library
Hawaiian Electric Company, Inc.
Kakaako Improvement Association
KSBE Properties

9 REFERENCES

Federal Emergency Management Agency. *Flood Insurance Rate Map, Community Panel No. 15003CO365 E*. November 20, 2000.

State of Hawaii, Department of Defense. *Tsunami Evacuation Zone proof maps*.

State of Hawaii, Hawaii Community Development Authority. *Kakaako Community Development District Makai Area Plan*. August 1998.

State of Hawaii, Hawaii Community Development Authority. *Kakaako Community Development District Makai Area Rules*. January 2000.

United States Department of Agriculture, Soil Conservation Service. *Soil Survey of the Islands of Kauai, Maui, Molokai, and Lanai, State of Hawaii*. August 1972.

Wilson Okamoto and Associates, Inc. *Kakaako Community Development District, Makai Area Plan, Final Supplemental Environmental Impact Statement*. June 1998.

Wilson Okamoto and Associates, Inc. *University of Hawaii Health and Wellness Center Final Environmental Assessment*. May 2002.

**Comments Received During The
Draft Environmental Assessment Comment Period**

HAWAII COMMUNITY
DEVELOPMENT AUTHORITYAKAAKO
KALAELOALinda Lingle
GovernorLori Ann C. Lum
ChairDaniel Dinell
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Ref. No.: PL MAP 5.15

February 27, 2004

Mr. Barry Usagawa
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Usagawa:

Re: Draft Environmental Assessment for the Honolulu Board of Water Supply
District Cooling System

Thank you for the opportunity to comment on the subject Draft Environmental Assessment ("EA"). We have the following comments to offer on the proposed project.

- The Tax Map Key for the John A. Burns School of Medicine is 2-1-60: por. 7, 9 and 10.
- The Project description states that the preferred disposal option is to discharge the effluent into the concrete drainage canal west of the project site near its connection with the ocean. Please be advised that during periods of high tide, water in the drainage canal tends to back up through the drainage system. This is especially prevalent during periods of heavy rains. Please include a discussion on the impact to the drainage system in the area.
- The Makai Area Plan designates a bike lane along Keawe Street that connects to a bike path in the Kakaako Waterfront Park. Any off-site disposal option should not impede the proposed Makai Area bike path into the Kakaako Waterfront Park.

Should you have any questions, please call Teney Takahashi, Director of Planning and Development at 587-2870.

Sincerely,

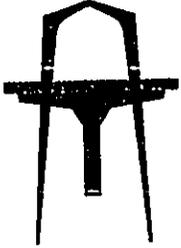
Daniel Dinell
Executive Director

DD/SJT/TT:ll

c. Ms. Genevieve Salmonson, OEQC
Mr. Rodney Funakoshi, Wilson Okamoto Corporation

6573-02
March 8, 2004

WILSON
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ENGINEERS
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FAX: (808)946-2253

Mr. Daniel Dinell, Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Mr. Dinell:

Thank you for your letter of February 27, 2004 (Ref. No.: PL MAP 5.15) commenting on the subject Draft Environmental Assessment. We acknowledge that the tax map keys for the John A. Burns School of Medicine (JABSOM) are 2-1-60: por. 7, 9 and 10. Most of the improvements associated with the proposed facility will be developed on parcel 9 of the JABSOM site. In addition, please be aware that effluent from the proposed facility is now proposed to be disposed of through injection wells rather than the nearby open drainage channel. As has been previously discussed with your staff, the injection wells are proposed to be developed within the easement for the drainage channel along the northwest boundary of the Kakaako Waterfront Park. The injection wells will not impede the proposed Makai Area bike path. We will be submitting the proposed easement request for your review and approval after the design is completed.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,

Rodney Funakoshi, AICP
Project Manager

RYF/DM/jsm

cc: Lorna Heller, City and County of Honolulu Board of Water Supply
Genevieve Salmonson, Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR OF HAWAII



RF

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

RECEIVED
FEB 11 2004

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EPO-04-005

WILSON OKAMOTO CORPORATION

February 11, 2004

Mr. Barry Usagawa
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Usagawa:

SUBJECT: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii
Tax Map Keys: (1) 2-1-60: por. 9

Thank you for allowing us to review and comment on the subject document. We have the following comments to offer:

CLEAN WATER BRANCH

1. The Army Corps of Engineers should be contacted at (808) 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."
2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:
 - a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).
 - b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on

- c. different schedules under a larger common plan of development or sale. An NPDES permit is required before the commencement of the construction activities.
- c. Discharges of treated effluent from leaking underground storage tank remedial activities.
- d. Discharges of once through cooling water less than one (1) million gallons per day.
- e. Discharges of hydrotesting water.
- f. Discharges of construction dewatering effluent.
- g. Discharges of treated effluent from petroleum bulk stations and terminals.
- h. Discharges of treated effluent from well drilling activities.
- i. Discharges of treated effluent from recycled water distribution systems.
- j. Discharges of storm water from a small municipal separate storm sewer system.
- k. Discharges of circulation water from decorative ponds or tanks.

The CWB requires that a Notice of Intent (NOI) to be covered by a NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at <http://www.state.hi.us/health/eh/cwb/forms/genl-index.html>.

- 3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. NPDES general permits do not cover discharges into Class 1 or Class AA receiving waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities.

The NPDES application forms may also be picked up at our office or downloaded from our website at <http://www.state.hi.us/health/eh/cwb/forms/indiv-index.html>.

- 4. Hawaii Administrative Rules, Section 11-55-38, also requires the owner to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. Please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

If you have any questions, please contact the CWB at 586-4309.

Mr. Barry Usagawa

February 11, 2004

Page 3

Environmental Planning Office

This project is located in the drainage basin of Honolulu Harbor and Shore Areas, and would add approximately 10 mgd of point source effluent to open coastal receiving waters in these shore areas. Open coastal waters in the Honolulu Harbor and Shore Areas are currently listed under section 303(d) of the Clean Water Act as water bodies in which water quality is impaired by excessive nutrients, pathogens, metals, turbidity, and suspended solids (<http://www.state.hi.us/doh/eh/epo/wqm/303dpcfinal.pdf>).

The impaired status of these waters requires that the Department of Health establish Total Maximum Daily Loads (TMDLs) suggesting how much the existing pollutant loads should be reduced in order to attain water quality standards in the coastal waters. Although these TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads.

We expect that this would be accomplished through the proper application of suitable best management practices in all phases of the project and adherence to the City and County of Honolulu Rules Relating to Storm Drainage Standards and any applicable permit conditions. For general public informational purposes and to facilitate TMDL development and assessment of the potential impact of the proposed project upon pollutant loading in the open coastal receiving waters, we suggest that the final Environmental Assessment for this project:

1. Include maps that:
 - a) Show the location of the open drainage channel that extends from the southwestern corner of the project site to the ocean.
 - b) Identify the point at which this channel discharges to marine receiving waters.
 - c) Name the receiving water body at this discharge point.
 - d) Identify the point in the drainage channel where seawater effluent will be discharged.
2.
 - a) Identify the NPDES storm water permit under which this channel and its drain inlets are currently operated and the outfall number involved.
 - b) Indicate if a license to connect the new cooling effluent with the existing permitted facility will be required and, if so, what the conditions of such a license would be.
3. Present data that quantitatively characterizes discharge and receiving water quality to validate the assumptions that "the deep well seawater is of high, consistent quality ..." (p. 2-6) and that "discharge water will be of similar quality to coastal waters ..." (p. 3-11). The appropriate criteria for such validation are found in the State of Hawaii Water Quality Standards, Hawaii Administrative Rules Title 11, Chapter 54 (<http://www.state.hi.us/doh/rules/11-54.pdf>), and should include those for the water quality parameters included in the Clean Water

Mr. Barry Usagawa
February 11, 2004
Page 4

Act Section 303(d) listing for the receiving water body (nutrients, pathogens, metals, turbidity, and suspended solids).

4. Present data to validate the assumption that "the project will not significantly increase the quantity of storm water runoff entering the drainage system" (p. 3-19), including a description of previous land use at the site and a comparison of pre and post-project impervious area and their effects on drainage processes and water quality.

When TMDLs are established for Honolulu Harbor and Shore Areas, the State will establish pollutant load allocations for the surrounding lands and point source discharges (including the proposed cooling effluent) and develop an implementation plan to improve coastal water quality. One of the components of this implementation plan will be to reduce the polluted discharge and runoff entering the coastal receiving waters. Thus we suggest that the applicant plan additional pollutant load reduction practices for future management of the cooling facility and storm drain system.

If you have any questions about these comments or the Total Maximum Daily Load program, please contact David Penn at 586-4337.

Sincerely,

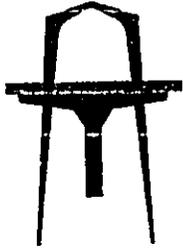


JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c: CWB
EPO
Ms. Genevieve Salmonson
✓ Wilson Okamoto Corporation

6573-02
March 8, 2004

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Mr. Denis Lau, P.E., Chief
Clean Water Branch
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Mr. Lau:

Thank you for your letter of February 11, 2004 (EPO-04-005) commenting on the subject Draft Environmental Assessment. Please be aware that as a result of further consultation with your department, effluent from the facility is now proposed to be disposed of through injection wells rather than into the nearby drainage channel. The change in the method of effluent disposal, including the size, location and design of the injection wells, will be discussed further in the Final EA.

We do not anticipate that a Federal license or permit will be required for the project as no discharges into navigable waters are proposed. It is anticipated that stormwater discharges associated with the project will be covered by the John A. Burns School of Medicine's NPDES general permit. In addition, an NPDES general permit for discharges of hydrotesting water will be procured if necessary.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,

A handwritten signature in cursive script, appearing to read "Rodney Funakoshi".

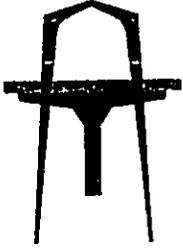
Rodney Funakoshi, AICP
Project Manager

RYF/DM/jsm

cc: Lorna Heller, City and County of Honolulu Board of Water Supply
Genevieve Salmonson, Office of Environmental Quality Control

6573-02
March 8, 2004

**WILSON
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Dr. June F. Harrigan-Lum, Manager
Environmental Planning Office
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Dr. Harrigan-Lum:

Thank you for your letter of February 11, 2004 (EPO-04-005) commenting on the subject Draft Environmental Assessment. Please be aware that as a result of further consultation with your department, effluent from the facility is now proposed to be disposed of through injection wells rather than into the nearby drainage channel. An exploratory boring for the proposed source well is presently being drilled and water quality will be sampled upon completion of drilling. Results of the water quality analysis will be submitted to the Safe Drinking Water Branch for the project's Underground Injection Control permit. We anticipate that water from the proposed well will be of similar quality to that of the Kalaeloa deep seawater well drilled by the Board of Water and have attached the water quality analysis results from the Kalaeloa well for your use. The change in the method of effluent disposal, including the size, location and design of the injection wells, will be discussed further in the Final EA.

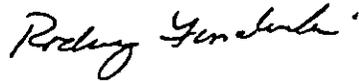
We do not anticipate that the project will significantly increase storm water runoff because the only impervious structures to be constructed will be an approximately 80-sq. ft. vault for the source well and 36-sq. ft. vaults for each of the five injection wells. All remaining areas will be landscaped. In contrast, prior to development of the John A. Burns School of Medicine, nearly the entire site, including the proposed source well site, was covered by warehouses or paved surfaces with stormwater runoff being collected and discharged into the nearby open drainage channel.

WILSON
OKAMOTO
CORPORATION

6573-02
Letter to Dr. June F. Harrigan-Lum, Manager
Page 2
March 8, 2004

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,



Rodney Funakoshi, AICP
Project Manager

RYF/DM/jsm

Attachment

cc: Lorna Heller, City and County of Honolulu Board of Water Supply
Genevieve Salmonson, Office of Environmental Quality Control



AECOS, Inc.

45-939 Kamehameha Hwy., Room 104 • Kaneohe, HI 96744
Telephone: (808) 234-7770 • Fax: (808) 234-7775

RECEIVED
DEC. 26 2002
BY:

CLIENT: Oceanit
1001 Bishop Street, Suite 2970
Honolulu, Hawaii 96813
ATTENTION: Bob Bourke

FILE No.: 631
REPORT DATE: 12/202
PAGE: 1 of 2

AECOS REPORT OF ANALYTICAL RESULTS

SAMPLE TYPE: Saline well water
DATE SAMPLED: 11/07/02

AECOS LOG No.: 16615
DATE RECEIVED: 11/07/02

SAMPLE ID ⇄	Kalaeloa Well		Method Number	Reporting Limit	Analysis Date Analyst ID
ANALYTE ↓					
Total Suspended Solids (mg/L)	5.6		160.2	0.1	11/07/02 ml, rd
Total Dissolved Solids (mg/L)	34,900		160.1	1	11/07/02 nv
Chloride (mg/L)	19,000		352.3	100	11/13/02 nv
Salinity (ppt)	33.718		Salinometer	0.001	11/26/02 rd
Alkalinity (mg CaCO ₃ /L)	104		La Motte kit	4	11/25/02 dh
Hardness (mg CaCO ₃ /L)	6120		Calculation	—	calculated
Oil & Grease (mg/L)	<10		1664	10	11/15/02 rd
Ammonia (µg N/L)	8		350M	1	11/27/02 dh
Nitrate+Nitrite (µg N/L)	128		353.2	1	11/26/02 dh

6 ↑

J. Mello
J. Mello, Laboratory Director

CLIENT: Oceanit
 1001 Bishop Street, Suite 2970
 Honolulu, Hawaii 96813
 ATTENTION: Bob Bourke

FILE No.: 631
 REPORT DATE: 12/20/02
 PAGE: 2 of 2

LOG No.: 16615

SAMPLE ID ⇄	Kalaeloa Well				Analysis Date/ Analyst ID
ANALYTE ⇄					
↑ Total Nitrogen (µg N/L)	294		353.2M	10	11/20/02 dh
Total Phosphorus (µg P/L)	59		365.1	5	11/12/02 dh
Silicate (µg/L)	18,600		370.1	5	12/10/02 kk
Sulfate (mg/L)	2750		SM4500 SO4 E	500	11/22/02 EMA
Fluoride (mg/L)	0.30		SM4500 F C	0.10	11/22/02 EMA
Bromide (mg/L)	68		300.0	50	11/20/02 EMA
Calcium (mg/L)	408		6010	20.0	11/19/02 EMA
Magnesium (mg/L)	1240		6010	10.0	11/19/02 EMA
Sodium (mg/L)	12,900		6010	200	11/19/02 EMA
Potassium (mg/L)	350		6010	10.0	11/19/02 EMA
Strontium (mg/L)	6.88		6010	1.00	11/22/02 EMA



AECOS, Inc.

#5-939 Kamehameha Hwy., Room 104 • Kaneohe, HI 96744
Telephone: (808) 234-7770 • Fax: (808) 234-7775

CLIENT: Oceanit
1001 Bishop Street, Suite 2970
Honolulu, Hawaii 96813
ATTENTION: Bob Bourke ☎ 531-3017 fax:531-3177

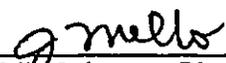
FILE No.: 631
REPORT DATE: 09/04/03
PAGE: 1 of 1

AECOS REPORT OF ANALYTICAL RESULTS

SAMPLE TYPE: Water
DATE SAMPLED: 07/22/03

AECOS LOG No.: 17643
DATE RECEIVED: 07/22/03

SAMPLE ID ⇄	A.	B	C	Back-wash			Analysis Date
ANALYTE ↓							
↓ Chlorophyll α ($\mu\text{g/L}$)	<0.03	<0.03	<0.03	<0.03			07/22/03 sn, nv
Nitrate ($\mu\text{g N/L}$)	137	137	137	138			07/23/03 dh
Nitrite ($\mu\text{g N/L}$)	<1	<1	<1	<1			07/22/03 dh
Organic Nitrogen ($\mu\text{g N/L}$)	76	51	54	66			07/24/03 dh
Phosphate ($\mu\text{g P/L}$)	35	34	32	32			07/22/03 dh
↑ Total Phosphorus ($\mu\text{g P/L}$)	35	34	32	32			07/28/03 dh


J. Mellor, Laboratory Director

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

February 23, 2004

Ms. Lorna Heller
Mr. Barry Usagawa
Board of Water Supply, City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Mr. Rodney Funakoshi
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Ms. Heller and Messrs. Usagawa and Funakoshi:

The Office of Environmental Quality Control has reviewed the draft environmental assessment for the Honolulu Central District Cooling Facility at Kakaako, situated at Tax Map Key 2-1-060: 9 (portion) in the judicial district of Honolulu, and offers the following comments for your consideration.

1. *Ground Water Resources and Impacts to Surface Water Quality through Discharge into the Drainage Channel.* Section 3.2 make reference to the presence of dieldrin, lead, polychlorinated biphenyls and fluorothane in limited areas of the John A. Burns School of Medicine site that exceeded the Department of Health's Tier 1 action level. Section 3.3 discusses ground water resources, but makes no mention of the quality of groundwater beneath the site. In light of the presence of the above constituents in the soil, is it reasonable to assume that there may be dieldrin, lead, polychlorinated biphenyls, fluorothane or other hazardous constituents in subsurface groundwater? Page 3-11 of the environmental assessment states that "[d]ischarging water from the facility into the drainage channel west of the project facility is anticipated to have no impact on coastal water quality." Please reassess this conclusion based on the discussion above.
2. *Use of glassphalt and native plants.* Please refer to our website above for recommended guidance on the use of glassphalt and landscaping with native xerophagic vegetation.

If there are any questions, please contact me at (808) 586-4185. Thank you for the opportunity to comment on this environmental assessment.

Sincerely,

A handwritten signature in black ink, appearing to read "Leslie Segundo".

Leslie Segundo
Environmental Health Specialist

6573-02
March 8, 2004

**WILSON
OKAMOTO
CORPORATION**



**ENGINEERS
PLANNERS**

1907 S. BERETANIA ST.
SUITE 400
HONOLULU, HI 96826
PH. (808)946-2277
FAX: (808)946-2253

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Ms. Salmonson:

Thank you for your letter of February 23, 2004 commenting on the subject Draft Environmental Assessment. As referenced in your letter, elevated levels of certain contaminants are present in limited areas of the John A. Burns School of Medicine site. While these contaminants may be present in the groundwater underlying the project site to a certain depth, we do not anticipate that contaminants will be present in the water pumped for the facility since the water will be pumped from a depth of about 2,000 feet. However, during drilling of the exploratory well, water quality sampling will be conducted to assess water quality. In addition, please note that based on consultation with the Department of Health (DOH), effluent from the facility is now proposed to be discharged into injection wells rather than into the drainage channel west of the project site. The water quality sampling results will be submitted to the DOH as part of the project's Underground Injection Control permit and appropriate mitigative measures will be take if necessary. This change will be described in the Final Environmental Assessment.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,

Rodney Funakoshi, AICP
Project Manager

RYP/DM/jsm

cc: Lorna Heller, City and County of Honolulu Board of Water Supply

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 12, 2004

KAKAAKOBWS2160.RCM
LD-NAV

Wilson Okamoto Corporation
Rodney Funakoshi, AICP
Project Manager
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Funakoshi:

SUBJECT: Review: Draft Environmental Assessment
Project: District Cooling Facility
Applicant: C&CoH Board of Water Supply
Location: Kakaako, Island of, Oahu, Hawaii
Consultant: Wilson Okamoto Corporation
TMK: (1) 2-1-060: Portion of 009

Thank you for the opportunity to review and comment on the subject matter

A copy of the document pertaining to the proposed project was transmitted or made available to the following Department of Land and Natural Resources' Division for their review and comment.

Division of Aquatic Resources - Division of Forestry & Wildlife
Division of State Parks - Engineering Division - Commission on
Water Resource Management - Conservation and Coastal
Land-Oahu District Land Office

Enclosed please find a copy of the Engineering Division and Commission on Water Resource Management comment.

Based on the attached responses, the Department of Land and Natural Resources has no other comment to offer at this time.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: ODLO

R.Y.F.
PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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DEPUTY DIRECTOR - WATER



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 6
HONOLULU, HAWAII 96809

04 JAN 22 10:41

COMMISSION ON WATER
RESOURCE MANAGEMENT

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

January 22, 2004

LD/NAV
Ref.: KAKAAKOBWS2160.CMT

L-262
Suspense Date: 2/5/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources
*XXX Division of Forestry & Wildlife
XXX Engineering Division
*XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
*XXX Land-Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment
Applicant: Honolulu Board of Water Supply.
Consultant: Wilson Okamoto Corporation
Project: District Cooling Facility
Location: Kakaako, Island of Oahu, Hawaii
TMK: (1) 2-1-060: Portion of 009

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead by the suspense date.

*Note: One copy of the document is available for your review in the Land Division Office, Room 220.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

(X) Comments attached.

Date: _____

Signed: Lene Y. Nakama

Division: _____

Name: LENE Y. NAKAMA

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



2004 FEB -4 P 3:45

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHIYOME L. FUKINO, M.D.
STEPHANIE A. WHALEN

ERNEST Y. W. LAU
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

February 3, 2004

Ref: Kakaako District Cooling.dr

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Draft Environmental Assessment, Honolulu Board of Water Supply, Kakaako District Cooling Facility

FILE NO.: KAKAAKOBWS2160.CMT

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

- We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.
- Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.
- If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).
- If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.
- OTHER:

The DEA correctly notes that well construction, pump installation, and water use permits from the Commission are required for the proposed use of 10 mgd of salt-water.

If there are any questions, please contact Lenore Y. Nakama at 587-0218.

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 22, 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

LD/NAV
Ref.: KAKAAKOBWS2160.CMT

L-262
Suspense Date: 2/5/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources
*XXX Division of Forestry & Wildlife
XXX Engineering Division
*XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
*XXX Land-Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment
Applicant: Honolulu Board of Water Supply.
Consultant: Wilson Okamoto Corporation
Project: District Cooling Facility
Location: Kakaako, Island of Oahu, Hawaii
TMK: (1) 2-1-060: Portion of 009

RECEIVED
LAND DIVISION
2004 FEB -9 A 10:00
STATE OF HAWAII
LAND AND NATURAL RESOURCES

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead by the suspense date.

*Note: One copy of the document is available for your review in the Land Division Office, Room 220.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

Comments attached.

Date: 1/29/04

Signed: Eric T. Hirano
ERIC T. HIRANO, CHIEF ENGINEER

Division: Engineering

Name: _____

04 JAN 23 09:04 ENGINEERING

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LANAV

Ref.: KAKAPO BUS 2160-CMT

COMMENTS

- We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X.
- () Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone ____.
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- () Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- () Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
- () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
- () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.
- () Additional Comments: _____
- () Other: _____

Should you have any questions, please call Mr. Eric Yuasa of the Planning Branch at 587-0254.

Signed: Eric T. Hirono
ERIC T. HIRONO, CHIEF ENGINEER

Date: 11/29/04

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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COMMISSION ON WATER RESOURCE MANAGEMENT
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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS



DIVISION OF AQUATIC RESOURCES	
DIRECTOR	Suspense Date:
COM FISH/RES	Draft Reply <input type="checkbox"/>
AC REC/SNY	Reply Direct <input type="checkbox"/>
AD REG/IN	Comments <input type="checkbox"/>
PLANNING	Information <input type="checkbox"/>
ENV DEV	Comp Act & File <input type="checkbox"/>
STATISTICS	Return to:
AFRIC	Copies to:
EDUCATION	Remarks:
SECRETARY	
CPRA/STCS	
FEELAND	

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

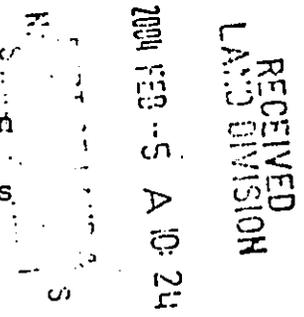
January 22, 2004

LD/NAV
Ref.: KAKAAKOBWS2160.CMT

L-262
Suspense Date: 2/5/04

MEMORANDUM:

- TO:
- *XXX Division of Aquatic Resources
 - *XXX Division of Forestry & Wildlife
 - XXX Engineering Division
 - *XXX Division of State Parks
 - Division of Boating and Ocean Recreation
 - XXX Commission on Water Resource Management
 - *XXX Office of Conservation and Coastal Lands
 - *XXX Land-Oahu District Land Office



FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment
Applicant: Honolulu Board of Water Supply.
Consultant: Wilson Okamoto Corporation
Project: District Cooling Facility
Location: Kakaako, Island of Oahu, Hawaii
TMK: (1) 2-1-060: Portion of 009

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead by the suspense date.

*Note: One copy of the document is available for your review in the Land Division Office, Room 220.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments. () Comments attached.

Date: 2/3/04

Signed: William S. Devick
William S. Devick

Division: Aquatic Resources

Name: 2-3-04

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 22, 2004

PETER T. YOUNG
CHAIR, ERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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BUREAU OF CONVEYANCES
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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

LD/NAV
Ref.: KAKAAKOBWS2160.CMT

L-262
Suspense Date: 2/5/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources
*XXX Division of Forestry & Wildlife
XXX Engineering Division
*XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
*XXX Land-Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment
Applicant: Honolulu Board of Water Supply.
Consultant: Wilson Okamoto Corporation
Project: District Cooling Facility
Location: Kakaako, Island of Oahu, Hawaii
TMK: (1) 2-1-060: Portion of 009

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LAND DIVISION
2004 JAN 29 A 11:07

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead by the suspense date.

*Note: One copy of the document is available for your review in the Land Division Office, Room 220.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Date: 1-29-04

Signed:

Division: Land

Name: Robert M. Inoué

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 22, 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
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

LD/NAV
Ref.: KAKAAKOBWS2160.CMT

L-262
Suspense Date: 2/5/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources
*XXX Division of Forestry & Wildlife
*XXX Engineering Division
*XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
*XXX Land-Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment
Applicant: Honolulu Board of Water Supply.
Consultant: Wilson Okamoto Corporation
Project: District Cooling Facility
Location: Kakaako, Island of Oahu, Hawaii
TMK: (1) 2-1-060: Portion of 009

DEPT. OF LAND & NATURAL RESOURCES
HONOLULU, HAWAII

2004 JAN 27 P 3:29

RECEIVED
LAND DIVISION

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead by the suspense date.

*Note: One copy of the document is available for your review in the Land Division Office, Room 220.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached

Date: JAN 26 2003

Signed: *Michael G. Buck*

Division: _____

Name: **MICHAEL G. BUCK, ADMINISTRATOR**
DIVISION OF FORESTRY AND WILDLIFE

6573-02
March 8, 2004

WILSON
OKAMOTO
CORPORATION



ENGINEERS
PLANNERS

1907 S. BERETANIA ST.
SUITE 400
HONOLULU, HI 96826
PH. (808)946-2277
FAX: (808)946-2253

Mr. Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Mr. Lau:

Thank you for your letter of February 3, 2004 commenting on the subject Draft Environmental Assessment. We acknowledge that the project is located in a designated water management area and that a water use permit for the seawater source well will be required from the Commission. We also appreciate your confirmation that well construction and pump installation permits will be required from the Commission.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,

A handwritten signature in cursive script, appearing to read "Rodney Funakoshi".

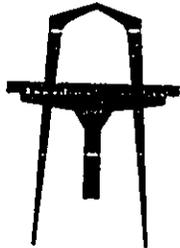
Rodney Funakoshi, AICP
Project Manager

RYF/DM/jsm

cc: Lorna Heller, City and County of Honolulu Board of Water Supply
Genevieve Salmonson, Office of Environmental Quality Control

6573-02
March 8, 2004

WILSON
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ENGINEERS
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1907 S. BERETANIA ST.
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PH. (808)946-2277
FAX: (808)946-2253

Mr. Eric T. Hirano, Chief Engineer
Engineering Division
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Mr. Hirano:

Thank you for your letter of January 22, 2004 confirming that the site for the proposed Board of Water Supply District Cooling Facility is within Flood Zone X according to the Flood Insurance Rate Map.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,

Rodney Funakoshi, AICP
Project Manager

RYF/DM/jsm

cc: Lorna Heller, City and County of Honolulu Board of Water Supply
Genevieve Salmonson, Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

HAWAII HISTORIC PRESERVATION
DIVISION REVIEW

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
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

Log #: 2004.0205
Doc #:0401EJ22

Applicant/Agency: Mr. Barry Usagawa
Address: Board of Water Supply
City and County of Honolulu
650 South Beretania Street
Honolulu, Hawaii 96813

RECEIVED
JAN 27 2004
WILSON OKAMOTO CORPORATION

SUBJECT: Chapter 6E-8 Historic Preservation Review-Honolulu Board of Water Supply
District Cooling Facility
Ahupua`a: Kaka`ako
District, Island: Kona, O`ahu
TMK: (1) 2-1-060: por. 9

1. We believe there are no historic properties present, because:

- a) intensive cultivation has altered the land
 b) residential development/urbanization has altered the land
 c) previous grubbing/grading has altered the land
 d) an acceptable archaeological assessment or inventory survey found no historic properties
 e) other: This area was in-filled historically to enlarge the original shoreline making it unlikely that historic sites will be found.

2. This project has already gone through the historic preservation review process, and mitigation has been completed ____.

Thus, we believe that "no historic properties will be affected" by this undertaking.

Aloha,

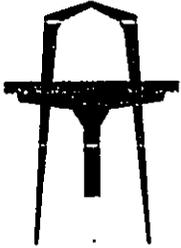
P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

C: Ms. Genevieve Salmonson, Director, OEQC
Rodney Funakoshi, Wilson Okamoto corporation, 1907 S. Beretania St. Ste. 400,
Honolulu, HI 96826

6573-02
March 8, 2004

**WILSON
OKAMOTO
CORPORATION**



**ENGINEERS
PLANNERS**

1907 S. BERETANIA ST.
SUITE 400
HONOLULU, HI 96826
PH. (808)946-2277
FAX: (808)946-2253

Dr. Holly P. McEldowney, Administrator
State Historic Preservation Division
State of Hawaii
601 Kamokila Boulevard, Room 555
Kapolei, Hawaii 96707

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Dr. McEldowney:

Thank you for your letter regarding the subject Draft Environmental Assessment indicating that no historic properties are likely present at the project site because the site was in-filled to enlarge the original the shoreline.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,

A handwritten signature in cursive script, appearing to read "Rodney Funakoshi".

Rodney Funakoshi, AICP
Project Manager

RYF/DM/jsm

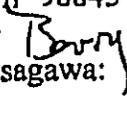
cc: Lorna Heller, City and County of Honolulu Board of Water Supply
Genevieve Salmonson, Office of Environmental Quality Control

UNIVERSITY OF HAWAII AT MANOA
Environmental Center

February 23, 2004

EA: 0301

Barry Usagawa
City and County of Honolulu
Board of Water Supply
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Usagawa: 

Draft Environmental Assessment
Honolulu Central District Cooling Facility at Kaka'ako
Honolulu, Oahu

The Honolulu Board of Water Supply proposes to design and construct a central district cooling system utilizing a deep seawater source well to serve the John A. Burns School of Medicine (JABSOM) facilities in Kaka'ako. This type of system uses a centralized plant with an underground piping network to deliver chilled water to buildings for air conditioning. This eliminates the need for air conditioning chillers and cooling towers within buildings and substantially reduces electricity and potable water use.

The proposed central district cooling system will be developed on the grounds of the JABSOM facilities and will consist of a well pump and piping to the JABSOM Central Cooling Plant, where heat exchangers will transfer the cold temperatures from the seawater to cool the water for the JABSOM's chilled water air conditioning system. The chilled water air conditioning system within the JABSOM site may also be extended in the future to serve adjacent developments. Water extracted from the deep seawater well will be adjusted to ambient ocean temperature and discharged into the concrete drainage canal west of the project site.

This review was conducted with the assistance of Hans-Jurgen Krock, Ocean and Resources Engineering and Dave Sims, Environmental Center.

We are very pleased to see alternative sources of energy being utilized for the new university medical school. However our reviewers have some concerns regarding this project. The document assumes that the water that will be pumped up is straight seawater with only a different temperature and consequently will have no effect on the canal or the nearshore zone where it is discharged. There is no evidence for this assumption, and the judgement as to

2500 Dole Street, Krauss Annex 19, Honolulu, Hawaii 96822-2313
Telephone: (808) 956-7381 • Facsimile: (808) 956-3980

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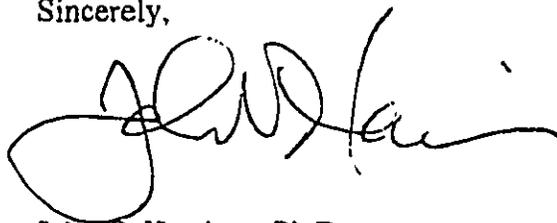
February 23, 2004
Page 2 of 2

environmental consequences of this project should await the outcome of the test hole drilling and water testing. Our reviewers feel that insufficient data exist to write this environmental report: temperature and flow rates of the proposed deep well water are unproven, and the water may contain unacceptable amounts of dissolved iron and significantly depleted dissolved oxygen. Resulting chemical characteristics of the deep well water may render it too corrosive or enriched in H₂S. Until the test hole is drilled and water samples are analyzed, both the feasibility and presumptive impacts of the project will remain speculative.

Our reviewers also suggest that the proposed alternative of a pipeline to the ocean to supply a larger scale district cooling system based in Kaka'ako is misstated and prematurely dismissed. A proposal for such a system presently is being considered with several bills before the legislature. These proposals are well thought out and well engineered and show a very good economic profile. The Kaka'ako part of these proposed SWAC systems would replace about 20 MW of present energy use for AC, including the UH facilities that are proposed to be supplied by the project being reviewed.

Thank you for the opportunity to comment on this Draft EIS.

Sincerely,



John T. Harrison, Ph.D.
Environmental Coordinator

cc: Lorna Heller
Rodney Funakoshi
OEQC
James Moncur
Dave Sims

6573-02
March 8, 2004

**WILSON
OKAMOTO
CORPORATION**



**ENGINEERS
PLANNERS**

1907 S. BERETANIA ST.
SUITE 400
HONOLULU, HI 96826
PH. (808)946-2277
FAX: (808)946-2253

Mr. John T. Harrison, Ph.D, Environmental Coordinator
University of Hawaii Environmental Center
2500 Dole Street
Krauss Annex 19
Honolulu, Hawaii 96822-2313

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Dr. Harrison:

Thank you for your letter of February 23, 2004 commenting on the subject Draft Environmental Assessment. We acknowledge that while water quality samples from the exploratory drilling would have provided definitive data regarding the source water for the proposed facility, sufficient information was available to prepare the Draft Environmental Assessment (EA). The Honolulu Board of Water Supply has a long history of well drilling, including deep seawater wells such as the proposed well. It is anticipated that water from the proposed well will have similar characteristics to that of the Board's Kalaeloa Well which was drilled for its desalination facility. Attached for your use are water quality sampling results from the Kalaeloa well. In addition, please be aware that as a result of further consultation with the Department of Health (DOH), the method of effluent disposal is now proposed to be through injection wells rather than into the nearby drainage channel. An Underground Injection Control permit will be required from the DOH and water quality data from the exploratory drilling will be submitted as part of the permit application. This change will be described in further detail in the Final EA.

With regard to the deep ocean pipeline alternative, we recognize that this alternative has been studied extensively and may be viable should capital and a sufficient cooling load commitment become available. However, at the present time we feel that the proposed deep well alternative is the most economical alternative to meet the immediate needs of the John A. Burns School of Medicine.

WILSON
OKAMOTO
CORPORATION

6573-02

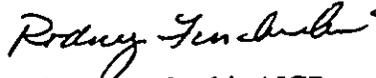
Letter to Mr. John T. Harrison, Ph.D., Environmental Coordinator

Page 2

March 8, 2004

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,



Rodney Funakoshi, AICP
Project Manager

RYF/DM/jsm

Attachment

cc: Lorna Heller, City & County of Honolulu Board of Water Supply
Genevieve Salmonson, Office of Environmental Quality Control



AECOS, Inc.

45-939 Kamehameha Hwy., Room 104 • Kaneohe, HI 96744
Telephone: (808) 234-7770 • Fax: (808) 234-7775

RECEIVED
DEC 26 2002
BY:

CLIENT: Oceanit
1001 Bishop Street, Suite 2970
Honolulu, Hawaii 96813
ATTENTION: Bob Bourke

FILE No.: 631
REPORT DATE: 12/202
PAGE: 1 of 2

AECOS REPORT OF ANALYTICAL RESULTS

SAMPLE TYPE: Saline well water
DATE SAMPLED: 11/07/02

AECOS LOG No.: 16615
DATE RECEIVED: 11/07/02

SAMPLE ID ↗	Kalaeloa Well		Method Number	Reporting Limit	Analysis Date
ANALYTE ↘					Analyst ID
Total Suspended Solids (mg/L)	5.6		160.2	0.1	11/07/02 ml, rd
Total Dissolved Solids (mg/L)	34,900		160.1	1	11/07/02 nv
Chloride (mg/L)	19,000		352.3	100	11/13/02 nv
Salinity (ppt)	33.718		Salinometer	0.001	11/26/02 rd
Alkalinity (mg CaCO ₃ /L)	104		La Motte kit	4	11/25/02 dh
Hardness (mg CaCO ₃ /L)	6120		Calculation	—	calculated
Oil & Grease (mg/L)	<10		1664	10	11/15/02 rd
Ammonia (µg N/L)	8		350M	1	11/27/02 dh
Nitrate+Nitrite (µg N/L)	128		353.2	1	11/26/02 dh

6 ↑

J. Mello
J. Mello, Laboratory Director

CLIENT: Oceanit
 1001 Bishop Street, Suite 2970
 Honolulu, Hawaii 96813
ATTENTION: Bob Bourke

FILE No.: 631
REPORT DATE: 12/20/02
PAGE: 2 of 2

LOG No.: 16615

SAMPLE ID ⇄	Kalaeloa Well				Analysis Date/ Analyst ID
ANALYTE ⇄					
Total Nitrogen (µg N/L)	294		353.2M	10	11/20/02 dh
Total Phosphorus (µg P/L)	59		365.1	5	11/12/02 dh
Silicate (µg/L)	18,600		370.1	5	12/10/02 kk
Sulfate (mg/L)	2750		SM4500 SO4 E	500	11/22/02 EMA
Fluoride (mg/L)	0.30		SM4500 F C	0.10	11/22/02 EMA
Bromide (mg/L)	68		300.0	50	11/20/02 EMA
Calcium (mg/L)	408		6010	20.0	11/19/02 EMA
Magnesium (mg/L)	1240		6010	10.0	11/19/02 EMA
Sodium (mg/L)	12,900		6010	200	11/19/02 EMA
Potassium (mg/L)	350		6010	10.0	11/19/02 EMA
Strontium (mg/L)	6.88		6010	1.00	11/22/02 EMA



AECOS, Inc.

45-939 Kamehameha Hwy., Room 104 • Kaneohe, HI 96744
Telephone: (808) 234-7770 • Fax: (808) 234-7775

CLIENT: Oceanit
1001 Bishop Street, Suite 2970
Honolulu, Hawaii 96813
ATTENTION: Bob Bourke ☎ 531-3017 fax:531-3177

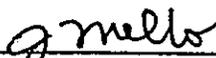
FILE No.:	631
REPORT DATE:	09/04/03
PAGE:	1 of 1

AECOS REPORT OF ANALYTICAL RESULTS

SAMPLE TYPE: Water
DATE SAMPLED: 07/22/03

AECOS LOG No.: 17643
DATE RECEIVED: 07/22/03

SAMPLE ID ⇨	A	B	C	Back-wash		Analysis Date
ANALYTE ⇩						
↓ Chlorophyll α (µg/L)	<0.03	<0.03	<0.03	<0.03		07/22/03 sn, nv
Nitrate (µg N/L)	137	137	137	138		07/23/03 dh
Nitrite (µg N/L)	<1	<1	<1	<1		07/22/03 dh
Organic Nitrogen (µg N/L)	76	51	54	66		07/24/03 dh
Phosphate (µg P/L)	35	34	32	32		07/22/03 dh
↑ Total Phosphorus (µg P/L)	35	34	32	32		07/28/03 dh


J. Meilb, Laboratory Director

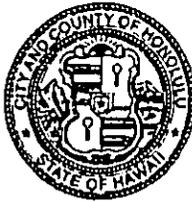
DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us

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FEB 25 2004

WILSON OKAMOTO CORPORATION

JEREMY HARRIS
MAYOR



ERIC G. CRISPIN, AIA
DIRECTOR

BARBARA KIM STANTON
DEPUTY DIRECTOR

KATHY SOKUGAWA
ACTING DEPUTY DIRECTOR

2004/ELOG-127 (RR)

February 23, 2004

TO: CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

ATTN: BARRY USAGAWA

FROM: *Eric G. Crispin* ERIC G. CRISPIN, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, HONOLULU BOARD
OF WATER SUPPLY DISTRICT COOLING FACILITY, KAKAAKO,
OAHU, TMK: 2-1-060: PORTION 009

We have reviewed the Draft Environmental Assessment (EA) for the Honolulu Board of Water Supply District Cooling Facilities, pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 200, Title 11, Department of Health Administrative Rules.

The project is consistent with the land use development goals of the City and County of Honolulu, as expressed in the General Plan and the Primary Urban Center Development Plan.

The General Plan sets forth broad statements of objectives and policies. The proposed project is consistent with the following General Plan Policies and Objectives:

Natural Environment

Objective A: To protect and preserve the natural environment.

Policy 4: Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water recharge areas, distinctive land forms, and existing vegetation.

Policy 7: Protect the natural environment from damaging levels of air, water, and noise pollution.

No significant impacts are expected to the natural environment from the construction or operating of the district cooling facility. The project site is not subject to natural hazards and does not possess significant natural resources.

Transportation and Utilities

Objective B: To meet the needs of the people of Oahu for an adequate supply of water and for environmentally sound systems of waste disposal.

Policy 1: Develop and maintain an adequate supply of water for both residents and visitors.

Policy 2: Develop and maintain an adequate supply of water for agricultural and industrial needs.

The proposed project has the potential to reduce potable water consumption by 30 to 40 million gallons annually, according to the applicant, which would preserve water resources for other priority uses.

Energy

Objective A: To maintain an adequate, dependable, and economical supply of energy for Oahu residents.

Policy 3: Support programs and projects, which contribute to the attainment of energy self-sufficiency on Oahu.

Objective D: To develop and apply new, locally available energy resources.

Policy 1: Support and participate in research, development, demonstration, and commercialization programs aimed at producing new, economical and environmentally sound energy supplies from:

- a. solar isolation;
- b. biomass energy conversion;
- c. wind energy conversion;

- d. geothermal energy; and
- e. ocean thermal energy conversion.

The district cooling facility will substantially reduce energy use by eliminating or reducing the need for air conditioning chillers and cooling towers. The district cooling facility will use naturally cool groundwater, a renewable resource, to reduce electricity use.

Primary Urban Center Development Plan

The project site is located within the region encompassed by the Primary Urban Center Development Plan. The Development Plan Special Provisions for the Primary Urban Center specifically identify the Kakaako area to permit the redevelopment of this area for mixed uses within an attractive setting and to preserve the makai-makai views and vies of punchbowl from within Kakaako as well as from areas beyond its boundaries. The PUC DP Land Use Map designates the project site as "Commercial." The project is consistent with the principles and controls for the Kakaako area as stated in the PUC-DP Special Provisions, as it will support commercial developments in Kakaako.

Proposed Primary Urban Center Development Plan

A revised Development Plan has been prepared for the Primary Urban Center and is presently before the Honolulu City Council for adoption. The revised plan proposes industrial, commercial, and park uses in the Kakaako makai area and designates the project site for Parks and Open Space. However, the revised Plan is not regulatory and the revised plan land use map illustrates conceptual land uses consistent with the objectives of the plan.

The following policies and guidelines relating to infrastructure and public facilities are relevant to the project:

4.1 Water Allocations and System Development

4.1.2 Policies

Adapt and implement water conservation practices in the design of new developments and modification of existing uses, including landscaped areas.

Clifford S. Jamile, Manager and Chief Engineer
Board of Water Supply
February 23, 2004
Page 4

4.1.3 Guidelines

Conserve the use of potable water by implementing the following measures, as feasible and appropriate: Install low flush toilets, flow restrictors and other mechanical water conserving devices in commercial and residential developments.

4.2 Electrical Power

4.2.3 Policies

Promote and implement energy conservation measures.

The proposed project is consistent with the vision for the Primary Urban Center, as it will support commercial uses, such as that envisioned by this project to be developed in the Kakaako Makai area. The project is also consistent with the Plan's policies relating to water systems and electrical power, as it will reduce electricity use and potable water use.

If you have further questions regarding this matter, please call Robert Reed of our staff at 523-4402.

EGC:rr
281063

c: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

✓ Mr. Rodney Funakoshi, AICP
Wilson Okamoto Corporation

6573-02
March 8, 2004

WILSON
OKAMOTO
CORPORATION



ENGINEERS
PLANNERS

1907 S. BERETANIA ST.
SUITE 400
HONOLULU, HI 96826
PH. (808)946-2277
FAX: (808)946-2253

Mr. Eric G. Crispin, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Mr. Crispin:

Thank you for your letter of February 23, 2004 stating that the project is consistent with the land use development goals of the City and County of Honolulu as expressed in the General Plan and the Primary Urban Center Development Plan.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,

Rodney Funakoshi, AICP
Project Manager

RYF/DM/jsm

cc: Lorna Heller, City and County of Honolulu Board of Water Supply
Genevieve Salmonson, Office of Environmental Quality Control

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4529 • FAX: (808) 523-4730 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR



CHERYL D. SOON
DIRECTOR

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

TP1/04-49181R

RECEIVED
FEB 26 2004

February 23, 2004

WILSON OKAMOTO CORPORATION

MEMORANDUM

TO: CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

ATTN: BARRY USAGAWA

FROM: CHERYL D. SOON, DIRECTOR

SUBJECT: HONOLULU BOARD OF WATER SUPPLY DISTRICT COOLING
FACILITY

In response to the January 16, 2004 letter from Wilson Okamoto Corporation, we have reviewed the draft environmental assessment for the subject project. We have no comments on the document.

Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation Planning Division at Local 6976.

Cheryl D. Soon

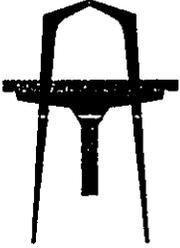
CHERYL D. SOON

cc: Ms. Genevieve Salmonson
Office of Environmental Quality Control

✓ Mr. Rodney Funakoshi
Wilson Okamoto Corporation

6573-02
March 8, 2004

**WILSON
OKAMOTO
CORPORATION**



**ENGINEERS
PLANNERS**
1907 S. BERETANIA ST.
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HONOLULU, HI 96826
PH. (808)946-2277
FAX: (808)946-2253

Ms. Cheryl D. Soon, Director
Department of Transportation Services
City and County of Honolulu
650 South King Street, 3rd Floor
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment
Honolulu Board of Water Supply District Cooling Facility
Kakaako, Oahu, Hawaii

Dear Ms. Soon:

Thank you for your letter of February 23, 2004 indicating that you have no comment on the subject Draft Environmental Assessment.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final Environmental Assessment.

Sincerely,

Rodney Funakoshi, AICP
Project Manager

RYF/DM/jsm

cc: Lorna Heller, City and County of Honolulu Board of Water Supply
Genevieve Salmonson, Office of Environmental Quality Control

February 5, 2004

City & County of Honolulu Board of Water Supply
630 S. Beretania Street
Honolulu, Hawaii 96843

Reference:

Seawater System Proposed To Cool Medical School
by James Gonser, Honolulu Advertiser 02 February 2004 , Pages B-1 & B-5

Attention: Lorna Heller,

Drilling through cap rock in Kaka'ako IS NOT prudent.

Many people rely on the fresh water beneath the cap rock for life. The possible RUIN
of this natural seal between fresh and salt water is not acceptable.

Please reject this plan !

Robert B. Faus Jr.
375 Mamaki Street
Honolulu Hawaii 96821



BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



March 12, 2004

JEREMY HARRIS, Mayor

EDDIE FLORES, JR., Chairman
CHARLES A. STED, Vice-Chairman
HERBERT S.K. KAOPUA, SR.
DAROLYN H. LENDIO

RODNEY K. HARAGA, Ex-Officio
LARRY J. LEOPARDI, Ex-Officio

CLIFFORD S. JAMILE
Manager and Chief Engineer

CONNIE FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

Mr. Robert B. Faus, Jr.
375 Mamaki Street
Honolulu, Hawaii 96821

Dear Mr. Faus:

Subject: Your letter of February 5, 2004 Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Kakaako Cold Seawater Source Well, Oahu, Hawaii, TMK: 2-1-060: 009

Thank you for taking the time to review the Draft Environmental Assessment (EA) for the proposed project and for providing your comments.

We appreciate your concern regarding the natural seal between fresh and salt water. However, the well is located about 600-feet from the shoreline and therefore no freshwater lens exists near the well. The seawater well will also be cement grouted around a PVC pipe to effectively seal the upper caprock formation.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final EA.

If you have any questions, please contact Loma Heller at 748-5944.

Very Truly Yours,

for CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Genevieve Salmonson, Office of Environmental Quality Control
Dean Minakami, Wilson Okamoto Corporation

Carlyle S. Harris
986 Koa Street
Honolulu, HI 96816

2 February 2004

Honolulu Board of Water Supply
Honolulu, Hawaii

Attn: Lorna Heller

Dear Ms Heller:

I wholeheartedly endorse the concept of deep drilling for saltwater to be utilized in the cooling system for the new School of Medicine. Not only will the associated costs be recouped in a short time, but the long range concerns for energy conservation also will be addressed.

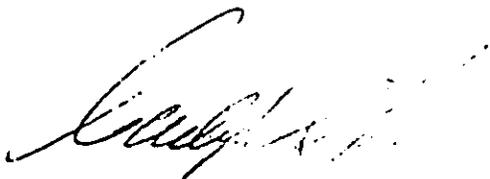
There is, however, much more to be accomplished here in Hawaii. I worked with the sugar industry for many years traveling thirty-four countries. Most of my time was spent in Central and South America, essentially in poorer countries where sugar was the main industry. Poor as most of these countries were in the sixties, they already had a variety of working desalination programs in place not only for their potable water supply, but some also utilized cold seawater for temperature abatement as well.

Hawaii is most fortunate to have many potential sources for energy conversion and potable water. We have a wind farm in place to generate electricity, even though it is only economically feasible when oil prices reach a certain level. Our use of solar energy is expanding at a respectable rate. We have a pilot desalination plant which I can't comment on because little is revealed about the results of their research. What is being done to develop or explore wave action as a source of mechanical energy? This mechanical energy can be readily converted to electricity.

We have constant wave action, an abundance of sunshine, and loads of potentially useful cold seawater. We should be doing more, much more. The proposed Medical School project is a start. We really must be looking forward. The thought of running out of our basic needs in Hawaii is appalling and, frankly, unnecessary.

Let's do it now, Hawaii, before it's not even a matter of choice.

Respectfully submitted,



Carlyle S. Harris
Telephone: 737-1200
FAX: 732-3082
email: sirrah@hawaii.rr.com

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
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CLIFFORD S. JAMILE
Manager and Chief Engineer

DONNA FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

Mr. Carlyle S. Harris
966 Koa Street
Honolulu, Hawaii 96816

Dear Mr. Harris:

Subject: Your letter of February 2, 2004 Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Kakaako Cold Seawater Source Well, Oahu, Hawaii, TMK: 2-1-060: 009

Thank you for taking the time to review the Draft Environmental Assessment (EA) for the proposed project and for providing your comments.

We appreciate your support for developing sustainable sources of energy and water supply. The Honolulu Board of Water Supply is committed to exploring new technologies that can conserve our precious supply of water. Our recently constructed desalination facility, promotion of recycled reclaimed water, and the proposed district cooling facility are among our ongoing water conservation efforts. We assure you that we will continue to explore and implement new means of water conservation as they become available.

We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final EA.

If you have any questions, please contact Lorna Heller at 748-5944.

Very Truly Yours,


for CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Genevieve Salmonson, Office of Environmental Quality Control
Dean Minakami, Wilson Okamoto Corporation

CORRECTION

THE PRECEDING DOCUMENT(S) HAS
BEEN REPHOTOGRAPHED TO ASSURE
LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

RECEIVED AS FOLLOWS

Carlyle S. Harris
966 Koa Street
Honolulu, HI 96816

2 February 2004

Honolulu Board of Water Supply
Honolulu, Hawaii

Attn: Lorna Heller

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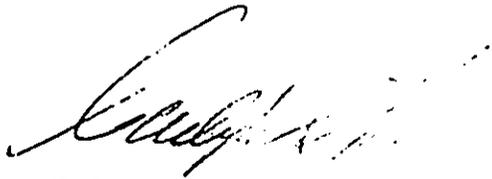
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Respectfully submitted,



Carlyle S. Harris
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DONNA FAY K. KIYOSAKI
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Mr. Carlyle S. Harris
966 Koaa Street
Honolulu, Hawaii 96816

Dear Mr. Harris:

Subject: Your letter of February 2, 2004 Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Kakaako Cold Seawater Source Well, Oahu, Hawaii, TMK: 2-1-060: 009

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We appreciate your participation in the environmental review process. Your letter, together with this response, will be included in the Final EA.

If you have any questions, please contact Lorna Heller at 748-5944.

Very Truly Yours,

for CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Genevieve Salmonson, Office of Environmental Quality Control
Dean Minakami, Wilson Okamoto Corporation

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The deadline to comment on the Board of Water Supply's saltwater cooling facility at Kaka'ako is Feb. 23. Send comments to City and County of Honolulu Board of Water Supply, 630 S. Beretania St., Honolulu, HI 96843, Attn.: Lorna Heller. Include three copies for the consultant, the approving agency and the state Office of Environmental Quality Control.

February 2, 2004

Ms. Lorna Heller
City and County of Honolulu Board of Water Supply
630 S. Beretania Street
Honolulu, Hawaii 96843

Dear Ms. Heller:

Let me start off by saying that I do not have a chemical engineering degree from Harvard or Stanford University, but I am a concerned citizen of the State of Hawaii where I have lived for the past twenty years, and would like to give you a view of my own personal experience with desalination to saltwater technology.

When I read your story, I was surprised, and then shocked. I cannot comprehend that nobody at the Office of Environmental Quality Control or the Board of Water Supply would make such a costly decision without the proper investigation.

I was born and raised in Curacao, which is an island in the Caribbean, part of the Kingdom of the Netherlands. Historically, the Netherlands is known for their eternal battle with water. Curacao, in the Netherlands West Indies, has been using desalination since 1928. The development of distillation, reverse osmosis and electro dialysis over the last 30 years have made desalination a reliable and widely accepted technology throughout the world where natural sources of water are limited. However, they all require sizable capital investment, trained support staff, continued long-term maintenance and low-cost energy.

Now, in the case of the John A. Burns Medical Center, it sounds to me as if someone is trying to use a backfire in its proposal of the use of saltwater technology for UH's new medical school building, by using cold seawater as a coolant for its air-conditioning system. While the investment of the construction of a desalination plant will be paid off 10 years after the opening of the UH medical school, it will be closed down in 10 years after the opening of its pipelines and air-conditioning system due to extensive engineering.

In other words, without the construction of a desalination plant, this plan will backfire, and the supposed reduction of the building's cooling costs by as much as 85% will be a total farce.

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Please, forget about the study to determine water temperature – instead gather more information about the potential related disasters this plan will cause, unless the water originates from the desalination plant in Kaleloa, or any other desalination facility before it is pumped into the pipelines to the medical center and in the future to Waikiki hotels, downtown office towers and other oceanfront developments.

Do not get me wrong, I am all for the use of desalination. But it has to be done properly and not by using short-cuts.

As an example, in 1973 in Curacao, the Intercontinental Hotel, which had recently been opened and had used the same technology as described in your article for its air-conditioning and plumbing systems, closed its doors for approximately two years in order to replace all of its plumbing, pipes, and air-conditioning system. Needless to say, it was a disaster.

Please read my letter carefully and learn from other people's experiences.

Aloha,



Delia Witteveen
464 Hao Street
Honolulu, Hawaii 96821
Phone: 377-1986

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BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
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February 20, 2004

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CLIFFORD S. JAMILE
Manager and Chief Engineer

DONNA FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

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FEB 25 2004

WILSON OKAMOTO CORPORATION

Ms. Debra Witteveen
464 Hao Street
Honolulu, Hawaii 96821

Dear Ms. Witteveen:

Subject: Your Letter of February 2, 2004 Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Kaka'ako Cold Seawater Source Well Oahu, Hawaii, TMK: 2-1-060: 009

Thank you for taking the time to review the Draft Environmental Assessment for the proposed project and for providing your comments.

We appreciate your information on Curacao's problem using saltwater technology for the Intercontinental Hotel. However, the technology used to serve the John A. Burns School of Medicine facilities in Kaka'ako utilizes a different system and will not require the use of a desalination facility.

The cold seawater that is pumped from the proposed well will be brought up to a cooling station on the university property, where it will pass (not mix) through a metal heat exchanger that chills fresh water, which is then distributed to the buildings for cooling. The heat exchanger is analogous to a car radiator, exchanging heat but not mixing the fluids. Once the seawater passes through the heat exchanger, it will return to the ocean through another pipeline or several disposal wells. Since fresh water will be circulated into the medical center's air-conditioning system, corrosion in the pipelines and air-conditioning system is avoided.

In the case of JABSOM, we are not trying to use a "short-cut" in its proposal of the use of saltwater technology. Centralized district cooling has been growing in the past ten years and has been very strong, especially in North America as well as worldwide, including Japan, France, Germany, Korea, Malaysia, Sweden and other countries.

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Ms. Debra Witteveen
February 20, 2004
Page 2

The Board of Water Supply looks at this project as a conservation project, making use of our abundant natural resource to conserve drinking water, energy, fossil fuels and improving air quality.

Again, we appreciate your comments, should you have any further questions, please call Lorna Heller at 748-5944.

Very truly yours,


for CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Genevieve Salmonson, Office of Environmental Quality Control
Dean Minakami, Wilson Okamoto Corporation